

Economic Survey 2019-20

Volume 1

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CONTENTS

Chapter No.	Page No.	Name of the Chapter
1		**Wealth Creation: The Invisible Hand Supported By The Hand Of Trust**
	2	Importance Of Wealth Creation
	6	Wealth Creation Through The Invisible Hand Of Markets
	9	The Instruments For Wealth Creation
	14	The Breakdown Of Trust In The Early Years Of This Millennium
2.		**Entrepreneurship And Wealth Creation At The Grassroots**
	28	Entrepreneurship And GDP
	35	Determinants Of Entrepreneurial Activity
	38	Policy Implications For Fast-Tracking Entrepreneurship And Wealth Creation
3.		**Pro-Business versus Pro-Crony**
	43	Pro-Business, Creative Destruction And Wealth Creation
	52	Pro-Crony And Wealth Destruction
	55	Discretionary Allocation Of Natural Resources Vis-À-Vis Allocation Via Auctions
	60	Riskless Returns: The Case Of Wilful Default
	63	Conclusion
4.		**Undermining Markets: When Government Intervention Hurts More Than It Helps**
	72	Essential Commodities Act (ECA), 1955
	78	Drug Price Controls Under ECA
	82	Government Intervention In Grain Markets
	88	Debt Waivers
	93	Legislative Changes Required To Reduce Government Interventions
5.		**Creating Jobs and Growth by Specializing to Exports in Network Products**
	102	India's Export Under-Performance Vis-À-Vis China
	108	Reaping Gains From Participation In Global Value Chains
	110	Which Industries Should India Specialize In For Job Creation?
	116	Pattern Of Entry
	119	Potential Gains In Employment And GDP
	121	Are Free Trade Agreements Beneficial?
	124	Way Forward
6.		**Targeting Ease Of Doing Business In India**
	128	Introduction
	130	Global Comparisons
	132	Density Of Legislation And Statutory Compliance Requirements In Manufacturing
	134	Starting A Business: Regulatory Hurdles In Opening A Restaurant
	136	Construction Permits

137 Achieving Scale Across Business
137 Trading Across Borders
139 Case Studies Of India's Performance In Logistics In Specific Segments
147 Conclusion

7. Golden Jubilee Of Bank Nationalisation: Taking Stock
156 Banking Structure: Nationalization To Today
157 Benefits Of Nationalization
163 Enhancing Efficiency Of PSBs: The Way Forward
176 Conclusion

8. Financial Fragility In The NBFC Sector
183 Conceptual Framework Of Rollover Risk
186 Differences Between HFCs And Retail-NBFCs
193 Diagnostic To Assess Financial Fragility
199 Policy Implications

9. Privatization And Wealth Creation
206 Impact Of Privatisation: A Firm Level Analysis
224 Way Forward

10. Is India's GDP Growth Rate Overstated? No!
231 Introduction
233 Is GDP Misestimated?
251 A Diagnostic Analysis
257 Conclusion

11. Thalinomics: The Economics Of A Plate Of Food In India
260 Introduction
263 Thali Prices
267 Affordability Of Thalis
272 Price Trends Of Thali Components
274 Thali Inflation
276 Variability Of Thali Prices
285 Conclusion

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Preface

The epic treatise of modern economics, written by Adam Smith in 1776, was interestingly titled "An Inquiry into the Nature and Causes of the Wealth of Nations". With India having become the fifth largest economy in the world in 2019 and aspiring to be the third largest by 2025, it is only befitting to go back to one of the foundational questions posed by Smith, "What causes wealth and prosperity of nations?" The Economic Survey 2019-20 makes a humble attempt to craft a framework of policies that can foster wealth creation in India. This inquiry is particularly critical at this stage as India aspires to become a $5 trillion economy by 2025 – an ambitious vision that should create, as Smith observed, "universal opulence which extends itself to the lowest ranks of the people."

Hon'ble Prime Minister highlighted in India's 73rd Independence Day Speech on 15th August 2019 that only when wealth is created will wealth be distributed. Therefore, a feeling of suspicion and disrespect towards India's wealth-creators is ill advised. Given India's "tryst" with Socialism, skepticism about the benefits of wealth creation is not an accident. In this context, *Team@EcoSurvey* 2019-20 attempts to put to rest any skepticism about the benefits accruing from a market economy, both in economic thinking and policy-making.

The Survey documents that ideas of wealth creation are rooted in India's old and rich tradition ranging from Kautilya's *Arthashastra* to Thiruvalluvar's *Thirukural*, which emphasizes ethical wealth creation as a noble human pursuit. The Survey uses the ancient literature and contemporary evidence and to show that India's dalliance with Socialism – a few decades is after all ephemeral in a history of millennia – is an exception with belief in the invisible hand of markets being the norm. Maddison (2007) provides the historical evidence that India has been the dominant economic power globally for more than three-fourths of known economic history. Such dominance manifests by design; not happenstance. The Survey draws on literature describing the ancient system to show that the invisible hand of the market supported by the hand of trust led to such dominance. The growth performance of the Indian economy and various sectors after India returned back to its roots post economic liberalisation in 1991 provides the contemporary evidence. Events from the Global Financial Crisis and the problems with the Indian financial sector provide evidence of the need for the hand of trust to support the invisible hand. Introducing the idea of "trust as a public good that gets enhanced with greater use", the Survey also makes some suggestions for enhancing this public good. The Survey's conceptualisation of wealth creation, thus, presents a synthesis of the old and the new, be it in the combination of ancient Indian tradition with contemporary evidence or in suggesting the use of FinTech for our Public Sector Banks. The survey cover conveys synthesis as well, with the lavender of the new "₹ 100 note" coming together with the one of older currency notes – that of Rs. 100.

The Survey identifies several levers for furthering wealth creation: entrepreneurship at the grassroots as reflected in new firm creation in India's districts; promote "pro-business" policies that unleash the power of competitive markets to generate wealth as against "pro-crony" policies that may favour incumbent private interests. The Survey makes the case that the churn created by a healthy pro-business system generates greater wealth than a static pro-crony system. Note that the Survey contrasts two systems; the arguments are not directed at any individual or entity. Instead, it argues for eliminating policies that undermine markets through government intervention even where it is not necessary; integrate "Assemble in India" into "Make In India" to focus on labour-intensive exports and thereby create jobs at large scale; efficiently scale up the banking sector to be proportionate to the size of the Indian economy and track the health of the shadow banking sector; use privatisation to foster efficiency. Consistent with the hand of trust supporting the invisible hand, the Survey provides careful evidence that India's GDP growth estimates can be trusted.

Continuing the modest endeavour of Economic Survey 2018-19 to use principles of behavioural economics as instruments of economic policy and as an easy prism to have insights about human behaviour, the Economic Survey 2019-20 presents "Thalinomics"- an attempt to relate economics to the common person using something that he or she encounters every day – a plate of food i.e. a Thali.

We chose to continue with the popular tradition of presenting the Survey in two volumes. Volume I, which attempts to capture ideas that encapsulate "economic freedom and wealth creation", provides evidence based economic analyses of recent economic developments to enable informed policymaking. Volume II reviews recent developments in the major sectors of the economy and is supported by relevant statistical tables and data. This would serve as the ready reckoner for the existing status and policies in a sector.

The Economic Survey attributes its existence and popularity to the collaborative effort of all Ministries and Departments of Government of India, the prodigious resource base of the Indian Economic Service officers, valuable inputs of researchers, consultants and think tanks both within and outside the government and the consistent support of all officials of the Economic Division, Department of Economic Affairs. The Survey has made a sincere effort to live up to the expectation of being an indispensable guide for following, understanding and thinking about the Indian economy. Needless to say, the personal gratification *Team@EcoSurvey* gets in thinking deeply about what is best for the Indian economy represents our ultimate reward. We hope readers share the sense of optimism with which we present this year's Survey.

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ABBREVIATIONS

3SLS	3 Stage Least Squares
AAI	Airports Authority of India
ACNAS	Advisory Committee on National Accounts Statistics
AD	After Death
AEO	Authorised Economic Operator
AEP	Assembled End Products
AERA	Airports Economic Regulatory Authority
ALM	Asset Liability Management problems
ASEAN	Association of Southeast Asian Nations
AUM	Assets Under Management
BACL	Bharat Aluminium Company Ltd.
BEC	Broad Economic Categories
BHEL	Bharat Heavy Electricals Limited
BIFR	Board of Industrial and Financial Reconstruction
BIMSTEC	Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation
BPCL	Bharat Petroleum Corporation Limited
BSE	Bombay Stock Exchange
BSES	Bombay Suburban Electric Supply
BT	British Telecom
CAG	Comptroller and Auditor General
CAGR	Compound annual growth rate
CAR	Capital Adequacy Ratio
CBI	Central Bureau of Investigation
CBIC	Central Board of Indirect taxes and Customs
CBU	Completely Built Unit
CCEA	Cabinet Committee on Economic Affairs
CCIL	Container Corporation of India Ltd
CCT	Conditional Cash Transfers
CD	Convertible Debenture
CGD	Core Group of Disinvestment
CIBIL	Credit Information Bureau Ltd
CIP	Central Issue Prices
CKD	Completely- Knocked Down
CMCL	Computer Management Corporation Ltd
CPI-IW	Consumer Price Index-Industrial Workers
CPs	Commercial papers
CPSE	Central Public Sector Enterprises
CRILC	Central Repository of Information on large Corporates
CSO	Central Statistics Office
CVC	Central Vigilance Commission
DBT	Direct Benefit Transfers
DCA	Department of Consumer Affairs
DGCI&S	Directorate General of Commerce Intelligence & Statistics
DHFL	Dewan Housing Finance Limited
DICGC	Deposit Insurance and Credit Guarantee Corporation
DID	Difference-in-differences
DII	Domestic Institutional Investors
DIPAM	Department of Investment and Public Asset Management
DPCO	Drugs Prices Control Order
DRT	Debt Recovery Tribunals
DVA	Domestic Value Added
ECA	Essential Commodities Act
EIL	Engineers India Limited
e-NAM	e-National Agricultural Market
EoDB	Ease of Doing Business
ESOP	Employee Stock Option Plan
ETF	Exchange Traded Funds
EU	European Union
FCI	Food Corporation of India
FDI	Foreign Direct Investment
FE	Fixed Effect
FEMA	Foreign Exchange Management Act
FII	Foreign Institutional Investors

FTA	Free Trade Agreement
FTC	Federal Trade Commission
FY	Financial Year
GDDP	Gross Domestic District Product
GDP	Gross Domestic Product
G-secs	Government Securities
GSFC	Gujarat State Fertilizers and Chemicals
GST	Goods and Services Tax
GVC	Global Value Chains
HCI	Hotel Corporation of India
HELP	Hydrocarbon Exploration and Licensing Policy
HFC	Housing Finance Company
HLAG	High Level Advisory Group
HPCL	Hindustan Petroleum Corporation Limited
HT	Hindustan Teleprinters
IBBI	Insolvency and Bankruptcy Board of India
IBC	Insolvency and Bankruptcy Code
IBP	Indo Bright Petroleum
ICD	Inland Container Depot
ICICI	Industrial Credit and Investment Corporation of India
IDBI	Industrial Development Bank of India
IEF	Index of Economic Freedom
IIP	Index of Industrial Production
ILFS	Infrastructure Leasing and Financial Services
IMF	International Monetary Fund
I-O	Input-Output
IOC	Indian Oil Corporation
IPCL	Indian Petrochemicals Corporation Limited
IPO	Initial Public Offer
IRDAI	Insurance Regulatory Development Authority of India
ISI	Indian Statistical Institute
ISWGNA	Inter-Secretariat Working Group on National Accounts
IT	Information Technology
ITC	International Trade Centre
ITDC	Indian Tourism Development Corporation
JAM	Jan Dhan-Aadhaar Mobile
JNPT	Jawaharlal Nehru Port Trust
LDMFs	Liquid Debt Mutual Funds
MAPE	Maximum Allowable Post-manufacturing Expenses
MBA	Master of Business Administration
MCA	Ministry of Corporate Affairs
MFI	MicroFinance Institutions
MFIL	Modern Food Industries Limited
MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act
MMTCL	Minerals & Metals Trading Corporation Limited
MNE	Multi-National Enterprises
MPC	Marginal Propensity to Consume
MPCE	Monthly Per Capita Expenditure
MRTP	Monopolies and Restrictive Trade Practices
MSME	Micro, Small & Medium Enterprises
MSP	Minimum Support Price
MTNL	Mahanagar Telephone Nigam Limited
MUL	Maruti Udyog Limited
NBFC	Non-Banking Financial Corporation
NCD	Non-Convertible Debenture
NELP	New Exploration Licensing Policy
NFSA	National Food Security Act
NITI	National Institution for Transforming India
NLEM	National List of Essential Medicines
NMDC	National Mineral Development Corporation
NMSA	National Mission for Sustainable Agriculture
NP	Network Products
NPA	Non-Performing Asset
NPB	New Private Bank

NPPA	National Pharmaceutical Pricing Authority
NRAI	National Restaurants Association of India
NSO	National Statistics Office
NTC	National Textile Corporation
OECD	Organisation for Economic Co-operation and Development
ONGC	Oil and Natural Gas Commission
OPB	Old Private Bank
Opex Ratio	Operating Expense Ratio
P&C	Parts & Components
PAT	Profit after tax
PDPS	Price Deficiency Payment Scheme
PDS	Public Distribution System
PKVY	Paramparagat Krishi Vikas Yojana
PLFS	Periodic Labour Force Survey
PM-AASHA	Pradhan Mantri Annadata Aay SanraksHan Abhiyan
PMFBY	Pradhan Mantri Fasal Bima Yojana
PMGSY	Pradhan Mantri Gram Sadak Yojana
PMJDY	Pradhan Mantri Jan Dhan Yojna
PMKSY	Pradhan Mantri Krishi Sinchayee Yojana
PPSS	Private Procurement & Stockist Scheme
PSB	Public Sector Banks
PSF	Price Stabilization Fund
PSS	Price Support Scheme
PSU	Public Sector Undertakings
RBI	Reserve Bank of India
RCEP	Regional Comprehensive Economic Partnership
REC	Rural Electrification Corporation
ROA	Return on Asset
ROE	Return on Equity
RPTs	Related Party Transactions
SAFTA	South Asian Free Trade Area
SAIL	Steel Authority of India Limited
SBI	State Bank of India
SCI	Shipping Corporation of India
SDG	Sustainable Development Goal
SEBI	Securities and Exchange Board of India
SEC	Securities and Exchange Commission
SHRUG	Socioeconomic High-resolution Rural-Urban Geographic Dataset on India
SICA	Sick Industrial Companies Act
SIDBI	Small Industries Development Bank of India
SITC	Standard International Trade Classification
SKD	Semi- Knocked Down
SMEs	Small and Mid-Size Enterprises
SNA	System of National Accounts
T-bills	Treasury Bills
TFP	Total Factor Productivity
TPDS	Targeted Public Distribution System
UN	United Nations
UNIDO	United Nations Industrial Development Organisation
UNSC	United Nations Statistical Commission
USA	United States of America
USD	United States Dollar
WCO	World Customs Organization
WDI	World Development Indicators
WIPO	World Intellectual Property Organization
YoY	Year - over - Year

Wealth Creation: The Invisible Hand Supported by the Hand of Trust

01
CHAPTER

பொருளென்னும் பொய்யா விளக்கம் இருளறுக்கும்
எண்ணிய தேயத்துச் சென்று

"Wealth, the lamp unfailing, speeds to every land,
Dispersing darkness at its lord's command."
– Thirukural, Chapter 76, verse 753.

செய்க பொருளைச் செறுநர் செருக்கறுக்கும்
எஃகதிற் கூரிய தில்

"Make money – there is no weapon sharper than it
to sever the pride of your foes."
– Thirukural, Chapter 76, verse 759.

For more than three-fourths of known economic history, India has been the dominant economic power globally. Such dominance manifested by design. During much of India's economic dominance, the economy relied on the invisible hand of the market for wealth creation with the support of the hand of trust. Specifically, the invisible hand of markets, as reflected in openness in economic transactions, was combined with the hand of trust by appealing to ethical and philosophical dimensions.

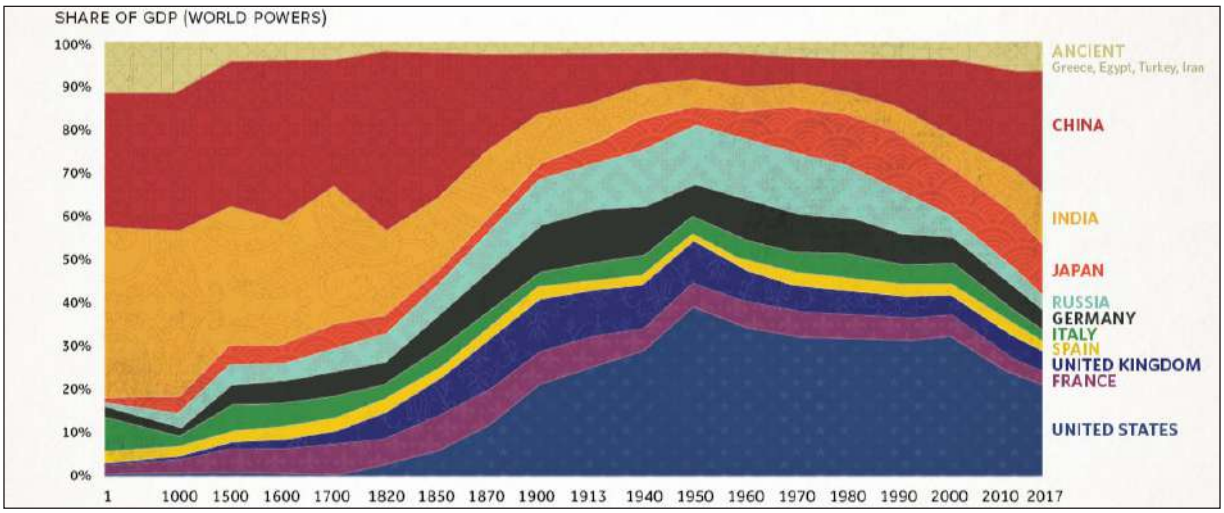
The Survey shows that contemporary evidence following the liberalization of the Indian economy support the economic model advocated in our traditional thinking. The exponential rise in India's GDP and GDP per capita post liberalisation coincides with wealth generation in the stock market. Similarly, the evidence across various sectors of the economy illustrates the enormous benefits that accrue from enabling the invisible hand of the market. Indeed, the Survey shows clearly that sectors that were liberalized grew significantly faster than those that remain closed. The events in the financial sector during 2011-13 and the consequences that followed from the same illustrate the second pillar - the need for the hand of trust to support the invisible hand.

The Survey posits that India's aspiration to become a $5 trillion economy depends critically on strengthening the invisible hand of markets together with the hand of trust that can support markets. The invisible hand needs to be strengthened by promoting pro-business policies to (i) provide equal opportunities for new entrants, enable fair competition and ease doing business, (ii) eliminate policies that undermine markets through government intervention even where it is not necessary, (iii) enable trade for job creation, and (iv) efficiently scale up the banking sector to be proportionate to the size of the Indian economy. Introducing the idea of "trust as a public good that gets enhanced with greater use", the Survey suggests that policies must empower transparency and effective enforcement using data and technology to enhance this public good.

IMPORTANCE OF WEALTH CREATION

1.1 For more than three-fourths of known economic history, India has been the dominant economic power globally (Maddison, 2007). The country has historically been a major wealth creator and a significant contributor to world's GDP as shown in Figure 1.

Figure 1: Global contribution to world's GDP by major economies from 1 AD to 2003 AD



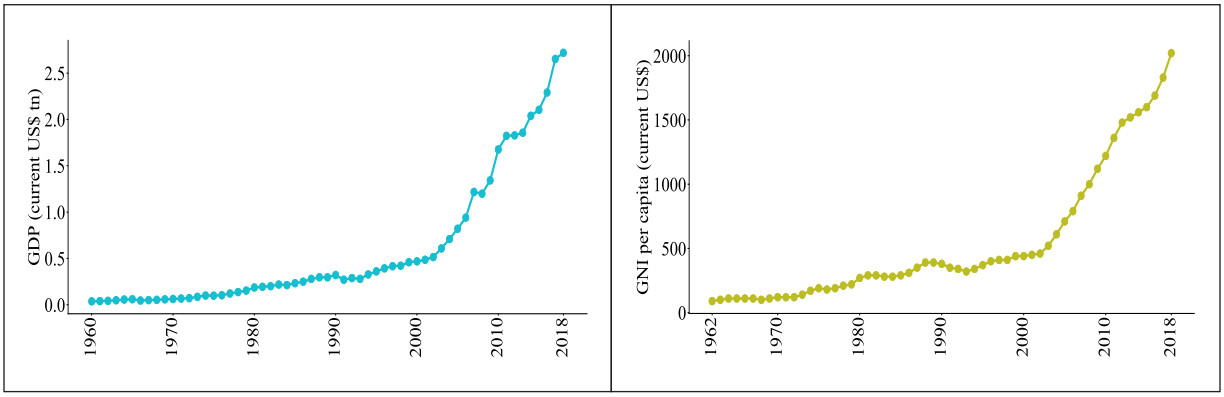
Source: Maddison A (2007). Note: X-axis of graph has non-linear scale, especially for 1-1500 AD, which underestimates the dominance of India.

1.2 Economic dominance over such long periods manifests by design, and not by mere chance. In this context, the Survey notes that our age-old traditions have always commended wealth creation. While *Kautilya's Arthashastra* is given as a canonical example, wealth creation as a worthy human pursuit is recognised by other traditional literature as well. The *Thirukural*, a treatise on enriching human life written in the form of couplets by Tamil saint and philosopher Thiruvalluvar, asserts in verses 753 of Chapter 76: "Wealth, the lamp unfailing, speeds to every land; Dispersing darkness at its lord's command." In verse 759 of the same chapter, which forms the second part of the *Thirukural* called Porul Paal or the essence of material wealth, Thiruvalluvar, declares: "Make money – there is no weapon sharper than it to sever the pride of your foes." Needless to say, *Thirukural* advocates wealth creation through ethical means – an aspect that is discussed later in this chapter. Verse 754 in the same chapter avows: "(Wealth) yields righteousness and joy, the wealth acquired capably without causing any harm."

1.3 Despite such a "rich" tradition of emphasizing wealth creation, India deviated from this model for several decades after independence. However, India returned back to these roots post economic liberalisation in 1991. The exponential rise in India's GDP and GDP (Figure 2a) per capita (Figure 2b) post liberalisation coincides with wealth generation in the stock market (Figure 3). Sensex has not only grown after 1991, but has grown at an accelerating pace. Whereas crossing the first incremental 5000 points took over 13 years from its inception in 1986, the time taken to achieve each incremental milestone has substantially reduced over the years. Note that the acceleration in the Sensex was not due to the base effect. In fact, the higher acceleration stemmed from higher cumulative annual growth rate (CAGR).

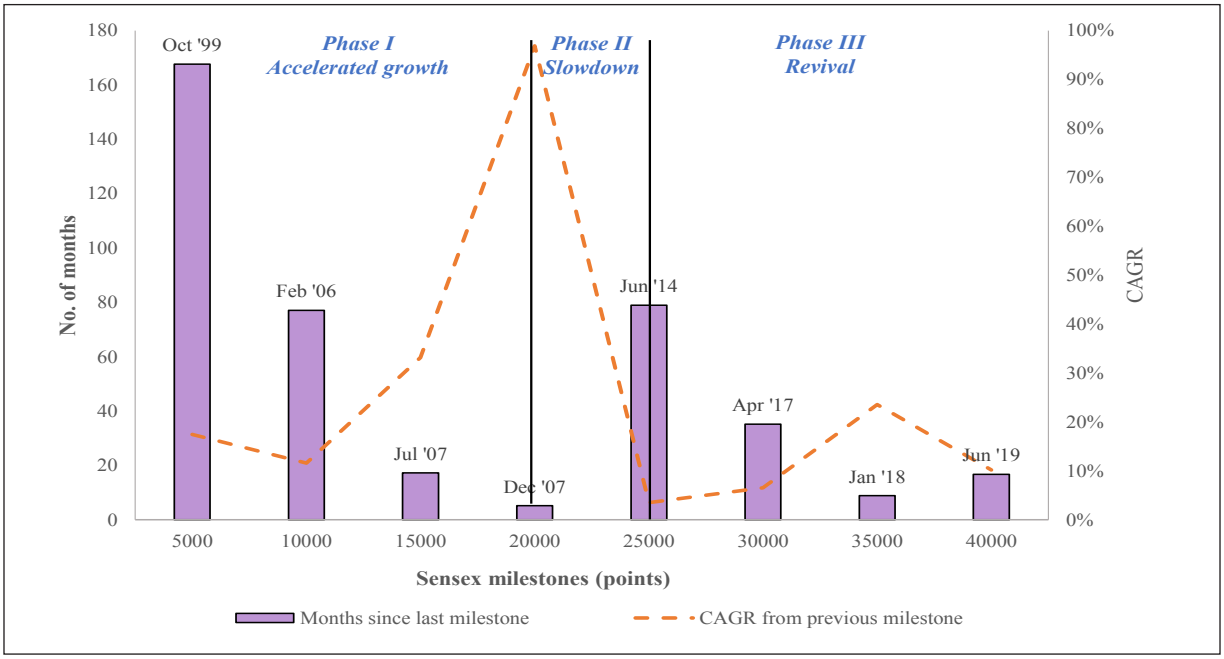
Figure 2a: India's GDP (current US$ tn) (1960-2018)

Figure 2b: India's GDP per capita (current US$) (1960-2018)



Source: World Bank

Figure 3: Incremental months taken for Sensex to cross each 5000-point milestone

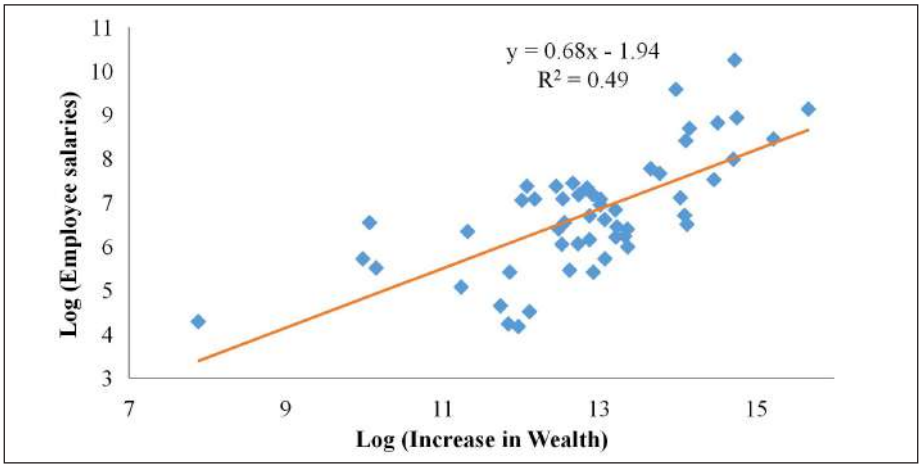


Source: BSE.

Note: Time to cross each milestone is defined as the time elapsed between the first time the Sensex closed at the previous milestone and the first time it closed at the present milestone. Note that milestones are based on closing prices. Time elapsed is recorded as number of calendar days and converted to months assuming 30 days a month.

1.4 Yet, given India's "tryst" with socialism, it is essential to emphasise its benefits in today's milieu. To understand the benefits from wealth creation, we collate the companies created by top 100 wealthy entrepreneurs in the country as estimated by Forbes in March 2019. After excluding those with tainted wealth by applying several filters, we correlate the increase in the entrepreneur's wealth over a decade (31-Mar-2009 to 31-Mar-2019) with the benefits that accrued to several other stakeholders including employees, suppliers, government, etc. Figure 4 shows that the wealth created by an entrepreneur correlates strongly with benefits that accrue to the employees working with the entrepreneur's firms.

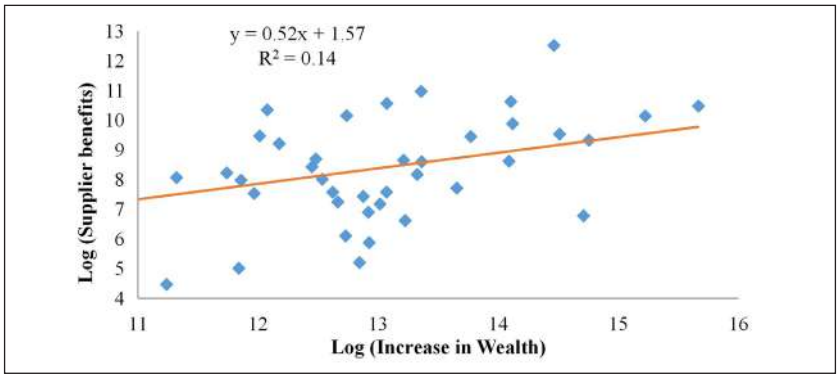
Figure 4: Wealth Creation and Salaries paid to Employees



Source: Forbes, CMIE, Capitaline, Bloomberg and Survey calculations.

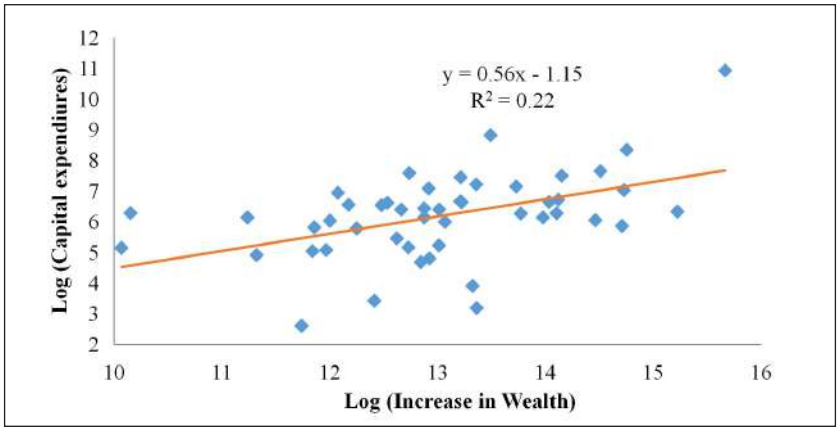
1.5 Figure 5 shows that the wealth created by an entrepreneur correlates strongly with raw materials procured by the entrepreneur's firms, which proxies the benefits that suppliers reap by supplying raw materials to the entrepreneur's firms. Similarly, Figure 6 shows that the wealth created by an entrepreneur correlates strongly with the capital expenditures made by the entrepreneur's firms, which proxies the benefits that manufacturers of capital equipment reap by supplying such equipment to the entrepreneur's firms.

Figure 5: Wealth Creation and Benefits reaped by Suppliers



Source: Forbes, CMIE, Capitaline, Bloomberg and Survey calculations.

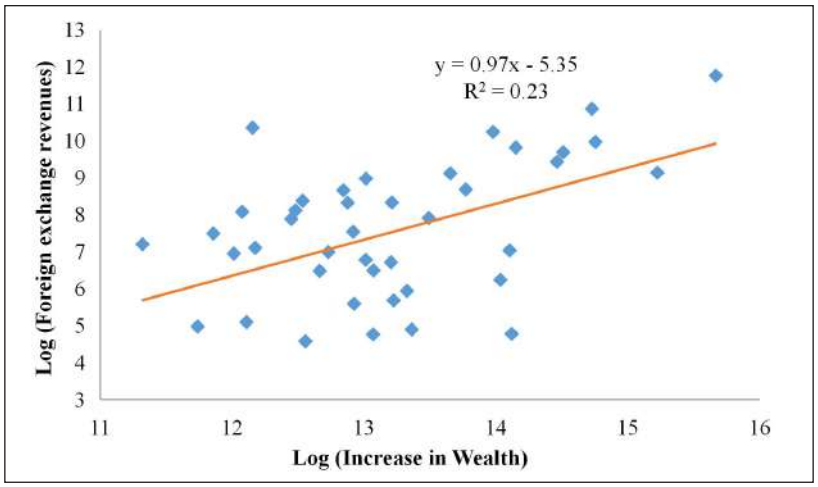
Figure 6: Wealth Creation and Capital Expenditures



Source: Forbes, CMIE, Capitaline, Bloomberg and Survey calculations.

1.6 Revenues earned in foreign exchange enable macroeconomic stability by enabling the country to pay for its imports and keeping the current account deficit at manageable levels. Figure 7 shows that the wealth creation by entrepreneurs correlates strongly with the foreign exchange revenues earned by the entrepreneurs' firms.

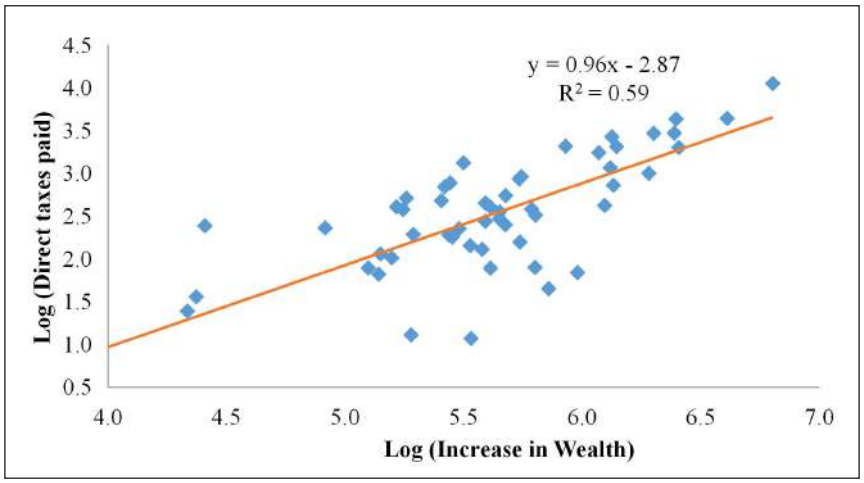
Figure 7: Wealth Creation and Foreign Exchange Revenues



Source: Forbes, CMIE, Capitaline, Bloomberg and Survey calculations.

1.7 Finally, Figure 8 shows that the wealth created by an entrepreneur helps the country's common citizens. Tax revenues enable Government spending on creating public goods and providing welfare benefits to the citizens. We correlate the wealth created by the entrepreneur with the direct taxes paid. Clearly, direct taxes underestimate the benefits accruing to the Government because it does not include the indirect taxes paid by the entrepreneur's firms, the direct taxes paid by the employees or the suppliers. Yet, as a proxy for the benefits accruing to the citizens through spending of tax revenues by the Government, this figure captures the benefits accruing to the country's common citizens. Therefore, the strong correlation of wealth creation by entrepreneurs to the taxes paid represents another important benefit to society from wealth creation.

Figure 8: Wealth Creation and Direct Tax Inflows



Source: Forbes, CMIE, Capitaline, Bloomberg and Survey calculations.

WEALTH CREATION THROUGH THE INVISIBLE HAND OF MARKETS

1.8 Wealth creation happens in an economy when the right policy choices are pursued. For instance, wealth creation and economic development in several advanced economies has been guided by Adam Smith's philosophy of the invisible hand. Despite the dalliance with socialism – four decades is but an ephemeral period in a history of millennia – India has embraced the market model that represents our traditional legacy. However, scepticism about the benefits accruing from a market economy still persists. This is not an accident as our tryst with socialism for several decades' makes most Indians believe that Indian economic thought conflicts with an economic model relying on the invisible hand of the market economy. However, this belief is far from the truth.

1.9 In fact, our traditional economic thinking has always emphasized enabling markets and eliminating obstacles to economic activity. As far as half-a-century back, Spengler (1971) wrote that Kautilya postulated the role of prices in an economy. Kautilya (p. 149) averred, "The root of wealth is economic activity and lack of it brings material distress. In the absence of fruitful economic activity, both current prosperity and future growth are in danger of destruction. A king can achieve the desired objectives and abundance of riches by undertaking productive economic activity (1.19)". Kautilya advocates economic freedom by asking the King to "remove all obstructions to economic activity" (Sihag, 2016).

1.10 A key contributor to ancient India's prosperity was internal and external trade. Two major highways Uttarapatha (the Northern Road) and Dakshinapatha (the Southern Road) and its subsidiary roads connected the sub-continent. Meanwhile, ports along India's long coastline traded with Egypt, Rome, Greece, Persia and the Arabs to the west, and with China, Japan and South East Asia to the east (Sanyal, 2016). Much of this trade was carried out by large corporatized guilds akin to today's multinationals and were funded by temple-banks. Thus, commerce and the pursuit of prosperity is an intrinsic part of Indian civilizational ethos.

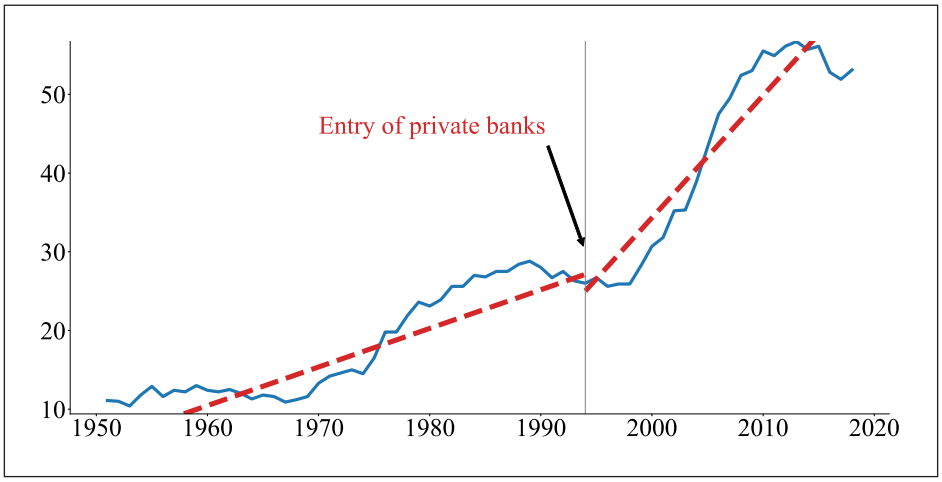
1.11 Much before the time period that Maddison (2007) analyses, a stakeholders-model existed in India as is discernible in *Arthashastra* in which entrepreneurs, workers and consumers share prosperity (Deodhar, 2018). *Arthashastra* as a treatise on economic policy was deeply influential in the functioning of the economy until the 12th century (Olivelle, 2013). During much of India's economic dominance, the economy relied on the invisible hand of the market.

1.12 As wealth creation happens by design, the overarching theme of Economic survey 2019-20 is wealth creation and the policy choices that enable the same. At its core, policies seek to maximize social welfare under a set of resource constraints. Resource constraints force policymakers to focus on efficiency, which more output to be produced from given resources such as land, human resources and capital, or, the same output for less resource use.

1.13 The evidence since 1991 shows that enabling the invisible hand of markets, i.e., increasing economic openness, has a huge impact in enhancing wealth both in the aggregate and within sectors. Indeed, the evidence presented below shows clearly that sectors that were liberalized grew significantly faster than those that remain closed. This is not surprising as the market economy is based on the principle that optimal allocation of resources occurs when citizens are able to exercise free choice in the products or services they want. Figure

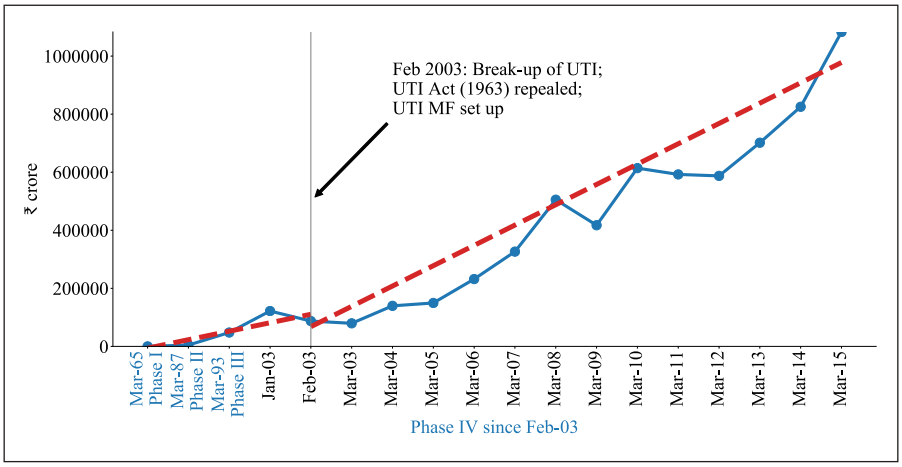
9 shows how credit in the banking sector expanded at much higher rates after the sector was opened for competition through licenses granted to private sector banks. As competition expanded the banking choices available to citizens, the sector experienced strong growth. Figure 10 shows a similar effect in the mutual funds sector following its opening up to competition in 2003. In Figures 11-14, we examine growth in an open sector, which is defined as one where citizens can choose among many different producers, vis-à-vis a closed sector, where the citizen cannot exercise this choice. Figure 11 shows the growth in the cargo volumes in an open sector (small ports) versus a closed sector (large ports). Figure 12 shows the same for open sectors such as cement and steel versus a closed sector such as coal. Figures 13 and 14 show the growth in freight and passenger traffic in an open sector (roads) when compared to a closed sector (railways). Across Figures 11-14, we see that growth has been significantly greater in the open sector than in the closed sector. Figures 9-14 thus highlight the positive impact of enabling economic choice for citizens in the economy.

Figure 9: Increase in domestic credit to GDP after entry of private sector banks



Source: World Bank WDI and Survey calculations.

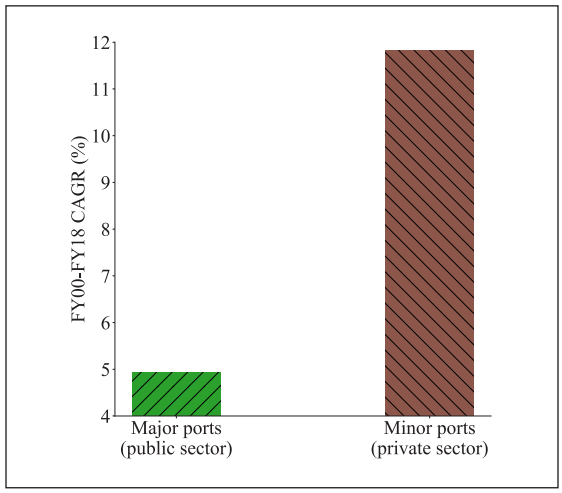
Figure 10: Growth in mutual funds sector after opening up in 2003



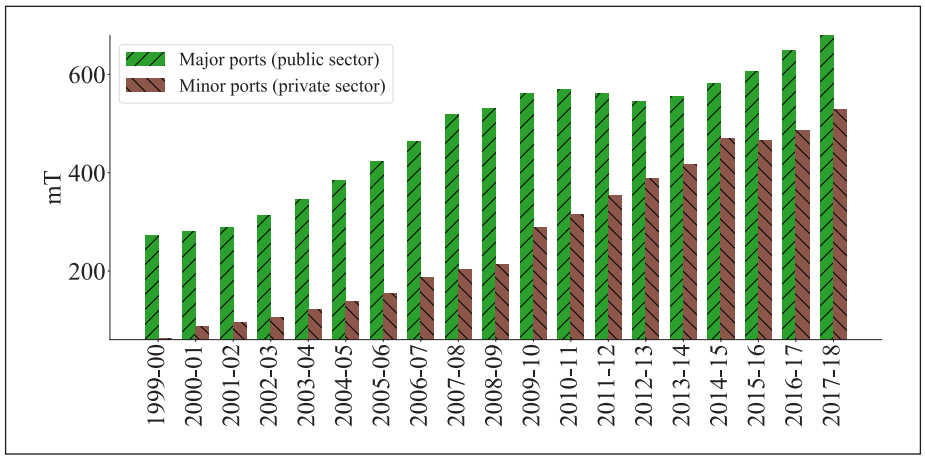
Source: AMFI data and Survey calculations.

Figure 11: Growth in the ports sector: open (minor ports) versus closed (major ports)

Cumulative Annual Growth rates

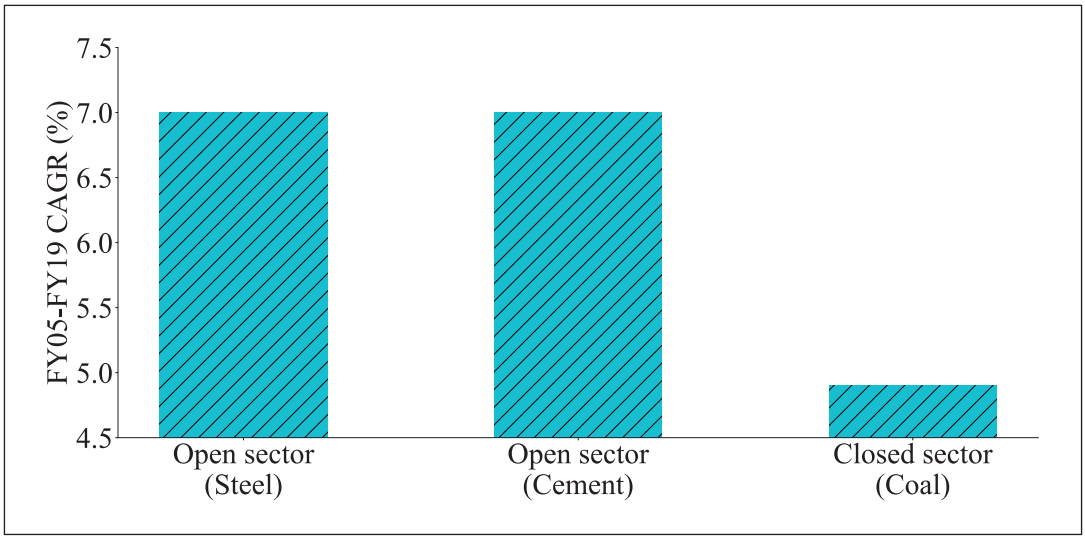


Cargo volumes in the Ports



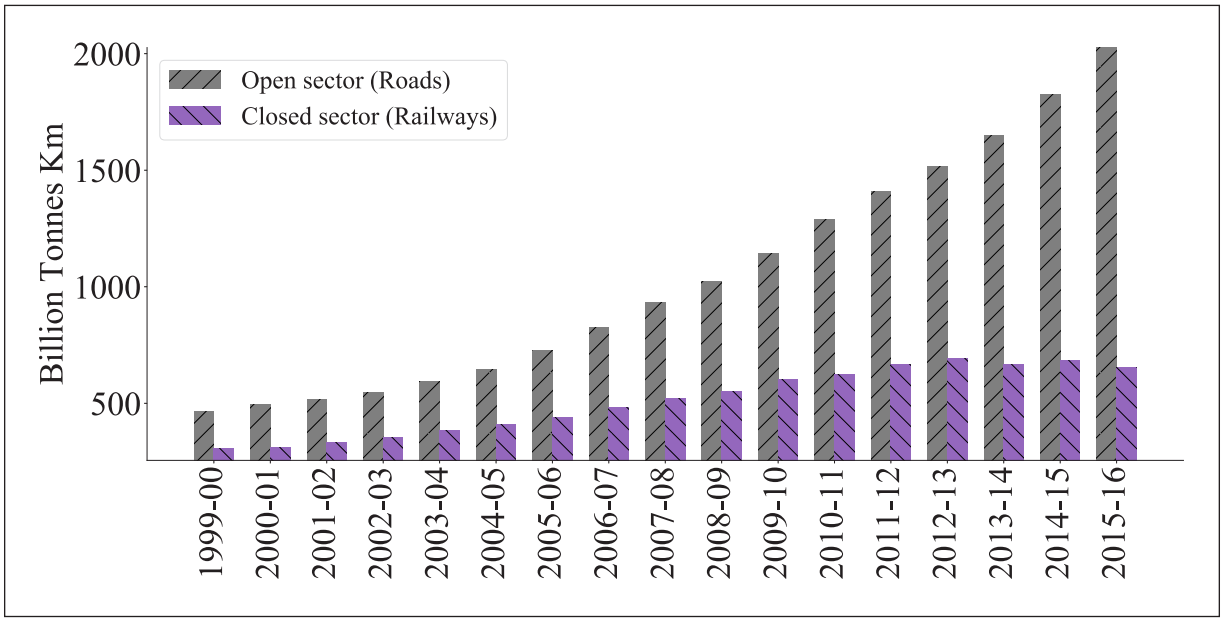
Source: CMIE, Company Annual reports and Survey calculations.

Figure 12: Annual growth rates in open sectors (steel and cement) versus closed sector (coal)



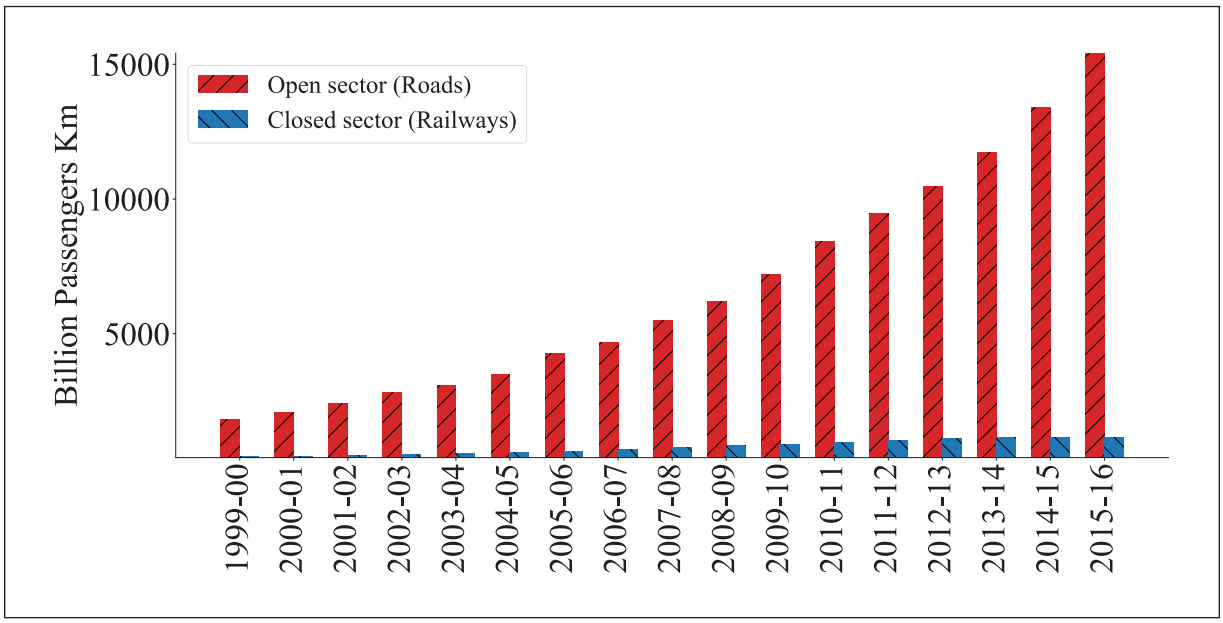
Source: CMIE, Company Annual reports and Survey calculations.

Figure 13: Growth in freight traffic across open sector (roads) and closed sector (railways)



Source: CMIE, Company Annual reports and Survey calculations.

Figure 14: Growth in passenger traffic across open sector (roads) and closed sector (railways)



Source: CMIE, Company Annual reports and Survey calculations.

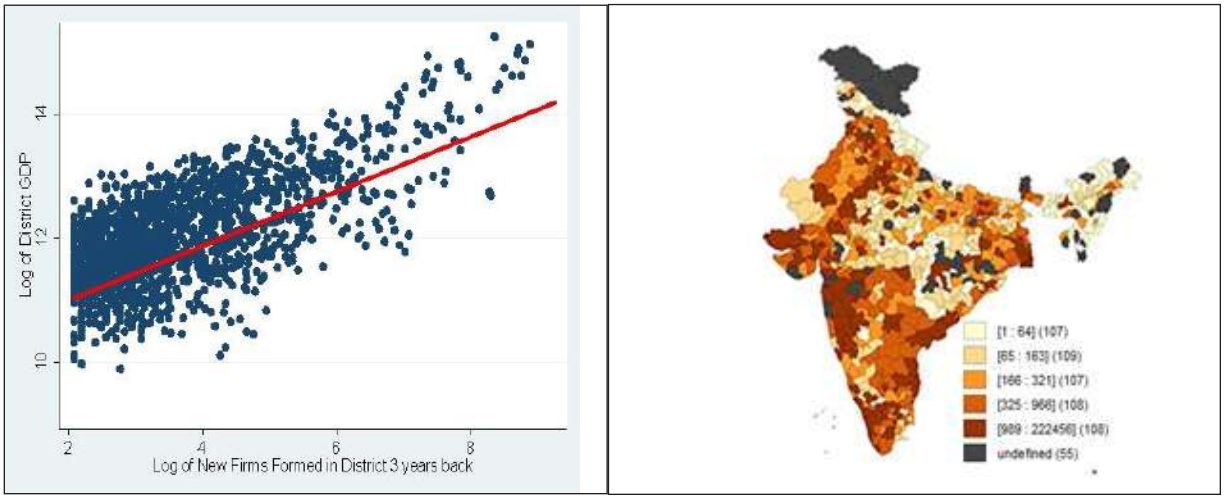
THE INSTRUMENTS FOR WEALTH CREATION

1.14 As argued above, enhancing efficiency is crucial for wealth creation. A key dimension of efficiency pertains to opportunity. Equal opportunity for new entrants is important because, as the survey shows in *Chapter 2 (Entrepreneurship and Wealth Creation at the grassroots)*, a 10 per cent increase in new firms in a district yields a 1.8 per cent increase in Gross Domestic District Product (GDDP). This effect manifests consistently both across districts as shown in Figure 15a and across

regions as shown in Figure 16. This impact of new firm creation on district-level GDP demonstrates that grassroots entrepreneurship is not just driven by necessity. Figure 15b, in fact, clearly demonstrates that, though the peninsular states dominate entry of new firms, enterpreneurship is dispersed across India and is not restricted just to a few metropolitan cities. The chapter shows using data from World Bank's enterpreneurship data that new firm creation has gone up dramatically since 2014. While the number of new firms grew at a cumulative annual growth rate of 3.8 per cent from 2006-2014, the growth rate from 2014 to 2018 has been 12.2 per cent. As a result, from about 70,000 new firms created in 2014, the number has grown by about 80 per cent to about 1,24,000 new firms in 2018. Equal opportunity for new entrants in entrepreneurship enables efficient resource

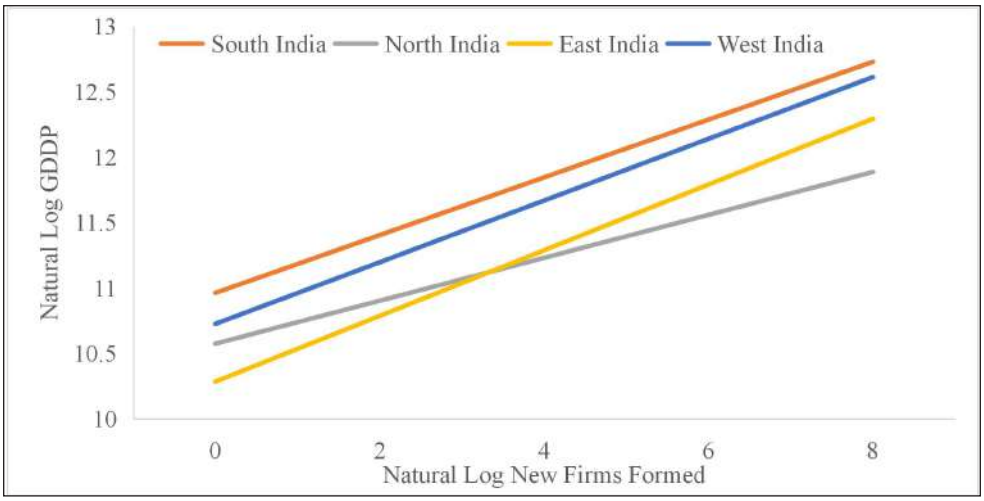
Figure 15a: Estimation of the Impact of Entrepreneurial Activity on GDDP

Figure 15b: Distribution of New Firms across Districts



Source: Ministry of Corporate Affairs (MCA) - 21 database, CEIC India Premium database

Figure 16: Impact across regions of new firm creation on District level GDP after 3 years



Source: Ministry of Corporate Affairs (MCA) - 21 database, CEIC India Premium database

allocation and utilization, facilitates job growth, promotes trade growth and consumer surplus through greater product variety, and increases the overall boundaries of economic activity.

1.15 A key dimension of opportunity pertains to that between new entrants and incumbents. While incumbents are likely to be powerful, influential, and have a voice that is heard in the corridors of power, new entrants are unlikely to possess these advantages. Yet, new entrants bring path-breaking ideas and innovation that not only help the economy directly but also indirectly by keeping the incumbents on their toes. Therefore, the vibrancy of economic opportunities is defined by the extent to which the economy enables fair competition, which corresponds to a "pro-business" economy. This is in contrast to the influence of incumbents in extracting rents from their incumbency and proximity to the corridors of power, which corresponds to "pro-crony" economy. It is crucial in this taxonomy to relate the term "pro-business" to correspond to an economy that enables fair competition for every economic participant. Given this backdrop, do new entrants have equal opportunity of wealth creation as the incumbents? *Chapter 3 (Pro-business versus pro-crony)* presents evidence on how efficient the Indian economy has been in terms of opportunity for new entrants against established players for wealth creation. Economic events since 1991 provide powerful evidence that supports providing equal opportunity for new entrants to unleash the power of competitive markets to generate wealth. India's aspiration to become a $5 trillion economy depends critically on promoting pro-business policies that provide equal opportunities for new entrants. The Survey makes the case that the churn create by a healthy pro-business system generates greater wealth than a static pro-crony system. Note that the Survey contrasts two systems; the arguments are not directed at any individual or entity.

1.16 Greater wealth creation in a market economy enhances welfare for all citizens. Chapter 3 of the Survey presents evidence of wealth creation in the economy post-liberalisation. For instance, the Sensex reached the 5,000 mark for the first time in 1999 from its base of 100 points in 1978. It was less than 1,000 points in early 1991 when India moved to a market economy from a command economy. Since then, the market capitalization based index has seen unprecedented growth as shown in Figure 3. This unprecedented growth after 1999 can be divided into three phases. Phase I from 1999 to 2007 saw acceleration in the growth of the Sensex, with each successive 5000-point mark taking lesser and lesser time to achieve. Phase II from 2007 to 2014 saw a slowdown in the index's growth. Phase III began in 2014 and saw a revival in response to structural reforms. Strikingly, in this phase, the Sensex jumped from the 30,000 mark to the 40,000 mark in just two years. As the CAGR shown in Figure 3 depict clearly, the acceleration in the Sensex was not due to the base effect. In fact, the higher acceleration stemmed from higher CAGR. Thus, there has been unprecedented wealth creation in the economy since 1991.

1.17 The freedom to choose is best expressed in an economy through the market where buyers and sellers come together and strike a bargain via a price mechanism. Where scarcity prevails and choice between one use of scarce resources and another must be made, the market offers the best mechanism to resolve the choice among competing opportunities. This principle is fundamental to a market economy. The command and control approach contends that the price of a good should be regulated. Our economy still has some of the regulatory relics of the pre-liberalisation era. The survey provides evidence in *Chapter 4 (Undermining*

Markets: When Government Intervention Hurts More Than It Helps) that government intervention hurts more than it helps in the efficient functioning of markets. For instance, in the pharmaceutical industry, government regulated formulation prices increase more than unregulated formulations. Moreover, the supply of unregulated formulations is more than that of regulated formulations. Government interventions often times lead to unintended consequences such as price increases, when compared to markets that are unregulated. Unlike in command economies where prices are determined by the government, in a market economy, price of a good is determined by the interaction of the forces of supply and demand. The survey finds that unshackling the economic freedom for markets augments wealth creation.

1.18 Yet another dimension of efficiency concerns allocation of resources to ensure their optimal use. Since resources are limited, a nation has to make choices. For example, given its demographic dividend, should India focus on labour-intensive industries or on capital intensive industries? *Chapter 5 (Creating Jobs and Growth by Specializing to Exports in Network Products)* answers this question to lay out a clear-headed strategy for creating crores of jobs through our export policies. The survey finds that by integrating "Assemble in India for the world" into Make in India, India can create 4 crore well-paid jobs by 2025 and 8 crore by 2030. Our trade policy must be an enabler because growth in exports provides a much-needed pathway for job creation in India.

1.19 As discussed in *Chapter 6 (Improving Ease of Doing Business in India)*, the ease of doing business has increased substantially in the last five years from reforms that provided greater economic freedom. India made a substantial leap forward in The World Bank's Doing Business rankings from 142 in 2014 to 63 in 2019. The Doing Business 2020 report has recognized India as one of the ten economies that have improved the most.

1.20 Yet, the pace of reforms in enabling ease of doing business need to be enhanced so that India can be ranked within the top 50 economies on this metric. India continues to trail in parameters such as Ease of Starting Business, Registering Property, Paying Taxes, and Enforcing Contracts. Chapter 6 identifies the most crucial issues plaguing India's performance beyond the approach taken by the World Bank's surveys. It also demonstrates the specific points in the supply-chain of exports and imports that experience inordinate delays and blockages. Although, the Authorized Economic Operators Scheme has smoothed the process for registered electronics exporters/importers, much more needs to be done. A holistic assessment and a sustained effort to ease business regulations and provide an environment for businesses to flourish would be a key structural reform that would enable India to grow at a sustained rate of 8-10 per cent per annum. This requires a nuts-and-bolts approach of feedback loops, monitoring and continuous adjustment.

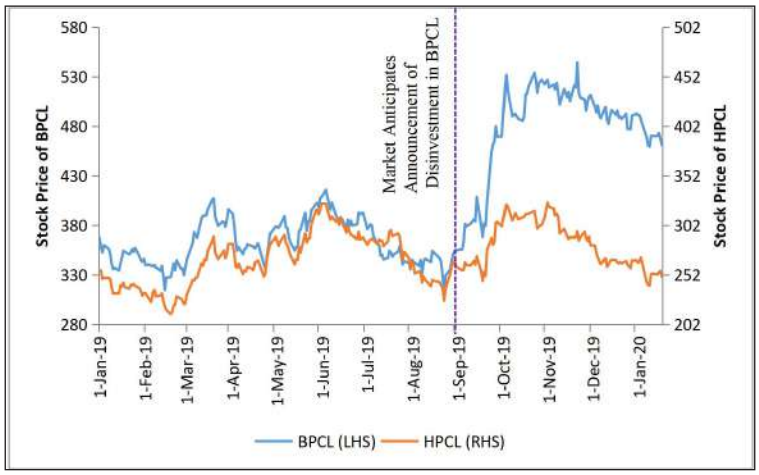
1.21 An efficient financial sector is extremely crucial for enhancing efficiency in the economy. Historically, in the last 50 years, the top-five economies have always been ably supported by their banks. The support of the U.S. Banking system in making the U.S. an economic superpower is well documented. Similarly, in the eighties during the heydays of the Japanese economy, Japan had 15 of the top 25 largest banks then. In recent times, as China has emerged as an economic superpower, it has been ably supported by its banks—the top four largest banks globally are all Chinese banks. The largest bank in the world—Industrial and Commercial Bank of China—is nearly two times as big as the 5th or 6th largest bank, which are Japanese and American banks respectively.

1.22 *Chapter 7 (Golden Jubilee of Bank Nationalisation: Taking Stock)* shows that India's banking sector is disproportionately under-developed given the size of its economy. For instance, India has only one bank in the global top 100 – same as countries that are a fraction of its size: Finland (about 1/11th), Denmark (1/8th), Norway (1/7th), Austria (about 1/7th), and Belgium (about 1/6th). Countries like Sweden (1/6th) and Singapore (1/8th) have thrice the number of global banks as India. A large economy needs an efficient banking sector to support its growth. As PSBs account for 70 per cent of the market share in Indian banking, the onus of supporting the Indian economy and fostering its economic development falls on them. Yet, on every performance parameter, PSBs are inefficient compared to their peer groups. The chapter suggests some solutions that can make PSBs more efficient so that they are able to adeptly support the nation in creating wealth commensurate with a $5 trillion economy.

1.23 The shadow banking sector, which has grown significantly in India, accounts for a significant proportion of financial intermediation especially in those segments where the traditional banking sector is unable to penetrate. *Chapter 8 (Financial Fragility in the NBFC Sector)* constructs a diagnostic to track the health of the shadow banking sector and thereby monitor systemic risk in the financial sector.

1.24 *Chapter 9 (Privatization and Wealth Creation)* uses the change in performance of Central Public Sector Enterprises (CPSEs) after privatization to show the significant efficiency gains that are obtained when the private sector runs businesses instead of the government. Figure 17 provides a compelling illustration using the announcement of the privatisation of Bharat Petroleum Corporation Limited (BPCL) by comparing to its peer Hindustan Petroleum Corporation Limited (HPCL). We focus on the difference in BPCL and HPCL prices from September 2019 onwards when the first news of BPCL's privatization appeared.[1] The comparison of BPCL with HPCL ensures that the effect of any broad movements in the stock market or in the oil industry is netted out. We note in Figure 17 that the stock prices of HPCL and BPCL moved synchronously till September. However, the divergence in their stock prices started post the announcement of BPCL's disinvestment. The increase in the stock price of BPCL when compared to the change in the price of HPCL over the same period translates into an increase in the value of shareholders'

Figure 17: Comparison of Stock Prices of BPCL and HPCL



Source: BSE, Survey Calculations

[1] https://www.livemint.com/market/mark-to-market/why-privatization-of-bpcl-will-be-a-good-thing-for-all-stakeholders-1568309050726.html

equity of BPCL of around ₹ 33,000 crore. As there was no reported change in the values of other stakeholders, including employees and lenders, during this time, the ₹ 33,000 crore increase translates into an unambiguous increase in the BPCL's overall firm value, and thereby an increase in national wealth by the same amount.

1.25 The analysis in this chapter reveals that key financial indicators such as net worth, net profit and return on assets of the privatized CPSEs, on an average, have increased significantly in the post-privatization period compared to the peer firms. This improved performance holds true for each CPSE taken individually as well.

1.26 The ultimate measure of wealth in a country is the GDP of the country. As investors deciding to invest in an economy care for the country's GDP growth, uncertainty about its magnitude can affect investment. Therefore, the recent debate about India's GDP growth rates following the revision in India's GDP estimation methodology in 2011 assumes significance, especially given the recent slowdown in the growth rate. Using careful statistical and econometric analysis that does justice to the importance of this issue, *Chapter 10 (Is India's GDP Growth Rate Overstated? No!)* finds no evidence of mis-estimation of India's GDP growth. Consistent with the hand of trust supporting the invisible hand, the Survey provides careful evidence that India's GDP growth estimates can be trusted.

1.27 Wealth creation in the economy must ultimately enhance the livelihood of the common person by providing him/her greater purchasing power to buy goods and services. A plate of nutritious food for the common man – a Thali – is a basic item that every person encounters every day. Therefore, there cannot be a better way to communicate whether or not economic policies make the common man better off than quantifying what he/she pays for a Thali every day. *Chapter 11 (Thalinomics: The Economics of a Plate of Food in India)* constructs an index of Thali prices across around 80 centres in 25 States/UTs in India from April 2006 to March 2019. The survey presents evidence in using an elementary indicator of price stability—a Thali— that a nourishing plate of food has become more affordable for a common man now.

1.28 This chapter aims to relate economics to the common person. Through the chapter on the "Behavioural Economics of Nudge", the Economic Survey 2018-19 made a humble attempt to understand humans as humans, not self-interested automatons, so that the common person can relate to his/her idiosyncrasies and use that easy prism to understand behavioural change as an instrument of economic policy. The Economic Survey 2019-20 continue this modest endeavour of relating economics to the common person using something that he or she encounters every day – a plate of food.

THE BREAKDOWN OF TRUST IN THE EARLY YEARS OF THIS MILLENNIUM

1.29 In a market economy too, there is need for state to ensure a moral hand to support the invisible hand. As Sandel (2012) argues, markets are liable to debase ethics in the pursuit of profits at all cost. Trust contributes positively to access of both formal and informal financing (Guiso et al., 2004). Ancient philosophers consider trust as an important element in a society and postulated[2] that trust can be furthered by appealing to ethical and philosophical dimensions. Along these lines, the Survey introduces "trust as a public good that gets enhanced with greater use" (see Box 1). As

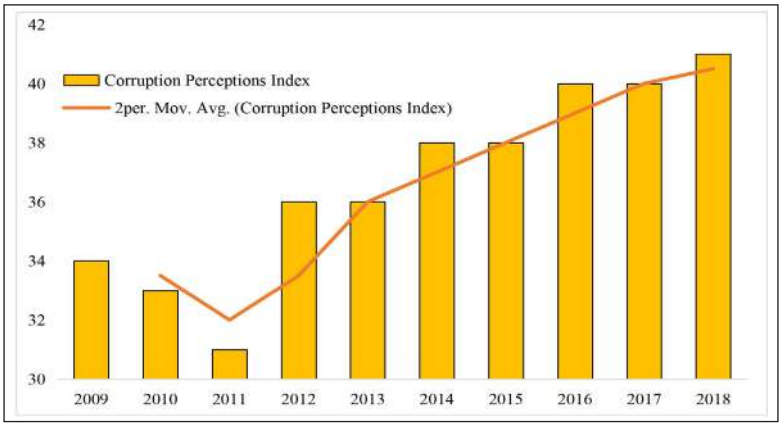
[2] See Gneezy Rustichini (2000a, 2000b), Gneezy, Meier, and Rey-Biel (2011), Meier (2000a, 2000b) for economic research on intrinsic motivation.

Box 1 explains, philosophers such as Aristotle and Confucius (implicitly) viewed trust as a public good by explaining that "good laws make good citizens."

1.30 In the contemporary context, Zingales (2011) and Sapienza and Zingales (2012) highlight that the Global Financial Crisis represented a glaring instance of the failure of trust in a market economy. Closer home, the events around 2011 paint a similar picture.

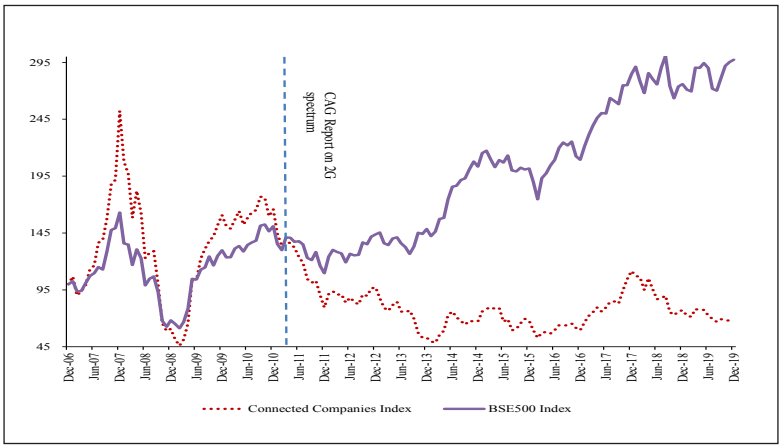
1.31 The corruption perception index, which Transparency International tracks across countries, shows India at its lowest point in recent years in 2011. Since 2013, India has improved significantly on this index (Figure 18). The phenomenon of trust deficit that developed in India during this period is also reflected in many other measures. As the survey shows in Chapter 4, prior to 2011, cronyism paid a firm and its shareholders. The index of "connected" firms - as defined and constructed by Ambit Capital consistently outperformed the BSE 500 index as shown in Figure 19. "Connected" firms however have consistantly underperformed the BSE 500 index post 2011. Chapter 4 also demonstrates how the discretionary allocation of natural resources before 2014 led to rent seeking by beneficiaries. In contrast, the competitive auction of natural resources after 2014 eliminated opportunities for such rent seeking.

Figure 18: Corruption Perceptions Index for India (low score = higher perceived corruption)



Source: Transparency International

Figure 19: Investor wealth generated by "connected" firms before and after 2011



Source: Ambit Capital research, Capitaline, BSE

Note: 1) The connected companies index is an aggregate market cap index which has been rebased and is adjusted for demergers, 2) 70 companies with political dependence and connectivity as on Dec'06 as per Ambit analysts.

Box 1: Trust as a public good: Aristotle and Kautilya vs. Machiavelli

The Survey introduces the idea of "trust as a public good that gets enhanced with greater use". Trust can be conceptualized as a public good with the characteristics of non-excludability i.e., the citizens can enjoy its benefits at no explicit financial cost. Trust also has the characteristics of non-rival consumption i.e., the marginal cost of supplying this public good to an extra citizen is zero. It is also non-rejectable i.e., collective supply for all citizens means that it cannot be rejected. Unlike other public goods, trust grows with repeated use and therefore takes time to build (Gambetta, 1998). Lack of trust represents an externality where decision makers are not responsible for some of the consequences of their actions.

Given the importance of trust in an economy, one might reasonably expect economic theory to address it, especially in the literature on transaction cost economics or incomplete contracts. However, this is not the case. Nobel laureate Oliver Williamson who specializes in transaction cost economics plainly states that there is no such thing as trust within economic activity: 'It is redundant at best and can be misleading to use the term "trust" to describe commercial exchange for which cost-effective safeguards have been devised in support of more efficient exchange. Calculative trust is a contradiction in terms' (Williamson, 1993, p. 463). Williamson does concede that there is a role of calculative co-operation based on incentives and governance structures: 'Machiavellian grabbing is not implied if economic agents have a more far-sighted understanding of the economic relations of which they are a part than myopic Machiavellianism ascribes to them' (Williamson, 1993, p. 474). He argues that calculative co-operation is more likely when agents have longer time horizons, which is also true for trust.

Equally, one would expect trust to be addressed in the incomplete contracts literature. The incomplete contracting paradigm was pioneered by Nobel laureate Oliver Hart with his co-authors Sanford Grossman, and John Moore. They argue that contracts cannot specify what is to be done in every possible contingency. So, it is reasonable to expect trust as a concept to be addressed in such a paradigm because economic agents will only risk entering into incomplete contracts if they trust their counterparts to adapt to unexpected outcomes in a manner that respects a fair division of economic returns. However, while the incomplete contracting literature analyses self-enforcing implicit contracts where myopic behaviour, i.e. opportunism, is restricted by concern for calculative, yet long-term, interest of either party (Baker et al. 1998).

In contrast to the transaction cost or incomplete contracting paradigm, individuals not only have material needs but also needs of self-esteem and self-actualization (Maslow, 1943). This view of humans relates directly to Benabou and Tirole (2006)'s schema, where people take actions to signal to themselves who they are. People's self-esteem needs could inter alia stem from their intrinsic motivation to be "trustworthy."

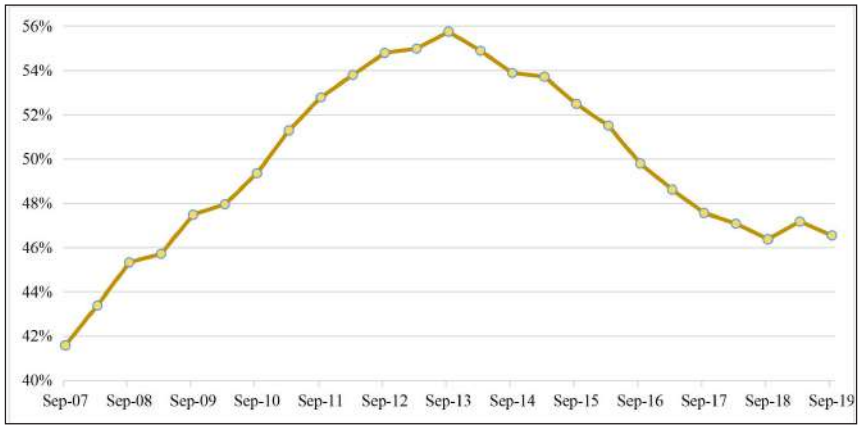
This contrast between modern economic theory's view of people as "knaves" derives from the view of humans that Machiavelli and Hume present. Hume (1964) for instance posits: "Every man ought to be supposed to be a knave and to have no other end, in all his actions, then in his private interest. By this interest we must govern him, and, by means of it, make him, notwithstanding his insatiable avarice and ambition, cooperate to public good." Economic policy today largely proceeds according to Hume's maxim.

Yet, Aristotle's view is in stark contrast to that of Hume or Machiavelli. Aristotle holds that "good laws make good citizens," by inculcating habits and social virtue. Confucius advices government that "Guide them with government orders, regulate them with penalties, and the people will seek to evade the law and be without shame. Guide them with virtue, regulate them with ritual, and they will have a sense of shame and become upright." People become "upright" when guided by "virtue" and regulated by "ritual" rather than by orders and penalties.

Kautilya is often presented as the Machiavelli of India. This is derived from a partial reading of the Arthashastra based on selectively quoting sections on spies and internal/external security. The Arthashastra literally means "The Treatise on Wealth" and it extensively discusses issues ranging from urban governance to tax administration and commerce. The book explicitly presents its intellectual framework right in the beginning by stating that good governance is based on the following branches of knowledge: Varta (economic policy), Dandaneeti (law and enforcement), Anvikshiki (philosophical and ethical framework) and Trayi (cultural context). The importance of Anvikshiki in Kautilya's writings is often ignored but is critical to understanding his worldview. Interestingly this mirrors Adam Smith who did not just advocate the "invisible hand" but equally the importance of "mutual sympathy" (i.e. trust). The same idea is reflected in the writings of Friedrich Hayek, who advocated not only economic freedom but also a set of general rules and social norms that applies evenly to everyone.

Aristotle's, Confucius' and Kautilya's notions may seem quaint in a 21st century worshipping self-interested greed. Yet, the events leading to and following the Global Financial Crisis clearly demonstrate that the intrinsic motivation to be "trustworthy" can generate trust as a public good while the intrinsic motivation of uninhibited greed can debase the same public good of trust. For instance, see Zingales (2011) and Sapienza and Zingales (2012) for the view that the Global Financial Crisis represented a glaring instance of the failure of trust in a market economy.

Figure 20: Proportion of Corporate Loan in Indian Non-Food Credit



Source: RBI.

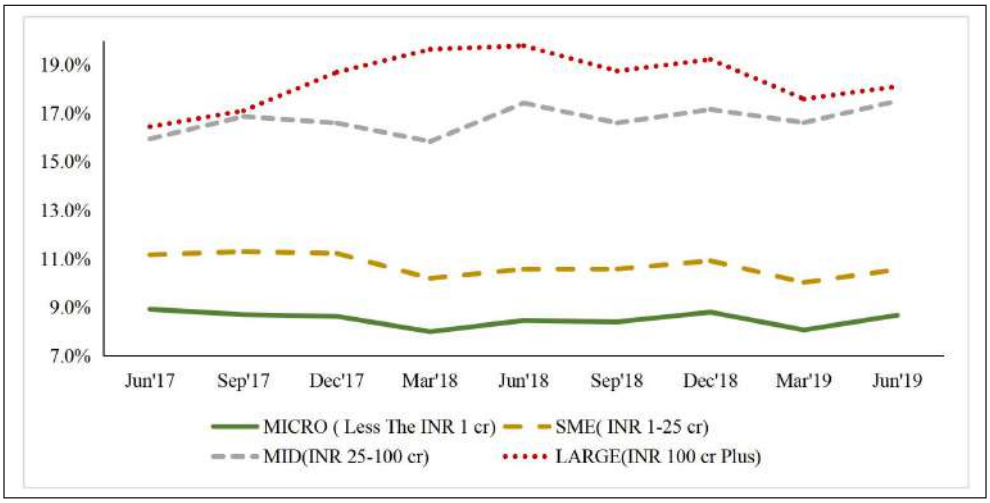
Loan defaults

1.32 The Survey presents evidence in Chapter 4 of large corporations wilfully defaulting on their loans; further, such wilful defaults correlated with the use of related party transactions and the lack of disclosure on the same. This phenomenon of credit boom and bust manifested during the unprecedented and disproportionate growth in corporate credit between September 2007 and September 2013 as shown in Figure 20 and the subsequent decline following 2013. Figure 21 shows that the rates of default were the highest with larger loans (above ₹100 crores).

Audit failures

1.33 Just as farmers burning the stubble create negative externalities for all citizens through the contaminated air, when a corporate intentionally misreports financial information, it harms investors by creating

Figure 21: Non-Performing Asset (NPA) Rate by Size of the Loan

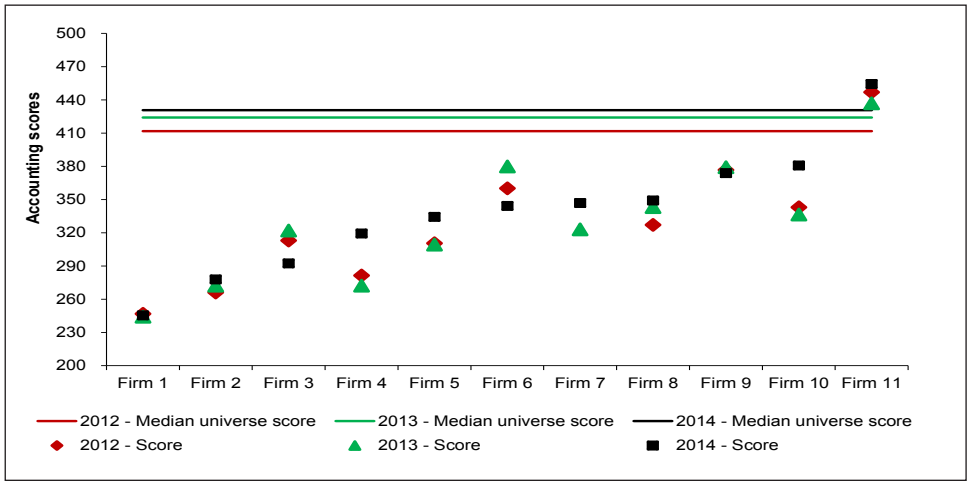


Source: TransUnion Cibil-Sidbi

a negative externality of low trust for all domestic and international investors in the financials of firms in the economy. Lenders including other financial system intermediaries and economy at large suffer the negative externality created by the malpractices of a few.

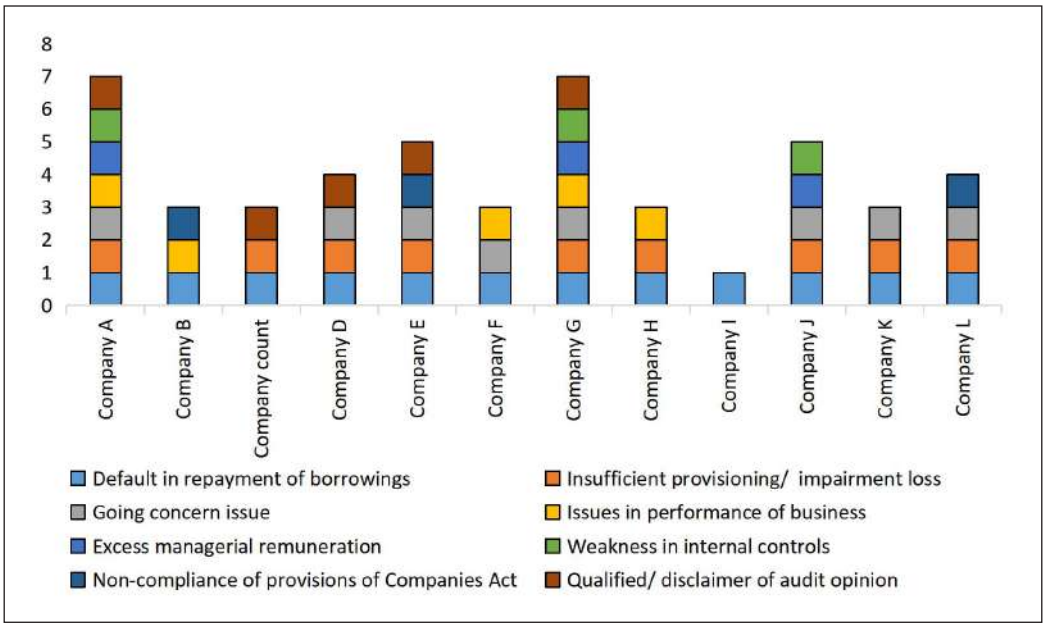
1.34 Relatedly, when a corporate wilfully defaults on its loans, it harms its bank and creates negative externality to all other corporates as they get lesser supply of credit because of lack of trust. As can be seen from Figure 20, the proportion of corporate loans in non-food credit has fallen since September 2013 after showing a disproportionate increase for six years from September 2007. As discussed in the section on wilful defaulters in Chapter 4 of the Survey, due to the opportunistic behaviour of a few unscrupulous promoters, all other firms bear the cost through a higher credit spread stemming from the greater risk. The free-rider problem resulting in higher credit spread incentivises even more corporates to wilfully default on their loan obligations.

Figure 22: Accounting quality scores of large defaulters



Source: Company Financials, Insolvency and Bankruptcy Board of India, RBI

Figure 23: Leading and Lagging Indicators disclosed in financial statements by large defaulters



Source: Company Financial Statements and Survey calculations.

1.35 The common thread of opportunistic behaviour of a few unscrupulous promoters runs across both financial misreporting and wilful defaults. In June 2017, the Reserve Bank of India (RBI) identified twelve companies constituting 25 per cent of India's total Non-Performing Assets (NPAs). As shown in Figure 22, the accounting quality of the large listed NPAs and a few wilful defaulters is much below the median accounting quality of other similar listed corporates in 2012, 2013 and 2014. Chapter 6 provides evidence that Public Sector Banks have a much greater proportion of NPAs as compared to New Private Sector Banks. In effect, wilful defaulters have siphoned off tax-payers money.

1.36 Similarly, there has been a market failure in the trust that auditors examine the accounting numbers of their clients reliably. The survey analysed the annual reports of the large listed NPAs and wilful defaulters to check if the auditors had purposely obfuscated material disclosures that are leading or lagging indicators of stress or impending default. These indicators should have been ideally flagged by the auditors. The leading indicators are shown in Table 1 and the lagging indicators in Table 2.

1.37 As can be seen from Figure 23, out of the twelve large defaulters, one of them had just one indicator disclosed with most others having three to four indicators disclosed of the eight leading and lagging indicators. Thus, a market failure of trust happened around 2011-13 due to a few large unscrupulous promoters. This created large Non-Performing Assets (NPAs) in the banking system, especially for Public Sector Banks (PSBs). The market failure of trust percolated to a couple of major Non-Banking Financial Companies (NBFCs). As investors in Liquid Debt Mutual Funds ran collectively to redeem their investments, it triggered panic across the entire gamut of NBFC-financiers, thereby causing a crisis in the NBFC sector. As mentioned above, Chapter 7 describes this phenomenon.

Table 1: Leading indicators of stress or impending default

Leading Indicator	Description
Issues in performance of business	• Severe pressure on company's operational cash flow. • Decline in turnover and operating margin. • Non adherence to contractual obligation. • Non-reconciled/mismatch in bank accounts.
Weakness in internal controls	• Material weakness in internal controls. • No internal audit department. • Manual intervention in operations.
Non-compliance of provisions of Companies Act	• Issues raised under secretarial audit relating to non-compliance of provision of Companies Act (2013), Rules, Regulations and Guidelines.
Qualified/Disclaimer of audit opinion	• Qualified opinion in the audit report. • Disclaimer of opinion due to inability to obtain sufficient appropriate audit evidence to provide a basis for an audit opinion.
Excess managerial remuneration	• Default in repayment of loans (principal and interest) to banks, financial institutions and debenture holders. • Loans classified as NPA by the lenders.

Table 2: Lagging indicators of stress or impending default

Lagging Indicator	Description
Default in repayment of borrowings	• Default in repayment of loans (principal and interest) to banks, financial institutions and debenture holders. • Loans classified as NPA by the lenders.
Insufficient provisioning/ impairment loss	No/insufficient provisioning for: • Recoverability of loans/ corporate guarantee extended to related parties. • Recoverability of investments made in related parties. • Lack of balance confirmation from debtors. • Long outstanding loans and advances.
Going concern issue	• Accumulated losses resulting in erosion of net worth. • Current liabilities in excess of current assets. • Recurring losses/Cash losses. • Negative net worth. • Suspension of primary business activity.

Enabling Trust: Avoiding policies that crowd out intrinsic motivation

1.38 As in the case of the Global Financial Crisis, the events of 2011-13 and the consequences that have followed have created a trust deficit in the economy. This needs to be set right, even while acknowledging that trust takes time to rebuild. Our tradition celebrates wealth creators as auspicious elements of the economy. But, as *Thiruvalluvar* mentions clearly, it can happen only if wealth is made ethically.

செப்பம் உடையவன் ஆக்கஞ் சிதைவின்றி
எச்சத்திற் கேமாப்பு உடைத்து.

"The just man's wealth unwasting
shall endure,
And to his race a lasting joy ensure."
– Thirukural, Chapter 12, verse 112.

1.39 Trust is the glue that has traditionally bound our economy and is an important ingredient in our recipe of economic well-being. Trust is a vital ingredient in the functioning of banking and financial markets as well. If there is high trust, economic activity can flourish despite the increased potential for opportunism. However, just because trust is functionally useful to an economy does not mean that it will necessarily arise. We need to identify the factors that underlie opportunistic behaviour and consider processes that facilitate trust creation since there has been a market failure of this public good around 2011-13 and the consequences that followed these events.

1.40 As Sandel (2012) postulates, good behaviour that stems purely from intrinsic motivation represents a crucial complement to the effective functioning of the market economy. In other words, the invisible hand of the market needs the supporting hand of trust. In this context, policy makers need to recognise that under-provisioning of public goods such as trust is often the result of lack of reward and recognition for good behaviour stemming purely from intrinsic motivation. When banks recognise corporates who pay their interest and principal in time in non-monetary ways, this enables the intrinsic motivation to get strengthened. Such gestures should not be accompanied by economic incentives such as greater credit limits or reduction in interest for award winners, otherwise the award-winning behaviour in the short-term may be perceived as ingratiation for better future credit availability i.e., future economic gains.

Reducing Information Asymmetry

1.41 An important factor that increases the potential for opportunism in any economic exchange is information asymmetry. Such opportunism can be remedied increasingly through standardising enforcement systems and public databases. For instance, in the case of wilful defaults pre-2014, inability to access relevant borrower data was a key driver of information asymmetry. This aspect of access of credit information for corporate borrowers has improved considerably in the last five years. It can be argued that if the Indian economy had the data infrastructure such as CRILC (Central Repository of Information on large Corporates) during the in pre-2014 credit boom, the extent of systemic NPAs may have been lower. This information would have alerted lenders to limit exposures to corporates who have been tagged as NPA by another bank or NBFC. This information availability would have reduced NPAs in the entire banking system considerably because when a borrower defaults with one lender, other lenders can contractually tag their loan too as a default and therefore recall the loan. This is possible because all corporate loan documents have cross-default clauses. This would have limited

incremental exposure of other banks who were not aware that at least one other financial institution had tagged a loan as an NPA. Such public databases remove information asymmetry considerably.

1.42 Figure 24 shows that the information sharing among lenders on NPAs was minimal as of 2014. While this information sharing was better among PSBs than NPBs, about a quarter of accounts that were declared as NPAs by other banks were classified as NPA in the bank's account. This proportion has increased dramatically to reach 95 per cent in just a few years. This has decreased the potential for opportunism and should enable greater trust in lending activities of financial institutions.

1.43 A related issue is the tagging of default as wilful or genuine. In the banking sector, informational availability issues has been solved by shared databases and attribution problems between distressed defaulters and wilful defaulters have been solved by making the list of wilful defaulters public. Such naming and shaming of wilful defaulters has made such offenders subject to economic sanction in the form of downright unavailability of credit from the banking sector.

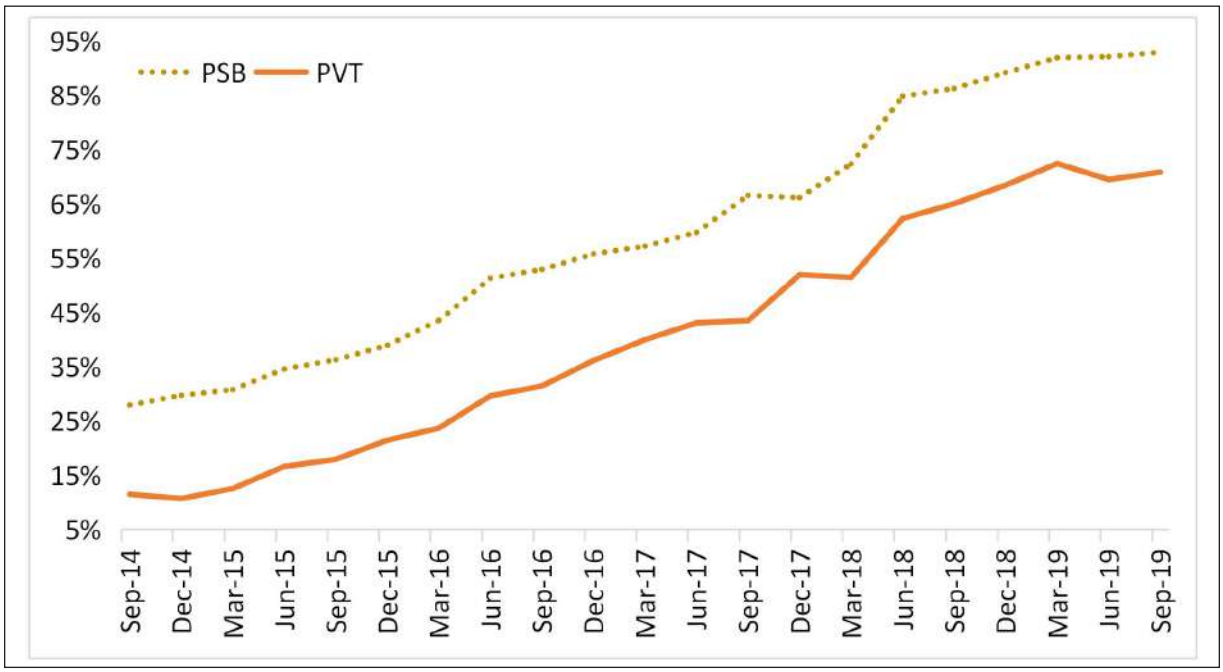
Enhancing quality of supervision

1.44 The government needs to support the hand of trust by being a good referee of the economy. The referee's job is to not just report but also detect opportunistic behaviour if people are not playing by the rules. Like wilful defaults, malpractices such as financial mis-reporting and market manipulation needs to be detected early because these are termites that eat away investor's faith in financial markets, diminishes portfolio investments and crowd-out important national investments. It scares away scrupulous and law-abiding market participants. It is a scourge that drives away investments and therefore jobs in the economy. To fittingly celebrate wealth creators who make wealth ethically, it is of utmost importance that our financial markets are fair and transparent. In this, the state's role as a competent referee cannot be overemphasized.

1.45 The U.S. Federal Trade Commission has one employee for every two listed firms, while the Competition Commission of India has one employee for every 38 listed firms. Securities and Exchange Commission (SEC) has almost one employee for each listed company. In contrast, SEBI has one employee for six listed companies. In fact, in key divisions such as Corporate Finance, SEC has more than fifteen times as many employees as SEBI. This resource deficit needs to be reduced to strengthen government's role as a referee to ensure fair-play for all wealth creators.

1.46 SEC and FTC extensively use Artificial Intelligence and Machine Learning to track and flag market malpractices while none of our regulators do so. As a result of the limited resources at the regulators' disposal, supervision of the market economy suffers badly thereby encouraging market malpractices. The economy cannot achieve the ambitious $5 trillion mark as long as it is plagued by market malpractices and suboptimal supervision. Therefore, significant enhancement in the quantity and quality of manpower in our regulators (CCI, RBI, SEBI, IBBI) together with significant investments in technology and analytics needs to be made. This would enhance the effectiveness of the hand of trust in supporting the invisible hand for greater wealth creation.

Figure 24: Proportion of Lenders Tagging an already tagged NPA (by Another Bank) as NPA in their books



Source: TransUnion CIBIL.

CHAPTER AT A GLANCE

- For more than three-fourths of known economic history, India has been the dominant economic power globally. Such dominance manifests by design; not happenstance. During much of India's economic dominance, the economy relied on the invisible hand of the market for wealth creation with the support of the hand of trust. Specifically, the invisible hand of markets, as reflected in openness in economic transactions, was combined with the hand of trust that fostered intrinsic motivation by appealing to ethical and philosophical dimensions. As far as half-a-century back, Spengler (1971) reflected this fact by asserting that Kautilya's Arthashastra postulates the role of prices in an economy.
- The Survey shows that contemporary evidence following the liberalization of the Indian economy supports both pillars of the economic model advocated in our traditional thinking. The exponential rise in India's GDP and GDP per capita post liberalisation coincides with wealth generation in the stock market. Similarly, the evidence across various sectors of the economy illustrates the enormous benefits that accrue from enabling the invisible hand of the market. Indeed, the Survey shows clearly that sectors that were liberalized grew significantly faster than those that remain closed. The events in the financial sector during 2011-13 and the consequences that followed from the same illustrate the second pillar - the need for the hand of trust to support the invisible hand. In fact, following the Global Financial Crisis, an emerging branch of the economics literature now recognises the need for the hand of trust to complement the invisible hand.

- The survey posits that India's aspiration to become a $5 trillion economy depends critically on strengthening the invisible hand of markets and supporting it with the hand of trust. The invisible hand needs to be strengthened by promoting pro-business policies to (i) provide equal opportunities for new entrants, enable fair competition and ease doing business, (ii) eliminate policies that unnecessarily undermine markets through government intervention, (iii) enable trade for job creation, and (iv) efficiently scale up the banking sector to be proportionate to the size of the Indian economy. Introducing the idea of "trust as a public good that gets enhanced with greater use", the Survey suggests that policies must empower transparency and effective enforcement using data and technology to enhance this public good.

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Entrepreneurship and Wealth Creation at the Grassroots

02
CHAPTER

அருவினை யென்ப உளவோ கருவியான்
காலம் அறிந்து செயின்.

– Thirukural, Chapter 76, verse 753.

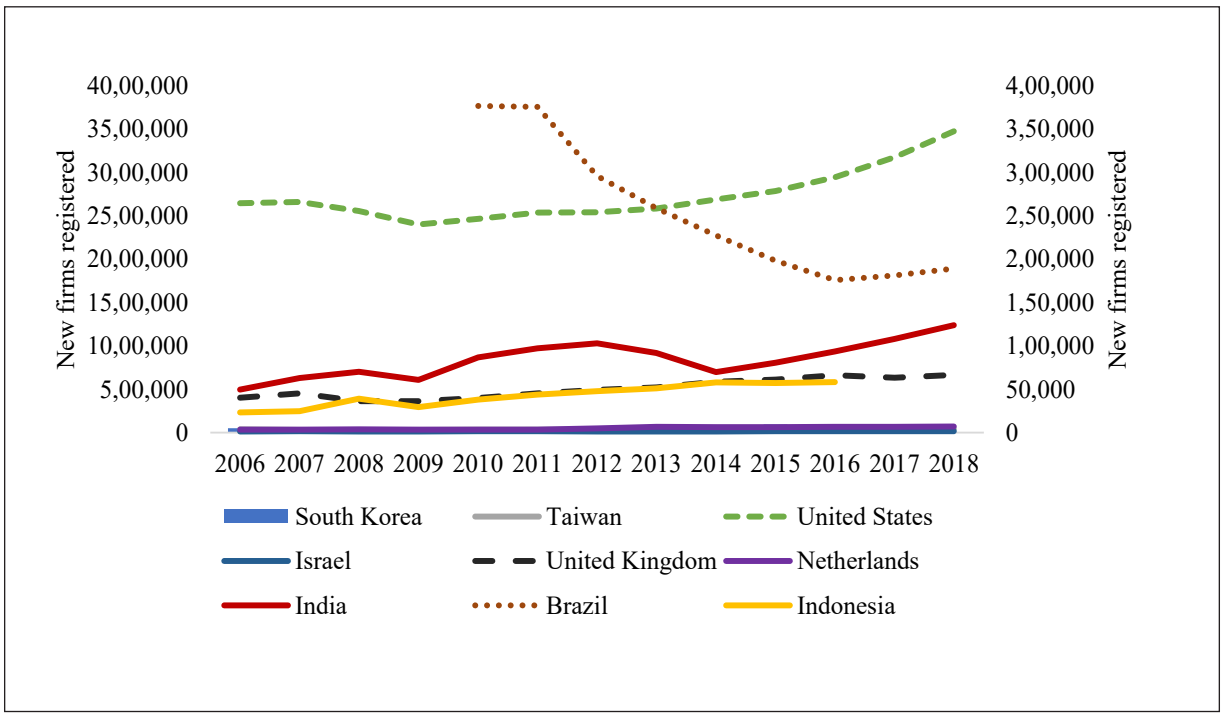
Contextual translation: "The one who utilizes all resources and opportunities at hand is an efficient (entrepreneur) and nothing is impossible for him to achieve."

The "Startup India" campaign of the Government of India recognizes entrepreneurship as an increasingly important strategy to fuel productivity growth and wealth creation in India. Given this initative, this chapter examines the content and drivers of entrepreneurial activity at the bottom of the administrative pyramid – over 500 districts in India. The analysis employs comprehensive data on new firm creation in the formal sector across all these districts from the Ministry of Corporate Affairs (MCA)-21 database. First, using the World Bank's Data on Entrepreneurship, this chapter confirms that India ranks third in number of new firms created. The same data shows that new firm creation has gone up dramatically in India since 2014. While the number of new firms in the formal sector grew at a compounded annual growth rate of 3.8 per cent from 2006-2014, the growth rate from 2014 to 2018 has been 12.2 per cent. As a result, from about 70,000 new firms created in 2014, the number has grown by about 80 per cent to about 1,24,000 new firms in 2018. Second, reflecting India's new economic structure, i.e. comparative advantage in the Services sector, new firm creation in services is significantly higher than that in manufacturing, infrastructure or agriculture. Third, grassroots entrepreneurship is not just driven by necessity as a 10 percent increase in registration of new firms in a district yields a 1.8 percent increase in GDDP. Thus, entrepreneurship at the bottom of the administrative pyramid – a district – has a significant impact on wealth creation at the grassroot level. This impact of entrepreneurial activity on GDDP is maximal for the manufacturing and services sectors. Fourth, birth of new firms is very heterogeneous across Indian districts and across sectors. Moreover, it is dispersed across India and is not restricted to just a few cities. Fifth, literacy and education in the district foster local entrepreneurship significantly. For instance, the eastern part of India has the lowest literacy rate of about 59.6 per cent according to the census of 2011. This is also the region in which new firm formation is the lowest. In fact, the impact of literacy on entrepreneurship is most pronounced when it is above 70 per cent. Sixth, the level of local education and the quality of physical infrastructure in the district

influence new firm creation significantly. Finally, policies that enable ease of doing business and flexible labour regulation enable new firm creation, especially in the manufacturing sector. As the manufacturing sector has the greatest potential to create jobs for our youth, enhancing ease of doing business and implementing flexible labour laws can create the maximum jobs in districts and thereby in the states. Literacy, education and physical infrastructure are the other policy levers that district and state administrations must focus on foster entrepreneurship and thereby job creation and wealth creation.

2.1 Entrepreneurship represents a key focus area for many policy makers given its role in economic development and subsequent employment growth. Entrepreneurs are seen as agents of change that accelerate innovation in the economy. Figure 1 uses the World Bank's EODB Entrepreneurship data together with that from the U.S. Census Bureau to compare total number of new firms in India with that in a diverse cross-section of countries in Asia, Europe and North America. The chart clearly establishes that India has the 3rd largest entrepreneurship ecosystem in the world. Also, while the number of new firms in the formal sector grew at a cumulative annual growth rate of 3.8 per cent from 2006-2014, the growth rate from 2014 to 2018 has been 12.2 per cent. As a result, from about 70,000 new firms created in 2014, the number has grown by about 80 per cent to about 1,24,000 new firms in 2018.

Figure 1: Comparison of entrepreneurial activity (new firms) across countries



Source: World Bank's EODB Entrepreneurship Data, Business Formation Statistics of the U.S. Census Bureau and Survey Calculations
Note: Secondary axis for India, Brazil and, Indonesia

Box 1: Data and Methodolody

The sample is constructed at the intersection of three data sources. First, data is obtained on district-level GDP at current prices from the CEIC India Premium database. This data spans financial years ending 2000 through 2018. Therefore, there are 5,591 district-year observations comprising district-level GDP of 504 districts across 22 states in India.

Entrepreneurship is measured as the count of new firms in the Ministry of Corporate Affairs (MCA) - 21 database, a public dataset that provides a one-time snapshot of all active firms registered with the Ministry of Corporate Affairs (MCA) between 1990 and 2018. Each firm is then matched to a district using the registered office address of the firm in MCA-21.The implications of using these data are twofold. First, the measure of entrepreneurship is restricted to the private corporate sector in the formal economy and does not include establishments that are expansions by existing companies. Second, since this data is only a one-time snapshot of active firms registered with the MCA, at least one limitation imposed is that the firms that did not survive until 2018 cannot be tracked. This survivor bias in our data also implies that the estimates of the impact of entrepreneurship might be biased upward.

Third, data relating to the physical and social infrastructure of a district is accumulated from the Socioeconomic High-resolution Rural-Urban Geographic Dataset on India (SHRUG, available at http://www.devdatalab.org/shrug_download/) which comprises of a set of variables that describe the extent of socio-economic development in India. Among other things, SHRUG contains variables that describe the demographic, socioeconomic, firm and political infrastructure of every district between 1990–2018 that it cumulates from a variety of data sources. These sources comprise data from the Census of India relating to the years 1991, 2001 and 2011, Socio-Economic Caste Census of 2012, and Pradhan Mantri Gram Sadak Yojana (PMGSY) public data to construct a variety of indices that describe the social and physical infrastructure of every district in India.

For cross-country comparison, we use the Entrepreneurship World Bank's EODB Entrepreneurship Data for all countries except the U.S. and the Business Formation Statistics of the U.S. Census Bureau for the U.S.

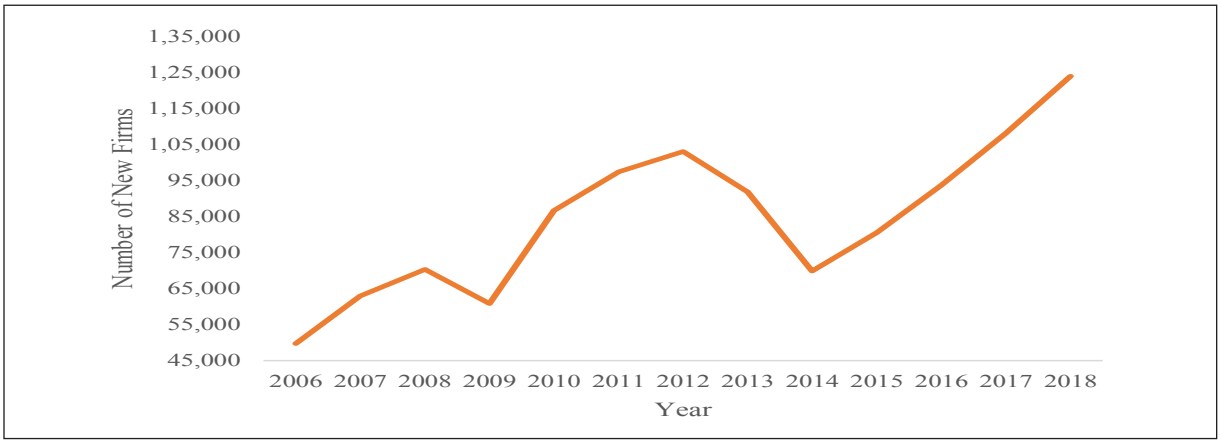
2.2 On a per-capita basis, India has low rates of entrepreneurship in the formal economy. Between 2006 and 2016, the mean (median) number of new firms registered per year per 1000 workers was 0.10 (0.11). In contrast, the mean (median) entrepreneurial intensity for the United Kingdom and the United States was 12.22 (11.84) and 12.12 (11.81) respectively. In general, the entrepreneurial intensity is significantly higher for the developed economies. It is also growing across all countries except Brazil, which has seen a significant decline from 2010 to 2018. It is important to note that in contrast to the other countries, a large number of India's enterprises operate in the informal economy which is not captured in these data. Notwithstanding the relatively lower rates of entrepreneurial intensity, Figure 2a emphasizes significant growth in the birth of new firms over time. New firm creation has gone up dramatically since 2014 as discussed above. Figure 2b shows that this growth is particularly pronounced for the services sector. This fact reflects India's new economic structure, i.e. comparative advantage in the Services sector.

ENTREPRENEURSHIP AND GDP

2.3 The entrepreneurial activity is related to economic growth. See Box 2 for details on estimation of this relationship.

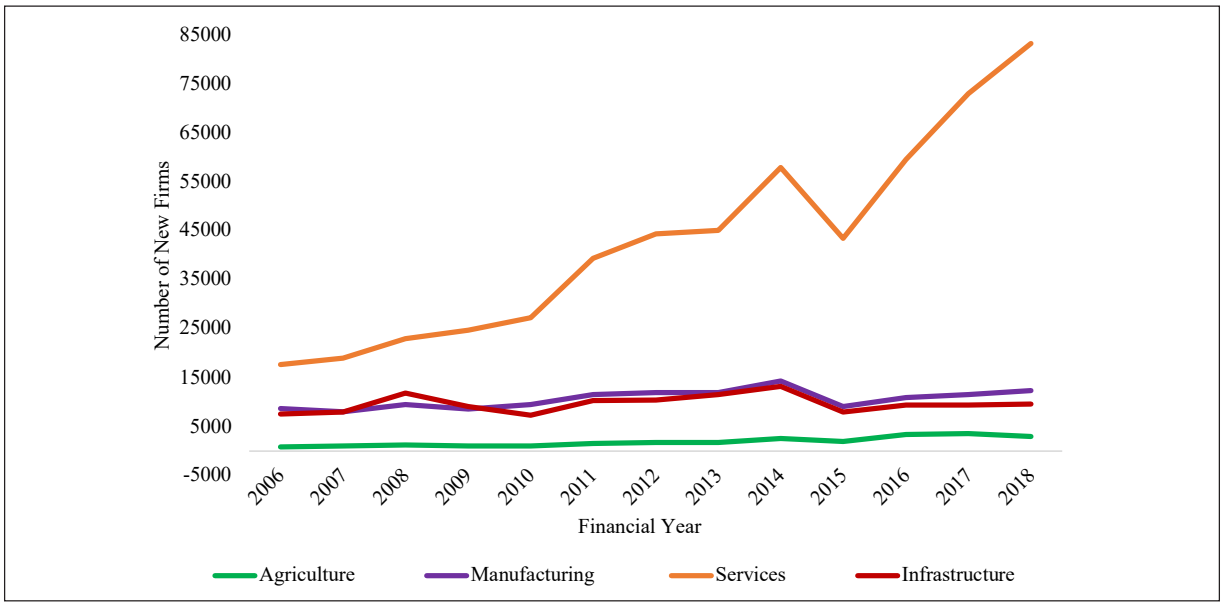
2.4 Figure 3a presents the scatter plot and trend line for the regression of the natural log of Gross Domestic District Product (GDDP)

Figure 2a: Growth in new firms over time in India



Source: World Bank's EODB Entrepreneurship Data

Figure 2b: Growth in new firms over time in India



Source: MCA-21 and Survey Calculations

Box 2: Estimating the relationship between Entreprneeureship and GDP

To explore how district-level GDP varies by the number of new firms in the district, we implemented an OLS specification that regresses the district GDP (at current prices in natural log) on the number of new firms (once again in natural log) as the primary independent variable. Given our premise that infrastructural and environmental differences mainly vary by state, we also use 21 state fixed effects are used in addition to including 17 time dummies. To minimize the possibility that the number of new firms might be endogenous to district-level GDP, the number of new firms in a district is lagged by three years. In sum, we the following is estimated

$$In\left(District\ GDP_{it}\right) = \alpha + \beta\left(new\ firms_{i,t-3}\right) + X_i + \tau_t + \varepsilon_{it} \qquad (1)$$

In (1) above, subscripts *i* and *t*, indexes a district and year respectively, X_i denotes state fixed effects and τ_t denotes year fixed effects. To ensure that the standard errors are not inflated we cluster our the errors at the district-level

on the natural log of new firms established in the focal district 3 years back. It is clear that entrepreneurial activity has a significant positive impact on GDDP. Specifically, a 10 per cent increase in registration of new firms per district-year yields a 1.8 per cent increase in GDDP. The results emphasize the importance of entrepreneurship as an engine of economic growth and change in India. They further mute the view that entrepreneurial activity in emerging economies like India is largely necessity driven and typically borne from a lack of alternative employment options. Rather, the findings highlight the incidence of productive and growth-focused entrepreneurial activity in the formal sector in India. Figure 3b represents spatial dispersion in entrepreneurial activity as defined by establishment of new firms. We find that, though the peninsular states dominate entry of new firms, entrepreneurship is dispersed across India and is not restricted just to a few metropolitan cities.

Figure 3a: Estimation of the Impact of Entrepreneurial Activity on GDDP

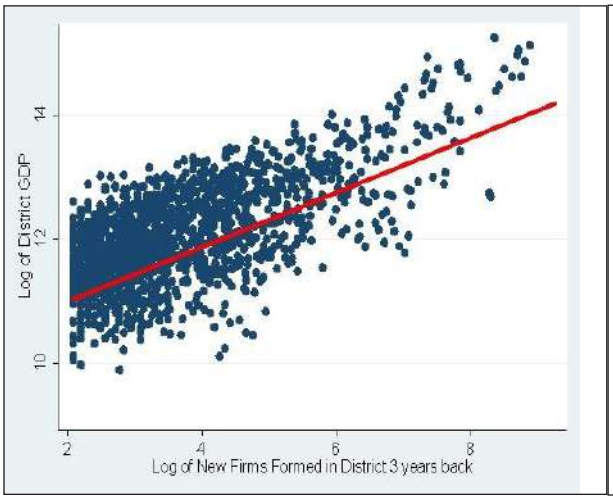
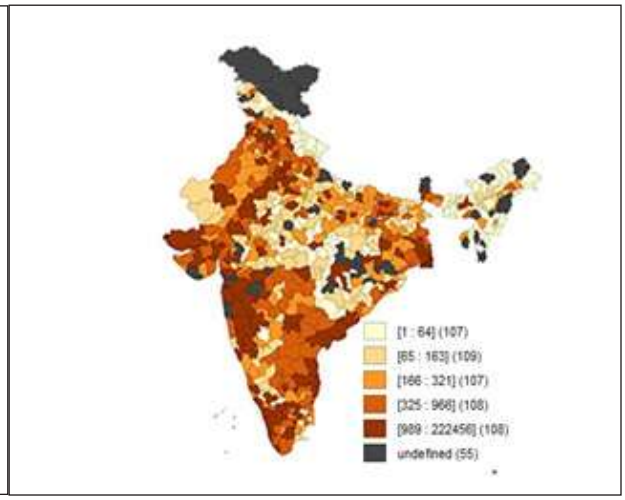


Figure 3b: Distribution of New Firms across Districts



Source: MCA-21 and Survey Calculations

Spatial Heterogeneity in Entrepreneurial Activity

2.5 Figure 4a, which shows the coefficient plot for the estimation of impact of entrepreneurial activity by sector, highlights that the impact of new firm entry is greatest in the Manufacturing and Services sectors. The findings emphasize the fundamental role that entrepreneurship can play in India's economic growth in the decades ahead. Movement of labour from other unproductive sectors and subsistence entrepreneurship into entrepreneurship in formal manufacturing and services can help close India's productivity gaps. To the extent that the manufacturing and services sectors are underdeveloped relative to economies of similar size, greater entrepreneurial activity will help close such gaps.

2.6 Figure 4b below presents the growth in entrepreneurial activity over time for each of the four regions in India. All regions demonstrate strong growth in entrepreneurial activity over time with the exception of the eastern states. Irrespective of the level of entrepreneurial activity, all regions demonstrate a strong relationship between

Figure 4a: Differences in the Impact of Entrepreneurial Activity by Region

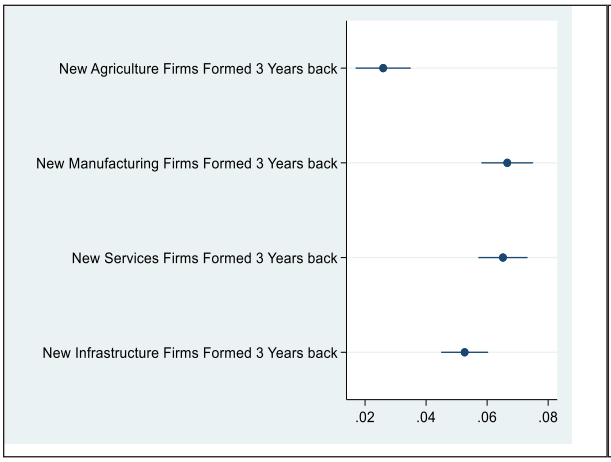
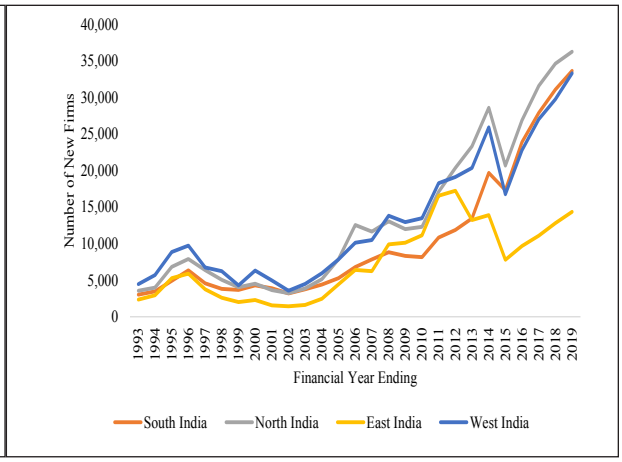


Figure 4b: Growth in new firms across regions over time



Source: MCA-21 and Survey Calculations

Figure 5a: Relative entrepreneurial capability of districts in Agriculture

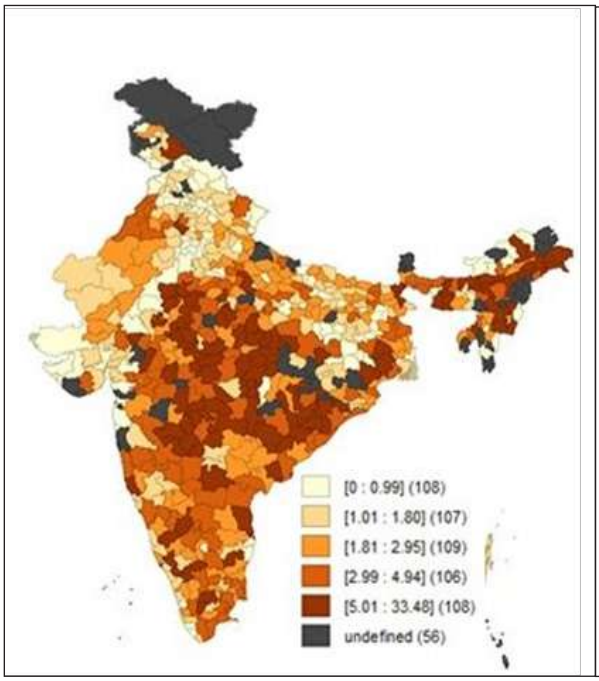
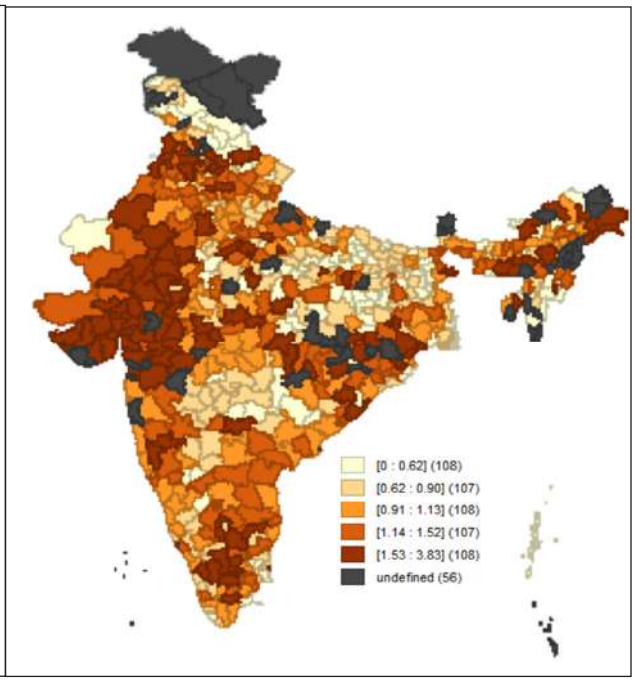


Figure 5b: Relative entrepreneurial capability of districts in Manufacturing



Source: MCA-21 and Survey Calculations

entreprenurship and GDDP signifying the pervasive benefits of entrepreneurship.

2.7 Next, an index of entrepreneurial activity for each district-sector is constructed to throws light on how the entrepreneurial capabilities for that sector are distributed across districts. For any specific sector, this index is estimated as a district's share of new firms in that sector, divided by that district's share of all new firms across all sectors. For example, a district responsible for 20 per cent of new firms in the agricultural sector, but only 10 per cent of all new firms, scores 2 on

Figure 5c: Relative entrepreneurial capability of districts in Services

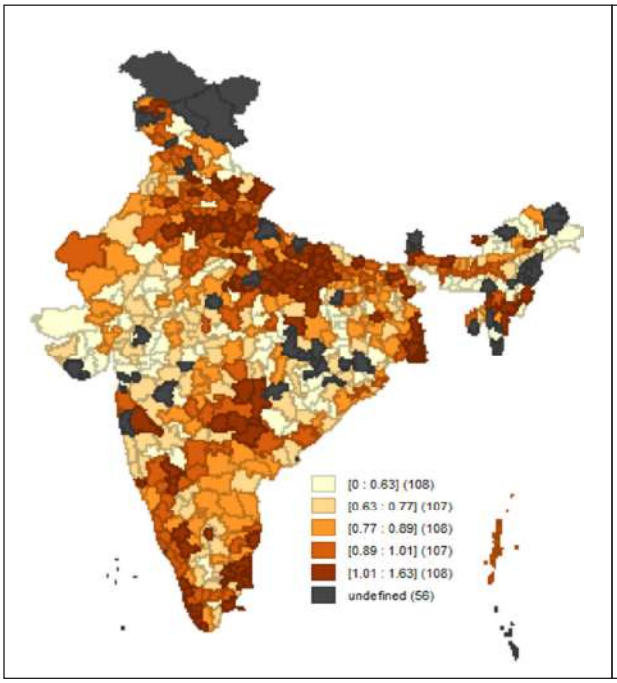
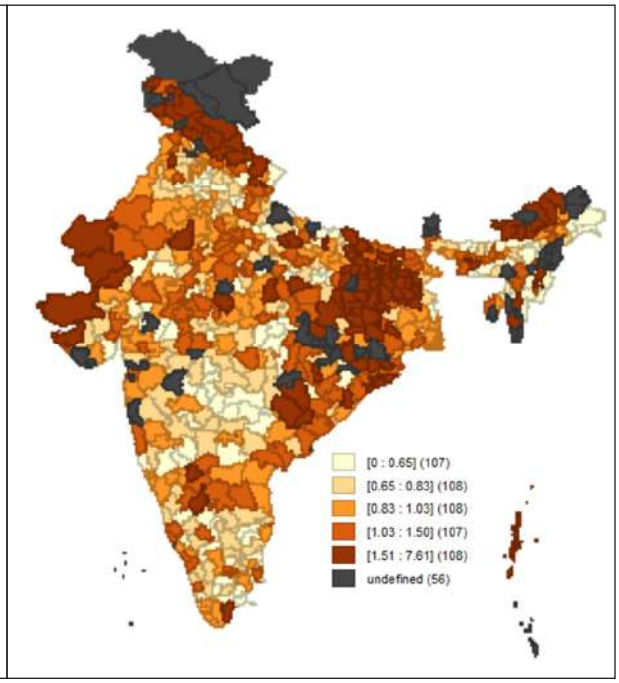


Figure 5d: Relative entrepreneurial capability of districts in Infrastructure



Source: MCA-21 and Survey Calculations

an index of relative entrepreneurial activity in agriculture, suggesting relative strength in that sector. Figures 5a to 5d show the relative distribution of the index across districts for agriculture, manufacturing, services and infrastructure respectively.

2.8 Figure 5a suggests that relative to entrepreneurial capabilities in Manufacturing, Services and Infrastructure, entrepreneurial capabilities in the Agriculture sector are not geographically localized and seem to be distributed evenly across most districts in India. States in the highest quintile of relative entrepreneurial activity in the Agriculture sector are Manipur, Meghalaya, Madhya Pradesh, Assam, Tripura and Orissa. Establishments in the North East are more likely to be private enterprises in the food business such as organic produce farms and tea plantations while a majority of the establishments in Madhya Pradesh and Orissa are farmer producer companies, designed as hybrids between cooperative societies and private limited companies that organize farmers into a collective to improve their bargaining strength in markets.

2.9 Figure 5b suggests that entrepreneurial activity in the Manufacturing sector is highest in the regions of Gujarat, Meghalaya, Puducherry, Punjab and Rajasthan. Within Gujarat, the most entrepreneurially active districts in the Manufacturing sector are Surendranagar, Rajkot, Bhavnagar and Surat. Establishments in these regions are focused on textiles, chemicals, metals, plastics, and pharmaceuticals manufacturing. The nature of establishments in each of these regions attests to agglomeration economies documented by prior research in the Indian manufacturing sector (Ghani et al. 2011). That is, incumbent industrial structures for input and output markets and specialized labour in a region are strongly linked to higher entrepreneurial activity in that industry-region.

2.10 Spatial heterogeneity in the Manufacturing sector emphasizes the need for policy reforms that improve the ease

of doing business, which is discussed in chapter 6 of the survey. It is noteworthy that three of the regions in the highest quintile of entrepreneurial activity in this sector – Gujarat, Punjab and Rajasthan – were classified in a prior economic survey as states with flexible labour laws. Further, states classified in the Economic survey 2018-19 as states with inflexible labour laws such as West Bengal, Assam, Jharkhand, Kerala and Bihar were classified in the lowest quintiles of entrepreneurial activity. While Gujarat's labour reforms are viewed as pro-worker, the state has also passed other regulations that improve ease of doing business, including reduction in compliance burden, transparent and timely processing of approval and renewal of applications, and reduction in stipulated timelines for granting and renewal of manufacturing sale licences, amongst others. Rajasthan too has introduced several reforms that are viewed as pro-employer. For example, to reduce the influence of trade unions, the state has increased the costs of union formation by increasing the minimum membership requirement to form a union to 30 per cent of the total workforce at an establishment, up from 15 per cent earlier. Similarly, the state has said that no prior approval is required for retrenchment or shutting down units in companies employing up to 300 people, up from the earlier limit of 100 workers. A worker can also object to wrongful termination only within a period of three years. Differences in the mean number of new firms per year and the mean number of new manufacturing firms per year between the states with flexible labour laws and those with inflexible laws are presented in Figures 6a and 6b respectively.

Figure 6a: Effect of Labour Laws on New Firm Formation

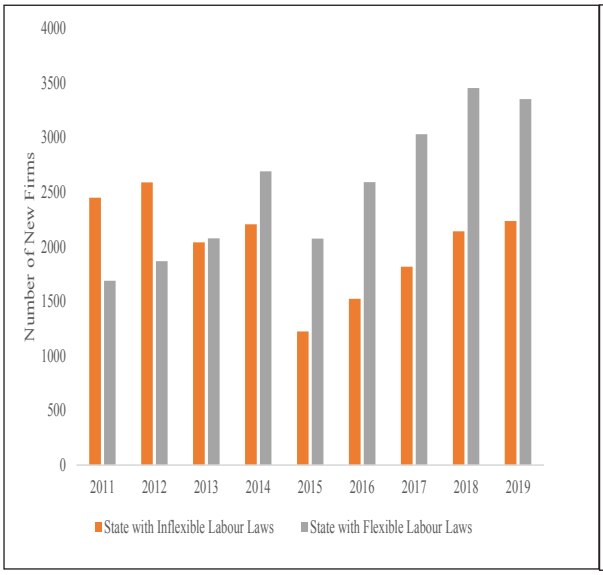
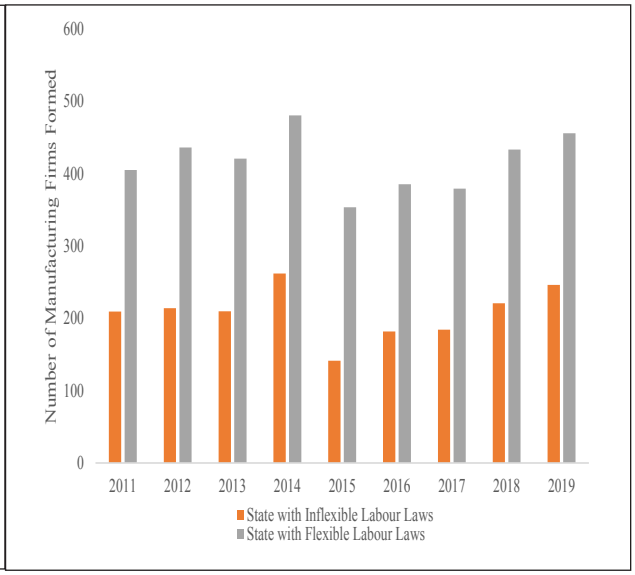


Figure 6b: Effect of Labour Loss on New Manufacturing Firms



Source: MCA-21 and Survey Calculations, Economic Survey 2018-19

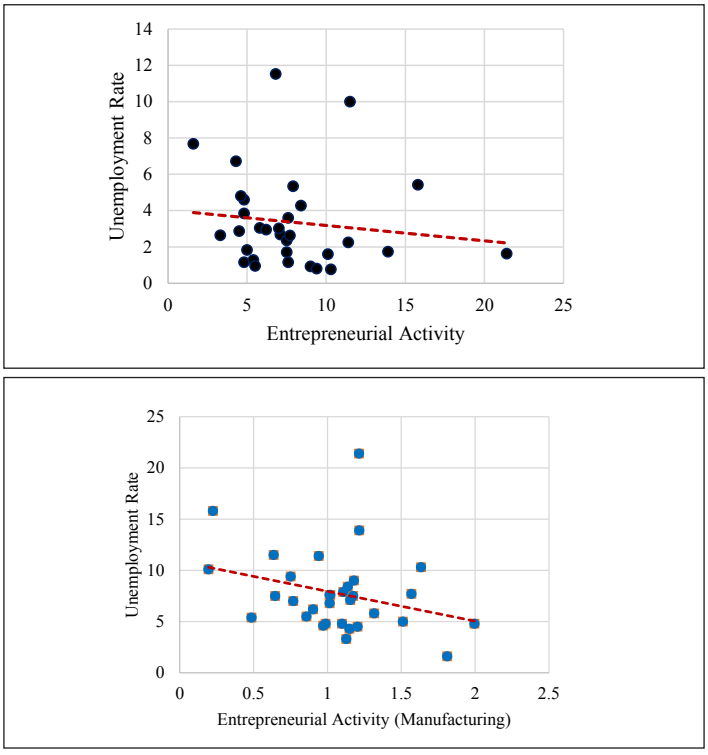
2.11 Given the relatively higher economic contribution of entrepreneurial activity in the Manufacturing sector, it is important for states to consider these policy levers that enable transition of labour and resources from less productive sectors and subsistence activity in the informal sector to these relatively more productive establishments.

2.12 Figure 5c suggests that entrepreneurial activity in the Services sector is highest in the regions of Delhi, Mizoram, Uttar Pradesh, Kerala, Andaman and Nicobar, and Haryana. Consistent with observations of prior research (Ghani et al. 2011), the nature of establishments in these regions is not reflective of agglomeration economies and spans diverse industries such as trading, financial services, tourism and hospitality services, retailing, and even religious leagues and missions.

2.13 Figure 5d suggests that entrepreneurial activity in the Infrastructure sector is highest in the states of Jharkand, Arunachal Pradesh, Himachal Pradesh, Mizoram, Jammu and Kashmir and Bihar, some of which are characterized by poor levels of extant infrastructure. Not surprisingly, new firms in these states are largely engaged in construction, logistics and transport, utilities generation, transmission and distribution, alternative energy distribution, and Infratech.

2.14 The nature of entrepreneurial activity in a district is significantly correlated with unemployment in the district, as measured by the Periodic Labour Force Survey (PLFS) data. Entrepreneurial activity in the agriculture and manufacturing sectors shares a negative spatial correlation of (-0.26) and (-0.29) respectively with the unemployment rate across states. In contrast, entrepreneurial activity in the services and infrastructure sectors shares a positive spatial correlation of 0.36 and 0.09 respectively with unemployment rate across states. These estimates are especially salient as the number of active one-person new firms in the services sector (14,475) is over five times that in all the other three sectors combined (2,785). The contribution of this class of entrepreneurial activity to GDP is also insignificant. The correlations between overall entrepreneurial activity and entrepreneurship in manufacturing with unemployment rates are presented in Figure 7 below.

Figure 7: Correlation of entrepreneurial activity in overall and manufacturing with unemployment



Source: MCA-21, PLFS and Survey Calculations

DETERMINANTS OF ENTREPRENEURIAL ACTIVITY

2.15 A natural question that follows from the documentation of significant spatial heterogeneity in entrepreneurial activity is what are the factors that drive such heterogeneity. The conclusions of research are summarized thus far (see Box 3) in this context, and subsequently, drivers of new firm entry in India are examined. While prior research implicates local population characteristics, district-level conditions, and agglomeration economies in the birth of new firms, these analyses are limited to district level conditions that represent important policy levers for the government.

2.16 The focus is on two key sets of district-level attributes that drive the level of entrepreneurial activity in the district – social and physical infrastructure. While these attributes do not constitute an exhaustive list of district-level conditions, they are widely featured in prior research on entrepreneurship and economic development in India. These measures of social infrastructure in a district largely relate to the general education levels in the district. Higher education levels in a district enable the development of better human capital that relates to increased supply of ideas and entrepreneurs. Higher education also increases the supply of talent available to entrepreneurs for managing and growing their companies. Therefore, it is expected that districts with better education levels will have higher entrepreneurial activity. The number of colleges in the district and the proportion of the population that is literate in a district are used to measure the education infrastructure in the district.

2.17 The measures of physical infrastructure include access to basic physical infrastructure in the district as well as physical connectivity that captures across-district infrastructure in most cases. The access to physical infrastructure in a district is measured using the proportion of villages in a district that is connected by tar roads. This measure is expected to correlate with access to other public goods like electricity, water/sanitation facilities, and telecom services that is fundamental to all businesses. Physical connectivity is measured as the mean distance from a population centre that has at least 500,000 people. Proximity to large population centers likely allows the startup to expand markets and scale operations. Therefore, it is expected that both these measures would correlate positively with entrepreneurial activity. Box 4 summarizes the methodology for estimation of the impact of physical and social infrastructure in a district on entrepreneurial activity in that district.

Box 3: Summary of Research on the Drivers of Entrepreneurial Activity

This study focuses on district-level conditions, notably, social and physical infrastructure that promote entrepreneurial activity. However, a rich body of prior work also emphasizes the role of other spatial and industrial factors in driving heterogeneity in entrepreneurial activity. These include *population attributes, other district-level conditions, regulatory framework, and agglomeration economies. These factors influence opportunities, skills and resources* available to entrepreneurs, driving firm creation and growth (Mittelstädt and Cerri 2008).

The role of local population characteristics such as population size and density is especially salient to new firms, where local markets are assumed the firm's primary product market and where most entrepreneurs are assumed to start their business in their area of residence (Dahl and Sorenson 2007). In such case, the size of the region reflects local market size and to some degree, the potential supply of entrepreneurs and managers. Population density also impacts other operating parameters such

as competition for local resources and higher resource costs (for example wages and land rents) (Ghani et al. 2011). Some studies (Carlino et al. 2007; Arzaghi and Henderson 2008) also link density to stronger knowledge flows, rendering its impact on entrepreneurial activity an empirical question. Researchers (Evans and Leighton 1989; Bönte et al. 2009; Glaeser and Kerr 2009) have also demonstrated an inverted-U relationship between regional age structure and entreprenurship rates that underlies India's "demographic dividend", establishing this variable as an important driver of entrepreneurship.

While the district-level investments in physical infrastructure and education are considered, other attributes such as digital literacy and ease of access of entrepreneurs to technology and finance are also salient to fostering entrepreneurship and increasing productivity and competitiveness of new ventures (see Mittelstädt and Cerri 2008 and Ghani et al. 2011 for a review of this literature and case studies). Barriers to finance, especially difficulty in accessing risk capital (versus growth capital), often disproportionately impact small and micro firms (Meki 2019).

Entrepreneurial activity can also be impeded by the regulatory framework in the region that hinder entry and exit, limit competition and increase costs of compliance and administration (see the study, *Fostering Entrepreneurship* by the OECD (1998) for a review). Key parameters that have been implicated by prior research in this context include regulatory barriers to entry, competition policy, bankruptcy legislation, tax burdens, administrative and compliance costs, and protection of intellectual property rights.

In addition to district-level conditions that homogenously impact all industries, there exist interactions between these conditions and specific industries as explicated in agglomeration theories (Marshall 1920; Glaeser and Kerr 2009). In the Indian context, Ghani et al. (2011) find strong evidence of agglomeration economies in manufacturing that emphasizes the input-output relationships amongst firms.

All of these factors represent key ways in which policy makers can influence spatial distribution of entrepreneurial activity.

Box 4: Estimation of Drivers of Entrepreneurship

To explore the drivers of entrepreneurship in a district, once again using an OLS specification, the number of new firms in district i in year t are regressed on the proportion of villages in that district connected by tar roads (proportion connected), the proportion of population in the district that is literate (proportion literate), the mean distance of the district from the nearest population centre that has at least 500,000 people (mean distance in natural log) and the total number of colleges in the district (colleges in natural log).

All our regressors are based on the most recent census and control for population density in the district, again as per the most recent census (population density in natural log). The specification in Equation (2) below is used to estimate the effect of different aspects of social and physical infrastructure on the number of new firms:

$$\begin{aligned}\ln\left(newfirms_{it}\right) = \alpha + \beta_1 \ln\left(roads_{it}\right) \\ + \beta_2 \ln\left(colleges_{it}\right) + \beta_3 proportion\,literate_{it} \\ + \beta_4 proportion\,connected_{it} + X_i + {}^2{}_5 \ln\left(population\,density_{it}\right) \\ + \lambda_t + \epsilon_{it}\end{aligned} \quad (2)$$

In equation (2), subscript i denotes a district and t denotes a census year. λ_t denotes census year dummies and standard errors are clustered at the level of a district.

2.18 As expected, an increase in the proportion of literate population in a district increases entrepreneurial activity as measured by the number of new firms in the district. Figure 8a shows that the number of new firms formed increases with an increase in the literacy in the distric. The largest increases appear when literacy rises above 72 per cent. This suggests that small increases in literacy levels matter less. Instead, the largest payoffs to increasing literacy occur when literacy levels are already high, specifically above 72 per cent.

2.19 Similar patterns are visible with the number of colleges as well, albeit with a few differences. In contrast with the proportion of the literate population, the largest increases appear when the number of colleges in a district increase above 26. In sum, the results of figures 8a and 8b suggest that higher literacy levels and better education infrastructure are associated with greater entrepreneurship.

Figure 8a: Literacy and entrepreneurship

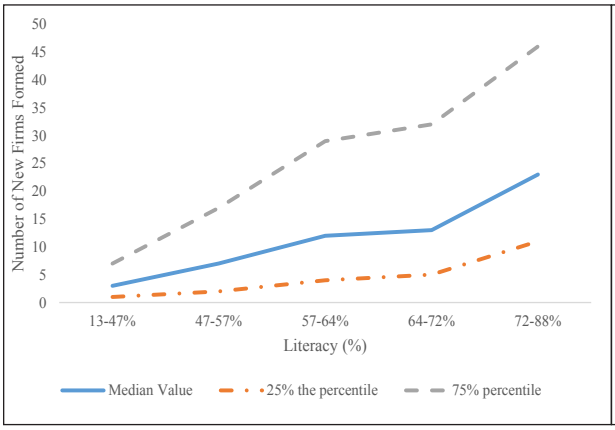
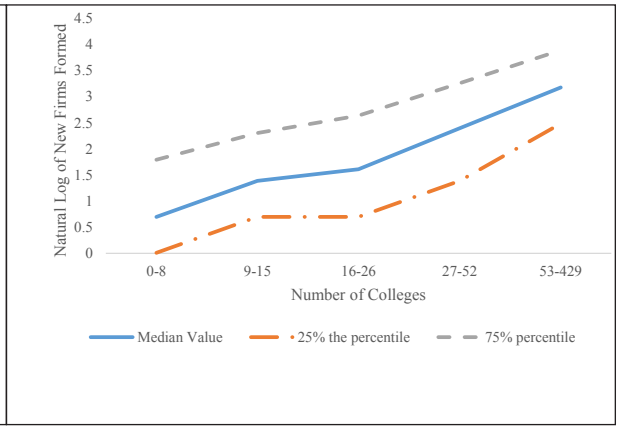


Figure 8b: Number of Colleges and entrepreneurship



Source: MCA-21, SHRUG and Survey Calculations

Box 5 – Box plot explained

The boxplot divides independent variable of interest into five categories based on how it is distributed – the lowest quintile, 20th – 40th percentile, 40th – 60th percentile, 60th – 80th percentile, and the highest quintile. Within each category it then explores the value of the dependent variable, in this case, the number of new firms foreach of the following values : (a) the minimum denoted by the lowest horizontal line, (b) first quartile denoted by the bottom line of the rectangle (c) median denoted by the blue line inside the rectangle of a category, (d) third quartile denoted by the top line of the recantagle of a category, and (e) the maximum denoted by the top most horizintal line. The box plots show how moving from one category to another changes the number of new firms for different values of the independent variable within a given category.

2.20 Figures 9a and 9b suggest that superior access to markets is also associated with higher entrepreneurial activity. Figure 9a shows the effect of the proportion of villages that are connected by tar roads in a district, hereafter labelled "connectivity." The Figure shows that till connectivity increases to 91 per cent, i.e., 91 per cent of

the villages in the district are connected by tar roads, the number of new firms increases monotonically. However, after this threshold, the number of new firms decreases. These results are symptomatic of diminishing returns from physical connectivity – when the access to local markets increases beyond a point, competition levels might increase and possibly discourage entrepreneurial activity. On similar lines, beyond a point, increased levels of infrastructure development might also open up potential entrepreneurs to other opportunities and consequently, decrease the incentives to become entrepreneurs.

Figure 9a: Market Access and Entrepreneurship

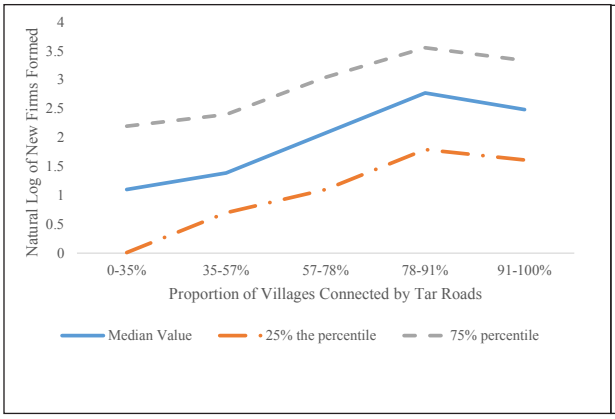
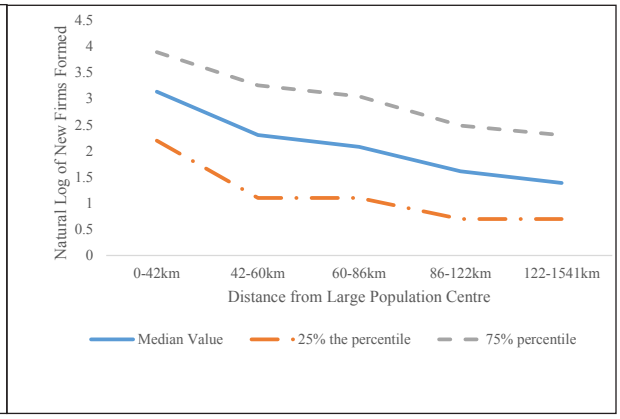


Figure 9b: Distance from large centres and Entrepreneurship



Source: MCA-21, SHRUG and Survey Calculations

2.21 Similar patterns are visible in Figure 9b as well. Figure 9b shows the effect of proximity to markets as captured by districts that are the closest to a centre that has a population of least 5 lakhs. As the proximity to markets increases, the number of new firms increases monotonically. The greatest improvement is seen when the distance to a market centre decreases below 42 kms. In sum, Figures 9a and 9b suggest superior physical infrastructure will likely promote entrepreneurial activity. However, there may be limits to how much its improvement may aid entrepreneurship. Beyond a point, increased access to local markets may create hyper-competition and discourage entrepreneurship. On the contrary, no such diminishing returns are apparent with increases in literacy or improving education infrastructure. Increasing literacy levels or the formation of new colleges appear to increase the number of new firms monotonically.

POLICY IMPLICATIONS FOR FAST-TRACKING ENTREPRENEURSHIP AND WEALTH CREATION

2.22 Clear patterns emerge from the analysis. Despite being the 3rd largest ecosystem for entrepreneurship in the world, India appears to have lower rates of formal entrepreneurship on a per-capita basis when compared to other countries. Consistent with the prevailing wisdom, a significant association between the count of new firms born in a district and the GDDP of that district is found – a 10 per cent increase in registration of new firms is associated with a 1.8 per cent increase in GDDP. This contribution of entrepreneurial activity to GDDP is strongest for the Manufacturing and Services sectors. Further, significant heterogeneity in entrepreneurial activity across districts demonstrates the critical role played by social

and physical infrastructure in determining such heterogeneity. For instance, the eastern part of India has the lowest literacy rate of about 59.6 per cent according to the census of 2011. This is also the region in which formal entrepreneurial activity is the lowest. The analysis in this chapter, therefore, suggests the following policy implications.

2.23 First, measures to increase the literacy levels rapidly through the institution of more schools and colleges will spur entrepreneurship and consequently local wealth creation. Following the successful contribution of privatization of engineering colleges to India's software exports (Arora et.al., 2011), governments could also explore the privatization of education to augment education capacity at all levels of education.

2.24 Second, better connectivity of villages through tar roads will likely improve access to local markets and improve entrepreneurial activity. However, in terms of prioritization, this may not be as crucial as investments in education. Moreover, increasing the access to local markets might create other types of opportunities which might discourage entrepreneurship. Hence investments in infrastructure especially those undertaken to increase entrepreneurial activity should be weighed against how improved infrastructure creates other kinds of opportunities that might be consequential to a district's GDDP.

2.25 Third, policies that foster ease of doing business and flexible labour regulation foster entrepreneurial activity, especially in the manufacturing sector. As the manufacturing sector has the potential to create the maximum jobs, states must focus on enabling ease of doing business and flexible labour regulation to foster job creation.

CHAPTER AT A GLANCE

- This chapter examines the content and drivers of entrepreneurial activity at the bottom of the administrative pyramid – over 500 districts in India. The analysis employs comprehensive data on new firm creation in the formal sector across all these districts from the Ministry of Corporate Affairs (MCA)-21 database.
- First, using the World Bank's Data on Entrepreneurship, this chapter confirms that India ranks third in number of new firms created. The same data shows that new firm creation has gone up dramatically in India since 2014. While the number of new firms in the formal sector grew at a cumulative annual growth rate of 3.8 per cent from 2006-2014, the growth rate from 2014 to 2018 has been 12.2 per cent. As a result, from about 70,000 new firms created in 2014, the number has grown by about 80 per cent to about 1,24,000 new firms in 2018.
- Second, reflecting India's new economic structure, i.e. comparative advantage in the Services sector, new firm creation in services is significantly higher than that in manufacturing, infrastructure or agriculture.
- Third, grassroots entrepreneurship is not just driven by necessity as a 10 percent increase in registration of new firms in a district yields a 1.8 percent increase in GDDP. Thus, entrepreneurship at the bottom of the administrative pyramid – a district – has a significant impact on wealth creation at the grassroot level. This impact of entrepreneurial activity on GDDP is maximal for the manufacturing and services sectors.

- Fourth, birth of new firms is very heterogeneous across Indian districts and across sectors. Moreover, it is dispersed across India and is not restricted to just a few cities.
- Fifth, literacy and education in the district foster local entrepreneurship significantly. For instance, the eastern part of India has the lowest literacy rate of about 59.6 per cent according to the census of 2011. This is also the region in which new firm formation is the lowest. In fact, the impact of literacy on entrepreneurship is most pronounced when it is above 70 per cent.
- Sixth, the level of local education and the quality of physical infrastructure in the district influence new firm creation significantly.
- Finally, policies that enable ease of doing business and flexible labour regulation enable new firm creation, especially in the manufacturing sector. As the manufacturing sector has the greatest potential to create jobs for our youth, enhancing ease of doing business and implementing flexible labour laws can create the maximum jobs in districts and thereby in the states.
- Literacy, education and physical infrastructure are the other policy levers that district and state administrations must focus on foster entrepreneurship

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APPENDIX

Table A1: OLS regressions of natural log of GDDP on natural log of new firms.

VARIABLES	(1) Log of GDDP	(2) Log of GDDP	(4) Log of GDDP
Log of New Firms Formed 3 years back	0.18*** (0.01)		
Log of New Firms Formed in Agriculture 3 years back		0.03*** (0.00)	
Log of New Firms Formed in Manufacturing 3 years back		0.07*** (0.00)	
Log of New Firms Formed in Services 3 years back		0.07*** (0.00)	
Log of New Firms Formed in Infrastructure 3 years back		0.05*** (0.00)	
Log of New Firms Formed in Other Sectors 3 years back		0.04*** (0.01)	
South India			10.96*** (0.05)
North India			-0.39*** (0.06)
East India			-0.68*** (0.07)
West India			-0.24*** (0.06)
South India x Log of New Firms Formed 3 years back			0.22*** (0.02)
North India x Log of New Firms Formed 3 years back			-0.06*** (0.02)
East India x Log of New Firms Formed 3 years back			0.03 (0.02)
West India x Log of New Firms Formed 3 years back			0.02 (0.03)
Constant	10.66*** (0.02)	11.21*** (0.04)	
Observations	5,591	5,591	5,591
R-squared	0.85	0.87	0.77
State Fixed Effects	Yes	Yes	No
Year Fixed Effects	Yes	Yes	Yes
Errors Clustered at District Level	Yes	Yes	Yes

*p<0.10, **p<0.05, ***p<0.01

Table A2: OLS regressions of natural log of new firms on measures of physical and social infrastructure

VARIABLES	(1) Natural Log of New Firms Formed	(2) Natural Log of New Firms Formed - Agriculture	(3) Natural Log of New Firms Formed - Manufacturing	(4) Natural Log of New Firms Formed - Services
Natural Log of Population Density per last Census	0.18*** (0.04)	0.09** (0.03)	0.16*** (0.04)	0.24*** (0.04)
Natural Log of Total Colleges per last Census	0.74*** (0.09)	0.45*** (0.08)	0.69*** (0.10)	0.72*** (0.09)
Percentage of Population Literate per last Census	0.07*** (0.01)	0.03*** (0.01)	0.06*** (0.01)	0.08*** (0.01)
Percentage Villages Connected by Tar Roads per last Census	0.02*** (0.00)	0.01*** (0.00)	0.02*** (0.01)	0.02*** (0.00)
Percentage Villages Having Access to Power per last Census	0.00 (0.00)	0.00 (0.00)	0.01 (0.00)	0.00 (0.00)
Natural Log of Mean Distance from 500K Population Centre	-0.15*** (0.05)	-0.16*** (0.03)	-0.18*** (0.05)	-0.16*** (0.05)
Constant	-6.11*** (0.67)	-5.96*** (0.51)	-7.47*** (0.72)	-7.92*** (0.67)
Observations	5,337	5,337	5,337	5,337
R-squared	0.53	0.44	0.43	0.56
State Fixed Effects	Yes	Yes	Yes	Yes
Census Fixed Effects	Yes	Yes	Yes	Yes
Errors Clustered at District Level	Yes	Yes	Yes	Yes

*p<0.10, **p<0.05, ***p<0.01

03 CHAPTER

Pro-Business versus Pro-Crony

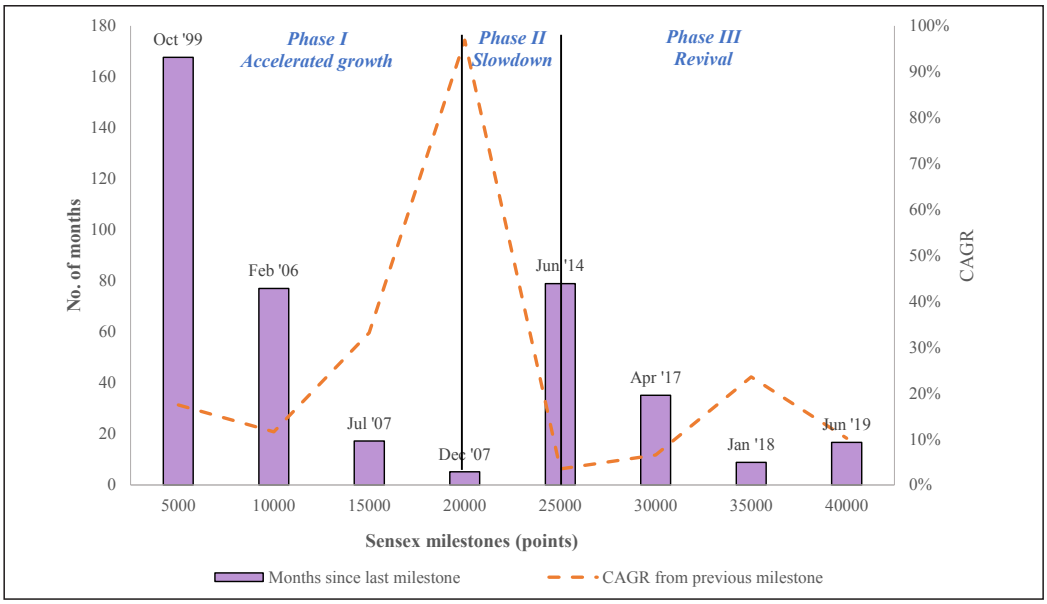
India's aspiration to become a $5 trillion economy depends critically on promoting "pro-business" policy that unleashes the power of competitive markets to generate wealth, on the one hand, and weaning away from "pro-crony" policy that may favour specific private interests, especially powerful incumbents, on the other hand. Economic events since 1991 provide powerful evidence supporting this crucial distinction. Viewed from the lens of the Stock market, which captures the pulse of any economy, creative destruction has increased significantly after reform. Before liberalization, a Sensex firm expected to stay in it for 60 years, which decreased to only 12 years after liberalization. Every five years, one-third of Sensex firms are churned out, reflecting the continuous influx of new firms, products and technologies into the economy. Despite impressive progress in enabling competitive markets, pro-crony has destroyed value in the economy. For example, an equity index of connected firms significantly outperformed the market by 7 per cent a year from 2007 to 2010, reflecting abnormal profits extracted at common citizens' expense. In contrast, the index underperforms the market by 7.5 per cent from 2011, reflecting the inefficiency and value destruction inherent in such firms. Pro-crony policies as reflected in discretionary allocation of natural resources till 2011 led to rent-seeking by beneficiaries while competitive allocation of the same resources post 2014 have put an end to such rent extraction. Similarly crony lending that led to wilful default, wherein promoters have collectively siphoned off wealth from banks, led to losses that dwarf subsidies directed towards rural development.

PRO-BUSINESS, CREATIVE DESTRUCTION AND WEALTH CREATION

3.1 The liberalization of the Indian economy in 1991 unleashed competitive markets. It enabled the forces of creative destruction, generating benefits that we still witness today. Using the lens of Indian equity markets as captured in the S&P BSE Sensex, we can clearly see an increase in market dynamism in the pro-business India of the post-liberalization period. Figure 1 reveals that after the market reforms of 1991, Sensex has not only grown, but has grown at an accelerating pace. Whereas crossing the first incremental 5000 points took over 13 years and was achieved in 1999, the time taken to achieve each incremental milestone has substantially reduced over the years.

3.2 Broadly, the growth of the Sensex as seen in the Figure 1 can be divided into three phases after 1999. Phase I from 1999 to 2007 saw an acceleration in the growth of the Sensex, with each successive 5000-point mark taking lesser and lesser time to achieve. Phase II from 2007 to 2014 saw a slowdown in the index's growth. This phase coincides with the global slowdown in 2008 among other unfavourable events. Phase III began in 2014 and saw a revival in response to structural reforms and improvement in global liquidity. Strikingly, in this phase, the Sensex jumped from the 30,000 mark to the 40,000 mark in just two years. As the Cumulative Abnormal Growth Rates (CAGR) shown in the chart depict clearly, the acceleration in the Sensex was not due to the base effect. In fact, the higher acceleration stemmed from higher CAGR.

Figure 1: Sensex- Incremental months taken to cross each 5000-point milestone



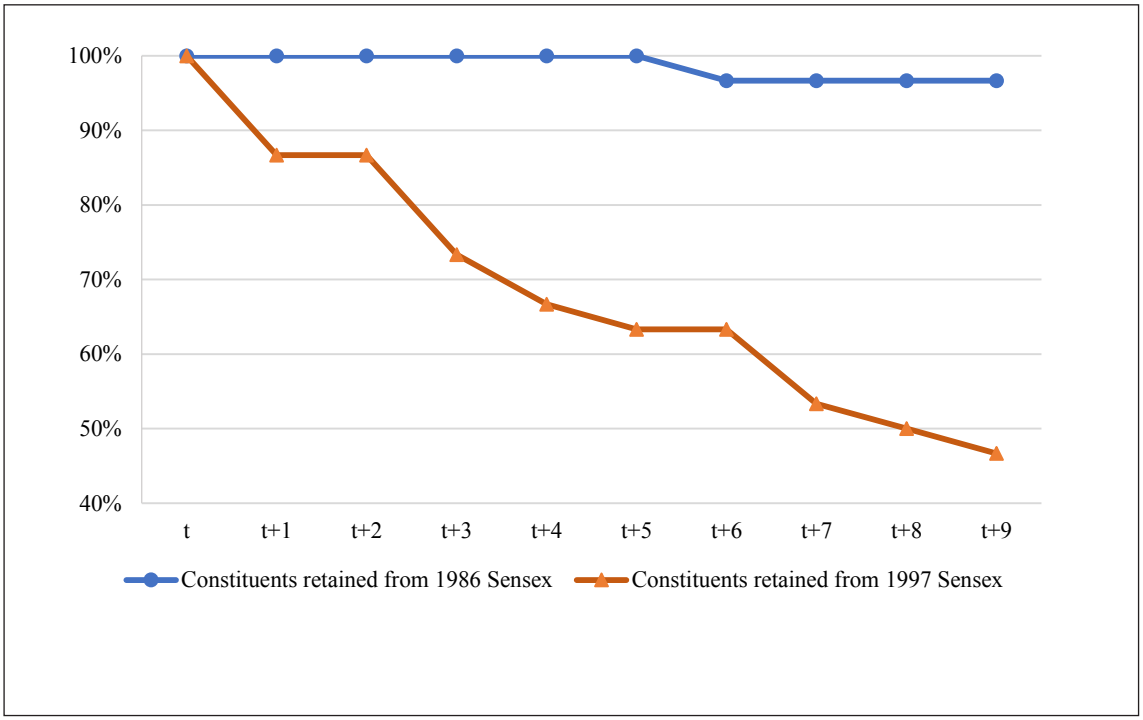
Source: BSE

Note: Time to cross each milestone is defined as the time elapsed between the first time the Sensex closed at the previous milestone and the first time it closed at the present milestone. CAGR is computed over the period from the previous milestone to the current one. Time elapsed is recorded as number of calendar days and converted to months assuming 30 days a month.

3.3 The relationship between pro-business policy and creative destruction is mirrored in the composition of the Sensex over the years.[1] For the first ten years since the Sensex's inception in 1986, the firms that constituted the index barely changed. As Figure 2 shows, of the firms that constituted the index during its inception in 1986, nearly all the firms were retained for the majority of the next decade. On the other hand, the constituents of the Sensex of 1997 were steadily churned out over the next decade, so that the Sensex of 2006 had barely half the firms from the Sensex of 1997.

[1] Data gathered from BSE and Bloomberg. Full market capitalization is used rather than free-float capitalization for comparability over time, as free-float methodology was initiated only in 2003. Sensex constituents and market capitalization data were obtained from BSE for 1985-2000. Data is available from BSE on the following dates of observation: Dec '91, Jun '92, Jun '93, Nov '94, Mar '95, Mar '96, Mar '97, Jun '98, Mar '99, Mar '00. Data for subsequent years obtained from Bloomberg with Sept of each corresponding year as the month of observation, basis the latest available data as of this writing (data for 2019 is as of 3 Sept 2019).

Figure 2: Percentage of Sensex constituents retained over next decade



Source: Bloomberg, BSE

Note: Due to slight discrepancy in the month of observation before and after 2001 (due to distinct data sources), consider individual annual churn rates for 2000-02 as approximate; however the aggregated churn over these years is accurate.

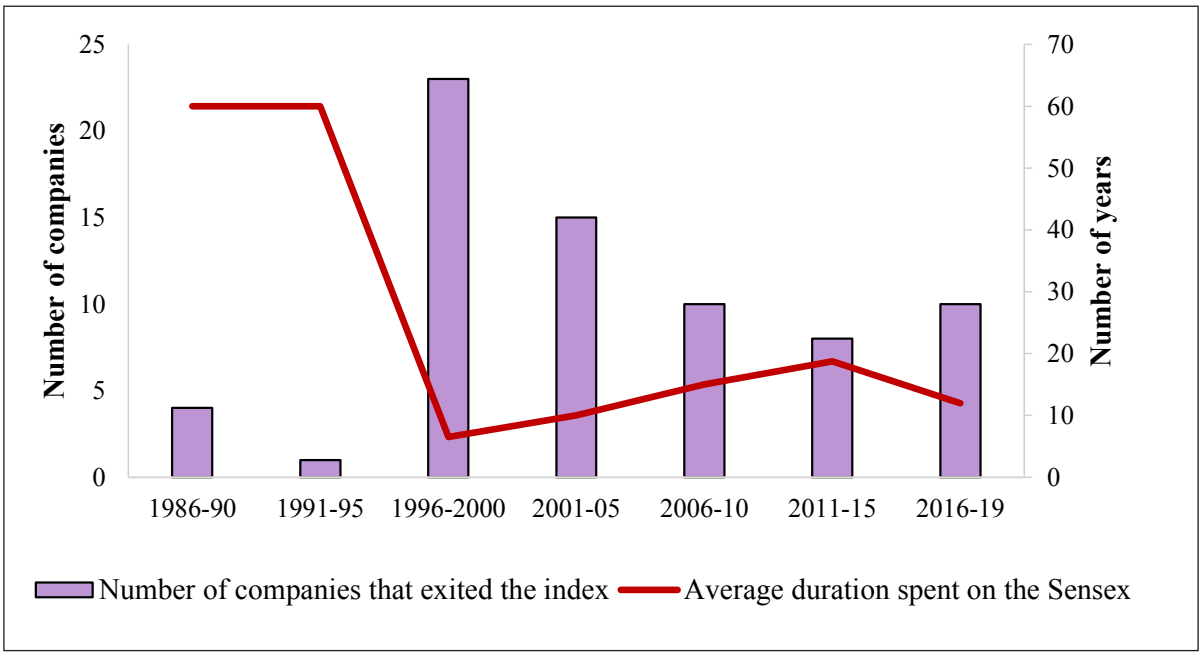
3.4 The lack of dynamism in the constitution of the index in its initial years was largely representative of the lack of dynamism in the Indian economy in general. However, the years following 1991 liberalization saw the rapid emergence of new firms, new ideas, new technologies and new operating processes, causing a steep revision of the Sensex in 1996. In 1996, half of the constituents of the index were replaced. After 1996, the Sensex underwent more frequent revisions, owing to the more dynamic nature of the now substantially more competitive Indian market.

3.5 Figure 3 shows the number of firms that exited the Sensex in each five-year period following 1986. Pro-business policy, i.e., liberalization caused a spike in the number of firms churned in the years that immediately followed it, but the churn rate did not decline to pre-liberalization levels in later years. Ten firms were churned out in the five years from 2006 to 2010, eight in 2011-15 and ten in 2016-19. Put differently, every five years, roughly one-third of the firms in the index are replaced.

3.6 The figure also indicates the average duration a Sensex constituent remains on the index. Given that only 5 firms exited the index in the ten-year period 1986-95, had liberalization not occurred, a firm that entered the index in 1986 could have expected to stay on the index for the next sixty years! Following the 1991 reforms, the average duration a firm spent on the index declined drastically. Currently, a firm is expected to remain on the index for only 12 years – one-fifth of the expected duration prior to the reforms.

3.7 A pertinent question that arises at this stage is whether the churn illustrated above was beneficial to the Indian economy.

Figure 3: Increasing churn in the Sensex



Source: Bloomberg, BSE

Note: Average time spent on Sensex is calculated as the reciprocal of the churn rate in that period. Because of the very low churn in the first two periods, the total churn rate during 1986-95 is used to infer the time spent on the Sensex for these two periods.

A monopolist taking the place of another identical monopolist is hardly beneficial. However, in the Indian case, the Sensex does represent a process of creative destruction rather than spurious dynamism. The firms that displaced the incumbents on the Sensex brought with them new ideas, technologies and processes. For an illustration, consider Table 1 that depicts the major Sensex revision of 1996 following market reforms.

Table 1: Revision of the constituents of the Sensex index in 1996

Exit		Replacement	
Firm	**Industry**	**Firm**	**Industry (new in bold)**
Ballarpur Industries	Materials	Arvind Mills	Consumer Durables & Apparel
Bharat Forge	Materials	Bajaj Auto	Automobiles & Components
GSFC	Materials	Ambuja Cements	Materials
Indian Organic	Materials	ICICI	**Diversified Financials**
Mukand Iron	Materials	MTNL	**Telecommunication Services**
Bombay Dyeing	Consumer Durables & Apparel	BHEL	Capital Goods
Century Textiles	Consumer Durables & Apparel	Colgate	**Household & Personal Products**

Indian Rayon	Consumer Durables & Apparel	IDBI	**Diversified Financials**
Phillips	Consumer Durables & Apparel	Ranbaxy Labs	Pharma, Biotech & Life Sciences
Voltas	Consumer Durables & Apparel	Tata Chemicals	Materials
Ceat	Automobiles & Components	BSES	Utilities
Hindustan Motors	Automobiles & Components	HPCL	Energy
Premier Auto	Automobiles & Components	SBI	**Banks**
Kirloskar Cummins	Capital Goods	IPCL	Materials
Siemens	Pharma, Biotech & Life Sciences	SAIL	Materials

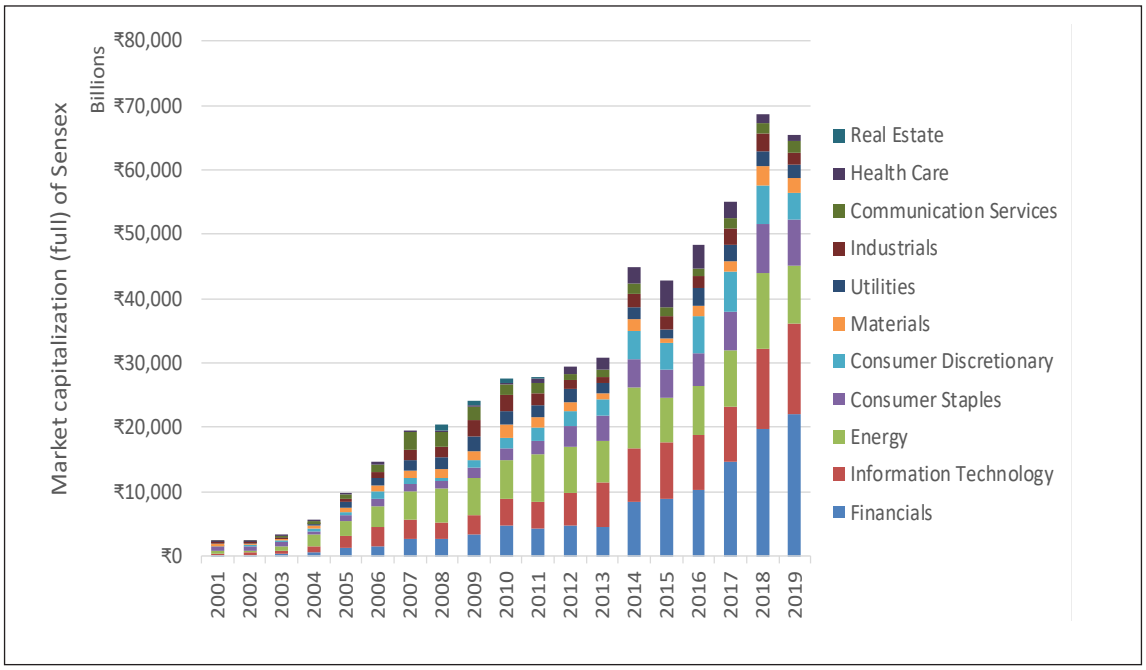
Source: BSE, Bloomberg.

Note: Highlighted cells represent new sectors that entered the index for the first time.

New sectors like banks and financials entered the index for the first time, eroding the predominance of the manufacturing sector on the index, placing the services sector on the map for the first time, and reflecting the far-reaching changes that the Indian economy was witnessing in the wake of liberalization.

3.8 Figure 4 depicts the size of various sectors in the Sensex by market capitalization over time. Financials and information technology, which were virtually non-existent in the Sensex of the early 1990s,

Figure 4: New sectors emerged in the Sensex following liberalization

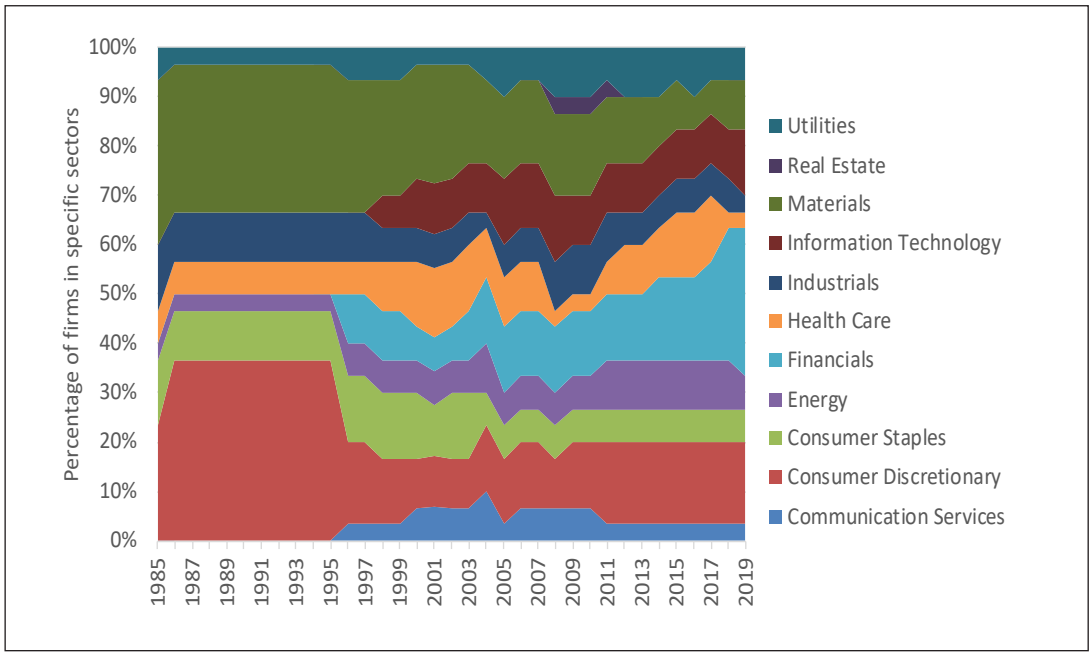


Source: Bloomberg, BSE

are responsible for more than 50 per cent of the market share of the Sensex today. It is therefore incontrovertible that the churn in the Sensex represents a very real process of creative destruction that brought altogether new technologies, products and services to consumers.

3.9 The diversity of sectors in the Sensex steadily increased over time following market reforms, as shown in Figure 5 below. The initial Sensex of 1986 was dominated by the Materials and Consumer Discretionary sectors, accounting for two-thirds of the firms on the Sensex. Sectors like financials, telecommunications and information technology were non-existent in the index then. With the entry of these new sectors, today's Sensex is far less concentrated than the Sensex of the 1980s and 1990s, and mirrors the far lower sectoral concentration of the Indian economy as a whole.

Figure 5: Sectoral concentration of the Sensex decreased post-liberalization as new sectors emerged



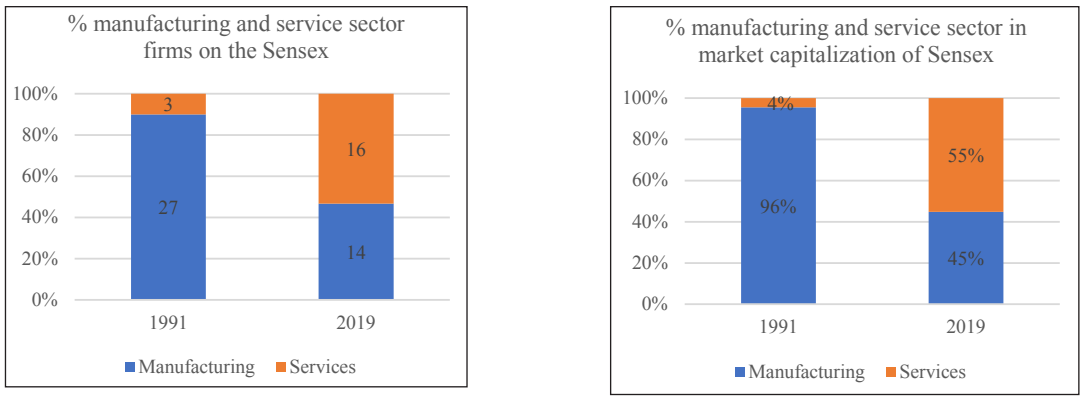
Source: Bloomberg, BSE

3.10 India has followed an idiosyncratic growth pattern, wherein the prime mover of the economy has shifted from agriculture to services. Almost 60 per cent of Indian GDP is attributable to the services sector. As shown by Figure 6, the number of Sensex firms in manufacturing has reduced while those in services has increased between 1988 and 2019. Thus, over the years, the share of services sector in the total number of companies on the Sensex has changed from being negligible in the 1980s to the dominant status today.

3.11 Today's Sensex is not only composed of a larger number of sectors, but is also far more democratic in terms of the size of companies. In 1991, the largest firm on the index was roughly 100 times the smallest in terms of market capitalization. Ten years later, the ratio declined to roughly 75. In 2018, the ratio was only 12. The benefit of liberalizing markets does not end with a one-time drop in the ratio and continues to be felt

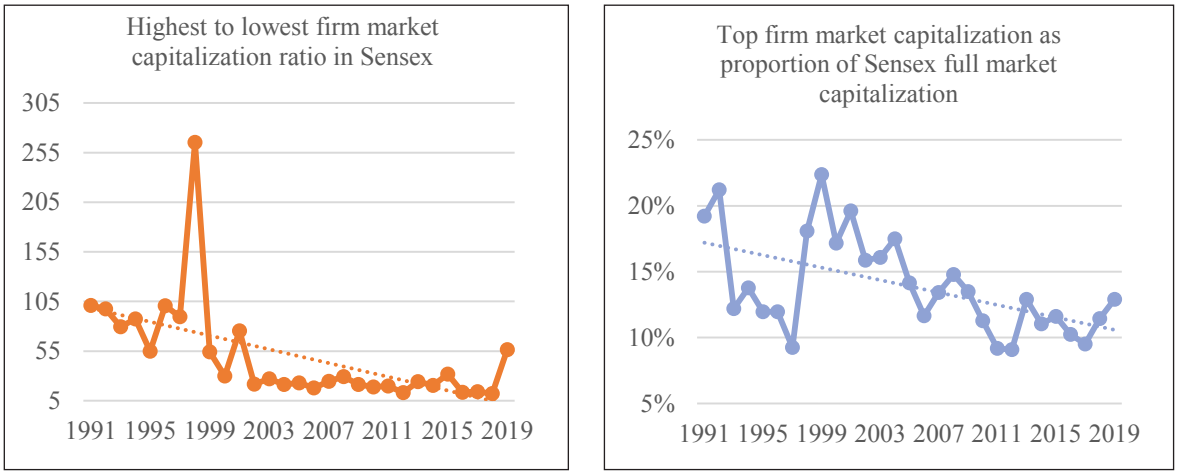
even today, as indicated by the decreasing trend in the ratio in Figure 7. Similarly, while the largest firm of 1991 constituted around 20 per cent of the market capitalization of the Sensex, the largest firm of 2019 contributed only 13 per cent.

Figure 6: The rise of services in the Sensex



Source: Bloomberg, BSE

Figure 7: Decreasing size concentration of firms in the Sensex



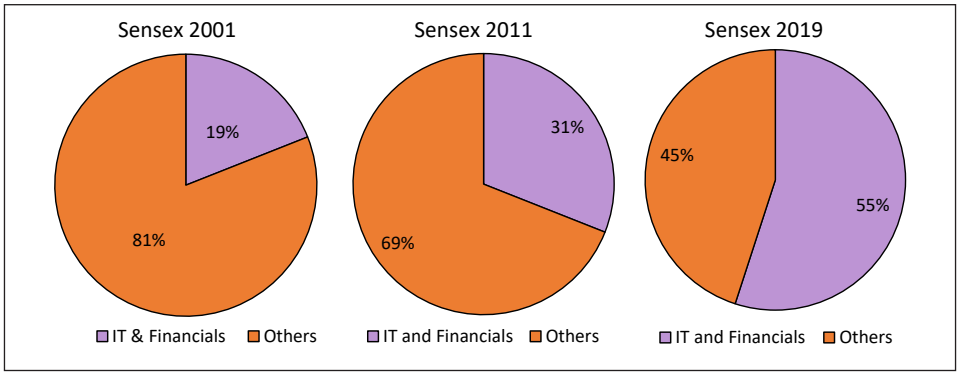
Source: Bloomberg, BSE

Note: See earlier footnote about the dates on which market capitalization for each corresponding year is observed. Data for 2019 is as of 3 Sep 2019

3.12 The forces of creative destruction following liberalization in the Indian economy have led to the rise of new sectors such as financials and information technology. Virtually non-existent in the Sensex of the early 1990s, the share of these sectors in the total market capitalization has increased over the years, so much so that these sectors dominate the Sensex today (Figure 8). At first glance, this trend indicates a cause for concern: a potential case of more concentration or a reversal in creative destruction in the economy. However, a closer look reveals otherwise.

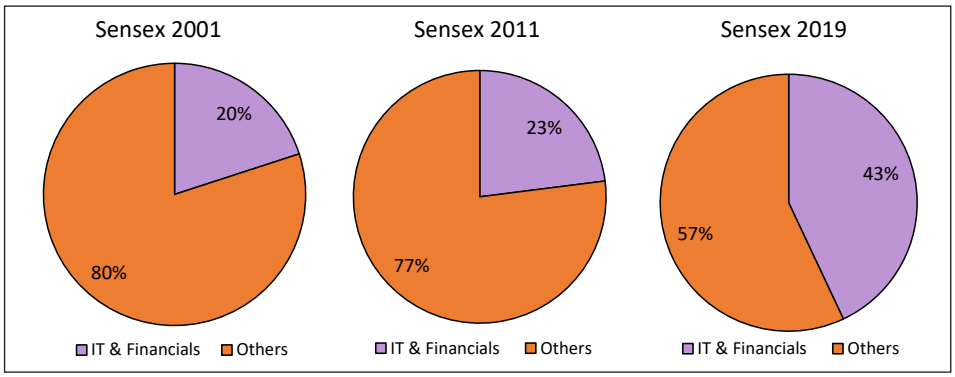
3.13 Firstly, the rising share in market capitalization has been accomplished by a rise in number of companies rather than a rise in size of incumbents, suggesting greater competition within these sectors (Figure 9).

Figure 8: Increasing Share of IT and Financials Sector in Total Market Capitalization of Sensex



Source: Bloomberg, BSE

Figure 9: Increasing Share of IT and Financials Sector (By Count) in the Sensex



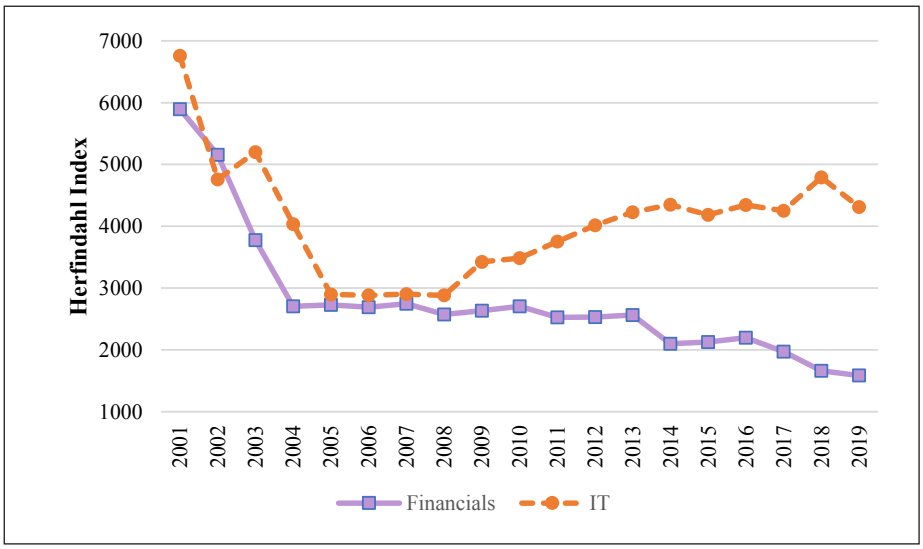
Source: Bloomberg, BSE

3.14 Secondly, using the Herfindahl Index to analyse degree of competition within the two sectors reveals an overall decline in concentration in both sectors. However, the IT sector has recently begun to show a slight increasing trend in the Herfindahl index, indicating that there is room to increase competition in the sector (Figure 10).

3.15 Three key insights emerge from the analysis above. First, we can expect today's dominant firms to remain dominant for only one-fifth of the time that their pre-liberalization counterparts did. Second, sectors once considered mainstays of the Indian economy are being displaced by new sectors bringing with them new technologies and products. The competitive advantage of entrenched firms is being rapidly challenged by new, smaller and more agile firms; every five years, roughly one in three firms in the Indian economy can expect to be challenged in a massive way by the forces of creative destruction. Finally, the difference between the sizes of the largest and smallest firms are rapidly shrinking, and consequently monopoly power in the economy is declining and making way for more competitive markets. Consumers benefit from an increased variety of goods and services, lower prices and incessant improvement in the quality of existing products.

3.16 "There is a common misconception that people who are in favour of a free market are also in favour of everything that big

Figure 10: Herfindahl Index of Financials and IT sectors

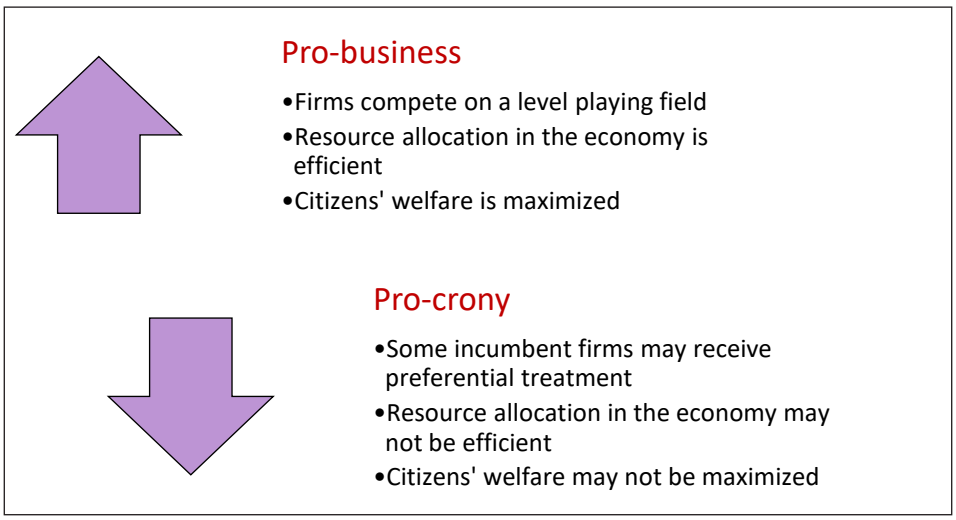


Source: Bloomberg, BSE

business does. Nothing could be further from the truth," wrote Milton Friedman (Friedman 1999). Pro-crony policy supports incumbent firms but does not necessarily foster competitive markets (Figure 11). On the other hand, policy that fosters competitive markets (hereafter pro-business policy) creates a level playing field for businesses to compete. It unleashes the powerful forces of creative destruction, which create wealth. Austrian economist and creator of the term, Joseph Schumpeter, described creative destruction as a "process of industrial mutation that incessantly revolutionizes the economic structure from within, incessantly destroying the old one, incessantly creating a new one."

3.17 Creative destruction brings new innovations into the market that serve people better than the old technologies they displace. It brings new firms into the markets, which compete with existing firms and lower prices for consumers. It brings dynamism to the marketplace that keeps firms on their

Figure 11: Difference between pro-business and pro-crony policy



toes, always on the lookout for the next big way to serve consumers. It has only one pre-requisite – a pro-business policy stance that fosters competitive, unfettered markets.

3.18 When creative destruction is fostered, sectors as a whole will always outperform individual companies within the sector in creating wealth and maximizing welfare. Therein lies the motivation for India to pursue pro-business, rather than pro-crony, growth.

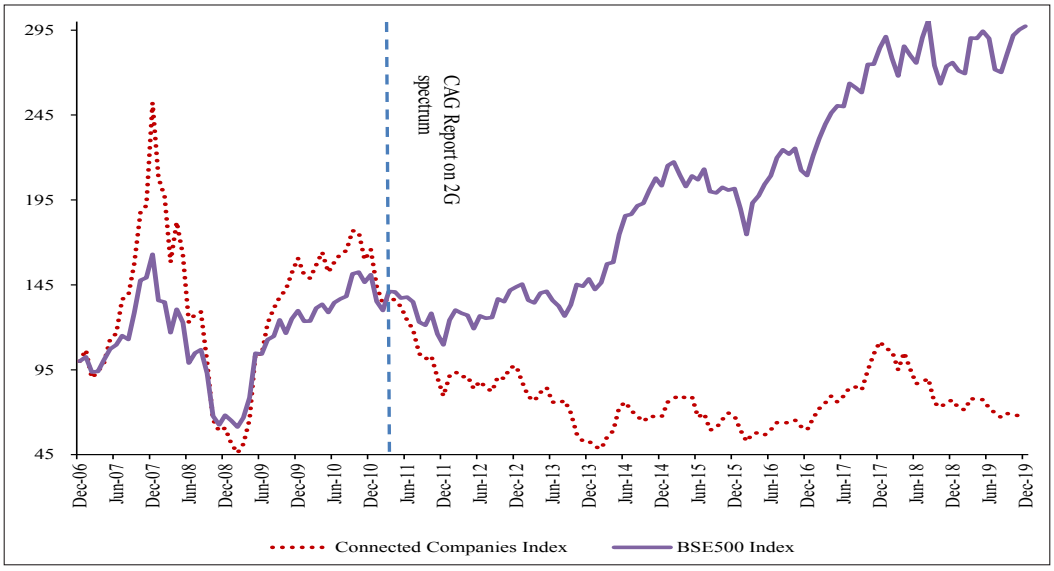
PRO-CRONY AND WEALTH DESTRUCTION

3.19 Pro-crony policies, in contrast to pro-business ones, erode wealth in the economy as cronyism fosters inefficiencies by inhibiting the process of creative destruction. Raghuram Rajan and Luigi Zingales stressed the need for "saving capitalism from the capitalists" in their eponymous book, referring to the dangers of regulatory capture by private interests (Rajan and Zingales 2003).

3.20 Ambit Pvt Ltd, a brokerage, publishes a stock market index of 75 Indian firms that they define as "connected". For our purposes, they proxy firms that may benefit from pro-crony policies. Figure 12 compares the performance of this index to the BSE 500 index over time.

3.21 Prior to 2010, it clearly paid a firm and its shareholders if the firm's promoters had "connections". The index of "connected" firms consistently outperformed the BSE 500 index as these firms systematically made more profits than would have been possible in a more competitive economy. The market priced the current and future abnormal profits of these firms. In late 2010, the Comptroller and Auditor General's audit report on the 2G spectrum allocation named a list of private companies that benefitted from alleged collusions in the allocation of the 2G spectrum. The timing of the report's release is demarcated on the chart with a vertical line.

Figure 12: Investor wealth generated by connected firms before and after CAG report on the 2G scam



Source: Ambit Capital research, Capitaline, BSE

Note: 1) The connected companies index is an aggregate market cap index which has been rebased and is adjusted for demergers, 2) 70 companies with political dependence and connectivity as on Dec'06 as per Ambit analysts.

3.22 The CAG report on the 2G allocations appears to have reversed the fortunes for "connected" firms. The "connected" index started to underperform the market starting 2011. In fact, the gap for the investor wealth destroyed by "connected" firms is widening over time, which reflects the inability of such firms to systematically create value for their investors from extracting rents based on their political connections (Kishore 2016).

3.23 Had an investor invested ₹ 100 in these "connected" firms at the start 2007, her investment would have grown to ₹ 190 by the start of 2010. On the other hand, had she invested ₹ 100 in the BSE500, the investment would have grown to ₹ 150. The "connected" index yielded an average return of 17.5 per cent per annum during this period, whereas the BSE 500 index yielded an average return of 10.5 per cent per annum. "Connected" firms thus outperformed the broad index of the stock market by 7 percentage points a year on average till 2010. Put differently, from 2007 to 2010, "connected" firms realized 7 percentage points higher returns than they would have in a more competitive market.

3.24 This pre-2010 outperformance of "connected" firms indicates the possible extent of rents extracted by these firms at society's expense. In contrast, the significant post-2010 underperformance – following the release of the CAG report – illustrates the fact that such "connected" firms were likely to have been inefficient ones. Between 2007 and 2016, "connected" firms have earned, on average, 7.5 percentage points lower returns than the BSE 500 index per annum. This phenomenon of rent-seeking by inefficient, "connected" firms, though unhealthy to the economy, is not unique to India. In fact, several global studies reinforce the relationship between such connections and rent-seeking activities when institutional checks and balances are weak (Box 1).

Box 1: Global evidence that political connections lead to rent extraction

Several studies from around the globe find that political connections lead to rent extraction.

Faccio (2006) examines politically connected firms in 47 countries and finds that around the time that a firm announces that managers or large shareholders are entering politics, there is a positive impact on stock price. The result is consistent with the theory that markets anticipate additional sources of profit for the now politically connected firm despite no change in firm fundamentals. Faccio *et al.* (2006) study financial distress in politically connected firms in 35 countries and find that distressed politically connected firms are significantly more likely to be bailed out by the government than their non-connected counterparts. Claessens *et al.* (2008) show that Brazilian firms that provided contributions to (elected) federal deputies experienced higher stock returns than firms that did not make such contributions around the 1998 and 2002 elections. Further, contributing firms substantially increased their bank financing relative to a control group after each election, indicating that access to bank finance is an important channel through which political connections operate. They estimate the economic costs of this rent seeking over the two election cycles to be at least 0.2 per cent of gross domestic product per annum.

A recent World Bank study of cronyism in Ukraine finds that the country would grow 1 to 2 per cent faster if all political connections were eliminated (Kahkonen 2018)! Politically connected firms in Ukraine account for over 20 per cent of the total turnover of all Ukrainian companies. The study finds that these politically connected firms (i) are larger than non-connected peers, (ii) pay lower

effective tax rates, (iii) are less productive in terms of total factor productivity (TFP), (iv) are less profitable, and (v) grow slower (World Bank 2018).

Evidence from Asia

China

Firth *et al.* (2009) find that political connections play a role in the allocation of bank loans to Chinese firms. They find that having the state as a minority owner helps firms obtain bank credit. Political connections especially benefit firms located in areas with a less developed banking sector. Deng, Zeng & Zhu (2019) provide evidence that firms in China actively build political connections to alleviate the cost of market frictions. Firms facing severe market frictions are not as financially constrained as they would be expected to be; the key reason is that they possess strong political connections which alleviate these costs. Chan *et al.* (2012) find that politically connected firms in China display much lesser financing constraints compared to firms without such connections. Chen *et al.* (2017) find that politically connected underwriters increase the likelihood of clients' IPO applications being approved by the Chinese Securities Regulatory Commission. Further, consistent with the rent-seeking argument, they document the post-IPO underperformance of such firms, indicating that minority shareholders' interests may be compromised.

Thailand

Bunkanwanicha & Wiwattanakantang (2009) find in Thailand that when business owners come to political power, the market valuation of their firms increases dramatically. Business owners in top offices use their policy-decision powers to implement regulations and public policies favorable to their firms. Civilize *et al.* (2015) undertake a longitudinal study of firms in Thailand and conclude that higher realized stock returns are systematically associated with political connectedness. Consistent with the view that such a relationship provides economic rents, this finding is particularly prominent in more regulated industries. The politically connected premium is higher for higher level political connections and when the political bodies hold an equity stake in the firm.

Indonesia

Fisman (2001) estimates the value of political connections in Indonesia by looking at how stock prices of firms with differing degrees of political exposure moved when former President Suharto's health was reported to change. Adverse health reports led politically connected firms to realize lower returns than less dependent firms.

Malaysia

Johnson & Mitton (2003) find that the imposition of capital controls in Malaysia in 1998 primarily benefitted firms with strong ties to the President, suggesting that capital controls provided a screen behind which firms with political ties leveraged their connections for favours. A study of Malaysian politically connected firms finds that such firms are perceived as being higher risk by the market, audit firms and lenders. Such firms have higher likelihoods of reporting a loss, having negative equity, and being charged higher interest rates by lenders (Bliss and Gul 2012).

Vietnam

Rand (2017) examines over 2000 Vietnamese SMEs over a 10-year period and finds that political connections decrease the likelihood of a firm being credit-constrained by 4 percentage points. Further, politically connected firms accessing credit face lower cost-of-capital than non-connected SMEs not excluded from formal financial markets.

These studies unanimously document a myriad of benefits enjoyed by politically connected firms. These benefits represent direct and indirect forms of rent unduly enjoyed by the connected firm's shareholders at the expense of unconnected firms and society at large.

3.25 Pro-crony, when compared to pro-business, policies can create various indirect costs as well. When opportunities for crony rent-seeking exist, firms shift their focus away from growth through competition and innovation towards building political relationships, thus undermining the economy's capacity for wealth creation (see Box 2). Further, the rents sought by cronies are paid for by genuine businesses and citizens who are not receiving any preferential treatment. Such a transfer of wealth exacerbates income inequality in the economy, as crony firms leverage their connections to extract a larger share of existing wealth instead of expanding the available wealth.

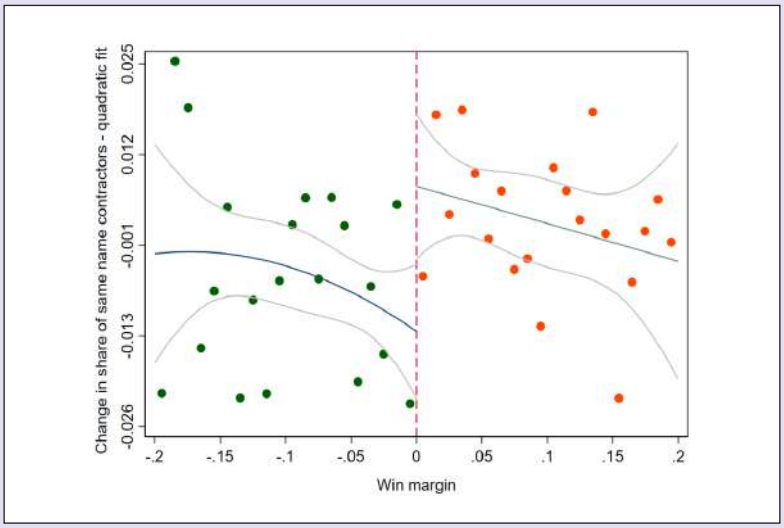
DISCRETIONARY ALLOCATION OF NATURAL RESOURCES VIS-À-VIS ALLOCATION VIA AUCTIONS

3.26 In this section, we consider a case study from the natural resource allocation process in India. India has the fifth largest coal reserves in the world behind USA, Russia, China, and Australia. Coal is the most important indigenous source of energy for India; it meets more than half of India's energy requirements. Therefore, allocation of such an important natural resource provides us a nice case study to contrast pro-business and pro-crony policies.

Box 2: Political clout and preferential allocation of contracts (2001-13): A case study of road construction in India

Many businesses in India use their political clout to obtain preferential allocation of projects and resources from the government. Lehne, Shapiro & Eynde (2016) examine bidding data on more than 88,000 rural roads built under the Pradhan Mantri Gram Sadak Yojana (PMGSY) and juxtapose this data with election results. Using a large sample spanning 8116 candidates in 4058 elections from 2001 to 2013 and employing a regression discontinuity design, the study finds that after close election victories, contractors affiliated to the winning politician are more likely to be awarded road projects. Figure below depicts this result graphically, plotting the change in the share of contractors who have the same name as the winning politician against the politician's margin of victory in the election.

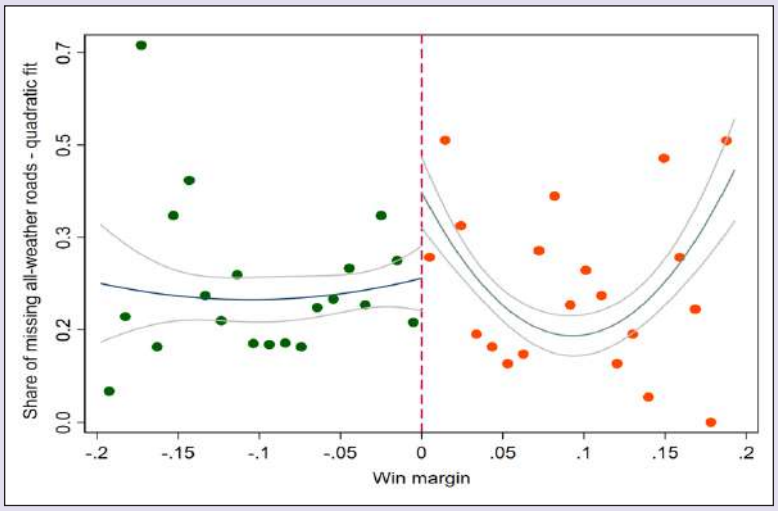
After close election victories, the share of road construction contractors who appear affiliated to the winning politician increases



Source: Lehne, Shapiro & Eynde (2016)

Further, the authors use Census 2011 data at the village level to check whether roads listed as completed in the PMGSY monitoring data are also captured in the Census data. Several roads recorded as complete in PMGSY monitoring data are missing from the Census, suggesting that these roads were never actually built or completed. Around 26 per cent of roads listed as completed prior to the census in PMGSY data are missing from the 2011 Census data. Preferential allocation of roads increases the likelihood of such "missing" roads by as much as 86 per cent. The figure below depicts this dramatic effect.

After close election victories, the share of missing all-weather roads increases when the contractor appears affiliated to the winning politician



Source: Lehne, Shapiro & Eynde (2016)

The authors find that preferential allocation accounts for an additional 497 missing all-weather roads that would have served roughly 860,000 people. Clearly, PMGSY contracts that seem to have been politically influenced lead to suboptimal economic outcomes.

3.27 Prior to 1993, no specific criteria for the allocation of captive mines existed. Amendments introduced to the Coal Mines (Nationalisation) Act 1973 in June 1993 allowed private companies to carry out coal mining for captive use. In July 1992, a screening committee was set up under the chairmanship of the Secretary of Coal to consider applications made by various companies interested in captive mining and to allocate coal blocks for development. In August 2012, the CAG report on coal block allocations examined the effectiveness of the processes adopted in allocation of coal blocks.[2] On 24 September 2014, the Supreme Court of India cancelled 214 of the 218 allocations made by the Government of India over a span of 15 years.[3] The Coal Mines (Special Provisions) Bill, 2014, and its subsequent rules, were passed in December 2014, and the Coal Mines (Special Provisions) Act, 2015, was included in the Indian mining legislative framework. The Act ensured that any future allocation of coal blocks would solely be through competitive auctions.

[2] The report can be found here: https://www.cag.gov.in/sites/default/files/audit_report_files/Union_Performance_Commercial_Allocation_Coal_Blocks_and_Production_Ministry_Coal_7_2012.pdf.

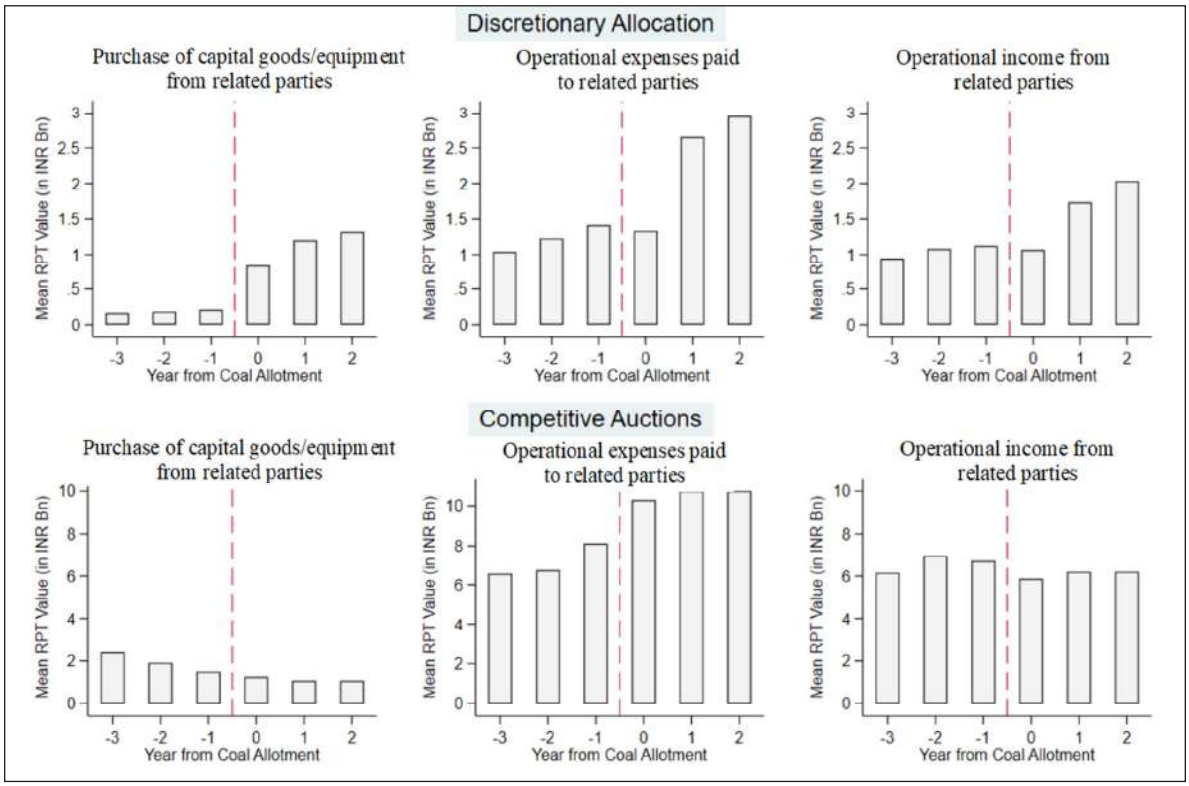
[3] Manohar Lal Sharma vs. The Principal Secretary & Ors., Writ Petition No. 120 of 1012. A copy of the order can be accessed here: http://www.prsindia.org/uploads/media/Coal%20Mines/SC%20order.pdf.

Use of Related Party Transactions in Discretionary Allotment of Natural Resources

3.28 Abraham, Chopra, Subramanian & Tantri (2018) find evidence that the form of coal block allocation has an impact on the value of Related Party Transactions (RPTs) engaged in by firms that are beneficiaries of the coal block allocation. Comparing the RPTs in the 3-year period post the allotment against the 3-year period prior to the allotment, they find significant differences between the rupee value of RPTs undertaken by beneficiaries of the committee-based allotment versus the beneficiaries of the competition-based allotment.

3.29 Figure 13 graphically depicts the comparison for RPTs under three heads. First, RPTs used for purchasing capital goods/ equipment from related parties are classified as "Capital Purchases". Capital purchases offer an ideal mechanism to transfer wealth because they are large one-time non-recurring cash outflows that can serve as an opportune mask to hide transactions from regulators. Second, operational expenses paid to related parties are classified as "Revenue expenses." Third, operational income from related parties are classified as "Revenue income." These three RPTs show a marked increase in the three-year period following the receipt of a coal block through the committee-based allocation as compared to the preceding three years. No such increase is seen in the case of auction-based allotment. The other three main types of RPTs – Capital Sales, Loans and advances given and taken do not show any particular increase in the case of the committee-based allocation.

Figure 13: Impact of coal block allocations on Related Party Transactions



Source: Abraham, Chopra, Subramanian & Tantri (2018)

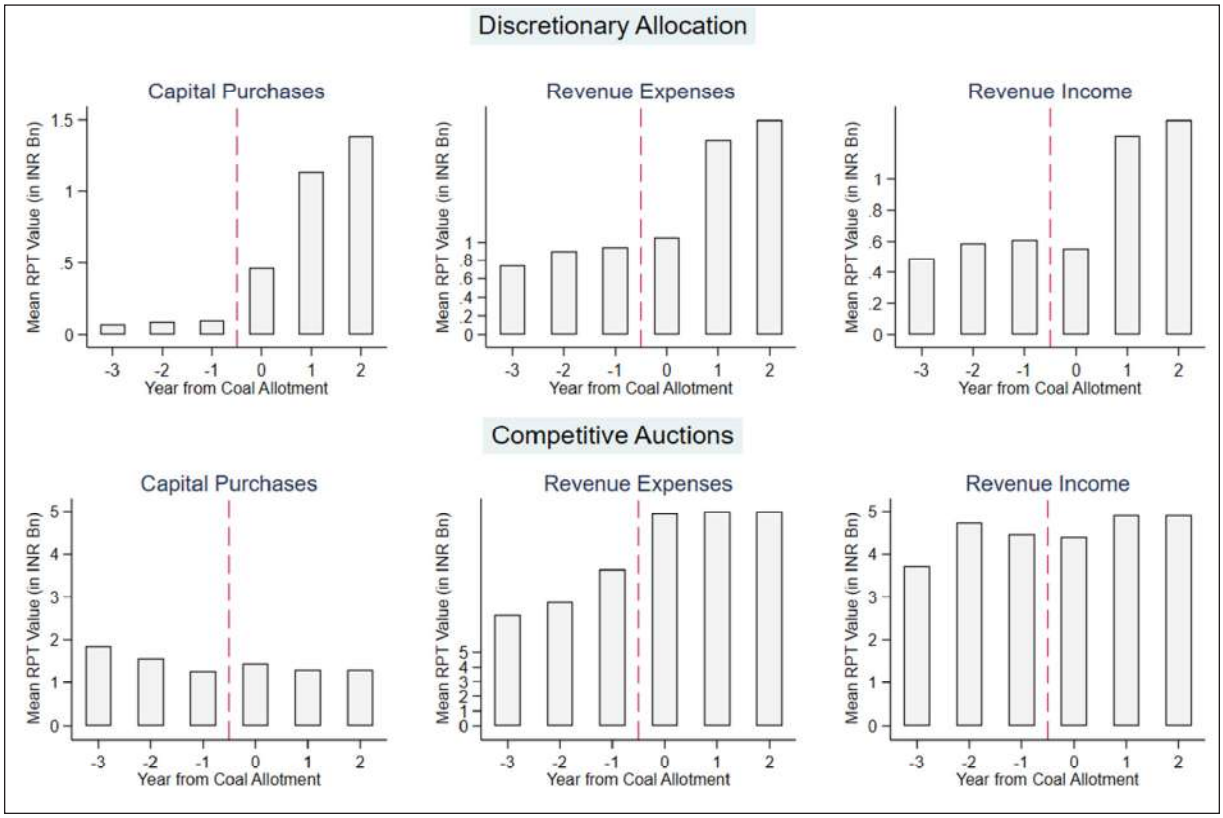
RPTs to unlisted/foreign entities and tax havens

3.30 Figure 14 shows RPTs with unlisted/ foreign entities and related parties that are based out of internationally recognised tax havens. Unlisted/foreign entities are either individuals or unlisted domestic enterprises or enterprises incorporated in a foreign jurisdiction. As such entities are harder for the domestic enforcement authorities to track, RPTs with such entities are likely to manifest for purposes of opacity. Similarly, tax havens are charaterised by opaque disclosure regulations and hence serve as an ideal sink to tunnel corporate wealth away from other stakeholders. As the figure shows, firm behaviour is nearly identical to the earlier figures, with capital purchases, revenue expenses and revenue income showing a remarkable increase post the receipt of the coal block in the committee-based allotment process, while no such increase is seen following competitive auctions.

Director compensation and consulting expenses

3.31 The authors also find evidence that one-time payments to directors like commissions, perquisites and consulting expenses increase following the discretionary allocation. Director commissions increase by 12 per cent, director perquisites by 5.7 per cent and other consulting expenses by

Figure 14 : RPTs to Unlisted/Foreign counterparties and tax havens



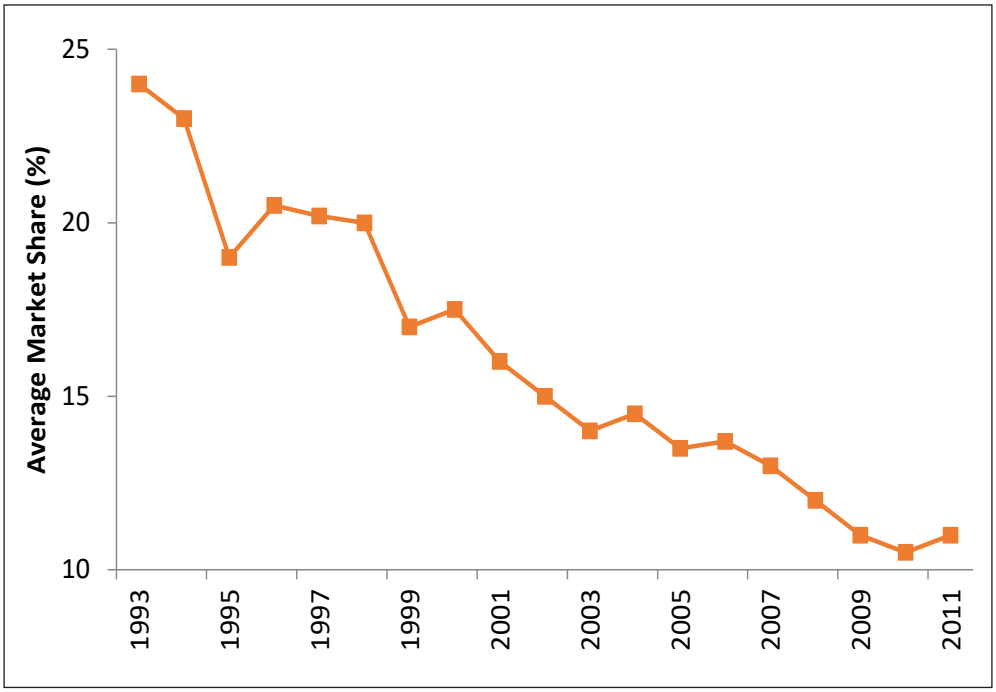
Source: Abraham, Chopra, Subramanian & Tantri (2018)

7.6 per cent. We find no increase in the case of salary expenses for normal employees suggesting that only the directors benefit post the discretionary allocation. In the case of auctions, we see no such increases. In fact, we find that director salaries decrease post the auction-based allotment.

Firm productivity and performance

3.32 Figure 15 shows the evolution of the average market share of firms that received the committee-based allocation from 1993 to 2011. There has been a steady decline in the market share of these firms despite them getting a windfall gain from the discretionary allocation. The gain of an almost free resource should have aided firm productivity and business fundamentals. Instead the market share has fallen over the years - suggesting a case of Dutch disease – firms that got the free resource diverted efforts towards the tunnelling of the windfall gain instead of towards productive business activity.

Figure 15: Market share of allottee firms (committee-based allocation)



Source: Abraham, Chopra, Subramanian & Tantri (2018)

3.33 Indeed, the authors find that total income declines by 54.9 per cent over a 3-year period from the date of allocation as compared to firms that did not receive an allocation, total expenses reduce by 58.7 per cent and PAT by 37.8 per cent. There also seems to be a loss of productive assets - total assets reduce by 76.2 per cent and Land and Building reduces by 48.2 per cent and Plant and Machinery reduces by 51.1 per cent. They find no such decline in the case of competitive auctions.

3.34 Overall, the evidence suggests that discretionary allocation of natural resources by a committee provides avenues for rent-seeking. Subsequently, firm owners divert their focus towards tunnelling away these rents rather than furthering productive

economic activities. A shift to market-based allocation of resources takes these avenues away, encourages productive economic activity and generates more wealth.

Riskless Returns: The Case of Wilful Default

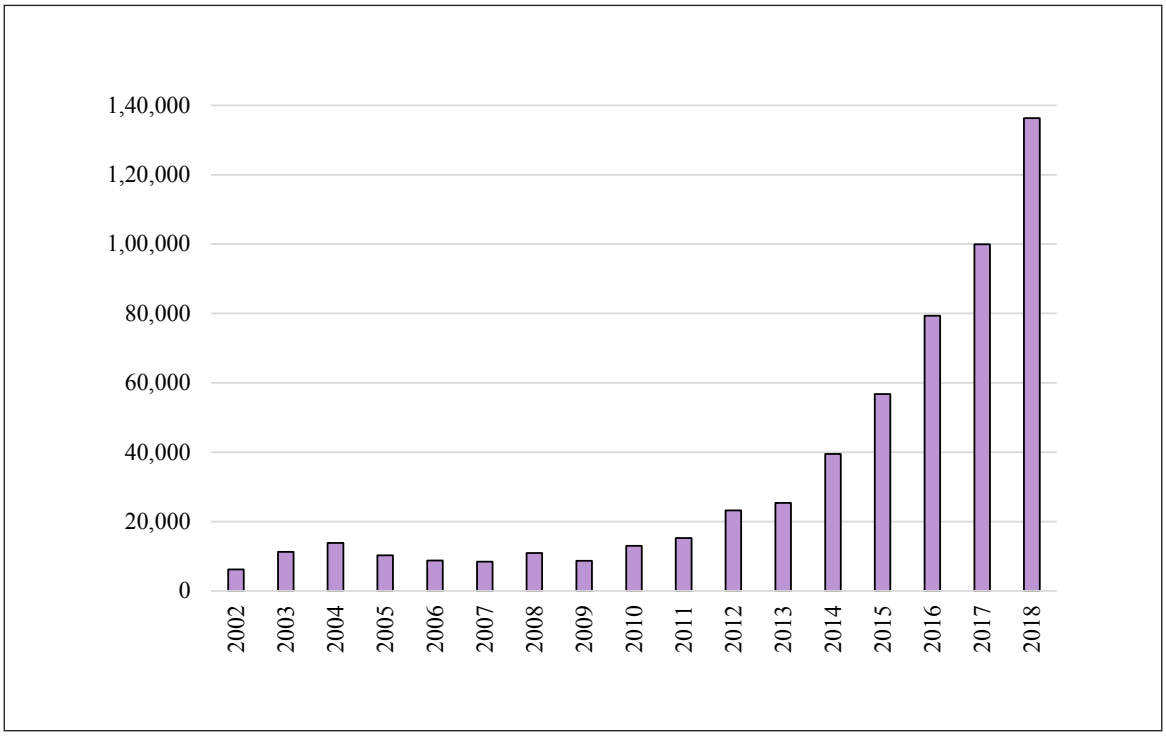
3.35 Although the primary tenet of any investment is that high expected rewards come with high risk, many Indian firms have found a peculiar way to reap rewards without commensurate risk. Many firms enjoy profits in good times but often rely on the state or their financiers to bail them out in bad times. A particularly egregious form of such riskless return is the phenomenon of wilful default – a classic case of a one-way gamble in which "heads, the promoter wins; tails, the lender loses". Wilful default occurs when firms take loans, divert the proceeds out of the firm for the personal benefit of owners, default on loans and declare bankruptcy, thereby expropriating a range of stakeholders – lenders, minority shareholders, employees, regulators and state coffers.

3.36 The RBI defines wilful defaulter as a firm that has defaulted in meeting its repayment obligations even though it has the capacity to honour these obligations. A firm could also be branded a wilful defaulter if it uses the funds for purposes other than what is sanctioned by the lender, siphons the money out to related parties or removes the assets used to secure the loan.

3.37 Every rupee lent to a wilful defaulter constitutes an erosion of wealth. Money lent to a genuine business creates assets, which generate profit and employment. On the other hand, money lent to a firm that has no intention of investing the proceeds in *ex-ante* profitable projects is money wasted. Besides making cronies rich, it contributes nothing to the economy.

3.38 Figure 16 and Figure 17 show the wealth that wilful defaulters have taken out of the Indian economy. As of 2018, wilful

Figure 16: Aggregate outstanding amount owed by wilful defaulters (₹ crores)

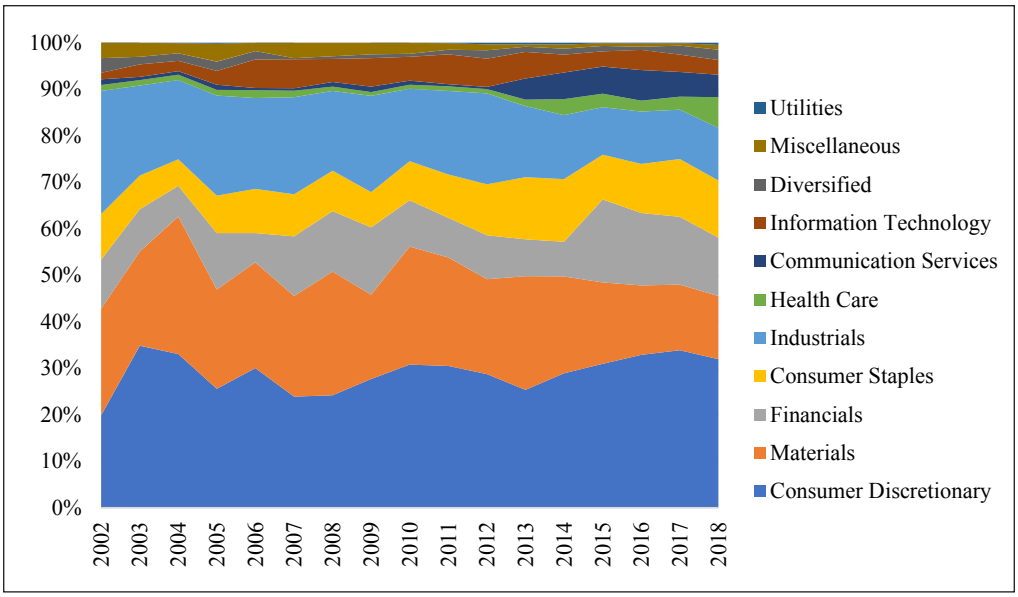


Source: TransUnion CIBIL Suits Filed database

defaulters owed their respective lenders nearly ₹1.4 lakh crores. The number has been steadily rising since the early part of the current decade. The defaulters are spread across several sectors, with manufacturing firms constituting the largest share.

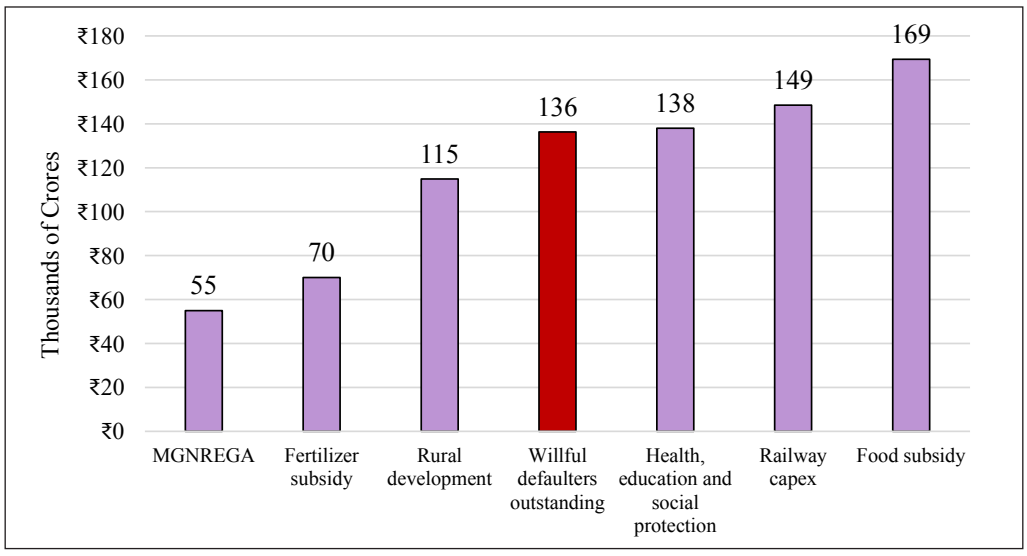
3.39 To put in perspective the quantum of wealth eroded by wilful defaulters, consider Figure 18, which compares the amount owed by wilful defaulters in 2018 with the Union budget allocations towards citizen welfare in the same year. Had the money siphoned away by wilful defaulters stayed in the economy, the resulting wealth would have been equivalent in value to that needed to *double* the allocation towards health, education

Figure 17: Split of aggregate outstanding amounts of wilful defaulters by sector



Source: TransUnion CIBIL Suits Filed database, CMIE Prowess database

Figure 18: Wealth destroyed by wilful defaulters in comparison to Union Budget Allocations



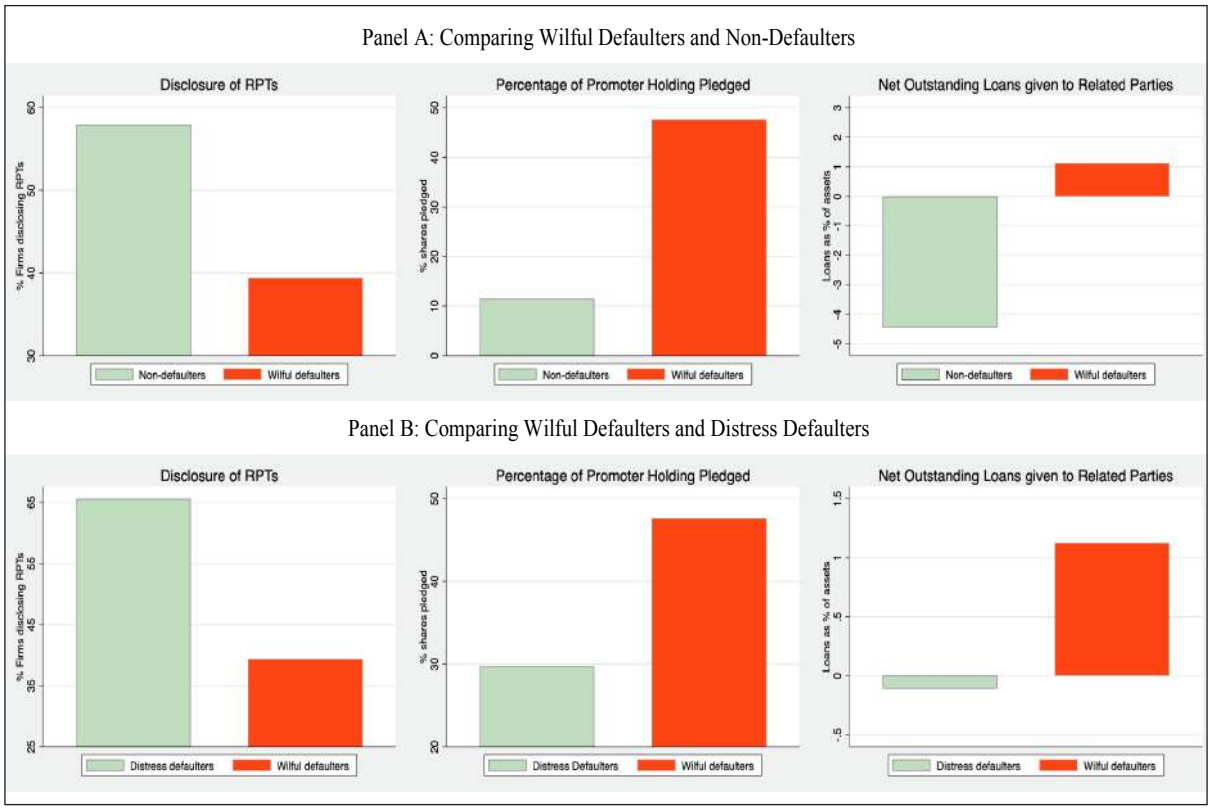
Source: TransUnion CIBIL Suits Filed database, Union budget reports

and social protection, *double* the allocation towards rural development, or *triple* the allocation towards MGNREGA.

3.40 Figure 19 depicts three distinguishing characteristics of wilful defaulters in India. First, wilful defaulters tend to be more opaque than both non-defaulters and firms that default out of genuine distress (hereafter distress defaulters). Whereas roughly 60 per cent of non-defaulters and distress-defaulters provide related party disclosures in their annual report as legally required in India, barely 40 per cent of wilful defaulters do.

3.41 Second, promoters at the helm of wilfully defaulting firms pledge, on average, almost 50 per cent of their shareholding to lenders. In contrast, the corresponding figures for distress defaulters and non-defaulters are 30 per cent and 11 per cent respectively. While the pledging of shares prevails in advanced economies also, it has taken a peculiar form in India. Promoters, especially

Figure 19: Wilful defaulters tend to be opaque about their RPTs, pledge substantial proportions of promoter shares, and advance large loans to related parties



Source: CMIE Prowess, TransUnion CIBIL Suits Filed database.
Note: A firm is said to have made an RPT disclosure if its annual filing contains an RPT section (even if the firm states it had no transactions that year). Net outstanding loans refers to the total balance of loans given by firms to their related parties, net of loans taken from them. It is expressed as a percentage of the firm's total assets. Wilful defaulters are those classified as such in the CIBIL Suits Filed database, while distress defaulters are those with a default credit rating at least once in the sample period but those who have not been classified as 'wilful defaulters'. Non-defaulters are all other firms. Data spans 2002-18

those of wilful defaulter firms, pledge shares to obtain financing not for external ventures or personal endeavours but for the firm's own projects. Such a practice is suboptimal for lenders as the value of collateral used to secure loans should not correlate with the value of the project being funded. When a firm is in distress, the value of pledged shares falls. Precisely when it is required to, the collateral stops serving its purpose. As promoters have no personal liability beyond their pledged shares, they care little when the pledged shares fall in value as any reduction in their wealth is offset by rents they have already extracted. In many cases, promoters are unconcerned about losing control of the company as they may have already siphoned out the extracted rents before the share price collapse.

3.42 Third, wilful defaulters make large loans to related parties. The outstanding balance of loans given to related parties for distress defaulters and non-defaulters is negative, meaning that the average firm in the sample is a net recipient of loans from related parties. Wilful defaulters, on the other hand, are net givers of loans. Peculiarly, they are net recipients of external loans and defaulters on these loans at the same time that they are net givers of loans to their related parties. This is consistent with a theory of issuing debt only to siphon the proceeds out of the firm for the personal benefit of owners and their cronies.

3.43 The cost of such wilful default is borne by the common man. Public sector banks get their equity from taxes paid by the common man. They get their debt from deposits made by the common man. When unscrupulous firms willfully default, it is the common man who loses. While most policy initiatives aim to redistribute wealth from the rich to the poor, wilful default achieves the opposite. Rich businesses that want to get richer use wilful default as an instrument to redistribute wealth *away* from the poor.

3.44 Not only that, wilful default if unchecked would increase the cost of borrowing for everyone else, including genuine businesses with profitable investment opportunities before them. In fact, at high enough credit spreads, adverse selection may force genuine borrowers to exit the market altogether, leaving only cronies in the market and resulting in a market failure that slows economic growth, employment and wealth creation capacity.

CONCLUSION

3.45 While pro-business policies increase competition, correct market failures, or enforce business accountability, pro-crony policies hurt markets. Such policies may promote narrow business interests and may hurt social welfare because what crony businesses may want may be at odds with the same. For example, crony businesses may lobby the government to limit competition in their industry, restrict imports of competing goods or reduce regulatory oversight. These initiatives enhance the lobbying group's income but undermine markets and reduce aggregate welfare. Thus, pro-crony policy can inadvertently end up being hurtful to businesses in general.

3.46 Pro-business policies, for example, those that make it easy to start a business, register property, enforce contracts, obtain credit, bid for natural resources, get permits, and resolve insolvency help firms to function effectively and thereby enable competitive

markets. Making it easy to do business in a jurisdiction furthers the eventual goal of maximizing social welfare. Reforms aimed in this direction must continue. However, catering to the needs of crony businesses alone without regard for other businesses and the remaining stakeholders in the economy may end up benefitting the preferentially treated firms at the expense of other firms, market efficiency and social welfare.

CHAPTER AT A GLANCE

- India's aspiration to become a $5 trillion economy depends critically on promoting "pro-business" policy that unleashes the power of competitive markets to generate wealth, on the one hand, and weaning away from "pro-crony" policy that may favour specific private interests, especially powerful incumbents, on the other hand. Economic events since 1991 provide powerful evidence supporting this crucial distinction.
- Viewed from the lens of the Stock market, which captures the pulse of any economy, creative destruction has increased significantly after reform. Before liberalisation, a Sensex firm expected to stay in it for 60 years, which decreased to only 12 years after liberalisation. Every five years, one-third of Sensex firms are churned out, reflecting the continuous influx of new firms, products and technologies into the economy.
- Despite impressive progress in enabling competitive markets, pro-crony policies has destroyed value in the economy. For example, an equity index of connected firms significantly outperformed the market by 7 per cent a year from 2007 to 2010, reflecting abnormal profits extracted at common citizens' expense. In contrast, the index underperforms the market by 7.5 per cent from 2011, reflecting the inefficiency and value destruction inherent in such firms.
- Pro-crony policies as reflected in discretionary allocation of natural resources till 2011 led to rent-seeking by beneficiaries while competitive allocation of the same resources post 2014 have put an end to such rent extraction. Similarly crony lending that led to wilful default, wherein promoters have collectively siphoned off wealth from banks, led to losses that dwarf subsidies directed towards rural development.

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Undermining Markets: When Government Intervention Hurts More Than It Helps

04
CHAPTER

क्षणशः कणशश्चैव विद्याम् अर्थं च साधयेत्।
क्षणे नष्टे कुतो विद्या कणे नष्टे कुतो धनम्।।

Every moment one should learn, from every bit one should earn. If you waste a second you can't get knowledge and if you waste a bit u can't get money.

Government intervention, sometimes though well intended, often ends up undermining the ability of the markets to support wealth creation and leads to outcomes opposite to those intended. This chapter analyses four examples of anachronistic government interventions, though many more abound.

First, frequent and unpredictable imposition of blanket stock limits on commodities under Essential Commodities Act (ECA) neither brings down prices nor reduces price volatility. However, such intervention does enable opportunities for rent-seeking and harassment. For instance, imposition of stock limits on dal in 2006-Q3, sugar in 2009-Q1 and onions in September 2019 spiked up the volatility of the wholesale and retail prices instead of smoothening them – in contrast to its objective of easing pressure on prices. Around 76000 raids under ECA were conducted during 2019. Assuming a minimum of 5 persons involved in a raid, considerable administrative effort goes into enforcement of ECA. As the conviction rate, however, is abysmally low and raids have no impact on prices, the ECA only seems to enable rent-seeking and harassment. The Act is anachronistic as it was passed in 1955 in an India worried about famines and shortages; it is irrelevant in today's India and must be jettisoned.

Second, the regulation of prices of drugs through the DPCO 2013, has led to increase in the price of a regulated pharmaceutical drug vis-à-vis that of a similar drug whose price is not regulated. Our analysis shows that the increase in prices was witnessed for more expensive formulations than for cheaper ones and those sold in hospitals rather than retail shops, reinforcing that the outcome is opposite to what DPCO aims to do - making drugs affordable. The evidence across different commodities (pulses, sugar, onions and drugs) - not just onions or sugar where cartelisation is often suspected - and episodes spanning different time periods (2006-19) suggests that the ineffectiveness of ECA stems from unnecessary government intervention that undermines markets.

Third, government policies in the foodgrain markets has led to the emergence of Government as the largest procurer and hoarder of foodgrains – adversely affecting competition in these markets. This has led to overflowing of buffer stocks with FCI, burgeoning food subsidy burden, divergence between demand and supply of cereals and acted as a disincentive towards crop diversification.

Fourth, analysis of debt waivers given by States/Centre shows that full waiver beneficiaries consume less, save less, invest less and are less productive after the waiver when compared to the partial beneficiaries. The share of formal credit decreases for full beneficiaries when compared to partial beneficiaries, thereby defeating the very purpose of the debt waiver provided to farmers.

The chapter makes the case that each department and ministry in the Government must systematically examine areas where the Government needlessly intervenes and undermines markets. Note that the chapter does not argue that there should be no Government intervention. Instead, interventions that were apt in a different economic setting may have lost their relevance in a transformed economy. Eliminating such instances of needless Government intervention will enable competitive markets and thereby spur investments and economic growth.

4.1 Though India has made significant progress in enhancing economic freedom for firms and its citizens, it still counts among the shackled economies in the world. In the global indices of economic freedom, India ranks in the bottom half. The Index of Economic Freedom, which is brought out by the Heritage Foundation, and the Global Economic Freedom Index, which is brought out by the Fraser Institute, measure economic freedom as the freedom of choice enjoyed by individuals in acquiring and using economic goods and resources. In the Index of Economic Freedom, India was categorized as 'mostly unfree' with a score of 55.2 in 2019 ranking the Indian economy 129th among 186 countries, i.e., in the bottom 30 per cent of countries (Figure 1). In the component pertaining to "investment freedom", which measures the ease of flow of investment capital both internally and across the country's borders, India scores a low 40.0 on a scale of 0-100 (repressed) against the world average of 58.5. In the Index of Global Economic Freedom too, India ranks 79th among 162 countries with 108th rank in business regulation.

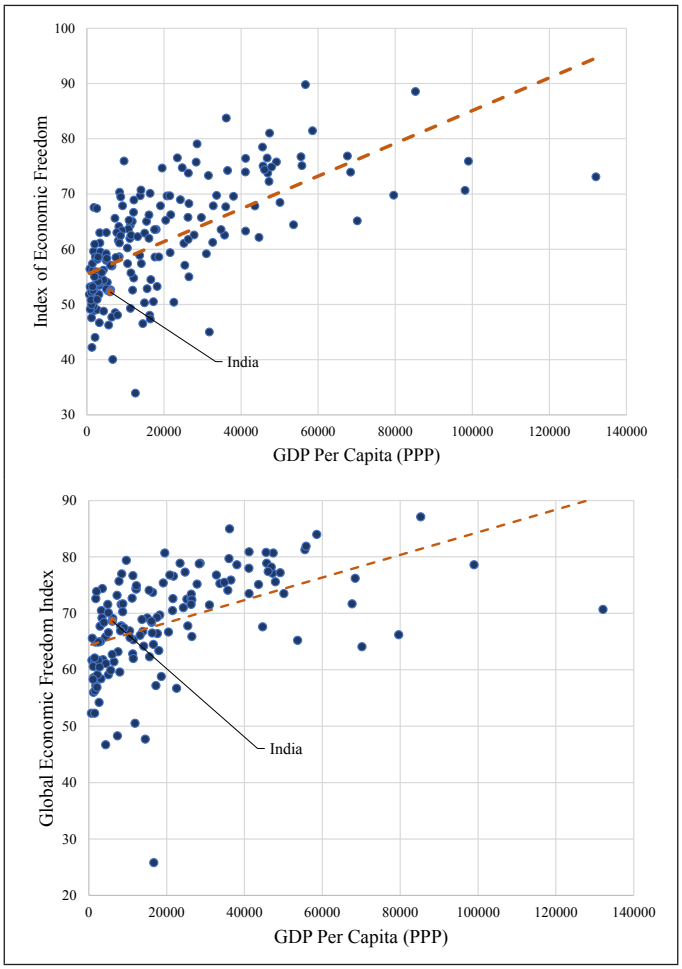
Figure 1: Relative Economic Freedom in India



Source: Index of Economic Freedom, 2019 accessed at https://www.heritage.org/index/

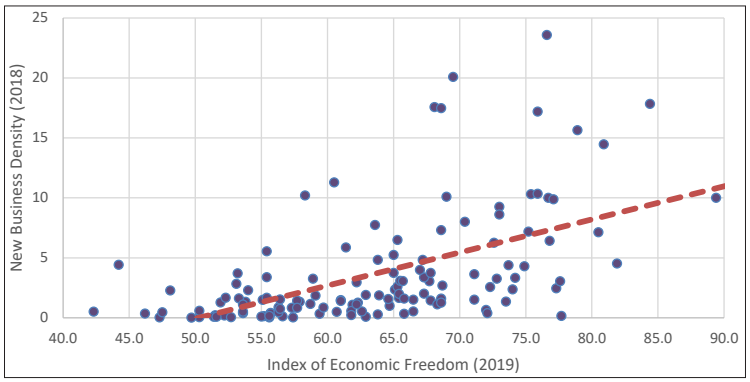
4.2 Economic freedom enhances wealth creation by enabling efficient allocation of entrepreneurial resources and energy to productive activities, thereby promoting economic dynamism. This is manifested in the close correlation of the ranks in the two referred indices of economic freedom with per capita GDP of the countries (Figure 2). The low rank in economic freedom makes it evident that India chains opportunities for wealth creation by shackling economic freedom for its citizens. Figures 3-6 show the cross-country correlation of the index of economic freedom with the density of registration of new business, the ease of doing business indicators, number of patents applied in a country, the number of

Figure 2: Correlation of Indices of Economic Freedom with Per Capita GDP



Source: Index of Economic Freedom accessed at https://www.heritage.org/index/ and Global Economic Freedom Index accessed at https://www.fraserinstitute.org/

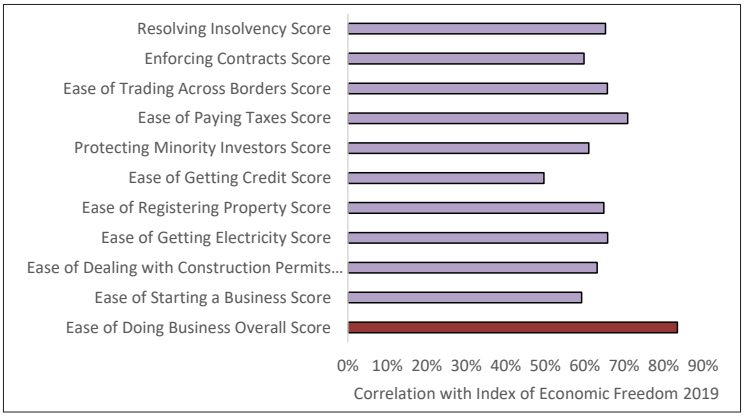
Figure 3: Correlation of IEF with density of new business registration



Source: Ease of Doing Business Database and Index of Economic Freedom accessed at https://www.heritage.org/index/

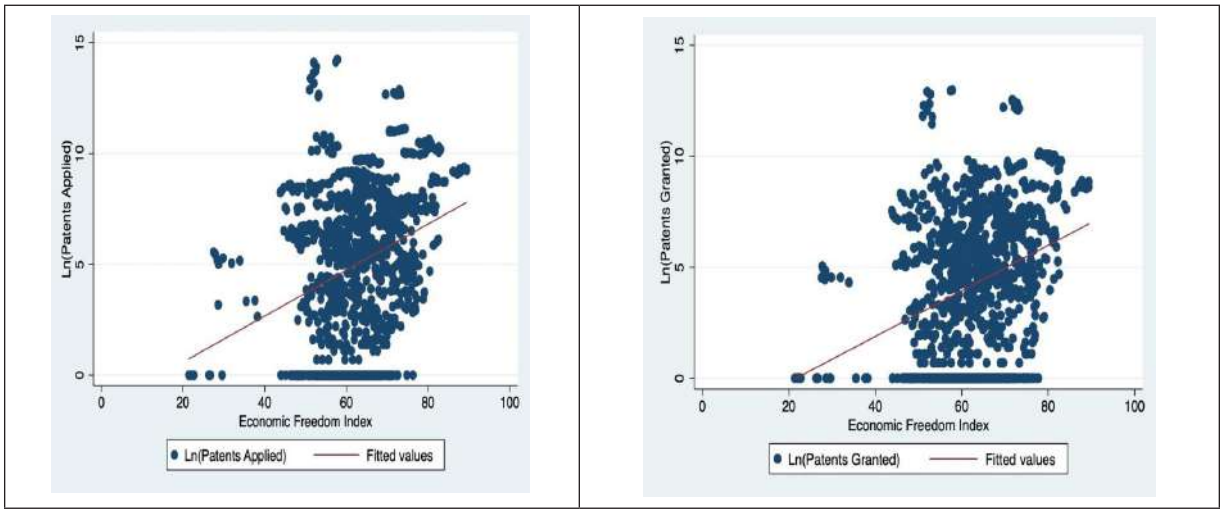
Note: The new business entry density is defined as the number of newly registered corporations per 1,000 working-age people (those ages 15–64). Units of measurement are private, formal sector companies with limited liability.

Figure 4: Correlation of Economic Freedom with Ease of Doing Business



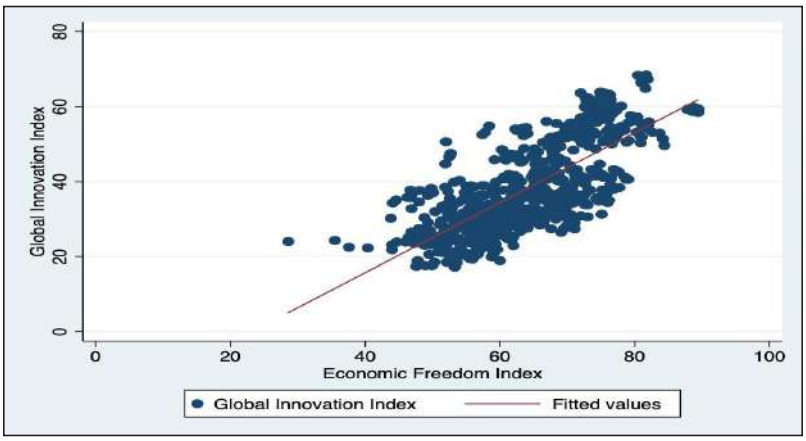
Source: Ease of Doing Business Database and Index of Economic Freedom accessed at https://www.heritage.org/index/

Figure 5: Correlation of Indices of Economic Freedom with Patents Applied and Patents Granted



Source: NBER patent data and Index of Economic Freedom accessed at https://www.heritage.org/index/

Figure 6: Correlation of Indices of Economic Freedom with Index of Innovation



Source: World Intellectual Property Organization (WIPO) database and Index of Economic Freedom accessed at https://www.heritage.org/index/

patents granted in a country and the index of innovation respectively. Thus, it is clear that economic freedom affects several aspects of wealth creation significantly.

4.3 While there is a case for Government intervention when markets do not function properly, excessive intervention, especially when markets can do the job of enhancing citizens' welfare perfectly well, stifles economic freedom. Government can affect markets either through direct participation (as a market maker or as a buyer or supplier of goods and services), or through indirect participation in private markets (for example, through regulation, taxation, subsidy or other influence). Any Government intervention of the first kind, however, affects the dynamic interaction of supply and demand in markets and thereby determination of 'equilibrium' market prices. When the price is too high, there is an excessive amount of the product for sale compared to what people want. When the price is too low, it causes consumers to want more of the product than producers have available. In both cases, serious welfare loss results because not enough of the good is sold. The wasted chance to create both producer and consumer welfare from such sales leads to 'deadweight loss' - income that is lost forever. In addition to creating deadweight loss, an artificially high price transfers profits from consumers to producers and creates opportunities for rent seeking and an artificially low price leads to transfer of profits from producers to consumers and leads to low incentive to invest further and aggravates the scarcity of the product.

4.4 As we illustrate in this chapter, the Indian economy is replete with examples where Government intervenes even if there is no risk of market failure, and in fact, in some instances its intervention has *created* market

Box 1: Essential Commodities Act, 1955

Essential Commodities Act (ECA), 1955 was enacted to control the production, supply and distribution of, and trade and commerce in, certain goods considered as essential commodities. The Act itself does not lay out Rules and Regulations but allows the States to issue Control Orders related to dealer licensing, regulate stock limits, restrict movement of goods and requirements of compulsory purchases under the system of levy. The Act also provides for action to confiscate the stock seized; to suspend/ cancel licences, if any and impose punishments like imprisonment. The Act also gives the power to fix price limits, and selling the particular commodities above the limit will attract penalties. Most of the powers under the Act have been delegated by the Central Government to the State Governments with the direction that they shall exercise these powers. Food and civil supply authorities in States execute the provisions of the Act.

The major commodity groups included in the Act are

(i) Petroleum and its products, including petrol, diesel, kerosene, Naphtha, solvents etc
(ii) Food stuff, including edible oil and seeds, vanaspati, pulses, sugarcane and its products like, khandsari and sugar, rice paddy
(iii) Raw Jute and jute textiles
(iv) Drugs- prices of essential drugs are still controlled by the DPCO
(v) Fertilisers- the Fertiliser Control Order prescribes restrictions on transfer and stock of fertilizers apart from prices
(vi) Onion and Potato
(vii) Seeds of food crops, fruits and vegetables, cattle fodder, Jute seeds and Cotton seeds

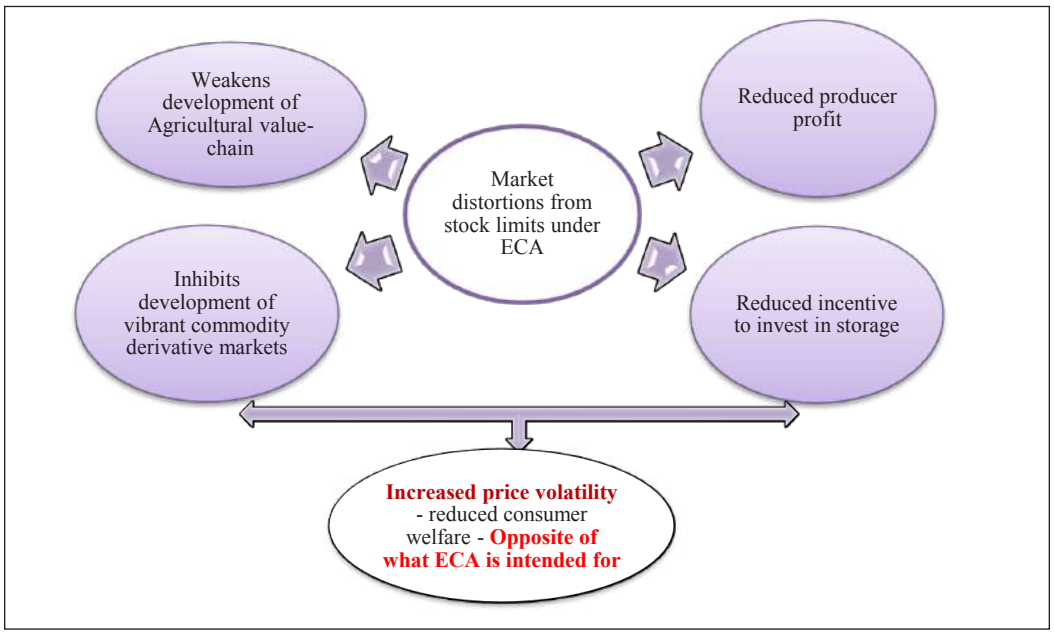
failures. This may be partly due to the legacy of post-independence economic policies which the country followed. However, as the role of markets has been recognized globally, it is only natural that markets are allowed to work to enable quick wealth creation and thereby economic growth.

ESSENTIAL COMMODITIES ACT (ECA), 1955

4.5 The Essential Commodities Act (ECA), 1955 controls the production, supply and distribution of, and trade and commerce in, certain goods such as vegetables, pulses, edible oils, sugar etc., which are treated as essential commodities. Under the Act, the powers to implement the provisions of the Act are delegated to the States. When the price of any of these essential commodities rises, the regulator can impose stockholding limits on the commodity, restrict movement of goods, and mandate compulsory purchases under the system of levy. Consequently, all wholesalers, distributors, and retailers dealing in the product must reduce their inventories to comply with the holding limit. The purported aim of this Act is to ensure affordability of essential commodities for the poor by restricting hoarding. It is an overarching legislation regulating agricultural marketing and production.

4.6 The ECA, however, affects the efficient development of agricultural markets by creating market distortions (Figure 7). As agriculture is a seasonal activity, it is essential to store produce for the off-season to ensure smoothened availaibility of a product at stable prices throughout the year. Therefore, producers face an inherent trade-off between building an inventory in the harvest season and drawing down inventory in the lean season. ECA interferes with this mechanism by disincentivising investments in warehousing and storage facilities due to frequent and unpredictable imposition of stock limits. As stockholding limits apply to the entire agriculture supply chain, including wholesalers, food processing industries and retail food chains, the Act does not distinguish between firms that genuinely need to hold

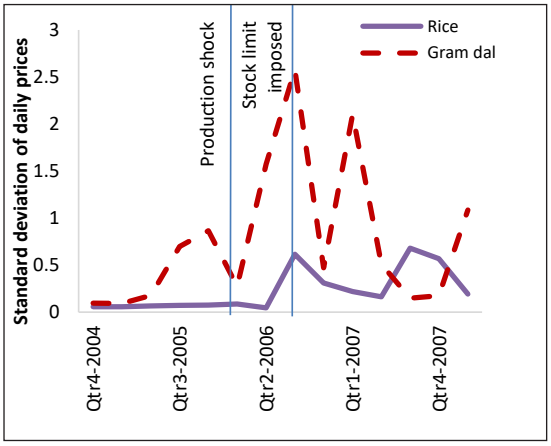
Figure 7: Agricultural Market distortions due to ECA



stocks owing to the nature of their operations, and firms that might speculatively hoard stocks. Further, this reduces the effectiveness of free trade and flow of commodities from surplus areas to markets with higher demand. ECA also affects the commodity derivative markets as traders may not be able to deliver on the exchange platform the promised quantity, owing to stock limits. The Act distorts markets by increasing uncertainty and discouraging the entry of large private sector players into agricultural-marketing. These market distortions further aggravate the price volatility in agricultural commodities- the opposite of what it is intended for.

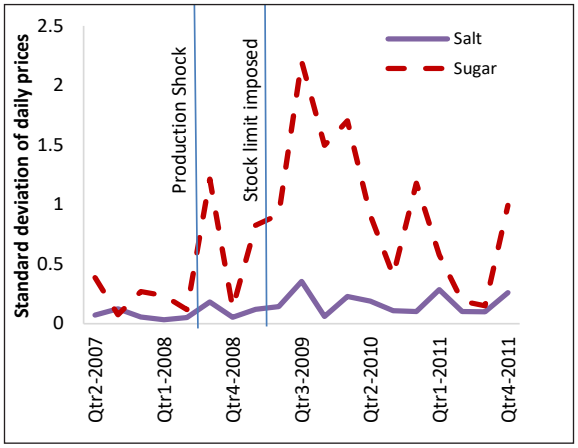
4.7 This market distortionary impact is clearly evident from several experiences. The ineffectiveness of stock limits in controlling price volatility, as described above, is not restricted to a specific commodity or a specific time period. The figure below indicates the standard deviation of prices of pulses and sugar, on which stock limits were notifioed in 2006-Q3 and 2009-Q1 respectively. These limits had limited success in containing the volatility of prices, even two to three years after the imposition (see Figure 8a and 8b).

Figure 8a: Volatility in Retail prices of Dal even after stock limits under ECA were imposed in 2006 - Q3



Source: Computed from data available from Deparment of Consumer Affairs (DCA)

Figure 8b: Volatility in Retail prices of Sugar even after stock limits under ECA were imposed in 2009 - Q1

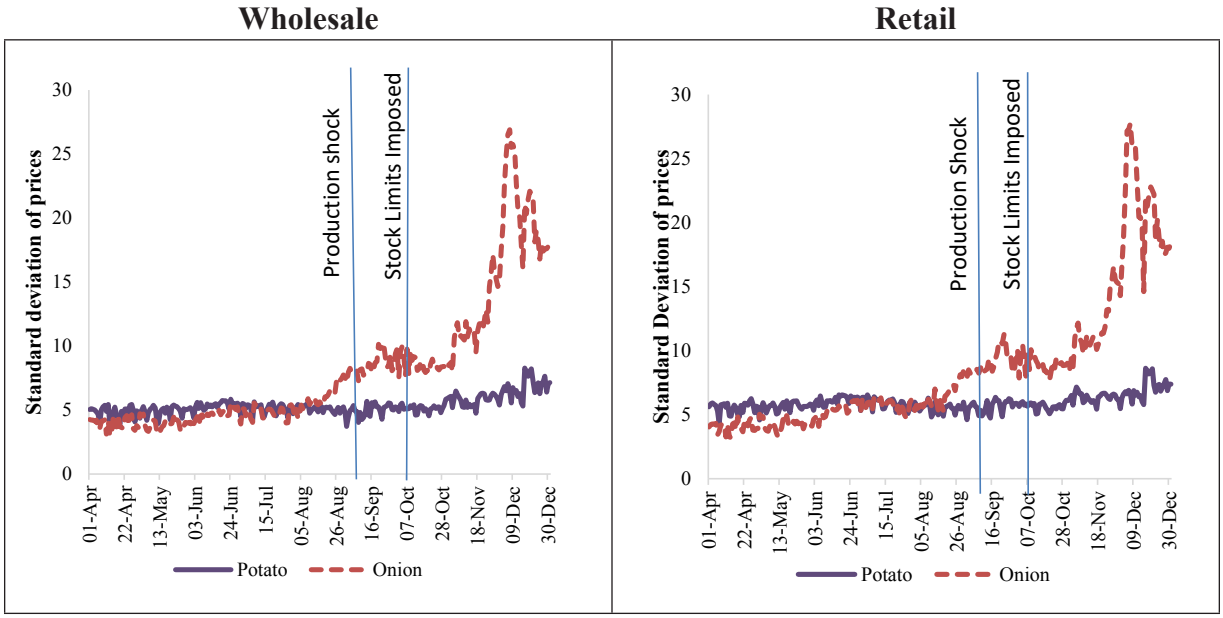


Source: Computed from data available from Deparment of Consumer Affairs (DCA)

4.8 The recent experience with rise in onion prices illustrate the same phenomenon. There are three harvesting seasons in India for the onion crop viz., Kharif (October-December), Late Kharif (January-March) & Rabi (March-May). There is a period from around May to September in the year wherein the demand for onions has to be met by the stocks kept by the traders/wholesalers. Due to heavy rains in August-September, 2019, the kharif crop of onions was adversely affected leading to lower market arrivals and upward pressure on onion prices. This kharif crop usually caters to the demand during the period from October to December till fresh produce from late kharif crop comes in the market. In view of a sustained increase in onion prices, stock limits under the ECA were imposed across the country on September 29, 2019 (the limits equaled 100 quintals on retail traders and 500

quintals on wholesale traders which were subsequently reduced to 20 quintals and 250 quintals respectively). The stock limits were imposed to control the price rise of onions by facilitating the release of stocks in the market and preventing hoarding by traders to enhance supply in the market. However, the imposition of stock limits has had no effect on the volatility of the wholesale and retail prices for onions after September, 2019 (Figure 8c). The lower stock limits must have led the traders and wholesalers to offload most of the kharif crop in October itself which led to a sharp increase in the volatility from November, 2019 onwards. The volatility in retal prices mirrors that in wholesale prices.

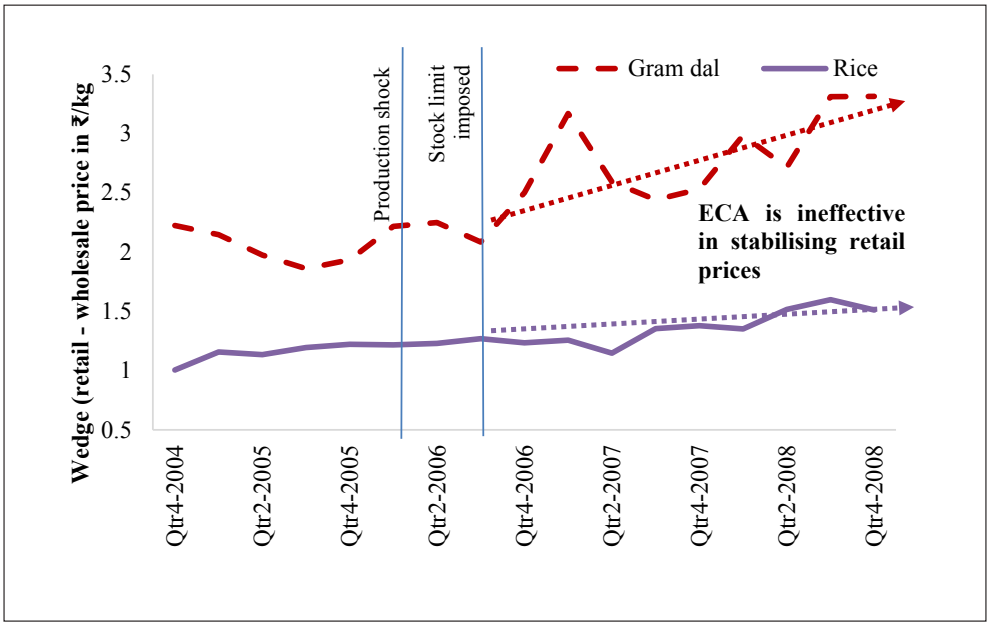
Figure 8c: Volatility in Retail and Wholesale prices of Onion in 2019 even after stock limits were imposed under ECA



Source: Computed from data available from Department of Consumer Affairs (DCA)
Note: Both onion and potato are covered under ECA but Stock Limits were imposed on onion since 29th September, 2019 and not on potato

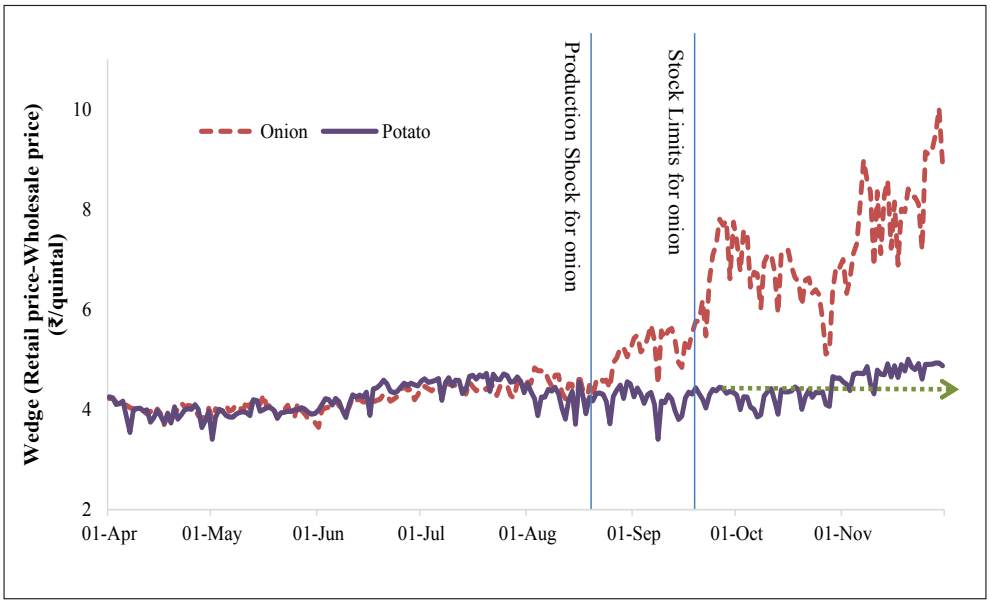
4.9 This effect of the imposition of stock limits is also evident in the trend of the wedge between the wholesale and retail prices of pulses and onion (Figure 9a and 9b). In the case of onions, the wedge has shown a sharp increasing trend from November, 2019 onwards as most of the kharif crop, which itself was lower, would have had to be offloaded in the market in October itself. Absent government intervention through ECA, traders would store a part of their produce to ensure smooth availaibility of a product at stable prices throughout the year. The increasing wedge between wholesale and retail prices reinforces that ECA reduces welfare of consumers. In the long term, the Act disincentivizes development of storage infrastructure thereby leading to increased volatility in prices following production/ consumption shocks – the opposite of what it is intended for. The evidence across different commodities and different time periods - not just onions or sugar where cartelisation is often suspected - suggests that the ineffectiveness of ECA stems from unnecessary government intervention that undermines markets.

Figure 9a: Increasing wedge between Retail and Wholesale prices of gram dal (pulse) even after ECA is imposed



Source: Computed from data available from Department of Consumer Affairs (DCA).
Note: Both rise and pulses are covered under ECA, and stock limits were imposed on pulses on 28th August, 2006. Stock limits were imposed on rice also in 2008, at the end of the period considered in this chart.

Figure 9b: Increasing wedge between Retail and Wholesale prices of Onion in 2019 even after ECA is imposed



Source: Computed from data available from Department of Consumer Affairs (DCA).
Note: Both onion and potato are covered under ECA but Stock Limits were imposed on onion since 29th September, 2019 and not on potato

Figure 10a: Correlation of raids conducted under ECA with wedge between retail and wholesale onion prices

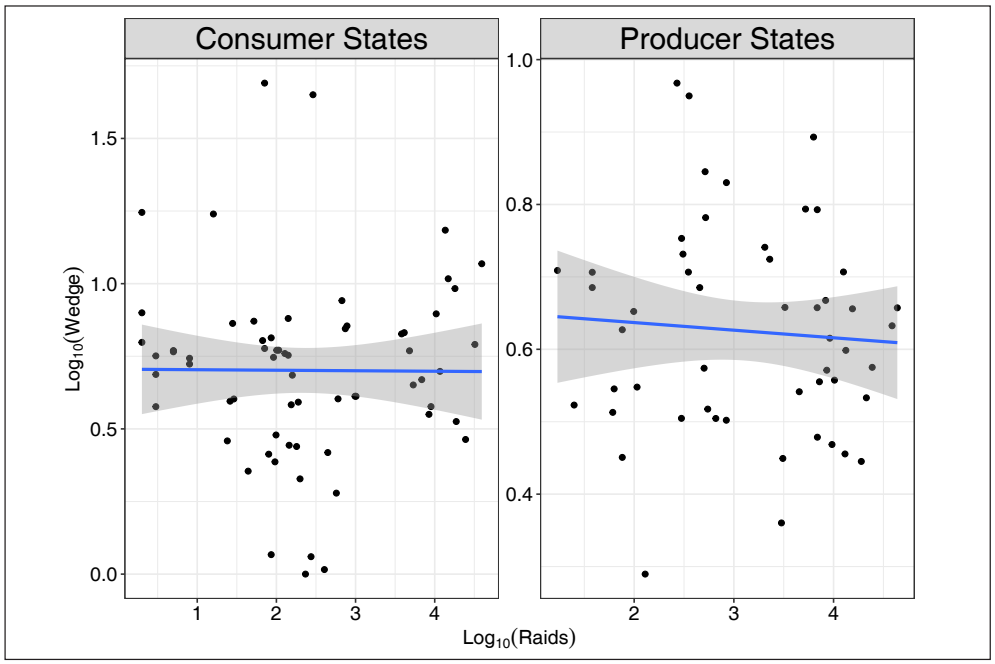
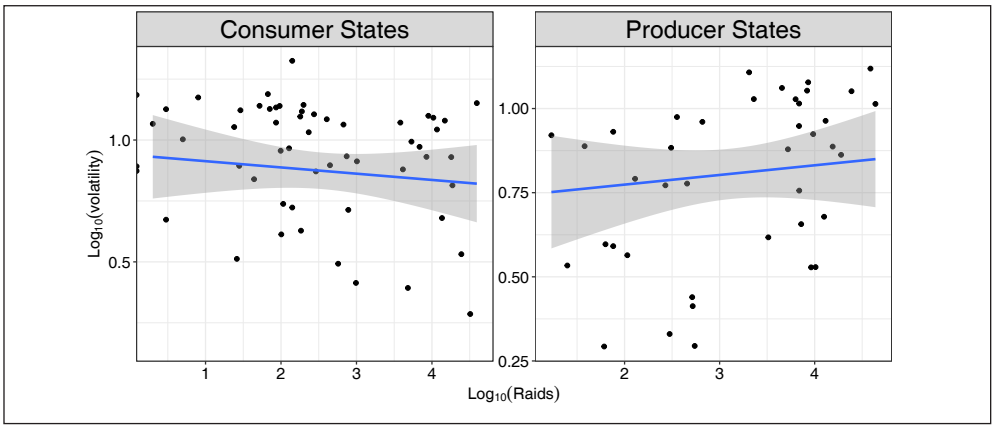


Figure 10b: Correlation of raids conducted under ECA with volatility of retail and wholesale onion prices

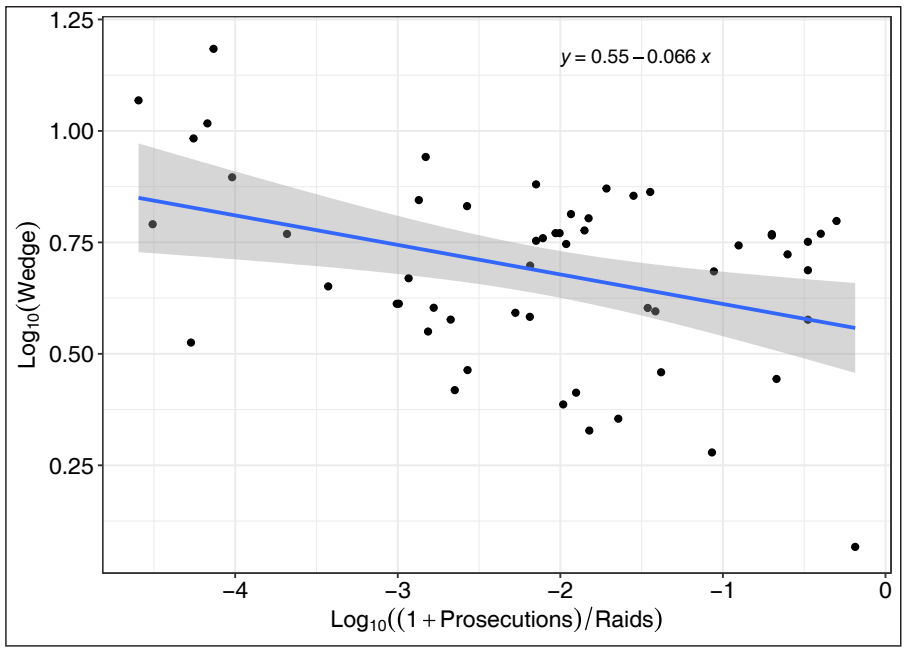


Source: Compiled from data available from Department of Consumer Affairs (DCA)

4.10 Under the ECA, states are required to enforce the adherence to any stock limits specified under the Act. Given that around 76000 raids were conducted during 2019 and assuming that a minimum of 5 persons are involved in a raid, a considerable administrative effort is utilized for the enforcement of the Act. Our analysis shows that such raids conducted by States have had no impact on both the wedge between retail and wholesale onion prices and volatility in these prices in consumer or producer states, thereby raising concerns on their effectiveness (Figure 10).

4.11 Our analysis shows that in states that are primarily consumer of essential commodities, there is a negative relationship between the

Figure 11: Correlation of Prosecution with wedge between retail and wholesale prices of onion



Source: Compiled from data available from Department of Consumer Affairs (DCA)

probability of being caught (reflected by the ratio of prosecution to raids) and wedge between retail and wholesale prices. This shows that ECA is only effective when it is executed properly (Figure 11). As per the reports received from the State Governments/ UT Administrations, the conviction rate under the Act is abysmally low at 2-4 per cent on an average. As on 16.12.2019 which is the latest available from DCA, total raids conducted in 2019 under ECA were 76,033 but number of persons convicted were only 2941, which equals only 3.8 per cent of the total raids conducted. This indicates that the raids under ECA may be only leading to harassment of traders, thereby adversely affecting the role of trade in the marketing of the given commodity.

4.12 A beginning was made by setting up of the Price Stabilization Fund (PSF) in 2014-15 to help regulate the price volatility of important agri-horticultural commodities like onion, potatoes and pulses. It provides for maintaining a strategic buffer of aforementioned commodities for subsequent calibrated release to moderate price volatility and discourage hoarding and unscrupulous speculation. This needs to be strengthened further as it supplements the market forces rather than substitute them which the ECA does.

4.13 The ECA was enacted at a time when speculative hoarding and black marketing was a threat as agricultural markets were fragmented and transport infrastructure was poorly developed. But the Act, while penalising speculative hoarding, also ends up penalising the much desirable consumption-smoothing that storage provides. With the agricultural markets in India increasingly becoming more integrated and competitive, the utility of the Act is dubious and is incompatible with development of an integrated competitive national market for food. The anti-hoarding provisions of ECA discourage open reporting of stock holdings, storage capacities, trading and carry forward

positions. There is no aggregated data of the total private storage capacity available in the country, which would enable policymakers to assess the impact of any production shocks on the prices. Besides discouraging investment in modern methods of storage and in market intelligence, the lack of information on trades makes it harder for market participants to make accurate forecasts for the future. Supporting development of commodity futures markets would help efficient discovery of market expected future prices, which can provide a better basis for private storage decisions and avoid 'peaks' and 'troughs' in prices. Development of effective forecasting mechanisms, stable trade policies, and increasing integration of agricultural markets can serve the purpose of stabilising prices of agricultural markets more efficiently than government fiat imposed through ECA.

DRUG PRICE CONTROLS UNDER ECA

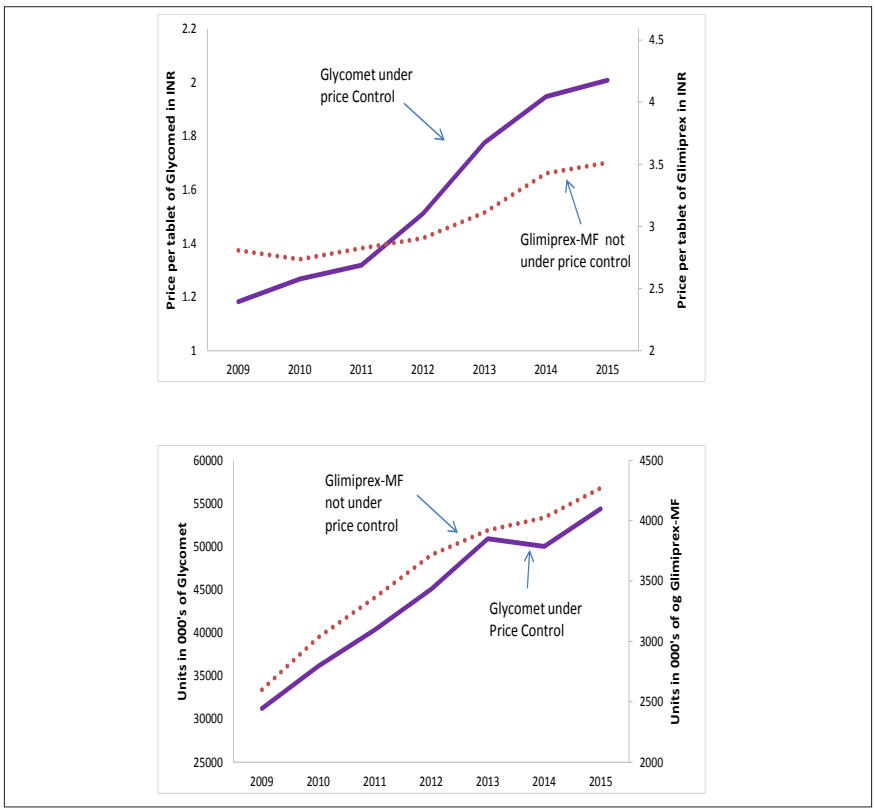
4.14 Given the important task of ensuring access to essential lifesaving drugs and to avoid poor households from falling into poverty, Governments often resort to price controls for drugs. In India, the Government has historically relied on price controls to regulate the prices of pharmaceutical drugs through the National Pharmaceutical Pricing Authority (NPPA) and Drug (Prices Control) Order (DPCO). The National List of Essential Medicines (NLEM), prepared by Ministry of Health and Family Welfare, is a list of medicines considered essential and high priority for India's health needs. It is based on aspects like prevalence of disease in the population, safety and efficacy of the medicine, and current affordability. DPCOs are issued by the Government, in exercise of the powers conferred under section 3 of the ECA to ensure that the medicines listed under NELM are available at a reasonable price to the general public.

4.15 To examine carefully the impact of the DPCO order on the price and quantity of essential drugs, we undertake the following comparison. Consider Glycomet (Metformin) and Glimiprex-MF (Glimepiride+Metformin) both of which are used for controlling high blood sugar. Glycomet came under price control in DPCO, 2013 while Glimiprex-MF did not. Therefore, a comparison of the before-after change in price and quantity consumed for Glycomet vis-à-vis that for Glimiprex-MF controls for the effect of all other confounding factors such as demand and supply of drugs in this category. This comparison, therefore, estimates the pure effect of the DPCO order. Figure 12 shows that the price of Glycomet actually increased more than that for Glimiprex-MF after DPCO, 2013. It, however, had no effect on the quantity consumed, which is consistent with pharmaceutical drugs being an essential commodity for which the demand is inelastic, or insensitive, to the changes in price.

4.16 Our estimates also show that the prices of drugs that came under DPCO, 2013 increased on average by ₹ 71 per mg of the active ingredient. For drugs that were unaffected by DPCO, 2013, the prices increased by ₹ 13 per mg of the active ingredient. The difference-in-difference estimate in prices was 58 per mg of the active ingredient, which was statistically significant at 5 per cent (Figure 13). The difference-in-difference in quantities was statistically indistinguishable from zero.

4.17 To parse out the effect of the DPCO order, we separate formulations by those that are sold primarily through retail outlets and those that are primarily sold through hospitals. The prices of formulations that came under DPCO, 2013 and that were mostly sold at hospitals increased by ₹99 per mg. In the case of formulations mostly sold in hospitals that were unaffected by DPCO, 2013, the prices increased by only 25 per mg (Figure 14). Thus, the difference-

Figure 12: Effect of DPCO, 2013 on Prices of Glycomet (regulated) vs Glimiprex-MF (unregulated)



Source: IMS Health, Survey Calculations

Box 2: Drugs Prices Control Order (DPCO)

The Drugs Prices Control Order (DPCO) is an order issued under Sec. 3 of Essential Commodities Act (ECA), 1955 that seeks to regulate the prices of pharmaceutical drugs. The DPCO, among other things, specifies the list of drugs that come under the price ceiling and the formula for calculating the ceiling price. The National List of Essential Medicines (NLEM) lists the pharmaceutical drugs that fall under price control. The DPCO, 2013 for instance, contains 680 scheduled drug formulations spread across 27 therapeutic groups whose prices are regulated.

National Pharmaceutical Pricing Authority (NPPA) is responsible for fixing and revising the prices of pharmaceutical products as well as the enforcement of the DPCO. The Government of India has amended the DPCO several times and most recently in 2013. Until 2013, DPCO specified the price ceiling using the cost-based pricing method in which the ceiling price was calculated as a multiple of the cost that it took producers to promote and distribute a pharmaceutical drug. This multiple referred to as the Maximum Allowable Post-manufacturing Expenses (MAPE) was set at 50 per cent for formulations imported into India and at 100 per cent for indigenously manufactured formulations.

In 2013, for the first time, India transitioned from cost-based pricing to market-based pricing. Under the market-based pricing method, the Government determines the ceiling prices as the maximum mark-up that a retailer can charge over the reference price, which is the simple average of the prices of the all the brands with market share of greater than or equal to 1 per cent based on market data provided by IMS Health, a market research firm. The order capped the maximum mark-up to 16 per cent for all formulations specified in the NLEM.

Box 3: Methodology of Difference-in-differences - Explained

Difference-in-differences (DiD) is a statistical technique used to estimate the effect of a specific intervention or treatment (such as a passage of law, enactment of policy, or large-scale program implementation). The technique compares the changes in outcomes over time between a population that is affected by the specific intervention (the treatment group) and a population that is not (the control group). DiD is typically used to mitigate the possibility of any extraneous factors affecting the estimated impact of an intervention. This is accomplished by differencing the estimated impact of the treatment on the outcome in the treatment group and the estimated impact of the treatment on the control group.

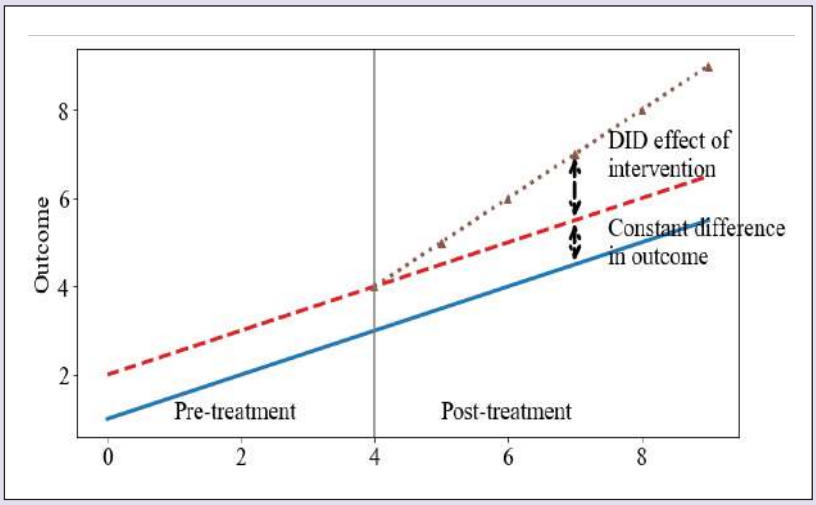
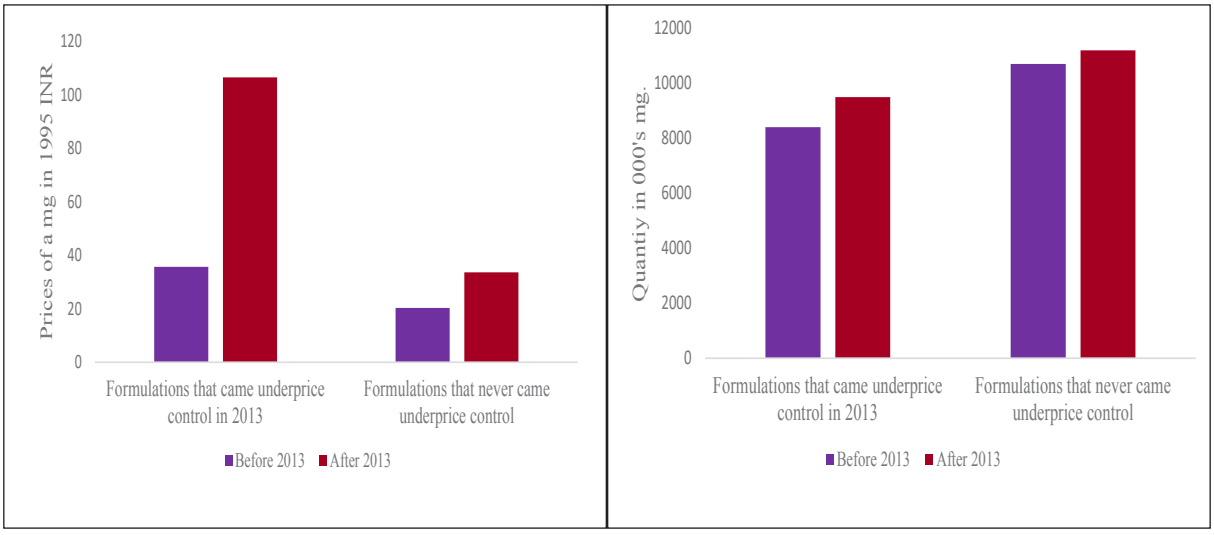


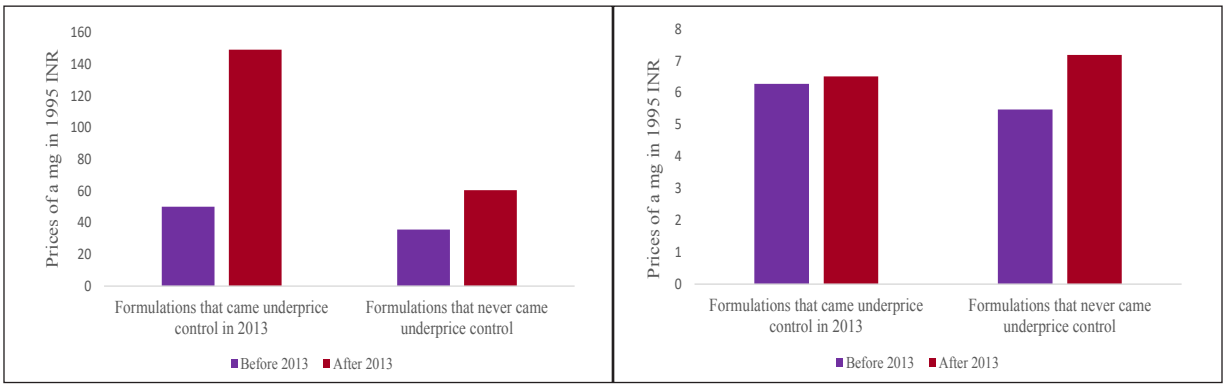
Figure 13: Effect of DPCO, 2013 on Prices and Quantities consumed of regulated drugs



Source: Survey Calculations
Note: Data comprising of 1751 formulations and 49893 brands was used from IMS Health. Averages are computed over all the drugs that were unaffected by DPCO, 2013 separately for the period before 2013 and for the period after 2013

in-difference estimate for formulations sold primarily through hospitals was ₹74 per mg. In contrast, the prices of drugs that came under DPCO, 2013 and primarily sold through retail outlets increased by a meagre ₹0.23 per mg during the same period. However, in the case of formulations unaffected by DPCO, 2013 and mostly sold by retail chemists,

Figure 14: Effect of DPCO, 2013 on Prices and Quantities consumed of formulations sold at hospitals vs retail outlets

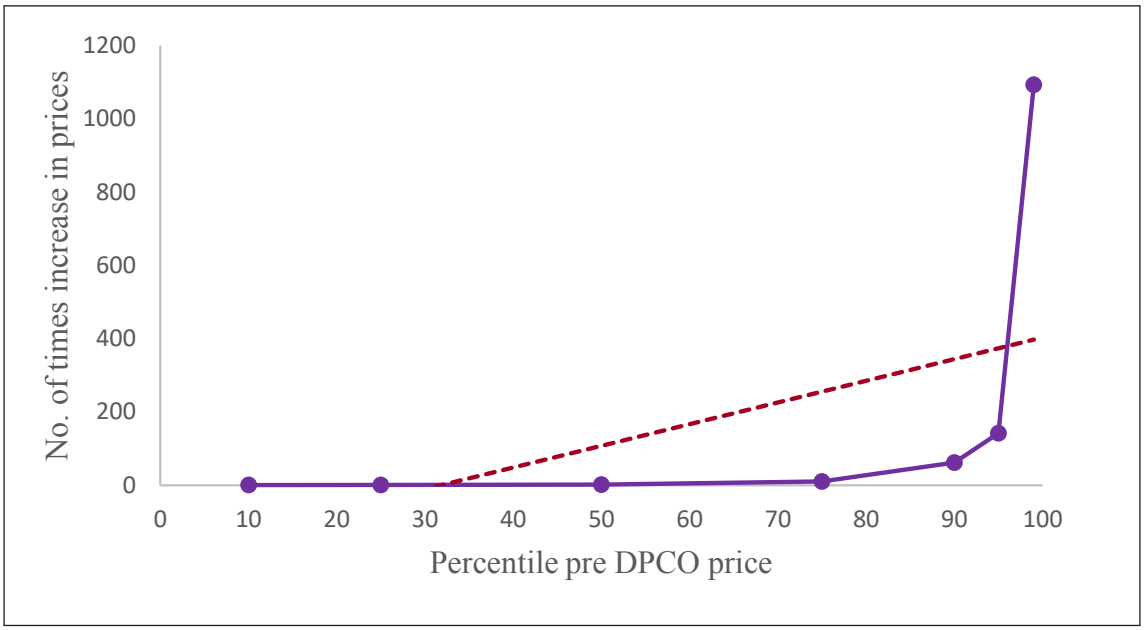


Source: Survey Calculations

the prices increased by about ₹1.72 per mg. Thus, the difference-in difference estimate for formulations primarily sold through retail outlets was ₹(-)1.49 per mg. This shows that the DPCO, 2013 appears to have increased the prices of drugs mostly sold through hospitals but decreased it mildly in the case of drugs sold through the retail chemists. This effect of price controls on drugs is expected because the enforcement of the DPCO orders would be easier in the case of retail outlets when compared to hospitals.

4.18 Our estimates also show that the DPCO, 2013 order increased prices by about 21 per cent for the cheaper formulations (i.e, those that were in the 25th percentile of the price distribution). However, in the case of costly formulations (i.e., those that were in the 99th percentile), the increase was about 2.4 times (Figure 15). The effect of DPCO, 2013 in increasing prices was, therefore, more potent for more expensive formulations than for cheaper ones – reinforcing the effect opposite to what it was instituted for i.e., making drugs affordable.

Figure 15: The effect of DPCO 2013 on prices by percentile (of prices)



Source: Survey Calculations

4.19 Our analysis of the ECA clearly shows that stock limits and price controls under the Act lead to sub-optimal outcomes which are actually opposite to what the Act is mandated to achieve. The Act interferes with the functioning of the markets and provides incentives which are detrimental to wealth creation thereby adversely affecting both social welfare and economic development. ECA needs to be repealed and replaced by market freiendly interventions like price stabilization funds, Direct Benefit Transfers (DBT) of support to consumers, incentives to innovations, increasing market integration and smooth flow of goods and services.

GOVERNMENT INTERVENTION IN GRAIN MARKETS

4.20 In the grain markets in India, Government has sought to achieve food security while ensuring remunerative prices to producers and safeguarding the interest of consumers by making supplies available at affordable prices. In trying to achieve this, the state controls input prices such as those of fertilizer, water, and electricity, sets output prices, undertakes storage and procurement through an administrative machinery, and distributes cereals across the country through the PDS.

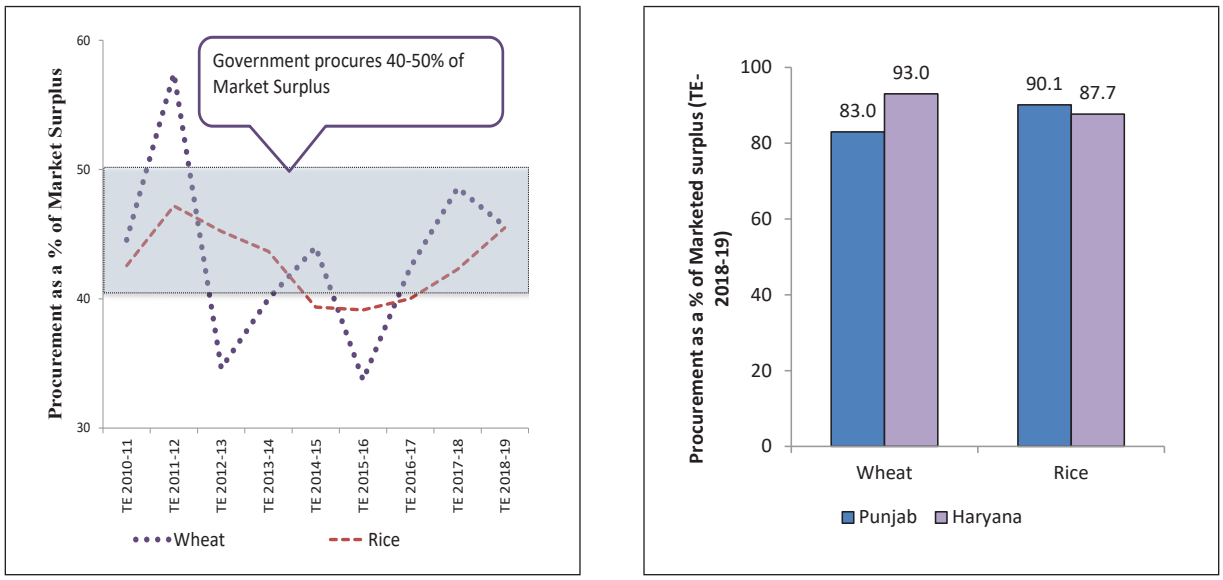
4.21 The Food Corporation of India (FCI) was set up in 1965 under the Food Corporations Act, 1964 with the primary duty to purchase, store, move/transport, distribute and sell foodgrains and other foodstuffs. The main objectives of FCI are (a) procurement of foodgrains from farmers at Minimum Support Prices (MSP) announced by the Government; (b) distribution of foodgrains to consumers through PDS, particularly the vulnerable sections of society at affordable prices; and (c) maintenance of buffer stock of foodgrains for food security and price stability. Thus, it is mandated to serve the interests of producers and consumers alike.

4.22 Subsequent to this mandate, the Government has emerged as the single largest procurer and hoarder of foodgrains. Government procures around 40-50 per cent of the total markets surplus of rice and wheat emerging as the dominant buyer of these grains (Figure 16). In some States like Punjab and Haryana, this share of purchase by Government reaches as high as 80-90 per cent (Figure 12). A record procurement of 44.4 million tonnes of rice and 34 million tonnes of wheat was done in 2018-19. Thus the government, as the single largest buyer of rice and wheat, is virtually a monopsonist in the domestic grain market and is a dominant player crowding out private trade. This disincetivizes the private sector to undertake long-term investments in procurement, storage and processing of these commodities.

4.23 These procurement operations largely support the MSPs that are designed to be indicative prices for producers at the beginning of the sowing season and floor prices as an insurance mechanism for farmers from any fall in prices. However, the secular increasing trend in these prices have served to give a signal to farmers to opt for the crops which have an assured procurement system. Figure 17 clearly shows that an increase in MSP translates into farmers offering their produce for the open-ended procurement by the Government. This also indicates that market prices do not offer remunerative options for the farmers and MSPs have, in effect, become the maximum prices rather than the floor price – the opposite of the aim it is intended for.

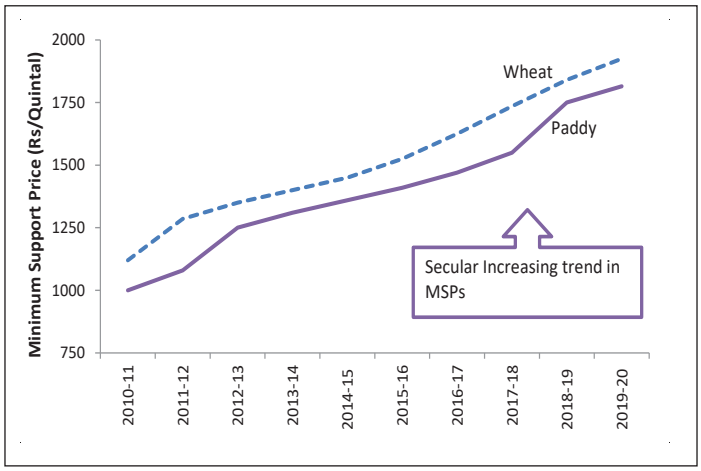
4.24 Given the obligations under the Targeted Public Distribution System (TPDS) earlier and now under the National Food Security Act (NFSA), 2013 that covers upto 75 per cent of the rural population and 50 per cent of the urban population to receive

Figure 16: Government – Single Largest Procurer of Rice and Wheat

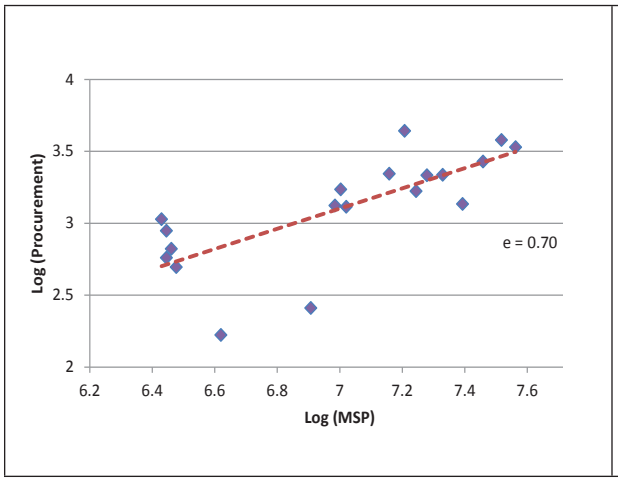


Source: FCI, DACF&W

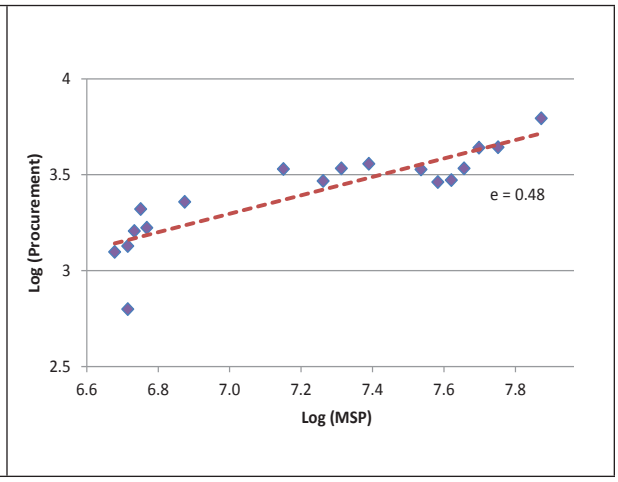
Figure 17: Increasing MSPs leading to Higher Procurements



Wheat



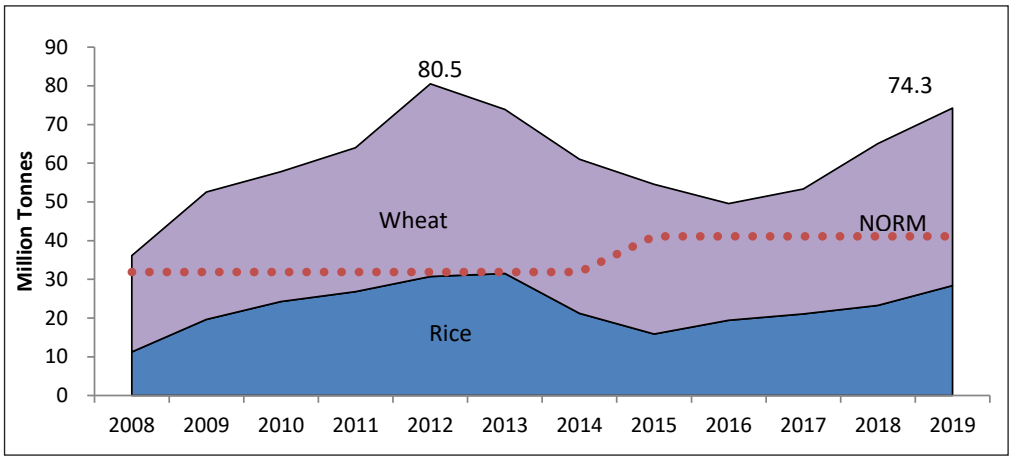
Rice



Source: DACF&W and DFPD

subsidized foodgrains, Government has also emerged as the single largest hoarder of rice and wheat. As against the buffer stock norm of 41.1 million tonnes of rice & wheat (as on 1 July of each year), total Central Pool stocks were at 74.3 million tonnes on 1 July, 2019 (Figure 18). The current peak comprises 45.8 million tonnes of wheat (against a buffer norm of 27.58 million tonnes) and 28.4 million tonnes of rice (against a buffer norm of 13.5 million tonnes).

Figure 18: Trend in Buffer Stocks with FCI

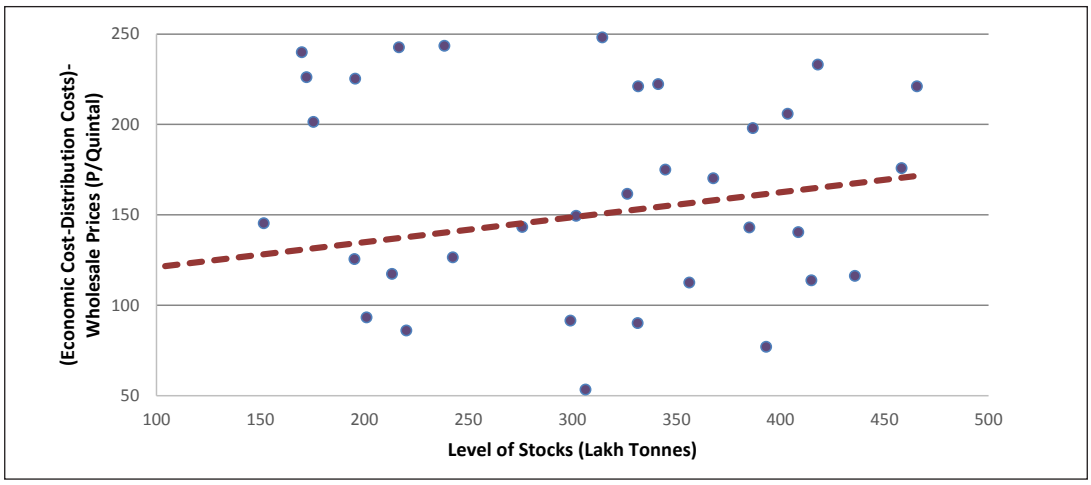


Source: FCI
Note: Stocks and norms are as on 1st July of the year

4.25 Accounting for the fact that the economic cost of FCI for acquiring, storing and distributing foodgrains is about 40 per cent more than the procurement price, the current mix of policies of assured procurement (at MSPs), storage (through a monopolist administrative government organistion) and distribution under TPDS have contributed to building up of a high cost foodgrain economy. Figure 19 shows that the inefficiency of FCI (estimated by the wedge between Economic Cost excl Distribution Cost and average wholesale prices) increases with the increasing level of stocks. It is evident that if foodgrain markets are opened for active participation of private players with Government as an equal player (and not as a monopsonist in procurement and monopolist in storage and distribution), competition would lead to more efficiency in the operations and development of adequate infrastructure in storage and warehousing.

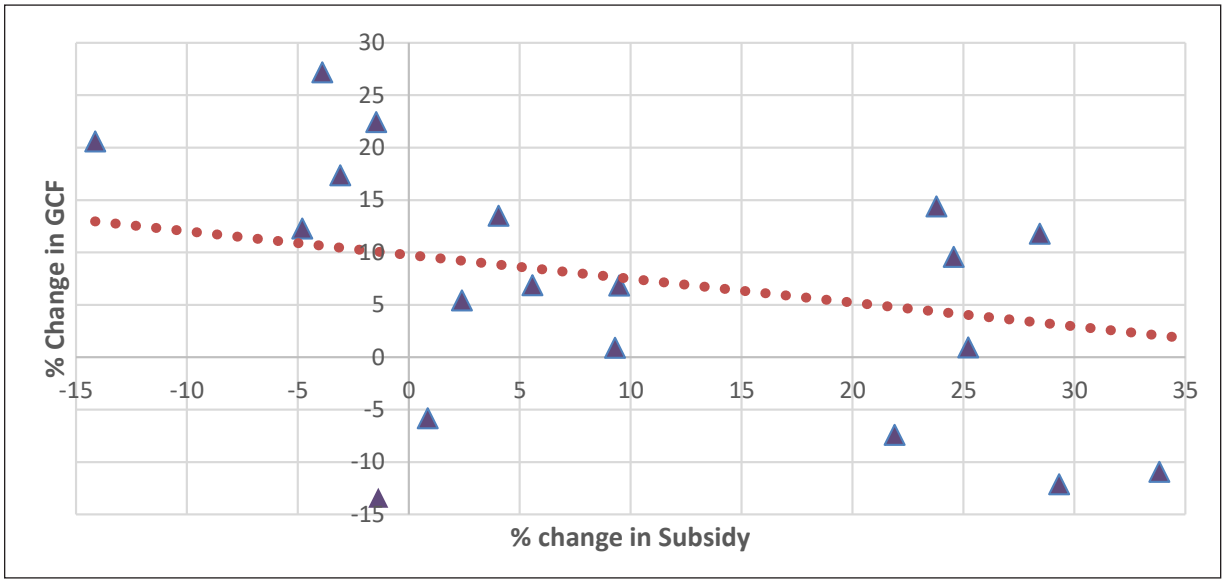
4.26 These policies have led to burgeoning burden of food subsidy which largely covers the procurement cost of FCI (difference between the MSP and the Central issue prices (CIP) of foodgrains under PDS) and distribution and carrying costs of FCI. Given fiscal constraints, there is always a trade-off between allocating money through subsidies and increasing investments. Figure 20 clearly shows that the growth in public investments in agriculture is negatively correlated to increases in food subsidy outlay. As investments are the crucial input to increase in productivity, the increasing focus on subsidies is harming the growth of agricultural sector in the long-run. This imbalance between subsidies and investments needs to be urgently corrected for sustainable

Figure 19: Increasing Inefficiency of FCI with Stocks (for Wheat)



Source: Analysis based on data from FCI, DCA

Figure 20: Inverse correlation between Change in outlays of food subsidy and Public Investments in Agriculture



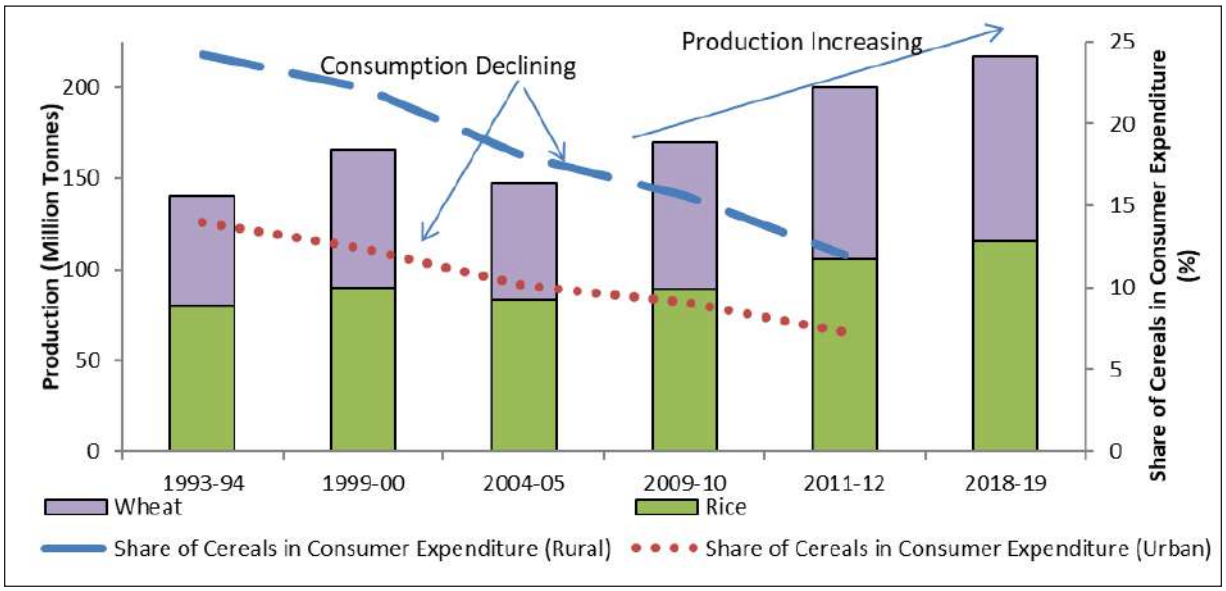
Source: Compiled from Union Budget Documents, data from National Statistics Office (NSO)

growth in Indian agriculture and overall inclusive growth.

4.27 Above trends need to be juxtaposed with the trends in consumer expenditure and thereby demand of cereals. NSS 73rd round on consumer expenditure shows that the share of cereals in Monthly Per Capita Expenditure (MPCE) has fallen by about 33 per cent in rural India and about 28 per cent in urban India from 2004-05 to 2011-12 (latest estimates available). Further, the share of cereals declines steadily as MPCE level increases, from about 19 per cent for the bottom decile class of rural India to about 5-6 per cent for the top decile class, and from 15 per cent for the bottom decile class of urban India to under 3 per cent for the top decile class. This is in line with decreasing consumption of food and increasing expenditure on non-food items as

incomes rise. Figure 21 shows the declining share of cereals in cosumer expenditure while the production of rice and wheat has reached new records. This trend of decreasing demand for cereals and increasing supply of cereals shows that the production pattern is not synchronized with the demand patterns. The farmers are deriving their signals, not from the demand patterns (reflected in the actual market prices) but from the Government policies of procurement and distribution policies for grains. Thus, the intervention of Government has led to a disconnect between demand and supply of grains in foodgrain markets.

Figure 21: Trends in Consumption and Production of Cereals in India



Source: DACF&W and NSS 68th Round

Note: Cereals consist of Rice, Wheat and Coarse cereals wherein Rice and Wheat comprise more than 80 per cent of total production of cereals Data for Consumption is available only till 2011-12

4.28 It is evident from the analysis above that there has been a paradigm shift on food (cereal) front between the time when FCI was created and today. India has moved from being a food scarce country to a food surplus country with a substantial increase in production and has emerged as a net exporter of cereals. The Government policies of assured procurement and distribution gave the right incentives to increase production at that time. The current foodgrain economy is, however, riddled with various economic inefficiencies described above. These policies, therefore, need to move on now to incentivize diversification and environmentally sustainable production.

4.29 The farmers need to be be empowered through direct investment subsidies and cash transfers, which are crop neutral and do not interefere with the cropping decisions of the farmer. The coverage of NFSA needs to be restricted to the bottom 20 per cent and the issue prices for others could be linked to the procurement prices. A better alternative would be giving income transfers to consumers through Direct Benefit Transfers (DBT). It may be noted here that internationally, there is a move towards conditional cash transfers (CCTs), aimed at tackling problems of food insecurity and poverty and for nudging people towards improved health and education levels

(Box 4). Therefore, the foodgrains policy needs to be dynamic and allow switching from physical handling and distribution of foodgrains to cash transfers/food coupons/ smart cards. At the macro level, the agricultural marketing, trade (both domestic and foreign) and distribution policies need to be aligned so that farmers receive the correct signals for diversification into remunerative and sustainable production.

Box 4: Examples of Successful Conditional Cash Transfer Schemes

Country	Year	Modalities	Impact
Brazil: *Bolsa Familia*	2003	• Covers 25 per cent of total population • Eligible beneficiaries below income level of $60 and further identified through household surveys • Size of transfer – R$15-95 • Access payments through banks, lottery offices, retail stores using debit card • Conditions – Minimum 85 per cent attendance and compulsory attending of health checkups for women and children • Cost of scheme – 0.5 per cent of GDP	• 80 per cent of benefits went to identified beneficiaries • Decline in households that are food inadequate • Decrease in number of children malnourished • Increase in food consumption • Over 60 per cent transactions made through non-bank agencies
Mexico: *Oportunidades*	1997	• Focus on geographically poor regions. Households identified in these regions using marginal index • Covers 20 per cent of total Population • Cost of scheme – 0.4 per cent of GDP • Size of transfer – 235 pesos (average) • Payments made bimonthly • Benefits can be withdrawn from bank branches and authorized non-financial agencies • Conditions – Minimum attendance requirement and mandatory health check ups	• 60 per cent of benefits went to poorest 20 per cent of the population • 12 per cent decrease in incidence of illnesses • Increase in enrollment of children into schools and reduction in dropout rates • Increase in likelihood of women deciding on how benefits to be spent
Philippines: Pantawid Pamilyang Pilipino Program	2007	• Covers 20 per cent of total population • Beneficiaries identified through Household surveys • Cost of scheme – 0.5 per cent of GDP • Conditions- Minimum attendance requirement and mandatory health check -ups, participate in monthly community-based Family Development Sessions.	• 20 million Filipinos benefited • Program has led to a poverty reduction of 1.4 percentage points per year • 10.18 million children currently benefit from CCT • Drastic decrease in alcoholism in 4Ps households (spending on vices was lower by 39 per cent)

Source: World Bank FAQ (2017), ICRIER(2017)

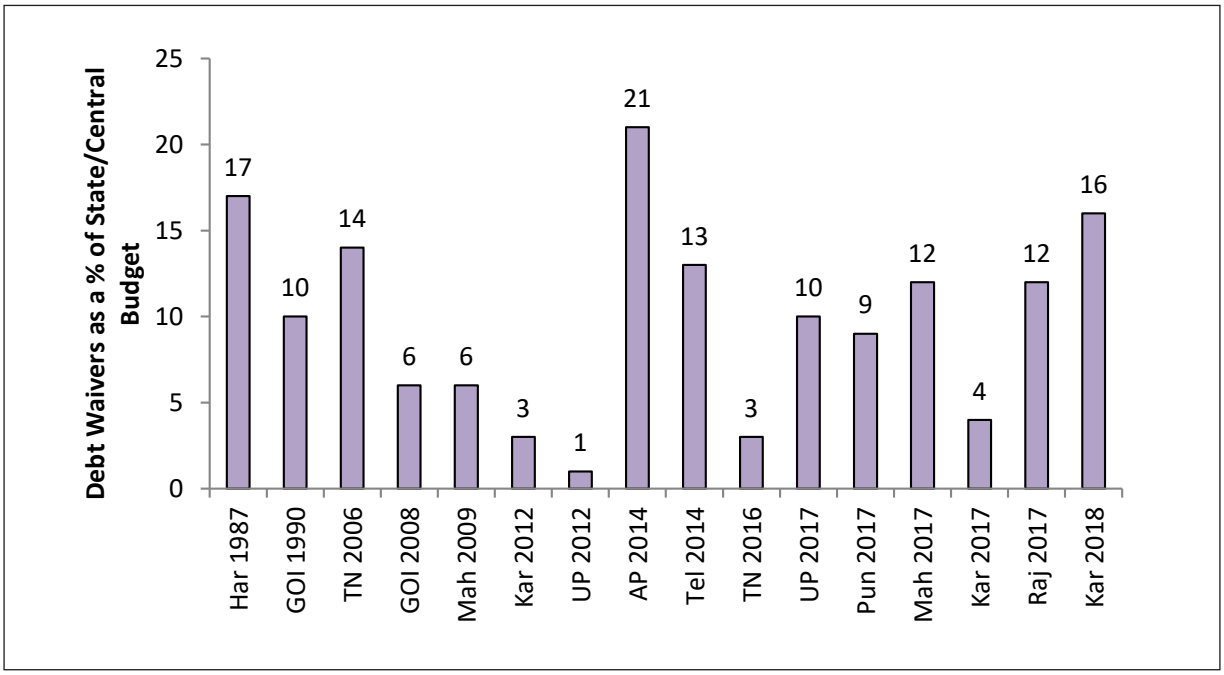
DEBT WAIVERS

4.30 Government intervention in credit markets, in the form of full or partial, conditional or unconditional, debt relief has become increasingly common at the state level in India. The phenomenon of granting debt waivers to farmers just before or after an election, which was to fulfill the promise made in the election manifesto, had died down in the early nineties. However, this phenomenon has become widespread after the large-scale farm debt waiver announced by the union government in 2008. This was followed by announcement of waivers in states such as Andhra Pradesh, Telangana, Uttar Pradesh, Madhya Pradesh, Rajasthan, Punjab, Maharashtra, and others. Figure 22 shows the scale of these waivers as a proportion of state/central budgets. Given the prevalence of government intervention in the form of farm debt relief in India, it is important to understand its consequences on both the beneficiaries and the credit market in general.

4.31 The consequences of government intervention in credit markets in India have been examined by several carefully crafted research studies (Kanz (2016), Giné and Kanz (2017), Mukherjee, Subramanian, and Tantri (2018), Tantri (2018)). Unlike simple pre- and post- event comparisons or opinions largely based on anecdotes, these studies compare the actual outcomes with carefully constructed representation of the counter-factual. In other words, the attempt is to compare what actually transpired after a government intervention with what would have happened had there been no such intervention, which represents the counter-factual. Therefore, causal claims made by these studies are reliable for policy purposes.

4.32 When arguing the benefits of debt waivers on farmers, proponents postulate that borrowers suffer from the problem of "debt overhang". This refers to a situation where all current income gets used up in

Figure 22: Loan Waiver Allocation as a per cent of State/Central Budget



Source: Adapted from Phadnis and Gupta (2018)

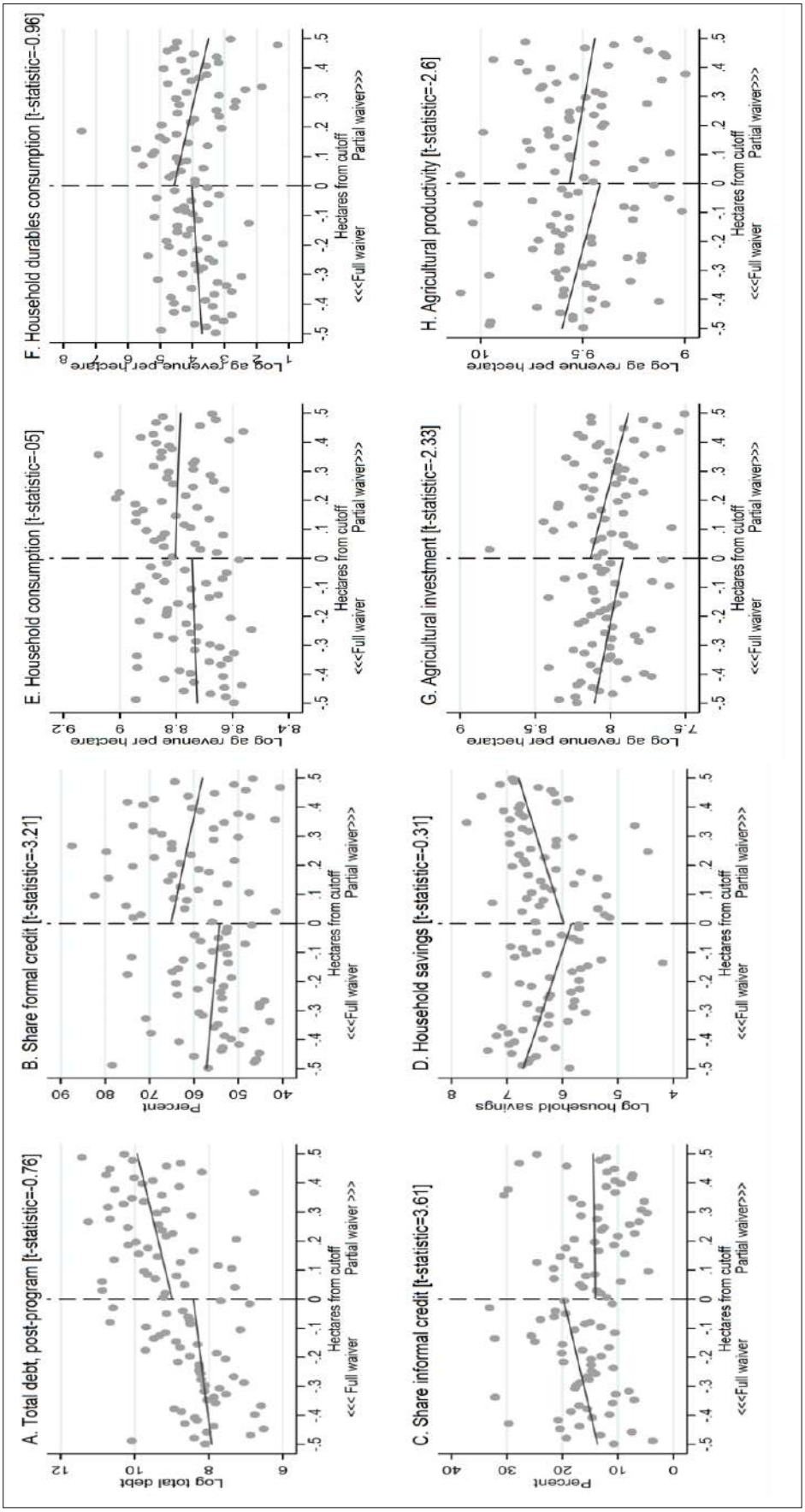
repaying the accumulated debt, leaving little incentives to invest either in physical or human capital. The incentives become muted because any incremental benefit of such investment in physical or human capital is likely to go to the lenders in the form of repayment of existing obligations and not the farmer. Such borrowers are unlikely to receive new funding, either equity or debt, as the ability of the borrower to repay additional loans or grow his/her business/farm is in question. Debt overhang, therefore, leads to abandonment of beneficial investment and hence reduces social welfare. Given this situation, proponents of debt relief argue that a debt waiver helps the borrowers to come out of the debt trap as it cleans their balance sheet and reduces the burden of debt servicing. This clean-up of borrowers' balance sheet is likely to lead to both new investments as well as fresh fund rising as borrowers' repayment capacity increases even if there is no change in income.

4.33 Kanz (2016) examines the 2008 debt waiver offered by Government of India and tests whether any of these effects actually play out. He uses the fact that farmers having less than 2 hectares of land received full relief while those with less than 2 hectares of land received only partial relief. A farmer having 1.98 hectares of land is not different from another farmer having 2.02 hectares of land. However, the farmer having 1.98 hectares of land receives the full relief while the farmer having 2.02 hectares of land receives only partial relief. If debt relief indeed benefits the farmers, then the former set of farmers should be definitely better off than the latter set. The results, however, are quite the opposite of what proponents of debt waivers believe. Neither agricultural investment nor productivity increased after the waiver. Consequently, there was little impact on consumption as well. In other words, a stimulus worth close to 2 per cent of the GDP did not have any meaningful real impact on the lives of the farmers.

4.34 Figure 23 summarizes these results, where each panel shows the impact of the debt waiver on a key outcome on the y-axis. The horizontal axis denotes distance from the two hectare cut-off in terms of landholding. Borrowers having positive distance received a partial waiver as they have landholding more than two hectares. In contrast, borrowers having negative distance have landholdings less than two hectares and therefore received full waiver. It is clear from the figure that the waiver did not benefit the full beneficiaries more than the partial beneficiaries. In fact, full waiver beneficiaries consume less, save less, invest less and are less productive after the waiver when compared to the partial beneficiaries. The effects for agricultural investment and productivity are statistically significant. As well, the disconcerting evidence is that the share of formal credit decreases while the share of formal credit decreases for full beneficiaries when compared to partial beneficiaries, thereby defeating the very purpose of the debt waiver provided to farmers.

4.35 Debt waivers impact credit markets negatively as well. Bolton and Rosenthal (2002) argue that debt relief can help as long as they are awarded under exceptional circumstances and remain unanticipated. In such situations, a debt relief can prevent

Figure 23: Post waiver outcomes for waiver beneficiaries and comparable non beneficiaries



Note: In each panel, the horizontal axis denotes distance from the cut-off in terms of landholding. Borrowers having positive (negative) distance are full (partial) waiver beneficiaries. The vertical axis in each figure measures a different outcome.

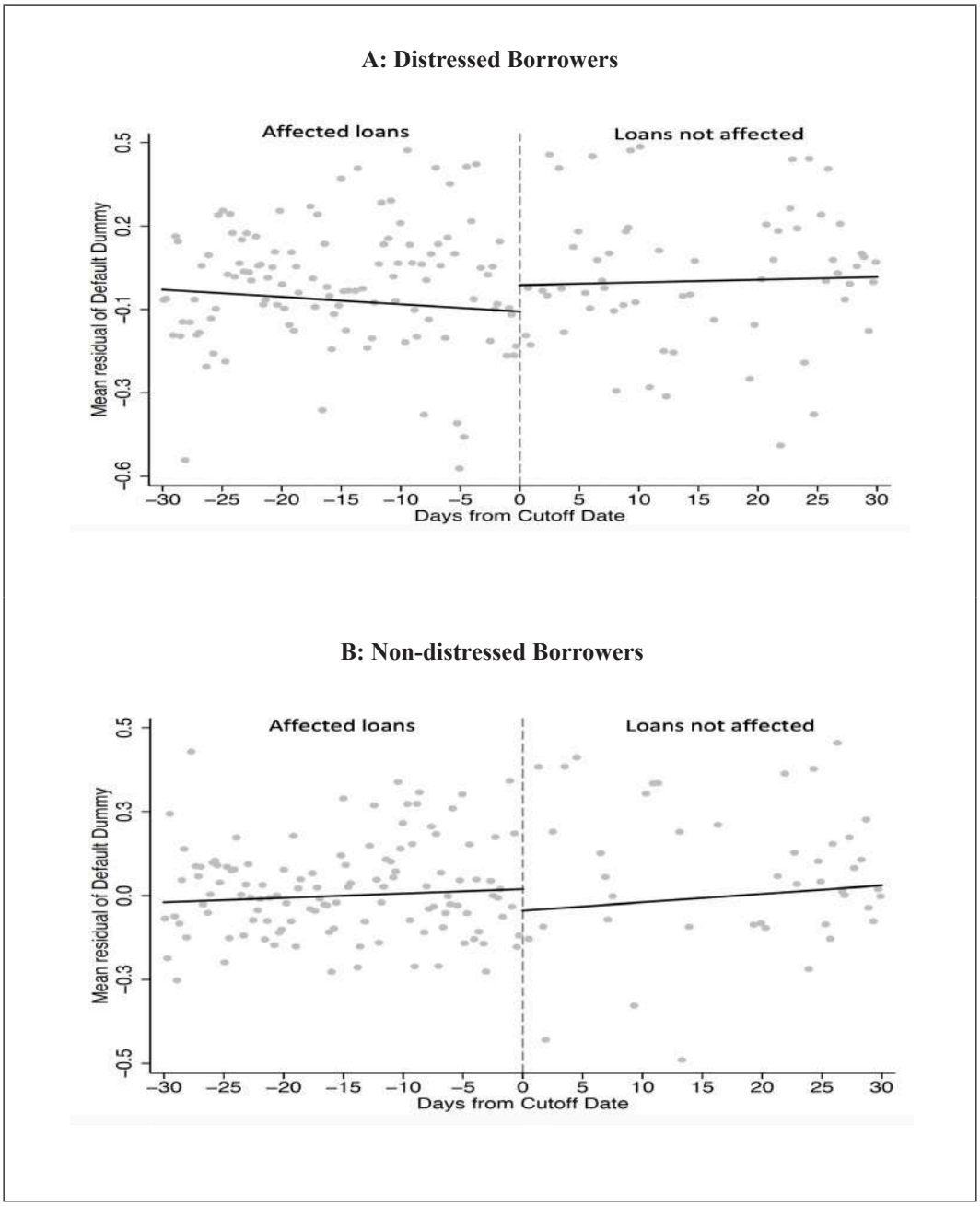
farmers going out of farming and the consequent reduction of output. However, they also note that an anticipated waiver may lead to moral hazard and destroy the credit culture. Given the nature of the 2008 waiver, the later consequences seem to have prevailed. Gine and Kanz (2017) find that the waiver led to increased loan defaults on future loans and no improvement in wages, productivity, or consumption. They compare districts based on their exposure to the 2008 debt waiver provided by Government of India. A one percentage increase in exposure to the debt waiver increased the amount of non-performing assets by about 7 per cent. Most worryingly, they find that the loan performance deteriorated the most in areas that were headed for election, indicating strategic default in anticipation of waiver. Ironically, flow of bank credit to waiver beneficiaries declined after the waiver. A one standard deviation increase in the exposure of a district to the waiver led to a 4-6 per cent decline in the number of new loans and a 14-16 per cent decline in the amount of post-program lending.

4.36 Tantri (2018) finds that the Andhra Pradesh government's 2010 intervention in micro-finance loans had a contagious impact on other segments of credit markets such as bank loans. In October, 2010, the government of Andhra Pradesh issued an ordinance virtually banning almost all loan recovery practices of micro-finance lenders. However, the loan delinquency rates in the micro-finance went up significantly following this intervention. The intervention had a contagious impact on bank loans as well. Rate of defaults and the rate of non-performing assets rose on bank loans increased by 12.4 per cent and 24.5 per cent respectively following this intervention. Finally, as the flow of new credit reduced by half, government intervention that intended to help micro-finance borrowers ended up hurting borrowers by depriving them of credit.

4.37 Mukherjee, Subramanian, and Tantri (2018), who also examine the 2008 waiver provided by the Government of India, make a much more nuanced point. They study the impact of the waiver on distressed and non-distressed borrowers separately by using crop insurance claims and weather conditions to identify economic distress of the borrowers. They find that loan performance of genuinely distressed borrowers improved by about 9 per cent due to the loan waiver. However, the loan performance of non-distressed beneficiaries deteriorated by about 23 per cent after the waiver. They use the waiver eligibility cut-off date of December 31, 2007 to carefully construct a regression discontinuity based identification strategy. It is crucial to note that the cut-off date for deciding beneficiaries was February 29, 2008 and hence borrowers were not aware about the cut-off date as on December 31.

4.38 Consider two distressed farmers, A and B who defaulted on their crop loans on December 30th 2007 and January 1st 2008, respectively. Due to the December 31st cut-off date for being eligible for the waiver, borrower A gets his/her loan waived whereas borrower B does not. Otherwise, both the borrowers are comparable. The study shows that loan performance of distressed borrower A improves after the waiver. Now consider two non-distressed farmers, C and D who defaulted on their crop loans on December 30th 2007 and January 1st 2008, respectively.

Figure 24: Impact of Debt Waiver On Distressed And Non- Distressed Borrowers



Source: Adapted from Mukherjee, Subramanian, and Tantri (2018)

Borrower C gets his/her loan waived whereas borrower D does not. Otherwise, both the borrowers are comparable. The study shows that loan performance of borrower D worsens after the waiver. In other words, a waiver helps only when the beneficiaries are genuinely distressed but fuels even greater default when relief is not made conditional on genuine distress.

4.39 Figure 24 shows the main results of this study. The horizontal axis denotes the distance, in terms of days, from the waiver

eligibility cut-off. The vertical axis denotes the default rate. Panel A (B) present the results for distressed (non-distressed) borrowers. Those who are on the left (right) of the cut-off are waiver beneficiaries (non-beneficiaries). It is clear from the figure that among the distressed (non-distressed) borrowers the waiver beneficiaries default less (more) when compared to comparable non-beneficiaries after the waiver. The horizontal axis denotes the distance, in terms of days, from the waiver eligibility cut-off. The vertical axis denotes the default rate on agricultural crop loans. Figure A indicates that distressed waiver beneficiaries default 9 per cent less than comparable distressed non-beneficiaries. Figure B shows that non-distressed beneficiaries default 23 per cent more than comparable non-distressed non-beneficiaries.

4.40 It is clear from the above studies that an unconditional and blanket debt waiver is a bad idea. It does not achieve any meaningful real outcomes for the intended beneficiaries while the costs to the exchequer are significant. Most importantly, debt waivers disrupt the credit culture and end up reducing the formal credit flow to the very same farmers it intends to help. As noted by Mukherjee, Subramanian, and Tantri (2018) and Bolton and Rosenthal (2002), there is a case for a limited relief only when distress can be identified credibly. In other words, a waiver can at best be an emergency medicine to be given in rare cases after a thorough diagnosis and identification of illness and not a staple diet. In most cases, its side effects, the unintended consequences, far outweigh any plausible short term benefits.

LEGISLATIVE CHANGES REQUIRED TO REDUCE GOVERNMENT INTERVENTIONS

4.41 The analysis above highlights clearly that India is still stuck with several forms of Government intervention that are anchronistice with today's economy. In several spheres of the economy, India has traversed the transition from a command and control economy to a market-driven economy. Table 1 illustrates this across several areas. Specifically industrial deregulation, privatizations of several state-owned enterprises, reduced controls on international trade and investment stand out in this context.

4.42 However, as highlighted in previous sections, several areas of unnecessary and inefficient government intervention still remain. Table 2 summarizes some key Acts, as low-hanging fruits to begin with, which have outlived their use and need to be repealed by one 'stroke-of-the-pen' as was done post-1990s or amended to enable functioning of competitive markets.

Table 1: Traversing the 'Full Circle' – From 'Control' to 'Market'

Act	Market Distortion created	Transformation towards Developing a Market Economy
Capital Issues (Control) Act, 1947	The Government decided which company could raise how much capital - Control over the amount as well as pricing of shares led to ineffective valuation of capital	Repealed and replaced by The Securities and Exchange Board of India (SEBI) Act, 1992 as a regulator of the capital markets. SEBI has steered the capital markets to ensure price discovery, governance of securities, allowing efficient mobilisation and allocation of capital, protecting the interest of investors in mind enabling enormous wealth creation (as detailed in chapter 1)
Oil and Natural Gas Commission (ONGC) Act, 1959	ONGC was created with the mandate to plan, promote, organize and implement programmes for the development of petroleum resources – created a Government monopoly in this sector	On 4 September 1993, the Act was repealed and ONGC was converted into a company. The evolution of hydrocarbons policy has been from state monopoly in 1948, to the beginning of deregulation in 1991 through nomination, to competitive bidding and profit sharing under New Exploration Licensing Policy (NELP), 1997, to gas pricing guidelines in 2014, to discovered small field policy in 2015 and, finally, to a uniform licence for exploration and production of all forms of hydrocarbon and revenue sharing under Hydrocarbon Exploration and Licensing Policy (HELP) in 2016.
Banking Companies (Acquisition and Transfer of Undertakings) Act of 1970 & State Bank of India Act, 1955	To provide for the acquisition and transfer of the undertakings of certain banking companies created – created 27 nationalized banks – Private sector banks were allowed only after 1994	Merger of banks announced which will reduce public sector banks from 27 to 12. Further, attempts to create a level playing field between private sector banks and public sector banks are in place.
Monopolies and Restrictive Trade Practices (MRTP) Act, 1969	MRTPC was constituted to prevent concentration of economic power, control of monopolies, prohibition of monopolistic practices, prohibition of restrictive and unfair trade practices. This restricted companies to grow and achieve a global scale and led to proliferation of small companies.	Repealed to give way to the Competition Act in 2002. The Competition Act aims to "*promote and sustain competition in markets, protect interests of consumers, ensure freedom of trade carried on by other participants in markets and prohibition of abuse of dominant position*". The focus has shifted from 'prevention of dominance' to 'regulating abuse of dominance'
The Coking Coal Mines (Nationalisation) Act, 1972 and Coal Mines (Nationalization) Act, 1973	Government took over the management of coking and non-coking coal mines as energy sector became a crucial sector	Repealed in 2018. Private firms have been permitted to enter the commercial coal mining industry. The mines will be auctioned to the firm offering the highest per tonne price. The move broke the monopoly of Coal India Limited over commercial mining.
Nationalisation of Life Insurance, 1956 and General Insurance Business (Nationalisation) Act, 1972	Acquisition and transfer of shares of Indian insurance companies and undertakings of other existing insurers to create LIC and GIC – led to cheap mobilisation of resources for investment in sectors decided by Government	Amended various times Insurance Regulatory Development Authority of India (IRDAI) Act, 1999 enacted to open the insurance sector. This was a journey from nationalisation to creation of a monopoly to opening up to private competition.

Act	Market Distortion created	Transformation towards Developing a Market Economy
Foreign Exchange Regulation Act, 1973	Imposed restriction on foreign equity in companies to 40 percent and permission was needed from RBI to operate, if their shareholding was higher. This restricted access to foreign capital and technology	Repealed and replaced by Foreign Exchange Management Act (FEMA), 1999 to facilitate external trade and payments. Under FERA, everything was prohibited unless special permissions were received, while under FEMA, everything was permitted unless specifically restricted or regulated to enable development of forex market.
Maruti Limited (Acquisition and Transfer of Undertakings) Act, 1980	The purpose was to modernise the automobile industry and ensure higher production of motor vehicles	On 14 May 2007, the government exited the company through a two-stage process: a rights issue of Rs. 400 crore followed by the sale of its existing shares through a public issue
Air Corporations Act of 1953	Nationalise nine airlines to form Air India and Indian Airlines – intended to provide safe, efficient, adequate, economical and properly coordinated air transport services, whether internal or international or both. A market-driven, services-oriented, consumer-centric business was nationalised.	Replaced by Air Corporations (Transfer of Undertaking and Repeal) Act, 1994 wherein Private operators were allowed to provide air transport services. The Airports Authority of India (Amendment) Act of 2003 introduced the term "private airport" and authorised Airports Authority of India (AAI) to transfer operations and management of its existing airports by way of long-term lease to private players. The Airports Economic Regulatory Authority (AERA) of India Act, 2008 was enacted to regulate tariff and other charges and to monitor performance standards
Urban Land Ceiling and Regulation Act, 1976	Imposition of a ceiling on acquisition of vacant land in urban agglomerations for the acquisition to prevent the concentration of urban land in the hands of the few and bring equity to subserve the common good. This led to distortion of land markets in urban areas, rise in slums, creation of artificial land scarcity and skyrocketing land prices.	Repealed in 1999.
Sick Industrial Companies Act (SICA), 1985	Timely detection of sick and potentially sick companies and speedy determination of preventive, ameliorative, remedial and other measures by Board of Industrial and Financial Reconstruction (BIFR). It put in place a debtor-friendly regime, in which defaulting borrowers could delay resolution for long periods of time and strip assets of value	The Act was repealed on 1 January 2004, and BIFR was dissolved on 1 December 2016 to give way to the Insolvency and Bankruptcy Code (IBC), 2016.

Table 2: Need to complete the Transformation : Acts which need to be Repealed/ Amended

Act	Market Distortion created	Need for repeal/amendment
Factories Act, 1948	Regulates occupational safety and health in factories and docks. Gives prosecutor powers to a 'chief inspector' – Raises cost of such entitlements and may nudge capital away from labour. This may be merged with	It is proposed to be subsumed by the Occupational Safety, Health and Working Conditions Code, 2019 which is in the Parliament.
Essential Commodities Act (ECA), 1955 and Prevention of Black marketing and Maintenance of Supplies of Essential Commodities Act, 1980	Enables the Government to regulate the production, supply and distribution of 'essential' commodities such as drugs, oils, kerosene, coal, iron, steel and pulses. It imposes stock limits which discourages large-scale private investments in agricultural markets	These Acts owe their origin in times of shortage and inefficient linking of markets. With enhanced production and integration of markets, these Acts have become an instrument of coercion and inhibit proper functioning of markets of these essential commodities.
Food Corporation of India (FCI), 1965	FCI was created for purchase, storage, transport, distribution and sale of food grains and other foodstuff to safeguard the interests of farmers, maintain buffer stocks for food security and make grains accessible at reasonable prices to the weaker and vulnerable through the public distribution system (PDS).	With a comfortable production scenario of foodgrains, the role of FCI, with a total storage capacity of more than 80 million tonnes, must be re-examined. Procurement operations of wheat, paddy and rice need to be given to states. FCI should primarily focus on creating competition in every segment of foodgrain supply chain, from procurement to stocking to movement and finally distribution in TPDS. This would reduce costs and plug leakages in the food management system.
Sick Textile Undertakings (Nationalisation) Act, 1974	To acquire sick textile units, reorganize and rehabilitate them. 103 sick textile mills were nationalised and transferred to the National Textile Corporation (NTC). The Act was amended in 1995 to allow NTC to transfer, mortgage or dispose of land, plant, machinery or other assets for the better management, modernization, restructuring or revival of a sick textile undertaking.	Land of textile units has been monetised to create offices and residential buildings in Mumbai's Lower Parel area. However, the nationalisation of these mills failed to achieve the desired objectives of rehabilitating or reorganising them and failed to deliver yarn, cloth, fair prices or jobs. This Act, therefore, needs to be repealed and NTC should be divested.
Recovery of Debts due to Banks and Financial Institutions Act, 1993	Led to establishment of Debt Recovery Tribunals (DRTs) for "expeditious adjudication and recovery of debts due to banks and financial institutions". However, there are huge delays due to insufficient number of presiding officers, recoveries taking two years instead of the recommended statutory six months, lack of sufficient judicial experience by recovery officers, and inconsistency of the decision-making process between tribunals	With the IBC now firmly in place to fix the problem of non-performing assets, the DRTs can be phased out or integrated with the IBC.

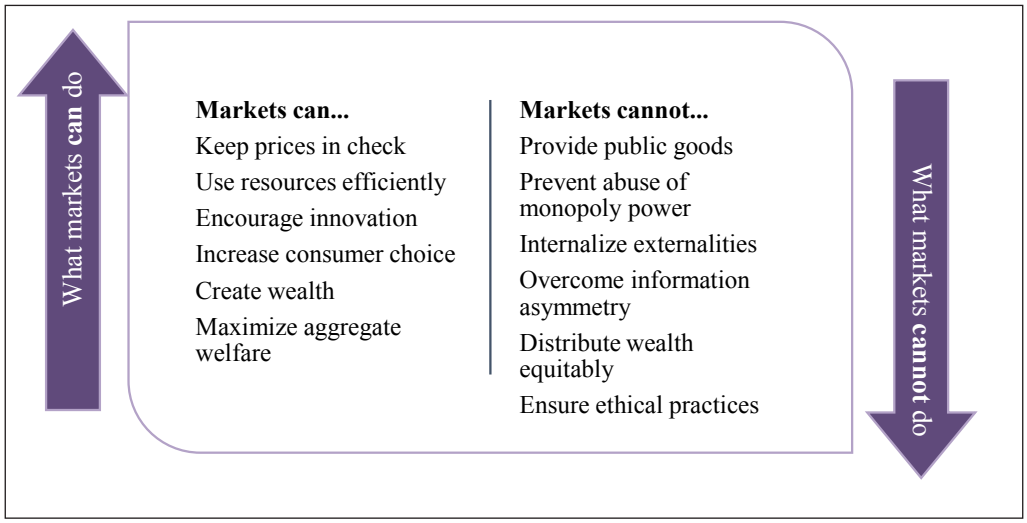
The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013	Regulates land acquisition with 80 percent of the land to be acquired through negotiations, with the government stepping in only for the balance 20 percent; for PPP projects, it is 70 percent.	This tilts the balance in favour of land owners who need to be made an equal partner in development of land and share the benefits and costs with the developer/acquirer.

CONCLUSION

4.43 Competitive markets are effective in allocating resources in an economy. However, while the ideal of a completely efficient market is rare, the costs of Government intervention may outweigh the benefits when "market failures" – a term that economists use to denote situations where markets may not work very well in allocating resources – are not severe. Of course, governments play a crucial role by intervening in situations where "market failures" are acute (see Figure 25 for a summary).

4.44 This chapter makes the case that there are several areas in the Indian economy where the Government needlessly intervenes and undermines markets. Note that the chapter does not argue that there should be no Government intervention. Instead, interventions that were apt in a different economic setting, possibly because the "market failures" were severe then, may have lost their relevance in a transformed economy where the "market failures" are not severe. Eliminating such instances of needless Government intervention will enable competitive markets and thereby spur investments and economic growth.

Figure 25: Strengths and Weaknesses of Markets



CHAPTER AT A GLANCE

- Indian economy is replete with examples where Government intervenes and thereby undermines markets unnecessarily, i.e. even in areas where there are no "market failures". Though there are many such instances, the chapter highlights four examples to show that Government intervention leads to outcomes opposite to what it actually intended to achieve.

- Frequent and unpredictable imposition of blanket stock limits on commodities under Essential Commodities Act (ECA) distorts the incentives for the creation of storage infrastructure by the private sector, movement up the agricultural value chain and development of national market for agricultural commodities. Imposition of stock limits on dal in 2006-Q3, sugar in 2009-Q1 and onions in September, 2019 had no effect on the volatility of the retail and wholesale prices of onions.

- The Ministry of Consumer Affairs and its related arms must examine whether the anachronistic ECA, which was passed in 1955 in an India worried about famines and shortages, is relevant in today's India. Around 76000 raids under ECA were conducted during 2019. Assuming a minimum of 5 persons involved in a raid, considerable administrative effort goes into enforcement of ECA. As the conviction rate, however, is abysmally low and raids have no impact on prices, the ECA only seems to enable rent-seeking and harassment. The Survey provides clear evidence that the case for jettisoning this anachronistic legislation is strong.

- The regulation of prices of drugs, through the DPCO 2013, has led to increase in the price of the regulated pharmaceutical drug vis-à-vis that of a similar drug whose price is not regulated. The increase in prices is greater for more expensive formulations than for cheaper ones and for those sold in hospitals rather than retail shops. These findings reinforce that the outcome is opposite to what DPCO aims to do - making drugs affordable.

- As the Government is a huge buyer of drugs through its various arms such as CGHS, Defense, Railways etc., the Government can intervene more effectively to provide affordable drugs by combining all its purchases and thereby exercise its bargaining power. The Ministry of Health and Family Welfare as well as its related arms must imbibe the evidence to evolve non-distortionary mechanisms that utilise Government's bargaining power in a transparent manner.

- Government policies in the foodgrain markets has led to the emergence of Government as the largest procurer and hoarder of rice and wheat crowding out. This has led to burgeoning food subsidy burden and inefficiencies in the markets, which is affecting the long run growth of agricultural sector. The foodgrains policy needs to be dynamic and allow switching from physical handling and distribution of foodgrains to cash transfers/ food coupons/smart cards.

- Analysis of debt waivers given by States/Centre shows that full waiver beneficiaries consume less, save less, invest less and are less productive after the waiver when compared to the partial beneficiaries. Debt waivers disrupt the credit culture and end up reducing the formal credit flow to the very same farmers, thereby defeating the very purpose of the debt waiver provided to farmers.

- This chapter makes the case that each department and ministry in the Government must systematically examine areas where the Government needlessly intervenes and undermines markets. Note that the chapter does not argue that there should be no Government intervention. Instead, interventions that were apt in a different economic setting may have lost their relevance in a transformed economy. Eliminating such instances will enable competitive markets and thereby spur investments and economic growth.

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Creating Jobs and Growth by Specializing to Exports in Network Products

05
CHAPTER

Every man lives by exchanging.

- Adam Smith

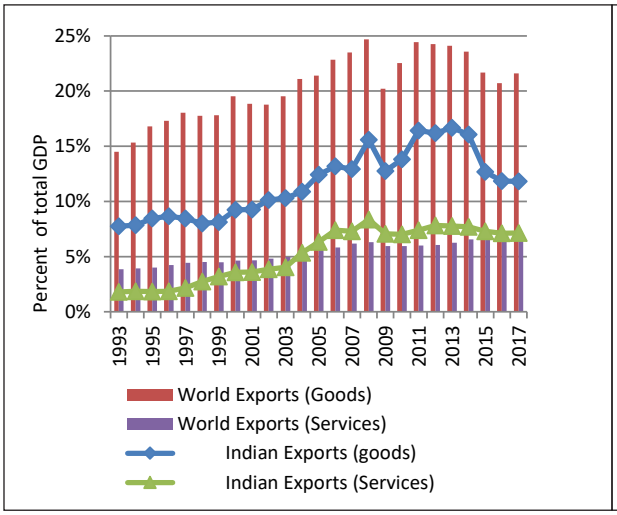
The current environment for international trade presents India an unprecedented opportunity to chart a China-like, labour-intensive, export trajectory and thereby create unparalleled job opportunities for our burgeoning youth. By integrating "Assemble in India for the world" into Make in India, India can create 4 crore well-paid jobs by 2025 and 8 crore by 2030. Exports of network products, which is expected to equal $7 trillion worldwide in 2025, can contribute a quarter of the increase in value-added for the $5 trillion economy by 2025. This chapter, therefore, articulates a clear-headed strategy to grab this opportunity. China's remarkable export performance vis-à-vis India is driven primarily by deliberate specialization at large scale in labour-intensive activities, especially "network products", where production occurs across Global Value Chains (GVCs) operated by multi-national corporations. Laser-like focus must be placed on enabling assembling operations at mammoth scale in network products. As an India that harbours misplaced insecurity on the trade front is unlikely to grab this opportunity, our trade policy must be an enabler. In fact, contrary to recent fears, careful analysis that controls for all confounding factors shows that India has gained from trade agreements: a 0.7 per cent increase per year in trade surplus with partner countries for manufactured products and 2.3 per cent per year for total merchandise.

5.1 Growth in exports provides a much-needed pathway for job creation in India. For instance, in just the five year period 2001-2006, labour-intensive exports enabled China to create 70 million jobs for workers with primary education (Los et al. 2015). In India, increased exports explain the conversion of about 800,000 jobs from informal to formal between 1999 and 2011, representing 0.8 per cent of the labour force (ILO report 2019).

5.2 The US–China trade war is causing major adjustments in Global Value Chains (GVCs) and firms are now looking for alternative locations for their operations. Even before the trade war began, China's image as a low-cost location for final assembly of industrial products was rapidly changing due to labour shortages and increases in wages. These developments present India an unprecedented opportunity to chart a similar export trajectory as that pursued by China and create unparalleled job opportunities for its youth. As no other country can match China in the abundance of its labour, we must grab the space getting vacated in labour-intensive sectors. This chapter focuses on articulating a clear-headed strategy for the same.

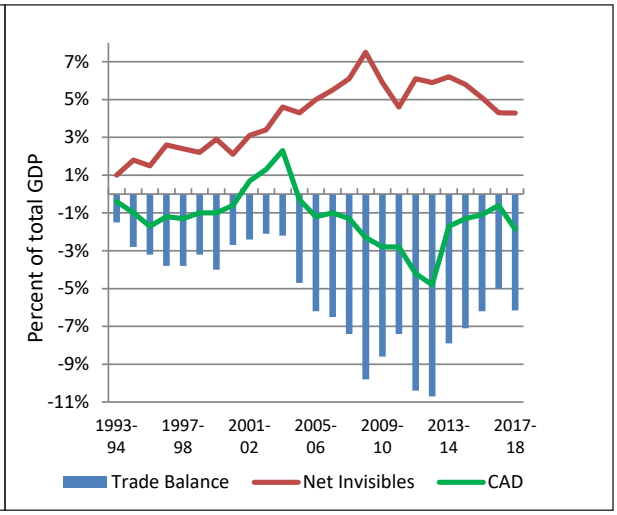
5.3 Post the 1991 reforms, India's share in merchandise (goods) exports has grown at 13.2 per cent per annum and our share in world exports has increased from 0.6 per cent in 1991 to 1.7 per cent in 2018. Yet, even by 2018, India's world market share remains paltry compared to 12.8 per cent for China. Further, merchandise exports as a percentage of GDP remained consistently lower for India compared to the world average by a significant margin (Figure 1(a)). Imports of merchandise have grown faster (at the rate of 14.9 per cent per annum during 1993-2018) than exports, resulting in increasing trade deficits (Figure 1(b)). On the other hand, exports of services generally grew faster than imports, providing some cushion to current account deficit.

Figure 1(a): Share of exports in GDP, India versus World



Source: UNCTAD Statistics and Survey Calculations

Figure 1(b): Share of exports in GDP, India versus World



Source: Reserve Bank of India and Survey Calculations

5.4 Key questions that arise in this context are: (i) what type of policy interventions would help achieve faster export growth? (ii) should policies target export growth through specialization (intensive margin) or diversification (extensive margin)?; (iii) is it in our interest to promote strong local linkages for domestic industries or to participate in GVCs wherein linkages are globally dispersed?; (iv) which are the industries that hold the greatest potential for export growth and employment generation?; and (vi) are free trade agreements beneficial to India?

5.5 By addressing these questions, this chapter lays out the policy map to achieve sustained and faster export growth and thereby well-paid jobs. India must focus on a group of industries, referred to as "network products", where production processes are globally fragmented and controlled by leading Multi-National Enterprises (MNEs) within their "producer driven" global production networks. Examples of network products include computers, electronic and electrical equipment, telecommunication equipment, road vehicles etc. China's remarkable export performance vis-à-vis India is driven primarily by deliberate specialization at large scale in labour-intensive activities, especially "network products", where production occurs across GVCs operated by multi-national corporations. By importing components and assembling them in China for the world, China created jobs at an unprecedented scale. Similarly, by integrating "Assemble in India for the world" into Make in India, India can raise its export market share to about 3.5 per cent by 2025 and 6 per cent by 2030, which

is highly feasible. In the process, India would create about 4 crore well-paid jobs by 2025 and about 8 crore by 2030. The incremental value added in the economy from the target level of exports of network products, which is expected to equal $248 billion in 2025, would make up about one-quarter of the increase required for making India a $5 trillion economy by 2025.

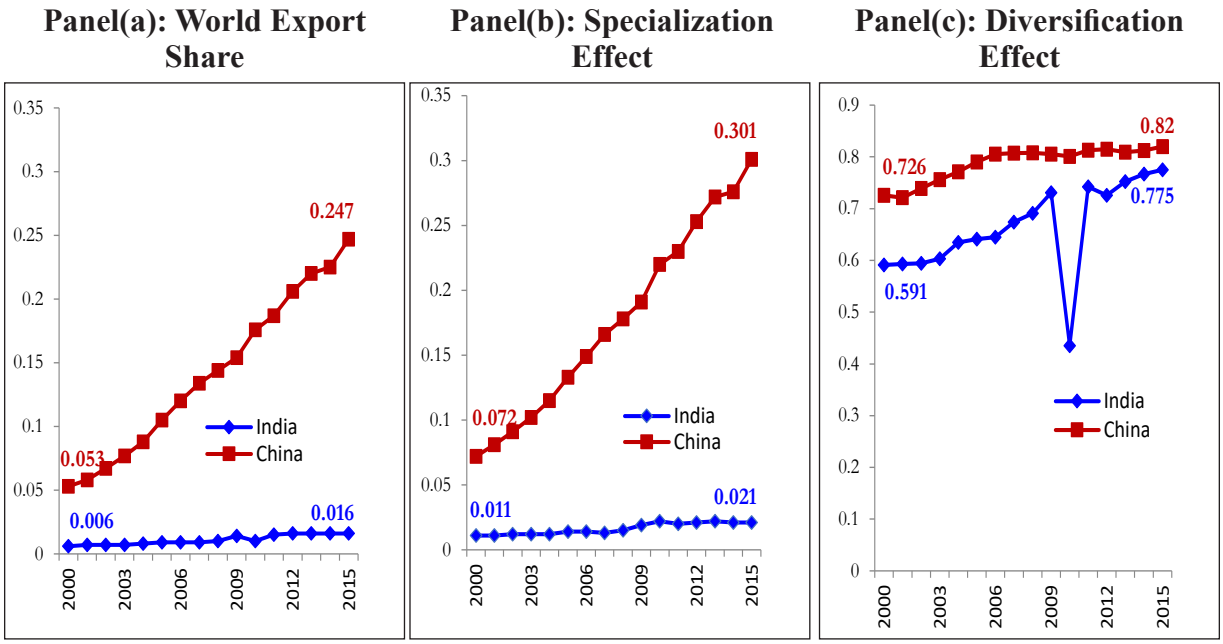
INDIA'S EXPORT UNDER-PERFORMANCE VIS-À-VIS CHINA

5.6 Before outlining the potential strategies for the immediate future, the Survey examines the reasons for India's under-performance in exports vis-à-vis China.

Specialization versus Diversification

5.7 Is India's lacklustre export performance caused by a lack of diversification in its export basket (extensive margin) or is it because of a lack of specialization (intensive margin)? This question is examined by comparing India and China on these two dimensions (see Box 1). Each country's share of world exports of manufactured products is decomposed into the effects of diversification versus concentration (see Figure 2). It can be seen that Panel (a), which depicts the world market shares of the two countries, is a mirror image of Panel (b), which shows the contribution of specialization. Thus, China-India gap in world market share is almost fully driven by the effect of specialization. On the other hand, India is clearly catching up with China in terms of diversification across products and markets (Panel (c)). Overall, high diversification combined with low specialization implies that India is spreading its exports thinly over many products and partners, leading to its lacklustre performance compared to China.

Figure 2: Decomposition of World Export Market Shares of India and China into Specialization and Diversification Effects, Manufactured Products, 2000 to 2015



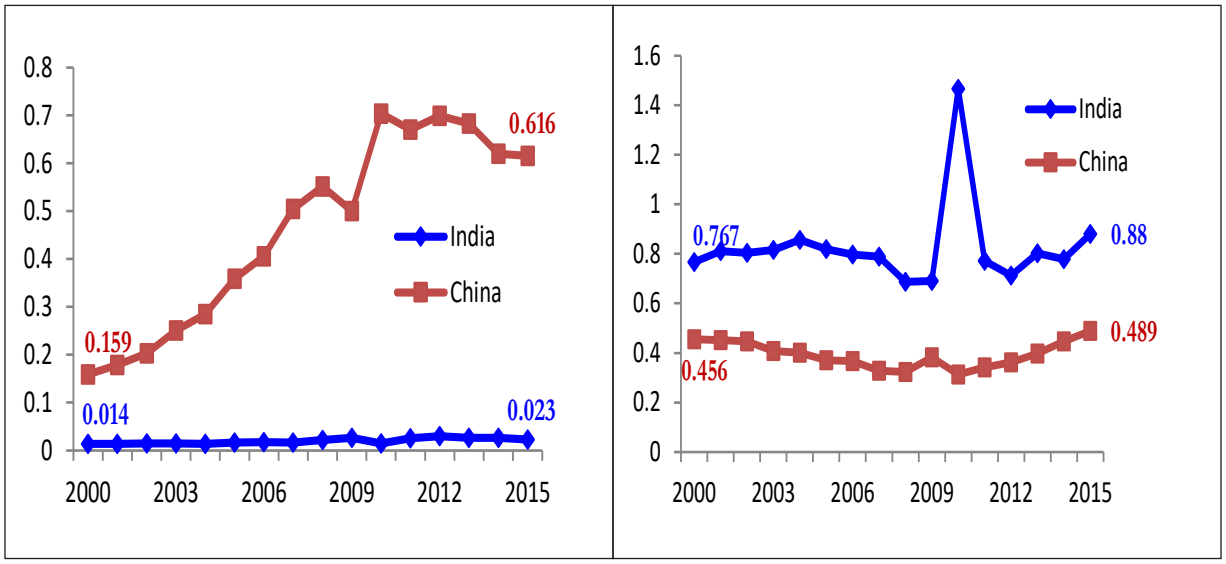
Source: Veeramani, Aerath and Gupta (2018) based on UN-Comtrade (WITS) database

Note: Following Hummels and Klenow (2005), world market shares of India and China in Panel (a) are decomposed into specialization effect in Panel (b) and diversification effect in Panel (c). For a given country and year, the world market share is obtained by multiplying the corresponding values of specialization and diversification effects.

5.8 The specialization effect can change, over the years, due to changes in the quantity and/or the prices of exported commodities. Therefore, it is of interest to further decompose the specialization effect into quantity and price effects. Figure 3 shows that the China-India gap with respect to specialization has been fully driven by the quantity effect. The bottom line is that if India wants to become a major exporter, it should specialize more in the areas of its comparative advantage and achieve significant quantity expansion.

Figure 3: Decomposition of Specialization Effect into Quantity and Price Effects, India and China, 2000-2015

Panel (a): Quantity Effect **Panel (b): Price Effect**



Source: Veeramani, Aerath and Gupta (2018) based on UN-Comtrade (WITS) database

Note: Following Hummels and Klenow (2005), specialization effect shown in Figure 2, Panel (b) is decomposed above into quantity effect in Panel (a) and price effect in Panel (b). For a given country and year, the specialization effect is obtained by multiplying the corresponding values of quantity and price effects.

Box 1: Methodology for Decomposition into Specialization and Diversification Effects

Following Hummels and Klenow (2005), the world export market share of a given country *i* (India and China, in our case) in year *t* to a destination group *D* (which consists of several partner countries *j*) can be decomposed as follows. Let S_{it} stand for the export market penetration of country *i* relative to 'rest of the world' (*r*) in destination market *D*.

$$S_{it} = \frac{X_{it}}{X_{rt}} = \frac{\sum_j \sum_{p \in N^p_{ijt}} x^p_{ijt}}{\sum_{j \neq i} \sum_{p \in N^p_{rjt}} x^p_{rjt}}$$

where, X_{it} = value of aggregate exports from *i* to destination *D*; X_{rt} = value of aggregate exports from *r* to destination group *D*; x^p_{ijt} = value of exports from *i* to *j* in product *p*; x^p_{rjt} = value of exports from *r* to *j* in product *p*; N^p_{ijt} = the set of partner-product pairs where country *i* records 'export relationships' (i.e., the set where $x^p_{ijt} > 0$); N^p_{rjt} = the set of partner-product pairs where *r* records 'export relationships' (i.e., the set where $x^p_{rjt} > 0$).

S_{it} can be expressed as the multiplicative product of diversification (extensive margin) and specialization (intensive margin) effects.

$$S_{it} = \underbrace{\frac{X_{it}}{\sum_{j \neq i} \sum_{p \in N_{ijt}^{p}} x_{rjt}^{p}}}_{(1)\ \text{Specialization}} \times \underbrace{\frac{\sum_{j \neq i} \sum_{p \in N_{ijt}^{p}} x_{rjt}^{p}}{X_{rt}}}_{(2)\ \text{Diversification}}$$

The denominator of the term (1) above measures total exports from *r* in those partner-product pairs in which country *i* records 'export relationships' in year *t*. Therefore, specialization effect is the ratio of country *i's* exports to total exports from *r* within the common set of partner-product pairs. Its value is always positive and can be above or below unity. The denominator of the term (2) represents total exports from *r* while the numerator is the sum of *r's* exports in those partner-product pairs in which country *i* records export relationships. Thus, diversification effect is a measure of the fraction of *r's* exports in those partner-product pairs in which country *i* reports positive export values. It can be seen that the numerator of term (2) is equal to the denominator of term (1). While intensive margin measures the depth of a country's export profile, extensive margin captures the breadth.

Since intensive margin captures changes in the value of exports due to changes in quantity as well as price, it can be further decomposed into price effect (P_{it}) and quantity effect (Q_{it}).

$$Intensive\ Margin_{it} = P_{it} \times Q_{it}$$

The price effect measures the aggregate weighted ratio of *i's* prices to *r's* prices, where the weights are the logarithmic mean of share of product p in exports of *i* and *r* within the common set of partner-product pairs.

$$P_{it} = \prod_{p \in N_{ijt}^{p}} \left(\frac{uv_{ijt}^{p}}{uv_{rjt}^{p}} \right)^{w_{ijt}^{p}}$$

where, uv^{p}_{ijt} and uv^{p}_{rjt} are unit values (proxy for prices) of product *p* exported by *i* and *r* respectively to *j* and w_{ijt}^{p} is the logarithmic mean of s_{ijt}^{p} (share of product *p* in *i's* exports to *j*) and s_{rjt}^{p} (share of product *p* in *r's* exports to *j*).

This methodology draws on an extensive literature in international trade (Evenett and Venables (2002), Hummels and Klenow (2005), Felbermayr and Kohler (2006), Helpman et al. (2008), Amiti and Freund (2010), Eaton et al. (2007), Besedes and Prusa (2011), Veeramani, Aerath and Gupta (2018). The results reported in Figure 2 and 3 are based on Veeramani, Aerath and Gupta (2018) who used data on manufactured exports at the 6-digit level for the period 2000-2015. An 'export relationship' is identified if $xp_{ijt}>0$ – that is, if country i (India or China) reports a positive export value to partner country j in product p (i.e., at HS 6-digit level) in year t.

Low Level of Participation in Global Value Chains

5.9 Despite being abundant in labour, the share of traditional unskilled labour-intensive industries in India's non-oil merchandise exports declined by almost one-half from 30.7 per cent in 2000 to 16.3 per cent in 2018 (Figure 4(a)). The fast growing commodities in India's export basket are capital and skill intensive (see also Kochhar et al., 2006; Panagariya, 2007, Veeramani, 2012a, Veeramani and Aerath, 2020). In fact, India's participation in GVCs has been low compared to the major exporting nations in East and Southeast Asia (Athukorala, 2014; Veeramani and Dhir, 2017; Veeramani, 2019).

Figure 4(a): Composition of India's Non-oil Merchandise Exports

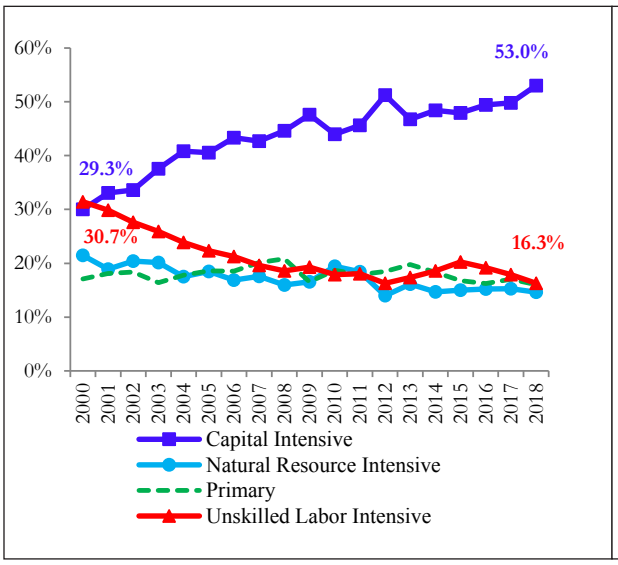
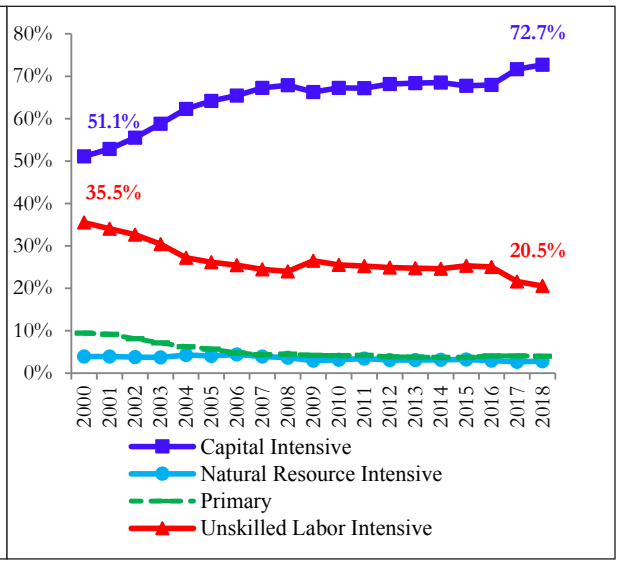


Figure 4(b): Composition of China's Non-oil Merchandise Exports



Source: UN-Comtrade (WITS) database and Survey Calculations

Note: See Box 2 for details regarding the classification of traded products into the four categories

5.10 In contrast, China's export composition shows a strong bias towards traditional labour-intensive industries and labour-intensive stages of production processes within capital-intensive industries (in particular, assembly of electronics and electrical machinery). Notwithstanding its decline over the years, unskilled labour-intensive products account for a higher share in China's export basket compared to India's (Figure 4(b)). During the first decade of its trade liberalization (1980-1990) China's export growth was mainly based on its specialisation in unskilled labour intensive products; its share in China's export basked increased from 27.8 per cent in 1980 to 46.5 per cent in 1990. On the other hand, the share of unskilled labour intensive products in India's export basket remained around 30 per cent during 1980-2000, before experiencing a premature decline since 2000 (Veeramani, 2012b).

5.11 While capital-intensive products account for a higher share in China's export basket than that of India's, it is important to emphasize two contrasting patterns. First, exports of capital-intensive products from China expanded since 2000 after the country recorded a major export expansion, for nearly two decades (1980-2000), of traditional unskilled labour intensive products. By contrast, India had not undergone a similar transition. Second, in contrast to India, export growth of capital-intensive products from China has been driven by its high level of participation in GVCs within these industries. China's export promotion policies since the 1990s have relied heavily on a strategy of integrating its domestic industries within the GVCs. Making use of imported parts and components, China emerged as a major assembly hub for several capital-intensive products.

Box 2: Factor Intensity Classification of Traded Products

The values reported in Figure 4(a) are estimated using the factor intensity classification of the International Trade Centre (ITC), adapted by Hinloopen and van Marrewijk (2008), which distinguishes between five broad factor-intensity categories at the 3-digit level of Standard International Trade

Classification (SITC). A total number of 240 products, at the 3-digit level, have been grouped into five categories: primary (83 products), natural resource-intensive (21 products), unskilled labour-intensive (26 products), human capital-intensive (43 products), technology-intensive (62 products), and unclassified (5 products). The detailed classification is available at: (http://www2.econ.uu.nl/users/marrewijk/eta/intensity.htm). The capital-intensive category consists of human capital-intensive plus technology-intensive products.

Export of "refined petroleum products" (SITC 334) is not included in any of the four factor intensity categories shown in Figure 4a and 4b. Note that, as per the ITC classification, SITC 334 is part of "primary" category. Since the early 2000s, India's exports of refined petroleum products recorded significant growth with its share in total merchandise exports increasing from 3.3 per cent in 2000 to 14.6 per cent in 2018. The export surge has been driven mainly by India's private sector oil refineries. India imports crude oil and specializes in the refining stage of the value chain in this industry. Since petroleum refining is a highly capital-intensive process, it is appropriate to include this product in the capital-intensive, rather than primary, category (Veeramani, 2012a). Thus, if SITC 334 is treated as capital-intensive, the share of capital intensive products in India's total merchandise exports almost doubled from 31.6 per cent in 2000 to 59.9 per cent in 2018. For China, it does not make much difference as SITC 334 accounts for a small share (about 1 per cent) in its export basket.

Low Market Penetration in High Income Countries

5.12 The dominance of capital intensive products in the export basket along with a low level of participation in GVCs have resulted in a disproportionate shift in India's geographical direction of exports from traditional rich country markets to other destinations (Veeramani, 2012a, Veeramani and Aerath, 2020). The high-income OECD markets accounted for 49.7 per cent of China's exports in 2018 (Figure 5b) while the corresponding figure for India was 40.2 per cent (Figure 5a); similarly, high-income OECD and other high-income countries together accounted for 63.9 per cent of China's exports while that of India was 56.7 per cent.

Figure 5(a): Trading partners by income level, India

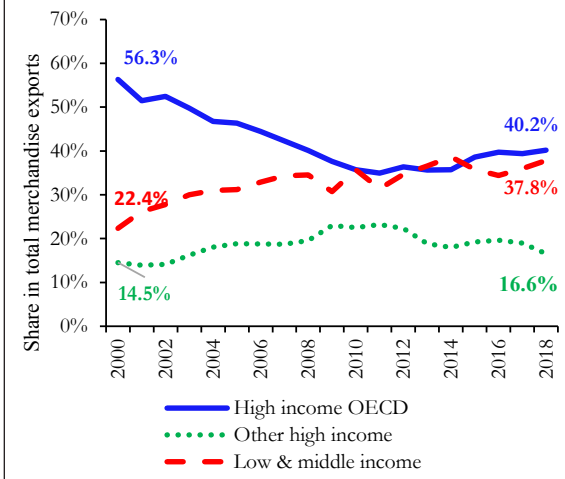
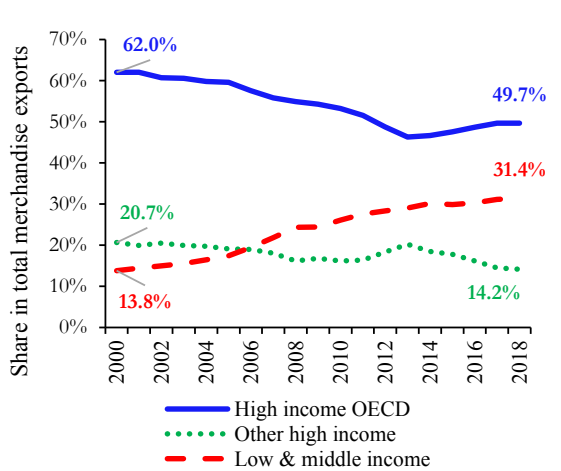


Figure 5(b): Trading partners by income level, China

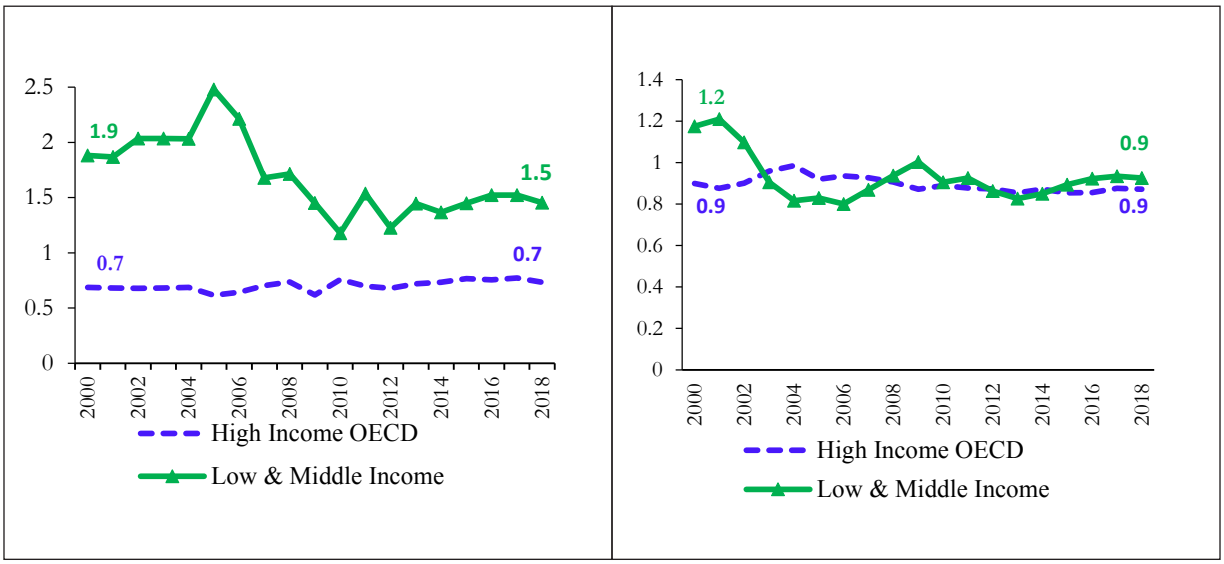


Source: UN-Comtrade (WITS) database and Survey Calculations

5.13 That India's market penetration in high-income countries is perceptibly low, and has declined disproportionately during the recent decades, is not difficult to understand given the distorted pattern of its specialization. Developing countries, especially those with low level of participation in GVCs, find it extremely difficult to export capital intensive products to the quality/brand conscious markets in richer countries. In contrast to capital-intensive products, high-income countries generally provide relatively a larger market for India's unskilled labour-intensive products (Figure 6, panel (a)). On the other hand, Chinese products, irrespective of whether they are capital intensive or unskilled labour-intensive, are able to penetrate equally both in high income and low & middle income countries (Figure 6, panel (b)). For China, this pattern is expected as it is an assembly centre for the world market, irrespective of who the buyer is.

Figure 6: Share of capital intensive exports as a ratio of the share of labour-intensive products across partner country groups

Panel (a): India **Panel (b): China**



Source: UN-Comtrade (WITS) database and Survey Calculations

5.14 The extent of China-India gap in terms of dollar value of total exports, specialization effect, diversification effect, quantity effect and price effect is shown in Figure 7(a). These estimates are obtained from a regression analysis which controls for the effects of various factors that affect bilateral trade flows of each of the two countries. On an average, China's export value in dollar terms exceeds that of India by about 743 per cent per year during the period 2000-2015. The bulk of this gap is accounted by specialization and quantity effects. Interestingly, however, China-India gap almost fully disappears once the effect of China's high trade orientation with richer trading partners is taken into account (Figure 7(b)).

5.15 A general perception is that China's exchange rate policy mainly contributed to its export success. However, as seen in Figure 2 and the subsequent ones, India's export under-performance persists over two decades when India's exchange rate depreciated significantly. In fact, multivariate analysis using regressions, which are omitted for brevity, shows that exchange rate does not significantly explain China-India gap. It can be concluded that China's remarkable export

performance, compared to India, is driven by a set of interrelated factors including a high level of participation in GVCs, a high degree of specialization in labour intensive production activities, large scale in the chosen sectors of specialisation, and a high level of export penetration in traditional rich country markets.

Figure 7(a): Estimates of China-India Gap (Per cent)

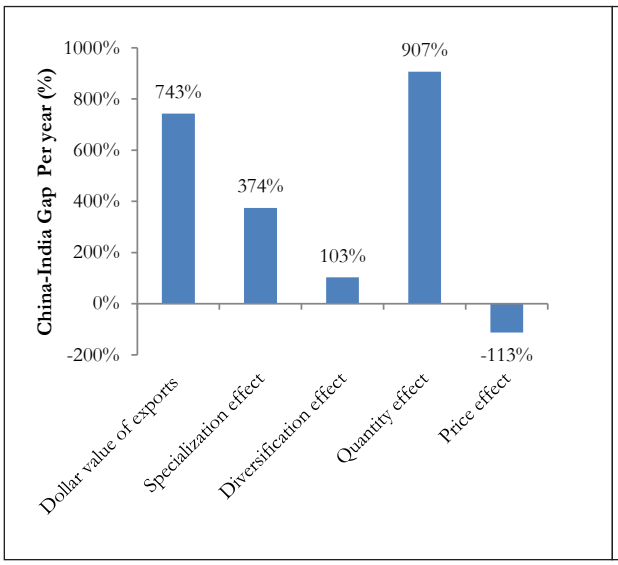
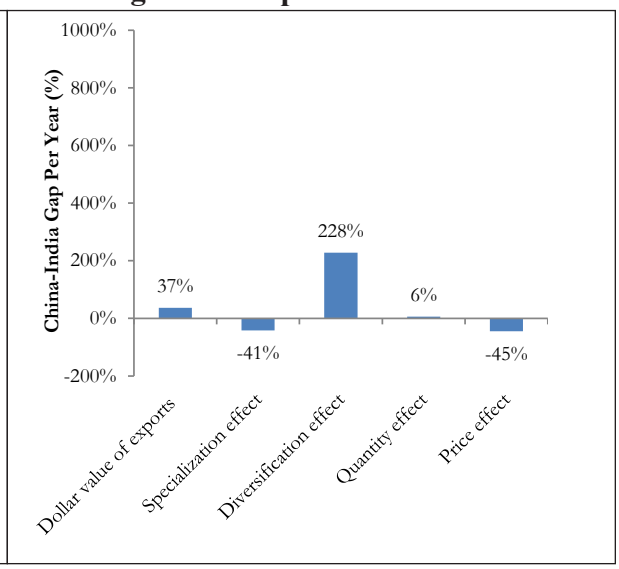


Figure 7(b): China-India Gap after controlling for China's exports to high-income partner countries



Source: Based on regression results in Veeramani, Aerath and Gupta (2018)

Note: The regression is based on pooled bilateral export data for India and China for the period 2000-2015. The variables on the x axis are the dependent variables. Independent variables include real GDP of partner countries, real per capita GDP of trading partners, real bilateral exchange rate, real inward FDI from trading partners, dummy variables for trade agreements, China dummy (taking value 1 if exporter is China and 0 if India), partner fixed effects and year fixed effects. Estimates of China-India gap is based on the coefficient of China dummy.

5.16 In a nutshell, driven by the nature of its specialization, India has gained a competitive advantage in relatively low and middle income country markets but at the cost of losing the much bigger markets in richer countries[1]. Though India can benefit significantly from utilising the potential opportunities from greater trade with high income markets, this requires a reorientation of our trade specialization towards labour-intensive product lines. This can be achieved both via selective focus on (i) traditional labour-intensive sectors such as textiles, especially man-made fibres, (ii) increased participation in GVCs.

REAPING GAINS FROM PARTICIPATION IN GLOBAL VALUE CHAINS

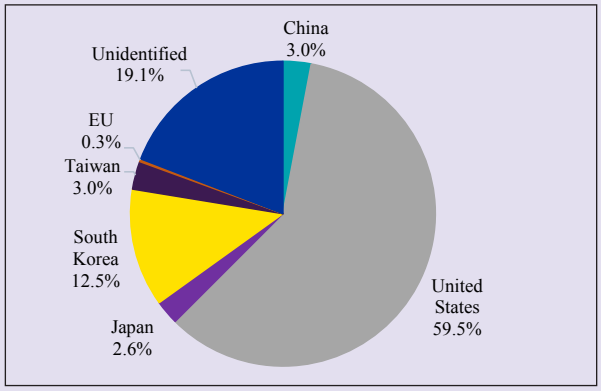
5.17 Is it desirable to promote strong local linkages for domestic industries by sourcing intermediate inputs domestically or to participate in GVCs wherein linkages are globally dispersed? The answer to this question depends on which of these strategies

[1] An illustrative example will make this point clearer. India's exports of passenger motor vehicles (SITC 7810), a capital and skill-intensive product, increased remarkably from $102 million in 2000 to $5392 million in 2015, registering an annual average growth rate of 34 per cent. In 2015, high-income OECD countries accounted for only 22 per cent of Indian exports of passenger motor vehicles while low & middle-income countries accounted for 68 per cent. On the other hand, India's exports of apparel (SITC 84), a traditional labor-intensive category, grew at a much lower rate of 9 per cent per annum during 2000-2015. In 2015, while high-income OECD countries accounted for 64 per cent of India's exports in this category, low & middle-income countries accounted for just 12 per cent (Veeramani and Aerath, 2020).

would result in higher levels of aggregate value added and employment within the country. A higher level of participation in GVCs implies that, for any given country, the share of foreign value added in gross exports is higher than when most inputs are sourced locally. However, owing to scale and productivity effects of selling in the world markets, participation in GVCs can lead to higher absolute levels of domestic value added and domestic job creation (Grossman and Rossi-Hansberg, 2008). See Figure 8 for the conceptual framework explaining this phenomenon. Chinese dominance of assembly in iPod and iPhone illustrates this phenomenon (Box 3). The scale effect creates millions of jobs and is therefore particularly suited for implementation in a labour-intensive economy such as India.

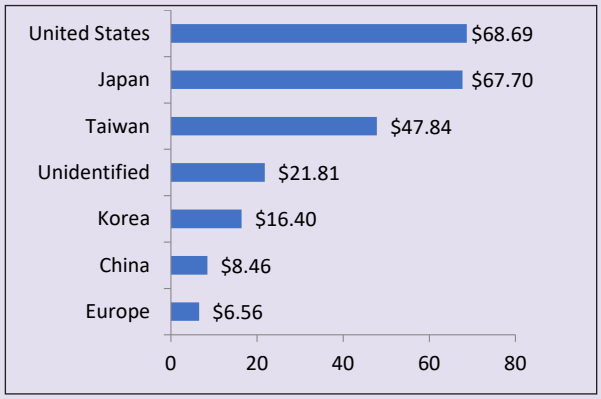
5.18 Multivariate analysis using regressions confirms that participation in GVCs, as measured by the sectoral ratio of foreign value added to gross exports, leads to higher absolute levels of gross exports, domestic value added and employment (Figure 9). It can be seen that a 10 per cent increase in foreign value added share of gross exports leads to 17.9 per cent increase in the dollar value of gross exports [panel (a) in Figure 9], which in turn, causes domestic value added (from exports) to increase by 7.7 per cent [panel (b) in Figure 9]. Finally, 7.7 per cent increase in domestic value added increases employment by 13.2 per cent. These relationships are robust to different model specifications with full set of control variables. The bottom line is that India can reap rich dividends by adopting policies aimed at strengthening its participation in GVCs.

Box 3: Example of Gain from Assembly: Apple iPod and iPhone 7 Assembly in China



Distribution of value added in Apple iPod

Within the iPod value chain, China specializes in assembly while parts & components are imported. The factory-gate price of an assembled iPod was estimated to be $144 in 2008, but only $4 of this constituted Chinese value added (3 per cent of factory gate price). However, China assembled almost all of the 54.83 million iPods that Apple sold, which led to aggregate domestic value added of $219 million.



Distribution of value added in iPhone 7

China makes only US$8.46 from the assembly of an iPhone 7. However, total Chinese value added is very high ($8.46 × number of iPhones sold in the world). iPod and iPhone are just two examples. There are thousands of such products, where China has emerged as an assembly centre.

Source: Dedrick et al (2010) and Dedrick et al (2018)

Figure 8: The Conceptual Framework for Gains from "Assembling in India" as part of "Make in India"

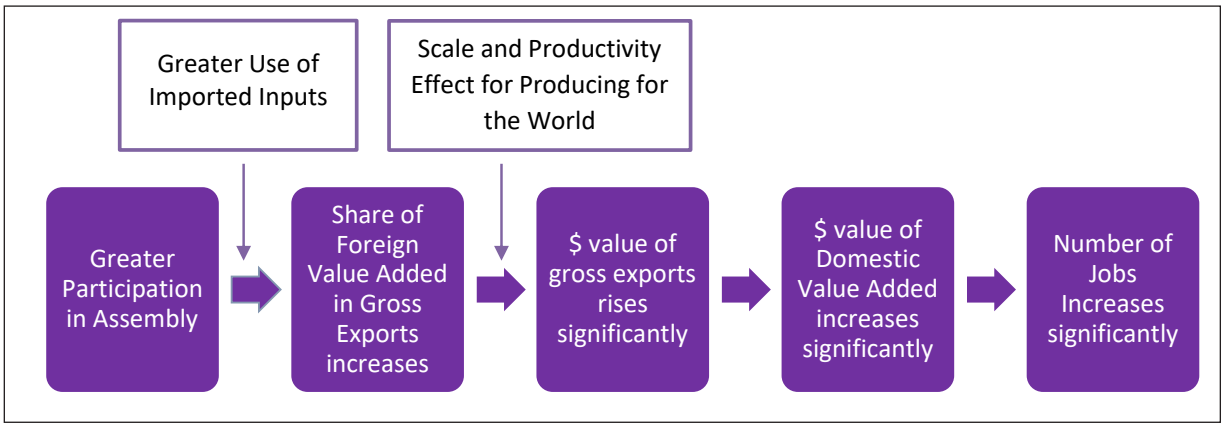
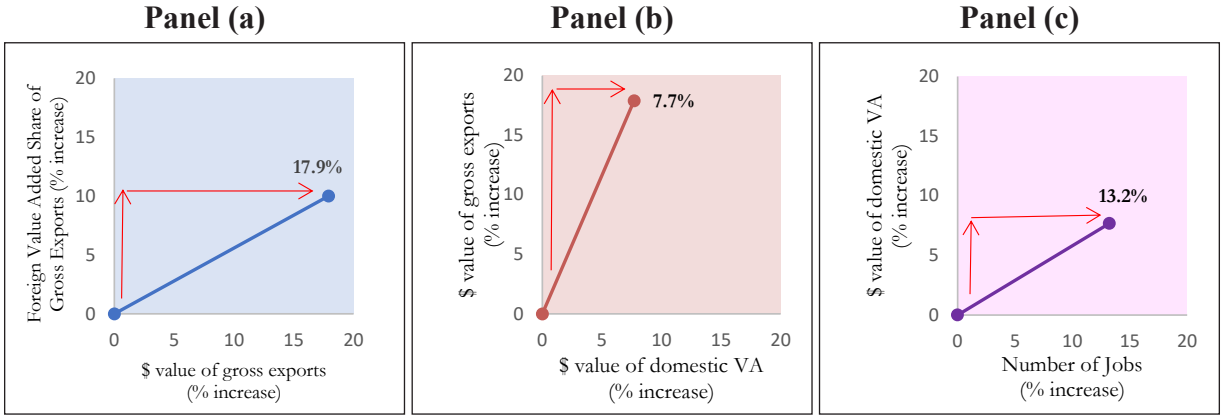


Figure 9: Gains from participation in GVCs, Empirical Evidence for India's Manufacturing Industries



Source: Based on regression results in Veeramani and Dhir (2019a) and Survey Calculations

Note: The arrows in the figure show percentage increase in the y-axis variable leading to a corresponding percentage increase in the x-axis variable. The three graphs are interlinked such that the variable in the x-axis of panel (a) is the same as that on the y-axis of panel (b) and variable in the in the x-axis of panel (b) is the same as that on the y-axis of panel (c). The estimates reported here are based on a simultaneous equation model (3SLS regressions) run on a panel data set of 56 Indian manufacturing industries for the period 1999-00 to 2012-13. The regression specifications include full set of control variables, including industry and year fixed effects.

WHICH INDUSTRIES SHOULD INDIA SPECIALIZE IN FOR JOB CREATION?

5.19 Which industries should India focus on? Given our comparative advantage in labour-intensive activities and the imperative of creating employment for a growing labour force, there are two groups of industries that hold the greatest potential for export growth and job creation.

5.20 First, there exists a significant unexploited export potential in India's traditional unskilled labour-intensive industries such as textiles, clothing, footwear and toys (Veeramani and Dhir, 2016). The GVCs in these industries are controlled by "buyer driven" networks wherein the lead firms that are based in developed countries concentrate in higher value added activities such as design, branding and marketing. Physical production is carried out, through sub-contracting arrangements, by firms in developing countries. Examples include

the production networks of Wal-mart, Nike, Adidas etc.

5.21 Second, India has huge potential to emerge as a major hub for final assembly in a range of products, referred to as "network products" (NP) (Athukorala, 2014; Veeramani and Dhir, 2017). The GVCs in these industries are controlled by leading MNEs such as Apple, Samsung, Sony etc. within "producer driven" networks. In general, these products are not produced from start to finish within a given country; instead, countries specialize in particular tasks or stages of the good's production sequence. Within the production network, each country specializes in a particular fragment of the production process; this specialization is based on the country's comparative advantage. Labour abundant countries, like China, specialize in low skilled labour-intensive stages of production such as assembly while the richer countries specialise in capital and skill-intensive stages such as R&D. Thus, the lead firms retain skill and knowledge-intensive stages of production in high-income headquarters (e.g., the U.S.A, E.U and Japan) but locate assembly related activities in low wage countries (e.g., China and Vietnam). The rest of the discussion in this Chapter focuses on India's growth potential in NP.

5.22 Athukorala (2011) identified six groups of NP, based on Standard International Trade Classification (SITC) nomenclature, where global production sharing is most prevalent (Table 1). Together, NPs accounted for nearly 30 per cent of world exports in 2018, with the share of Electrical Machinery (SITC 77) being the highest at 10.4 per cent. Using trade data at a detailed level of disaggregation and the UN-Broad Economic Categories (BEC) system, it is possible to disentangle total trade in these NP into its two main sub-categories - parts & components (P&C) and assembled end products (AEP).

Table 1: World Exports of Network Products, 2018

SITC Code	SITC Description	World Exports, 2018 (trillion US$)	Share in Total World Exports, 2018 (per cent)
75	Office machines and automatic data processing machines	0.83	4.37
76	Telecommunication and sound recording equipment	0.65	3.42
77	Electrical Machinery	1.97	10.44
78	Road Vehicles	1.55	8.23
87	Professional and scientific equipment	0.48	2.53
88	Photographic Apparatus	0.12	0.66
Total Network Products		**5.59**	**29.6**

Source: UN Comtrade (WITS) Database
Note: Based on import data reported by all countries in 2018.

World Exports of Network Products: Trends and Patterns

5.23 The world exports of NP increased steadily from US$ 2.01 Trillion in 2000 to US$ 5.41 Trillion in 2018 (Figure 10(a)). The increase was mainly driven by AEP whose value rose from US$ 1.11 Trillion to US$ 3.93 Trillion. On an average, NP accounts for about 42 per cent of world manufactured exports. The average share of AEP exports in total NP exports increased from about 59 per cent during 2000-2016 to about 72 per

cent during the last two years (2017-2018). Asia's share in world exports of NP increased phenomenally from about 37 per cent in 2000 to 51 per cent in 2018 while the shares of both Europe and America declined (Figure 10(b)). East Asia accounted for the bulk of total Asian exports followed by Southeast Asia (Figure 10(c)). Rest of Asia (including South, Central and Western Asia) accounted for just 3 per cent of the total Asian exports.

Figure 10: Trends and Geographic Distribution of Network Product Exports, 2000 to 2018

Figure 10(a): Trends in world exports

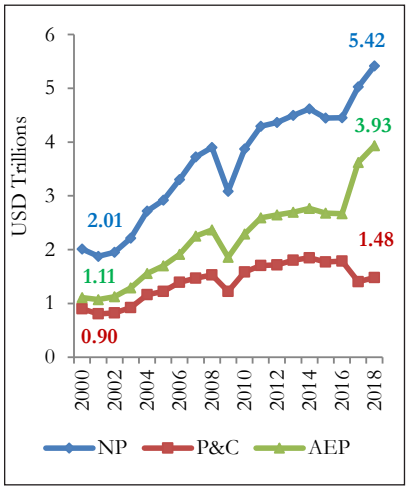


Figure 10(b): Geographical Distribution of NP World Exports

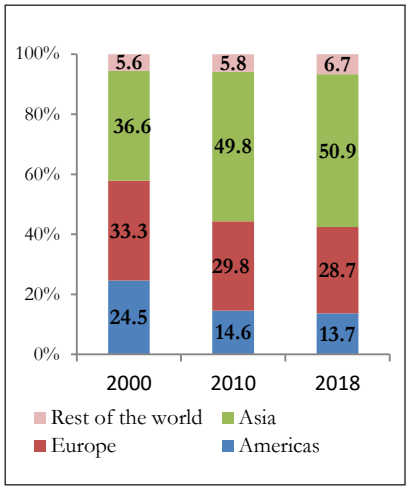
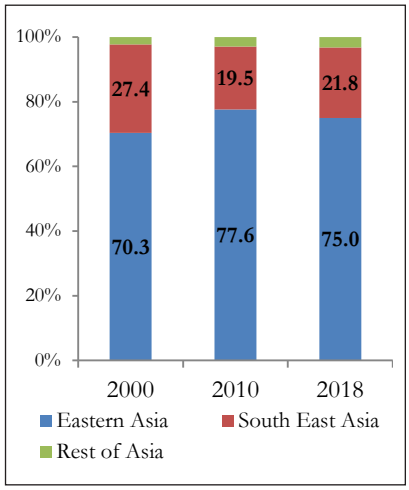


Figure 10(c): Distribution of Asian NP Exports



Source: UN Comtrade (WITS) database and Survey Calculations

Note: NP stands for Network Product, P&C and AEP stand for Parts & Components and Assembled End Products respectively within the group of Network Products. Estimates are based on mirror statistics (imports reported by trading partners) for a fixed set of 118 countries that have reported import data for every year during 2000-2018. In 2018, these 118 countries accounted for 96.8 per cent of total world trade in NP.

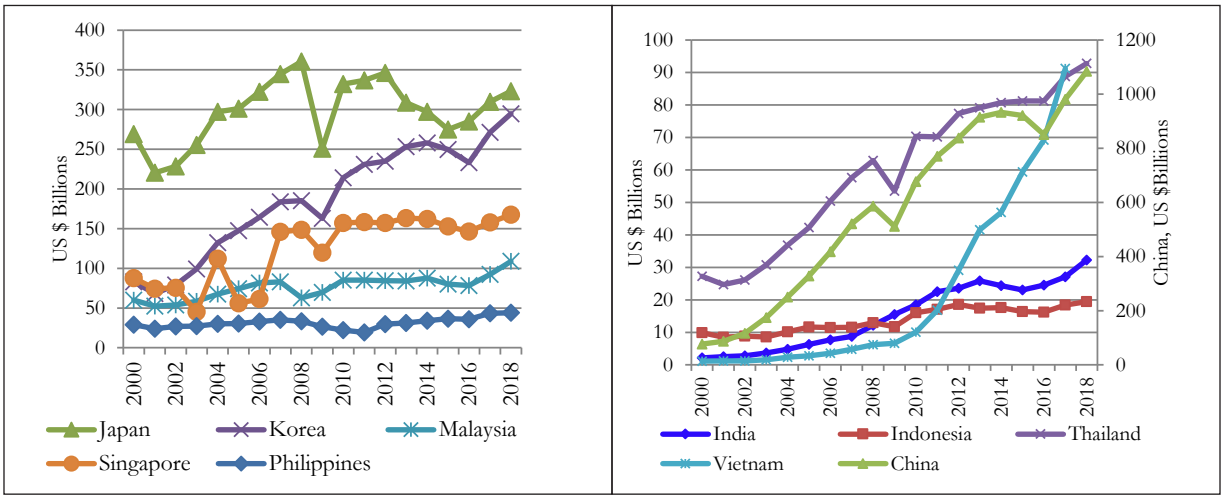
India in Comparison to East and Southeast Asia

5.24 Even as India's export of NP increased from about US$2 billion in 2000 to US$32 billion in 2018, its participation in this market remains miniscule compared to that of other Asian countries (Figure 11). The share of NP exports in total national merchandise exports by each country is shown in Figure 12(a). It is evident that, despite some increase, NP exports accounts for a very small share (10 per cent in 2018) in India's export basket. In contrast, these products account for about one half of the total national exports of China, Japan and Korea. Between 2000 and 2018, the share of NP in the export basket has increased by 41 percentage points for Vietnam and by 18 percentage points for China.

5.25 Among the major Asian countries, India and Indonesia are the only ones with a trade deficit in NP (Figure 12(b). India's import value of $68 billion in 2017 is higher than that of Thailand ($61billion) and Philippines ($39 billion) even as the latter two countries record significantly higher level of exports than India. India's import basket mostly consists of electronics and electrical machinery, primarily meant for domestic final use (Tewari and Veeramani, 2016).

Figure 11: Exports of NP by Asian Countries, USD Billions, 2000 to 2018

Panel (a): Early entrants **Panel (b): Late entrants and laggards**

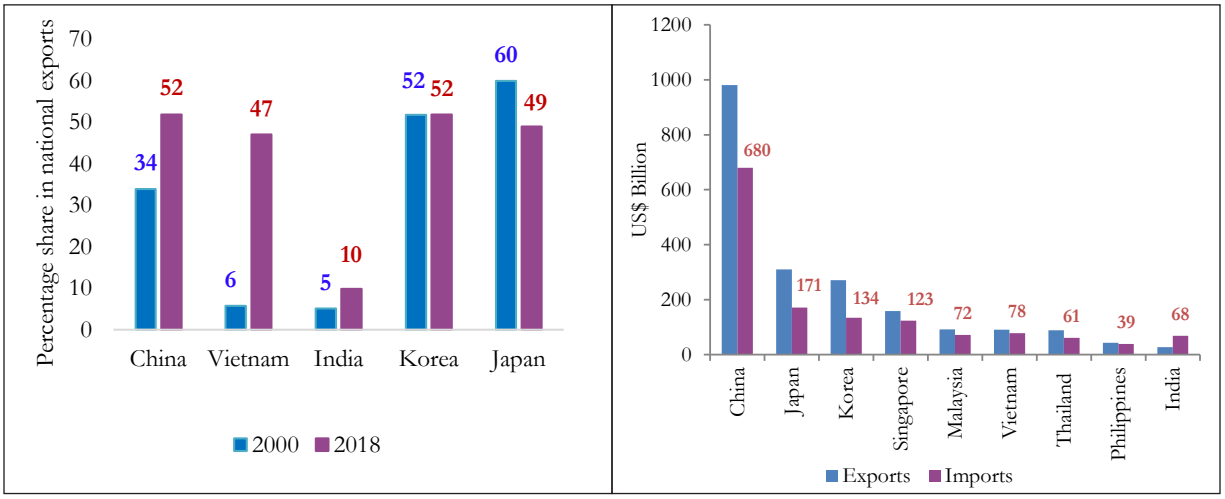


Source: UN Comtrade (WITS) Database and Survey Calculations

Notes: China's export values are in secondary axis in Panel(b). Estimates are based on export data reported by each country. Vietnam has not reported data for the year 2018.

Figure 12(a): Share of NP in India's merchandise export basket is very low

Figure 12(b): Among the major Asian countries, India is the only one with trade deficit in NP

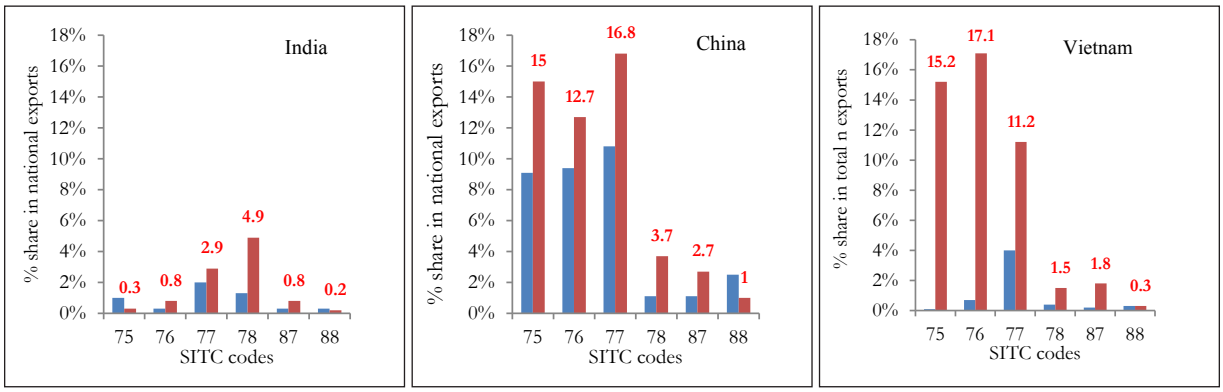


Source: UN Comtrade (WITS) Database and Survey Calculations

5.26 Turning to the product group composition of India's NP exports, the percentage shares of four product groups recorded an increase in 2018 as compared to 2000 (Figure 13). These are: Road vehicles (SITC 78), Electrical machinery (SITC 77), Telecommunication and sound recording equipment (SITC 76), and Professional and scientific equipment (SITC 87). The main category of NP exported by India is Road vehicles with a share of 4.9 per cent in its total exports in 2018 (up from 1.3 per cent in 2000). In contrast, Electrical machinery, which accounts for the largest share in the export baskets of China (16.8 per cent) and Korea (30.5 per cent), accounts for less than 3 per cent of India's total exports. Apart from electrical machinery,

other two sub-categories where India can achieve significant export growth are: (i) Office machines and automatic data processing machines (SITC 75) and (ii) Telecommunication and sound recording equipment (SITC 76).

Figure 13: Shares of NP sub-categories in National Export Basket



Source: UN Comtrade (WITS) database and Survey Calculations

Note: The description of the SITC codes are: Office machines and automatic data processing machines (SITC 75); Telecommunication and Sound Recording Equipment (SITC 76); Electrical Machinery (SITC 77); Road Vehicles (SITC 78), Professional and scientific equipment (SITC 87); Photographic Apparatus (SITC 88).

5.27 Several leading automobile companies have established assembly plants in India and some of them have begun to use India as an export base within their production networks (see the discussion in Box 4). Since the early 2000s, India's exports of assembled cars (completely built units) have increased at a much faster rate than automobile parts (Athukorala and Veeramani, 2019). The case of mobile phone assembly is another recent success story for India (see Box 5). In contrast to auto industry, the MNEs that have set up production bases in India's electronics and electrical goods industries have been mainly involved in production for the domestic market (Athukorala, 2014, Tewari and Veeramani, 2016).

Box 4: Learnings from Integration into GVCs by Indian Automobile Industry

After Government of India established Maruti Udyog Limited (MUL) in 1981, MUL entered into a license and joint venture agreement with Suzuki Motor Co Ltd in 1982. Suzuki acquired 26 per cent stake in MUL in return for providing latest technologies and management practices. The company started its operation with the import of totally assembled cars in Japan, followed first by assembly of semi- knocked down (SKD) packs and then by completely- knocked down (CKD) packs supplied by Suzuki. During the early stage, assembly of cars in India involved fitting low-technology and low-value components and equipment into the imported car (Hamaguchi, 1985). During 1985-89 the import value of auto components shot up rapidly (D'Costa, 1995). India's imports of auto parts from Japan increased from US$4 million in 1980 to US$155 million in 1986, accounting for 77 per cent of India's total auto parts imports. However, with the development of domestic auto ancillary industry, imports of auto parts declined sharply since the late 1980s. In the meanwhile, the success of the joint venture led Suzuki to increase its equity from 26 per cent to 40 per cent in 1987, to 50 per cent in 1992, and further to 56.21 per cent in 2013. Indian government sold the remaining 18 per cent of its shares in 2007.

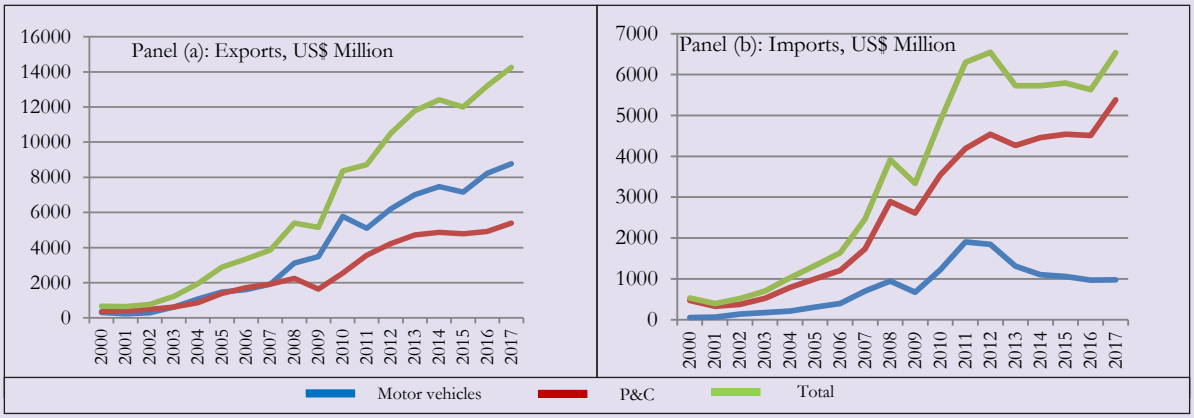
Following the entry of Suzuki, other major Japanese automobile manufacturers (Toyota, Mitsubishi,

Nissan, and Mazda) arrived (Athukorala and Veeramani, 2019). Several Tier 1 automobile parts suppliers (such as Denso, Aisin Seiki, and Toyota Boshoku) and global automobile parts producers arrived (such as Robert Bosch, Delphi, Magna, Eaton, Visteon, and Hyundai Mobil). Hyundai was the first automobile MNE to establish a 100 per cent subsidiary in the country. Volkswagen, Nissan, BMW, and Isuzu Motors followed suit. Companies that first entered as joint ventures, such as Honda, Ford, Fiat, and Renault severed links with their local partners and established 100 per cent subsidiaries.

From about the early 2000s, the Indian automobile industry has undergone a remarkable transformation from production for the domestic market, which remained its modus operandi for over a half century, to global integration. The country has emerged as a major assembly centre for compact cars (Athukorala and Veeramani, 2019). India's exports of completely built units (CBUs) increased from about US$225 million in 2001 to US$8.8 billion in 2017, while exports of parts and accessories increased from US$408 million to US$5.5 billion between these two years (see panel (a) in the figure below). The pattern is quite different on the import side with parts and accessories growing significantly faster than assembled vehicles during the same period (see panel (b) in the figure below). In 2017, the import value of assembled vehicles stood below US$1 billion compared to about US$5.4 billion worth of imports of parts and accessories. While assembled motor vehicles constitute the bulk of India's automobile exports, parts and accessories account for the lion's share of total automobile imports. This pattern is consistent with the emergence of India as an assembly centre for automobiles.

The key learning from the successful case study of the Indian Automobiles sector is that domestic firms graduate up the production value chain by first starting with low-technology operations such as assembly and then moving to manufacturing of components. In the process, imports of components increase in the short run. Following a policy of import substitution right from the outset does not enable the process of graduation up the production value chain.

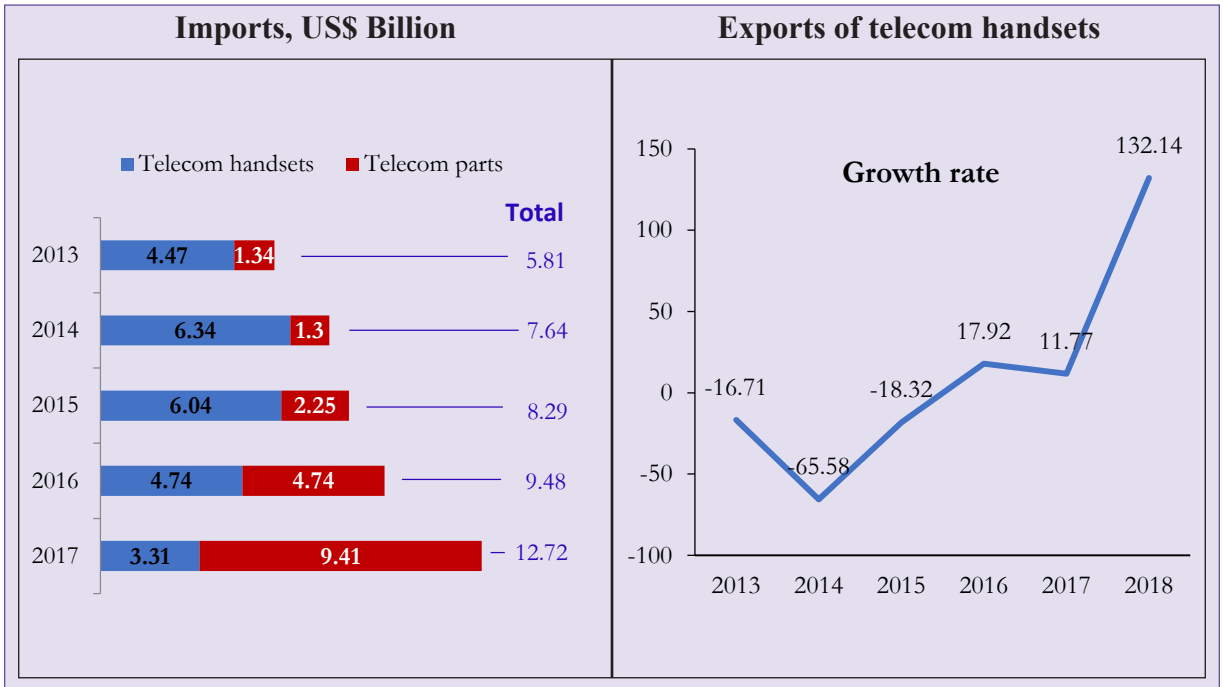
Exports and imports of motor vehicles versus and parts & components (P&C)



Source: UN Comtrade (WITS) database

Box 5: Assembly of mobile phones in India

India toppled Vietnam to become the second largest manufacturer of mobile phones globally following China in 2018 with a world share of 11 per cent. India could manufacture around 1.25 billion handsets across various segments by 2025, firing up an industry worth around $230 billion (ICEA-McKinsey report, 2018). Between 2013 and 2017, while India's import of telecom handsets declined from US$4.47 billion to US$3.31 billion that of telecom parts increased steadily from US$1.34 billion to US$9.41 billion. At the same time exports of telecom handset increased significantly during the last three years. This pattern is consistent with the emergence of India as an assembly centre for telecom handsets.



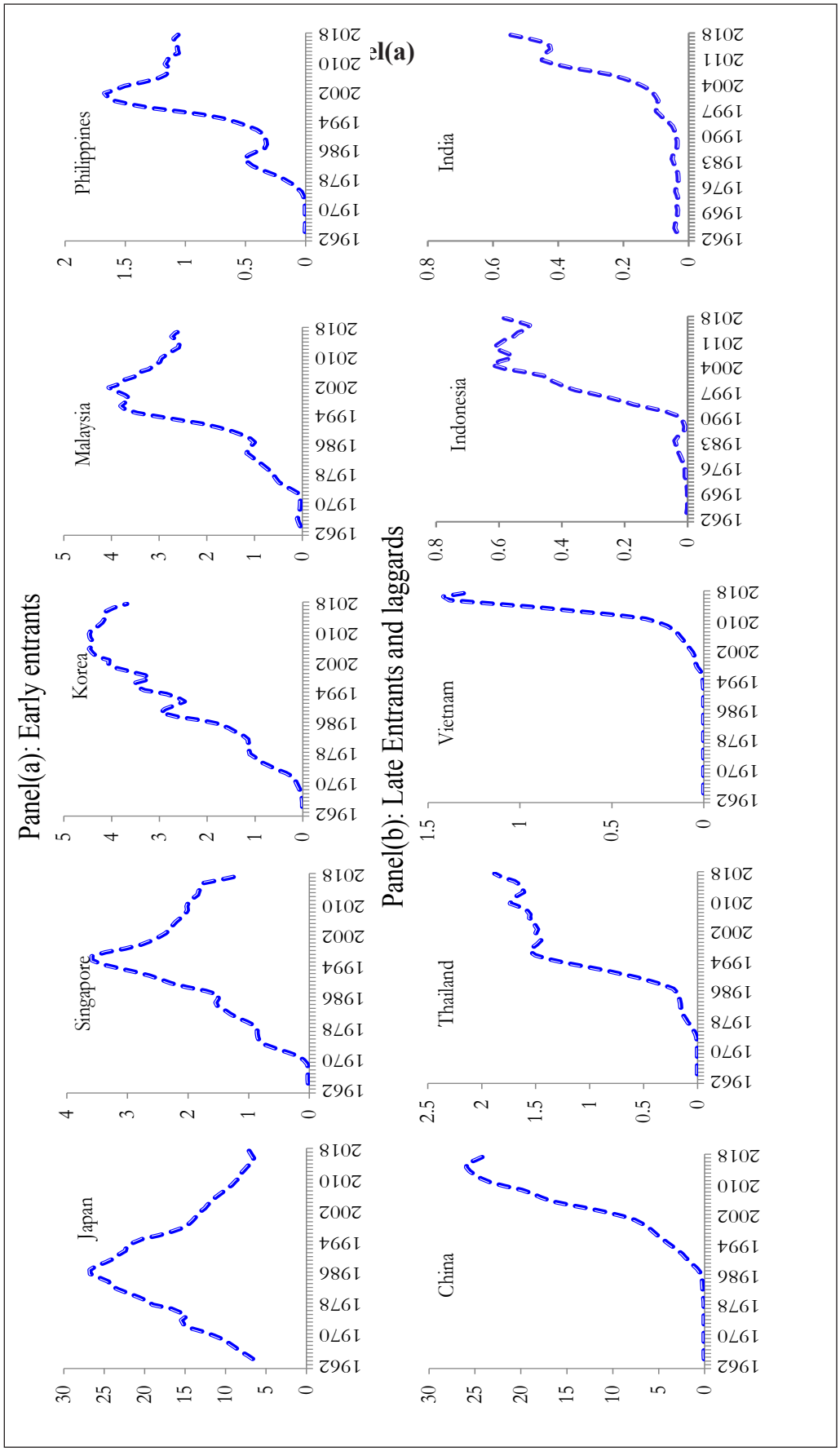
Source: DGCI&S

PATTERN OF ENTRY

5.28 The pattern of entry, rise, survival, and relative decline of countries in the export market for NP is consistent with the "wild-geese flying model" formulated by Japanese economist Kaname Akamatsu during the 1960s. The first Asian country to enter the export market for NP was Japan followed by a number of East and Southeast Asian countries. Japan, the lead goose, provided capital, technology and managerial know-how to "follower geese" countries in East and Southeast Asia. "Wild geese fly in orderly ranks forming an inverse V, just as airplanes fly in a formation" (Akamatsu, 1962, p.11). The export market participation of several of the Asian countries, over the years, indeed depicts an "inverted V" pattern (see Figure 14). Panel (a) in the figure depicts the pattern for the early entrants – Japan, Korea, Singapore, Malaysia and Philippines. Panel (b) shows the pattern for the late entrants (China, Thailand and Vietnam) and laggards (India and Indonesia). Among the late entrants, China seems to have reached the inflection point of "inverted V" while Thailand and Vietnam are on the rising part of the curve. A comparison of the charts shows that the take-off process in NP exports may be beginning in India.

5.29 Larger countries like Japan and China, which have survived in the market for longer periods of time, took off with an expansion of assembled end products (AEP) while parts & components (P&C) followed suit (Figure 15). Japan's descent on the inverted V-path also began with AEP in 1985 followed by P&C circa 1993. China seems to have reached the inflection point of the inverted V-curve for AEP circa 2015 while its world market share in P&C continues to increase. The most recent entrants, Thailand and Vietnam, have taken off with an expansion of AEP exports while P&C is following suit. For India, P&C has recorded some growth in recent years while AEP, with exceptions such as passenger cars and telecom handsets, has declined.

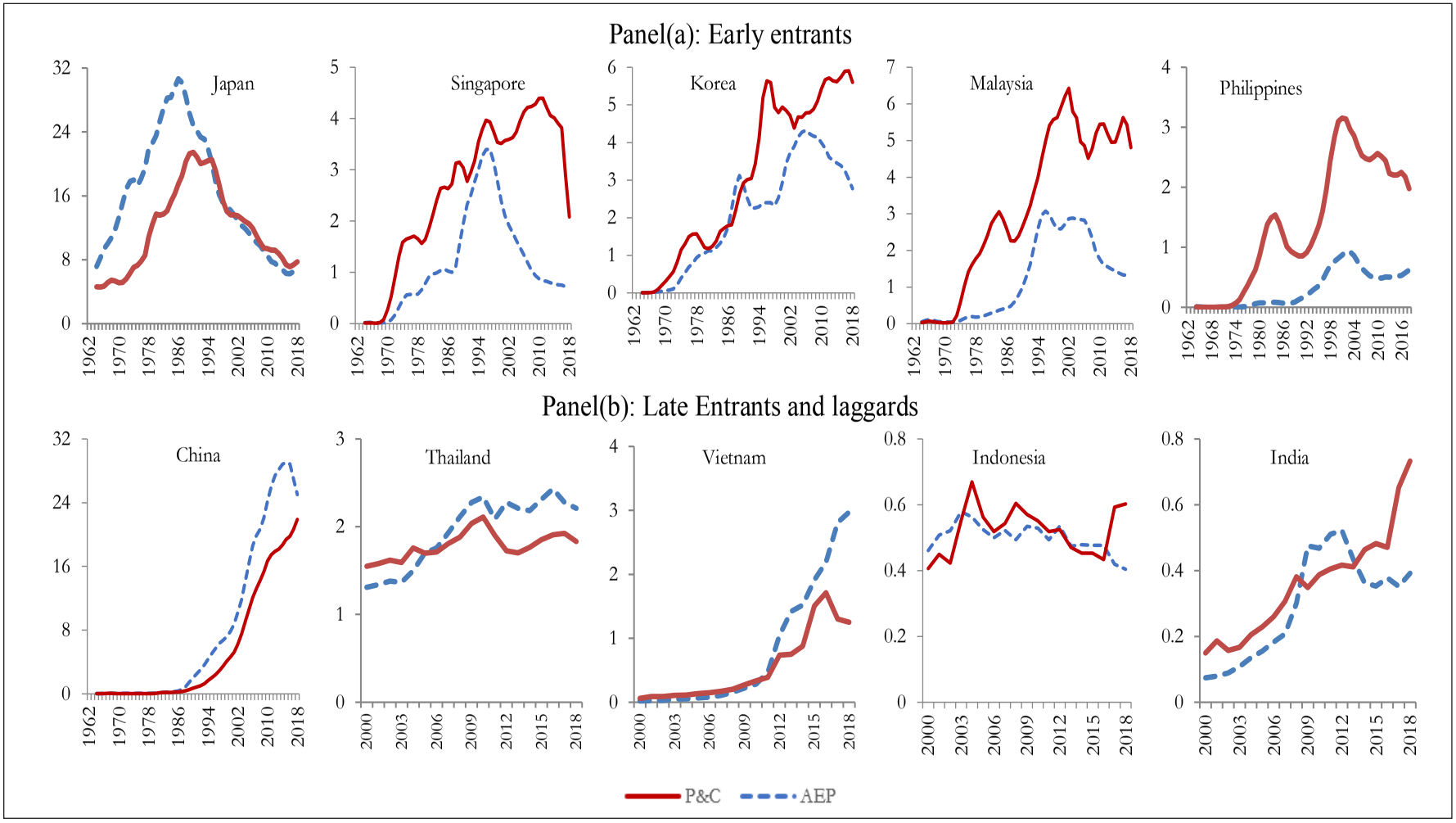
Figure 14: Wild Geese Flying Pattern of Exports in Network Products, 1962-2018



Source: Veeramani and Dhir (2019b)

Note: Values on the vertical axis are the world export market shares (three year moving averages) of the respective country. Estimates are based on mirror statistics (imports from each of the Asian countries reported by trading partners) for a fixed set of 28 countries that have reported import data for every year during 1962-2018. Share of these 28 countries in world exports was about 55 per cent.

Figure 15: Wild Geese Flying Pattern of NP Exports – Assembled End Products (AEP) versus Parts & Components (P&C)



Source: Veeramani and Dhir (2019b)

Note: Values on the vertical axis are the world export market shares of the respective country. Estimates are based on mirror statistics (imports from each of the Asian countries reported by trading partners). For the group of early entrants and China, the estimates are based on import flows reported by a fixed set of 28 countries that have reported data for every year during 1962-2018. For late entrants and laggards (except China), the estimates are based on mirror statistics for a fixed set of 118 countries that have reported import data for every year during 2000-2018.

POTENTIAL GAINS IN EMPLOYMENT AND GDP

5.30 The policy of focusing on NP can create significant gains both in employment creation and GDP growth. Let's consider a scenario in which India follows the trajectory similar to that of China's initial period of export expansion. During the first ten years of its take off, China progressively increased its share in world exports of NP from 0.7 per cent in 1987 to 6.1 in 1998. What would be the impact on India's GDP and employment if the country mimics China's initial export growth performance – that is, assuming that India can increase its world export share for NP from the current level of 0.6 per cent to over 6 per cent by 2030? See Box 6 for a detailed discussion of the method and assumptions used for assessing the potential gains from an accelerated growth of NP exports from India.

5.31 Table 2 shows that, under the "business as usual scenario", the world exports of NP will increase from the current actual value of US$5.6 trillion in 2018 to the projected value of US$6.9 trillion in 2025 and US$ 8.1 trillion in 2030. During this period, India's exports of NP is projected to increase from the current actual value of US$32.3 billion in 2018 (accounting for 0.6 per cent of world exports) to US$ 248.2 billion in 2025 (3.6 per cent of world exports) and US$ 490.7 billion in 2030 (6.1 per cent of world exports).

Table 2: Predicted values of NP exports for World and India, 2020-2030

Year	World exports of NP (US$ Trillion)	India's exports of NP (US$ Billion)	India's Share in World Exports (per cent)
(1)	(2)	(3)	(4)
2020	5.94	69.4	1.2
2025	6.92	248.2	3.6
2030	8.06	490.7	6.1

Source: Survey calculations
Note: See Box 6 for the assumptions used for predicting the values.

5.32 Domestic value added (DVA) from India's predicted exports is estimated at US$ 166.5 billion in 2025 and US$ 304.7 billion in 2030 (Table 3). Total number of jobs attributed to exports (direct employment in NP sector plus employment caused by NP sector's backward linkages with other sectors supplying inputs to the former) will go up from 4.4 million in 2020 to 14.3 million in 2025 and 25.5 million in 2030. Thus, based on the first-order effects of the scenario under consideration, it is possible to create 10 million additional export related jobs during the next five years and over 20 million jobs during the next ten years.

5.33 However, it is important to take into account the second-order effect of increased consumption by workers. The overall impact on jobs (first order plus second order effect) is much higher (see Table 4). Our estimates suggest that, by raising India's share in world exports of NP to 3.6 per cent by 2025, it is possible to create 38.5 million additional jobs in the country during the next five years. Further, by raising this share to 6.1 per cent by 2030, it is possible to generate additional 82.2 million jobs during the next ten years. The total domestic value added (in basic prices) is likely to increase from US$168 billion in 2020 to US$1134.3 billion by 2030. Between 2019 and 2025, the incremental value added is US$485.5 billion, which is one-quarter of the increase in GDP (in basic prices) required for making India a $5 trillion economy by 2025.

Table 3: Impact of Accelerated Growth of NP Exports on Employment and GDP in India, First and Second Order Impacts

Year	First-order impacts			Second-order impacts		
	Domestic value added from exports (US$ Billion)	# of jobs tied to NP exports (Millions)	Wage Income (US $ Billion)	Wage income (US$ Billion)	Domestic value added (US $ Billion)	#of jobs (Millions)
	(1)	(2)	(3)	(4)	(5)	(6)
2020	50.1	4.4	24.8	82.5	117.9	25.7
2025	166.5	14.3	88.4	294.4	420.4	83.0
2030	304.7	25.5	174.5	580.9	829.6	148.0

Source: Survey calculations
Note: See Box 6 for various methods and assumptions used for assessing the impact

Table 4: Overall Impact (First plus Second Order) employment and GDP

	# of Jobs (Millions)	Value added (US$ Billion)
2020	30.1	168
2025	97.3	586.9
2030	173.5	1134.3

Source: Survey calculations
Note: See Box 6 for various methods and assumptions used for assessing the impact

Box 6: Methods and Assumptions used for assessing the potential gains on GDP and employment by increasing India's exports of network products

The forecasted values of world exports in Table 2 is based on the "business as usual" scenario, wherein it is assumed that the trend growth rates of world exports of NP during 2010-2018 (3.1 per cent per year) would continue for the forecast period (2019-2030). India's export values for 2020-2030 are predicted by assuming that India can mimic China's export performance in world market share during the first decade (1988-1998) of China's export market entry in NP.

The domestic value added (DVA) from exports (Column 1, Table 3) is estimated using the ratio of DVA to gross exports for NP. These ratios are estimated using input-output (I-O) tables. The advantage of the I-O framework is that it enables us to disentangle the direct and indirect effects (backward linkages) of exports from any given sector. For the year 2017-18, the DVA (direct plus indirect) share of India's gross exports of NP was 74.1 per cent. We assume that this share will progressively reduce by 1 percentage points every year (driven by increased use of imported intermediate inputs), so that it will become 67.1 per cent by 2025 and 62.1 per cent by 2030.

Similarly, the number of jobs attributed to NP exports (Column 2, Table 3) is obtained by using available estimates that make of use of I-O methodology. It is estimated that 1 million US$ worth of NP exports from India generated 67.6 jobs in 2017-18. We assume that this number will progressively reduce by 2 per cent every year (driven by labour productivity improvements), so that it will become 57.5 by 2025 and 52 by 2030.

The annual wage income for workers (Column 3, Table 3) is obtained by multiplying the annual wages and salaries (in US$) with total number of jobs created by exports every year. Wages and salaries for

workers are obtained from UNIDO's industrial statistics. For the year 2017, the annual wages and salaries in India's NP industries was US$5287. We assume that this will progressively increase by 2 per cent every year (driven by labour productivity improvements), so that it becomes US$6194.5 by 2025 and US$6839.3 by 2030.

The first-order impacts are estimated by using the Type-1 multipliers (direct plus backward linkages) in I-O analysis. The second-order impact arises from additional household spending as a result of increased wage income for workers (Type-2 multipliers). The marginal propensity to consume (MPC) for the Indian household is estimated to be about 0.7. Accordingly, the value of income multiplier (1/1-MPC) is estimated as 3.33. Applying this multiplier to the initial wage income (Column 3, Table 5), we obtain the second order impact on wage income (Column 4, Table 3).

The second-order impact on domestic value added is obtained as follows. First, we obtain the difference in wage income (DWage) by subtracting initial wage income (first-order effect) from the final wage income (second-order effect). Second, by dividing DWage by the ratio of aggregate labour income to aggregate value added for Indian economy, we obtain the second-order estimate of domestic value added. Using India KLEMS database, the ratio of labour income to value added for the year 2016 was estimated to be 0.49.

In order to obtain the second order impact on jobs, we first convert the second-order estimate of domestic value added to gross output as follows:

Gross output = domestic value added (second order estimate) / ratio of gross value added (GVA) to gross output for the Indian economy.

The estimated ratio of GVA to output is 0.5 for the year 2015-16 (Source: Supply Use Table, CSO). Survey estimates shows that 1 million US$ worth of output created 116 jobs (direct plus indirect) in India in 2017-18. We assume that this number will progressively reduce by 2 per cent every year, reflecting the improvements in labour productivity.

ARE FREE TRADE AGREEMENTS BENEFICIAL?

5.34 Given the recent debate about India joining the Regional Comprehensive Economic Partnership (RCEP) agreement, questions have been asked about the general efficacy of free trade agreements (FTAs). An apprehension is that most of the FTAs that India had signed in the past had not worked in "India's favour." The argument that is put forward is that the agreements led to worsening of India's trade deficit with the partner countries with which the agreements have been signed. This is the mercantilist way of evaluating the gains from trade. Basic trade theory teaches us that a country's gains from free trade arise from the fact that it leads to a more efficient allocation of a country's resources. Yet, does the evidence support the naïve mercantilist's perspective?

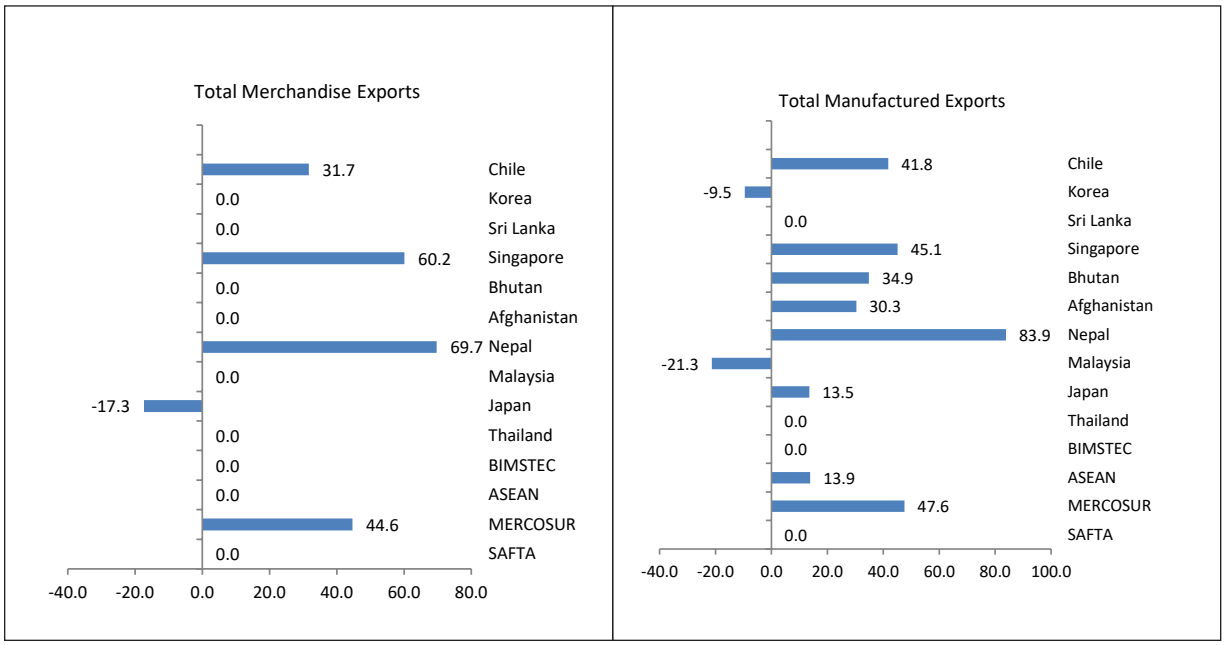
5.35 Table 5 shows India's trade agreements signed between 1993 and 2018. Figure 16 shows the impact of these agreements on the percentage changes of dollar values of India's exports and imports. These results are based on regressions specifications that take into account full set of confounding factors, including GDP and per capita income of trading partners, partner country fixed effects and year fixed effects. A simple before-and-after comparison, without controlling for the confounding factors, could lead to misleading conclusions.

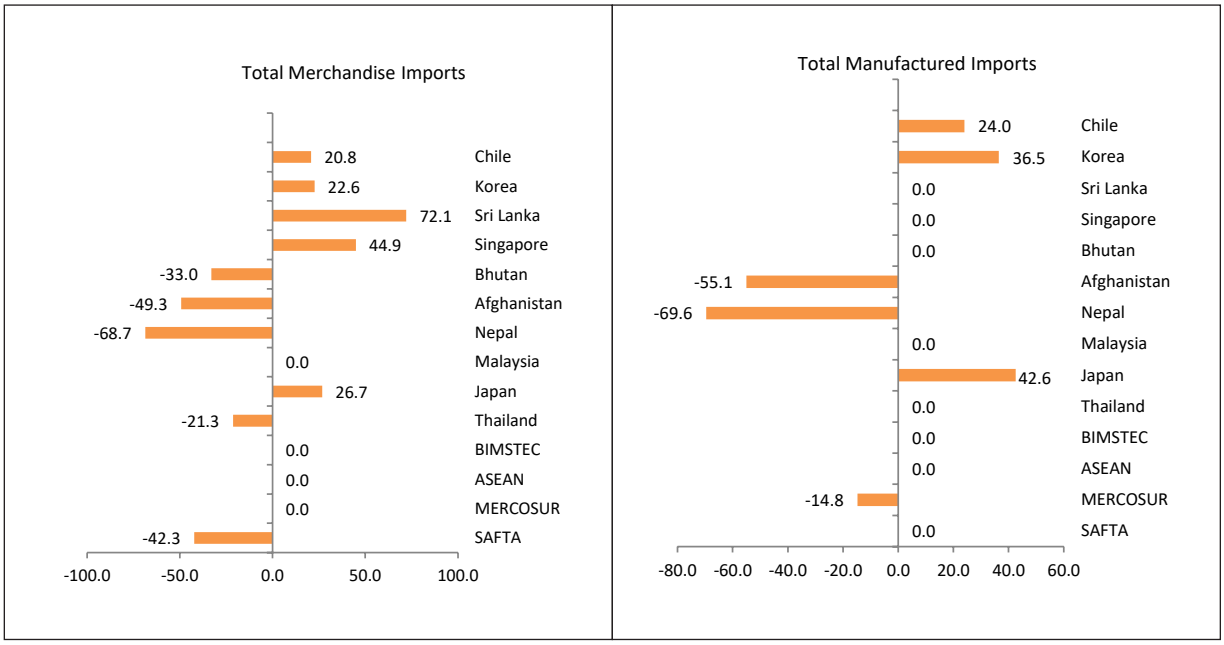
5.36 It can be seen that, manufactured products from India has clearly benefitted

from eight out of the fourteen trade agreements considered here. These are: MERCOSUR, ASEAN, Nepal, Singapore, Chile, Bhutan, Afghanistan and Japan. Four of the agreements (SAFTA, BIMSTEC, Thailand and Sri Lanka) had no effect on exports of manufactured products while the bilateral agreements with Korea and Japan exerted a negative effect. Turning to overall merchandise exports, only four trade agreements (MERCOSUR, Nepal, Singapore, and Chile) show a positive impact. The differential effect on overall merchandise exports as compared to the manufacturing subset is not surprising as several primary products are usually included in the negative/sensitive list of the trade agreements. Therefore, a majority of the trade agreements exerted no effect on overall merchandise exports. Compared to manufactured exports, a fewer number of trade agreements exerted a positive impact on India's manufactured imports. The agreements that exerted a positive effect on India's imports include Japan, Korea and Chile for manufactured products and Japan, Korea, Chile, Singapore and Sri Lanka for overall merchandise imports. Even as some of the agreements led to increase in imports, for most of the cases, the percentage increase in exports is higher than the percentage increase in imports. The exceptions are the bilateral agreements with Korea, Japan and Sri Lanka, where the percentage increase in imports are higher than that of exports.

5.37 The overall impact on India's exports to the partners, with which the agreements have been signed, is 13.4 per cent for manufactured products and 10.9 per cent for total merchandise, as shown in Figure 17. The overall impact on imports is found to be lower at 12.7 per cent for manufactured products and 8.6 per cent for total merchandise. Therefore, from the perspective of trade balance, India has clearly "gained" in terms of 0.7 per cent increase in trade surplus per year for manufactured products and of 2.3 per cent increase in trade surplus per year for total merchandise.

Figure 16: Impact of Trade Agreements on India's Exports and Imports, 1993 to 2018 (per cent Changes of US$ Values per Year)

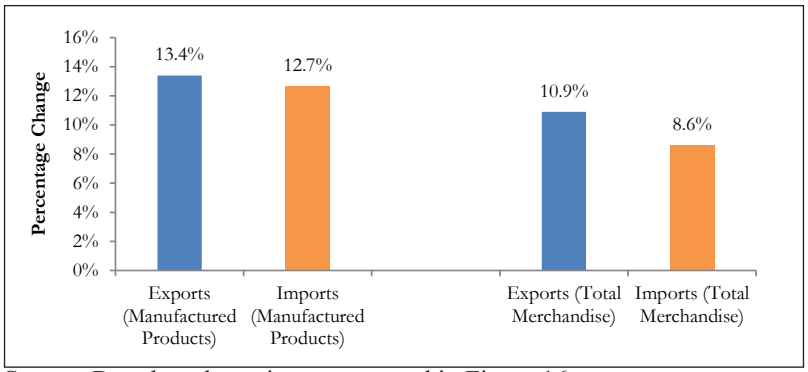




Source: Survey Calculations

Note: The results reported here are based on a gravity model based regression analysis, where the dependent variable is the $ value of India's exports on bilateral basis for the period 1993-2018. Independent variables include GDP of partner countries, per capita GDP of trading partners, various trade agreement dummies, partner fixed effects and year fixed effects. Estimates of percentage changes in exports and imports (after entering into FTA) are based on the coefficient of the corresponding FTA dummies.

Figure 17: Overall Impact of Trade Agreements on Exports and Imports



Source: Based on the estimates reported in Figure 16

Table 5: India's Trade Agreements

Agreements	Year in which India signed the agreement	Countries in the Bloc	Start year	End year
BIMSTEC	1997	Bangladesh, Bhutan (2004), India, Myanmar, Nepal (2004), Sri Lanka, Thailand	1997 (except Bhutan 2004, Nepal 2004)	2018
Sri Lanka	2001	India, Sri Lanka	2001	2005
Afghanistan	2003	India, Afghanistan	2003	2010

Thailand	2004	India, Thailand	2004	2009
Singapore	2005	India, Singapore	2005	2009
Bhutan	2006	India, Bhutan	2006	2018
SAFTA	2006	Afghanistan (2011), Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, Sri Lanka	2006 (except Afghanistan 2011)	2018
Chile	2007	India, Chile	2007	2018
MERCOSUR	2009	India (2009), Argentina, Brazil, Paraguay, Uruguay	2009	2018
Nepal	2009	India, Nepal	2009	2018
Korea	2010	India, Korea	2010	2018
ASEAN	2010	India (2010), Brunei Darussalam (1984), Cambodia (1999), Indonesia, Lao People's Democratic Republic (1997), Malaysia, Myanmar (1997), Philippines, Singapore, Thailand, Vietnam (1995)	2010	2018
Malaysia	2011	India, Malaysia	2011	2018
Japan	2011	India, Japan	2011	2018

Source: WTO Regional Trade Agreement Database

WAY FORWARD

5.38 The experience of countries that have achieved rapid and sustained export growth suggests that India can reap rich dividends by adopting policies aimed at strengthening its involvement in the export market for network products (NP). Given our vast manpower with relatively low skill, India's current strength lies primarily in assembly of NP. While the short to medium term objective is the large scale expansion of assembly activities by making use of imported parts & components, giving a boost to domestic production of parts & components (upgrading within GVCs) should be the long term objective. Assembly is highly labour intensive, which can provide jobs for the masses, while domestic production of parts & components can create high skill jobs.

5.39 A highly feasible target of raising India's export market share to about 3.5 per cent by 2025 and 6 per cent by 2030 would create about 38.5 million additional jobs in the country by 2025 and about 82 million additional jobs by 2030. The incremental value added in the economy from the target level of exports of network products would make up about one-quarter of the increase required for making India a $5 trillion economy by 2025.

5.40 An important concern is whether participation in GVCs implies that low wage countries would remain perpetually stuck at the lower end of the production processes. As the case studies of India's automobile sector illustrate, such apprehensions are unwarranted.

5.41 For a country to become an attractive location for assembly activities, it is imperative

that import tariff rates for intermediate inputs are zero or negligible. It is also imperative to create an ecosystem that will result in realignment of India's specialization patterns towards labour-intensive processes and product lines. The ongoing reform measures to provide greater flexibility in the labour market should continue. A pro-active FDI policy is also critical as MNEs are the leading vehicles for the country's entry into global production networks while local firms play a role as subcontractors and suppliers of intermediate inputs to MNEs. Assembly processes require not only trainable low-cost unskilled labour but also a lot of middle-level supervisory manpower. For example, when Apple employed 7,00,000 factory workers in China, it also employed 30,000 engineers on-site to supervise those workers (Isaacson, 2011).

5.42 A low level of service link costs (costs related to transportation, communication, and other tasks involved in coordinating the activity in a given country with what is done in other countries) is a pre-requisite for countries to strengthen their participation in GVCs. Supply disruptions in a given location due to shipping delays, power failure, political disturbances, labour disputes etc could disrupt the entire production chain. Policy measures should focus on reducing input tariffs, implementation of key factor market reforms, providing an enabling environment for the entry of lead firms into the country and reducing the service link costs.

CHAPTER AT A GLANCE

- The current environment for international trade presents India an unprecedented opportunity to chart a China-like, labour-intensive, export trajectory and thereby create unparalleled job opportunities for our burgeoning youth.
- By integrating "Assemble in India for the world" into Make in India, India can raise its export market share to about 3.5 per cent by 2025 and 6 per cent by 2030. This will create 4 crore well-paid jobs by 2025 and 8 crore by 2030.
- One-quarter of the increase in value added required for making India a $5 trillion economy by 2025 can come from exports of network products.
- This chapter, therefore, articulates a clear-headed strategy to grab this opportunity.
- China's remarkable export performance vis-à-vis India is driven primarily by deliberate specialization at large scale in labour-intensive sectors, especially "network products", where production occurs across Global Value Chains (GVCs) operated by multi-national corporations. China used this specialised strategy to export primarily to markets in rich countries. Similarly, India must place laser-like focus on enabling assembling operations at mammoth scale in network products.
- As an India that harbours misplaced insecurity on the trade front is unlikely to grab this opportunity, our trade policy must be an enabler. When the impact of India's trade agreements on overall trade balance is made by accounting for all confounding factors, India's exports have increased by 13.4 per cent for manufactured products and 10.9 per cent for total merchandise while imports increased by 12.7 per cent for manufactured products and 8.6 per cent for total merchandise. Thus, India has clearly gained 0.7 per cent increase in trade surplus per year for manufactured products and 2.3 per cent per year for total merchandise.

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Targeting Ease of Doing Business in India

06
CHAPTER

"The King (i.e., the State) shall promote trade and commerce by setting up trade routes by land and by water, and establishing market towns and ports" – Kautilya's Arthashastra, 4th century B.C.

Ease of doing business is key to entrepreneurship, innovation and wealth creation. India has risen significantly in the World Bank's Doing Business rankings in recent years, but there are categories where it lags behind – Starting a Business, Registering Property, Paying Taxes and Enforcing Contracts. This chapter focuses on these parameters and compares India's performance with both its peers and with the best-in-class. For example, registering property in Delhi and Mumbai takes 49 and 68 days respectively, while it takes 9 days in China and 3.5 days in New Zealand. These performance matrices provide a measure of the scope for improvement. The chapter then explores the density of laws, rules and other statutory compliance requirements faced by a manufacturing or services business (specifically the restaurants segment).

Export competitiveness depends not only on the cost of production but also on the efficiency of logistics. A series of case studies are used to analyse the time taken at each stage for specific merchandise items to travel from factory gate to the warehouse of the foreign customer. For instance, a study found that an apparels consignment going from Delhi to Maine (U.S.) takes roughly 41 days, but 19 of these are spent within India due to delays in transportation, customs clearance, ground handling and loading at sea-ports. A study of carpets exports from Uttar Pradesh to the United States also showed similar results. The process flow for imports, ironically, is more efficient than that for exports! In contrast, however, the imports and exports of electronics through Bengaluru airport was found to be world class. The processes of Indian airports should be adapted and replicated in sea-ports.

INTRODUCTION

6.1 As India leapfrogs towards a five trillion-dollar economy by 2024-25, simplifying and maintaining a business-friendly regulatory environment is essential. To ease the constraints and gaps in the regulatory processes involved in doing business, it is necessary to assess the country's progress vis-à-vis other leading economies on various parameters.

6.2 India has made substantial gains in the World Bank's *Doing Business* rankings from 142 in 2014 to 63 in 2019. It has progressed on seven out of the 10 parameters.The Goods and Service Tax (GST) and the Insolvency and Bankruptcy Code (IBC) top the list of reforms that have propelled India's rise in rankings. The trajectory of India's performance over the last decade is shown in Table 1.

6.3 However, India continues to trail in parameters such as Ease of Starting Business (rank 136), Registering Property (rank 154), Paying Taxes (rank 115), and Enforcing Contracts (rank 163). It takes roughly 58 days and costs on an average 7.8 per cent of a property's value to register it, and 1,445 days for a company to resolve a commercial dispute through a local first-instance court. These figures are longer in time and often greater in cost than OECD high-income economies, and therefore, impede wealth creation.

6.4 This chapter analyses India's performance in the parameters used in Doing Business reports, and compares it to its peers as well as to the best-in-class countries like New Zealand, which has been ranked number one over the past several years.

Table 1: Capturing India's decade-long journey in the Doing Business Rankings

Parameters	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Ease of starting a business	169	165	166	173	179	158	155	155	156	137	136
Dealing with construction permits	175	177	181	182	182	184	183	185	181	52	27
Getting electricity	-	-	98	105	111	137	70	26	29	24	22
Registering your property	93	94	97	94	92	121	138	138	154	166	154
Getting credit for your business	30	32	40	23	28	36	42	44	29	22	25
Protecting minority investors	41	44	46	49	34	7	8	13	4	7	13
Paying taxes	169	164	147	152	158	156	157	172	119	121	115
Trading across borders	94	100	109	127	132	126	133	143	146	80	68
Enforcing contracts	182	182	182	184	186	186	178	172	164	163	163
Resolving insolvency	138	134	128	116	121	137	136	136	103	108	52
Overall Rank	**133**	**134**	**132**	**132**	**134**	**142**	**130**	**130**	**100**	**77**	**63**

Source: Doing Business database, World Bank.

6.5 In addition, this chapter presents several case studies and surveys that were conducted to capture the on-ground experience of doing business in the country including the logistics of merchandise exports and imports, the number of permissions needed to set up a restaurant and so on. This allows a close look at the nuts-and-bolts of the business environment. Case studies of merchandise exports found that logistics is inordinately inefficient in Indian sea-ports. The process flow for imports, ironically, is more efficient than that for exports. Although one needs to be careful to directly generalise

from specific case studies, it is clear that customs clearance, ground handling and loading in sea ports take days for what can be done in hours. A case study of electronics exports and imports through Bengaluru airport illustrates how Indian logistical processes can be world class. The main goal of the chapter, therefore, is to help the reader to identify the most crucial issues when evaluating Ease of Doing Business (EoDB) in India beyond the approach taken by the World Bank's surveys.

GLOBAL COMPARISONS

6.6 In this section, India's performance has been compared with its peers (China, Brazil & Indonesia) as well as the best-in-class economy in EoDB, i.e., New Zealand. In the interest of brevity, the comparisons are limited to how India fared over the decade from 2009 to 2019 across only those parameters of EoDB where India lags, namely- Starting a Business, Registering Property, Paying Taxes, and Enforcing Contracts. The comparisons demonstrate the gap that India needs to travel to achieve the best international standards.

6.7 The number of procedures required to set up a business in India, for example, has reduced from 13 to 10 over the past ten years (Table 2). Today, it takes an average of 18 days to set up a business in India, down from 30 days in 2009. On the other hand, New Zealand has a seamless process of business incorporation which takes place through a single window via one agency. It just takes half-a-day with a single form and minimal cost to set up a business in New Zealand. Although, India has significantly reduced the time and cost of starting a business, a lot more is needs to be done. Some further simplification of processes in India has been implemented very recently but it is too early to gauge its impact.

6.8 Property registration is another interesting example. It takes nine procedures, at least 49 days, and 7.4-8.1 per cent of the property value to register one's property in India. Moreover, the number of procedures, time and cost have increased over the last 10 years. Meanwhile, New Zealand has only two procedures and a minimal cost of 0.1 per cent of the property value.

6.9 In the case of paying taxes, even though the number of payments per year has significantly reduced in India from 59 to 12 over the last decade, time spent on this activity has not reduced much. While India takes 250-254 hours per year to pay taxes, New Zealand spends just 140 hours a year. Interestingly, time spent to pay taxes in New Zealand has doubled from 2009 to 2019.

6.10 Enforcing contracts is one parameter in which India's performance has been very poor over the years. While India takes 1,445 days to resolve an average dispute, New Zealand takes approximately one-seventh of it, i.e., 216 days. The previous Economic Survey[1] had argued that the single biggest constraint to ease of doing business in India is its inability to enforce contracts and resolve disputes. Given the potential economic and social multipliers of a well-functioning legal system, this may well be the best investment India can make.

6.11 When compared to the performance of India's peer nations, namely China, Brazil, and Indonesia, on the same parameters, it can be seen that China fares much better than India on virtually all parameters (Table 3).

6.12 The comparisons with other nations is not so one-sided. An entrepreneur has to go through 10 procedures to set up a business in India taking 17-18 days to do so. On the other hand, Indonesia and Brazil require one extra process than India to open a business.

[1] See Economic Survey 2018-19 Chapter 5, Volume I.

Table 2: Mapping New Zealand across EODB parameters where India struggles

	India		New Zealand	
	2009	2019	2009	2019
Starting a Business				
Number of Procedures	13	10	1	1
Time – No. of days	30	17/18*	1	0.5
Cost (% of income per capita)	66.1	5.3/ 9.3*	0.4	0.2
Registering Property				
Number of Procedures	5	9	2	2
Time – No. of days	44	49/ 68*	2	3.5
Cost (% of property value)	7.4	8.1/ 7.4*	0.1	0.1
Paying Taxes				
Number of Payments	59	10/ 12*	8	7
Time (hours per year)	271	250/ 254*	70	140
Total tax payable (% of gross profit)	64.7	49.7#	32.8	34.6
Enforcing Contracts				
Time – No. of days	1,420	1,445	216	216
Cost (% of debt)	39.6	31	22.4	27.2

Source: Doing Business database, World Bank.

*: Denotes values for Delhi/ Mumbai as these are the two centres covered by World Bank for India.

#: Before India reduced its Corporate tax rate from 30 to 25 per cent.

Table 3: India v/s Peers on EODB Parameters (2019)

	India	China	Brazil	Indonesia
Starting a Business				
Number of Procedures	10	4	11	11
Time – No. of days	17/18*	9	17	13
Cost (% of income per capita)	5.3/ 9.3*	1.1	4.2	5.7
Registering your Property				
Number of Procedures	9	4	14	6
Time – No. of days	49/ 68*	9	31	31
Cost (% of property value)	8.1/ 7.4*	4.6	3.6	8.3
Paying Taxes				
Number of Payments	10/ 12*	7	10	26
Time (hours per year)	250/ 254*	138	1,501	191
Total tax payable (% of gross profits)	49.7#	59.2	65.1	30.1
Enforcing Contracts				
Time – No. of days	1,445	496	801	403
Cost (% of debt)	31	16.2	22	70.3
Overall Doing Business Rank	**63**	**31**	**124**	**73**

Source: World Bank Doing Business Report, 2020.

Note: India numbers are for Delhi/Mumbai respectively, as these are the two centres covered by World Bank for India.

#: Before India reduced its Corporate tax rate from 30 to 25 per cent.

While Indonesia takes four days less than India, Brazil takes almost the same time as India to do so. In fact, countries like Pakistan, Turkey and Sri Lanka (ranked 72, 77, and 85 respectively in Starting a Business parameter) have a less cumbersome process to start a business than India.

6.13 Similarly, while India has five less procedures than Brazil (14) to register one's property, it takes much less time to do so in Brazil (31 days) than in India (49-68 days). Indonesia, on the other hand, has only six procedures and takes same time as Brazil to register property.

6.14 In case of paying taxes, although Indonesia (26) has more than double the number of payments per year than India (10-12), its citizens spend far less time in paying them than India. Brazil seems to fare particularly poor in this segment.

6.15 India's performance in contract enforcement is poor even when compared to India's peer nations. While it takes approximately four years to enforce a contract in India, Brazil and Indonesia spend 2.2 and 1.1 years, respectively to do so. With a rank of 163 out of 190 nations in Enforcing Contracts, only a few countries like Afghanistan, Mozambique, and Zimbabwe perform worse than India.

6.16 A holistic assessment and a sustained effort to ease business regulations and provide an environment for businesses to flourish would be a key structural reform that would enable India to grow at a sustained rate of 8-10 per cent per annum. This requires a nuts-and-bolts approach of feedback loops, monitoring and continuous adjustment. The next section, surveys some of areas where there is scope for significant efficiency gains.

DENSITY OF LEGISLATION AND STATUTORY COMPLIANCE REQUIREMENTS IN MANUFACTURING

6.17 A major challenge most companies face is the complex architecture of the Indian governance framework

Table 4: Applicable Rules and Statutory Laws for Manufacturing

S. No.	Name of the Act (A)	No. of Sections (B)	No. of Rules, etc. (A+B)	Total
1.	Apprentices Act, 1961	37	14	51
2.	Air (Prevention & Control of Pollution) Act, 1981	54	-	54
4.	Central Excise Act, 1944	40	90	130
5.	Central Excise Tariff Act, 1985	5	-	5
6.	Central Sales Tax Act, 1956	26	9	35
7.	Companies Act, 2013	470	19	489
8.	Contract Labour (Regulation and Abolition) Act, 1970	35	83	118
9.	Customs Act, 1962	161	53	214
10.	Customs Tariff Act, 1975	13	-	13
11.	Depositories Act, 1996	31	-	31
12.	Employee Compensation Act, 1923	36	52	88
13.	Employee State Insurance Act, 1948	100	211	311
14.	Employment Exchanges (Compulsory Notification of Vacancies) Act, 1959	10	8	18

15.	Environment (Protection) Act, 1986	26	88	114
16.	Employee Provident Funds & Miscellaneous Provisions Act, 1952	22	156	178
17.	Equal Remuneration Act, 1976	18	6	24
19.	Factories Act, 1948	120	128	248
20.	Foreign Exchange Management Act, 1999	49	102	151
21.	Foreign Trade (Development & Regulation) Act, 1992	20	18	38
22.	Finance Act, 1994	36	43	79
23.	Guidelines of Department of Scientific and Industrial Research	-	6	6
24.	Income Tax Act, 1961	298	125	423
25.	Indian Stamp Act,1899	78	22	100
26.	Indian Boiler Act,1923	34	626	660
27.	Indian Electricity Act, 2003	185	-	185
28.	Indian Wireless Telegraphy Act, 1933	11	13	24
29.	Indian Standard Code of Practice for Selection, Installation and Maintenance of Portable First Aid Fire Extinguishers	-	16	16
30.	Industrial Disputes Act,1947	40	80	120
31.	Industrial Employment (Standing Orders) Act, 1946	15	22	37
32.	Legal Metrology Act, 2009	57	64	121
33.	Maternity Benefit Act, 1961	30	-	30
34.	Minimum Wages Act, 1948	31	32	63
35	Motor Vehicles Act,1988	217	164	381
36.	Narcotic Drugs and Psychotropic Substances Act, 1985	51	68	119
37.	Payment of Gratuity Act, 1972	15	17	32
38.	Patents Act, 1970	161	139	300
39.	Payment of Wages Act,1936	26	13	39
40.	Payment of Bonus Act, 1965	40	5	45
41.	Petroleum Act,1934	31	202	233
42.	Poisons Act, 1919	9	-	9
43.	Securities and Exchange Board of India Act, 1992	31	334	365
44.	Securities Contract (Regulation) Act, 1956	31	21	52
45.	Special Economic Zones Act, 2005	58	6	64
46.	Water (Prevention and Control of Pollution) Act, 1974	64	-	64
48.	Water (Prevention and Control of Pollution) Cess Act, 1977	17	9	26
49.	Shops and Establishment Act	State-wise	State-wise	State-wise
51.	Trade Marks Act,1999	159	185	344
	Total	**3,214**	**3,582**	**6,796**

Source: Federation of Indian Chambers of Commerce and Industry (FICCI).

Note: This is not a comprehensive list and not every rule applies to every manufacturer. It is just an illustration of the wide range of rules that a manufacturer faces.

including the density of legislation and statutory compliance requirements. A list containing the names of Acts applicable as well as number of Sections / Rules of such Acts required to be complied with by manufacturing units is given in Table 4. Manufacturing units have to conform with 6,796 compliance items, which is a tedious and time consuming task. It must be noted that this is not a comprehensive list and not every rule applies to every manufacturer. It is just an illustration of the bewilderingly wide range of rules that the sector faces.

STARTING A BUSINESS: REGULATORY HURDLES IN OPENING A RESTAURANT

6.18 The services sector too faces many regulatory hurdles even for routine businesses. The bars and restaurants sector is an important source of employment and growth everywhere in the world. It is also a business that, by its nature, faces a high frequency of starting new businesses and shutting old ones.

6.19 A survey showed that the number of licenses required to open a restaurant in India are significantly more than elsewhere. While China and Singapore require only four licenses, India requires several more mandatory licenses and approvals (the comparison is in Table 5 and some of Indian requirements are listed in Table 6).

6.20 According to the National Restaurants Association of India (NRAI), a total of 36 approvals are required to open a restaurant in Bengaluru, Delhi requires 26, and Mumbai 22. Moreover, Delhi and Kolkata also require a 'Police Eating House License'. The number of documents needed to obtain this license from Delhi Police is 45 – far more than the number of documents required for a license to procure new arms and major fireworks, 19 and 12 respectively (Table 7).

6.21 Moreover, in India, only the list of licenses and permissions can be obtained from a government portal or information center. On the other hand, in New Zealand, the website of Auckland Council (operated by a private third-party agency) has all detailed guides and stepwise procedures about permissions, fees and timeline to open a restaurant. The website is also equipped with ready-to-use business plan templates and comprehensive information on different businesses irrespective of the scale of business. The contrast reflects a difference in approach – government control versus curation/ partnership.

Table 5: Licenses Required to Open a Restaurant

Country	Market Size (US $ billion)	No. of licenses	Nature of licenses
India	**61**	**12-16***	**As detailed in Table 6**
Singapore	8.3	4	Food shop License Liquor License Importing Food License Halal Certificate
China	815	4	Sanitation License Environment License Fire License Sales License

Source: National Restaurants Association of India (NRAI).
Note: * These are just key licenses. In practice, each city requires several more approvals as mentioned in the text.

Table 6: Key Mandatory Licenses required to open a Restaurant in India

S. No.	License	Authority	Delhi	Mumbai	Bangalore	Kolkata
1.	Food Safety	FSSAI	Yes	Yes	Yes	Yes
2.	Heath/Trade	Municipal Corporation	Yes	Yes	Yes	Yes
3.	Police Eating House License	Police Commissioner Licensing	Yes			Yes
4.	Fire NOC	Fire Department	Yes	Yes	Yes	Yes
5.	Shops & Establishment	Labor Department	Yes	Yes	Yes	Yes
6.	Liquor License (If serving Liquor)	Excise Department	Yes	Yes	Yes	Yes
7.	Tourism License (for liquor service)	Tourism Department	Yes			
8.	Environment Clearance for Grease Trap/ETP (Water Pollution Act)	State Pollution Control Board	Yes			Yes
9.	Environment Clearance for Gen Sets (Air Pollution Act)	State Pollution Control Board	Yes			Yes
10.	Weights and Measures	Legal Metrology Department	Yes	Yes	Yes	Yes
11.	Music License	Copyright Societies registered by Govt. of India	Yes	Yes	Yes	Yes
12.	Signage License	Municipal Corporation	Yes	Yes	Yes	Yes
13.	GST/VAT Registration	GST/Tax Authorities	Yes	Yes	Yes	Yes
14.	Employees State Insurance/ PF	Labor/ PF Commissioner	Yes	Yes	Yes	Yes
15.	Lift License (if lift installed)	Electrical Inspector	Yes	Yes	Yes	Yes
16.	Delivery Bikes (if employed)	FSSAI	Yes	Yes	Yes	Yes

Source: National Restaurants Association of India (NRAI).

Table 7: Documents required for obtaining a license from Delhi Police

Type of license	Number of documents required
Eating and Lodging Establishments License	45
New Arms license	19
Fireworks license	12

Source: Delhi Police Licensing.

CONSTRUCTION PERMITS

6.22 Table 8 shows the procedures, time, and costs that businesses in Delhi have to undergo for building a factory/warehouse, including obtaining necessary licenses and permits, completing required notifications and inspections, and obtaining utility connections.

6.23 When compared to the best in class-Hong Kong, which tops the World Bank rankings for ease of obtaining construction permits, it can be seen that Hong Kong takes just over two months to obtain a construction permit, while Delhi takes almost four months. Moreover, it takes 35 days to get water and sewer connection in Delhi.

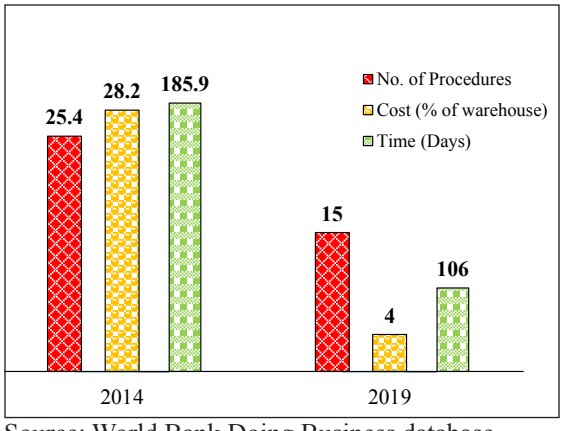
6.24 Nonetheless, it must be noted that India has considerably improved the process to obtain construction permits over the last five years. Compared to 2014, when it took approximately 186 days and 28.2 per cent of the warehouse cost; in 2019 it takes 98-113.5 days and 2.8-5.4 per cent of the warehouse cost (Figure 1).

Table 8: Construction Permits - Delhi vs Hong Kong

DELHI, INIDA (RANK 27)	Days	Days	HONG KONG (RANK 1)
Submit online Common Application Form along with requisite building permit fees and drawings	0.5	45	Obtain approval by submitting applications to the One Stop Center
Request & obtain release of building sanction plans	30	1	Receive inspection by Building Dept. on foundation strata
Submit online notice of completion up to the plinth level and get inspection done	15.5	1	Request and receive inspection on the superstructure construction
Submit notice of completion, receive final inspection & obtain Fire NOC	2.5	1	Receive an audit inspection by the Building Department
Obtain completion/occupancy permit	30	1	Submit notification of project completion and relevant applications
Request water and sewer connection approval and inspection	35	18	Obtain relevant certificates through the One Stop Center
		1	Receive joint & final inspection of licensing authorities; Obtain Water & Sewerage connection
113.5 Days		**Time Taken**	**69 Days**
2.8		**Cost (% of Warehouse)**	**0.3**

Source: World Bank Doing Business Report, 2020.

Figure 1: Cost of Construction Permits in India



Source: World Bank Doing Business database.

ACHIEVING SCALE ACROSS BUSINESS

6.25 One issue that gets in the way of business efficiency in India is that of scale. Most of the manufacturing units in India have small capacities and consequently low manufacturing efficiencies which are a disadvantage in the global supply chain. Countries like Bangladesh, China, Vietnam are able to progress in the value chain by increasing their competitiveness in the international market by improving their delivery time and domestic production capacity.

6.26 Compared to Bangladesh, China, and Vietnam, which have more than 80 per cent of market value of exports by large enterprises, India has 80 per cent by small enterprises. Moreover, in India it can take 7-10 days to reach a port whereas in countries like China, Bangladesh and Vietnam it takes less than a day. Thus, the Indian supply chain ends up with a large number of small consignments clogging already inefficient logistics pathways. A comparison of turn-around time (i.e., order to deliver) is given in Table 9.

Table 9: Emerging Economies Comparison - Scale and Logistics

	Bangladesh	China	India	Vietnam
Scale of Operations	80% large enterprises	80% or more large enterprises	80% small enterprises	80% or more large enterprises
Turn Around Time (in Days) (from order to delivery)	50	31	63	46
Time Taken to reach port (in Days)	1	0.2	7-10	0.3

Source: High Level Advisory Group (HLAG) Report, 2019.

TRADING ACROSS BORDERS

6.27 The Trading Across Borders indicator records the time and cost associated with the logistical process of exporting and importing goods. Globally, transportation by ports is the most favored followed by railways and then roads, whereas in India it is the opposite.

6.28 Italy tops the EoDB rankings in Trading Across Borders. Table 10 tabulates its comparison with India. While India takes 60-68 and 88-82 hours in border and documentary compliance for exports and imports respectively, Italy takes only one hour for each. Moreover, the cost of compliance is zero in Italy. In India, it costs US$ 260-281 and US$ 360-373 for exports and imports respectively.

6.29 It must be noted that almost 70 per cent of the delays (both in exports and imports) occur on account of port or border handling processes which essentially pertain to procedural complexities (number and multiplicity of procedures required for trade), multiple documentations and involvement of multiple agencies for approvals and clearances. It is also observed that time delays and procedural inefficiencies end up pushing cost to trade.

6.30 While the government has already reduced procedural and documentation requirements considerably, increasing digitalization and seamlessly integrating multiple agencies onto a single digital platform can further reduce these procedural inefficiencies significantly and improve user experience substantially. The accompanying box discusses the Authorized Economic Operators scheme that is being used to smoothen the process for registered exporters/ importers.

Table 10: Trading across Borders- India vs Italy

INDIA (RANK 68)	Hours Delhi	Hours Mumbai	Hours	ITALY (RANK 1)
EXPORT 1: Border Compliance	54	50	0	**EXPORT** 1: Border Compliance
2: Documentary Compliance	6	18	1	2: Documentary Compliance
IMPORT 1: Border Compliance	70	60	0	**IMPORT** 1: Border Compliance
2: Documentary Compliance	18	22	1	2: Documentary Compliance
INDIA (RANK 68)	**Cost (US$) Delhi**	**Cost (US$) Mumbai**	**Cost (US$)**	**ITALY (RANK 1)**
EXPORT 1: Border Compliance	195	231	0	**EXPORT** 1: Border Compliance
2: Documentary Compliance	65	50	0	2: Documentary Compliance
IMPORT 1: Border Compliance	260	273	0	**IMPORT** 1: Border Compliance
2: Documentary Compliance	100	100	0	2: Documentary Compliance

Source: World Bank Doing Business Report, 2020.
Note: India numbers are for Delhi/Mumbai respectively, as these are the two centres covered by World Bank for India.

BOX 1: Authorised Economic Operators (AEO)

Authorised Economic Operator (AEO) is a programme under the aegis of the World Customs Organization (WCO) SAFE Framework of Standards to secure and facilitate Global Trade. The programme aims to enhance international supply chain security and facilitate movement of goods. AEO encompasses various players in the international supply chain. Under this programme, an entity engaged in international trade is approved by Customs as compliant with supply chain security standards and granted AEO status. An entity with an AEO status is considered a 'secure' trader and a reliable trading partner. AEO is a voluntary programme. It enables Indian Customs to enhance and streamline cargo security through close cooperation with the principle stakeholders of the international supply chain viz. importers, exporters, logistics providers, custodians or terminal operators, custom brokers and warehouse operators, who benefit from preferential treatment from customs authorities. Benefits include expedited clearance times, fewer examinations, improved security and communication between supply chain partners, and more. The Circular 33/2016 – Customs dated July 22, 2016 provides the statutory framework for the AEO programme.

There are three tiers of certification in the new AEO Programme for importers and exporters:

1. AEO T1 – Verified on the basis of document submission only.
2. AEO T2 – In addition to document verification, onsite verification is also done.
3. AEO T3 – For AEO T2 holders who have enjoyed the status for two years only on the basis of document verification and for AEO T2 holders who have not enjoyed the status continuously or have introduced major changes in business, the applicant is subjected to physical verification.

For logistics providers, custodians or terminal operators, custom brokers and warehouse operators there is only one tier:

AEO LO – Here onsite verification is done in addition to document verification.

Who is entitled for AEO Certification

Anyone involved in the international supply chain that undertakes Customs related activity in India can apply for AEO status irrespective of size of the business. These may include exporters, importers, logistic providers (e.g. carriers, airlines, freight forwarders, etc.), custodians or terminal operators, customs house agents and warehouse owners. Others who may qualify include port operators, authorized couriers, stevedores. The list is not exhaustive.

Eligibility

Any legal entity that undertakes Customs related work can apply for the AEO Programme if they fulfil the following conditions:

1. They have handled 25 Import or Export documents in last Financial Year.
2. They have had their business activity for last three Financial Year (can be waived in deserving cases).
3. The applicant must have been Financially Solvent for the last three financial years.
4. The applicant must not be issued a show cause notice involving 'fraud, forgery, outright smuggling, clandestine removal of excisable goods or cases where Service Tax has been collected from customers but not deposited to the Government during last three financial years.

An entity can apply for AEO-T1 certification online, by visiting: https://www.aeoindia.gov.in/. Table A lists the number of AEO compliant entities in India.

Table A: AEO Certified Entities in India as on January 17, 2019

AEO Tier	Number of AEO status holders
AEO T1	2,842
AEO T2	491
AEO T3	8
AEO LO	745
Total	**4,086**

Source: Central Board of Indirect Taxes and Customs (CBIC).

CASE STUDIES OF INDIA'S PERFORMANCE IN LOGISTICS IN SPECIFIC SEGMENTS

6.31 This section presents the results of case studies and industry surveys conducted in October-December 2019 by the '*Quality Council of India'* in order to understand the specific points in the supply-chain that experience inordinate delays and blockages.

I. Case Study of Exporting Apparels

6.32 This case study tracks consignments from an apparel factory in Delhi, which is a non-AEO (Box 1), that exports its products to Maine, U.S. via India's largest sea port Nhava Sheva in Maharashtra, India's largest sea port. Table 11 traces the logistics of the export consignment.

6.33 The study found that after the shipment leaves the factory gate in Delhi, it takes five days to reach Jawaharlal Nehru Port Trust (JNPT). However, six processes in Nhava Sheva can take up to 14 days, of which a day or two is spent just on 'Unloading' depending

on space availability at the port. Three days are then used up in 'Custom Clearance', another three days in 'Stuffing Containers' and up to five days are taken up by 'queue for entry into the ship'. This is partly due to insufficient port infrastructure to handle the inflow of containers, narrow roads and poor strength bearing capacity of the roads at the port.

Table 11: Tracing an Apparel Export Consignment from Delhi to Maine, United States

	Place	Action	Day	No. of Days
INDIA				
19 Days in India	Delhi	Shipment ready at factory	Day 1	
	Delhi Haryana Rajasthan Gujarat Maharashtra	Transport of shipment via truck/ train to JNPT	Day 1 – 5	5 days
	Nhava Sheva, Maharashtra	Shipment reaches JNPT	Day 5	Up to 14 days
		a) Unloading	Day 5/6	
		b) Custom clearance	Day 6/7 - 8	
		c) Stuffing in container	Day 8/9 - 12	
		d) Queue for entry into ship	Day 12/13 - 17	
		e) Handover to shipping line	Day 17/18	
		a) Departure of Ship	Day 18/19	
19 Days at High Seas	High seas	Ship traveling at seas	Day 18/19 – Day 38	19 days
UNITED STATES				
3 Days in U.S.	Houston, U.S.	Reaches port	Day 38	3 days
		Clears customs (considering all documentation is in place and inspections render safe results)	Day 38/39	
		Loading & Departure	Day 39	
	Maine, U.S.	Reaches buyer in US	Day 40/41	

Source: QCI Calculations.

However, much of the delay is due to the misalignment of processes that do not allow for "just in time" protocols. The uncertainty of time needed to clear each step means that exporters have to pad up the time spent waiting. This adds to the clogging of port space.

6.34 Once the ship leaves the port, the consignment travels for 19 days by sea, reaching Houston, U.S. on day 38. Here, Customs take at most a day's time to clear the consignment, provided all paper work and regulatory requirements are met. The consignment then reaches the buyer's warehouse in Maine within two days.

6.35 In short, of the total 41 days taken by the consignment from factory in Delhi to warehouse in Maine, 19 days were spent in India, 19 days at sea and roughly three days in the United States. There is obvious scope for improvement.

Table 12: Tracing a Carpet Export Consignment from Mirzapur to New Jersey

	Place	Action	Day	No. of Days
INDIA (AEO)				
13 Days in India	Mirzapur, U.P.	Shipment ready at factory	Day 1	1 day
	Mirzapur to Piyala, Haryana	Transport of shipment via truck to ICD Piyala	Day 1 – 3	2 days
	Piyala	Shipment reaches Piyala	Day 3	4 days
		Custom clearance	Day 3/4	
		Stuffing in container	Day 4-7	
		Departure to Mundra Sea Port by Train	Day 7	
	Rail Travel	Transport of shipment via train to Mundra	Day 7 – 10/11	3-4 days
	Mundra Sea Port (Gujarat)	Queue with the truck to enter the port	Day 11 (6-7 hours)	2 days
		Loading of vessel	Day 11-13	
		Departure of Ship	Day 13	
22 Days at High Seas	High seas	Ship traveling at seas	Day 13 – Day 35/36	22/23 days
UNITED STATES				
5 Days in U.S.	New York Sea Port	Reaches port	Day 36	4-5 days
		Clears customs (considering all documentation is in place and inspections render safe results)	Day 36-39	
	Road Travel	Transportation to New Jersey Warehouse	Day 39/40	
	New Jersey	Reaches warehouse	Day 40	

Source: QCI Calculations.

II. Case Study of Exporting Carpets

6.36 A similar exercise was done for a carpet manufacturer, who is an AEO, exporting products from Mirzapur in Uttar Pradesh to New Jersey in the U.S. (Table 12).

6.37 After the shipment leaves the factory in Mirzapur, it takes two days to reach the Inland Container Depot (ICD) in Piyala, Haryana. At the ICD, the consignment is cleared by Customs in a day's time. In the next three days the consignment is stuffed in containers and sent to Mundra.

6.38 It takes three to four days to transport the shipment via train to Mundra sea port. Another 6-7 hours are used up in queue to enter the port. The vessel is loaded in the next two days and the ship departs on day 13. The ship takes around 23 days to reach New York sea port on day 36. Here, Customs takes two-three days to clear the consignment, provided all paper work and regulatory requirements are met. In the next two days the consignment is transported to the warehouse in New Jersey.

6.39 To sum up, of the 40 days, 13 days are spent in India, another 22 days at sea and 4-5 days in the U.S. before the consignment reaches the final buyer in New Jersey. Although, being an AEO significantly reduces the number of days a shipment takes to depart from India (compared to the previous case), it still takes an inordinate amount of time within the country.

III. Case Study of Importing Carpets

6.40 Another way to understand the process flow of logistics is to look at it in reverse. This case study tracks the timelines involved while importing carpets from Milan, Italy to a warehouse in Beawar, Rajasthan (Table 13).

6.41 Once the shipment is ready at the factory gate in Milan, it takes only 10 Hours to transport the shipment to Naples, 773 kms away. Just two hours are spent in custom clearances and then it takes only an hour's time to load the ship. This means that the consignment spends less than a day from factory to ship. It is possible to do this because of well-oiled "just-in-time" processes. The ship then spends 23 days on high seas, reaching Mundra sea port in Gujarat on Day 24. The next six days are spent at Mundra port, of which, about two days are used up waiting outside the port for entry, followed by another two days in custom clearance and a queue of 6-7 hours to exit the port. Lastly, the shipment reaches its final destination- Beawar, Rajasthan on Day 31, including the two days of travel time by road. Thus, it takes 8 days in India to undergo border compliances and travel time before the consignment reaches the buyer.

6.42 To summarize, while it takes only one day in Italy to transport, and complete border compliance and documentation, India takes eight days to complete the import process (note that the importer for this study was an Authorised Economic Operator). Nonetheless, it is interesting to note that the imports process takes less time than the exports process.

6.43 The results of the case study approach, by definition, are limited by sample size, but the above results were cross verified by QCI by interacting with a wide cross section of importers and exporters in order to confirm that the collected data broadly fits their experience. The following were the outcomes (a) the inordinate delays in loading and customs processes in Indian sea-ports (b) the processes for imports, ironically, are better than those for exports (c) the large variance in process time means that exports are forced to account for the uncertainty by padding extra waiting time. This means that it is not good enough to simply improve the "average" without improving reliability.

6.44 It must be noted that the turnaround time of ships in India has been on a continuous decline, almost halving from 4.67 days in 2010-11 to 2.48 days in 2018-19[2]. This shows that achieving significant efficiency gains in the case of sea ports is possible. Although, a full case study of Chennai port was not done, partial data suggests that its processes are smoother than those of the ports discussed above.

Table 13: Tracing a Carpet Import consignment from Milan to Beawar

	Place	Action		Time	No. of Days/ Hours
ITALY					
13 Hours in Italy	Milan	Shipment ready at factory in Milan			
	Milan Bologna San Marino Rome Naples (773 km)	Transport of shipment to Naples		Day 1	10 Hours
	Naples	Customs clearance Documentary compliances		Day 1	2 Hours
		Loading Departure of ship		Day 1	1 Hour
23 Days at High Seas	High seas	Ship traveling at seas		Day 2-24	23 days
INDIA (AEO)					
8 days in India	Mundra Sea Port (Gujarat)	Shipment reaches Mundra Port at Sea Shore		Day 24	6 days
		Vessel waiting time outside the port before entry		Day 24-26	
		Unloading shipment at port		Day 26	
		Custom Clearance	Handling shipment at port	Day 27	
			Clearing security inspections conducted by port authorities	Day 28	
		Queue with the truck to exit port		Day 29 (6-7 Hours)	
	Road Travel	Transport of shipment via truck to Beawar Rajasthan		Day 29	2 days
	Beawar (Rajasthan)	Shipment reaches factory at Beawar		Day 31	

Source: QCI Calculations.

[2] See Economic Survey 2019-20 Chapter 9, Volume II.

IV. Case Study of Electronics

6.45 Although, the processes at sea-ports remain very inefficient, those at airports have dramatically improved. Indeed, a case study of an electronics company based in Bangaluru, which is currently AEO-T2 certified, found that Indian systems can be world class. It also provides some insight into how the business environment has changed for some segments after the implementation of AEO policy in 2016.

6.46 Tables 14 (a) and (b) compare the time taken for exporting electronics from Bangaluru to Hong Kong, with and without AEO registration. Once the shipment is ready at the factory in Bangaluru, it takes three hours to transport it to Kempegowda Airport. At the airport, it takes one hour to enter exports terminal. So far, there is no difference between AEO and non-AEO. However, total time spent at the airport for Customs and examination process is just two hours for AEO-T2 operators. Non-AEO operators take 6 hours.

6.47 In fact, after AEO implementation, the total time spent in India (six hours) is less than that spent in Hong Kong (seven hours). This shows, with the help of right policies, India can achieve international standards, or even better them.

Table 14 (a): Tracing Electronics Export consignment from Bangaluru to Hong Kong (Non AEO)

	Place	Action	Time
INDIA- (NON AEO)			
10 Hours in India	Bangaluru, Karnataka	Shipment ready at factory	
	Warehouse to Kempegowda Airport, Bangaluru Distance – 70Km	Transport of shipment via truck to Airport	3 Hours
	Shipment reaches Airport	Export Terminal Entry	1 Hour
		Customs Registration	2 Hours
		Examination & Let Export of Shipping Bill	4 Hours
5 Hour Flight	Air travel		5 Hours
HONG KONG			
7 Hours in Hong Kong	Hong Kong	Reaches Hong Kong Airport	
	Customs Clearance	Inspection & Pass out Order	4 Hours
	Road Travel	Transportation from airport to warehouse	3 Hours

Source: Survey Calculations.

Table 14 (b): Tracing Electronics Export consignment from Bangaluru to Hong Kong (AEO)

	Place	Action	Time
INDIA (AEO T2)			
6 Hours in India	Bangaluru, Karnataka	Shipment ready at factory	
	Warehouse to Kempegowda Airport, Bangaluru Distance – 70Km	Transport of shipment via truck to Airport	3 Hours
	Shipment reaches Airport	Export Terminal Entry	1 Hour
		Customs Registration	1 Hour
		Examination & Let Export of Shipping Bill	1 Hour
5 Hour Flight	Air travel		5 Hours
HONG KONG			
7 Hours in Hong Kong	Hong Kong	Reaches Hong Kong Airport	
	Customs Clearance	Inspection & Pass out Order	4 Hours
	Road Travel	Transportation from airport to warehouse	3 Hours

Source: Survey Calculations.

6.48 Again, the process flow was studied in reverse. Tables 15 (a) and (b) compare the time taken in importing electronics from China to Bangaluru, with and without AEO. After the shipment is ready in factory at Shenzhen, it takes two days to transport it to Hong Kong airport.

6.49 At the airport, an hour is spent on export declaration, two hours on customs clearance and another four hours in loading the aircraft at the terminal. After a five hour air travel, the consignment reaches Kempegowda Airport, Bangaluru. It then takes 14 and 11 hours respectively for a Non-AEO and AEO consignment to reach the warehouse in Bangaluru.

6.50 The case study suggests the following conclusions: (a) the processes in Indian airports is vastly superior to those at sea ports for both imports and exports; (b) AEO did significantly improve the process but it is reasonably smooth even for non-AEO operators importing/ exporting electronics (c) Indian processes can beat international standards.

Table 15 (a): Tracing Electronics Import consignment from China to Bangaluru (Non AEO)

	Place	Action	Time
CHINA			
2 days & 7 Hours in China	Shenzhen, China	Shipment ready at factory	
	From warehouse in Shenzhen to Hong Kong Airport	Transport of shipment via truck to Airport	2 days
	Shipment reaches Airport	Export Declaration	1 Hour
		Customs Clearance	2 Hours
		Acceptance to flight at Terminal	4 Hours
5 Hour Flight	Air travel		5 Hours
INDIA- (NON AEO)			
14 Hours in India	Shipment reaches Airport in Bangaluru	Bonding/ Manifest of Cargo	3 Hours
		Customs Clearance	6 Hours
		Cargo Delivery process	1 Hours
	Road Travel	Transportation from airport to warehouse	4 Hours

Source: Survey Calculations.

Table 15 (b): Tracing Electronics Import consignment from China to Bangaluru (AEO)

	Place	Action	Time
CHINA			
2 days & 7 Hours in China	Shenzhen, China	Shipment ready at factory	
	From warehouse in Shenzhen to Hong Kong Airport	Transport of shipment via truck to Airport	2 days
	Shipment reaches Airport	Export Declaration	1 Hour
		Customs Clearance	2 Hours
		Acceptance to flight at Terminal	4 Hours
5 Hour Flight	Air travel		5 Hours
INDIA- (AEO T2)			
11 Hours in India	Shipment reaches Airport in Bangaluru	Bonding/ Manifest of Cargo	3 Hours
		Customs Clearance	3 Hours
		Cargo Delivery process	1 Hours
	Road Travel	Transportation from airport to warehouse	4 Hours

Source: Survey Calculations.

CONCLUSION

6.51 This chapter looked at the Ease of Doing Business in India from various aspects. First, it compared India's performance on World Bank's EoDB rankings with its peers as well as the best-in-class. The analysis focused on the four parameters where India lags behind *viz*- Starting Business Registering Property, Paying Taxes, and Enforcing Contracts. The findings clearly show the large scope for improvement in all categories. While it takes approximately four years to enforce a contract in India; New Zealand, Indonesia, China and Brazil require 0.6, 1.2, 1.4 and 2.2 years respectively. With a rank of 163 out of 190 nations in Enforcing Contracts, only a few countries like Afghanistan, Mozambique, and Zimbabwe perform worse than India. Similar comparisons have been shown for other categories.

6.52 Secondly, the chapter throws light on the maze of laws, rules and regulations in manufacturing and services (particularly restaurants) sector. While China and Singapore require only four licenses to open a restaurant, India requires several more mandatory licenses and approvals: Delhi requires 26, Bangaluru 36, and Mumbai requires 22. In addition, Delhi requires a 'Police Eating House License' from Delhi Police that asks for 45 documents compared to just 19 needed to buy a gun. The scope for streamlining is clear.

6.53 Lastly, a series of case studies and industry surveys are used to analyse the time taken at each stage of the supply chain for specific merchandise items to travel from factory gate to the warehouse of the foreign customer. These confirmed the following (a) the inordinate delays in loading and customs processes in Indian sea-ports (b) the processes for imports, ironically, are better than those for exports (c) the large variance in process time means that exports are forced to account for the uncertainty by padding extra waiting time. In contrast, however, the imports and exports of electronics through Bengaluru airport was found to be world class. The processes of Indian airports should be adapted and replicated in sea-ports.

CHAPTER AT A GLANCE

- India has jumped up 79 positions in World Bank's Doing Business rankings, improving from 142 in 2014 to 63 in 2019. However, it continues to trail in parameters such as Ease of Starting Business (rank 136), Registering Property (rank 154), Paying Taxes (rank 115), and Enforcing Contracts (rank 163).
- Enforcing a contract in India takes on average 1,445 days in India compared to just 216 days in New Zealand, and 496 days in China. Paying taxes takes up more than 250 hours in India compared to 140 hours in New Zealand, 138 in China and 191 in Indonesia. These parameters provide a measure of the scope for improvement.
- Setting up and operating a services or manufacturing business in India faces a maze of laws, rules and regulations. Many of these are local requirements, such as burdensome documentation for police clearance to open a restaurant. This must be cleaned up and rationalized one segment at a time.

- Case studies of merchandise exports found that logistics is inordinately inefficient in Indian sea-ports. The process flow for imports, ironically, is more efficient than that for exports. Although one needs to be careful to directly generalize from specific case studies, it is clear that customs clearance, ground handling and loading in sea ports take days for what can be done in hours. A case study of electronics exports and imports through Bengaluru airport illustrates how Indian logistical processes can be world class.
- It must be noted that the turnaround time of ships in India has been on a continuous decline, almost halving from 4.67 days in 2010-11 to 2.48 days in 2018-19. This shows that achieving significant efficiency gains in the case of sea ports is possible. Although, a full case study of Chennai port was not done, partial data suggests that its processes are smoother than those of the ports discussed above.
- The streamlining of the logistics process at sea-ports requires close coordination between the Logistics division of the Ministry of Commerce and Industry, the Central Board of Indirect Taxes and Customs, Ministry of Shipping and the different port authorities. The simplification of the Ease of Doing Business landscape of individual sectors such as tourism or manufacturing, however, requires a more targeted approach that maps out the regulatory and process bottle-necks for each segment. Once the process map has been done, the correction can be done at the appropriate level of government - central, state or municipal.

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Golden Jubilee of Bank Nationalisation: Taking Stock

07
CHAPTER

"It is not by augmenting the capital of the country, but by rendering a greater part of that capital active and productive than would otherwise be so, that the most judicious operations of banking can increase the industry of the country."

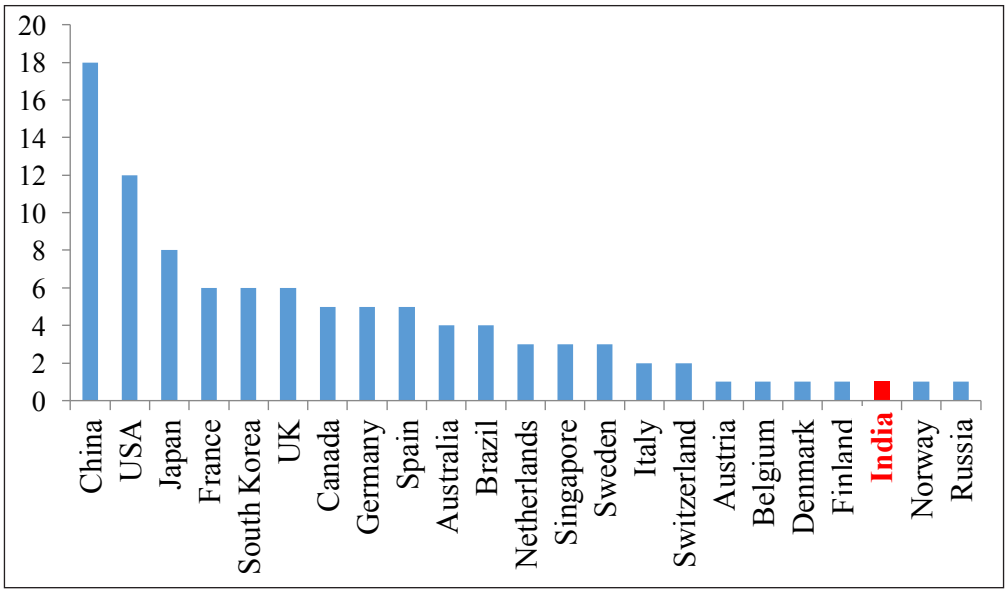
– Adam Smith

In 2019, India completed the 50th anniversary of bank nationalization. It is, therefore, apt to celebrate the accomplishments of the 3,89,956 officers, 2,95,380 clerks, and 1,21,647 sub-staff who work in Public Sector Banks (PSBs). At the same time, an objective assessment of PSBs is apposite. Since 1969, India has grown significantly to become the 5th largest economy in the world. Yet, India's banking sector is disproportionately under-developed given the size of its economy. For instance, India has only one bank in the global top 100 – same as countries that are a fraction of its size: Finland (about 1/11th), Denmark (1/8th), Norway (1/7th), Austria (about 1/7th), and Belgium (about 1/6th). Countries like Sweden (1/6th) and Singapore (1/8th) have thrice the number of global banks. A large economy needs an efficient banking sector to support its growth. Historically, in the last 50 years, the top-five economies have always been ably supported by their banks. Should India's banks play a role proportionate to its economic size, India should have six banks in the top 100. As PSBs account for 70 per cent of the market share in Indian banking, the onus of supporting the Indian economy and fostering its economic development falls on them. Yet, on every performance parameter, PSBs are inefficient compared to their peer groups. Previously, the Narasimhan Committee (1991, 1997), Rajan Committee (2007) and P J Nayak Committee (2014) have provided several suggestions to enhance the efficiency of PSBs. The survey suggests use of FinTech (Financial Technology) across all banking functions and employee stock ownership across all levels to enhance efficiencies in PSBs. These will make PSBs more efficient so that they are able to adeptly support the nation in its march towards being a $5 trillion economy. All these recommendations need to be seriously considered and a definite, time-bound plan of action drawn up. With the cleaning up of the banking system and the necessary legal framework such as the Insolvency and Bankruptcy Code (IBC), the banking system must focus on scaling up efficiently to support the economy.

7.1 In 2019, India completed the 50th anniversary of the bank nationalization programme undertaken in 1969. It is, therefore, apt to celebrate the accomplishments of the 389,956 officers, 295,380 clerks, and 121,647 sub-staff who work in public sector banks (PSBs). As PSBs account for 70 per cent of the market share in banking, an assessment of the state of India's public sector banks (PSBs) is apposite. Even though PSBs are the dominant players in the banking sector, they lag considerably in performance metrics when compared to their peers.

7.2 Figure 1 shows that India's banks are disproportionately small compared to the size of its economy. In 2019, when Indian economy is the fifth largest in the world, our highest ranked bank—State Bank of India—is ranked a lowly 55th in the world and is the only bank to be ranked in the Global top 100. India has only one bank in the global top 100 and gets grouped on this characteristic with countries that are a fraction of its size: Finland (about 1/11th), Denmark (1/8th), Norway (1/7th), Austria (about 1/7th), and Belgium (about 1/6th). Countries like Sweden and Singapore, which are respectively about 1/6th and 1/8th the economic size of India, have thrice the number of global banks as India does.

Figure 1: Number of banks in the Global Top 100 (2019)



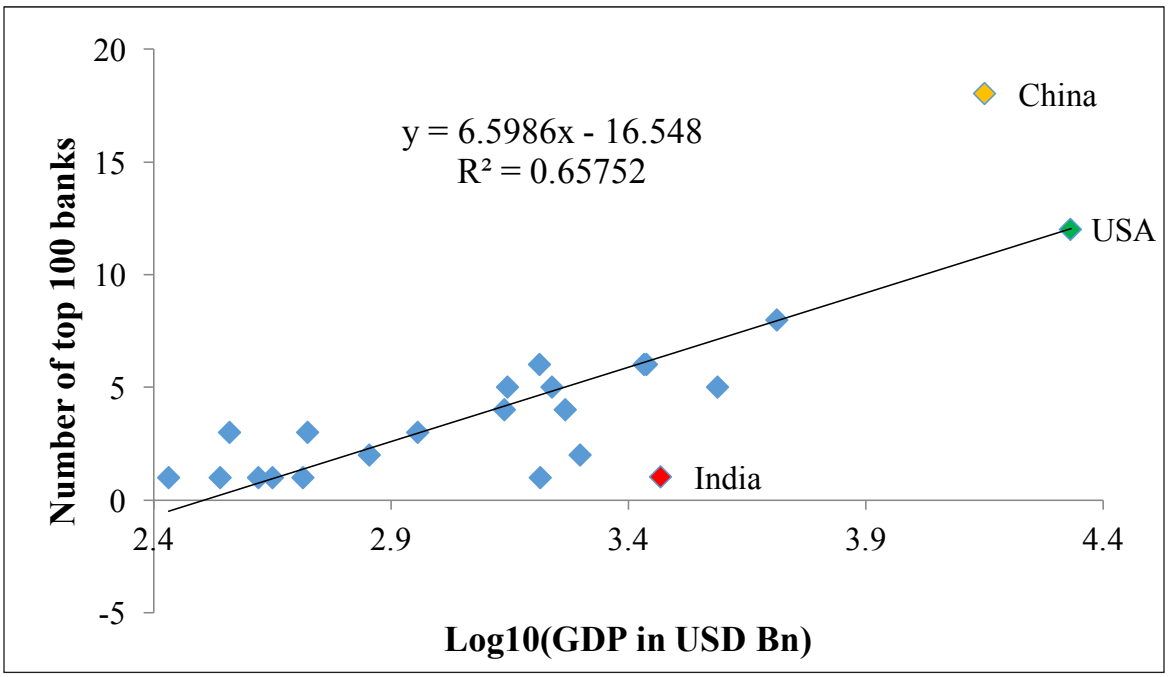
Source: Wikipedia

7.3 Figure 2 clearly highlights this disproportionate dwarfism of the Indian banks when compared to the size of the Indian economy. A fit of the number of banks in the global top 100 and the size of the economy shows clearly that India is a significant outlier on the negative side. All the largest economies have proportionately large banks with China being an outlier on the positive side with 18 banks in the global top 100. Figure 3, similarly, shows India as an outlier when the penetration of credit to the private sector is plotted against the GDP per capita of a country; as credit in India is provided primarily by banks, this measure proxies the penetration of credit by banks in India.

[1] Source: RBI data

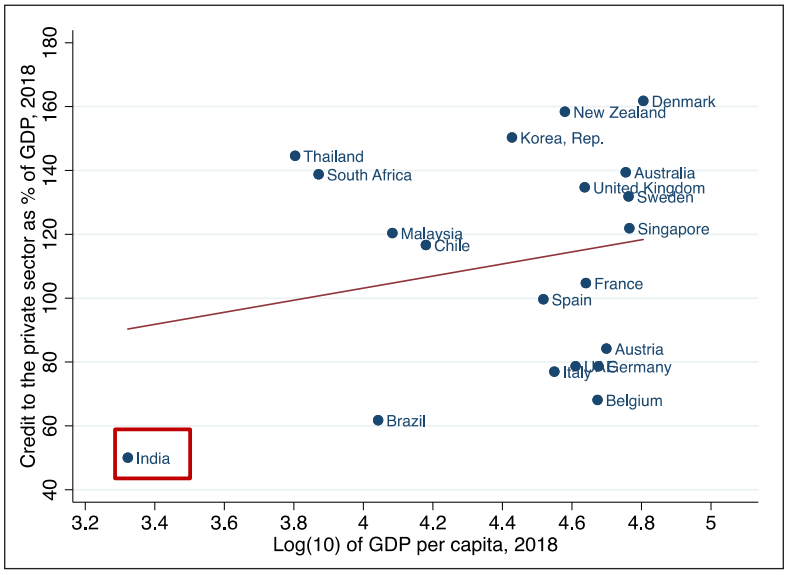
Figure 4 shows that the disproportionately lower penetration is not just because of our greater population. While greater population does lower penetration of credit, such penetration is disproportionately lower in India when compared to our population. In sum, Figures 1-4 clearly show the dwarfism of our banking sector when compared to the country's characteristics: size of the economy (GDP), development of the economy (GDP per capita) and population.

Figure 2: Country's GDP and number of banks in the Global Top 100



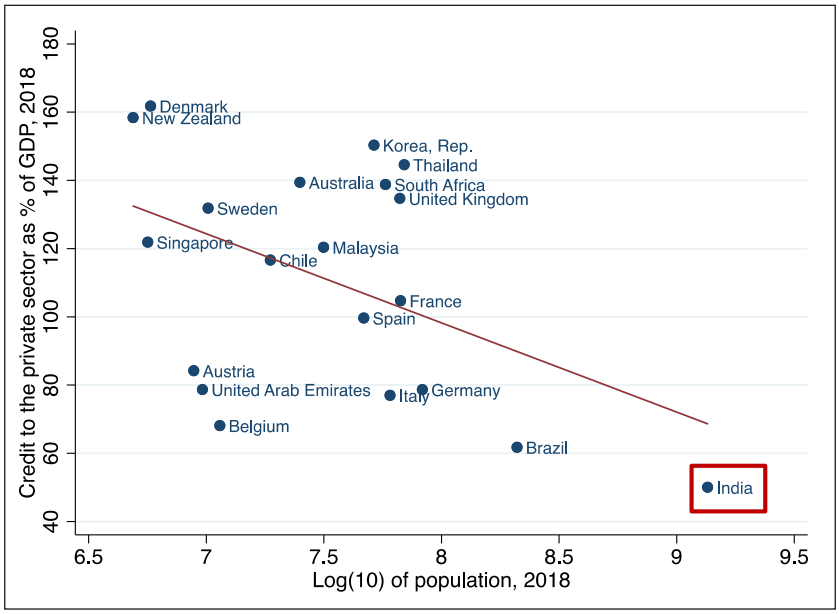
Source: Wikipedia for banks in the top 100 and GDP 2019 estimates from IMF.

Figure 3: Country's GDP per capita and penetration of credit in the country



Source: World Bank WDI Database.

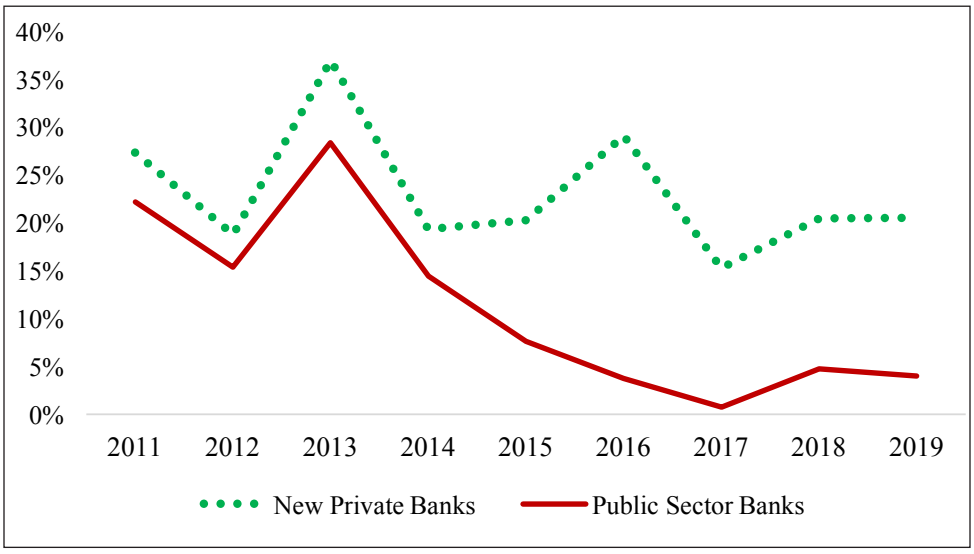
Figure 4: Country's population and penetration of credit in the country



Source: World Bank WDI database

7.4 A large economy needs an efficient banking sector to support its growth. Yet, Figure 5 shows that credit growth among PSBs has declined significantly since 2013 and has also been anaemic since 2016. Even as NPBs grew credit at between 15 per cent and 29 per cent per year between 2010 and 2019, PSB credit growth essentially stalled to the single digits after 2014, ending up at a 4.03 per cent growth in 2019 compared 15 per cent to 28 per cent from 2010 to 2013. As Section 2 in Chapter 1 of Volume 2 of this Survey clearly demonstrates, anaemic credit growth has impacted economic growth. This needs to be remedied because the economy needs PSBs to perform to their fullest potential and support economic growth rather than pullback lending, which has a detrimental effect on growth and welfare.

Figure 5: Bank Credit Growth (per cent)



Source: RBI Data and Survey Calculations

7.5 Historically, in the last 50 years, the top-five economies have always been ably supported by their banks. The support of the U.S. Banking system in making the U.S. an economic superpower is well documented. Similarly, in the eighties during the heydays of the Japanese economy, Japan had 15 of the top 25 largest banks then. In recent times, as China has emerged as an economic superpower, it has been ably supported by its banks—the top four largest banks globally are all Chinese banks. The largest bank in the world—Industrial and Commercial Bank of China—is nearly two times as big as the 5th or 6th largest bank, which are Japanese and American banks respectively. Using the above relationship, we estimate that if Indian banks were proportionately large in relation to the size of the Indian economy, we should have at least six banks in the global top 100. Similarly, India becoming a $ 5 trillion economy will require at least eight Indian banks to be large enough to belong in the top 100 globally. The state of the banking sector in India, therefore, needs urgent attention.

7.6 As PSBs account for 70 per cent of the market share in Indian banking, the onus of supporting the Indian economy and fostering its economic development falls on them. However, in 2019, PSBs' collective loss—largely due to bad loans—amounted to over ₹ 66,000 crores, an amount that could nearly double the nation's budgetary allocation for education. PSBs account for 85 per cent of reported bank frauds while their gross non-performing assets (NPAs) equal ₹ 7.4 lakh crores which is more than 150 per cent of the total infrastructure spend in 2019. Estimate of return on equity in 2019 highlights that every rupee of taxpayer money invested in PSBs as equity by the Government loses 23 paise. The market-to-book ratio, which indicates the quality of a bank's governance, is 0.8 as on 20th January, 2020 for PSBs while that of the average NPB is close to 4. To enable PSBs to become efficient and thereby catalyse the banking sector and stimulate economic growth, structural solutions are necessary.

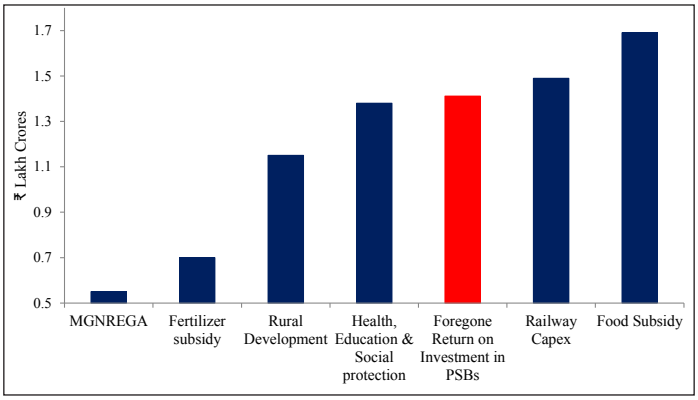
7.7 Over ₹ 4,30,000 crores of taxpayer money is invested as Government's equity in PSBs. In 2019, every rupee of taxpayer money invested in PSBs, on average, lost 23 paise. In contrast, every rupee of investor money invested in "New Private Banks" (NPBs)—banks licensed after India's 1991 liberalization—on average gained 9.6 paise. As PSBs and NPBs operate in the same domestic market, there is a case for enhancing the efficiency of PSBs.

7.8 To understand the scale of inefficiencies in PSBs, we estimate the potential gain only from changes in the return on the taxpayer's investment in PSBs. The return earned by an investor in an average NPB represents the benchmark that must be employed to estimate the losses that the taxpayer bears from her investment in PSBs. Using this benchmark, Figure 6 shows that the foregone return on the taxpayer's investment in PSBs must rank as one of the largest subsidies as the foregone amount of over ₹ 1.4 lakh crores compares similarly to the amount provided for the food subsidy.

7.9 Another way to understand the scale of inefficiencies is to ask the following question: What is the overall value that the taxpayer derives from her investment in PSBs? For this purpose, we use the ratio of stock market-to-book value of PSBs on average vis-à-vis that of new private sector banks (NPBs). As on 20th January 2020, we note that every rupee of this taxpayer money fetches a market value of 71 paise. In stark contrast, every rupee invested in NPBs fetches a market value of ₹ 3.70 i.e., more than five times as much value as that of a rupee invested in PSBs. This leads to the natural question: What if the market-to-book ratio of each PSB doubled, which envisages an extremely modest and unambitious increase, as the average PSB will still generate about one-third the value

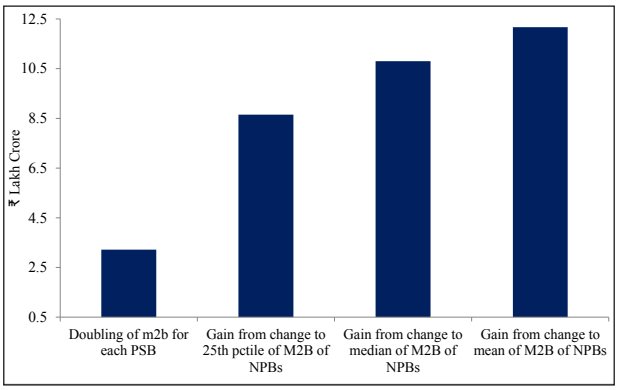
that a NPB generates on average? Figure 7 shows that the gain would be ₹ 5.2 lakh crores, an amount that is about five times the budgeted estimate for disinvestment for 2019 (₹ 1.05 lakh crores). A more realistic, but not desperately modest, scenario would be to assume that the market-to-book ratio of each PSB becomes equal to that of the second worst performing NPB; this is a realistic scenario as the worst performing NPB has a market-to-book ratio that is greater than the average for PSBs. Thus, we assume here that the taxpayer investment in each PSB would at least equal the market-to-book ratio of the NPBs that are at the bottom of their heap. This change would gain the Government about ₹9.1 lakh crores, which is more than about 8.5 times budgeted estimate for disinvestment for 2019. A change in the market-to-book ratio of each PSB to the median for the NPBs would gain the Government ₹ 10.2 lakh crores, which is over nine times the disinvestment target for 2019. Finally, a change in the market-to-book ratio of each PSB to the median for the NPBs would gain the Government ₹ 11.8 lakh crores, which is about 11 times the disinvestment target for 2019. As argued above, the primary difference between PSBs and NPBs stems from the difference in efficiencies and all the consequent differences that result from the same. This scenario analysis clearly suggests that the costs stemming from inefficiency of PSBs are enormous.

Figure 6: Comparison of the foregone return on taxpayer money investment in PSBs with large subsidy heads (2019)



Source: Budget documents, RBI Data and Survey Calculations

Figure 7: Potential gains to the taxpayer from enhanced efficiency in PSBs



Source: Survey Calculations
Note: M2B denotes the market-to-book ratio of a listed bank

7.10 India needs to recognise that the fulfilment of social goals can happen at scale through financial intermediation. The exponential growth of microfinance and its impact illustrates this point (see Box 1). Also, as is clarified later, highlighting the odd weakness in other business models – NPBs or in microfinance institutions (MFIs) – to make the case for continuing status quo in PSBs suffers from the fallacy of an apples-to-oranges comparison. As with any economic activity, heterogeneity in performance is inevitable. Just as there is a wide variation within PSBs in their performance with some PSBs performing better than others, similarly, there has to be some variation in the performance of NPBs and MFIs. However, to compare the performance of the average PSB with either the best performing NPB/MFI or the worst performing one is incorrect as that mixes up two statistical measures – averages and outliers – and leads to an apples-to-oranges comparison. In sum, the case for enabling efficiencies in PSBs is compelling.

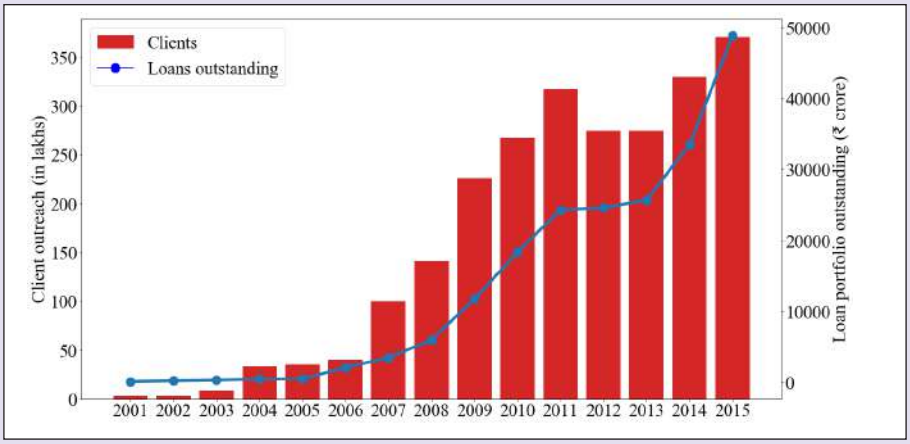
7.11 India is at a critical inflection point in her growth trajectory due to a unique confluence of factors, which (i) a positive demographic dividend; (ii) a modern digital infrastructure supported by the JAM "trinity" of near-100 per cent financial inclusion, a biometrics-based unique identity system, and a mobile network structure, and (iii) a de novo GST network with uniform, electronic indirect taxation system across India. These investments set the stage for a modern economy in which tens of crores of individuals and businesses are entering the formal financial system.

7.12 Given India's demographics and the growth opportunities on hand, we need a thriving banking sector now. A vibrant banking system can support and unleash a multiplier effect and permanently alter India's growth trajectory in a positive way. Conversely, inefficient PSBs can severely handicap the country's ability to exploit the unique opportunities she can utilize today. The result could be a generational setback to the country's economic growth. As mentioned earlier, no country has been a dominating global economy without the support of an efficient banking system. So for India to march in its goal of becoming a $5 trillion economy, PSBs—the dominant banks in our banking system—need to become efficient.

Box 1: Financial intermediation in the private sector for social impact: The case of microfinance

The microfinance sector, especially given its transformation since 2000, provides a good illustration of how social goals can be achieved at scale using business models that are different from that of PSBs. Most microfinance institutions (MFIs) started as not-for-profit institutions. Post 2000, while their objective remained poverty alleviation via inclusive growth and financial inclusion, MFIs moved from purely pursuing social goals to the double bottom-line approach of achieving social and financial returns. The emphasis on social impact at the "bottom of the pyramid" combined with good financial returns of some of the leading MFIs, brought many mainstream commercial entities into the sector. For instance, some banks partnered with MFIs by lending to MFIs for on-lending the money to this segment and thereby fulfil their priority lending obligations. The United Nation's declaration of Microfinance year in 2005 highlighted the role of MFIs in poverty alleviation. Some MFIs have transformed themselves into banks as well. Figure A shows the exponential growth in the impact that MFIs have had since 2000. As of 2016, 97 per cent of the borrowers were women with SC/ST and minorities accounting for around 30 per cent and 29 per cent of the borrowers. This shows that the loans given by these MFIs primarily cater to the marginal sections of the society.

Figure A: Exponential growth in customer reach by MFIs



Source: The Bharat Microfinance Report 2012 and 2015

BANKING STRUCTURE: NATIONALIZATION TO TODAY

7.13 Banking in India dates back to thousands of years. Several of India's ancient texts including those in the Vedic period mention bank lending functions. The modern banking system in India has its roots in the colonial era starting in the 1800s. India's public sector banks (PSBs) are essentially legacy banks from the colonial period that were subsequently nationalized. For example, India's largest PSB which is currently the 55th largest bank globally, State Bank of India (SBI), was founded as Bank of Calcutta in 1806, took the name Imperial Bank of India in 1921 and became state-owned in 1955. The remaining PSBs in India were formed through two waves of nationalizations, one in 1969 and the other in 1980. After the 1980 nationalization, PSBs had a 91 per cent share in the national banking market with the remaining 9 per cent held by "old private banks" (OPBs) that were not nationalized.

7.14 The market structure of the banking sector has evolved in the 50 years since the 1969 nationalization. As of March 2019, PSBs had ₹ 80 lakh crore in deposits, held ₹ 20 lakh crore in government bonds, and made loans and advances of ₹ 58 lakh crore, representing between 65 per cent and 70 per cent of the aggregates for all scheduled commercial banks operating in India.[2] They also hold about ₹ 20 lakh crore of the government debt, a large part of it driven by the requirements for a minimum "statutory liquidity" ratio. PSBs thus continue to have a significant footprint today albeit with a market share that is less than the 91 per cent share after the 1980 nationalization. The decline in PSB market share has been largely absorbed by "new private banks" (NPBs), which were licensed in the early 1990s after a liberalization of licensing rules that earlier regulated bank entry.

7.15 PSBs, OPBs, and NPBs are currently subject to similar banking regulations on virtually all aspects of their functioning including branching and priority sector lending. The key difference between the state-owned PSBs and private banks is that PSBs enjoy less strategic and operating freedom

[2] Aggregate banking statistics are from the Database on the Indian Economy (DBIE) maintained by the Reserve Bank of India. See https://dbie.rbi.org.in/

because of majority government ownership. The government exercises significant control over all aspects of PSB operations ranging from policies on recruitment and pay to investments and financing and bank governance including board and top management appointments. The majority ownership of the government and its writ on bank functioning also results in an implicit promise of the bailout of bank liabilities which is an implicit cost to the taxpayer. The majority ownership by the government also subjects PSB officers to scrutiny of their decisions by the central vigilance commission and the comptroller auditor general. With no real restrictions on what can be investigated and under what circumstances, officers of state-run banks are wary of taking risks in lending or in renegotiating bad debt, due to fears of harassment under the veil of vigilance investigations.

BENEFITS OF NATIONALIZATION

7.16 What did nationalization achieve? The allocations of banking resources to rural areas, agriculture, and priority sectors increased. Consider some of the raw statistics in the first decade after the 1969 nationalization. The number of rural bank branches increased ten-fold from about 1,443 in 1969 to 15,105 in 1980 compared to a two-fold increase in urban and semi-urban areas from 5,248 to 13,300 branches. Credit to rural areas increased from ₹ 115 crore to ₹ 3,000 crore, a twenty-fold increase and deposits in rural areas increased from ₹ 306 crore to ₹ 5,939 crore, again a twenty-fold increase. Between 1969 and 1980, credit to agriculture expanded forty-fold from ₹ 67 crore to ₹ 2,767 crore, reaching 13 per cent of GDP from a starting point of 2 per cent. This growth represents a significant correction to the undersupply of credit to farmers that drove nationalization. Both rural bank deposit mobilization and rural credit increased significantly after the 1969 nationalization.

7.17 However, some caution is necessary in interpreting the above trends as being entirely caused by nationalisation. A key confounder in such an interpretation is the role played by other interventions around bank nationalization. For instance, the government initiated a "green revolution" between 1967 and 1977. In addition, multiple anti-poverty programmes mark India's 4th and 5th five-year plans that bookend its nationalization. Confounding effects are introduced by the policies pursued by RBI after nationalization. Its directed lending programmes set lending targets for priority sectors, using a complex mix of pricing formulas that determined the rates of interest to be charged by banks on different types of credit, in styles reminiscent of central planning rather than market economies. RBI used both formal means and moral suasion to persuade banks to achieve the targets it set. These tools carried special force given that banks were essentially operating in a marketplace sheltered from entry.

Box 2: Research based evidence on the impact of Nationalisation

Conclusions about what nationalisation has achieved must consider the counter-factual situation of what could have been achieved had there been no nationalization. The benefits of nationalization can only be estimated using this counterfactual. There have been some careful studies that have looked at the impact of bank nationalization using this careful lens. The findings are mixed.

Burgess and Pande (2005) study the RBI's 4:1 formula where a bank was required to open 4 rural branches to obtain a license to open an urban branch between years 1977 and 1991. They find that the

policy led to significant reduction in poverty in financially less developed states. However, Kochar (2005) argues that integrated rural development program (IRDP), the Government's flagship poverty alleviation program, was actively implemented during this period with greater intensity in financially less developed states. Therefore, it is almost impossible to conclude that government bank branch expansion caused reduction in poverty. Panagariya (2006) also rejects the findings in Burgess and Pande (2005) by arguing that the branch expansion program of similar intensity existed even before nationalization and hence the 1977-1991 period is not special in terms of branch expansion. In other words, differential impact on poverty seen during 1977-1991 cannot be attributed to nationalization.

Finally, Cole (2009) carefully examines the impact of the second wave of bank nationalization undertaken in the year 1980. He exploits the fact that banks above certain threshold size were nationalized and compares regions having higher proportion of banks that marginally crossed the nationalization threshold and regions having higher proportion of banks that narrowly missed the threshold. The study finds no significant benefit of nationalization on the real economy. In fact, he shows that employment in trade and services declines and the quality of financial intermediation deteriorated. There was increase only in the quantity of credit.

Over and above these studies, we also know that despite nationalization a significant portion of the poor remained unbanked till 2014. Financial inclusion, in large part, happened in August 2014 through the Pradhan Mantri Jan Dhan Yojana (PMJDY), the first week of which saw more than 18 million bank accounts—a record in the Guinness Book of World Records.

THE WEAKENING OF PUBLIC SECTOR BANKS

7.18 The 2019 performance statistics concerning PSBs are sobering. In 2019 public sector banks reported gross and net NPAs of ₹ 7.4 lakh crore and ₹ 4.4 lakh crore respectively, amounting to about 80 per cent of the NPAs of India's banking system. The gross NPAs of PSBs amount to a significant 11.59 per cent of their gross advances, although a slightly encouraging trend is that the NPA ratio is below the 14.58 per cent ratio in 2018, raising hopes that the non-performing asset problem has peaked and is now coming down. Moreover, in 2019, PSBs suffered losses of ₹ 661 billion compared to profits of ₹ 421 billion of other scheduled commercial banks or profits of ₹390 billion of the NPBs. Besides the NPAs leading to losses, frauds are another source of concern in PSBs. The Reserve Bank of India (RBI)'s supervisory returns reveal that PSBs account for 92.9 per cent of the 5,835 cases of fraud and 85 per cent of the fraud amounts of about ₹ 41,000 crore reported in 2017-2018.[3] Despite the past accomplishments of PSBs, of which plenty are noted later in this chapter, PSBs are clearly not efficient today.

Comparing averages

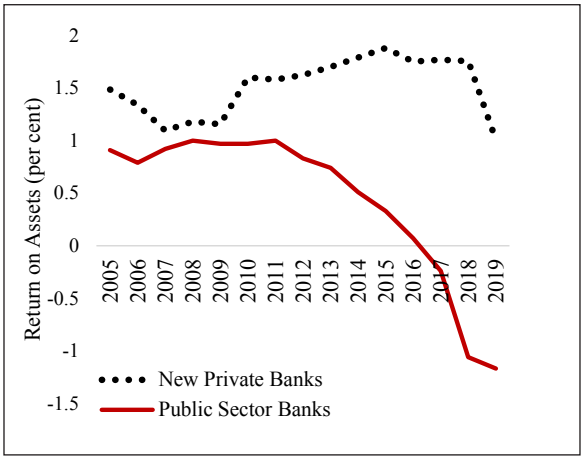
7.19 Trends over time that contrast PSBs and NPBs in a "difference-in-difference" sense reveal that the PSB weaknesses did not develop suddenly. Figure 8 reports the return on assets (ROA) for PSBs and NPBs from 2005 to 2019. While both PSBs and NPBs have similar ROAs prior to 2009, PSB ROAs decline starting in 2009 and continue through 2019. ROA of NPBs increases till 2013 and declines thereafter, which reflects common trends in all banks since 2013. However, the decline in ROA for PSB is far steeper.

[3] Statistics from chapter VI of the RBI Annual Report released on August 29, 2018, accessed at https://rbi.org.in/scripts/AnnualReportPublications.aspx?Id=1233

7.20 Figure 9 shows a similar trend in the Return on Equity (ROE). Figures 10 and 11 display the ratio of the gross and net NPAs to gross advances. Both ratios increase sharply after 2010 for PSBs but the trend lines are far less step or even flat until recently for the NPBs. Figures 10 and 11 clearly suggest that asset quality problems developing over a few years are at the root of the PSB performance slide. Figure 12 displays the total capital adequacy ratio for the two types of banks while Figure 13 depicts the core "Tier 1" capital ratio. These ratios show that the bank losses have impaired the capital bases of the PSBs relative to their private peers.

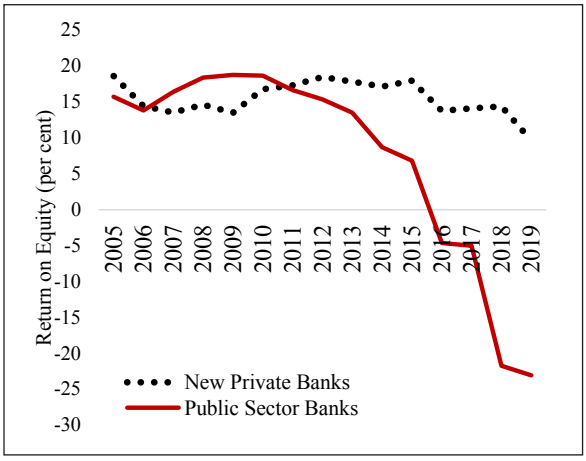
7.21 A plausible explanation for the NPA problems of PSBs is that in the Indian economy's growth phase between 2004 and 2011, PSBs grew their loan portfolios but this credit growth was of suspect quality. When the economy slowed, the banking system saw a dramatic increase in NPAs.

Figure 8: Return on Assets of Banks (per cent)



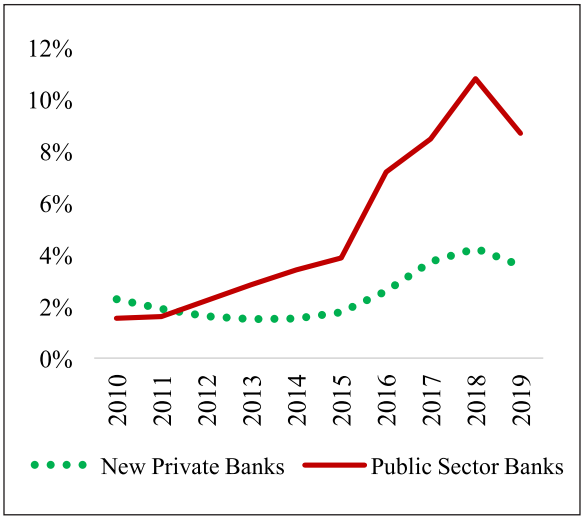
Source: RBI Data and Survey Calculations

Figure 9: Return on Equity of Banks (per cent)



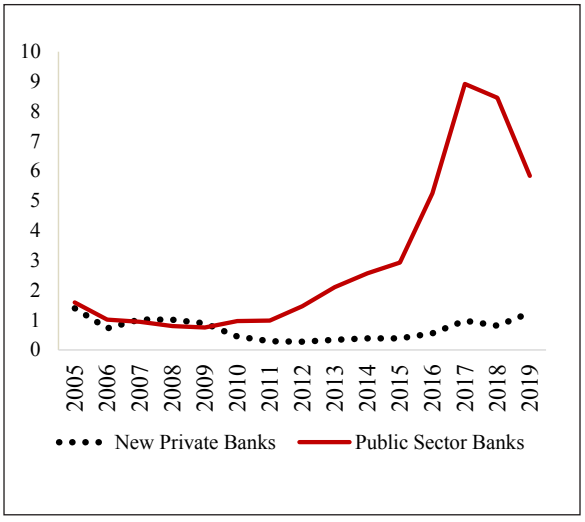
Source: RBI Data and Survey Calculations

Figure 10: Gross Non-Performing Assets to Advances (per cent)



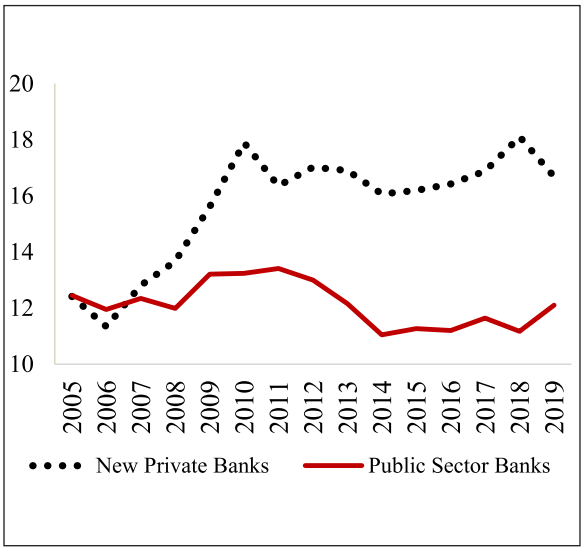
Source: RBI Data and Survey Calculations

Figure 11: Net Non-Performing Assets to Advances (per cent)



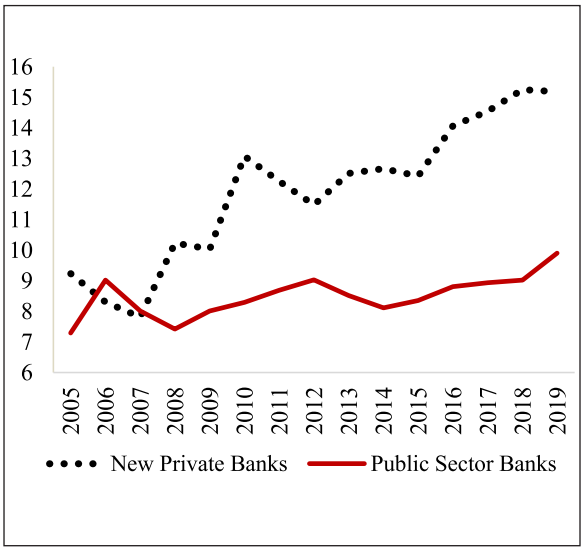
Source: RBI Data and Survey Calculations

Figure 12: Total Capital Adequacy Ratio (per cent)



Source: RBI Data and Survey Calculations

Figure 13: Tier-1 Capital Adequacy Ratio (per cent)

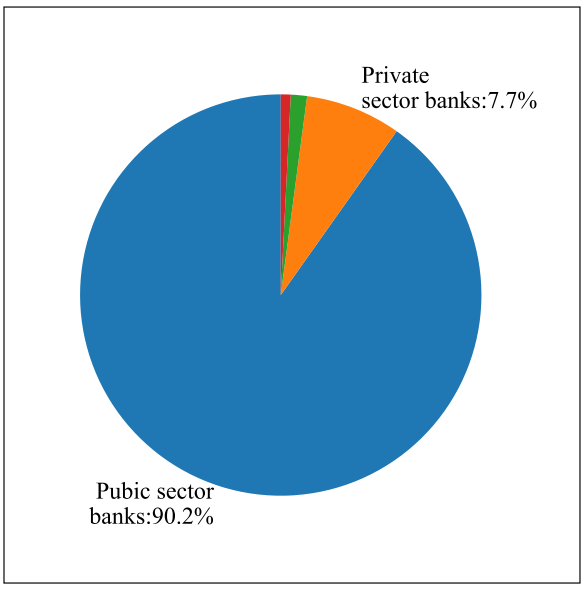


Source: RBI Data and Survey Calculations

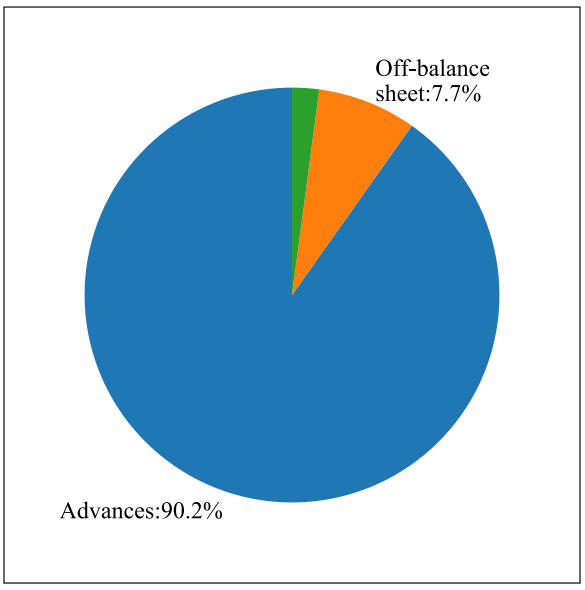
7.22 Figure 14a shows clearly that over 90 per cent of the cases of bank frauds based on the amount involved occurred in PSBs with private sector banks accounting for less than 8 per cent. A large majority (90.2 per cent) of these frauds related to advances (Figure 14b). Chakrabarty (2013) highlights that about 90 per cent of advances above ₹ 1 crore occur in PSBs. Therefore, the quality of screening and monitoring processes for corporate lending adopted by PSBs needs urgent attention.

Figure 14: Frauds in banks (per cent)

(a) Group-wise summary of fraud cases based on amount involved



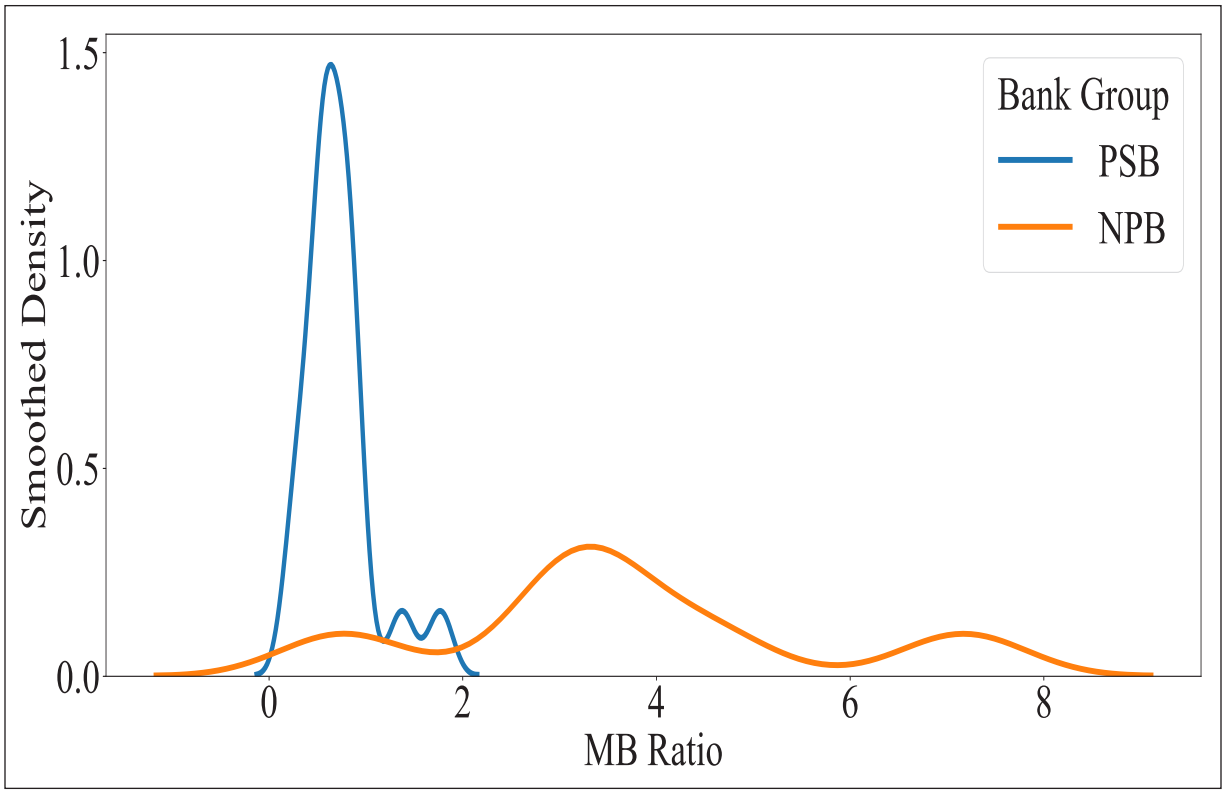
(b) Operation-wise summary of fraud cases based on amount involved



Source: RBI and Survey Calculations

7.23 The poor performance of PSBs across the range of metrics is also reflected in their equity values. Figure 15 shows the ratio of the market value of equity to the book value of equity for the two types of banks. The median market-to-book ratio of PSBs equals 0.64, which is less than 1/5th the median of 3.33 for the NPBs.

Figure 15: Distribution of Market-to-book ratios of Banks



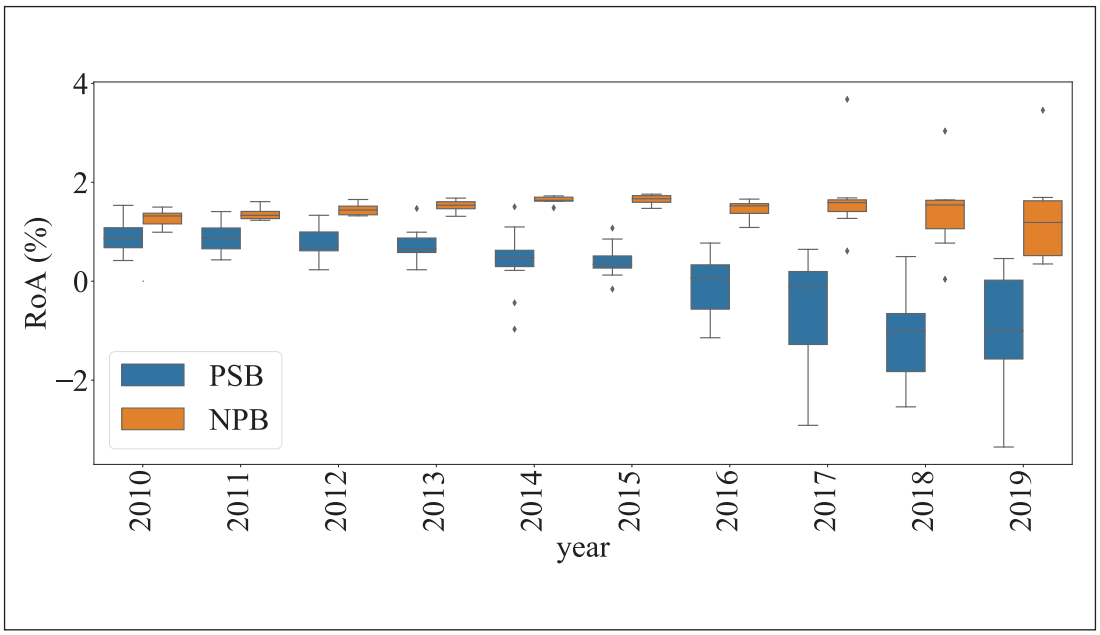
Source: Data from Moneycontrol

Comparison accounting for heterogeneity among PSBs and within NPBs

7.24 It must be carefully noted why a comparison between the average performance of PSBs and average performance in NPBs is an appropriate, apples-to-apples comparison. As with any economic activity, heterogeneity in performance is inevitable. Just as there is a wide variation within PSBs in their performance with some PSBs performing better than others, similarly, there is some variation in the performance of NPBs as well. However, to compare the performance of the average PSB with either the best performing NPB or the worst performing one is incorrect as that mixes up two statistical measures – averages and outliers – and leads to an apples-to-oranges comparison.

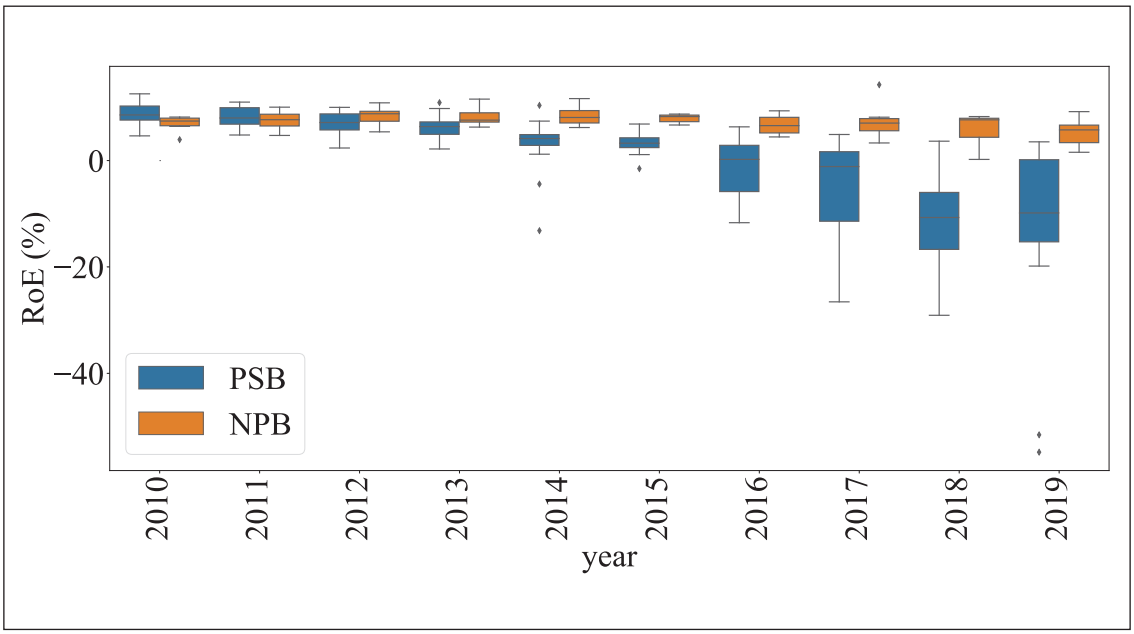
7.25 To undertake a comparison by accounting for the heterogeneity in performance, we examine the distribution of ROA for PSBs and NPBs in Figure 16 using box plots (see box 3 to understand the box plot). It is clear from this figure that for every year since 2013 the ROA of the best performing PSB has been lower than the ROA of the worst performing NPB. A similar, albeit less stark, pattern is observed for the ROE as well.

Figure 16a: Heterogeneity in Return-on-assets



Source: RBI Data and Survey Calculations

Figure 16b: Heterogeneity in Return-on-equity



Source: RBI Data and Survey Calculations

Box 3 – Box plot explained

The boxplot displays: (a) the minimum denoted by the lowest horizontal line, (b) first quartile denoted by the bottom line of the rectangle (c) median denoted by the line inside the rectangle, (d) third quartile denoted by the top line of the rectangle, and (e) the maximum denoted by the top most horizontal line.

7.26 These statistics are particularly telling because both the NPBs and PSBs operate in the same domestic market. Yet, we see an asymmetry in bank performance which has cleaved significantly over the last decade. It is important to note that the pictures do not necessarily denote worse decision-making by banks in the last decade. The history of financial crises across the world shows that the effect of bad governance shows up only in bad times, never in good times. As the 2014 P. J. Nayak Committee report shows, the structural weaknesses in PSBs explains their poor performance.

7.27 Some may contend that the poor performance over the last few years represents a passing phase. However, this interpretation essentially ignores the considerable body of knowledge about the histories of banking crises, which tells us that poor banking sector performance inevitably stems from a set of known systemic factors. As Laven (2011) points out, banking crises are due to some combination of unsustainable macroeconomic policies, market failures, regulatory distortions, and government interference in the allocation of capital. Moreover, crises that are not resolved effectively and swiftly impose enormous costs on society.

ENHANCING EFFICIENCY OF PSBs: THE WAY FORWARD

7.28 The key drivers of India's growth prospects are now (a) highly favourable demographics – with 35 per cent of its population between 15 and 29 years of age; (b) a modern and modernizing digital infrastructure that encompasses the "JAM" trinity of financial inclusion, the Aadhaar unique identification system, and a well-developed mobile phone network, and (c) a uniform indirect taxation system (GST) to replace a fragmented, complex state-level system.[4] India's growth path depends on how quickly and productively these growth levers are deployed using a well-developed financial system.

7.29 Previously, the Narasimhan Committee (1991, 1997), Rajan Committee (2007) and P J Nayak Committee (2014) have provided several suggestions to enhance the efficiency of PSBs. The Survey, therefore, focuses on two ideas for enhancing the efficiency of PSBs that have hitherto not been explored.

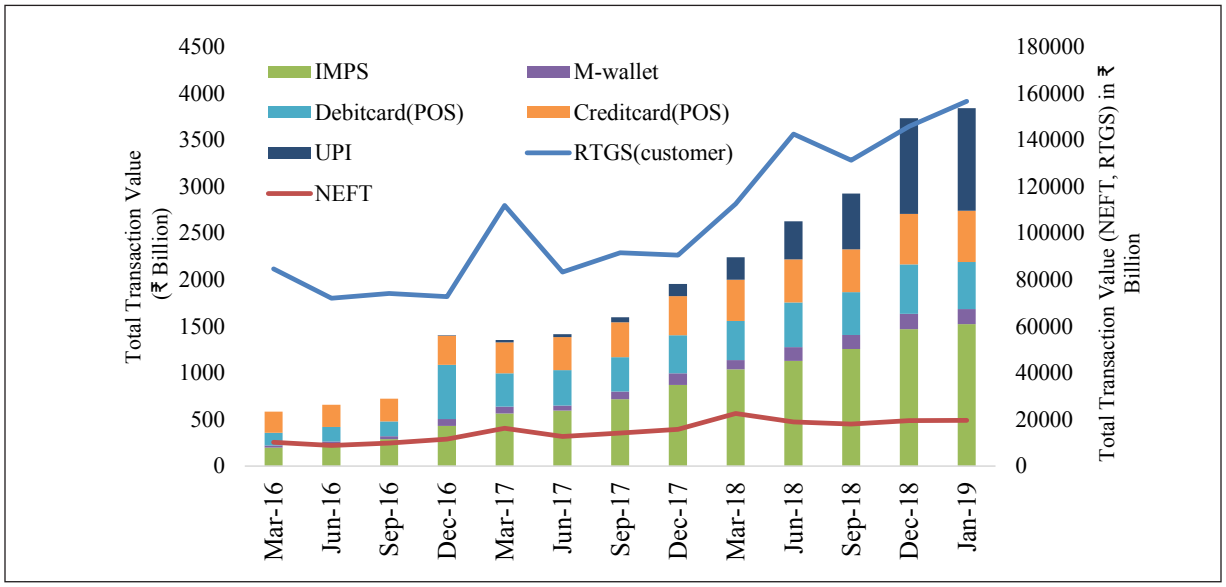
Credit Analytics using Artificial Intelligence and Machine Learning

7.30 India's growth opportunities today, which stem from a unique confluence of several positives, position PSBs well to utilise FinTech. One is India's demographic dividend. 62 per cent of India's population is between 15 and 60 and a further 30 per cent of the population is under 15. Thus, India is poised to enjoy the benefits of a substantial working age population for a long period of time. The second force driving India's growth opportunities is the JAM "trinity," viz., the PMJDY bank account programme, the Aadhaar unique identity programme, and the mobile phone infrastructure, each of which has been implemented to cover practically the entire country. The growth in digital transactions as a result of these two factors has been significant (Figure 17). The use of direct benefit transfers, which increased from has increased exponentially over the last five years (Figure 18), has helped to bring both credit and deposits into the banking system (Figure 19) across all geographies (rural, semi-urban, urban and metropolitan). The high elasticities

[4] The "JAM" trinity underpins the digital infrastructure. The "PMJDY" bank account programme enrolled 37.8 crore beneficiaries whose balances have crossed ₹ 1.11 lakh crore. Over 120 crore unique identification cards have been issued. More than 128 crore mobile phones and a unified payments interface serve India's population of 137 crore.

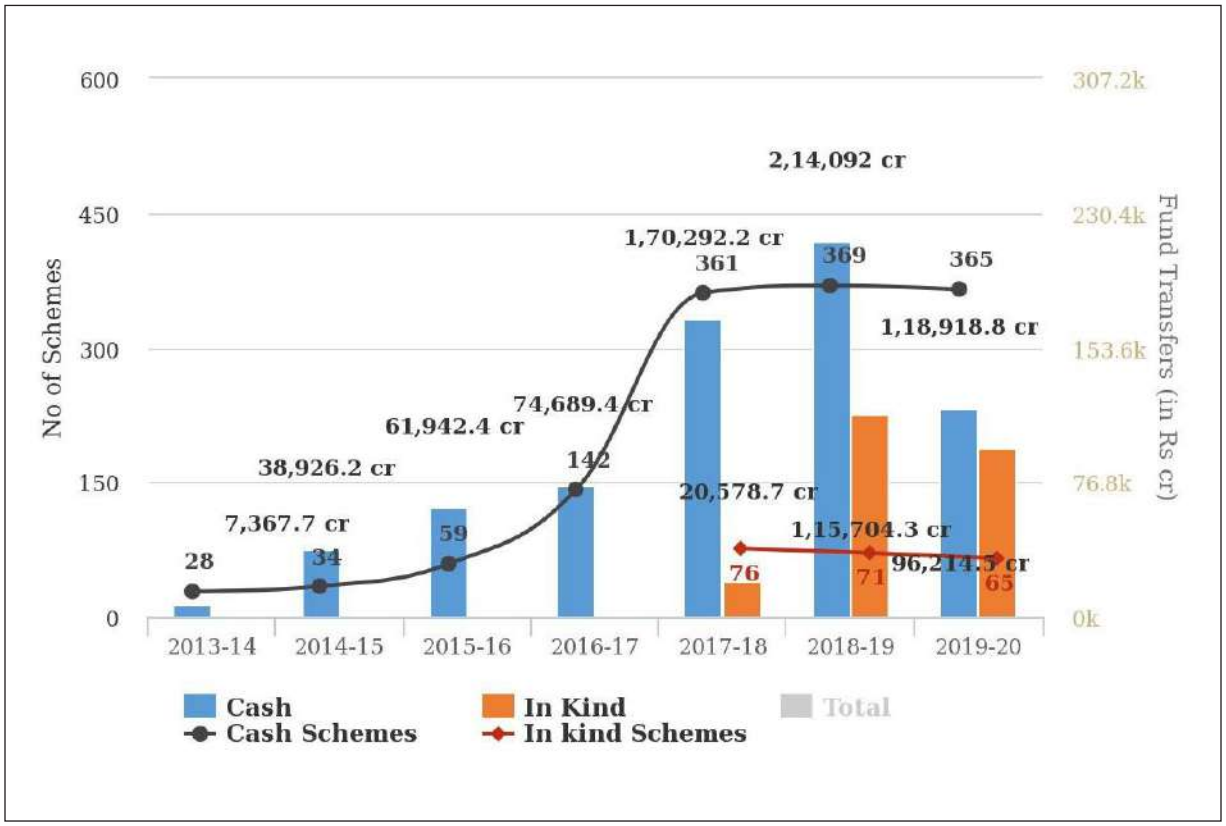
shown in Figure 19 across all geographies clearly demonstrate the opportunity that exists for Indian banks to benefit from the greater use of DBT by the Government.

Figure 17: Total Value of Digital Transactions between March 2016 and January 2019



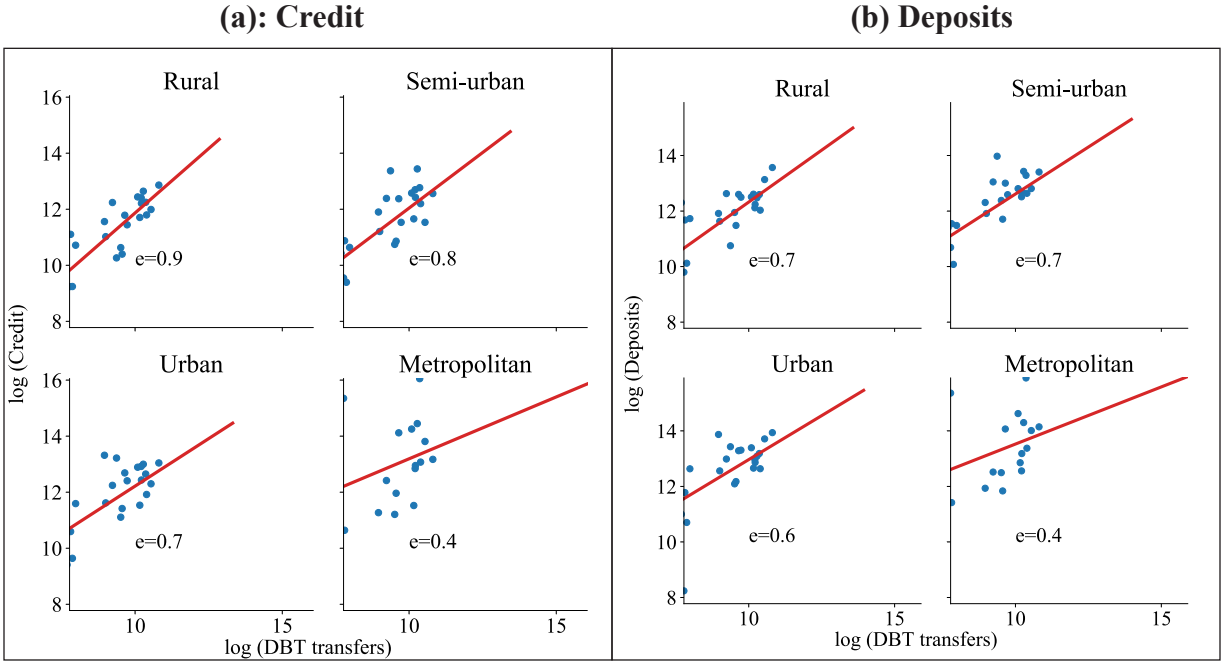
Source: Payment System Indicators, RBI

Figure 18: Trends in Amount Transferred and the Number of DBT Schemes



Source: DBT

Figure 19: Benefits of DBT to the Banking System



Source: DBT, RBI and Survey Calculations

7.31 All the above indicates the possibilities that exist for the Indian banking sector to grow proportionate to the scale of the Indian economy. The new programmes have resulted in a surge of individuals and businesses being brought into the formal economy. Perhaps more important is that the inclusion is backed by state-of-art digital infrastructure that generates and stores an abundance of high quality structured data on the all aspects of the economic lives of firms and individuals. Such data are, of course, the gold mine for economic growth in the 21st century. They offer essentially unlimited and uncharted possibilities, especially for firms and individuals who have been traditionally excluded from the financial system.

7.32 PSBs have many important ingredients in place to cater to this new demand. For example, they have local market insights and relationships based on operating histories spanning many decades. Their geographic footprint is vast. PSBs, however, need significant investments are in the capabilities to exploit the coming data-rich environment in India. Analytics based on market data are quite capable of providing accurate predictions of corporate distress. Variants of such approaches appear to hold promise for both consumer loans and commercial and industrial loans.

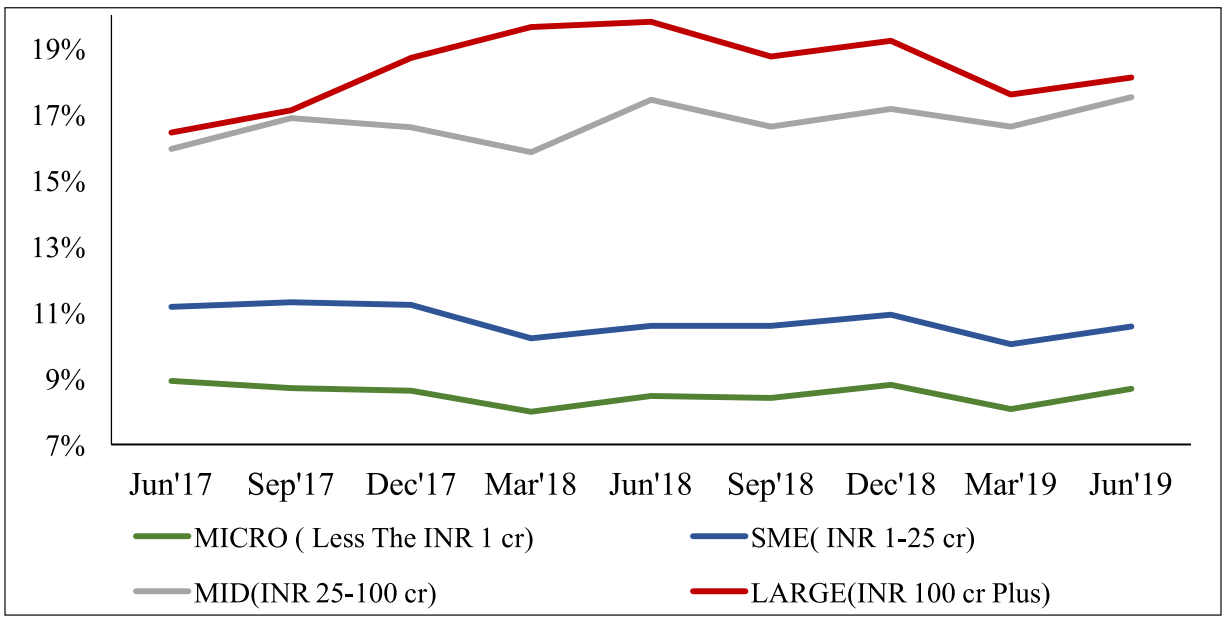
7.33 The data that can be employed for credit analytics is available in both structured and unstructured form. Data in a structured form include credit information and credit scores based on loan grants and repayments held in the credit registries or credit bureaus. The richer, though unstructured, micro-data is available in text, images, geo-tagged data, social network data, mobile apps, as well as other shallow or deep digital footprints of current and potential customers. Leveraging these data requires new data, analytics, and modelling skills. Likewise, banks need to invest in credit recovery infrastructure. The adoption of these new technologies to exploit a data rich environment will require complementary investments such as specialist

human capital with an orientation towards analytics. The barriers to such technologies are not insurmountable. While there are some instances in which PSBs have been lax, technology aversion does not seem to be an intrinsic characteristic of PSBs. For example, when credit bureaus were introduced in India, PSBs in the aggregate were relatively quick to adopt scoring for their new clients (Mishra, Rajan, and Prabhala, 2019).

The benefits of credit analytics

7.34 A large proportion of NPAs of Indian banks, especially PSBs, could have been prevented if data and analytics were employed in corporate lending. Figure 20 shows that the rates of default were the highest with larger loans (above INR 100 crores). Figure 21-24 demonstrate clearly the several leading indicators that data and analytics could have clearly highlighted about wilful defaulters. Figure 21 shows the systematic differences in the disclosure of related party transactions, pledging of promoter shares, and large loans to related parties between wilful defaulters and non-defaulters, on the one hand, and wilful defaulters and distressed defaulters, on the other hand. These are easily quantifiable measures that a robust credit analytics platform could have easily picked up and provided warning signals.

Figure 20: Non-Performing Asset (NPA) Rate by Size of the Loan

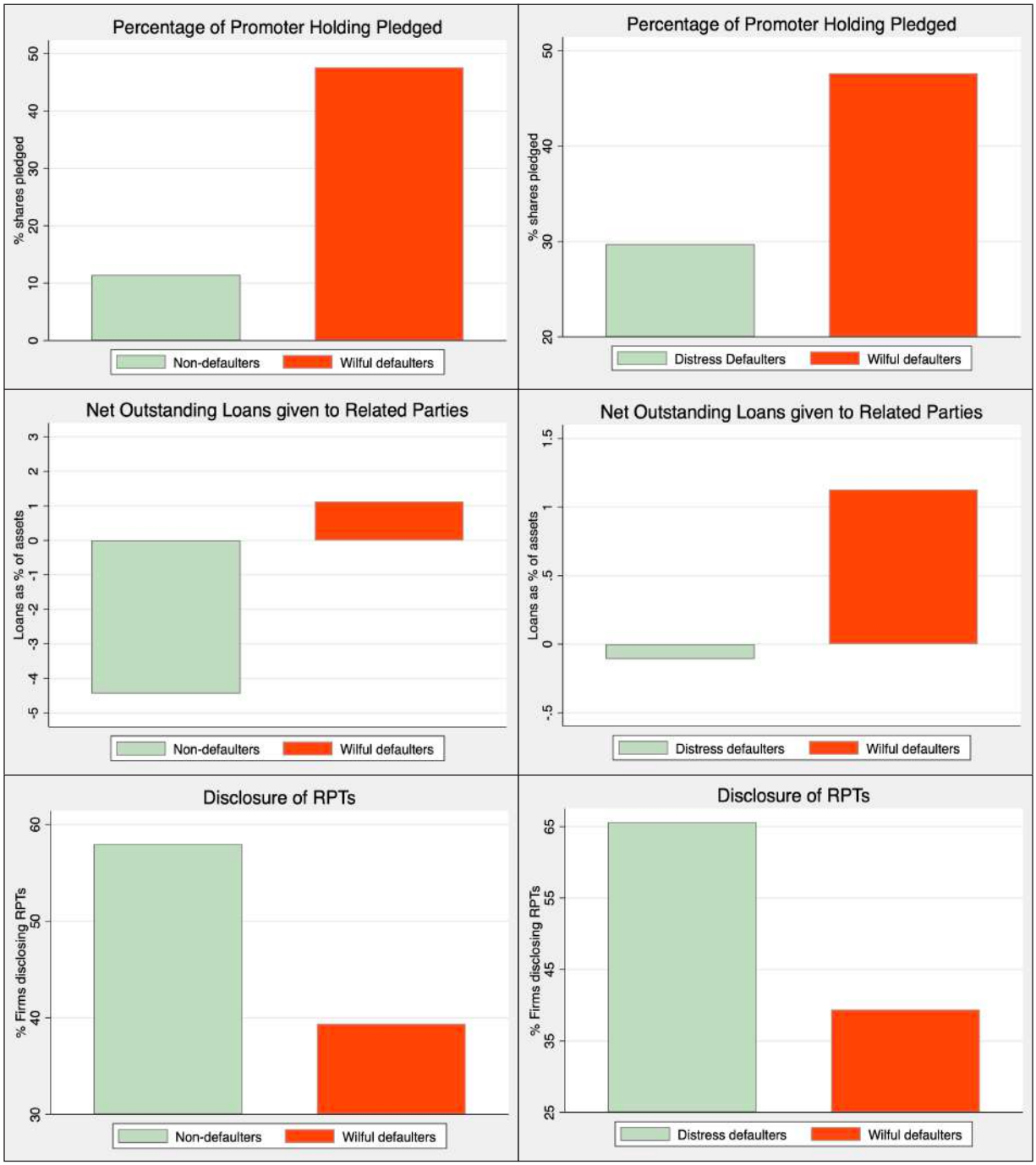


Source: TransUnion Cibil-Sidbi

7.35 In June 2017, the Reserve Bank of India (RBI) identified twelve companies constituting 25 per cent of India's total Non-Performing Assets (NPAs). As shown in Figure 22, the accounting quality of these large defaulters is much below the median accounting quality of other similar listed corporates in 2012, 2013 and 2014. As accounting quality is easily quantifiable, a robust credit analytics platform could have easily picked up and provided warning signals.

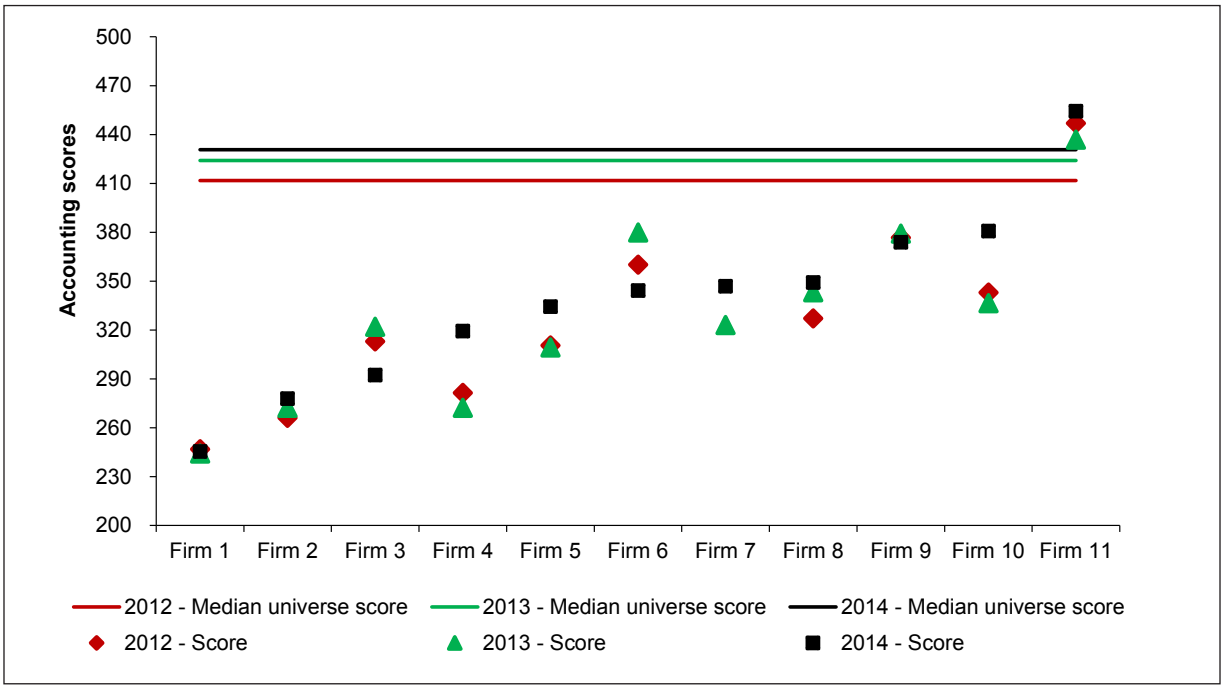
Figure 21: Leading indicators of wilful default using disclosure of related party transactions, pledging of promoter shares, and large loans to related parties

Panel A: Comparing Wilful Defaulters and Non-Defaulters | **Panel B: Comparing Wilful Defaulters and Distress Defaulters**



Source: CMIE Prowess, TransUnion CIBIL Suits Filed database. Notes: A firm is said to have made an RPT disclosure if its annual filing contains an RPT section (even if the firm states it had no transactions that year). Net outstanding loans refers to the total balance of loans given by firms to their related parties, net of loans taken from them. It is expressed as a percentage of the firm's total assets. Wilful defaulters are those classified as such in the CIBIL Suits Filed database, while distress defaulters are those with a default credit rating at least once in the sample period but those who have not been classified as 'wilful defaulters'. Non-defaulters are all other firms. Data spans 2002-18

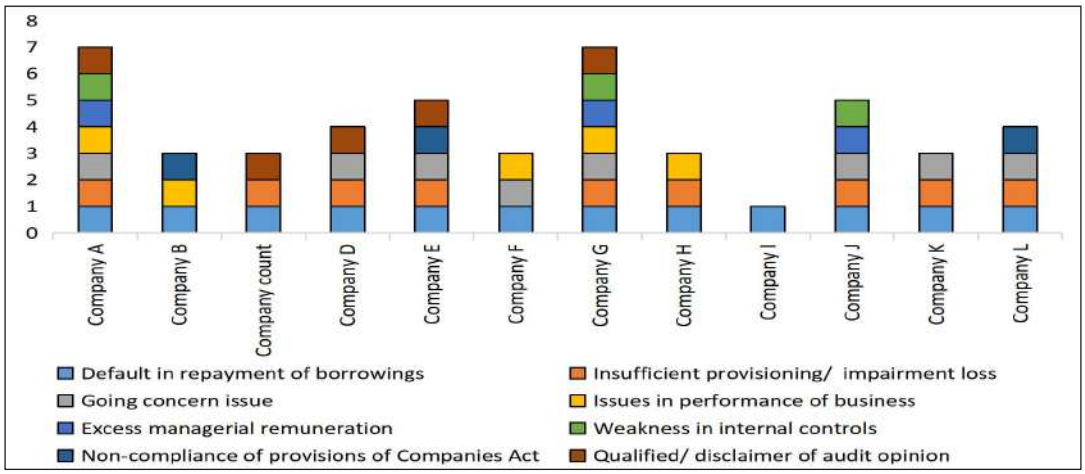
Figure 22: Leading indicators using accounting quality measures for large defaulters



Source: Company Financials, Insolvency and Bankruptcy Board of India, RBI

7.36 Similarly, an analysis of the annual reports of the large defaulters suggests that the quality of audit disclosure in these firms was very poor. As can be seen from Figure 23, out of the twelve large defaulters, one of them had just one indicator disclosed with most others having three to four indicators disclosed of the eight leading indicators. Again, this is an easily detectable characteristic that a robust credit analytics platform could easily flag.

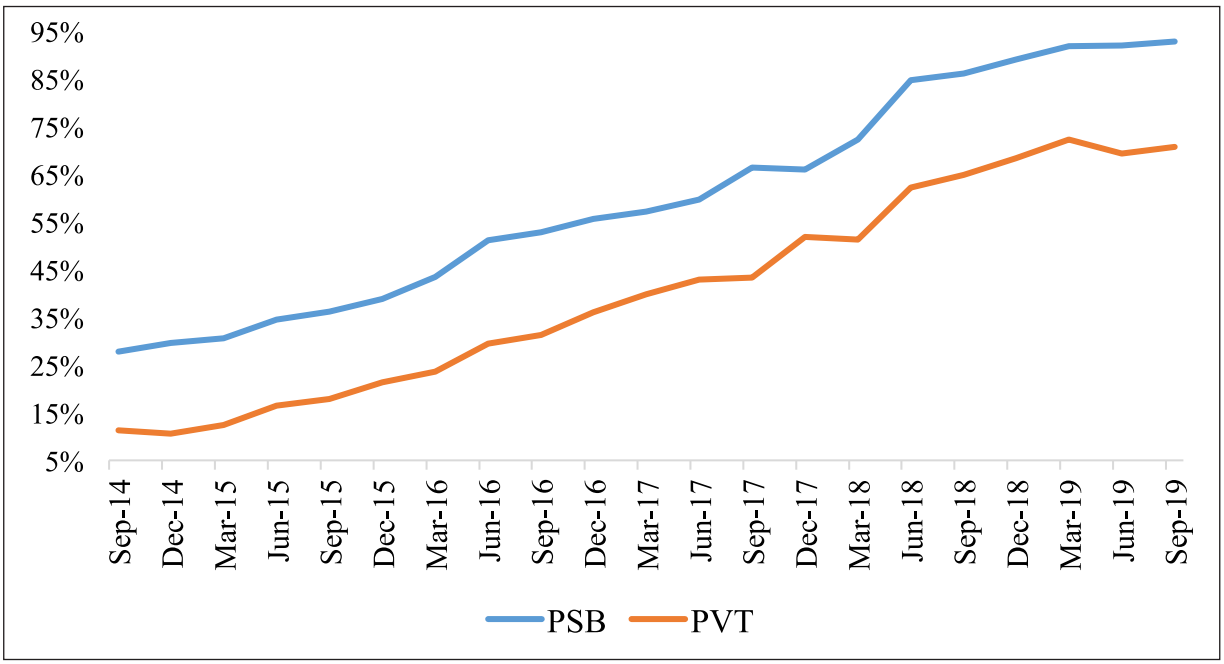
Figure 23: Leading Indicators using quality of financial statement disclosures by large defaulters



Source: Company Financial Reports and Survey calculations

7.37 Figure 24 shows that the information sharing among lenders on NPAs was minimal as of 2014. While this information sharing was better among PSBs than NPBs, about a quarter of accounts that were declared as NPAs by other banks were classified as NPA in the bank's account. This proportion has increased dramatically to reach 95 per cent in just a few years.

Figure 24: Proportion of Lenders Tagging an already tagged NPA (by another bank) as NPA in their books



Box 4: A note on leveraging data to protect creditors' collateral

Most corporate term loans are secured and lenders have recourse to pledged assets in the event of default. However, when dealing with wilful defaulters, lenders find their hands tied even when they have a contractual lien on pledged assets. Wilful defaulters have a natural incentive to misrepresent the value of collateral. In more egregious cases, they may pledge fictitious collateral. If they pledge genuine collateral, they have an incentive to dispose of these assets without the lender's knowledge, lest they lose control of valuable assets after they default.

Data can come to lenders' rescue in such cases. For example, geo-tagging – the process of adding geographical identification such as latitude and longitude to photos, videos or other media – can help lenders keep track of the location of assets. If borrowers are mandated to periodically share geo-tagged evidence of collateralized assets with their lenders, it would be difficult for them to remove these assets by stealth. Several government departments have already taken the lead in geo-tagging; the Ministry of Rural Development geo-tags MGNREGA assets and the Department of Land Resources geo-tags watershed projects. Lenders may learn from these examples to monitor their collateral. Geo-tagging can also help verify the value of pledged land or property. Armed with the exact location of land, lenders are better placed to evaluate the market value of these assets, the bulk of whose value derives from their location.

GPS systems can confer even more monitoring power. GPS devices, when affixed to collateralized equipment or machinery, can alert lenders if these assets are moved out of the plant. Such tracking

systems ensure that the asset never leaves the lender's sight. For instance, renting companies that lease laptops, appliances etc. have demonstrated a powerful use of remote monitoring using GPS. These electronic items often come with remote kill switches that disable all functions if the renter attempts to tamper with the asset, dispose of it, or delay rent payments. It may similarly serve lenders well if they could, say, disable a vehicular asset remotely if the borrower attempts to dispose of it or wilfully defaults on the loan. Kingfisher Airlines pledged a few helicopters (among other assets) to obtain loans. Only when the lenders attempted to take possession of these assets did they realize that the helicopters had fallen into disrepair and could fetch little more than scrap value. Therein lies a strong application of low-cost technology to track the presence, use and quality of assets.

Integrated data on collateral across all lenders in a geography may be particularly useful in curbing double-pledging of collateral. For example, a party may pledge the same collateral to multiple lenders to obtain multiple lines of credit for the same project, or a buyer and his seller may both separately obtain credit for the same trade by presenting the same invoice to their respective lenders. As long as lenders rely on human control processes and paper-based documentation to verify trades, such double-pledging easily escapes notice. SWIFT India – the messaging platform that PNB used to transmit messages in the Nirav Modi case – recently announced a pilot blockchain effort that allows lenders to log invoices and e-bills submitted to them online, allowing other lenders to verify whether a trade they are looking to finance has already been funded or the underlying collateral already pledged. Such integrated data systems are essential to protect lenders.

While these technologies are powerful, they carry an important risk, i.e., the risk of infringing upon the borrower's privacy and dignity. Enforcement of debt obligations should not encroach into the borrower's private sphere, as much as a lender may suspect an impending case of wilful default. Therefore, strong and clear policy guidelines are needed on what data may be collected, how, by whom and for how long.

In sum, wilful default would not be as much of a drain on an economy's wealth if lenders could fully recover their dues from selling pledged assets. Technology and data can be put to powerful use to keep these assets secure and saleable, thus keeping intact an important recourse for lenders. In fact, the threat of losing valuable assets may itself be a deterrent to wilful default in the first place, as these firms often wilfully default only when they are unafraid of losing control of other valuable pledged assets.

Learning on use of credit analytics for corporate lending from retail loans

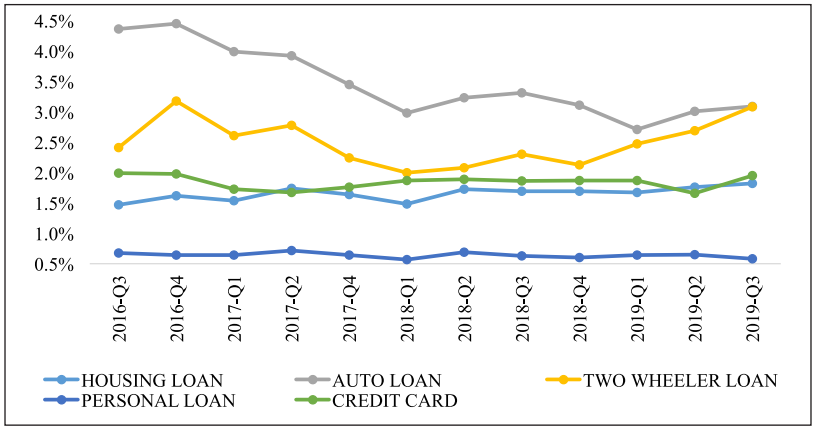
7.38 Retail lending in India passed through a painful and steep learning curve after 2007-2008. The NPAs in retail loans primarily impacted the unsecured loans originated by NPBs. While the size of the NPAs was insignificant from a systemic perspective, the sector took its learning from the same. As seen in Figure 25, the NPA levels across various retail products has been less than 5 per cent during 2016-19. The use of credit analytics and the resultant reduction in defaults offers important lessons that can be implemented in corporate lending in India.

7.39 In fact, the use of data and credit analytics, such as consumer credit bureau data, has significantly enhanced growth in retail lending. As Figure 26 shows, India has now caught up the OECD economies in the proportion of population covered using credit bureau data. NPBs, in fact, expanded the use of consumer credit bureau data significantly since 2006 (Figure 27).

Creation of a FinTech Hub for PSBs: The Public Sector Banking Network (PSBN)

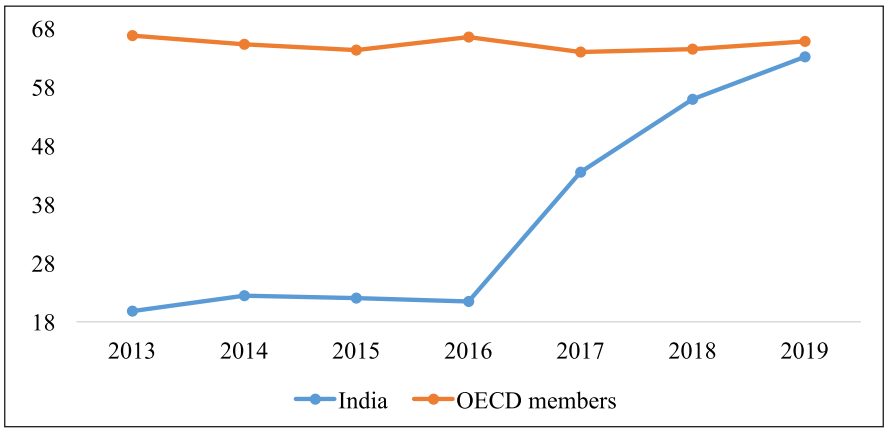
7.40 PSBs were quick to adopt credit score by bureaus (Mishra, Rajan, and Prabhala, 2019).

Figure 25: NPA Levels in Retail Loans by Major Products (2016-19)



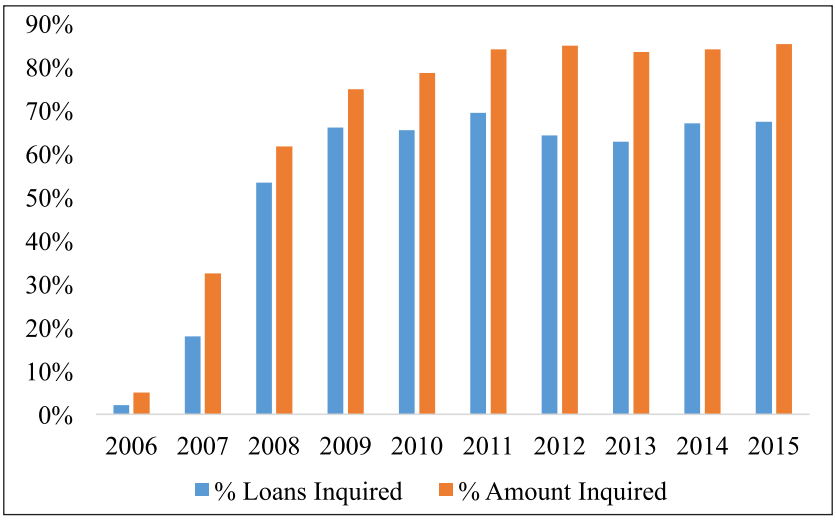
Source: CIBIL Data

Figure 26: India caught up with OECD Credit Bureau Coverage (per cent of Adult Population)



Source: World Bank –Ease of Doing Business Report 2019

Figure 27: Usage of Credit Bureau Data in New Private Sector Banks

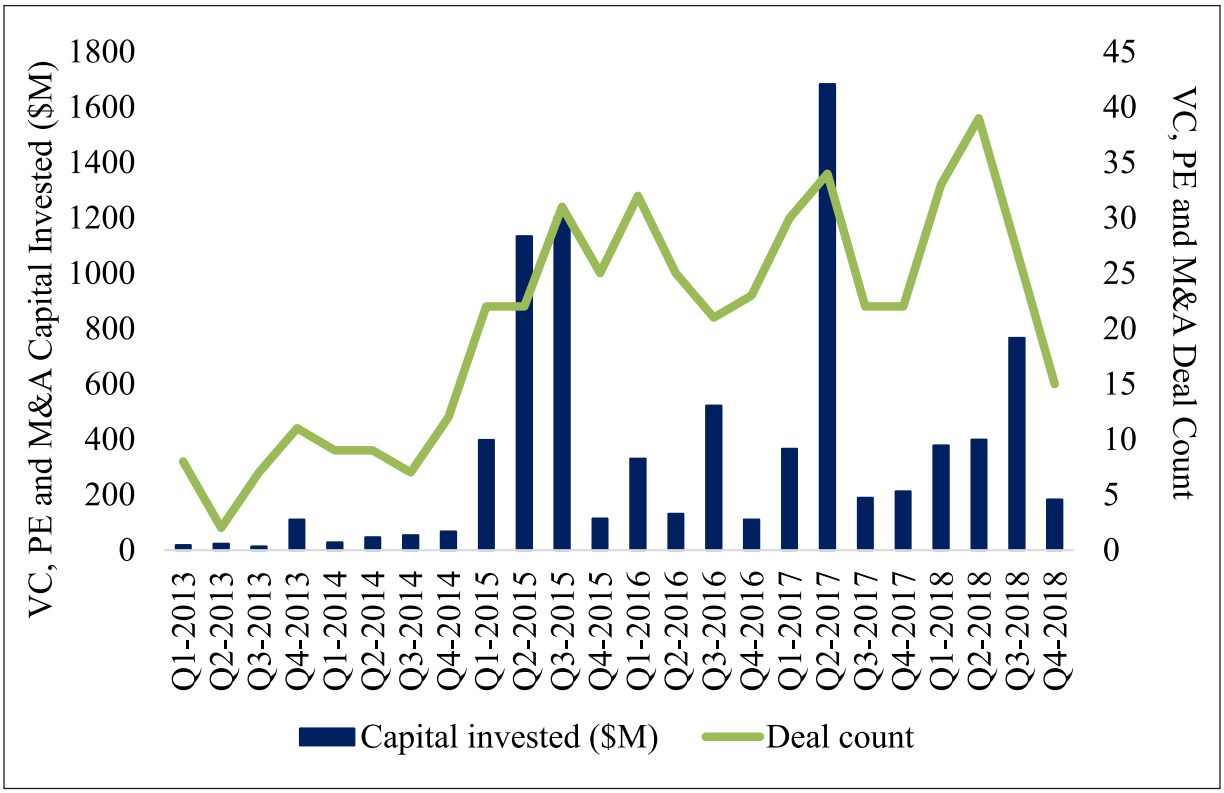


Source : Mishra, Prabhala, Rajan 2019

Similarly, they need to embrace FinTech, which is revolutionising the global financial landscape. FinTech is forcing traditional banks to review their outdated business paradigms to come up with effective, low-cost, banking solutions. PSBs have the maximum to gain from FinTech as their use of even conventional information technology is not all-pervasive, except in the use of core banking solutions. As of now, PSBs employ technology mostly for MIS and reporting while most information processing on loans happens manually which causes inefficiency, frauds and loan defaults. Information processing includes all activities related with the ex-ante screening of potential borrowers and the ex-post monitoring of their behaviour.

7.41 FinTech has radically changed the way information is processed by banks. In corporate lending, for instance, a huge mass of quantitative data such as company financials and qualitative data such as company filings and analyst call reports are machine-analysed using both supervised and unsupervised learning algorithms. Tools such as Machine Learning (ML), Artificial Intelligence (AI) as well as Big Data and matching provide banks the ability to recognize patterns quickly by analysing vast datasets, an activity that would be virtually impossible for humans, even using conventional information technology. The idea is not new as even standard econometric models are but tools for pattern recognition. The novelty lies in analysing extremely large sets of data using algorithms that explore, learn and identify patterns. As Figure 28 shows, investments in FinTech in India are significant. Therefore, PSBs can benefit from the expertise that already resides in India in this area.

Figure 28: VC, PE and M&A Investment Activity in FinTech in India, 2013-18



Source: Pulse of Fintech 2018, Biannual Global Analysis of Investment in Fintech, KPMG International.

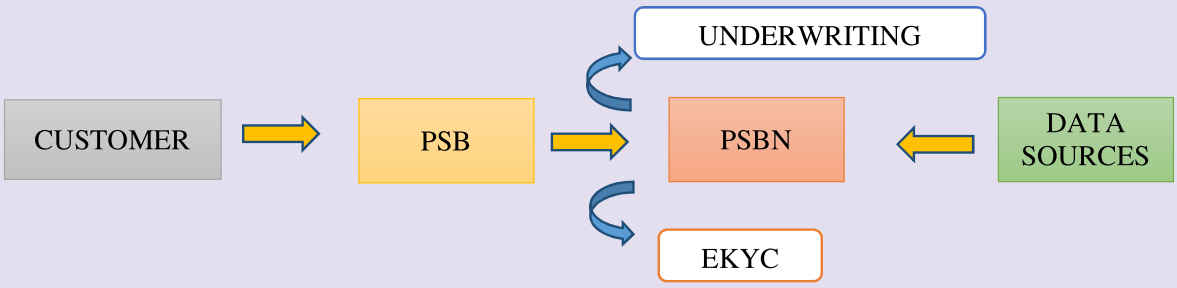
7.42 Currently, PSBs face many challenges such as high operating costs, disjointed process flows from manual operations and subjective decision making. These challenges hinder PSB's ability to rigorously screen corporate borrowers ex-ante by evaluating the prospects of the potential borrowers and the value of the collateral that they may be posting. They also need to monitor the borrower ex-post along the whole duration of the lending relationship, possibly enforcing covenants capable of limiting losses in case of default. Using FinTech allows banks to better screen borrowers and set interest rates that better predict ex-post loan performances (Rajan, 2015).

7.43 PSBs will be able to enhance their efficiency by fulfilling their role of delegated monitors if all the PSBs can pool their data into one entity. Private information held by their corporate borrowers leads to contracting problems, because it is costly to assess the solvency of a borrower or to monitor her actions after lending has taken place (Stigliz and Weiss, 1981). Moreover, the delegation of screening and monitoring to banks has been shown to be an efficient mechanism (Diamond, 1984). This efficiency can be enhanced further by packaging all the information held by various PSBs into a common entity. This would have the additional benefit of reducing the costs of screening and monitoring.

7.44 As the Government is the owner of all the PSBs, it can mandate the PSBs to share this data so that economies of scale can be utilized to make the necessary investments in undertaking analytics using Artificial Intelligence and Machine Learning (AI-ML). The survey proposes establishment of a GSTN like entity, called PSBN (PSB Network), to use technology to screen and monitor borrowers comprehensively and at length. Apart from utilizing data from all PSBs, which would provide a significant information advantage, PSBN would utilize other Government sources and service providers to develop AI-ML ratings models for corporates. The AI-ML models can not only be employed when screening the corporate for a fresh loan but also for constantly monitoring the corporate borrower so that PSBs can truly act as delegated monitors. Box 3 provides the architecture and solution flow for the proposed PSBN for all types of bank customers including individuals, SMEs and large corporations.

Box 5: Suggested Architecture and Solution Flow for FinTech in PSBs

Schematic Architecture:

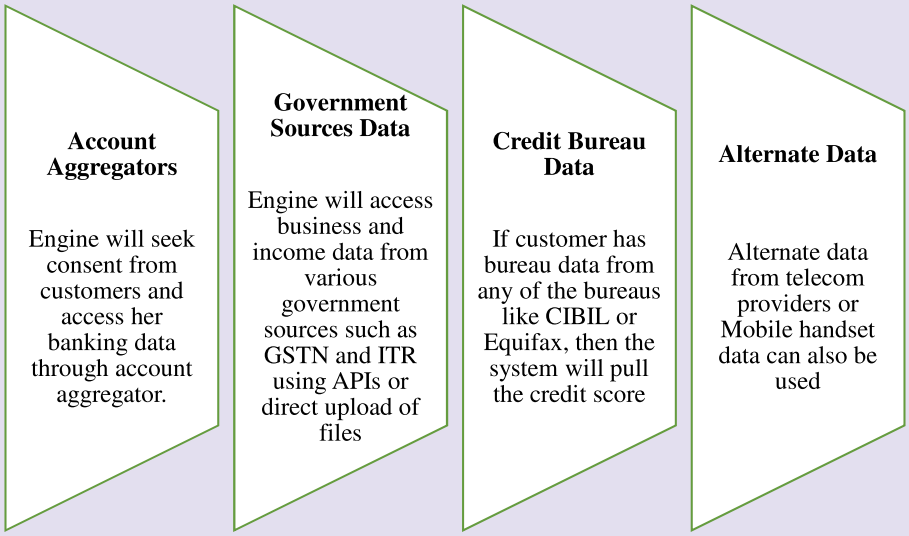


Solution Flow:

1. **Customer contact:** Customer approaches the PSB and indicates the amount and type of loan she wishes to borrow.

2. **KYC verification:** PSB transfers the above information to the entity. The entity will complete KYC process for customer based on data provided by identity verification agencies e.g., Aadhaar based EKYC. As per norms, KYC must be confirmed by Banks for loan provision through PSBs. So, engine will collate data and pass on to PSBs for KYC confirmation.

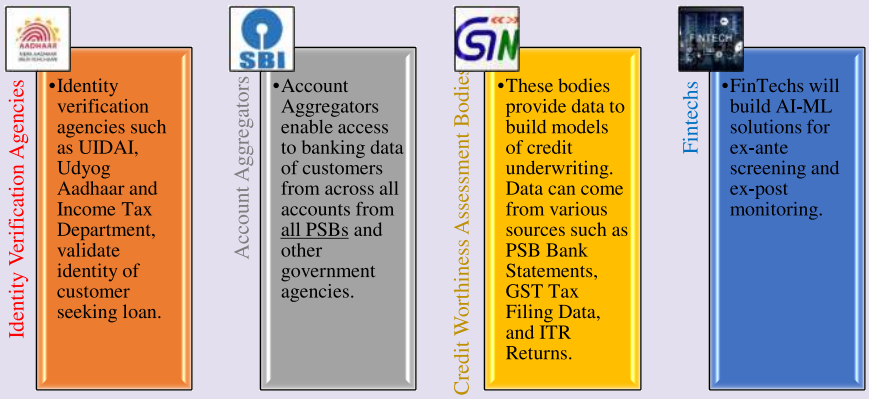
3. **Data Collections:** Engine will further collate data from various data sources based on customer profile. Data will be collected from:



System will have complete credit underwriting, which refers to generating credit profile of the customer after analysing all available data, based on the model built into it. Different AI-ML underwriting models will be built for different types of customers such as individuals, SMEs and large corporations.

4. **Loan provision:** Based on KYC and underwriting, system will assess customer eligibility of loans and transfer all the information to the PSB. On the basis of the information provided, PSB can take the decision on the amount and the rate at which the loan is to be given.

Key Participants:



7.45 The benefit of PSBN would be that it would take advantage of the data that all PSBs have of the last 50 years to create better underwriting solutions. Using PSBN, they would be able to do better underwriting of loans to their corporate clients. Better decision making on credit underwriting would reduce the burden of NPAs, apart from helping them in fraud prevention. The high operating costs of each PSB would

decrease by helping them automate the end-to-end process of lending. PSBs would be able to make quicker decisions, process loan applications faster, and reduce turn-around-times (TAT). These would, in turn, help PSBs to compete better with NPBs. In fact, PSBN can provide informational advantages that NPBs are unlikely to be able to match.

The case for employee stakes in PSBs

7.46 Employees paid largely in salaries—as PSBs employees currently are—have claims that resemble debt contracts in the sense that they are fixed pay-outs made by banks. Employees paid through such fixed compensation contracts rely on implicit promise by the state to make good on their salaries (and post-retirement pensions) in the event of bank distress. In the parlance of financial economists, such employees have "inside debt," which induces conservatism and preference for safety over risk-taking even among senior executives (e.g., Edmans and Liu, 2011). Given the current flat compensation contracts of employees and the pressures from ex-post monitoring by the vigilance agencies, it is hardly surprising that bank employees of state-owned banks prefer safety and conservatism over risk-taking and innovation. A long-term solution to this problem is enabling employees to own stakes in the PSBs.

7.47 To enable employees to become owners in the banks and thereby incentivise them to embrace risk-taking and innovation continually, a portion of the government stakes can be transferred to employees exhibiting good performance across all levels of the organization through Employee Stock Option Plans (ESOPs).

7.48 Part-ownership of PSBs by employees will reduce agency problems. This is because employees who own shares are incentivized to increase market value of equity, since their direct compensation depends on share values. Other benefits include the possible change of the mind-set from that of an employee to that of an owner. Employees can constitute one of the blocks of new owners of PSBs through an employee stock ownership plan (ESOP) that is conditioned on employee performance. Ownership by motivated, capable employees across all levels in the organization could give such employees tangible financial rewards for value enhancement, align their incentives with what is beneficial to the PSB, and create a mind-set of enterprise ownership for employees.

The need for best talent and organizational verticals based on technology

7.49 A related issue pertains to the process for recruitment of bank officials. PSBs cannot, for instance, recruit professional MBAs directly from the campuses. Given the FinTech disruptions described above, PSBs need to enable cutting-edge recruitment practices that allow lateral entry of professionals and recruitment of professionally trained talent at the entry level. For example, the possibilities generated by FinTech call for recruitment of professionals with domain skills in technology, data science, finance, and economics. With a large ownership stake available for employees, attracting the best talent in the industry may not be a constraint, as it is currently. The advances in FinTech and data science may even call for entirely new verticals such as innovation labs, accelerators, venture arms, and sandboxes for experimentation, that take stakes in and empower smaller entrepreneurial ventures, much as in the collaborations between big pharma and the biotech sectors.

7.50 Embracing disruptive innovations through disruptive processes is difficult. It requires a degree of risk-taking, a more flexible human capital acquisition strategies at all levels, and complementary incentive structures that may, for instance, offer more

high-powered incentives that offer greater pay for success. A generous ownership offer by the Government to PSBs employees would help them provide the incentive structures to attract high-quality banking professionals and thereby improve their human capital acquisition strategies.

CONCLUSION

7.51 The Indian banking system is currently sub-scale compared to the size of the economy. A large economy needs an efficient banking sector to support its growth. Historically, in the last 50 years, the top-five economies have always been ably supported by their banks. Should India's banks play a role proportionate to its economic size, India should have six banks in the top 100. As PSBs account for 70 per cent of the market share in Indian banking, the onus of supporting the Indian economy and fostering its economic development falls on them. Yet, on every performance parameter, PSBs are inefficient compared to their peer groups. Previously, the Narasimhan Committee (1991, 1997), Rajan Committee (2007) and P J Nayak Committee (2014) have provided several suggestions to enhance the efficiency of PSBs. The survey suggests use of FinTech (Financial Technology) across all banking functions and employee stock ownership across all levels to enhance efficiencies in PSBs. These will make PSBs more efficient so that they are able to adeptly support the nation in its march towards being a $5 trillion economy. All these recommendations need to be seriously considered and a definite, time-bound plan of action drawn up. With the cleaning up of the banking system and the necessary legal framework such as the IBC, the banking system must focus on scaling up efficiently to support the economy.

CHAPTER AT A GLANCE

- In 2019, India completed the 50th anniversary of bank nationalization. It is, therefore, apt to celebrate the accomplishments of the 389,956 officers, 295,380 clerks, and 121,647 sub-staff who work in Public Sector Banks (PSBs). At the same time, an objective assessment of PSBs is apposite.
- Since 1969, India has grown leaps and bounds to become the 5th largest economy in the world. Yet, India's banking sector is disproportionately under-developed given the size of its economy. For instance, India has only one bank in the global top 100 – same as countries that are a fraction of its size: Finland (about 1/11th), Denmark (1/8th), Norway (1/7th), Austria (about 1/7th), and Belgium (about 1/6th). Countries like Sweden (1/6th) and Singapore (1/8th) India's size have thrice the number of global banks as India does.
- A large economy needs an efficient banking sector to support its growth. Historically, in the last 50 years, the top-five economies have always been ably supported by their banks.
- As PSBs account for 70 per cent of the market share in Indian banking, the onus of supporting the Indian economy and fostering its economic development falls on them. Yet, on every performance parameter, PSBs are inefficient compared to their peer groups. In 2019, every rupee of taxpayer money invested in PSBs, on average, lost 23 paise. In contrast, every rupee of investor money invested NPBs on average gained 9.6 paise. Also, credit growth in PSBs has been much lower than NPBs for the last several years.

- The survey suggests solutions that can make PSBs more efficient so that they are able to adeptly support the nation in its march towards being a $5 trillion economy.
- To incentivize employees and align their interests with that of all shareholders of banks, bank employees should be given stakes through an employee stock ownership plan (ESOP) together with proportionate representation on boards proportionate to the blocks held by employees.
- A GSTN type of entity should be setup to enable the use of big data, artificial intelligence and machine learning in credit decisions, especially those pertaining to large borrowers. As Government is the owner of all the PSBs, Government has the right to use the data that PSBs generate during their business. Therefore, the Government as the promoter must set up this entity that will aggregate data from all PSBs to enable decision making using big data techniques. The patterns in default that such powerful techniques can unearth are far beyond the capacity of any unscrupulous promoter to escape. Therefore, such investments are critical to ensuring better screening and monitoring of borrowers, especially the large ones.
- With the cleaning up of the banking system and the necessary legal framework such as the Insolvency and Bankruptcy Code (IBC), the banking system must focus on scaling up efficiently to support the economy.

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Financial Fragility in the NBFC Sector

08
CHAPTER

देवान्भावयतानेन ते देवा भावयन्तु वः।
परस्परं भावयन्तः श्रेयः परमवाप्स्यथ॥

3.11 (Shrimad Bhagvad Gita)

Creating sustainable systems requires a good understanding of the basic principle of mutuality and inter-dependence

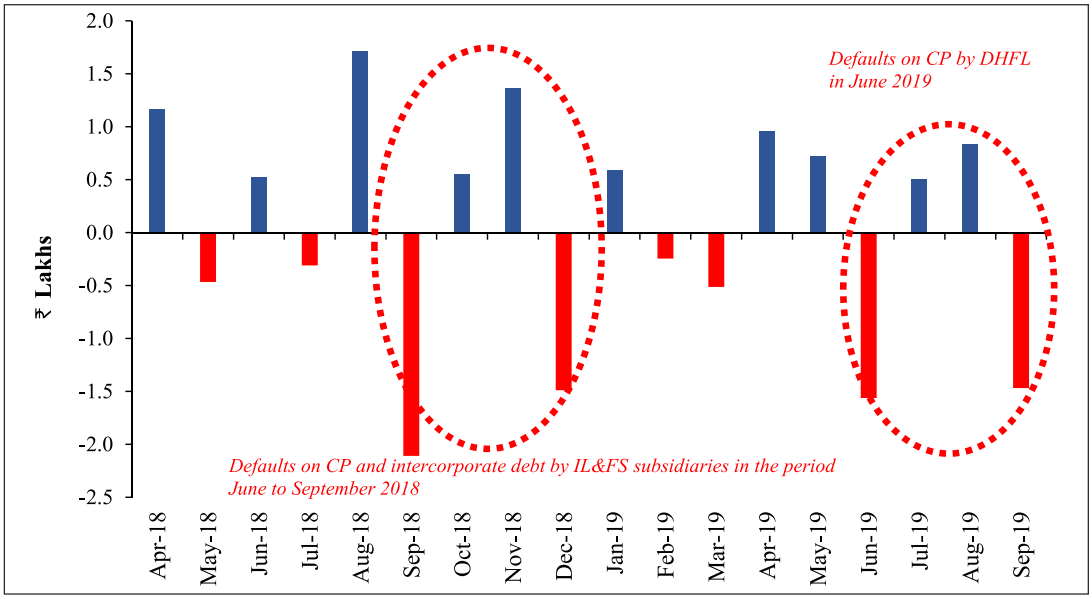
Following payment defaults by subsidiaries of Infrastructure Leasing and Financing Services and by Dewan Housing Finance Limited, investors in Liquid Debt Mutual Funds (LDMFs) ran collectively to redeem their investments. In fact, the defaults triggered panic across the entire gamut of NBFC-financiers, thereby causing a funding (liquidity) crisis in the NBFC sector. This chapter highlights that problems faced by the NBFCs stemmed from their over-dependence on short-term wholesale funding from the Liquid Debt Mutual Funds. While such reliance works well in good times, it generates significant risk to NBFCs from the inability to roll over the short-term funding during times of stress. An asset-side shock not only exacerbates the Asset Liability Management (ALM) problem but also makes investors in LDMFs jittery and thereby leads to a redemption pressure that is akin to a "bank run." This run on LDMFs then precipitates the refinancing (rollover) risk for NBFCs and further exacerbates the initial problems caused on the asset side. A dynamic health index (Health Score) is constructed that captures these risks and can be used as an early warning system to anticipate liquidity crisis in an NBFC. Policy makers can use this tool to monitor, regulate and avert financial fragility in the NBFC sector.

8.1 The liquidity crunch in the shadow banking system in India (Box 1) took shape in the wake of defaults on loan obligations by major Non-Banking Financial Companies (NBFCs). Two subsidiaries of Infrastructure Leasing & Financial Services (IL&FS) defaulted on their payments in the period from June to September 2018, while Dewan Housing Finance Limited (DHFL) did so in the period from June to August 2019. Both these entities defaulted on non-convertible debentures and commercial paper obligations for amounts of approximately ₹ 1500-1700 crore.

8.2 In response to the defaults, mutual funds started selling off their investments in the NBFC sector to reduce exposure to stressed NBFCs. A case in point is DSP Mutual Fund selling DHFL commercial

papers (CPs) worth ₹ 300 crore at a steep discount in September 2018.[1] Panic-stricken investors in debt mutual funds started pulling out their investments in these funds rapidly. Coinciding with the news of payment defaults by IL&FS and DHFL being known to the wider market, the months of September 2018 and June 2019 saw the highest net outflows from LDMFs and money market funds, as shown in Figure 1.

Figure 1: Net Inflows – Liquid Debt Mutual Funds (LDMFs) & Money Market Funds (₹ Crore)



Source: ACE-MF Database, based on a sample of prominent LDMFs

8.3 On June 4, 2019, the net asset value of debt funds, which held debt instruments issued by the stressed NBFCs, fell by 53 per cent in one day when news about its default became public.[2] The drop in net asset value was due to the twin effects of debt mutual funds writing off their investments in stressed NBFCs and asset sales at fire sale prices to meet unexpected high redemptions.

8.4 The impact of these defaults was not limited to debt markets. There was a sharp decline in the equity prices of stressed NBFCs as equity market participants anticipated repayment troubles at these firms a few months in advance of actual defaults. As illustrated in Figure 2, the equity prices in stressed NBFCs showed a consistent downward trend from May 2018. Interestingly, the plot shows that the equity prices dipped dramatically in September 2018.

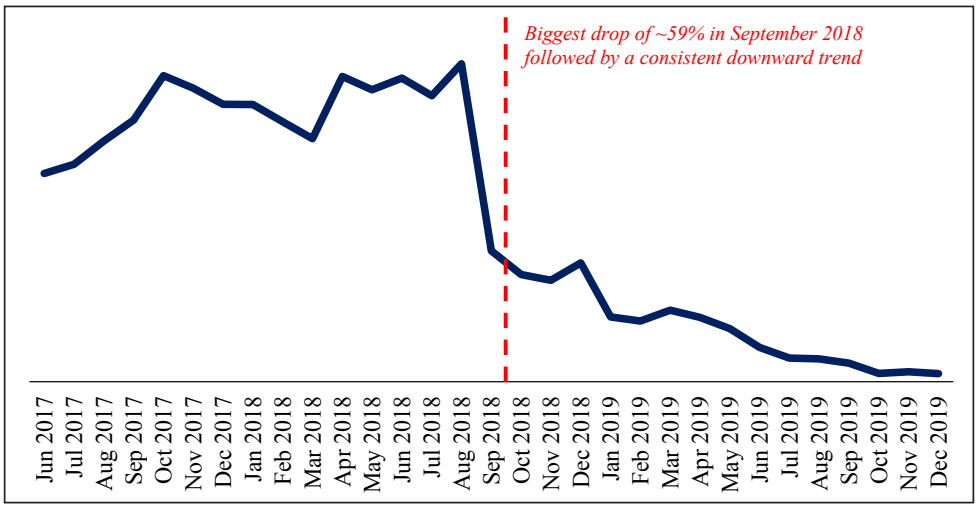
8.5 Therefore, both debt and equity investors suffered a massive erosion in wealth due to the defaults. To get a sense of the quantum of losses, debt mutual funds with exposure to stressed NBFCs lost approximately ₹ 4000 crore after adjusting for recoveries in the aftermath of defaults.[3] Debt mutual funds, facing increasing redemptions, were hesitant to finance the NBFC sector. This, in turn, led to the difficulty

[1] Economic Times article titled "DHFL Paper Sale by DSP triggered panic" dated 22nd September 2018.
[2] NewsClick article titled "Mutual Funds in Trouble as Housing Finance Firm DHFL Defaults on Debt Repayment" dated 6th June 2019.
[3] LiveMint article titled "Debt Mutual Funds: Quantum of Loss and Solace" dated 29th April 2019.

of NBFCs to raise funds, which took a toll on the overall credit growth in the Indian economy and a decline in GDP growth.

8.6 Given the significant economic impact of the liquidity crisis on the domestic economy, it would be a fruitful exercise to investigate whether there were any early warning signs of stress in the NBFC sector. An index is developed to estimate the financial fragility of the NBFC sector and it was found that it can predict the constraints on external financing (or refinancing risk) faced by NBFC firms. This index is called as the Health Score, which ranges between -100 to +100 with higher scores indicating higher financial stability of the firm/sector. The Health Score employs information on the key drivers of refinancing risk such as Asset Liability Management (ALM) problems, excess reliance on short-term wholesale funding (Commercial Paper) and balance sheet strength of the NBFCs.

Figure 2: Trend in Equity Prices of stressed NBFC (July 2017- December 2019)

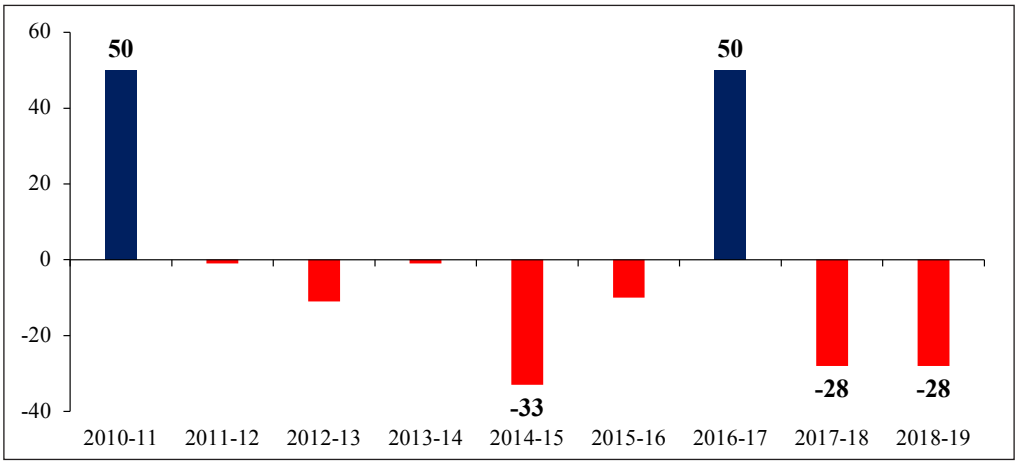


Source: Bloomberg

Note: To focus on the trend in prices, the actual price on the y-axis are omitted.

8.7 The Health Score provides a good diagnostic for the problems in the NBFC sector. For instance, figure 3 shows that

Figure 3: Health Score of a stressed NBFC



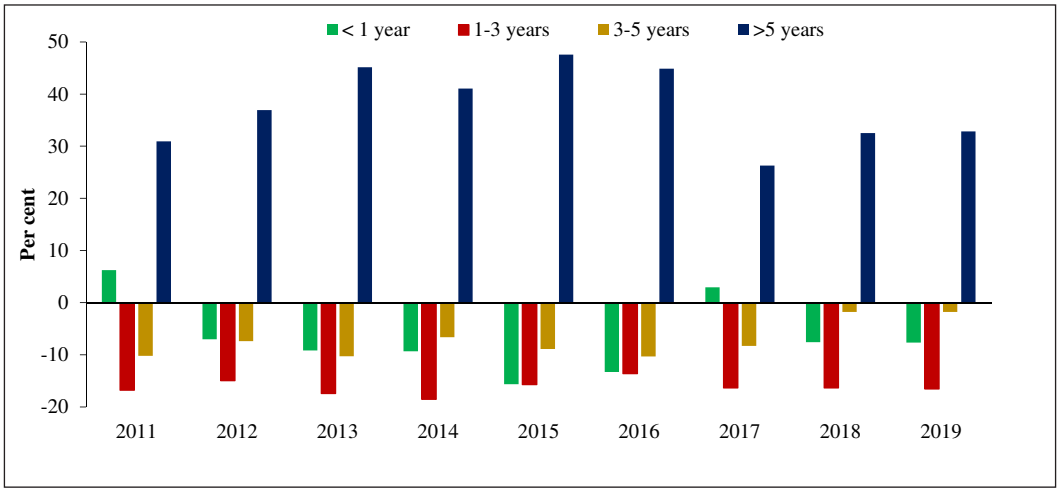
Source: Annual Reports

the Health Score of a stressed NBFC was consistently low throughout the period 2011-19 with a sharp decrease in 2017-18. Hence, the Health Score of the stressed NBFC over the entire eight- year period provided significant early warning signals.

8.8 Figure 4, which highlights the ALM problem in the stressed NBFC and Figure 5, which highlights the over-dependence of the NBFC on short-term wholesale funding, show adverse trends in the refinancing risk faced by the NBFC. Except for 2011 and 2017, Figure 4 shows that ALM mismatch in the shorter tenures was negative for all the years coinciding with the years when the Health Score of the NBFC was low.

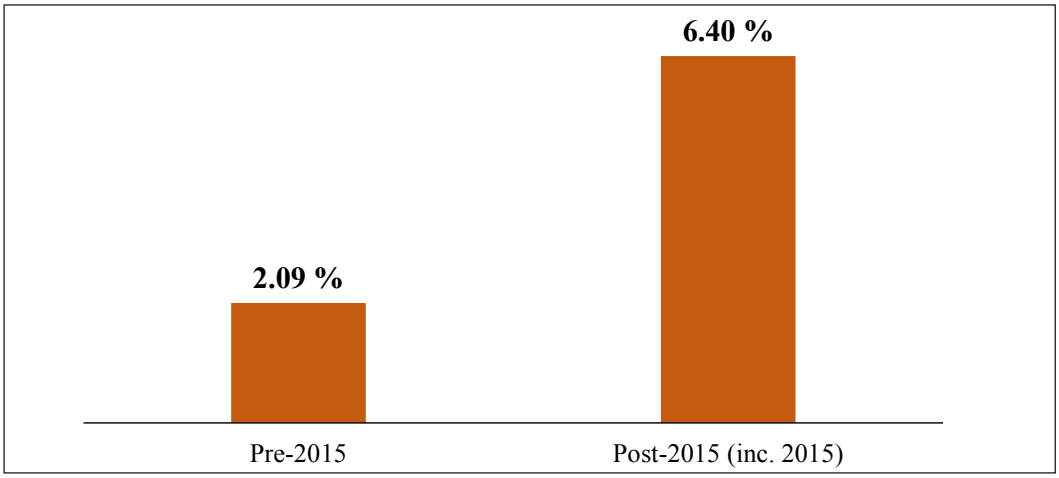
8.9 Figure 5 highlights that for the post-2015 period, the average reliance on short-term wholesale funding increased steeply by more than 200 per cent relative to pre-2015. Given the long term duration of assets of the stressed NBFC, this over dependence on commercial paper funding created exposure to refinancing risk. This is also consistent

Figure 4: ALM Profile (Assets – Liabilities as a percentage of Total Assets) of a stressed NBFC



Source: Annual Reports

Figure 5: Reliance on Short-Term Wholesale Funding (Commercial Paper as a percentage of Borrowings) of a stressed NBFC

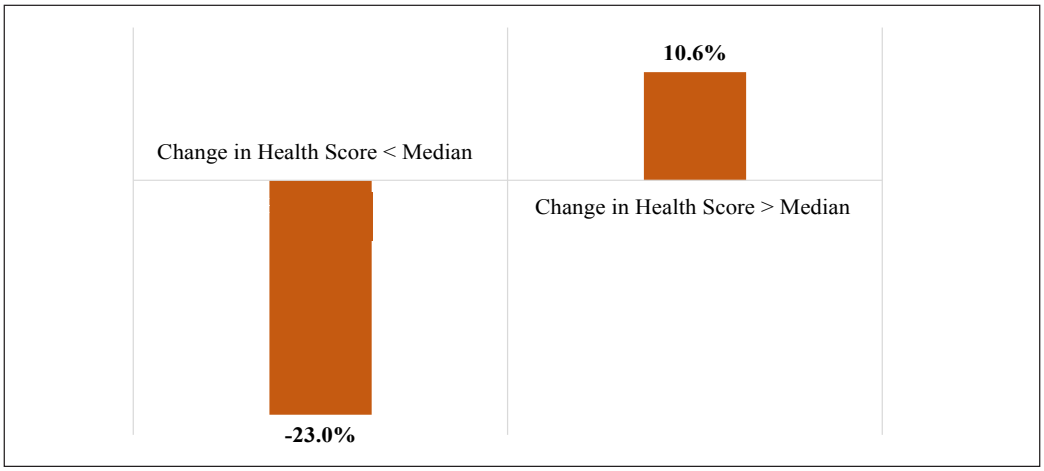


Source: Annual Reports

with the Health Scores of the stressed NBFC which have been very low for three out of four years post-2015.

8.10 Figure 6 further validates the use of the Health Score by showing that it is a leading indicator of stress at a stressed NBFC. It was observed that if the year-over-year change in Health Score is higher (lower) than the median, the cumulative abnormal returns for of a stressed NBFC stock was higher (lower). Cumulative abnormal returns net out the impact of other confounding factors that affect stock markets and are thereby able to capture the pure effect of events relating to a particular stock or set of stocks. This indicates that equity markets reacted favorably to impovement in Health Scores.

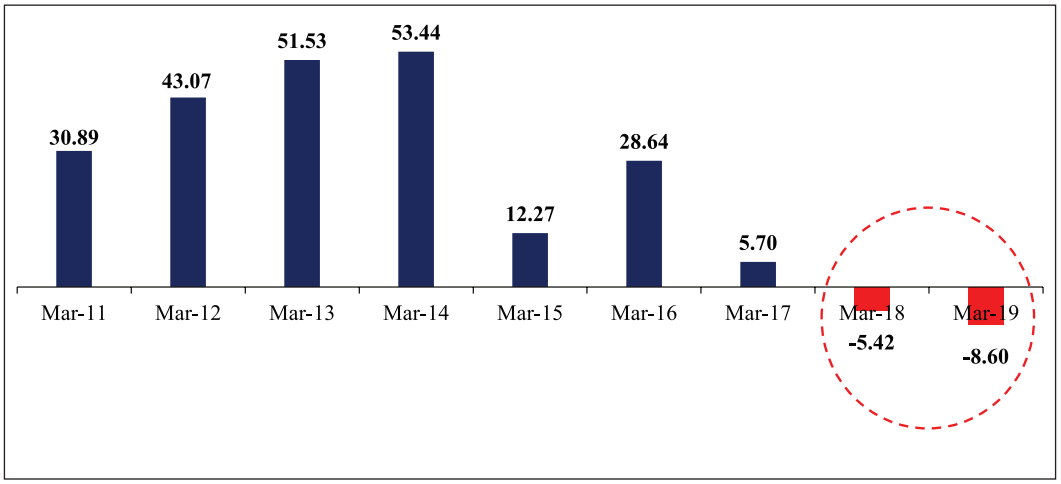
Figure 6: Cumulative Abnormal Returns vs. Change in Health Score of a stressed NBFC



Source: Bloomberg

8.11 Turning to the Housing Finance Companies (HFCs), it was found that the Health Score of the HFC sector also exhibited a declining trend post 2013-14, as indicated in Figure 7. The trend of the Health Score showed early warning signs, well before the HFC sector eventually faced constraints on external financing from 2017-18 onwards. Again, this confirms that the Health Score is a leading indicator of stress in the HFC sector.

Figure 7: Health Score of HFC Sector



Source: Annual Reports of HFCs: 2011-2019, based on a sample of prominent HFCs

8.12 These diagnostic plots on the Health Scores of a stressed NBFC and the HFC sector indicate that the Health Score can serve the critical role of predicting refinancing related stress faced by the financial firms in advance. It can serve as an important monitoring mechanism to prevent such problems in future. Furthermore, disaggregating the components and examining their trends can shed light on how to regulate NBFCs.

8.13 Other than its utility as a leading indicator of stress in the NBFC sector, the Health Score can also be used by policy makers to allocate scarce capital to stressed NBFCs in an optimal way to alleviate a liquidity crisis.

8.14 To summarize, redemption pressure faced by debt mutual funds is akin to a "bank run", which is a characteristic of any crisis in the financial sector. The redemption pressure gives rise to refinancing risk (rollover risk) for NBFCs, thereby affecting the real sector. The extent of refinancing risk faced by NBFCs is fundamentally driven by their reliance on short-term wholesale funding. The chapter analyze the mechanisms through which the reliance on short-term wholesale funding is manifested with an aim to develop a quantifiable measure (Health Score) that can predict stress in the NBFC sector.

BOX 1: THE SHADOW BANKING SYSTEM

To quote (Ghosh et al., 2012), "Shadow banking comprises a set of activities, markets, contracts and institutions that operate partially (or fully) outside the traditional commercial banking sector and are either lightly regulated or not regulated at all. A shadow banking system can be composed of a single entity that intermediates between end-suppliers and end-users of funds, or it could involve multiple entities forming a chain". Shadow banks do not have explicit access to central bank liquidity. The shadow banking system is highly levered with risky and illiquid assets while its liabilities disposed to "bank runs".

The focus in this chapter is on three important segments of the shadow banking system in India, namely, Non-Banking Housing Finance Companies (HFCs), Retail Non-Banking Financial Companies (Retail-NBFCs) and Liquid Debt Mutual Funds (LDMFs). The NBFC sector is lightly regulated as compared to the traditional banking system consisting of public and private sector banks and other financial institutions. However, the regulation in NBFC sector has evolved over time with prudential norms discouraging deposit-taking by NBFC (Reserve Bank of India (RBI), 1998) and encouraging the entry of non-deposit-taking NBFCs (RBI, 2006). The combination of these two effects has led to a steady decline in the share of deposits and increase in wholesale funding in the funding sources of the NBFCs. The wholesale funding sources of the NBFCs comprise mainly of banks (primarily via term loans and rest through non-convertible debentures and commercial paper) and debt mutual funds (via non-convertible debentures and commercial paper).

CONCEPTUAL FRAMEWORK OF ROLLOVER RISK

8.15 Financial institutions rely on short-term financing to fund long-term investments. This reliance on short-term funding causes an asset liability management (ALM) problem because asset side shocks expose financial institutions to the risk of being unable to finance their business.

8.16 More specifically, in the context of the liquidity crisis in the NBFC sector, a conceptual framework is built based on the following insights:

(i) NBFCs raise capital in the short-term (1-3 months) commercial paper (CP) market at a lower cost, as compared to the long term (5-10 years) non-convertible debenture (NCD) market

but face the risk of rolling over the CP debt at short frequencies of a few months.[4] The frequent repricing exposes NBFCs to the risk of facing higher financing costs and, in the worst case, credit rationing. Such refinancing risks are referred as Rollover Risk.

(ii) When an asset-side shock reduces expected future cashflows for an NBFC, it adversely affects the ALM problem in the NBFC and thereby risk perceptions about the NBFC.

(iii) Such a shock amplifies the NBFC's problems when its liability structure is over-dependent on short-term wholesale funding such as commercial paper, which requires frequent refinancing.

(iv) The LDMF sector is a primary source of short-term wholesale funds in the NBFC sector. Thus, the NBFC sector is intricately connected with the Liquid Debt Mutual Fund (LDMF) sector.[5]

(v) This interconnectedness is a channel for the transmission of systemic risk from the NBFC sector to the LDMF sector. Shocks in the NBFC sector may lead to concerted redemptions by investors in the LDMF sector at fire-sale prices. Faced with this situation, LDMFs may withdraw funding to the NBFC sector when refinancing is due. Such a reinforcing cycle can quickly turn into a vicious cycle, leading to a liquidity crisis in the NBFC sector. More technically, systemic risk is transmitted from the NBFC sector to the LDMF sector and vice-versa, i.e., interconnectedness causes systemic risk transmission between an NBFC sector and the LDMF sector.

(vi) In general, if the quantum of defaults is large enough (as was the case with IL&FS and DHFL), it can spread panic among the investors in CP leading to concerted redemptions in the LDMF sector (systemic risk within the LDMF sector). Moreover, the liquidity crunch in an NBFC adversely affects risk perceptions about other NBFCs when they are due for rolling over their CP obligations. Hence, Rollover risk, initially contained within a few NBFCs may rapidly spillover and affect the entire NBFC sector (systemic risk within the NBFC sector).

(vii) The key drivers of the redemption problem in the LDMF sector, and thereby the Rollover Risk problem in the NBFC sector, are threefold: The first risk stems from the magnitude of the ALM problem in the NBFC. The second risk originates from the interconnectedness of the NBFC with the LDMF sector. This risk depends on the extent to which an NBFC relies on short-term wholesale funding and the liquidity buffers in the LDMF sector to absorb redemption pressure. The third risk stems from the inherent resilience of the NBFC, as reflected in the strength of the balance sheet, which allows it to absorb shocks in the first place.

(viii) These three risks work in tandem

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[4] For one of the largest HFCs, the rate of interest on CP was 7.01% - 8.00% while that on NCD was 10.01 – 11.95%, as of 31 March 2019.

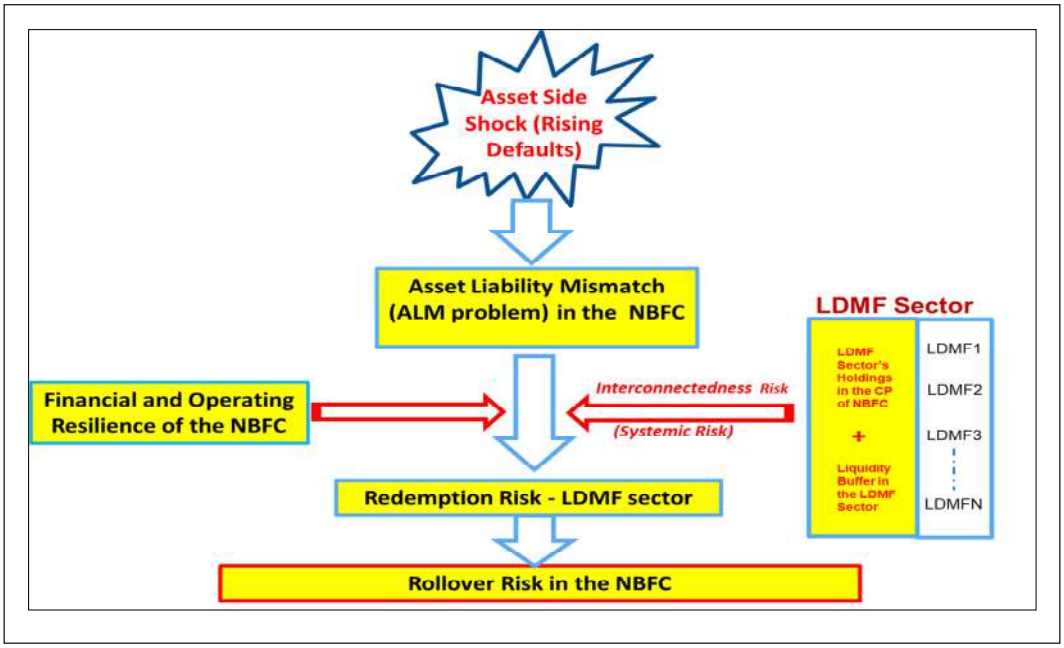
[5] The share of CP issued by NBFCs that are subscribed to by mutual funds was the highest (79.7% as of 31 March 2019) among all classes of subscribers (Retail-NBFC Credit Trends: ICRA Report, July 2019). Among mutual funds, LDMFs have the highest share of investments in CP (~80% on average), which is highlighted in Figure 11, sub-section 3.2. Together, these two facts suggest that the LDMF sector is a primary source of short-term wholesale funds in the NBFC sector.

to cause Rollover Risk. At the time of refinancing their CP obligations, the NBFCs having stronger balance sheets are successful in rolling over CPs, albeit at a higher cost. Other NBFCs with weaker balance sheets face higher default probabilities and find it difficult to access the CP market at affordable rates or are unable to raise money at all, i.e., they are unable to avoid default.

(ix) At the most fundamental level, the root cause of the liquidity crisis in the NBFC sector can be traced to the over-dependence of NBFCs on the short-term wholesale funding market. This factor works through two channels, a direct channel and an indirect channel. First, an increase in short-term wholesale funding causes a direct effect by increasing the amount of funding that is subject to frequent repricing, and therefore, Rollover Risk. Second, there are indirect effects in that an increase in short-term wholesale funding influences the two key drivers of Rollover Risk - it worsens the ALM mismatch problem and increases the degree of interconnectedness of the NBFC sector with the LDMF sector. In addition, if the NBFC's balance sheet strength is suspect, Rollover Risk is further exacerbated. In short, over-dependence on short-term wholesale funding has direct and indirect impact on Rollover Risk.

8.17 Figure 8 illustrates the drivers of rollover risk in the NBFC sector. Redemptions pressures in the LDMF sector are exacerbated when NBFCs face an asset-side shock and experience an ALM problem, which gets compounded due to interconnectedness and lack of balance sheet resilience. Faced with redemption pressures, the LDMF sector is reluctant to roll over loans to the NBFC sector (Rollover Risk), causing a liquidity crunch in the NBFC sector.

Figure 8: Rollover Risk Schematic (NBFC Sector)



Source: Adapted from V. Ravi Anshuman and Rajdeep Sharma, "Financial Fragility in Housing Finance Companies", IIMB Working Paper, 2020

8.18 To develop policy implications, financial metrics were employed to estimate the drivers of Rollover Risk and weigh them appropriately based on their relative contribution to Rollover Risk. This procedure helps to generate a measure of the health of an NBFC. This measure is called as the Health Score, which is an indicator of potential rollover risk issues faced by an NBFC. The validity of this indicator as a predictor of future performance is also tested using market data.

DIFFERENCES BETWEEN HFCs AND RETAIL-NBFCs

8.19 The NBFC sector analysis is conducted for two sub-sectors: (i) Housing Finance Companies (HFCs) and (ii) Retail-NBFCs. To analyse the HFC sector, select a set of the five largest HFCs is selected which control, on average, ~82 per cent of the non-banking housing finance sector with an on-book portfolio of ₹ 8.6 lakh crore as of 31 March 2019. These five HFCs, therefore, are representative of the non-banking housing finance sector in India. To analyse the Retail-NBFC sector, a set of fifteen private sector NBFCs operating in the retail credit segment were selected for analysis. These fifteen NBFCs have assets under management (AUM) of ₹ 6.8 lakh crore while the total AUM of the industry including PSUs is ₹ 9.1 lakh crore as of 31 March 2019. These fifteen Retail-NBFCs, therefore, control ~75 per cent of the market and serve as a good proxy for the Retail-NBFC sector. The fifteen Retail-NBFCs are classified into large, medium and small-sized Retail-NBFCs based on assets under management to analyse firm size effects.

8.20 The drivers of Rollover Risk differ between HFCs and Retail-NBFCs are demonstrated first due to the following reasons. First, HFCs hold much longer duration assets (housing loans, developer loans etc.,) as compared to Retail-NBFCs, which hold medium-term assets (auto, consumer durables, gold loans, etc.,). HFCs face a greater gap between the average maturity of their assets and liabilities, as compared to Retail-NBFCs, which typically provide loans of shorter duration in the form of working capital loans to MSME, automobile financing loans or gold loans. Thus, asset side shocks cause significant deterioration in the asset liability mismatch of the HFCs, but they induce less of an adverse impact on asset liability mismatch of Retail-NBFCs.

8.21 Second, Retail-NBFCs rely much more on the short-term wholesale funding market as compared to HFCs. For the sample, the average level of CP as a percentage of borrowings in HFCs was 8.50 per cent while that in Retail-NBFCs was 12.74 per cent from March 2015 till March 2019. Thus, HFCs are less exposed to interconnectedness risk, as compared to Retail-NBFCs. For computing the Rollover Risk score of Retail-NBFCs data is collected on the month-on-month portfolio holdings of the top fifteen LDMFs' in the Retail-NBFC sector and their overall corpus from March 2014 till March 2019. These fifteen LDMFs control ~70 per cent of the assets under management of the LDMF sector and are representative of the risks emanating out of the Retail-NBFC and the LDMF sector interconnectedness. For computing the redemption risk in the LDMF sector, data is collected on the portfolio holdings of the LDMFs by asset class (i.e., cash, G-secs, T-bills, CP, CD, NCD, and corporate debt). Source of data for LDMFs is the ACE-Mutual Fund database.

8.22 Given these two differences, it is argued that the key drivers of the redemption problem in the LDMF sector (and the rollover problem for NBFCs) differ between HFCs and Retail-NBFCs. The implication of these factors is that the key drivers of Rollover Risk for HFCs are ALM Risk and

Financial and Operating Resilience, whereas, for Retail-NBFCs, Interconnectedness Risk and Financial and Operating Resilience are the key drivers of Rollover Risk. A more detailed analysis is presented in next section to support these arguments.

RISKS FROM ASSET LIABILITY MANAGEMENT MISMATCH

8.23 This risk arises in most financial institutions due to a mismatch in the duration of assets and liabilities. Liabilities are of much shorter duration than assets which tend to be of longer duration, especially loans given to the housing sector. This mismatch implies that an NBFC must maintain a minimum amount of cash or cash-equivalent assets to meet its short-term obligations.

8.24 If cash flows from the long-term assets are inadequate to meet its immediate debt obligations, an NBFC can still repay its obligations by issuing fresh CP to avoid defaulting. However, such a refinancing strategy works well only when there are no asset side shocks or liability side shocks.

8.25 During periods of stress, there may be a significant drop in periodic cash flows that would normally arise from an NBFC's long-term assets. This exacerbates Rollover Risk. NBFCs that maintain adequate cash buffers and do not have asset liability management problems are able to survive through the stress period as they can meet their obligations without having to tap the wholesale funding market. This implies that they have much lower Rollover Risk.

8.26 For HFCs, which invest in significantly longer duration (15 to 20-year horizon) assets, the key driver of Rollover Risk is the ALM risk. ALM risk arises if the future contractual cash inflows from loan assets are not enough to meet the future contractual cash outflows from debt obligations. The cash flows are split into multiple buckets based on the duration of assets and liabilities and the difference between expected inflows and outflows is measured. This difference is normalized by dividing the difference by total assets for meaningful comparison across years. Negative asset liability gap in short tenor buckets can lead to defaults if there is a shock to the asset/liability side and the firm is unable to roll over its debt obligations.

8.27 Figure 9 (a & b) illustrates that the ALM risk is more problematic for HFCs based on a quarter-on-quarter comparison of trends in ALM for the HFC and Retail-NBFC sector. HFCs short term liabilities (up to maturities of 3 years) are clearly greater than their assets in these maturity buckets. Therefore, HFCs face significant rollover risk due to their ALM mismatch problem. In contrast, for Retail-NBFCs, the assets are greater than their liabilities with respect to the profile of cashflows for all maturity buckets. The Rollover Risk stemming from ALM mismatch is, therefore, lower for Retail-NBFCs.

RISKS FROM INTERCONNECTEDNESS

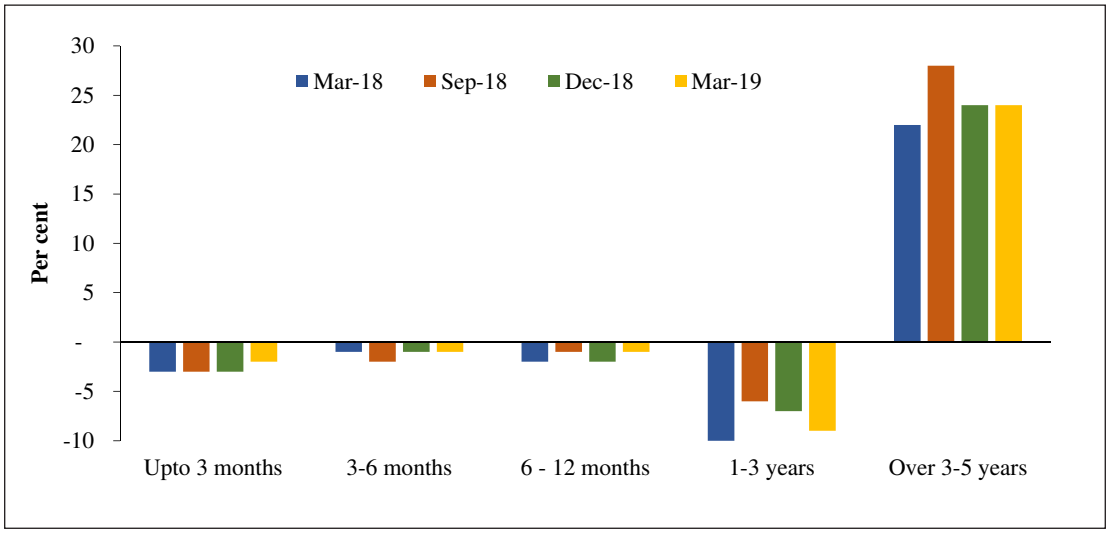
8.28 Interconnectedness Risk is a measure of the transmission of systemic risk between an NBFC and the LDMF sector that arises from two factors. First, if the LDMF sector, on average, holds concentrated positions in the CPs of a specific *stressed* NBFC, it may lead to a greater redemption risk from their own investors who fear rise in default probabilities due to deterioration of asset quality of the NBFC. This factor is measured by the LDMF sector's average exposure to CP issued by the NBFC.

8.29 Second, LDMFs are subject to run risk or redemption risk from their investors if their cash holdings do not account for extreme tail events. Thus, low levels of cash holdings in the LDMF sector, on average,

diminish the ability of the LDMF sector to absorb redemption pressures.

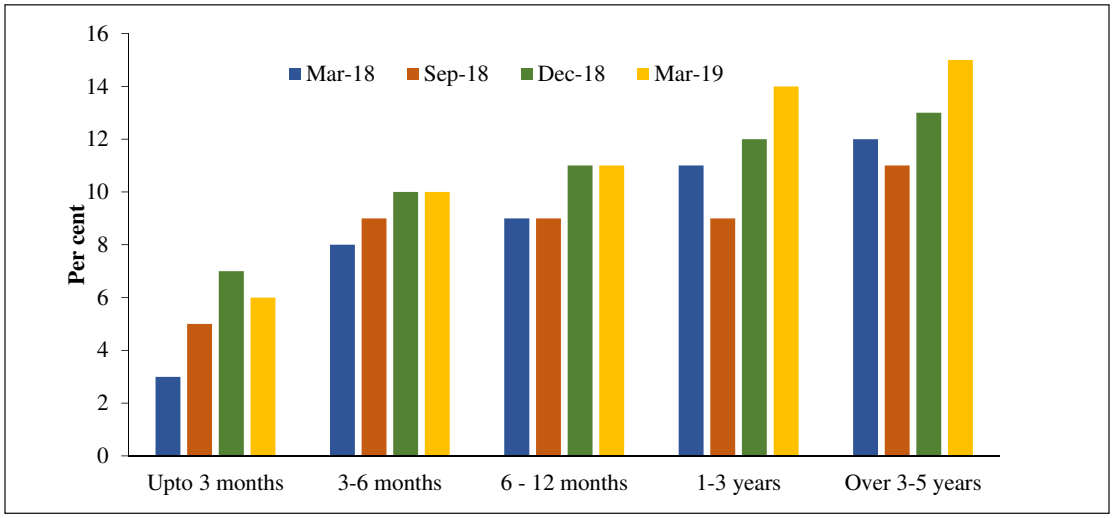
8.30 The combined impact of these two factors are referred to as the Interconnectedness Risk, which increases the likelihood of concerted redemption by investors across the entire LDMF sector,

Figure 9: ALM Profile
(a) HFC Sector



Source: Indian Mortgage Finance Market: ICRA Reports, June 2019, March 2019, November 2018

(b) Retail-NBFC Sector



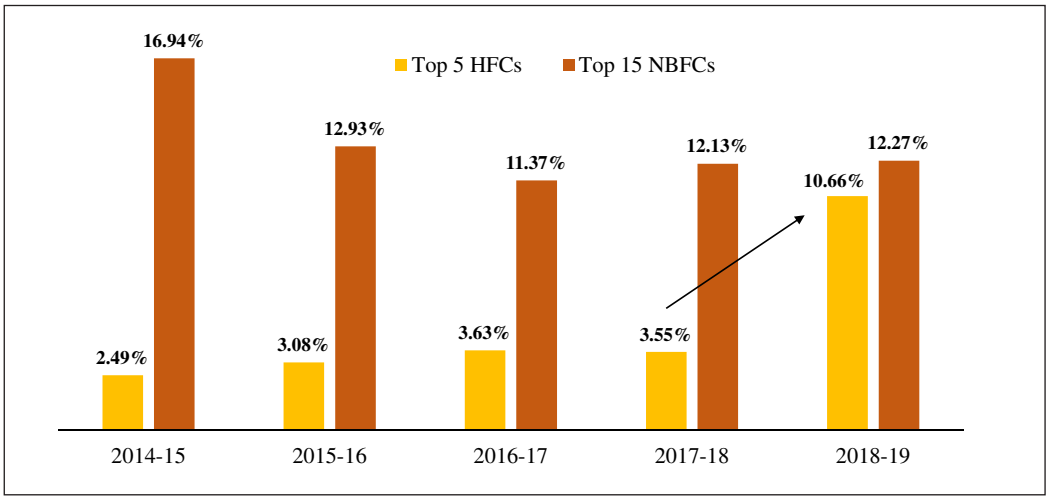
Source: Retail-NBFC Credit Trends: ICRA Report, July 2019

leading to fire sales of LDMF assets. These redemptions increase Rollover Risk in a vicious cycle for the stressed NBFCs.

8.31 To shed light on the first factor driving Interconnectedness Risk, a comparison of the average dependence of the HFC sector and the Retail-NBFC sector on the LDMF sector is provided, as shown in Figure 10. This dependence is measured by the average of

the ratio of commercial paper of the *specific* HFC/Retail-NBFC held by the LDMF sector and the total commercial paper holdings of the LDMF sector in the overall HFC/Retail-NBFC sector. Then the dependence over the HFC/Retail-NBFC sectors is averaged and the figures are tracked from 2014 till 2019.

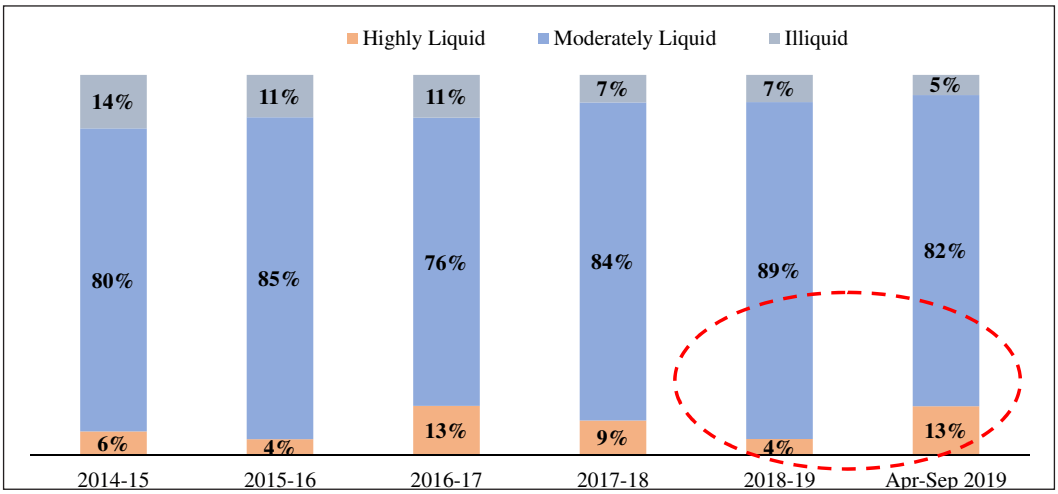
Figure 10: YoY Average Dependence of HFC/Retail-NBFC Sectors on the LDMF Sector



Source: ACE-MF Database

8.32 The average dependence for the HFC sector from March 2014 till March 2019 was 4.68 per cent while the average dependence for the Retail-NBFC sector during the same period was 13.13 per cent. Although the average dependence of HFCs had spiked in financial year 2019, the dependence was lower than that of Retail-NBFCs in 4 out of 5 years in the chapter.

Figure 11: Liquidity Buffer of Top 15 LDMFs (percentage of Assets under Management)

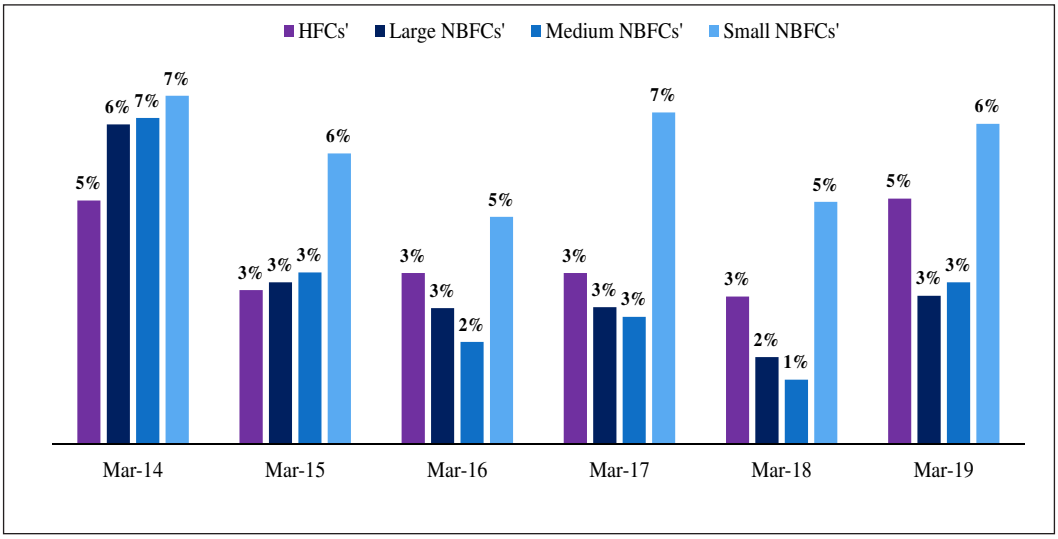


Source: ACE-MF Database

*Note: Highly liquid investments include cash and cash equivalents, G-secs, T-bills, Bills rediscounting and cash management bills. These are the most liquid investments having the lowest liquidity risk. Moderately liquid investments include certificates of deposits (CD) and commercial paper (CP). Illiquid investments include corporate debt, (NCD), deposits, floating rate instruments and pass-through certificates/securitized debt.

8.33 Turning to the second factor driving Interconnectedness Risk, the asset class wise holdings of the LDMFs in sample from March 2014 till March 2019 is plotted, as shown in Figure 11. The proportion of highly liquid investments such as cash, G-secs etc., is a measure of the Liquidity Buffer in the LDMF sector. Higher the Liquidity Buffer, lower is the redemption risk faced by the LDMFs and by extension the Rollover Risk faced by HFCs/Retail-NBFCs. A steep jump in the average level of highly liquid investments of LDMFs post the IL&FS and DHFL defaults was observed, probably in anticipation of higher than usual redemptions.

Figure 12: Cash (Percentage of Borrowings)



Source: Annual Reports 2014-2019, HFCs and Retail-NBFCs

FINANCIAL AND OPERATING RESILIENCE

8.34 Liquidity crunch in debt markets often leads to credit rationing. Credit rationing results when firms with robust financial and operating performance get access to credit while the less robust ones are denied credit. Firms with robust financial and operating performance can withstand a prolonged period of liquidity crunch if they choose not to raise funds from debt mutual funds.

8.35 Measures of financial resilience of NBFCs are commercial paper (CP) as a percentage of borrowings, Capital Adequacy Ratio (CAR) and provisioning policy, while measures of operating resilience are cash as a percentage of borrowings, loan quality and operating expense ratio (Opex Ratio). As an example, the trends in cash as a percentage of borrowings which is a measure of operating resilience for NBFCs is plotted, as shown in Figure 12.

8.36 From 2015-16 onwards, large and medium-sized Retail-NBFCs had lower operating resilience, measured by cash as a percentage of borrowings, as compared to HFCs and small-sized NBFCs.

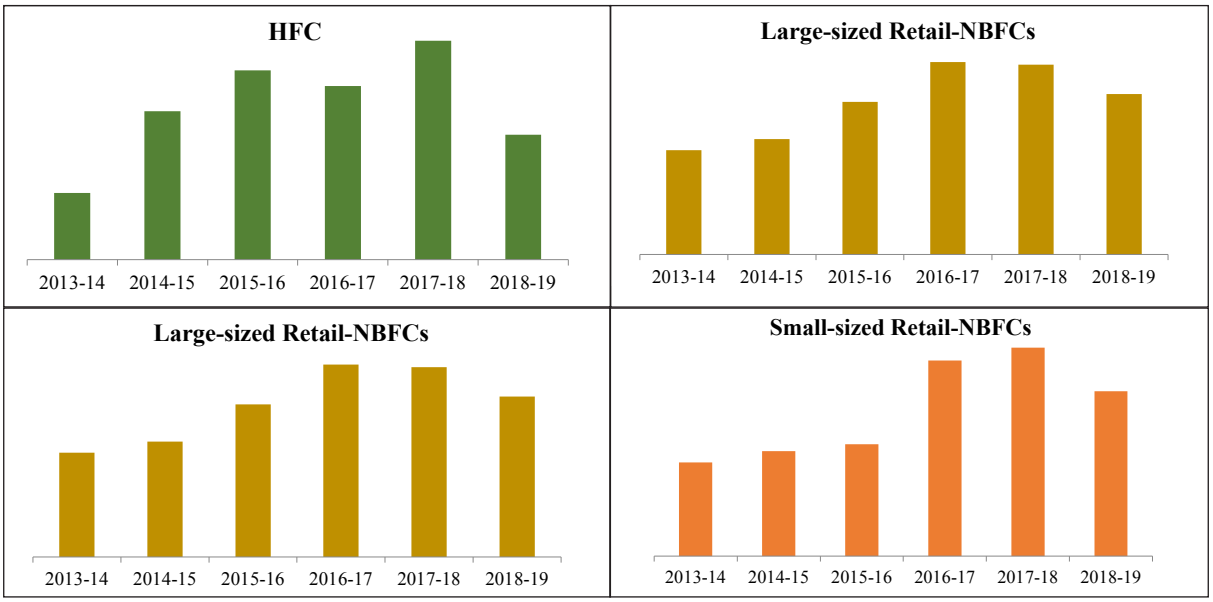
RELIANCE ON SHORT-TERM WHOLESALE FUNDING

8.37 As pointed out earlier, it is argued that the fundamental factor that influences Rollover Risk can be traced to the over-dependence of the NBFC sector on the short-term wholesale funding market. First, greater short-term funding implies a greater exposure

to repricing risk (direct channel). Second, both the key drivers of Rollover Risk, ALM Risk and the Interconnectedness Risk increase when short-term funding increases (indirect channel).

8.38 This issue is investigated by comparing the reliance on short-term wholesale funding (CP as a percentage of liabilities) of HFCs and Retail-NBFCs, as shown in Figure 13. It was observed that the average level of commercial paper in sources of funds was 5-6.5 per cent for the HFC sector and large-sized Retail-NBFCs while it was 11.5-12.5 per cent for medium and small-sized Retail-NBFCs. While the HFC sector is less exposed to short-term wholesale funding, one must recognize that given the much longer duration of their assets, a lower 5-6.5 per cent exposure is sufficiently high to influence ALM Risk but not high enough to affect Interconnectedness Risk. In contrast, small and medium Retail-NBFCs have high exposure to short-term wholesale funding which makes Interconnectedness Risk an important driver of Rollover Risk without causing ALM problems. The large Retail-NBFCs are in a better position as their exposure to short-term wholesale funding is low enough to keep both ALM Risk and Interconnectedness Risk within reasonable levels.

Figure 13: Commercial Paper as a percentage of Liabilties



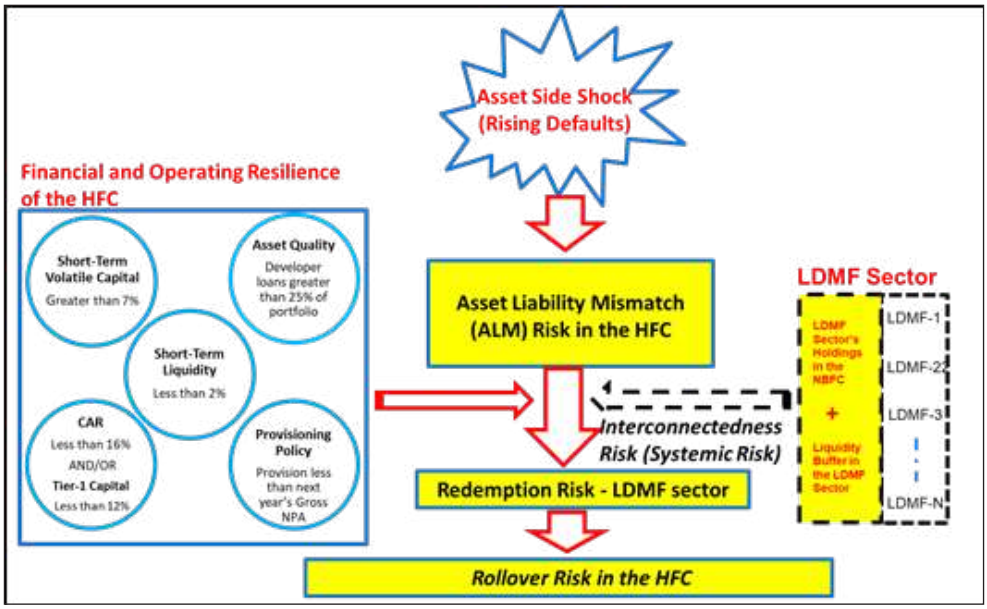
Source: Annual Reports 2014-2019, HFCs and Retail-NBFCs

8.39 Hahm, Shin and Shin (2013) have found that legacy banks with more reliance on deposit funding are safer than banks that depend heavily on wholesale funding. Defaults on wholesale funding obligations by NBFCs in September 2018 and more recently in June 2019 exposed the risks of heavy reliance on wholesale funding sources, consistent with the findings of Hahm, Shin and Shin (2013).

ROLLOVER RISK SCHEMATICS OF HFCs/RETAIL-NBFCs

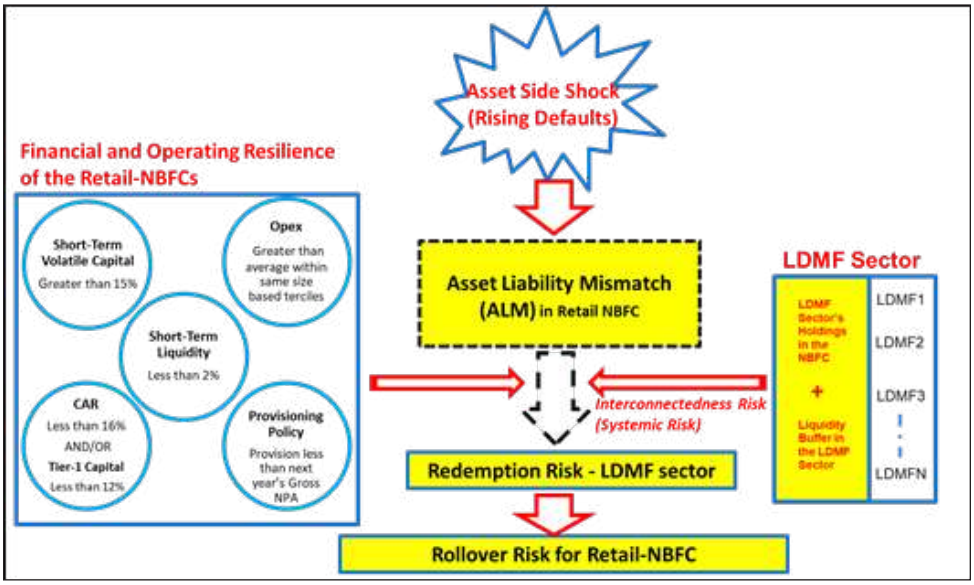
8.40 Figures 14 and 15 provide the modified schematics of the conceptual framework underlying the drivers of Rollover Risk in the HFC and the Retail-NBFC sectors. These schematics highlight the difference in the mechanism through which asset side shocks affect Health Score of HFCs and Retail-

Figure 14: Rollover Risk Schematic (HFCs)



Source: Adapted from V. Ravi Anshuman and Rajdeep Sharma, "Financial Fragility in Housing Finance Companies", IIMB Working Paper, 2020
Note: Solid Red Arrows - Strong Effect
Dotted Black Arrows – Weak Effect

Figure 15: Rollover Risk Schematic (Retail-NBFCs)



Source: Adapted from V. Ravi Anshuman and Rajdeep Sharma, "Financial Fragility in Housing Finance Companies", IIMB Working Paper, 2020
Note: Solid Red Arrows - Strong Effect
Dotted Black Arrows – Weak Effect

NBFCs, respectively. More specifically, the schematic for the HFC sector highlights the ALM Risk and the Financial and Operating Resilience as strong effects while the Interconnectedness Risk as a weak effect. On the other hand, in the schematic for the Retail-NBFC sector, the ALM Risk, is highlighted as a weak effect, but the Interconnectedness Risk and the Financial and Operating Resilience are strong effects.

DIAGNOSTIC TO ASSESS FINANCIAL FRAGILITY

8.41 In this section, a methodology is developed to estimate a dynamic health index for an individual NBFC (referred to this index as the Health Score). The sample consists of data on HFCs from March 2011 till March 2019 and Retail-NBFCs from March 2014 till March 2019. The fifteen Retail-NBFCs is divided into three equal sized groups based on the size of their loan books as there is significant variation in the size of the loan book among the fifteen firms. This helps to differentiate between the Retail-NBFCs in terms of their Health Scores while controlling for loan book size. There is not much variation in size among the five HFCs in the sample and thus the five HFCs are treated as representative of the HFC sector.

8.42 Overall, it was found that the Health Score for the HFC sector exhibited a declining trend post 2014. By the end of 2018-19, the health of the overall sector had worsened considerably. The Health Score of the Retail-NBFC sector was consistently below par for the period 2014 till 2019. Further, the large Retail-NBFCs had higher Health Scores but among the medium and small Retail-NBFCs, the medium size Retail-NBFCs had a lower Health Score for the entire period from March 2014 till March 2019.

8.43 Finally, the change in Health Score is demonstrated as a significant predictor of future abnormal returns of these stocks/ portfolios. The Health Score, therefore, can serve as a timely indicator of future performance of these firms.

HEALTH SCORE (HFCs)

8.44 Based on the relative contribution to Rollover Risk, the key drivers of Rollover Risk are combined for HFCs into a composite measure (Health Score). ALM Risk and Financial and Operating Resilience are the most important constituents of the Health Score of HFCs, as shown earlier in the Health Score schematic for the HFC sector. As discussed, Interconnectedness Risk was low for the HFC sector and, therefore, not a key driver of Rollover Risk for these firms.

8.45 Metric 1 captures ALM Risk, while Metrics 2-6 capture the Financial and Operating Resilience of HFCs. Metrics 2, 5 and 6 are measures of Financial Resilience and Metrics 3 and 4 are measures of Operating Resilience for the HFCs.

8.46 In Box 2, definitions of each of the metrics is provided, which affect Health Score of HFCs. There may be metrics other than the ones considered here that may explain Health Score of HFCs, but the most important ones are focussed in this chapter. Box 3 provides a short description of the method used to arrive at the Health Score for the HFC sector.

BOX 2: Key Metrics affecting Health Scores of HFCs

Metric 1: ALM Profile - ALM Profile is measured by the difference between assets and liabilities in each cash flow bucket normalized by the total assets of the HFC.

Metric 2: Short-Term Volatile Capital – This is measured by CP as a percentage of borrowings of the HFC.

Metric 3: Asset Quality - This is measured by the ratio of retail loans to the overall loan portfolio of the HFC.

Metric 4: Short-term Liquidity – This is measured by the percentage of cash to the total borrowings of the HFC.

Metric 5: Provisioning Policy – This is measured by the difference between provision for bad loans made in any financial year and the gross non-performing assets (NPA) in the subsequent financial year.

Metric 6: Capital Adequacy Ratio (CAR) – This is the sum of Tier-I and Tier-II capital held by the HFC as a percentage of Risk-Weighted Assets (RWA).

8.47 The Health Score can range from -100 to +100 with higher scores indicating lower Rollover Risk. A Health Score of 0 is a neutral score, not risky, but not too safe either. A benchmark of 50 is used, above which the individual HFC/Sector may be deemed to be sufficiently safe.

BOX 3: Weighting Scheme to determine the Health Score of HFCs

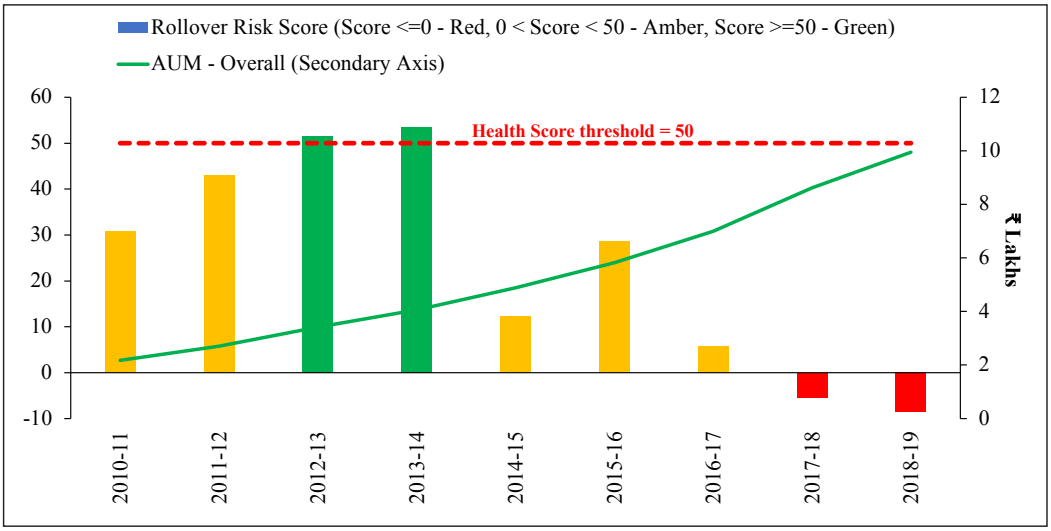
Weights are assign to each of the six metrics defined in Box 2. The assigned weights are subjective, and the sum of the weights is 100 points. To capture the relative contributions of each of the metrics to Health Score, maximum weight of 50 points is assigned to ALM Risk (Metric 1) and 50 points to Financial and Operating Resilience (Metrics 2-6). The 50 points to Financial and Operating Resilience are further broken down, with 20 points to Metric 2, 10 points each to Metrics 3-4 and 5 points each to Metrics 5-6.

For each of the five HFCs, a Health Score is computed based on Metrics 1-6. The variables defining each metric are compared with pre-defined thresholds, which reflect the level of the variable for an HFC facing average Rollover Risk. The maximum possible score for a metric is the weight assigned to that metric (for example, 50 for ALM Risk).

For computing the Health Score for the HFC sector as of 31st March in any financial year, the AUM (Assets under Management) weighted average of the scores obtained for each of the Metrics 1-6 is computed and added upon. Using this approach, the Health Score is computed at the end of each financial year from March 2011 till March 2019 for the overall HFC sector.

8.48 Figure 16 plots the trends in Health Scores for the HFC sector as of 31st March each year from 2011 till 2019. The start of the decrease in Health Score for the HFC sector followed soon after the real estate sector slowdown in 2013-14. The dynamics of the Health Score for a stressed NBFC have been provided in Figure 3 to illustrate the validity of Health Score. It is evident from figure 3, that the Health Score declined significantly from 2015 onward. However, AUM of the HFC sector continued to increase substantially during this period. Taken together, these trends suggest a build-up of risk that does not bode well for the HFC sector in the future.

Figure 16: Health Score and Portfolio Trends (HFC Sector)



Source: Annual Reports of top 5 HFCs (2011-2019)

HEALTH SCORE (RETAIL-NBFCs)

8.49 Based on the relative contribution to Rollover Risk, the key drivers of Rollover Risk are combined for Retail-NBFCs' to compute the Health Score. Interconnectedness Risk between an NBFC and the LDMF sector and Financial and Operating Resilience are the most important constituents of Health Score of Retail-NBFCs, as shown earlier in the Health Score schematic for the Retail-NBFC sector. Interconnectedness Risk arises from both the LDMF sector exposure to CP issued by Retail-NBFCs (Metric 1) and Liquidity Buffer levels in the LDMF Sector (Metric 2). The analysis is also illustrated that ALM Risk was low for the Retail-NBFC sector and, therefore, not a key driver of Rollover Risk for these firms.

8.50 Metrics 1 and 2 capture the Interconnectedness Risk and Metrics 3-7 capture the Financial and Operating Resilience of Retail-NBFCs. Metrics 3, 6 and 7 are measures of Financial Resilience while Metrics 4 and 5 are measures of Operating Resilience for the HFCs. Together, they reflect the Financial and Operating Resilience of Retail-NBFCs.

BOX 4: Key Metrics affecting Health Scores of Retail-NBFCs

Metric 1: LDMF sector exposure to CP issued by Retail-NBFCs - This is measured by the average of the ratio of commercial paper of the *specific* HFC/Retail-NBFC held by the LDMF sector and the total commercial paper holdings of the LDMF sector in the overall HFC/Retail-NBFC sector.

Metric 2: Liquidity Buffer levels in the LDMF Sector – This is measured by the average proportion of highly liquid investments such as cash, G-secs etc., that are held by the LDMFs.

Metric 3: Short-Term Volatile Capital - This is measured by CP as a percentage of borrowings of the Retail-NBFC.

Metric 4: Operating Expense Ratio (Opex Ratio) – This is measured by the operating expenses in a financial year divided by the average of the loans outstanding in the current financial year end and previous financial year end. Opex Ratio is an indicator of efficiency of a Retail-NBFC.

Metric 5: Short-term Liquidity - This is measured by the percentage of cash to the total borrowings of the Retail-NBFC.

Metric 6: Provisioning Policy – This is measured by the difference between provision for bad loans made in any financial year and the gross non-performing assets (NPA) in the subsequent financial year.

Metric 7: Capital Adequacy Ratio (CAR) – This is the sum of Tier-I and Tier-II capital held by the Retail-NBFC as a percentage of Risk-Weighted Assets (RWA).

BOX 5: Weighting Scheme to determine the Health Score of Retail-NBFCs

Weights are assigned to each of the seven metrics defined in Box 4. The assigned weights are subjective, and the sum of the weights is 100 points. To capture the relative contributions of each of the metrics to Health Score, 50 points to Interconnectedness Risk (25 points each to Metrics 1 and 2) and 50 points to Financial and Operating Resilience (Metrics 3-7). The 50 points to Financial and Operating Resilience are further broken down, with 20 points to Metric 3, 10 points each to Metrics 4-5 and 5 points each to Metrics 6-7.

For each of the fifteen Retail-NBFCs, the Health Score is computed based on the scores of Metrics 1-7. The variables defining each metric are compared with pre-defined thresholds, which reflect the level of the variable for a Retail-NBFC that is facing average Rollover Risk.

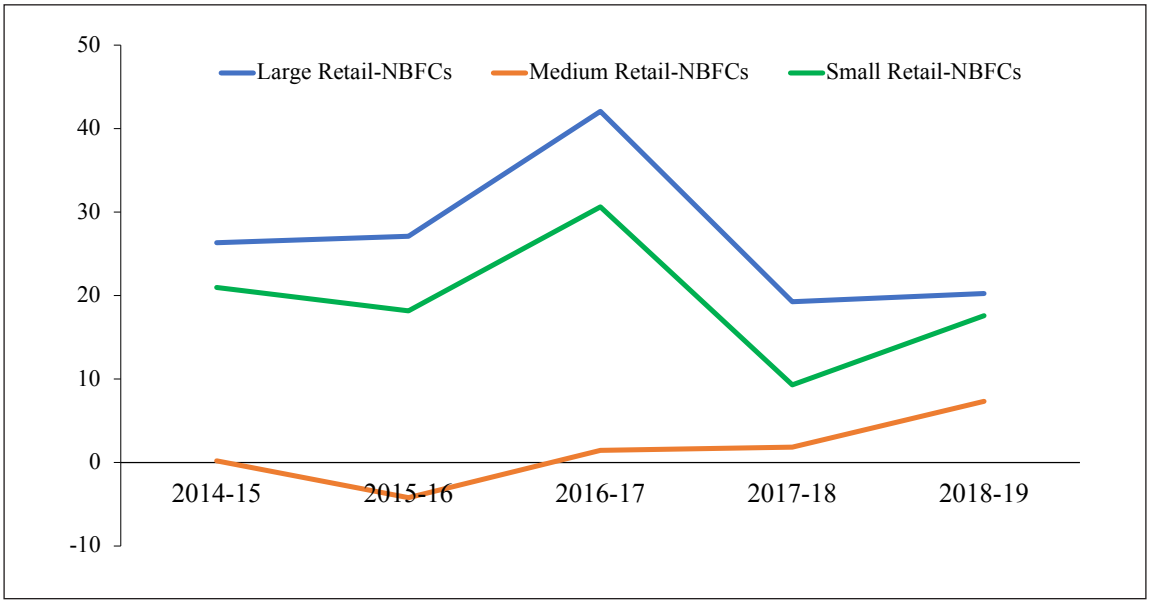
The maximum possible score for a metric is the weight assigned to that metric (for example, 50 for Interconnectedness Risk). The sum of the scores obtained for all seven metrics for a Retail-NBFC is its Health Score. The Health Score is computed in each of the financial years from 2014-15 till 2018-19 for each of the fifteen Retail-NBFCs' in the sample. Although some of the metrics for Retail-NBFCs and HFCs are same, the thresholds for these common metrics differ. In this way, different nature of assets and liabilities of HFCs and Retail-NBFCs is accounted in the Health Score computation.

8.51 In Box 4, definitions of each of the metrics is provided which affect Health Score of Retail-NBFCs. There may be metrics other than the ones considered here that may explain Rollover Risk of Retail-NBFCs, but the chapter tried to capture the most important ones in this chapter. Box 5 provides a brief description of the method used to arrive at the Health Score for the Retail-NBFC sector.

8.52 The sample of fifteen Retail-NBFCs' is divided into three equal sized groups based on the loan book size to examine Health Scores within each sub-class of Retail-NBFCs. For each group, the average Health Score of the five firms within the group is computed. As in the case of HFCs, the Health Score of Retail-NBFCs can range from -100 to +100 with higher scores indicating lower Rollover Risk. A Health Score of 0 is a neutral score, not risky, but not too safe either. A benchmark of 50 is used, above which the individual Retail-NBFC/Sector may be deemed to be sufficiently safe. Figure 17 plots the trends in average Heath Score for the three size-based groups of Retail-NBFCs. Among the three size-based groups, it was observed that medium-sized Retail-NBFCs had low Health Score almost throughout the period. The Health Score of large-sized Retail-NBFCs started declining post 2016-17.

8.53 Figure 17 shows that size is not always inversely related to Rollover Risk exposure. Throughout the period, it was evident that, on average, smaller sized Retail-NBFC had higher Health Scores than the medium-sized ones. Hence, targetting liquidity enhancements based on size, would be a sub-optimal capital allocation strategy.

Figure 17: Average Health Scores (Retail-NBFCs)



Source: Annual Reports of top 15 Retail-NBFCs (2014-2019)

PREDICTIVE POWER OF HEALTH SCORE

Housing Finance Companies (HFCs)

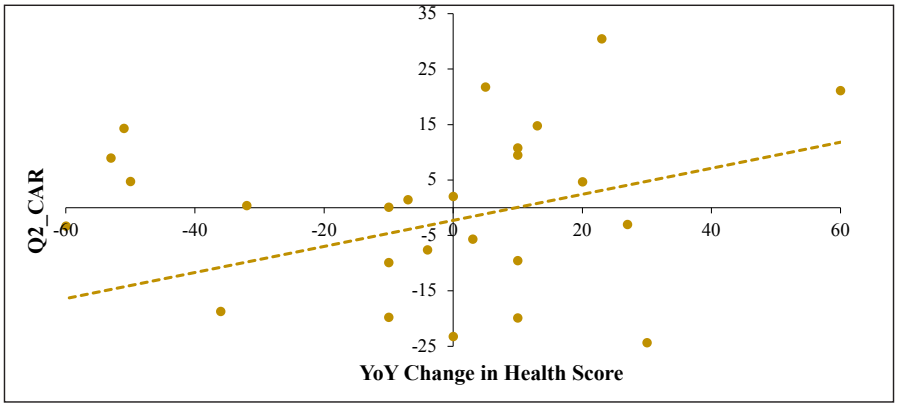
8.54 In this section, an attempt is made to understand whether the year-over-year (YoY) change in Health Score of individual HFCs has any predictive power on future abnormal stock returns of these firms. This test is useful in validating the Health Score as an early warning signal. The annual reports for each financial year are generally released in the period from July to August each year. The dates of release, however, vary for each of the HFCs. Information in the annual reports that provide insights on the Health Score of the HFC should gradually reflect in the share price over horizon of a few months as the information is absorbed by active traders. If the Health Score is a forward-looking measure of the prospects of the HFCs, the YoY change in Health Score should explain future abnormal returns of their stocks.

8.55 Given the uncertainty on the date of release of annual reports of the HFC and the time required for the information to be reflected in future stock price movements/ returns of these firms, the price effect is estimated using the cumultaive return of an NBFC's stock from July to September (Q2) of each year from 2011 till 2018. The contemporaneous NIFTY 500 index returns is subtracted to compute the abnormal returns on a weekly basis. The cumulative abnormal return (Q2_CAR) is calculated by adding the weekly abnormal returns every week from July to September (~ 12 weeks in a year).

8.56 Q2_CAR is calculated in this way for all the five HFCs for each year from 2011-2018. Based on the year of listing of the five HFCs'in the sample, a set of 32 Q2_CAR values are obtained and the corresponding Health Scores of individual HFCs.

8.57 Figure 18 shows a scatter plot of Q2_ CAR and YoY Change in Health Scores of the HFC sector in the sample. The positively sloped trend line in the scatter plot confirms the ex-ante expectation that an improvement in the YoY Health Score should result in an increase in future short-term cumulative abnormal returns of the HFC stocks.

Figure 18: Cumulative Abnormal Returns (Q2_CAR) vs YoY Change in Health Score (HFCs)



Source: Based on data from Bloomberg

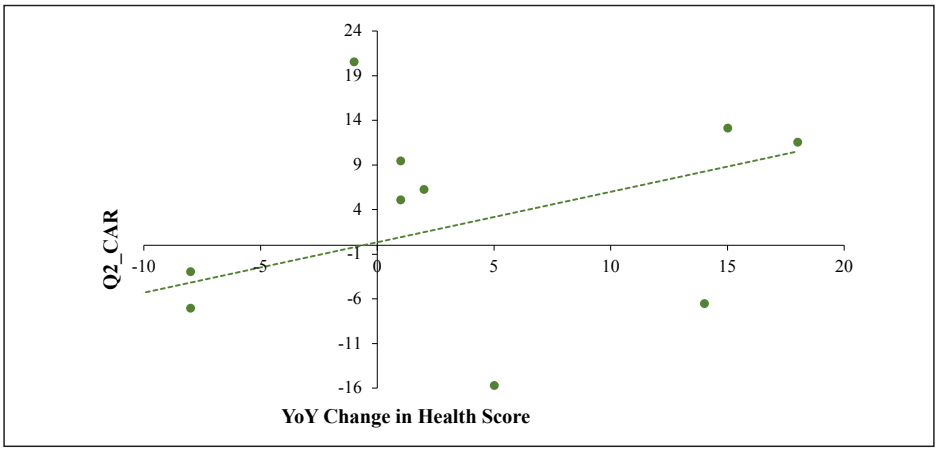
RETAIL-NBFCs

8.58 In this section an attempt is made to understand whether the year-over-year (YoY) change in Health Score of individual Retail-NBFCs has any predictive power on future abnormal stock returns of these firms. Q2_CAR for the fifteen Retail-NBFCs is computed in exactly the same way as done for HFCs (illustrated in sub-section 4.3.1) for each year from 2015-2019.

8.59 A set of Q2_CAR values and corresponding Health Scores for each of the fifteen Retail-NBFCs is obtained. The fifteen Retail-NBFCs are classified into three terciles comprising of large, medium and small NBFCs. An equally weighted portfolio of size-based NBFC stocks is constructed and the Q2_CAR is computed for the three size-based portfolios for each of the years from 2015 till 2019. Corresponding to each Q2_CAR value for the three portfolios, the average Health Score is computed of the constituent set of Retail-NBFCs.

8.60 Figure 19 shows a scatter plot of Q2_CAR and YoY Change in Health Scores of the three size-based portfolios. The positively sloped trend line in the scatter plot confirms the ex-ante expectation that an improvement in the YoY Health Score should result in an increase in future short-term cumulative abnormal returns of the three portfolios.

Figure 19: Cumulative Abnormal Returns (Q2_CAR) vs YoY Change in Health Score (Retail-NBFCs)



Source: Based on data from Bloomberg

POLICY IMPLICATIONS

8.61 The above analysis suggests that firms in the NBFC sector are susceptible to rollover risk when they rely too much on the on the short-term wholesale funding market for financing their investments in the real sector. The following policy initiatives can be employed to arrest financial fragility in the shadow banking system:

(i) Regulators can employ the Health Score methodology presented in this analysis to detect early warning signals of impending rollover risk problems in individual NBFCs. Downtrends in the Health Score can be used to trigger greater monitoring of an NBFC. Furthermore, an analysis of the trends in the components of the Health Score can shed light on the appropriate corrective measures that should be applied to reverse the adverse trends.

(ii) When faced with a dire liquidity crunch situation, as experienced recently, regulators can use the Health Score as a basis for optimally directing capital infusions to deserving NBFCs to ensure efficient allocation of scarce capital.

(iii) The above analysis can also be used to set prudential thresholds on the extent of wholesale funding that can be permitted for firms in the shadow banking system. Such a norm would be consistent with macroprudential regulations that are required to internalize the systemic risk concerns arising due to an individual NBFC's financing strategy. These norms could be countercyclically adjusted because the seeds of a liquidity crunch are sown during good times.

CHAPTER AT A GLANCE

- Motivated by the current liquidity crunch the NBFC sector, this chapter investigates the key drivers of Rollover Risk of the shadow banking system in India.
- The key drivers of Rollover Risk are: ALM Risk, Interconnectedness Risk and Financial and Operating Resilience of an NBFC.
- The over-dependence on short-term wholesale funding exacerbates Rollover Risk.
- Using a novel scoring methodology, Rollover Risk is quantified for a sample of HFCs and Retail-NBFCs (which are representative of their respective sectors) and thereby compute a diagnostic (Health Score).
- The Health Score for the HFC sector exhibited a declining trend post 2014. By the end of FY2019, the health of the overall sector had worsened considerably.
- The Health Score of the Retail-NBFC sector was consistently below par for the period 2014 till 2019.
- Larger Retail-NBFCs had higher Health Scores but among medium and small Retail-NBFCs, the medium size ones had a lower Health Score for the entire period from March 2014 till March 2019.
- The above findings suggest that the Health Score provides an early warning signal of impending liquidity problems.
- The analysis find significant evidence that equity markets react favourably to increase in Health Score of individual HFCs and Retail-NBFCs, thereby confirming the validity of Health Score as an early warning signal.

- Thus, the analysis provides a dynamic leading indicator of the financial health of firms in the NBFC sector, after incorporating the macroprudential externalities of their investment and financing decisions.
- Policy makers intending to revive the shadow banking channel of growth can use this analysis to efficiently allocate liquidity enhancements across firms (with different Health Scores) in the NBFC sector, thereby arresting financial fragility in a capital-efficient manner.

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09 CHAPTER

Privatization and Wealth Creation

Free enterprise has enabled the creative and the acquisitive urges of man to be given expression in a way which benefits all members of society. Let free enterprise fight back now, not for itself, but for all those who believe in freedom.

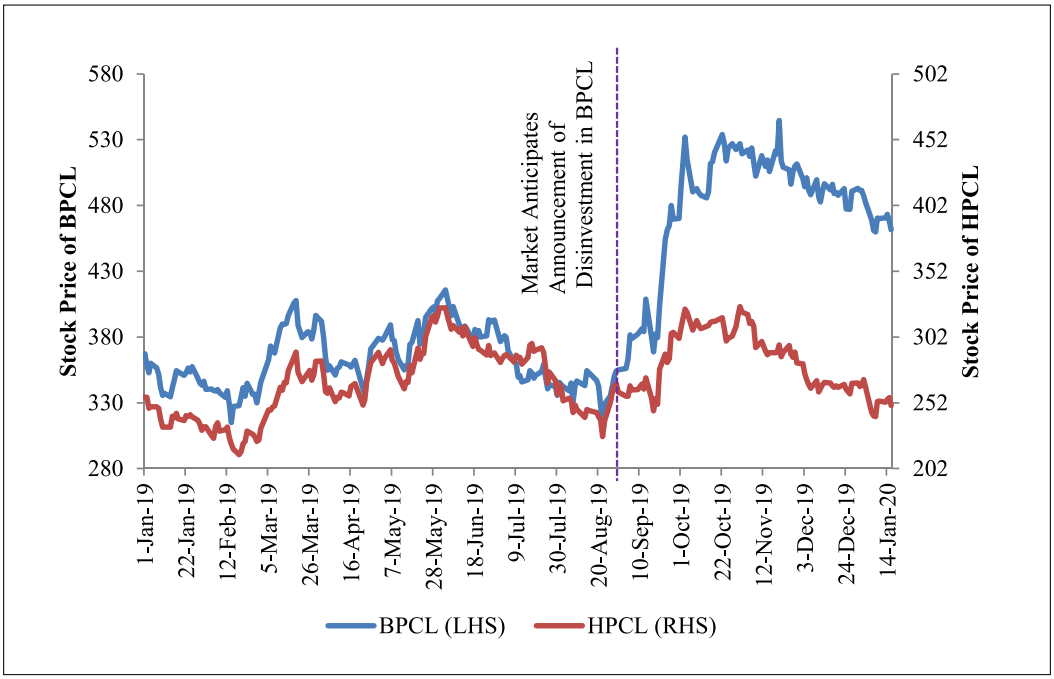
- Margaret Thatcher

The recent approval of strategic disinvestment in Bharat Petroleum Corporation Limited (BPCL) led to an increase in value of shareholders' equity of BPCL by ₹ 33,000 crore when compared to its peer Hindustan Petroleum Corporation Limited (HPCL)! This reflects an increase in the overall value from anticipated gains from consequent improvements in the efficiency of BPCL when compared to HPCL which will continue to be under Government control. This chapter, therefore, examines the realized efficiency gains from privatization in the Indian context. It analyses the before-after performance of 11 CPSEs that had undergone strategic disinvestment from 1999-2000 to 2003-04. To enable a careful comparison using a difference-in-difference methodology, these CPSEs are compared with their peers in the same industry group. The analysis shows that these privatized CPSEs, on an average, perform better post privatization than their peers in terms of their net worth, net profit, return on assets (ROA), return on equity (RoE), gross revenue, net profit margin, sales growth and gross profit per employee. More importantly, the ROA and net profit margin turned around from negative to positive surpassing that of the peer firms, which indicates that privatized CPSEs have been able to generate more wealth from the same resources. This improved performance holds true for each CPSE taken individually too. The analysis clearly affirms that privatization unlocks the potential of CPSEs to create wealth. The chapter, therefore, bolsters the case for aggressive disinvestment of CPSEs.

9.1 In November, 2019, India launched its biggest privatization drive in more than a decade. An "in-principle" approval was accorded to reduce Government of India's paid-up share capital below 51 per cent in select Central Public Sector Enterprises (CPSEs). Among the selected CPSEs, strategic disinvestment of Government's shareholding of 53.29 per cent in Bharat Petroleum Corporation Ltd (BPCL) was

approved. Figure 1 shows the share price of BPCL when compared to its peer Hindustan Petroleum Corporation Limited (HPCL). The Survey focuses on the difference in BPCL and HPCL prices from September 2019 onwards when the first news of BPCL's privatization appeared.[1] The comparison of BPCL with HPCL ensures that the effect of any broad movements in the stock market or in the oil industry is netted out. Figure 1 shows that the stock prices of HPCL and BPCL moved synchronously till September. However, the divergence in their stock prices started post the announcement of BPCL's disinvestment. The increase in the stock price of BPCL when compared to the change in the price of HPCL over the same period translates into an increase in the value of shareholders' equity of BPCL of around ₹ 33,000 crore. As there was no reported change in the values of other stakeholders, including employees and lenders, during this time, the ₹ 33,000 crore increase translates into an unambiguous increase in the BPCL's overall firm value, and thereby an increase in national wealth by the same amount.

Figure 1: Comparison of Stock Prices of BPCL and HPCL



Source: Bombay Stock Exchange (BSE)

9.2 As stock markets reflect the current value of future cash flows of a firm, the increase in value reflected anticipated gains from improvements in the efficiency of BPCL when compared to HPCL, which will continue to be under Government control. Strategic disinvestment is guided by the basic economic principle that Government should discontinue its engagement in manufacturing/ producing goods and services in sectors where competitive markets have come of age. Such entities would most likely perform better in the private hands due to various factors e.g. technology up-gradation and efficient management practices; and would thus create wealth and add to the economic growth of the country. Therefore, the increase in BPCL's value when compared to HPCL reflects

[1] https://www.livemint.com/market/mark-to-market/why-privatization-of-bpcl-will-be-a-good-thing-for-all-stakeholders-1568309050726.html

these anticipated gains. A large literature in financial economics spanning a large number of countries establishes very clearly that privatization brings in significant efficiency gains from the sources mentioned above (see Box 2). The experience of the UK under the leadership of Ms. Margaret Thatcher is particularly noteworthy in this context (see Box 1).

Box 1: UK Model of Privatization

The British privatization programme started in 1980 under the stewardship of then Prime Minister of United Kingdom (UK), Margaret Thatcher. In the initial phase (1979-81), the focus was on privatizing already profitable entities to raise revenues and thus reduce public-sector borrowing like in British Aerospace and Cable & Wireless. In the next phase (1982-86), focus shifted to privatizing core utilities and the government sold off Jaguar, British Telecom, the remainder of Cable & Wireless and British Aerospace, Britoil and British Gas. In the most aggressive phase (1987-91), British Steel, British Petroleum, Rolls Royce, British Airways, water and electricity were sold.

The dominant method was through an initial public offering (IPO) of all or a portion of company shares. British Aerospace was privatized in 1981 with an IPO of 52 per cent of its shares, with remaining shares unloaded in later years. The British Telecom (BT) IPO in 1984 was a mass share offering, and more than two million citizens participated in the largest share offering in world history to that date. The OECD (2003: 24) called the BT privatization "the harbinger of the launch of large-scale privatizations" internationally. In subsequent years, the British government proceeded with large public share offerings in British Gas, British Steel, electric utilities, and other companies. A second privatization method is a direct sale or trade sale, which involves the sale of a company to an existing private company through negotiations or competitive bidding. For example, the British government sold Rover automobiles and Royal Ordnance to British Aerospace. Other privatizations through direct sale included British Shipbuilders, Sealink Ferries, and The Tote. A third privatization method is an employee or management buyout. Britain's National Freight Corporation was sold to company employees in 1982, and London's bus services were sold to company managers and employees in 1994.

In most cases, British privatizations went hand-in-hand with reforms of regulatory structures. The government understood that privatization should be combined with open competition when possible. British Telecom, for example, was split from the post office and set up as an arms-length government corporation before shares were sold to the public. Then, over time, the government opened BT up to competition. The British government opened up intercity bus services to competition beginning in 1980. That move was followed by the privatization of state-owned bus lines, such as National Express. Numerous British seaports were privatized during the 1980s, and the government also reformed labour union laws that had stifled performance in the industry. Florio (2004) in his extensive research on UK privatization has found that the divestiture benefited shareholders and employee (especially managers), small impact on firms and other employees. Sector specific studies (Affuso, Angeriz, & Pollitt, 2009) found that privatization in train companies in UK was associated with increased efficiency. Parker (2004) found that the privatization facilitated creation of competitive market.

Box 2: Evidence on the Benefits of Privatization

Brown et al. (2015) found that the average privatization effects are estimated to be significantly positive, about 5-12 per cent, but these vary across countries and time periods. There is evidence of significant positive impacts for better quality firms and in better macroeconomic and institutional

environments. Chibber and Gupta (2017) showed that disinvestment has a very strong positive effect on labour productivity and overall efficiency of PSUs in India. O' Toole et al. (2016) in their study from Vietnam find that privatization improves capital allocation and economic efficiency. Chen et al. (2008) showed that there is a significant improvement in performance of Chinese companies after transfer of ownership control, largely due to cost reductions but only when the new owner is a non-state entity.

Subramanian, K. and Megginson, W (2018) found that stringent employment protection laws (EPL) are a deterrent to privatization, and the effect of EPL on privatization is disproportionately greater in industries with higher relocation rates and in less productive industries. Megginson and Netter (2001), Boardman and Vining (1989), La Porta and Lopez de Silanes (1999) found that in the post-privatization period, firms show significantly higher profitability, higher efficiency, generally higher investment levels, higher output, higher dividends, and lower leverage post privatization. According to Gupta (2005), both the levels and growth rates of profitability, labour productivity, and investment spending improve significantly following partial privatization. Majumdar (1996) documented that efficiency levels are significantly higher than state owned enterprises which show efficiency only during efficiency drives only to decline afterwards based on a study of Indian firms over the period 1973-89.

Borisova and Megginson (2010) indicated that on an average across firms, a one percentage point decrease in government ownership is associated with an increase in the credit spread, used as a proxy for the cost of debt, by three-quarters of a basis point. According to Li et al. (2016), profitability of newly privatized companies increases significantly (by 2-3 percentage points) after adjusting for negative listing effect. Capital spending and sales growth also improve significantly based on triple difference-in-difference tests. Wolf and Pollitt (2008) showed that privatization is associated with significant and comprehensive performance improvements over 7-year period (−3 to +3 years). Oum et al. (2006) provides strong evidence that airports with majority government ownership and those with multi-level government ownership are significantly less efficient than those with private majority ownership. Increased customer satisfaction comes in form of reduction in tariffs, increased data usage etc. in the telecommunication sector; increased penetration of banking services in the rural areas; and reduced air-fares comparable to high-end consumers in the railways.

9.3 To examine the efficiency gains from privatization and whether the purported benefits of privatization have indeed manifested in the Indian context, this chapter analyses the before-after performance of 11 CPSEs that had undergone strategic disinvestment from 1999-2000 to 2003-04. To provide a historical context for the current disinvestment drive, Box 3 summarizes the evolution of disinvestment policy in India.

Box 3: Evolution of Disinvestment Policy in India

The liberalization reforms undertaken in 1991 ushered in an increased demand for privatization/ disinvestment of PSUs. In the initial phase, this was done through the sale of minority stake in bundles through auction. This was followed by separate sale for each company in the following years, a method popularly adopted till 1999-2000. India adopted strategic sale as a policy measure in 1999-2000 with sale of substantial portion of Government shareholding in identified Central PSEs (CPSEs) up to 50 per cent or more, along with transfer of management control. This was started with the sale of 74 per cent of the Government's equity in Modern Food Industries Limited (MFIL). Thereafter, 12 PSUs (including four subsidiaries of PSUs), and 17 hotels of Indian Tourism Development Corporation (ITDC) were sold to private investors along with transfer of management control by the Government.

In addition, 33.58 per cent shareholding of Indo Bright Petroleum (IBP) strategically sold to Indian Oil Corporation (IOC). IBP, however, remained a PSU after this strategic sale, since IOC held 53.58 per cent of its paid-up equity. Another major shift in disinvestment policy was made in 2004-05 when it was decided that the government may "dilute its equity and raise resources to meet the social needs of the people", a distinct departure from strategic sales.

Strategic Sales have got a renewed push after 2014. During 2016-17 to 2018-19, on average, strategic sales accounted for around 28.2 per cent of total proceeds from disinvestment. Department of Investment and Public Asset Management (DIPAM) has laid down comprehensive guidelines on "Capital Restructuring of CPSEs" in May, 2016 by addressing various aspects, such as, payment of dividend, buyback of shares, issues of bonus shares and splitting of shares. The Government has been following an active policy on disinvestment in CPSEs through the various modes:

i. Disinvestment through minority stake sale in listed CPSEs to achieve minimum public shareholding norms of 25 per cent. While pursuing disinvestment of CPSEs, the Government will retain majority shareholding, i.e., at least 51 per cent and management control of the Public Sector Undertakings;

ii. Listing of CPSEs to facilitate people's ownership and improve the efficiency of companies through accountability to its stake holders - As many as 57 PSUs are now listed with total market capitalisation of over ₹ 13 lakh crore.

iii. Strategic Disinvestment;

iv. Buy-back of shares by large PSUs having huge surplus;

v. Merger and acquisitions among PSUs in the same sector;

vi. Launch of exchange traded funds (ETFs) - an equity instrument that tracks a particular index. The CPSE ETF is made up of equity investments in India's major public sector companies like ONGC, REC, Coal India, Container Corp, Oil India, Power Finance, GAIL, BEL, EIL, Indian Oil and NTPC; and

vii. Monetization of select assets of CPSEs to improve their balance sheet/reduce their debts and to meet part of their capital expenditure requirements.

NITI Aayog has been mandated to identify PSUs for strategic disinvestment. For this purpose, NITI Aayog has classified PSUs into "high priority" and "low priority", based on (a) National Security (b) Sovereign functions at arm's length, and (c) Market Imperfections and Public Purpose. The PSUs falling under "low priority" are covered for strategic disinvestment. To facilitate quick decision making, powers to decide the following have been delegated to an Alternative Mechanism in all the cases of Strategic Disinvestment of CPSEs where Cabinet Committee on Economic Affairs (CCEA) has given 'in principle' approval for strategic disinvestment:

(i) The quantum of shares to be transacted, mode of sale and final pricing of the transaction or lay down the principles/ guidelines for such pricing; and the selection of strategic partner/ buyer; terms and conditions of sale; and

(ii) To decide on the proposals of Core Group of Disinvestment (CGD) with regard the timing, price, terms & conditions of sale, and any other related issue to the transaction.

On November 20, 2019, the government announced that full management control will be ceded to buyers of Bharat Petroleum Corporation Ltd. (BPCL), Shipping Corporation of India (SCI) and Container Corporation of India Ltd (CONCOR). On January 8, 2020, strategic disinvestment was approved for Minerals & Metals Trading Corporation Limited (MMTC), National Mineral Development Corporation (NMDC), MECON and Bharat Heavy Electricals Ltd. (BHEL).

IMPACT OF PRIVATIZATION: A FIRM LEVEL ANALYSIS

9.4 To assess the impact of strategic disinvestment/privatization on performance of select CPSEs before and after privatization, 11 CPSEs are studied, that had undergone strategic disinvestment from 1999-2000 to 2003-04 for which data is available both before and after privatization.[2] To enable careful comparison using a difference-in-difference methodology, these CPSEs have been compared with their peers in the same industry group (Table 1). Box 4 gives an explanation of the difference-in-difference methodology.

Table 1: List of Selected CPSEs and Peers

Industry Group	Privatized CPSE	Peers
Metals-Non Ferrous	Hindustan Zinc	Tinplate Co. Of India, Hindustan Copper, Vedanta
Aluminium& Aluminium Products	Bharat Aluminium Company Ltd. (BALCO)	NALCO, Hindalco, PG Foils
Computers, peripherals & storage devices	Computer Management Corporation Ltd. (CMC)	Moserbear, Zenith Computers, Izmo Limited
Automobile	Maruti Suzuki	Ashok Leyland Ltd, Tata Motors., Mahindra & Mahindra Ltd
Petrochemicals	Indian Petrochemicals Corporation Ltd. (IPCL)	Chemplast Sanmar, Bhansali Engineering Polymers, Ineos Styrolution India Ltd
Telecommunication Services	Tata Communications	Tata Teleservices, MTNL, GTL infra
Heavy Engineering	Lagan Engineering	Gujarat Toolroom, Gujarat Textronics, Integra Engineering India Ltd.

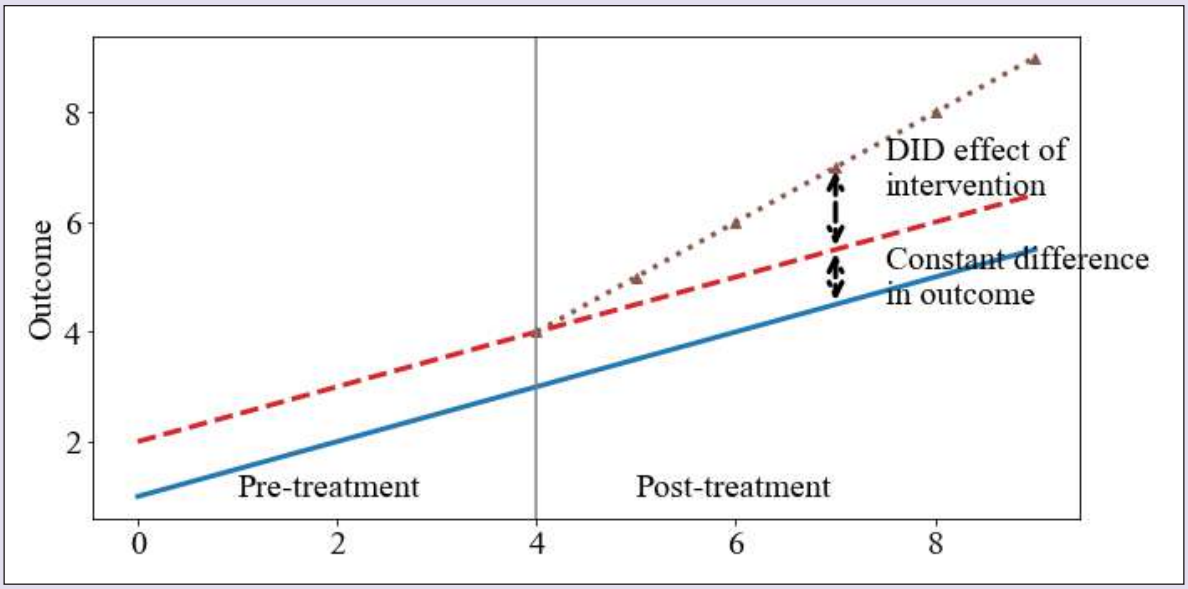
[2] Of the 30 CPSEs that were privatised from 1999-2000 to 2003-04, 18 were subsidiaries of India Tourism Development Corporation (ITDC) and 1 was a subsidiary of Hotel Corporation of India (HCI). For the purpose of our analysis, we require information on all financial performance indicators of each disinvested company over a period of 10 years pre and post privatization. However, in the case of disinvested subsidiaries of ITDC (18) and HCI (1), the financial statements are subsumed in the consolidated financial statements of the parent companies. Post disinvestment, these subsidiaries are attached to buyer companies and the financial statements are again presented as consolidated statements of the new parent companies. Due to this challenge, these subsidiaries could not be included in our analysis. Indo Bright Petroleum (IBP) Private Ltd. was merged with Indian Oil Corp (IOC), which is a government enterprise and hence is not considered for the analysis.

Medium & Light Engineering	Jessop &Co.	Elgi Ultra, Disa India, Alfa Laval, Filtron Engineers
Bakery Products	Modern Food India Ltd. (MFIL)	Britannia
Wires and Cables	Hindustan Teleprinters (HTL)	Anamika Conductors, Delton Cables, Fort Gloster Ltd
Chemicals and Fertilizers	Paradeep Phosphates	GSFC, Fertilizers & Chemicals-Travancore, Godavari Chemicals and Fertilizers
Total	**11**	**32**

Source: Survey calculations based on data from CMIE Prowess

Box 4: Difference-in-Differences Methodology

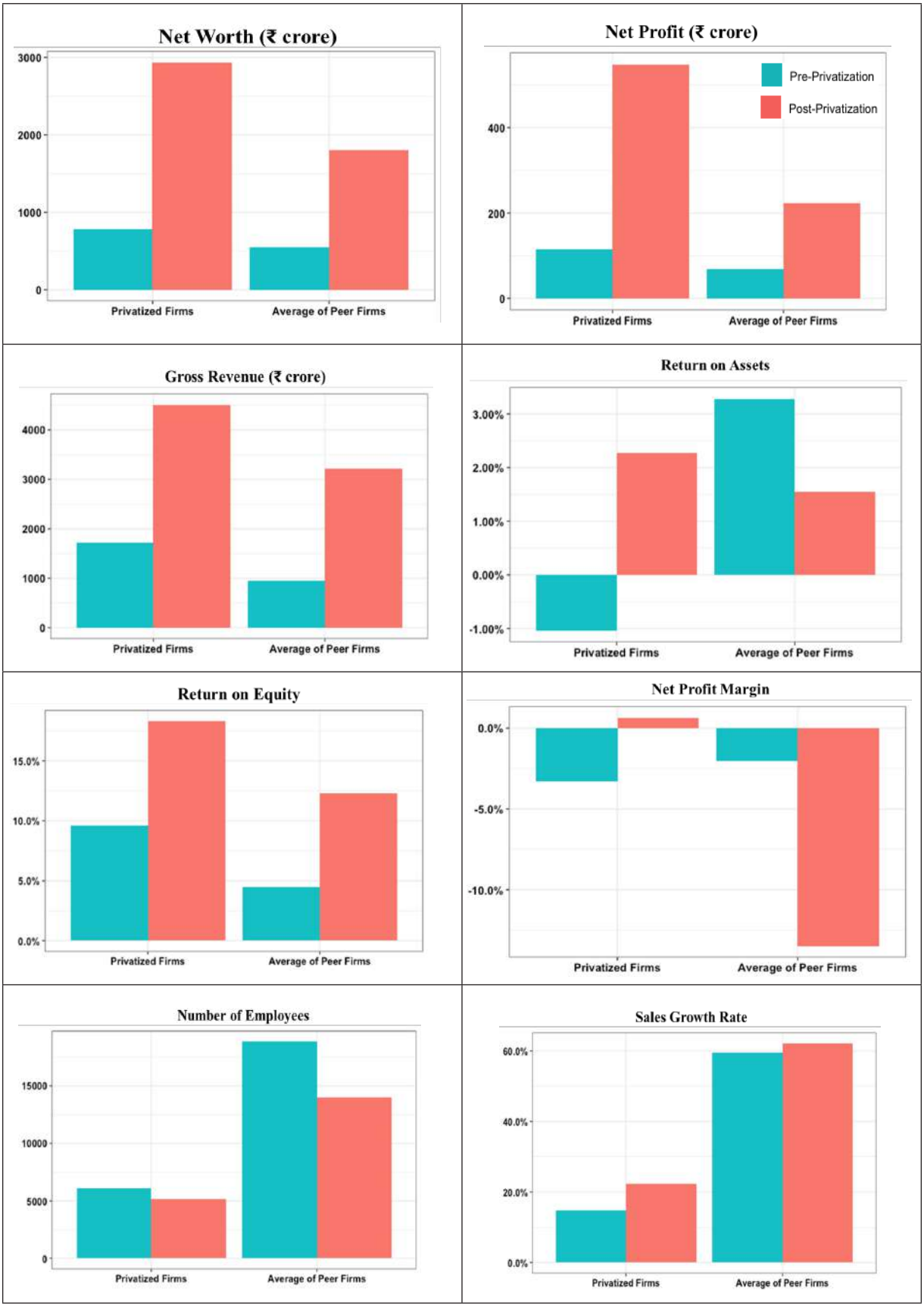
Difference-in-differences (DiD) is a statistical technique used to estimate the effect of a specific intervention or treatment (such as a passage of law, enactment of policy, or large-scale program implementation). The technique compares the changes in outcomes over time between a population that is affected by the specific intervention (the treatment group) and a population that is not (the control group). DiD is typically used to mitigate the possibility of any extraneous factors affecting the estimated impact of an intervention. This is accomplished by differencing the estimated impact of the treatment on the outcome in the treatment group as compared to the control group.

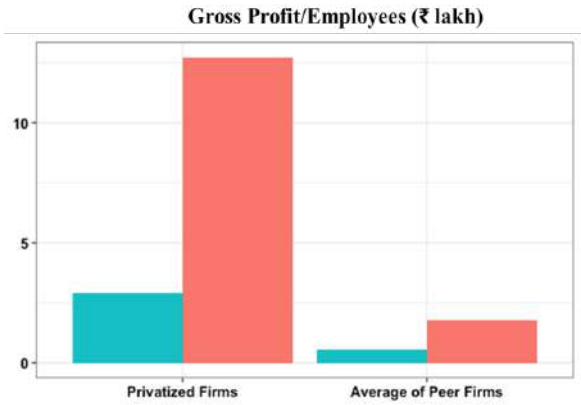


9.5 Figure 2 shows the average performance of these CPSEs using various financial indicators as compared to their peers for ten years before and after the year of privatization of the specific CPSE.[3] It is clear from Figure 2 that the performance of privatized firms, after controlling for other confounding factors using the difference in performance of peer firms over the same period, improves significantly following privatization.

[3] Given data limitations, the financial data of MFIL and IPCL have been taken for less than 10 years after their disinvestment.

Figure 2: Comparison of Financial Indicators of Privatized Firms vis-à-vis Peers





Source: Survey calculations based on data from CMIE Prowess

9.6 The differences for each metric are described in detail below.

i) *Net worth:* The net worth of a company is what it owes its equity shareholders. This consists of equity capital put in by shareholders, profits generated and retained as reserves by the company. On an average, the net worth of privatized firms increased from ₹ 700 crore before privatization to ₹ 2992 crore after privatization, signalling significant improvement in financial health and increased wealth creation for the shareholders (Table 2). Difference in difference (DiD) analysis attributes an increase of ₹ 1040.38 crore in net worth due to privatization.

Table 2: Net Worth (₹ Crore)

	Name of privatized CPSE	Pre average	Post average	Post minus Pre
1	BALCO	656.25	1921.60	1265.35
2	CMC	35.28	275.41	240.13
3	Maruti	1426.02	8191.98	6765.96
4	Jessop	-212.07	77.19	289.26
5	Lagan Engineering	5.15	6.30	1.15
6	IPCL	2258.52	3106.69	848.17
7	HTL	33.35	-145.98	-179.33
8	Hindustan Zinc	818.06	12874.57	12056.51
9	Modern Food India	10.63	-79.34	-89.97
10	Paradeep Phosphates	-3.98	214.12	218.1
11	Tata Communications	2683.82	6468.49	3784.67
12	**Combined average of all privatized firms**	701.00	2991.91	2290.91
13	**Combined average of peer firms**	551.61	1802.14	1250.53
14	**Privatized firm minus peer firms**	149.39	1189.77	**DiD = 1040.38**

Source: Survey calculations based on data from CMIE Prowess

ii) *Net Profit:* This is the net profit of the company after tax. An increase in net profit indicates greater realizations from the company after incurring all the operational expenses. On an average, the net profit of privatized firms increased from ₹ 100 crore before privatization to ₹ 555 after privatization compared to the peer firms (Table 3 below). DiD analysis attributes an increase of ₹ 300.27 crore in net profit due to privatization.

Table 3: Net Profit (₹ Crore)

Name of privatized CPSE	Pre average	Post average	Post minus Pre
1 BALCO	45.47	348.94	303.47
2 CMC	6.77	73.22	66.45
3 Maruti	205.28	1321.99	1116.71
4 Jessop	-36.44	7.87	44.31
5 Lagan Engineering	-0.49	0.18	0.67
6 IPCL	238.48	606.42	367.94
7 HTL	3.16	-43.84	-47
8 Hindustan Zinc	72.47	3237.04	3164.57
9 Modern Food India	-1.2	-18.4	-17.2
10 Paradeep Phosphates	-53.93	114.83	168.76
11 Tata Communications	620.34	452.25	-168.09
12 **Combined average of all privatized firms**	100	554.6	454.6
13 **Combined average of peer firms**	68.51	222.84	154.33
14 Privatized firm minus peer firms	**31.49**	**331.76**	**DiD=300.27**

Source: Survey calculations based on data from CMIE Prowess

iii) *Gross Revenue:* On an average, the gross revenue of privatized firms increased from ₹ 1560 crore to before privatization to ₹ 4653 crore after privatization, signalling increase in income from sales of goods and other non-financial activities (Table 4). DiD analysis attributes an increase of ₹ 827.65 crore in gross revenue due to privatization.

iv) *Return on assets (ROA):* ROA captures the ratio of profits after taxes (PAT) to the total average assets of the company, expressed in percentage terms. On an average, ROA for the privatized firms have turned around from (-)1.04 per cent to 2.27 per cent surpassing the peer firms which indicates that privatized firms have been able to use their resources more productively (Table 5). DiD analysis attributes an increase of 5.04 per cent in ROA due to privatization.

Table 4: Gross Revenue (₹ Crore)

Name of privatized CPSE	Pre average	Post average	Post minus Pre
1 BALCO	747.84	2858.48	2110.64
2 CMC	261.55	792.88	531.33
3 Maruti	6013.28	22958.8	16945.52
4 Jessop	79.76	178.33	98.57
5 Lagan Engineering	6.52	12.87	6.35
6 IPCL	3791.56	9341.25	5549.69
7 HTL	141.21	126.89	-14.32
8 Hindustan Zinc	999.16	7923.77	6924.61
9 Modern Food India	77.21	192.6	115.39
10 Paradeep Phosphates	824.52	2692.56	1868.04
11 Tata Communications	4219.51	4106.69	-112.82
12 **Combined average of all privatized firms**	1560.19	4653.19	3093
13 **Combined average of peer firms**	945.42	3210.77	2265.35
14 **Privatized firm minus peer firms**	614.77	1442.42	**DiD=827.65**

Source: Survey calculations based on data from CMIE Prowess

Table 5: Return on Assets (per cent)

Name of privatized CPSE	Pre average	Post average	Post minus Pre
1 BALCO	4.62	6.84	2.22
2 CMC	-0.89	8.7	9.59
3 Maruti	8.24	10.29	2.05
4 Jessop	-35.95	4.34	40.29
5 Lagan Engineering	-2.19	0.78	2.97
6 IPCL	4.34	6.74	2.4
7 HTL	-3.12	-24.17	-21.05
8 Hindustan Zinc	5.29	26.7	21.41
9 Modern Food India	3.35	-39.5	-42.85
10 Paradeep Phosphates	-8.78	2.57	11.35

11 Tata Communications	13.4	4.03	-9.37
12 **Combined average of all privatized firms**	-1.04	2.27	3.31
13 **Combined average of peer firms**	3.28	1.55	-1.73
14 **Privatized firm minus peer firms**	-4.32	0.72	**DiD=5.04**

Source: Survey calculations based on data from CMIE Prowess

v) *Return on equity (ROE):* Return on equity (ROE) is profit after tax (PAT) as percentage of average net worth. On an average, the ROE of privatized firms increased from 9.6 per cent before privatization to 18.3 per cent after privatization, reflecting increase in firm's efficiency at generating profits from every unit of shareholders' equity. For the average peer group, the increase in ROE over pre privatization period was 7.8 per cent (Table 6). DiD analysis attributes an increase of 0.89 per cent in ROE due to privatization.

Table 6: Return on Equity (per cent)

Name of privatized CPSE	Pre average	Post average	Post minus Pre
1 BALCO	6.1	16.9	10.8
2 CMC	11.2	26.6	15.4
3 Maruti	19	16.6	-2.4
4 Jessop	5	12.9	7.9
5 Lagan Engineering	-4.5	1.4	5.9
6 IPCL	11.2	17.9	6.7
7 HTL	9.8	2.3	-7.5
8 Hindustan Zinc	9.2	28.8	19.6
9 Modern Food India	11.4	27.8	16.4
10 Paradeep Phosphates	3.5	-0.1	-3.6
11 Tata Communications	-44.8	7.3	52.1
12 **Combined average of all privatized firms**	9.6	18.3	8.7
13 **Combined average of peer firms**	4.5	12.31	7.81
14 **Privatized firm minus peer firms**	5.1	5.99	**DiD=0.89**

Source: Survey calculations based on data from CMIE Prowess

vi) *Net profit margin:* Net profit margin of a company is PAT as percentage of total income. On an average, the net profit margin of privatized firms increased from (-3.24) per cent before privatization to 0.65 per cent after privatization, reflecting that out of a rupee that is generated as income, the share of after-tax profit in the income increases. For the average peer group, the net profit margin has fallen to (-13.4) per cent in the post privatization period from (-2.03) per cent in the pre privatization period (Table 7). DiD analysis attributes an increase of 15.26 per cent in net profit margin due to privatization.

Table 7: Net profit margin (per cent)

Name of privatized CPSE	Pre average	Post average	Post minus Pre
1 BALCO	5.8	10.1	4.3
2 CMC	1.9	9.1	7.2
3 Maruti	6.5	34.3	27.8
4 Jessop	2.9	-66.9	-69.8
5 Lagan Engineering	6.7	5.9	-0.8
6 IPCL	-65	5.8	70.8
7 HTL	-3.1	-0.2	2.9
8 Hindustan Zinc	3.7	5.9	2.2
9 Modern Food India	-2.1	-9.8	-7.7
10 Paradeep Phosphates	-6.6	1.8	8.4
11 Tata Communications	13.7	11.1	-2.6
12 **Combined average of all privatized firms**	-3.24	0.65	3.89
13 **Combined average of peer firms**	-2.03	-13.4	-11.37
14 **Privatized firm minus peer firms**	-1.21	14.05	**DiD= 15.26**

Source: Survey calculations based on data from CMIE Prowess

vii) *Sales growth:* On an average, growth rate of sales of privatized firms increased from 14.7 per cent before privatization to 22.3 per cent after privatization (Table 8). DiD analysis attributes 4.9 per cent increase in sales growth due to privatization.

viii) *Gross profit per employee:* Figure 2 shows that on average, the number of employees has declined for both set of firms, but the reduction is lesser in magnitude as compared to its peers. Gross profit per employee has been estimated for only 8 out of the selected eleven CPSEs as per the availability of relevant data. DiD analysis attributes an increase of ₹ 21.34 lakh in gross profit per employee due to privatization (Table 9).

Table 8: Sales growth y-o-y (per cent)

	Name of privatized CPSE	Pre average	Post average	Post minus Pre
1	BALCO	7.87	22.25	14.38
2	CMC	20.19	4.66	-15.53
3	Maruti	20.26	16.18	-4.08
4	Jessop	-2.45	17.26	19.71
5	Lagan Engineering	0.22	17.05	16.83
6	IPCL	14.33	23.90	9.58
7	HTL	19.29	82.10	62.81
8	Hindustan Zinc	10.44	28.34	17.90
9	Modern Food India	18.36	4.02	-14.34
10	Paradeep Phosphates	6.41	32.39	25.99
11	Tata Communications	46.58	-2.94	-49.52
12	**Combined average of all privatized firms**	14.68	22.29	7.61
13	**Combined average of peer firms**	59.37	62.09	2.72
14	**Privatized firm minus peer firms**	-44.69	-39.80	**DiD =4.89**

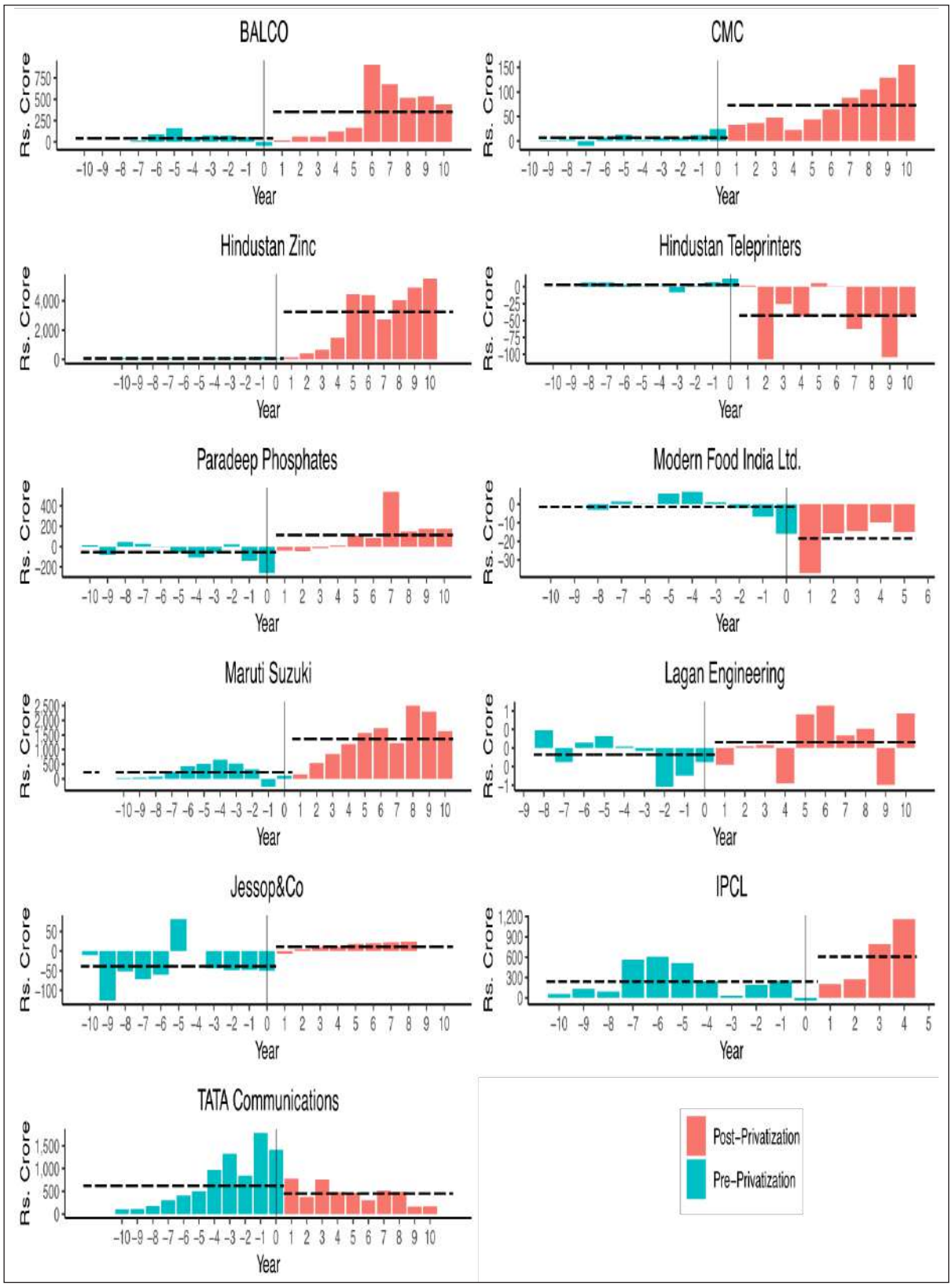
Table 9: Gross profit/employee (₹ lakh)

	Name of privatized CPSE	Pre average	Post average	Post minus Pre
1	BALCO	0.46	10.87	10.42
2	CMC	0.17	1.49	1.32
3	Maruti	4.75	21.01	16.26
4	Jessop	-1.06	0.77	1.82
5	IPCL	1.89	4.14	2.26
6	Hindustan Zinc	0.26	166.66	166.40
7	Paradeep Phosphates	-6.02	-14.96	-8.94
8	Tata Communications	22.28	13.42	-8.85
9	**Combined average of all privatized firms**	2.84	25.43	22.58
10	**Combined average of peer firms**	0.54	1.78	1.24
11	**Privatized firm minus peer firms**	2.30	23.65	**DiD= 21.34**

Source: Survey calculations based on data from CMIE Prowess

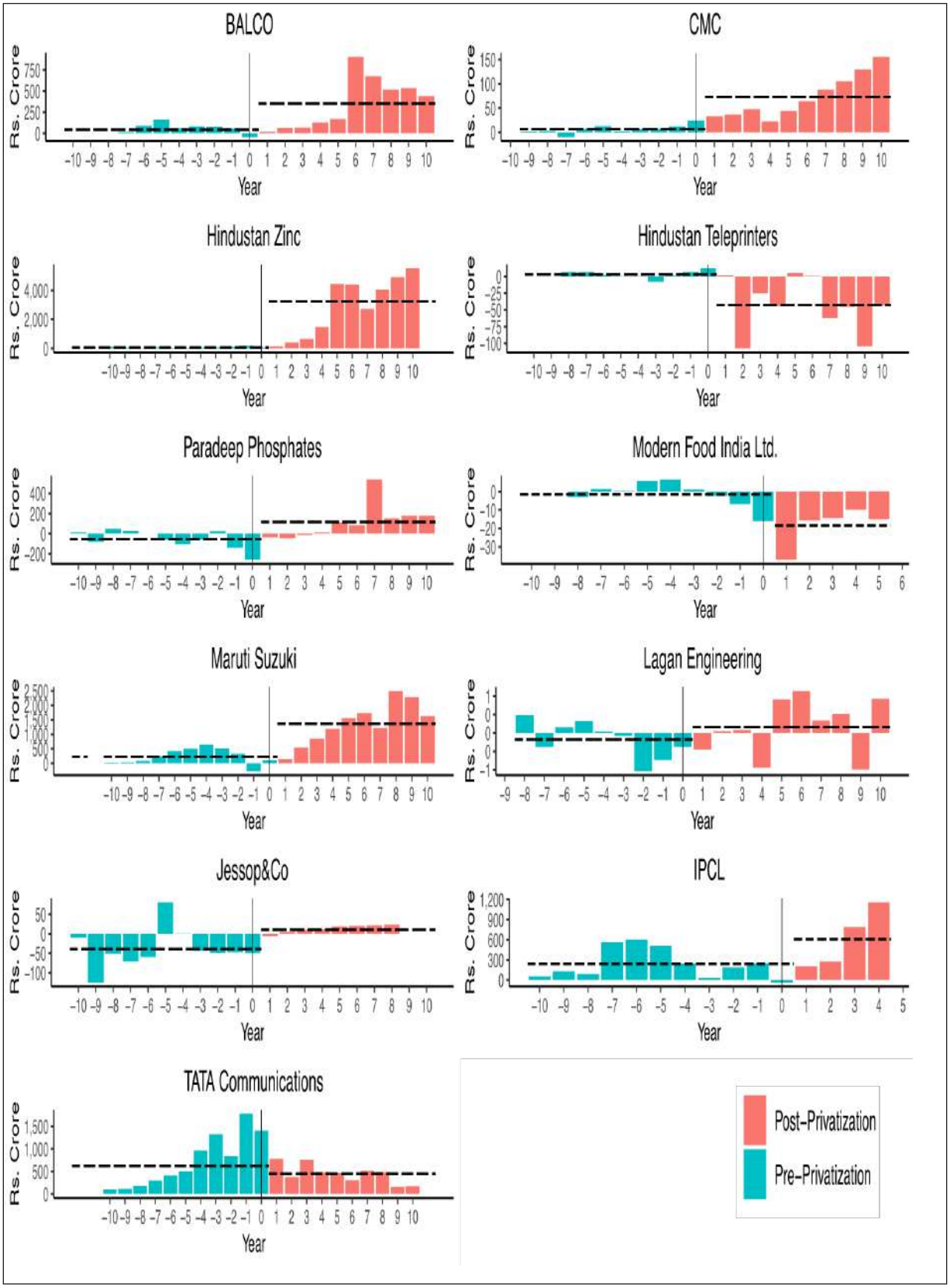
9.7 The Survey also examines the change in performance for each individual CPSE. Figures 3 to 10 show the movement in these major financial indicators for each of the firm ten years before and after the year of strategic disinvestment/privatization. Taken individually, each privatized CPSE witnessed improvement in net worth, net profit, gross revenue, net profit margin, sales growth in the post privatization period compared to pre privatization period (except for Hindustan Teleprinters, MFIL and Tata Communications in the case of few indicators).

Figure 3: Net worth of privatized firms (pre and post privatization)



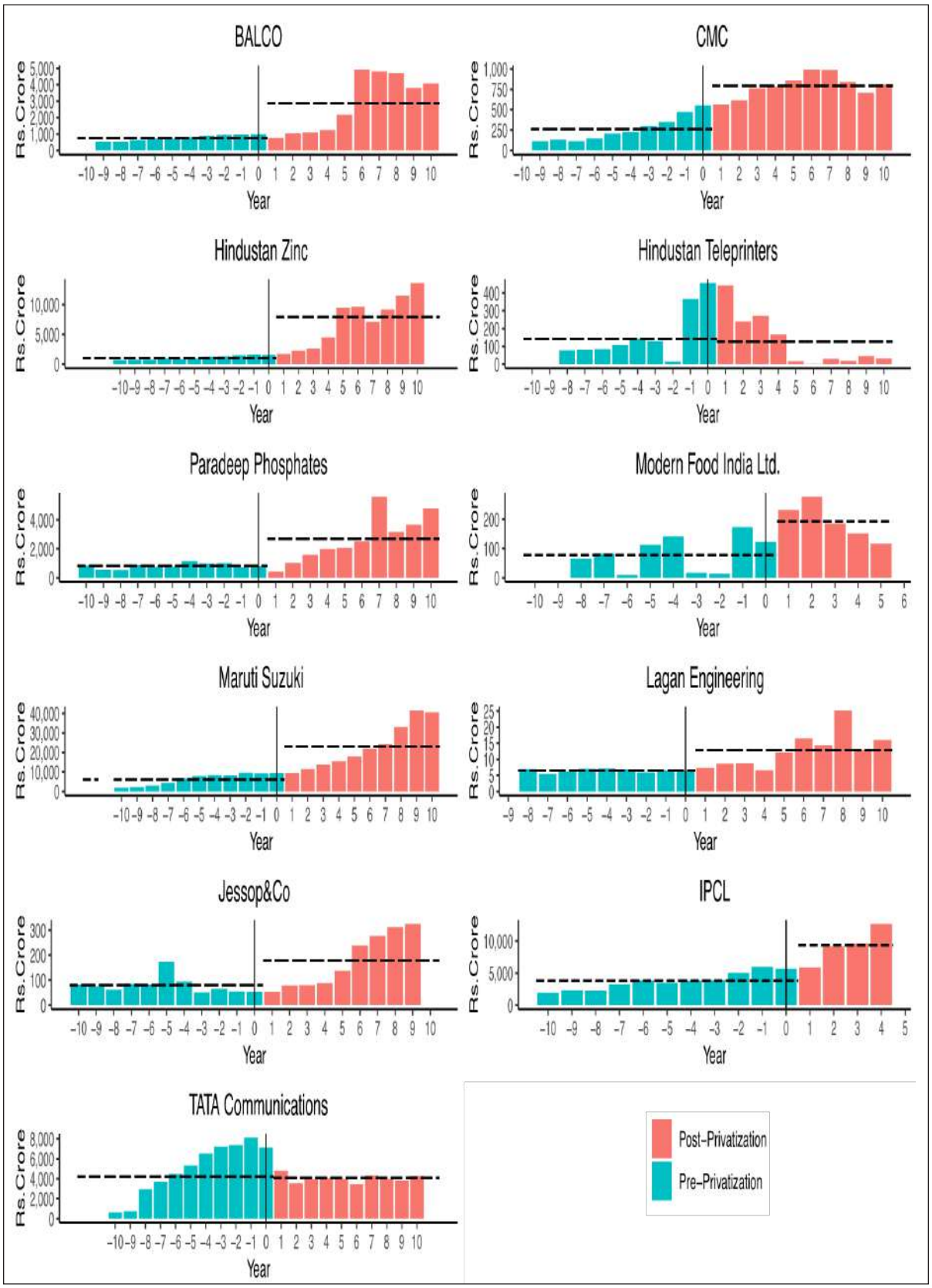
Source: Survey calculations based on data available from CMIE Prowess
Note: 0 denotes the year of privatization

Figure 4: Net Profit of privatized firms (pre and post privatization)



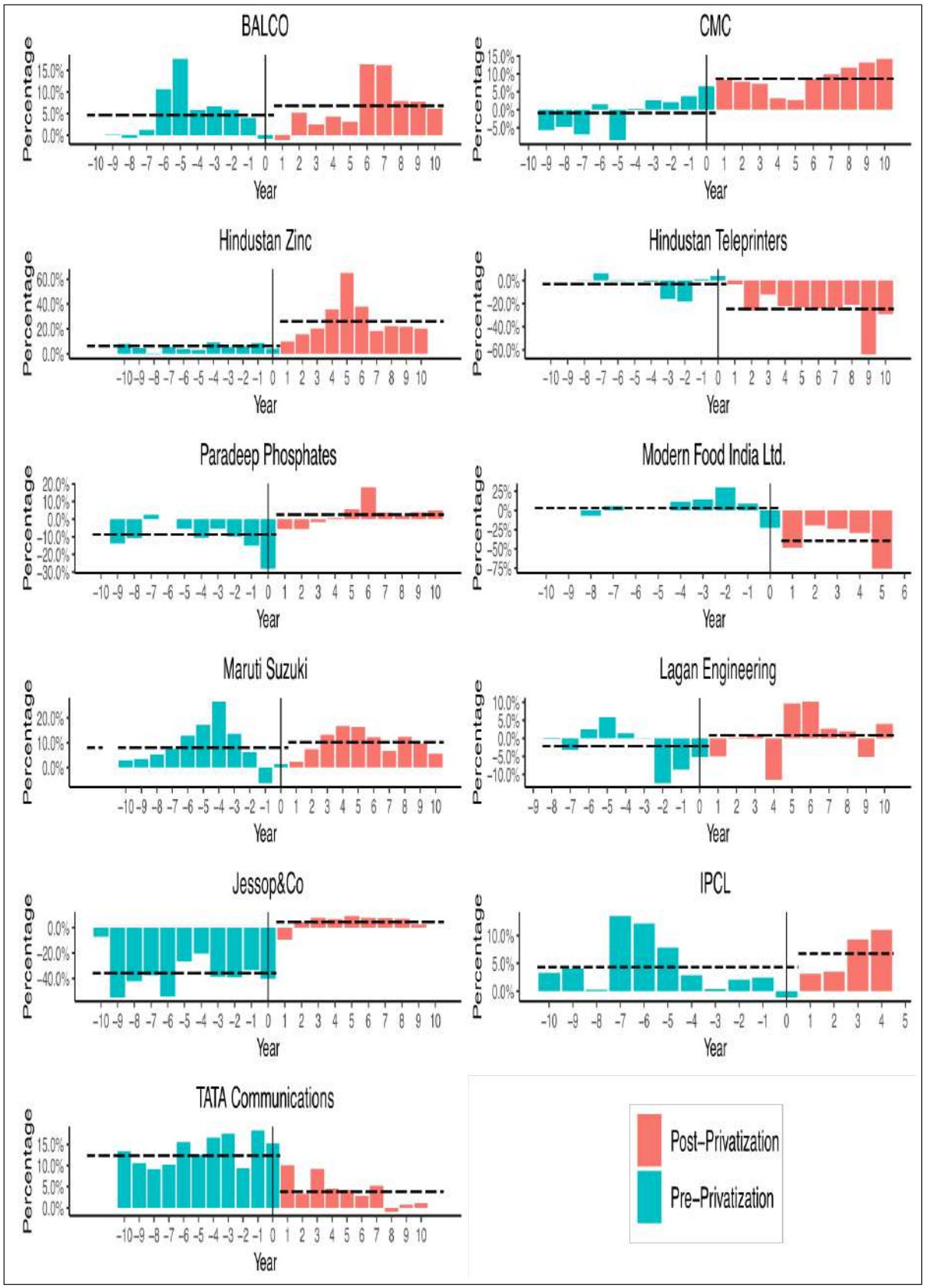
Source: Survey calculations based on data available from CMIE Prowess
Note: 0 denotes the year of privatization

Figure 5: Gross Revenue of privatized firms (pre and post privatization)



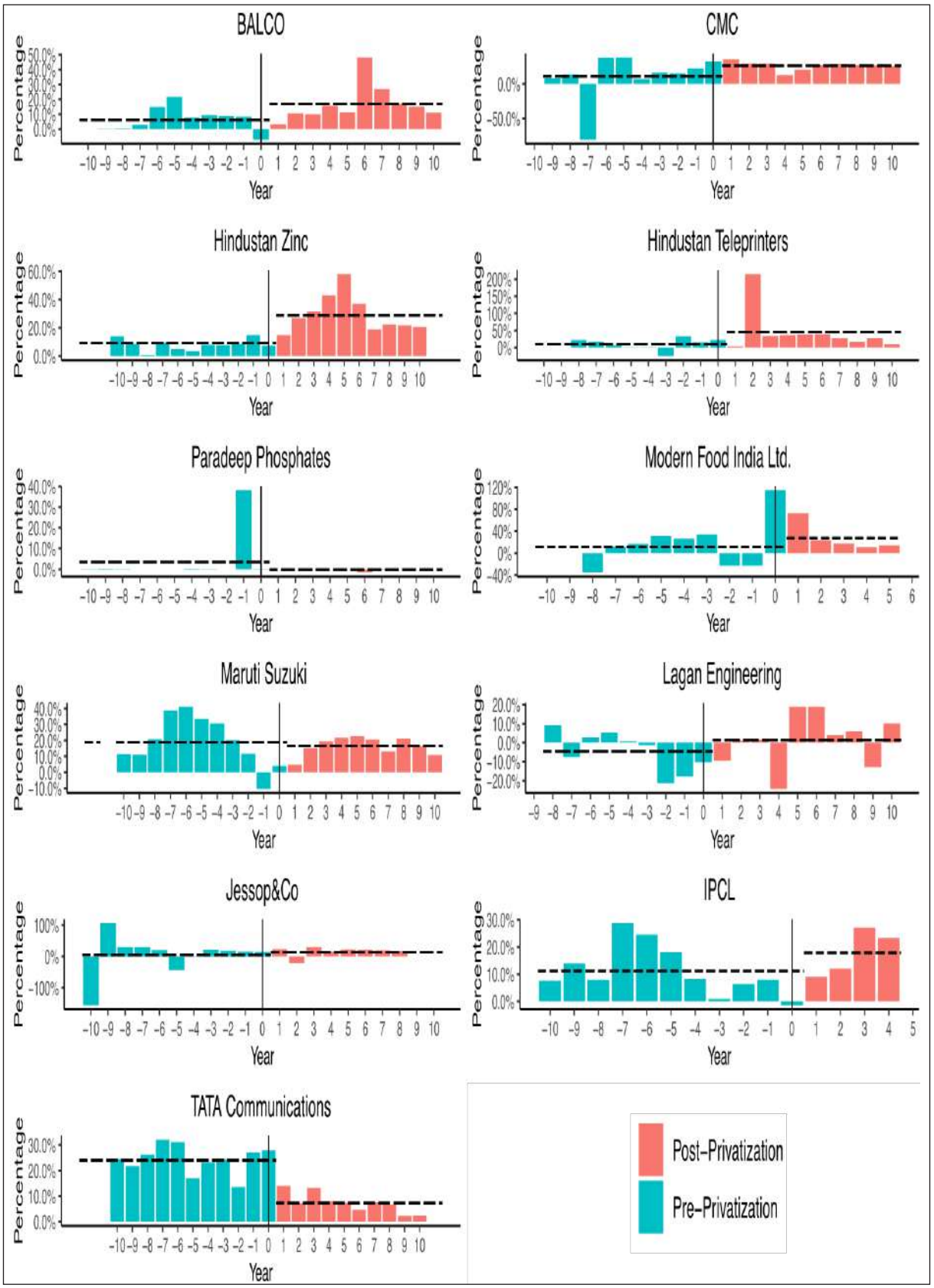
Source: Survey calculations based on data available from CMIE Prowess
Note: 0 denotes the year of privatization

Figure 6: Return on Assets (ROA) of privatized firms (pre and post privatization)



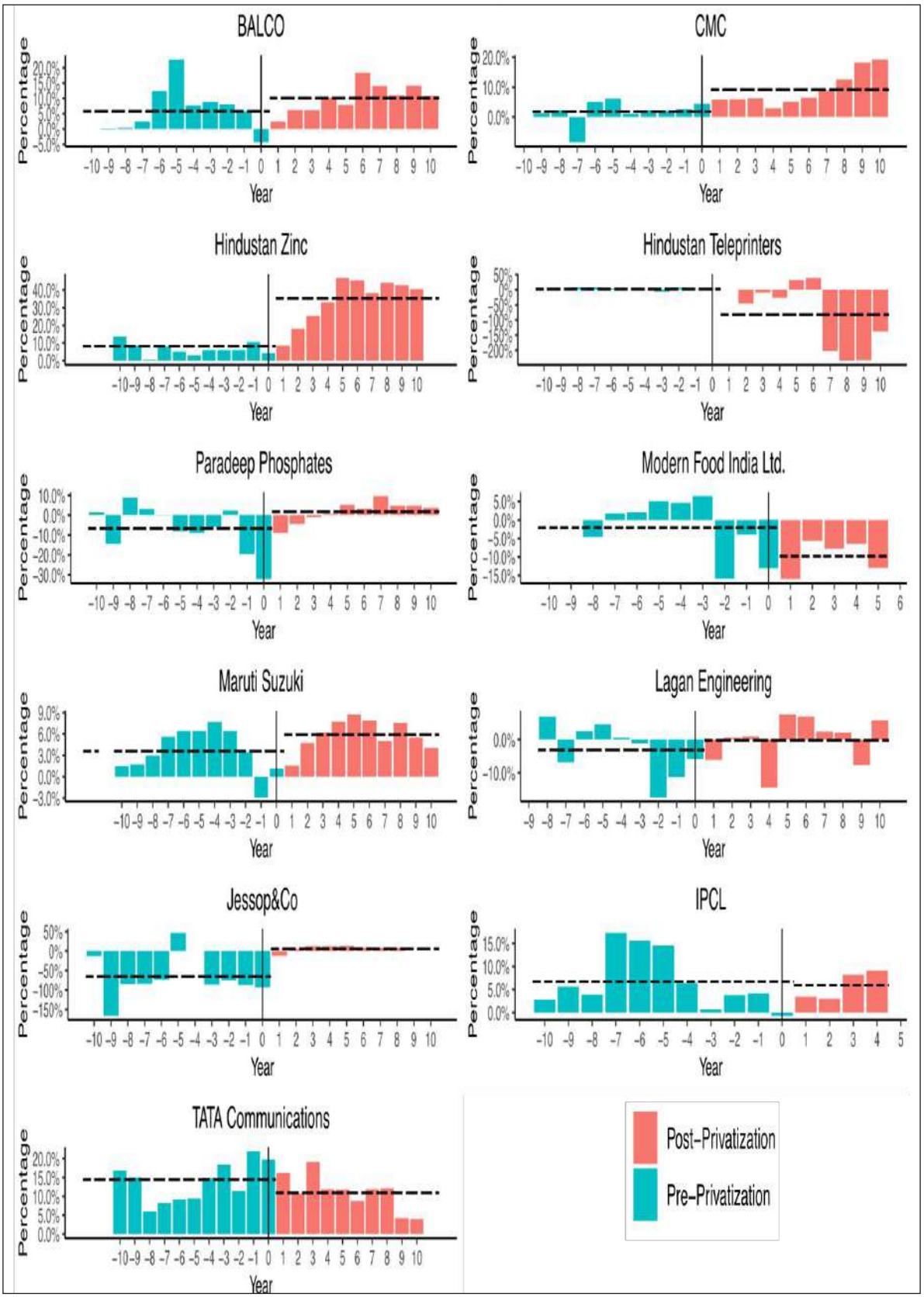
Source: Survey calculations based on data available from CMIE Prowess
Note: 0 denotes the year of privatization

Figure 7: Return on Equity (ROE) of privatized firms (pre and post privatization)



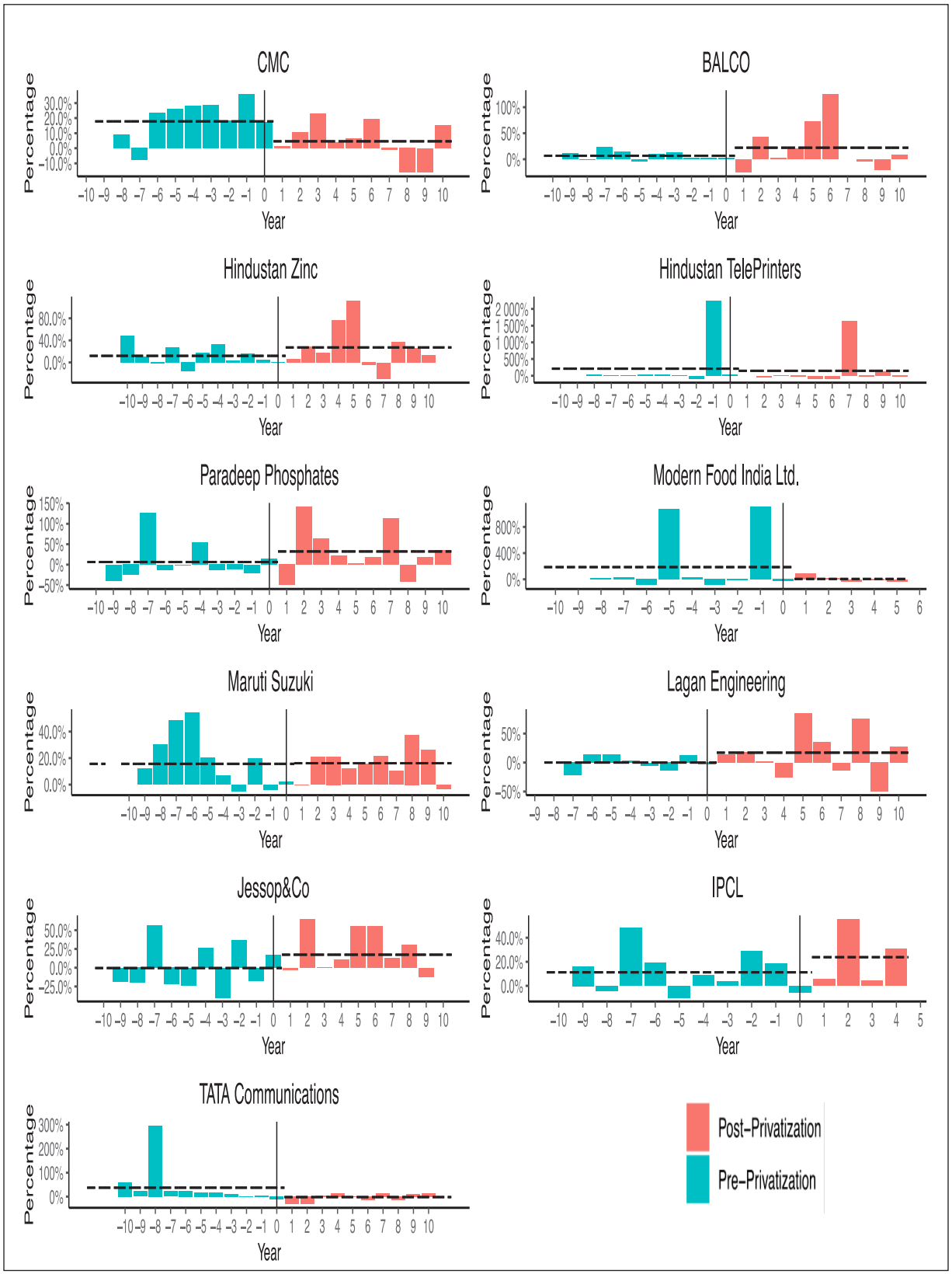
Source: Survey calculations based on data available from CMIE Prowess
Note: 0 denotes the year of privatization

Figure 8: Net Profit Margin of privatized firms (pre and post privatization)



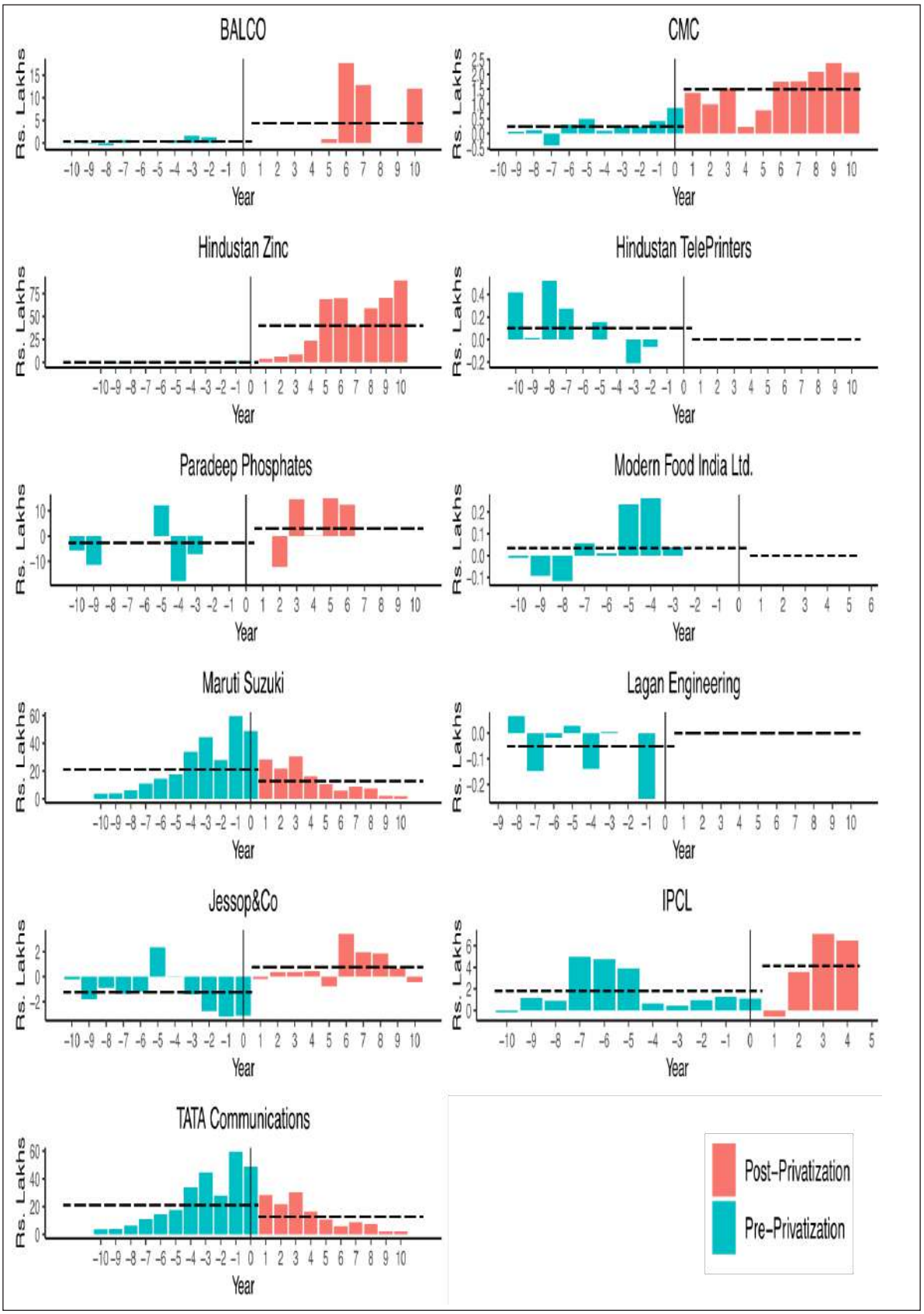
Source: Survey calculations based on data available from CMIE Prowess
Note: 0 denotes the year of privatization

Figure 9: Sales growth of privatized firms (pre and post privatization)



Source: Survey calculations based on data available from CMIE Prowess
Note: 0 denotes the year of privatization

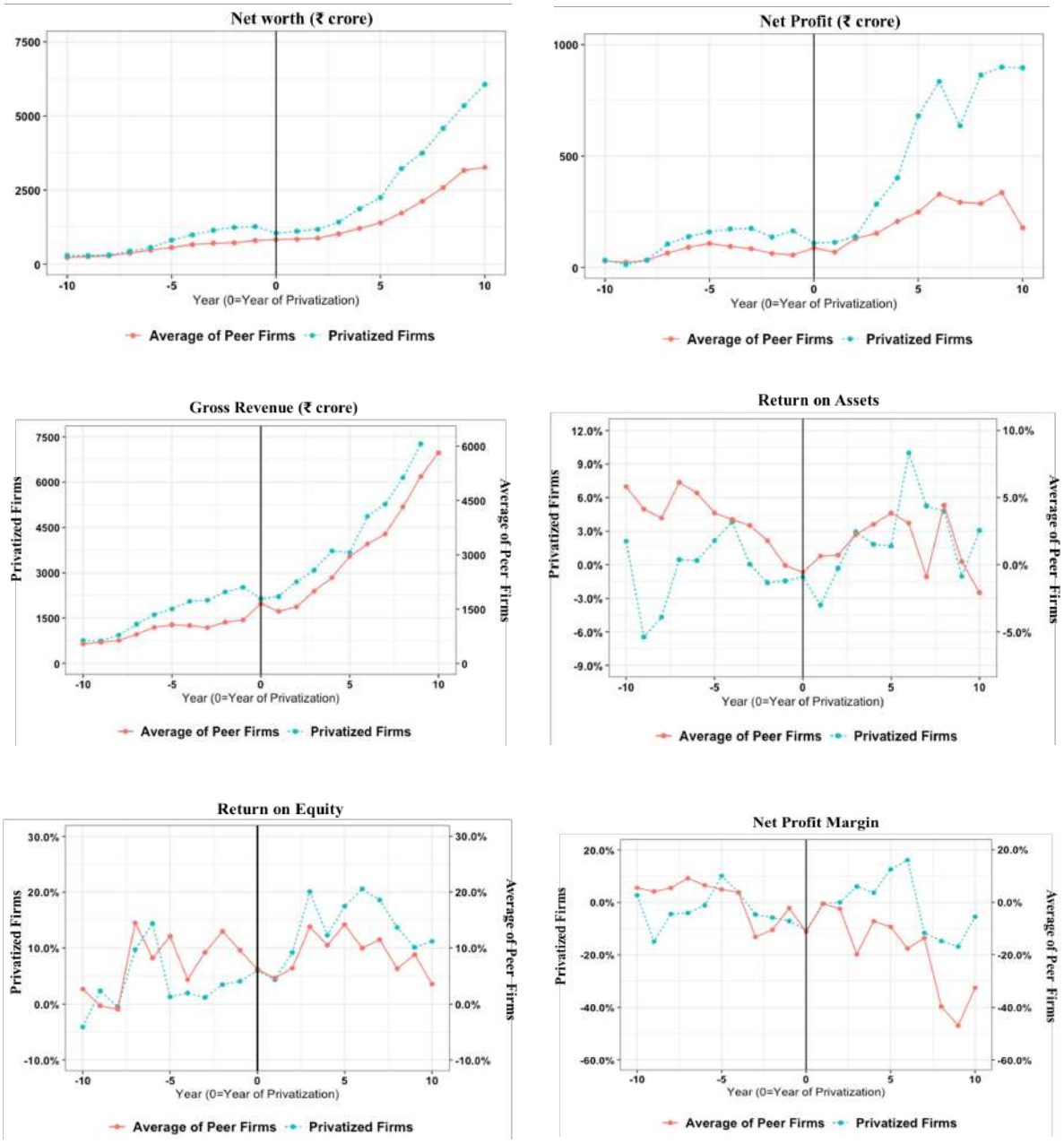
Figure 10: Gross Profit per Employee of privatized firms (pre and post privatization)

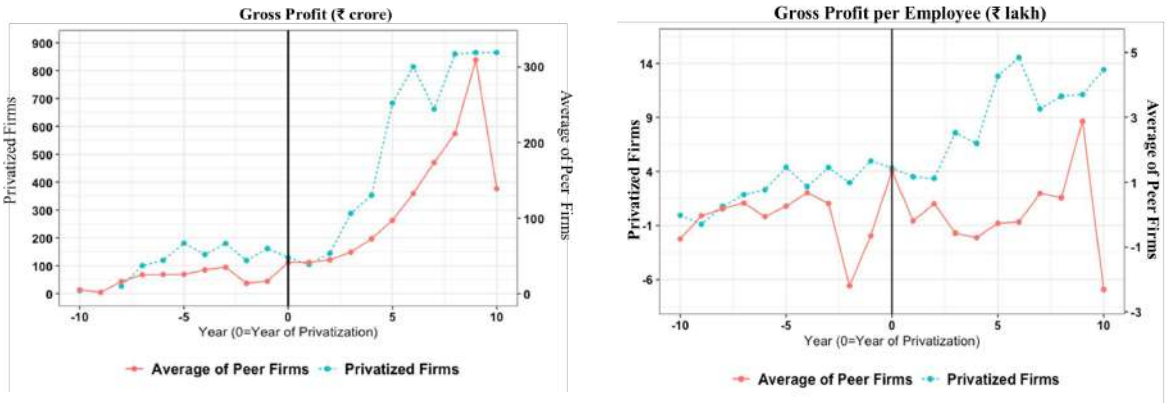


Source: Survey calculations based on data available from CMIE Prowess
Note: 0 denotes the year of privatization

9.8 Figure 11 below shows the trend in the performance of the privatized CPSEs, on an average, as compared to their peers over the period of ten years before and after the year of privatization of the specific CPSE. The trend thereby enables us to understand the dynamic aspects of the change in performance of the privatized firms after privatization when compared to its peer firms. The trends confirm that the performance of the privatized CPSE and its peers is quite similar till the year of privatization. However, post privatization, the performance of the privatized entity improves significantly when compared to the change in the peers' performance over the same time period.

Figure 11: Trend in Performance of privatized firms vs. Peers





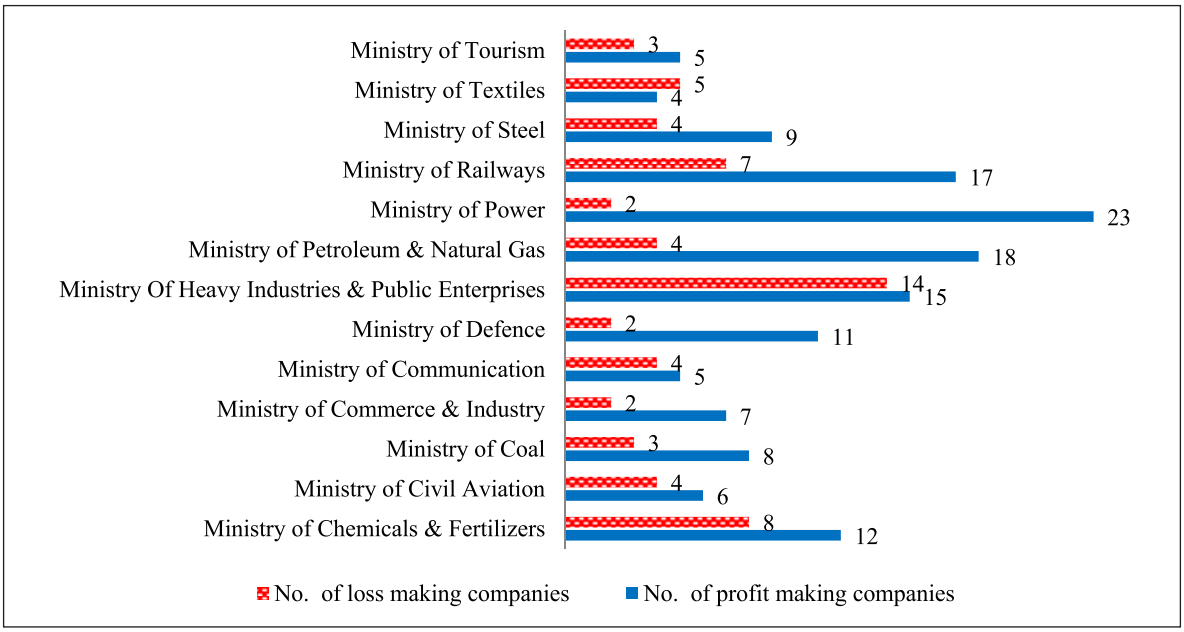
Source: Survey calculations based on data available from CMIE Prowess

Way Forward

9.9 The analysis in this chapter clearly affirms that disinvestment improves firm performance and overall productivity, and unlocks their potential to create wealth. This would have a multiplier effect on other sectors of the economy. Aggressive disinvestment, preferably through the route of strategic sale, should be utilized to bring in higher profitability, promote efficiency, increase competitiveness and to promote professionalism in management in CPSEs. The focus of the strategic disinvestment needs to be to exit from non-strategic business and directed towards optimizing economic potential of these CPSEs. This would, in turn, unlock capital for use elsewhere, especially in public infrastructure like roads, power transmission lines, sewage systems, irrigation systems, railways and urban infrastructure. It is encouraging that the enabling provisions by DIPAM are already in place (as detailed in Box 3 earlier). The Cabinet has 'in-principle' approved the disinvestment in various CPSEs (as detailed in Annex to the chapter). These need to be taken up aggressively to facilitate creation of fiscal space and improve the efficient allocation of public resources.

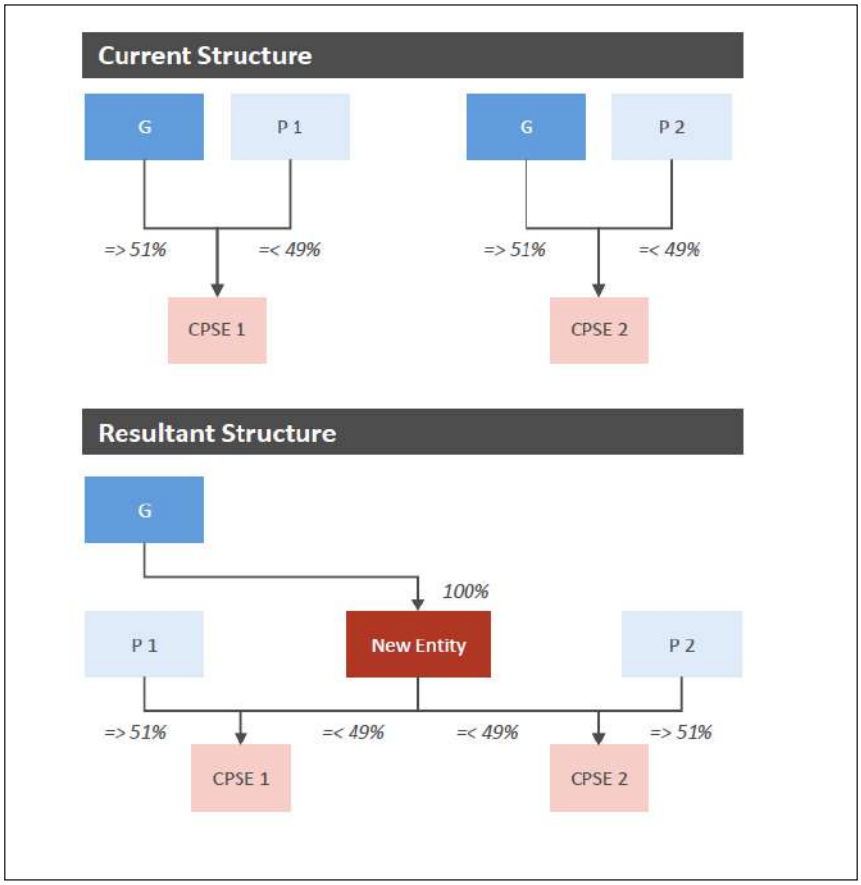
9.10 There are about 264 CPSEs under 38 different Ministries/Departments. Of these, 13 Ministries/Departments have around 10 CPSEs each under its jurisdiction. It is evident from Figure 11 that many of the CPSEs are profitable. However, CPSEs have generally underperformed the market as is evident from the average return of only 4 per cent of BSE CPSE Index against the 38 per cent return of BSE SENSEX during the period 2014-2019. The aim of any privatization or disinvestment programme should, therefore, be the maximisation of the Government's equity stake value. The learning from the experience of Temasek Holdings Company in Singapore may be useful in this context (Box 4). The Government can transfer its stake in the listed CPSEs to a separate corporate entity (Figure 12). This entity would be managed by an independent board and would be mandated to divest the Government stake in these CPSEs over a period of time. This will lend professionalism and autonomy to the disinvestment programme which, in turn, would improve the economic performance of the CPSEs.

Figure 11: No. of CPSEs under various Ministries which are profitable



Source: Department of Public Enterprises

Figure 12: Proposed Structure for Corporatization of Disinvestment



Box 4: Temasek Holdings Ltd – Privatization Model of Singapore

Temasek Holdings was incorporated by Government of Singapore on 25 June 1974, as a private commercial entity, to hold and manage its investments in its government-linked companies (GLCs). Temasek Holdings is wholly owned by the Ministry for Finance and operates under the provisions of the Singapore Companies Act. Temasek's board comprises 13 members—mostly non-executive and independent business leaders from the private sector. The company has since expanded its operations to cover key areas of business in sectors such as telecommunications, media, financial services, energy, infrastructure, engineering, pharmaceuticals and the bio-sciences.

Many of the original investments that Temasek managed included national treasures such as shipping firms (NOL, Keppel, Sembawang), a bank (DBS Bank), and systems engineering conglomerates (Singapore Technologies, Singapore Telecom). Temasek has retained strategically important investments, including its original stakes in all of these GLCs. Since March 2002, Temasek began diversifying its portfolio outside of Singapore such that a third of its investments are in developed markets, a third in developing countries and a third in Singapore. Some of the company's major investments in foreign companies include Standard Chartered, ICICI Bank (India), Bank Danamon (Indonesia), Telekom Malaysia and ShinCorp (Thailand). Temasek's investments in local companies include Singapore Airlines, Singtel, DBS Bank, SMRT, ST Engineering, MediaCorp and Singapore Power.

It manages a net portfolio of over US$230 billion as on 31st March 2019 – around fourfold jump from US$66 billion in 2004. Its compounded annualised total shareholder return since inception in 1974 is 15 per cent in Singapore dollar terms.

CHAPTER AT A GLANCE

- Approval for strategic disinvestment of Government's shareholding of 53.29 per cent in Bharat Petroleum Corporation Limited (BPCL) led to an increase of around ₹ 33,000 crore in the value of shareholders' equity of BPCL when compared to Hindusta Petroleum Corporation Limited (HPCL). This translates into an unambiguous increase in the BPCL's overall firm value, and thereby an increase in national wealth by the same amount.
- A comparative analysis of the before-after performance of 11 CPSEs that had undergone strategic disinvestment from 1999-2000 to 2003-04 reveals that net worth, net profit, return on assets (ROA), return on equity (ROE), gross revenue, net profit margin, sales growth and gross profit per employee of the privatized CPSEs, on an average, have improved significantly in the post privatization period compared to the peer firms.
- The ROA and net profit margin turned around from negative to positive surpassing that of the peer firms which indicates that privatized CPSEs have been able to generate more wealth from the same resources.
- The analysis clearly affirms that disinvestment (through the strategic sale) of CPSEs unlocks their potential of these enterprises to create wealth evinced by the improved performance after privatization.
- Aggressive disinvestment should be undertaken to bring in higher profitability, promote efficiency, increase competitiveness and to promote professionalism in management in the selected CPSEs for which the Cabinet has given in-principle approval.

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List of CPSE that have received 'in-principle' approval of Cabinet Committee on Economic Affairs (CCEA) for strategic disinvestment

SL. No	Name of CPSE	Date of CCEA approval
	ONGOING	
1	Nagarnar Steel Plant of NMDC	27.10.2016
2	Alloy Steel Plant, Durgapur; Salem Steel Plant; Bhadrwati units of SAIL:	27.10.2016
3	Ferro Scrap Nigam Ltd (Subsidiary)	27.10.2016
4	Central Electronics Ltd.	27.10.2016
5	Bharat Earth Movers Ltd. (BEML)	27.10.2016
6	Cement Corporation of India Ltd.	27.10.2016
7	Bridge & Roof Co. India Ltd.	27.10.2016
8	Engineering Projects (India) Ltd.	27.10.2016
9	Scooters India Ltd	27.10.2016
10	Bharat Pumps & Compressors Ltd.	27.10.2016
11	Hindustan Newsprint Ltd. (Subsidiary)	27.10.2016
12	Hindustan Fluorocarbons Ltd. (Subsidiary)	27.10.2016
13	Pawan Hans Ltd.	27.10.2016
14	Projects Development India Ltd.	27.10.2016
15	Hindustan Prefab Ltd. (HPL)	27.10.2016
16	Hindustan Antibiotics Ltd.	28.12.2016
17	Bengal Chemicals and Pharmaceuticals Limited (BCPL)	28.12.2016
17	Air India and its subsidiaries	28.06.2017
19	India Medicines & Pharmaceuticals Corporation Ltd. (IMPCL)	01.11.2017
20	Karnataka Antibiotics and Pharmaceuticals Ltd.	01.11.2017
21	HLL Lifecare	01.11.2017
22	Kamarajar Port Limited	28.02.2019
23	Shipping Corporation of India (SCI)	20.11.2019
24	(a) Bharat Petroleum Corporation Ltd (except Numaligarh Refinery Limited) (b) BPCL stake in Numaligarh Refinery Limited to a CPSE strategic buyer	20.11.2019
25	Container Corporation of India Ltd. (CONCOR)	20.11.2019
26	THDC India Limited (THDCIL)	20.11.2019
27	North Eastern Electric Power Corp. Ltd. (NEEPCO)	20.11.2019
28	Neelanchal Ispat Nigam Ltd (NINL)	08.01.2020
	TRANSACTION COMPLETED	
29	Hindustan Petroleum Corporation Limited	19.07.2017
30	Rural Electrification Corporation Limited	06.12.2018
31	Hospital Services Consultancy Corporation Limited (HSCC)	27.10.2016
32	National Projects Construction Corporation Limited (NPCC)	27.10.2016
33	Dredging Corporation of India Limited	01.11.2017

Note: The Government has already strategically sold its stake in 5 CPSEs namely Hindustan Petroleum Corporation Limited (HPCL) (to Indian Oil Corporation (IOC)), Rural Electrification Corporation Limited (REC) (to Power Finance Corporation (PFC)), Dredging Corporation of India Limited (DCIL) (to a consortium of four ports), Hospital Services Consultancy Corporation Limited (HSCC) (to NBCC) & National Projects Construction Corporation Limited (NPCC) (to WAPCOS) in last two years resulting in a yield of Rs. 52,869 crore.

Source: Department of Investment and Public Asset Management (DIPAM) and Press Information Bureau (PIB)

Is India's GDP Growth Overstated? No!

10
CHAPTER

Correlation is the basis of superstition and causation the foundation of science.

- Anonymous

As investors deciding to invest in an economy care for the country's GDP growth, uncertainty about its magnitude can affect investment. Therefore, the recent debate about India's GDP growth rates following the revision in India's GDP estimation methodology in 2011 assumes significance, especially given the recent slowdown in the growth rate. Using careful statistical and econometric analysis that does justice to the importance of this issue, this chapter finds no evidence of mis-estimation of India's GDP growth. The chapter starts from the basic premise that countries differ among each other in various observed and unobserved ways. Therefore, cross-country comparisons are fraught with risks of incorrect inference due to various confounding factors that stem from such inherent differences. As a result, cross-country analysis has to be carefully undertaken so that correlation is distinguished from causality. The models that incorrectly over-estimate GDP growth by 2.77 per cent for India post-2011 also mis-estimate GDP growth over the same time period for 51 other countries out of 95 countries in the sample. The magnitude of mis-estimation in the incorrectly specified model is anywhere between +4 per cent to -4.6 per cent, including UK by +1.6 per cent, Germany by +1.0 per cent, Singapore by -2.3 per cent, South Africa by -1.2 per cent and Belgium by -1.3 per cent. Given the lower growth rates for UK and Germany compared to India, the mis-estimation in percentage terms in the incorrectly specified model is much larger for UK (76 per cent) and Germany (71 per cent) than for India (40 per cent). However, when the models are estimated correctly by accounting for all unobserved differences among countries as well as the differential trends in GDP growth across countries, GDP growth for most of these 52 countries (including India) is neither over- or under-estimated. In sum, concerns of over-estimation of India's GDP are unfounded.

The larger point made by this chapter needs to be understood by synergistically viewing its findings with the micro-level evidence in Chapter 2, which examines new firm creation in the formal sector across 504 districts in India. Two observations are critical. First, the granular evidence shows that a 10 per cent increase in new firm creation increases district-level GDP growth by 1.8 per cent. As the pace of new firm creation in the formal sector accelerated significantly more after 2014, the resultant impact on district-level growth

and thereby country-level growth must be accounted for. Along these lines, Purnanandam (2019) shows that India's improvement in indicators such as access to nutrition and electricity might explain the higher growth rate in Indian GDP post the methodological change. Second, granular evidence on new firm creation shows that new firm creation in the Service sector is far greater than that in manufacturing, infrastructure or agriculture. This micro-level evidence squares up fully with the well-known macro fact on the relative importance of the Services sector in the Indian economy. The need to invest in ramping up India's statistical infrastructure is undoubted. In this context, the setting up of the 28-member Standing Committee on Economic Statistics (SCES) headed by India's former Chief Statistician is important. Nevertheless, carefully constructed evidence in the Survey must be taken on board when assessing the quality of Indian data.

INTRODUCTION

10.1 To achieve the objective of becoming a USD 5 trillion economy by 2025, a strong investment climate is critical. The Economic Survey of 2018-19 laid out the role of investment, especially private investment, in driving demand, creating capacity, increasing labour productivity, introducing new technology, allowing creative destruction, and generating employment. Undoubtedly, investment assumes primacy in catalyzing the economy into a virtuous cycle.

10.2 In recent times, India has taken several initiatives to foster investment, be it relaxing FDI norms, cutting corporate tax rates, containing inflation, accelerating infrastructure creation, improving ease of doing business, or reforming taxation. Investors, including international investors, see an unparalleled opportunity in India as it is one of the fastest growing large economies in the world. The growth rate of the economy is a pre-eminent driver of investment decisions. Moreover, the level and growth rate of a country's GDP informs several critical policy initiatives by serving as a barometer of the economy's size and health.

10.3 In recent times, there has been significant debate about the veracity of India's GDP growth rates, with particular focus being placed on these growth rates following the change in the GDP estimation methodology in 2011-12 (see Box 1 for a note on the revision). Both national and international experts including Bhalla (2019), Goyal and Kumar (2019), Roy and Sapre (2019), Panagariya (2019), Purnanandam (2019), Subramanian (2019) and Vaidya Nathan (2019) have contributed to the debate on whether the GDP growth rates in India are correctly estimated or not. As concerns about the veracity of India's GDP growth rates may generate substantial concerns not only to investors but also to policymakers, this issue warrants a careful examination. Such an examination is important especially given the slowdown in the GDP growth rates over recent quarters. If investors apply a "discount" to a lower growth rate, even if incorrectly, the same can really affect investor sentiment. This chapter, therefore, studies this important issue.

10.4 The aim of the chapter is to estimate the inaccuracy, if any, in the GDP growth rate using the difference-in-difference methodology as implemented in Subramanian (2019) and Purnanandam (2019). Estimating the inaccuracy of any measured variable requires a benchmark for the "accurate estimate", which by definition represents a "counter-factual", i.e. one that

Box 1: Change in the Base Year of the GDP Series

The Base Year of the GDP Series was revised from 2004-05 to 2011-12 and released on 30 January, 2015 after adaptation of the sources and methods in line with the System of National Accounts (SNA) 2008 of the United Nations. The methodology of compilation of macro aggregates was finalized by the Advisory Committee on National Accounts Statistics (ACNAS) comprising experts from academia, National Statistical Commission, Indian Statistical Institute (ISI), Reserve Bank of India (RBI), Ministries of Finance, Corporate Affairs, Agriculture, NITI Aayog and selected State Governments. The decision taken by the Committee was unanimous and collective after taking into consideration the data availability and various methodological aspects.

For the purpose of global standardization and comparability, countries follow the SNA evolved in the UN after elaborate consultation. The SNA 2008 is the latest version of the international statistical standard for the national accounts, adopted by the United Nations Statistical Commission (UNSC) in 2009 and is an update of the earlier 1993 SNA. The Inter-Secretariat Working Group on National Accounts (ISWGNA) in India was mandated to develop the 2008 SNA through intense discussions and consultation with member countries. India also participated in the deliberations of the Advisory Expert Group. In its adoption of the 2008 SNA the UNSC encouraged Member States, regional and sub-regional organizations to implement its recommendations and use it for the national and international reporting of national accounts statistics based on the available data sources.

is not revealed in fact and therefore has to be estimated. This assessment is undertaken by comparing the Indian GDP growth rates to those of other countries. Effectively, this methodology asks the question "what would have been the estimate of the Indian GDP growth rate if the methodological change had not been implemented" and compares this estimate to the actual growth rate to infer the incorrectness in the estimates.

10.5 This methodology is similar to ones that researchers in medicine use to estimate whether a drug is effective or not. For concreteness, think of testing a drug for blood pressure (BP). Create two groups of identical guinea pigs – a treatment group that is administered the drug and a control group that is given sugar pills. Identical groups ensure apples-to-apples, instead of apples-to-oranges, comparison. When the groups are identical, before-after difference in BP for treatment group minus the same difference for control group estimates the correct effect of the drug by removing any confounding placebo effects. Effectively, the change in BP for the control group asks the question "what would have been the change in BP even if the drug had not been administered?" This methodology that researchers call "difference-in-difference" is used extensively in economic research.

10.6 In the context of GDP growth rate estimation, India represents the treatment group and other countries represent the control group. Countries differ from each other in ways that can be measured and, especially, in ways that cannot be measured; both sets of differences can affect economic activity. Therefore, cross-country comparisons are fraught with risks of incorrect inference due to various confounding factors that stem from such inherent differences. As a result, cross-country analysis has to be carefully undertaken so that correlation is distinguished from causality. So, researchers using data across several countries implement careful statistical techniques, called panel-data econometrics,

to ensure an apples-to-apples comparison across countries and thereby mimic the above example of testing a drug's effectiveness on BP.

10.7 Using careful statistical and econometric analysis that does justice to the importance of this issue, no evidence of mis-estimation of India's GDP growth is found. Indeed, the models that incorrectly over-estimate GDP growth by over 2.77 per cent for India post-2011 also mis-estimate GDP growth over the same time period for 51 other countries by any where between +4 per cent to -4.6 per cent, including UK by +1.6 per cent, Germany by +1.0 per cent, Singapore by -2.3 per cent, South Africa by -1.2 per cent and Belgium by -1.3 per cent. However, when the models are estimated correctly by accounting for all unobserved differences among countries as well as the differential trends in GDP growth across countries, GDP growth for most of these 52 countries is neither over- or under-estimated. In sum, concerns of over-estimation of India's GDP are unfounded.

10.8 The analysis is concluded by examining other signs that may indicate a problem with the GDP estimation methodology. As in Subramanian (2019), the GDP growth rates are correlated with other indicators that have not undergone any changes in methodology. In essence, the methodology involves correlating the "suspect" variable – the GDP growth rate – with several other "reliable" variables to uncover any suspicious patterns. As in Subramanian (2019), these "reliable" variables include exports, imports, real credit to industry, petroleum consumption, railway freight traffic, electricity consumption, etc. This diagnostic exercise is undertaken while recognizing that correlations can be non-stationary, i.e., can vary over time due to factors that may be unrelated to the change in the GDP methodology.

10.9 The results clearly establish the concern that the correlations studied as a diagnostic for GDP growth are notoriously non-stationary: not only do they flip signs frequently over various 3-year or 5-year time periods from 1980 to 2015, their values change significantly over this time period as well. Given such change in the correlations for reasons unrelated to the specific change in the GDP methodology in 2011, there seems to be no cause for concern regarding the mis-estimation of India's GDP. Further, the relationship of these indicators with the new GDP series does not diverge from their relationship with the old series. In other words, the relationship between these indicators and GDP is preserved even after the methodology revision, thereby adding to the evidence that the revised methodology estimates the GDP correctly.

IS GDP MISESTIMATED?

The Choice of Model: Is the Standard Difference-in-Difference Appropriate?

10.10 Cross-country data is gathered from the World Bank's World Development Indicators (WDI) database as in Purnanandam (2019) and Subramanian (2019). The sample exclude oil exporters[1], countries with population less than 1 million, and war-torn and politically fragile countries, in line with Subramanian (2019). Although the sample is unlikely to be an exact replica of these papers' samples, hence, a substantial overlap[2] is expected. In any case, this chapter aims to test the robustness of results to an independent verification, among other objectives. A sample that varies slightly from the original serves as a check of robustness to sample selection.

[1] Net export status of Ghana and Azerbaijan during the sample period being ambiguous, these countries are included in the sample.

[2] It was found that by running Subramanian (2019)'s main empirical specification using the sample, India's GDP is overestimated by 2.77 per cent, which is quite close to the original study's estimate of 2.5 per cent. This indicates a strong overlap in the samples. Scholarly literature are leveraged to modify the model to take care of additional sources of heterogeneity among the countries in the sample.

10.11 The standard difference-in-difference (DID) model is an econometric technique that attempts to mimic an experimental research design by studying the differential effect of a quasi-experiment such as a GDP methodology change. The differential effect studied is the difference in average GDP growth rate in a country that has gone through the methodology change, such as India (treatment group), versus other countries which have not gone through the change (control group). See Box 2 for a note on this methodology.

Box 2: A Note on the Difference-in-difference Method

The difference-in-difference (DID) methodology asks the question "what would have been the estimate of the Indian GDP growth rate if the methodological change had not been implemented?" and compares this estimate to the actual growth rate to infer the incorrectness in the estimates.

Let $\overline{GDP}_{c,t}$ denote the average GDP growth in country c in year t, where the subscript c tells whether average GDP growth rate is from India or from other countries used as controls (controls hereafter) in the study and the subscript t tells whether average growth rates looked is from 2002-2011 (before the GDP methodology change) or 2012-2016 (after the GDP methodology change). The DID estimate (δ_{DID}) of the effect of GDP methodology change in the average GDP growth estimates of India is:

$$\delta_{DID} = \left(\overline{GDP}_{India,2012-2016} - \overline{GDP}_{India,2002-2011}\right) - \left(\overline{GDP}_{Controls,2012-2016} - \overline{GDP}_{Controls,2002-2011}\right)$$

Instead of comparing average GDP growth of India and the controls, DID contrasts the change in the average GDP growth between India and the controls.

Comparing changes instead of average GDP growth levels adjusts for the fact that before the GDP methodology change (pre-treatment period), India's average GDP growth may have been higher than that of the controls. To see this, the DID bottom line can be constructed this way:

$$\delta_{DID} = \left(\overline{GDP}_{India,2012-2016} - \overline{GDP}_{Controls,2012-2016}\right) - \left(\overline{GDP}_{India,2002-2011} - \overline{GDP}_{Controls,2002-2011}\right)$$

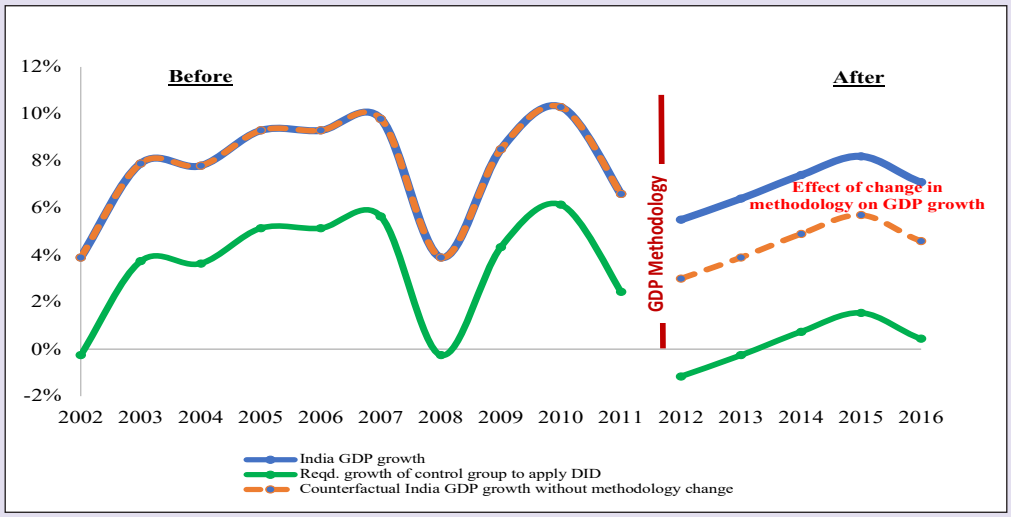
This version of DID calculation subtracts the average GDP growth rate difference before the GDP methodology change (pre-treatment difference) between India and the controls from the average GDP growth rate difference after the GDP methodology change (post-treatment difference), thereby adjusting for the fact that GDP growth rates in India and the rest of the other countries used as controls in the chapter were not the same initially.

DID logic is depicted in Figure 1 which plots the GDP growth of India and the control countries for the period 2002-2011 (Before) with the period 2012-2016 (After) by a solid line. The DID tool amounts to a comparison of trends in average GDP growth between India and other control countries. The dotted line in the figure is the counterfactual outcome that lies at the heart of the DID research design. This dotted line indicate what would have happened to GDP growth estimation without the GDP methodology change and more crucially if everything evolved in India as it did with the control countries i.e., the GDP growth rates moved parallelly between India and the control countries.

The DID counterfactual comes with an easily stated but even so, a formidable assumption of

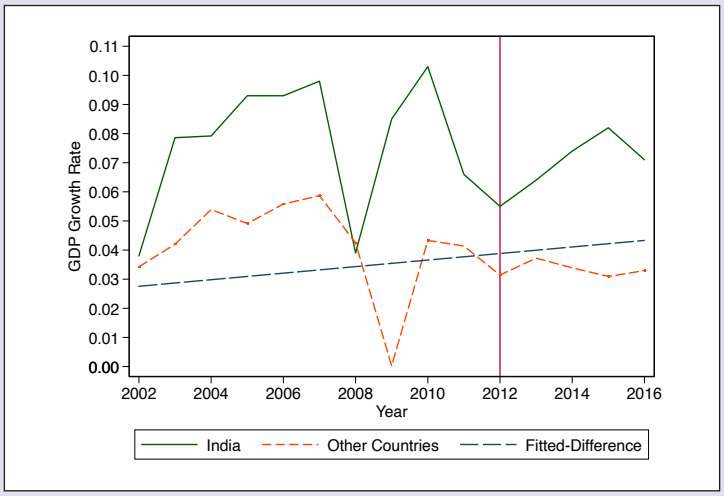
common trends. In the GDP methodology quasi-experiment, DID presumes that, absent any GDP methodology change, the average GDP growth trend in countries used as controls in the chapter is what one should expect to see in India as well. This assumption requires that before the "treatment" in 2011, India and the other countries followed a parallel trend in GDP growth – one that would have continued had India not been "treated" to a methodology revision. This assumption can seen from Figure 2 does not hold good. Notwithstanding the fact that DID is only an imperfect model to estimate GDP overstatement, this chapter nevertheless employs the methodology, with caveats, for comparability with other studies on the subject.

Figure 1: Illustration of the treatment effect in an ideal difference-in-difference design



Source: World Bank WDI Database.

Figure 2: India and other countries did not follow a parallel trend before the "treatment" before 2012, making DID an imperfect model to measure mis-estimation



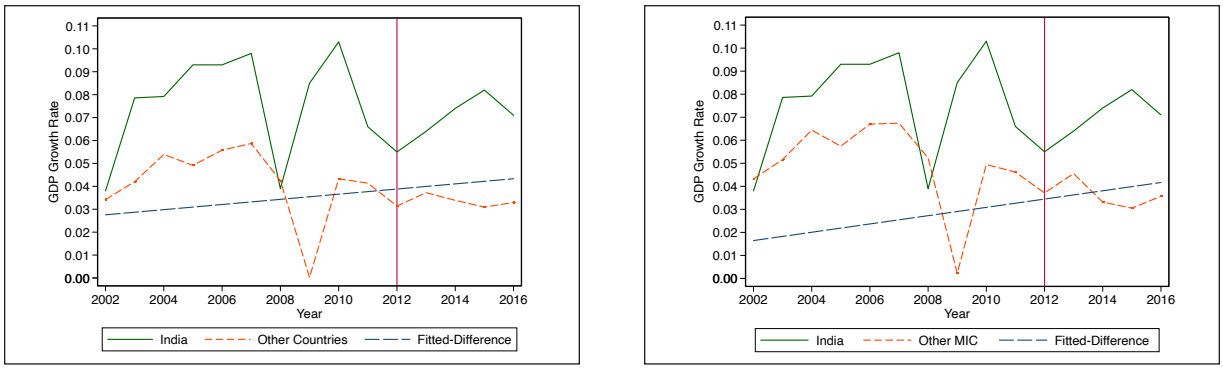
Source: World Bank WDI Database.

10.12 A fundamental assumption required for the standard DID model to correctly measure the magnitude of mis-estimation in GDP growth is the "parallel trends" assumption. In the GDP methodology quasi-experiment, DID presumes that, absent any GDP methodology change, the average GDP growth trend in countries used as controls in

the chapter is what one should expect to see in India as well. This assumption requires that before the "treatment" in 2011-12, India and the other countries followed a parallel trend in GDP growth – one that would have continued had India not been "treated" to a methodology revision. Only then one can do an apples-to-apples comparison. If the parallel trends assumption is violated, then the standard DID is not an appropriate tool for the current problem (see Box 2 for an illustration of the parallel trends assumption).

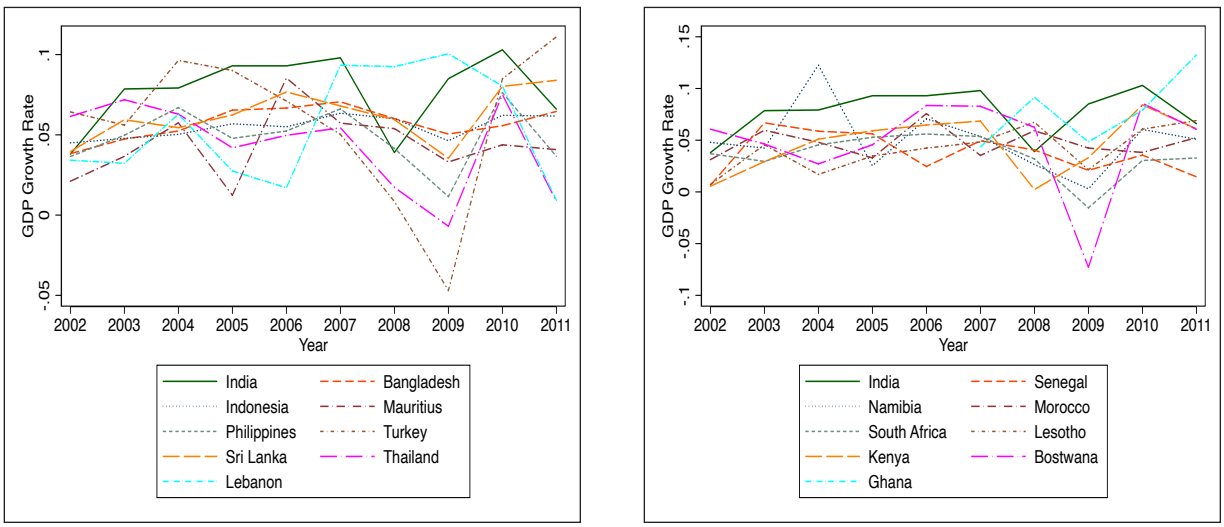
10.13 Figure 3, derived from Purnanandam (2019), compares in the two panels respectively, a) India's growth trajectory with all other sample countries, b) India's trajectory with the average for other middle income countries in the sample. Figure 4 plots the trajectories of India against other middle income countries individually until the year of methodology revision, 2011-12. All charts make it clear that India and the other countries did not follow a parallel trend in growth before 2011. Even when compared to other Asian middle income countries (the first panel of Figure 4), the analysis fail to see parallel trends. There is not only variation between the treatment and control groups, but also variation within the control group.

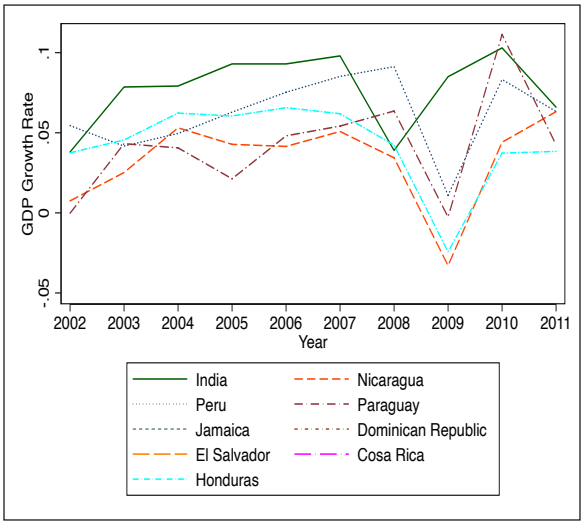
Figure 3: India and other countries do not follow a parallel trend in GDP growth prior to 2011

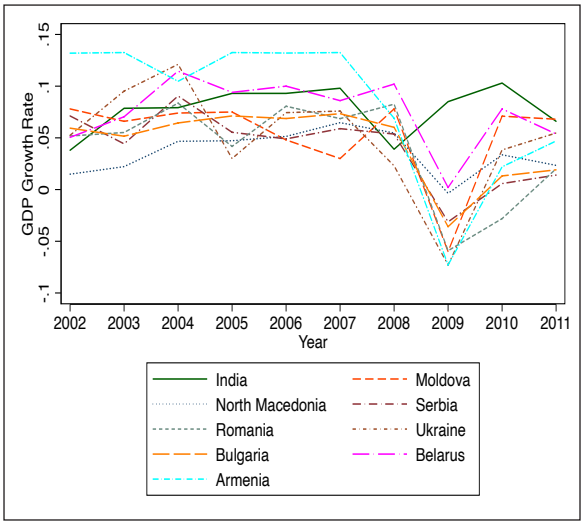


Source: Purnanandam (2019)

Figure 4: India and other middle income countries do not follow a parallel trend in GDP growth prior to 2011







Source: World Bank WDI Database.

10.14 The parallel trends assumption is critical for any inference from a standard DID model. However, as the figures make clear, India did not follow a parallel trend compared to other countries prior to 2011, so there is no reason to assume that India would have continued on a parallel trend after 2011 in the absence of a methodology revision, and the measured difference-in-difference (treatment effect of the 2011 revision) should therefore be treated with caution.

10.15 The other challenge is the choice of independent variables. As GDP is an immensely complex phenomenon that is influenced directly and indirectly by a range of socio-economic factors, some of which are measured and most of which are non-measurable, there is a high risk of omitted variable bias – an issue considered in the next section.

10.16 The lack of a parallel trend between the treatment and control, as well as the possibility of omitted variable bias, render the standard DID methodology an imperfect tool to evaluate whether India's GDP is misestimated. Nevertheless, to begin with, a baseline standard DID model is estimated as implemented in Subramanian (2019). In order to bring out comparability with other studies such as Subramanian (2019). In subsequent sections, various ways are explored to adjust the model to overcome these limitations.

10.17 The following cross-sectional regression is estimated twice, once for the pre-change period and once for the post-change period:

$$g_i = \beta_0 + \beta_1 X_i + \theta\, India_i + \varepsilon_i$$

The dependent variable is the real GDP growth rate of country i in period T. The independent variables include real growth rates of exports, imports and credit to the private sector, as well as a dummy for India. For each country, the continuous variables are averaged over all pre-change years for the first estimation, and over all post-change years for the second estimation. The coefficient of interest is the $India_i$ dummy. The difference between the coefficient from the post-change specification and the pre-change one gives the magnitude of mis-estimation in the post-change period.

10.18 The two pooled cross-sectional regressions above can be clubbed into one specification as follows:

$$g_{iT} = \beta_0 + \beta_1 X_i + \beta_1 X_i \times T + \theta_1 India_i + \theta_2 India_i \times T + \gamma T + \varepsilon_{iT}$$

In this model, the treatment period is captured by T, which equals one for the post-change

period and zero for the pre-change period. The variable of interest now is θ_2 which captures the level of mis-estimation of the Indian GDP post-change.

10.19 Table 1 presents results. Using this rudimentary specification, it was found that India's GDP was overstated by 2.77 per cent. Results mirror the results of Subramanian (2019), who finds an overestimation of 2.5 per cent. Further, the analysis considered the issues associated with this model and implementation adjustments. After making these adjustments, the evidence in favour of a misestimated GDP weakened considerably.

Table 1: Estimation of abnormal growth in GDP using a cross-country standard DID model

Dependent variable: Average GDP growth	2002-11	2012-16	Pooled
India	**0.0092****	**0.0369*****	**0.0092****
	(2.4151)	**(15.7342)**	**(2.4151)**
India x Post-Change			**0.0277*****
			(6.1757)
Post-Change			0.0042
			(1.0690)
Export Growth Rate	0.0929*	0.0805**	0.0929*
	(1.9697)	(2.1591)	(1.9697)
Import Growth Rate	0.1856***	0.0225	0.1856***
	(3.3672)	(0.6245)	(3.3672)
Credit Growth Rate	0.0632***	0.1892***	0.0632***
	(3.3336)	(6.4593)	(3.3336)
Export Growth x Post-Change			-0.0125
			(-0.2075)
Import Growth x Post-Change			-0.1631**
			(-2.4767)
Credit Growth x Post-Change			0.1260***
			(3.6123)
Constant	0.0139***	0.0181***	0.0139***
	(4.3905)	(7.7800)	(4.3905)
Observations	95	95	190
R^2	0.5323	0.5304	0.5443

Note: Columns 1 and 2 estimate the following cross-sectional regression: $g_i = \beta_0 + \beta_1 X_i + \theta\, India_i + \varepsilon_i$. For each country *i*, the dependent and independent variables are averaged over the period 2002-11 and 2012-16 in columns 1 and 2 respectively. Column 3 pools the observations from both periods and estimates the following regression: $g_{iT} = \beta_0 + \beta_1 X_i + \beta_1 X_i \times T + \theta_1 India_i + \theta_2 India_i \times T + \gamma T + \varepsilon_{iT}$. g_i equals the average growth rate for country i in either 2002-11 or 2012-16 period. T equals one for the post-change period and zero otherwise. India equals one for India and zero for all other countries. t-statistics are provided in parentheses. *, ** and *** denote significance levels of 10 per cent, 5 per cent and 1 per cent respectively[3].

[3] Standard errors reported in this table and elsewhere, unless explicitly stated otherwise, are unclustered, as the small size of the treatment group (one country only) is insufficient to calculate a robust covariance matrix. Subramanian (2019) reports clustered standard errors in some of his specifications, which may not be suitable given the extremely small number of clusters in the treatment group (see Cameron, Gelbach, & Miller (2008); Cameron & Miller (2015)).

Choice of Covariates: A Generalized DID to Handle Omitted Variable Bias

10.20 The omission of important variables in a regression model can lead to what is known as omitted variable bias (see Box 3). For example, the regression attempted above excludes important agriculture- and services-related indicators as well as other unobserved factors that may affect GDP growth. To illustrate the effect of omitted variable bias on the results, the analysis re-estimate rudimentary baseline model with different combinations of independent variables:

$$g_{iT} = \beta_0 + \beta_1 X_i + \beta_1 X_i \times T + \theta_1 India_i + \theta_2 India_i \times T + \gamma T + \varepsilon_{iT}$$

In particular, besides the existing covariates – real growth in exports, imports and credit – real growth in agriculture and real growth in services were added to the model. Table 2 presents results. Column 1 indicates the baseline estimation in which India's GDP growth appears overstated by 2.77 per cent, as earlier. Column 2 includes real services growth in the model, which yields a much lower mis-estimation of 1.18 per cent. Moreover, the coefficient of interest in this case is only weakly statistically significant. Column 3 includes real agriculture growth in the model, which causes the mis-estimation to drop to 2.6 per cent. Column 4 includes both agriculture and services growth, which also causes the mis-estimation to drop further to 1.1 per cent. The final column runs a model with only the agriculture and services indicators and finds the level of mis-estimation to be negative.

10.21 The objective of Table 2 is not to provide a refined estimate of the level of mis-estimation, but to illustrate the extremely high sensitivity of the findings to the choice of covariates used in the model. Clearly, the baseline model with only three covariates significantly overestimates the level of overestimation.

Box 3: A note on omitted variable bias in regression models

Regression is a statistical technique, which if done the right way, is a way to make other things equal by controlling for or removing the effects of variables (such as indicators from the services, industrial and agriculture sectors of the economy) that are related to the dependent variable (such as GDP growth rate). One may be interested in the effect on GDP growth rate from a GDP methodology change and not particularly interested in the variables from the services, industrial and agriculture sectors of the economy. But equality is established only for the variables included as controls. Failure to include enough controls or the right controls gives biased results from the regression. This bias in the results is called Omitted Variable Bias (OVB).

Suppose the following 'short' regression does not have either enough controls or the right controls:

$$GDP = \alpha_S + \beta_{1S} X_1 + \beta_S X_{India} + \varepsilon_S$$

where GDP denotes the GDP growth in a particular country in a given year, α_S is the intercept of the short regression, β_{1S} is the regression coefficient of X_1, X_1 is a vector of independent variables in the 'short' regression of say industrial indicators and consequently does not have enough/right controls for GDP growth, β_S is the causal effect estimated of

the GDP methodology change on GDP growth rate, X_{India} is the India country dummy and ε_S is the residual or the error term.

Now, suppose following 'long' regression is run such that it has enough/right controls:

$$GDP = \alpha_L + \beta_{1L}X_1 + \beta_{2L}X_2 + \beta_L X_{India} + \varepsilon_L$$

where α_L is the intercept of the long regression, β_{2L} is the regression coefficient of X_2, X_2 is a vector of omitted controls, β_L is the causal effect estimated of the GDP methodology change on GDP growth rate, and ε_L is the residual.

The bias in the estimation of GDP growth rate from methodology change due to omitted variables is:

$$OVB = \beta_S - \beta_L = \pi_1\beta_{2L}$$

where π_1 is the coefficient of the following regression:

$$X_2 = \pi_0 + \pi_1 X_1 + \pi_2 X_{India} + \varepsilon$$

The illustration below summarizes the direction of the omitted variable bias. The dependent variable is GDP, X_1 and X_2 are the independent variables, and X_2 is the omitted variable.

	X_1 and X_2 are positively correlated	**X_1 and X_2 are negatively correlated**
X_2 has a positive effect on GDP	Positive bias	Negative bias
X_2 has a negative effect on GDP	Negative bias	Positive bias

For example, with regard to the study by Subramanian (2019) that aimed to explain GDP growth using indicators of real economic activity, the Economic Advisory Council recently wrote, "a cursory look at the indicators suggests a strong link with industry indicators (a sector that contributes an average of 22 per cent to India's GDP), while the representation of services (60 per cent of GDP) and agriculture (18 per cent of GDP) is as good as missing. It is difficult to believe that indicators in the services sector would not correlate with Indian GDP." (Economic Advisory Council to the Prime Minister, 2019)

In the above analysis, say X_1 indicates the manufacturing-related indicators and X_2 represents the missing indicators from services and agriculture. The indicators from industry are expected to be positively correlated with that of services and agriculture, so X_1 and X_2 are positively correlated. Similarly, the missing indicators from services and agriculture will have a positive effect on GDP growth rate. So, omitted variable bias is expected to be positive. Notwithstanding the fact that DID is an imperfect model to estimate GDP overstatement, the overestimation of 2.5 per cent found in Subramanian (2019) is itself likely to be overestimated because of omitted variable bias, as the explanatory variables (exports, imports and credit) do not adequately cover all the sources of variation in GDP growth.

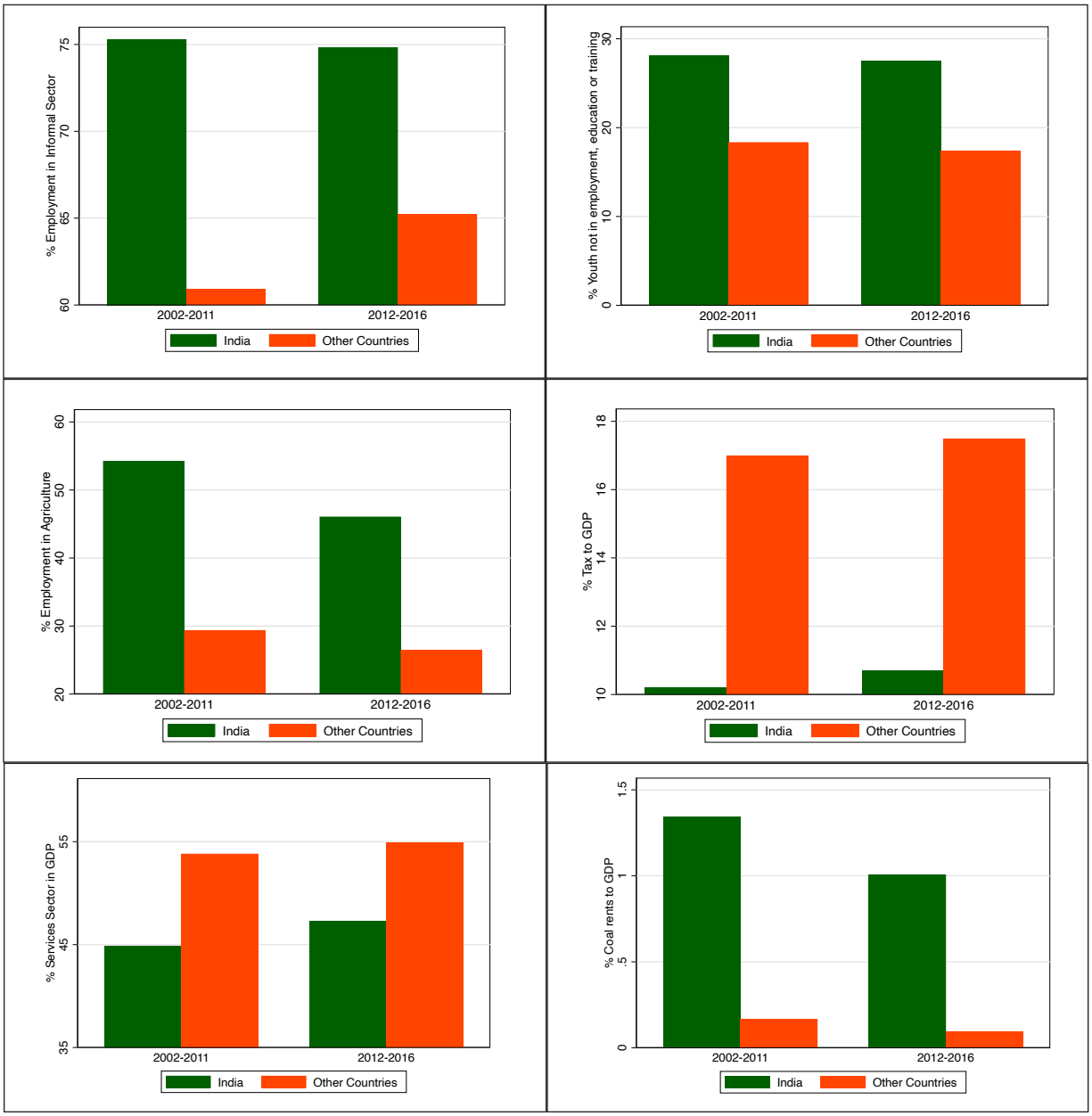
Table 2: Illustration of the effect of omitted variable bias on level of mis-estimation

	Baseline	Incl. services	Incl. agri.	Incl. both services & agri.	Excl. exports, imports, credit
India x Post-Change	**0.0277*** **	**0.0118***	**0.0261*** **	**0.0112****	**-0.0090****
	(6.1757)	**(1.9719)**	**(5.7183)**	**(2.1128)**	**(-2.0210)**
India	**0.0092****	**0.0059***	**0.0087****	**0.0066****	**0.0173*** **
	(2.4151)	**(1.8999)**	**(2.2617)**	**(2.4470)**	**(7.4551)**
Post-Change	0.0042	0.0064*	0.0051	0.0076**	0.0034
	(1.0690)	(1.9675)	(1.3677)	(2.4421)	(0.8392)
Agriculture Growth			0.0022***	0.0019***	0.0021***
			(3.8005)	(5.2800)	(4.6917)
Services Growth		0.5485***		0.5094***	0.6592***
		(8.5362)		(8.5219)	(9.3156)
Export Growth	0.0929*	0.0401	0.0819*	0.0541*	
	(1.9697)	(1.2310)	(1.7386)	(1.9165)	
Import Growth	0.1856***	0.1234***	0.1991***	0.1107***	
	(3.3672)	(2.6379)	(3.3378)	(2.9288)	
Credit Growth	0.0632***	0.0125	0.0377*	0.0010	
	(3.3336)	(0.8320)	(1.9493)	(0.0758)	
Agri. Growth x Post-Change			-0.0004	-0.0006	-0.0007
			(-0.4541)	(-1.1001)	(-1.0330)
Services Growth x Post-Change		-0.1085		-0.1060	-0.0728
		(-0.9346)		(-0.9803)	(-0.6774)
Export Growth x Post-Change	-0.0125	0.0024	-0.0022	-0.0090	
	(-0.2075)	(0.0449)	(-0.0368)	(-0.1851)	
Import Growth x Post-Change	-0.1631**	-0.0965	-0.1866***	-0.0912*	
	(-2.4767)	(-1.5804)	(-2.6874)	(-1.7305)	
Credit Growth x Post-Change	0.1260***	0.0720**	0.1409***	0.0847***	
	(3.6123)	(2.0397)	(4.2821)	(2.6902)	
Constant	0.0139***	0.0026	0.0106***	0.0006	0.0056*
	(4.3905)	(1.2230)	(3.4347)	(0.2944)	(1.9176)
Observations	190	187	190	187	187
Adjusted R^2	0.5443	0.7608	0.6073	0.7962	0.7218

Note: All columns estimate the following regression: $g_{iT}=\beta_0+\beta_1 X_i+\beta_1 X_i \times T+\theta_1 India_i+\theta_2 India_i \times T+\gamma T+\varepsilon_{iT}$. g_i equals the average growth rate for country i in either 2002-11 or 2012-16 period. T equals one for the post-change period and zero otherwise. India equals one for India and zero for all other countries. Columns vary by the choice of covariates used in the model. t-statistics are provided in parentheses. *, ** and *** denote significance levels of 10 per cent, 5 per cent and 1 per cent respectively.

10.22 The solution to omitted variable bias is not as simple as adding more covariates to the model. Thousands of indicators immediately present themselves as candidates, most of which exert their influence on the dependent variable in very indirect, non-linear ways. For example, compared to other countries, India has very high informal sector employment and a large proportion of youth that is not in employment, education or training. Agriculture contributes disproportionately to India's employment whereas services contributes disproportionately to GDP.

Figure 5: Structural differences between the economies of India and other countries



Source: World Bank WDI database.

Note: Informal sector employment share is a percentage of total non-agricultural employment. Share of youth not in education, employment or training represents the proportion of such individuals aged 15-24 among all individuals aged 15-24. Coal rents as defined by World Bank are the difference between the value of both hard and soft coal production at world prices and their total costs of production. It represents a measure of natural resource contribution to GDP.

10.23 Figure 5 illustrates some of these structural differences between the Indian economy and others. All these variables undoubtedly affect GDP, but in indirect ways that cannot be easily measured or observed.

10.24 A complete model must capture the idiosyncratic drivers of growth of each country in the sample. For example, institutional and legal structures are inherently different across countries, which affect countries in ways that cannot be measured directly. Purnanandam (2019) argues that cross-country regressions of this kind must include country fixed effects to account for such unobserved variations across countries. After controlling for such variation, it finds that the erstwhile mis-estimation of 2.4 per cent in his model disappears altogether.

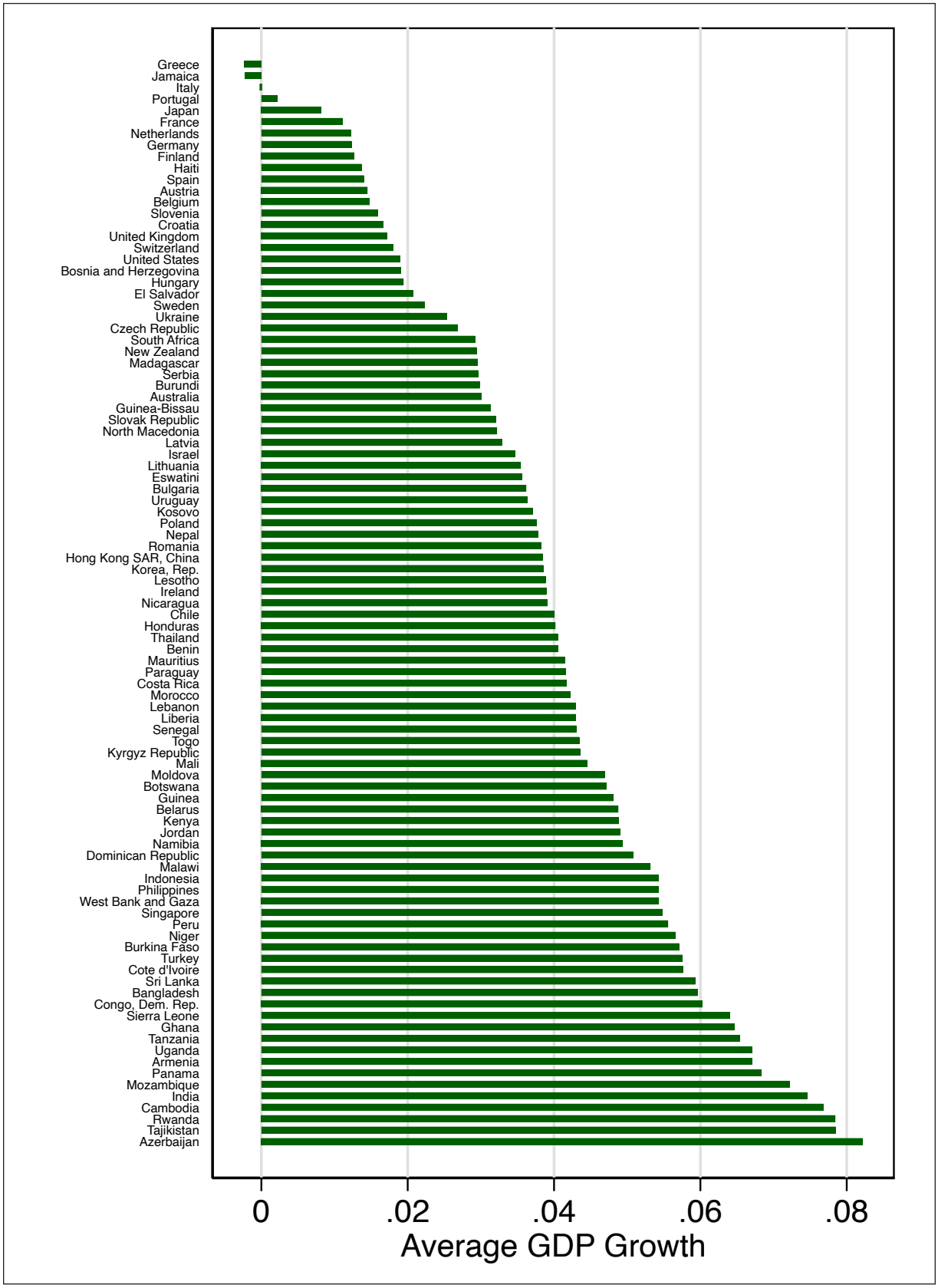
10.25 Figure 6 plots the average growth rate of all countries in the sample over the period 2002-16. Clearly, countries exhibit tremendous variation in their average GDP growth rates. Because average growth rates vary, each country has a different average "effect" on the dependent variable which must be held fixed before it examine the effect of treatment. Put differently, the difference in average growth rates represents important structural differences among countries that must be held fixed before it can examine the effect of treatment. Including country fixed effects in the model achieves exactly this – it accounts for the differences in average growth rates, and by extension all unobserved differences across countries that may influence the dependent variable. Only by including country fixed effects in the model the influence of such unobserved variation can be isolated, counter the omitted variable bias discussed above, and get an unbiased estimate of the effect of treatment.

10.26 In a similar vein, Figure 7 motivates the case for year fixed effects. The chart depicts the cross-sectional average GDP growth of all sample countries in every year from 2002 to 2016. The average is far from constant over time; every year, the sample countries' average GDP growth behaves differently compared to the previous year. In 2009, the average GDP growth of all sample countries reaches rock bottom owing to the financial crisis – an important factor that affected all countries and therefore must be included in the model as a control. Year fixed effects would control for all such unobserved factors that affect all countries in a given year, and thus take care of another source of omitted variable bias.

10.27 In line with Purnanandam (2019), the baseline specification is modified to include country fixed effects and results are presented in Table 3. As a baseline, the first two columns depict cross-sectional regressions for 2002-11 and 2012-16 respectively without fixed effects. The variable of interest is the $India_i$ dummy, which increases from 0.92 per cent pre-change to 3.69 per cent post-change, indicating a mis-estimation of 2.77 per cent, as demonstrated earlier. The third column simply pools the observations in columns 1 and 2, i.e. the pre-change and post-change observations, such that the coefficient of interest now is the interaction between the $India_i$ dummy and T, the post-change dummy. As earlier, the coefficient reflects the mis-estimation of 2.77 per cent.

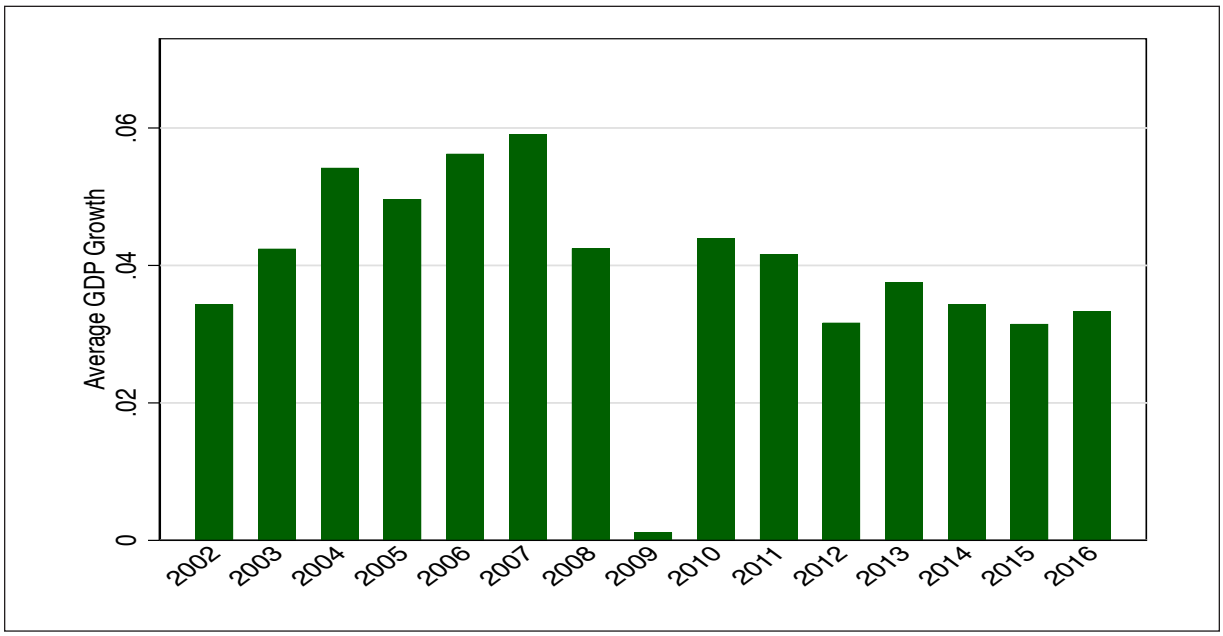
10.28 The final column shows the preferred specification that includes country fixed effects, thus implementing a generalized DID model. Here, the coefficient on the *India x post-change* interaction term turns insignificant. Clearly, a substantial variation in GDP growth is absorbed by unobserved differences across countries, leaving little evidence of any mis-estimation in India's GDP growth rates.

Figure 6: Need for controlling for difference in average GDP growth across countries



Source: World Bank WDI database.

Figure 7: Need for controlling for difference in global growth rates across years



Source: World Bank WDI database.

Table 3: Estimation of abnormal growth with and without controls for differences across countries

Description of sample:	2002-11	2012-16	Pooled	Pooled
Does the econometric specification control for differences across countries?	No	No	No	Yes and therefore the correct model
India	**0.0092****	**0.0369*****	**0.0092****	
	(2.4151)	**(15.7342)**	**(2.4151)**	
India x Post-Change			**0.0277*****	**0.0170**
			(6.1757)	**(0.9067)**
Post-Change			0.0042	-0.0009
			(1.0690)	(-0.3852)
Export Growth Rate	0.0929*	0.0805**	0.0929*	0.0500
	(1.9697)	(2.1591)	(1.9697)	(1.2545)
Import Growth Rate	0.1856***	0.0225	0.1856***	0.0725**
	(3.3672)	(0.6245)	(3.3672)	(2.1073)
Credit Growth Rate	0.0632***	0.1892***	0.0632***	0.0756***
	(3.3336)	(6.4593)	(3.3336)	(3.7686)
Export Growth x Post-Change			-0.0125	
			(-0.2075)	

Import Growth x Post-Change			-0.1631**	
			(-2.4767)	
Credit Growth x Post-Change			0.1260***	
			(3.6123)	
Constant	0.0139***	0.0181***	0.0139***	0.0247***
	(4.3905)	(7.7800)	(4.3905)	(7.1371)
Observations	95	95	190	190
R^2	0.5323	0.5304	0.5443	0.6564
Fixed Effects				Country

Note: Columns 1 and 2 estimate the following cross-sectional regression: $g_i = \beta_0 + \beta_1 X_i + \theta India_i + \varepsilon_i$. For each country i, the dependent and independent variables are averaged over the period 2002-11 and 2012-16 in columns 1 and 2 respectively. Column 3 pools the observations from both periods and estimates the following regression: $g_{iT} = \beta_0 + \beta_1 X_i + \beta_1 X_i \times T + \theta_1 India_i + \theta_2 India_i \times T + \gamma T + \varepsilon_{iT}$. Column 4 also pools the pre-change and post-change observations and includes country fixed effects. gi equals the average growth rate for country i in either 2002-11 or 2012-16 period. T equals one for the post-change period and zero otherwise. India equals one for India and zero for all other countries. t-statistics are provided in parentheses. *, ** and *** denote significance levels of 10 per cent, 5 per cent and 1 per cent respectively.

10.29 The perils of estimating incomplete models without controlling for differences across countries is exemplified in the following experiment. Using baseline specification without country fixed effects, many other countries seems to have misstated their GDPs. Table 4 depicts the results for a subset of these countries. To derive the results in Table 4, now model is re-run with the specifications in columns 3 and 4 of Table 3, with other countries instead of India as the treated group. When the model excludes country fixed effects, many countries appear to have their GDPs overstated or understated, as shown in panels A and B respectively. The over-or under-statement disappears or reduces in magnitude when country fixed effects are introduced in the model. Results reinforce similar findings in other independent studies, notably Bhalla (2019) who finds Germany's GDP "overstated" and Jamaica's GDP "understated", as chapter do, in a model without controls for differences across countries.

10.30 Table 5 shows the results for all the countries in the sample where it was found a "mis-estimation" disappeared after including fixed effects[4]. These countries amount to more than half of the sample. The average absolute level of what seems to be "misrepresentation" that diminishes after including fixed effects is a massive 1.68 per cent. In the absence of fixed effects, one may erroneously conclude that all the countries in the tables below, including several advanced economies like United Kingdom, Singapore, Germany etc., have flawed methodologies for their respective GDP estimations – an extremely unlikely scenario.

[4] For a small number of countries, even though the coefficients are significant even after including country fixed effects, they drop substantially in magnitude.

Table 4: Countries with GDP appearing misstated without fixed effects and correction resulting from adding fixed effects (FE)

Panel A: Countries with GDP appearing overstated without country fixed effect

	United Kingdom		Bangladesh		Germany	
	No FE (incorrect)	FE (correct)	No FE (incorrect)	FE (correct)	No FE (incorrect)	FE (correct)
Country x Post-Change	0.0163***	0.0131	0.0389***	0.0289	0.0092**	0.0051
	(4.3289)	(0.7077)	(8.7502)	(1.5596)	(2.4795)	(0.2742)
Observations	190	190	190	190	190	190
R^2	0.5298	0.6552	0.5383	0.6624	0.5315	0.6536

Panel B: Countries with GDP appearing understated without country fixed effect

	Singapore		South Africa		Belgium	
	No FE (incorrect)	FE (correct)	No FE (incorrect)	FE (correct)	No FE (incorrect)	FE (correct)
Country x Post-Change	-0.0226***	-0.0229	-0.0116***	-0.0130	-0.0135***	-0.0100
	(-8.0765)	(-1.2451)	(-3.6358)	(-0.6997)	(-4.3818)	(-0.5377)
Observations	190	190	190	190	190	190
R^2	0.5334	0.6592	0.5292	0.6552	0.5335	0.6544

Note: For each country, the first column estimates the model: $g_{iT}=\beta_0+\beta_1 X_i+\beta_1 X_i \times T+\theta_1 Country_i+\theta_2 Country_i \times T+\gamma T+\varepsilon_{iT}$. The second column estimates the model: $g_{iT}=\beta_i+\gamma t+\beta_1 X_{iT}+\theta Country_i \times T+\varepsilon_{it}$, i.e. with country fixed effects. T equals one for the post-change period, i.e. the post-change period, and zero otherwise. Country equals one for the country in question and zero for all other countries. t-statistics are provided in parentheses. *, ** and *** denote significance levels of 10 per cent, 5 per cent and 1 per cent respectively.

Table 5: Countries with GDP appearing misstated without fixed effects and correction resulting from controls for variation across countries

	Country	Country x Post-Change Coefficient				
		Coefficient without FE (incorrect)	Coefficient with FE (correct)	Is the coefficient significant in FE model?	If yes, whether magnitude lower	Amount of "mis-estimation" corrected (Diff. in coefficients, %)
1	Burundi	0.0404***	0.0113	No		4.04
2	Bangladesh	0.0389***	0.0289	No		3.89
3	Hungary	0.0385***	0.0209	No		3.85
4	Romania	0.0334***	0.0187	No		3.34
5	Sierra Leone	0.0309***	0.018	No		3.09
6	Slovenia	0.0255***	0.0138	No		2.55
7	Ghana	0.0229***	0.0021	No		2.29
8	United Kingdom	0.0163***	0.0131	No		1.63
9	Ireland	0.0495***	0.0338*	Yes	Yes	1.57
10	Kosovo	0.0152***	0.0103	No		1.52
11	Kenya	0.0147***	0.0163	No		1.47
12	Moldova	0.0133***	0.0042	No		1.33
13	Kyrgyz Republic	0.0130**	0.0145	No		1.30
14	Guinea-Bissau	0.0123*	0.0208	No		1.23
15	Haiti	0.0116***	0.0185	No		1.16
16	Bulgaria	0.0099**	-0.0006	No		0.99
17	Germany	0.0092**	0.0051	No		0.92
18	Nicaragua	0.0088**	0.0197	No		0.88
19	Senegal	0.0079***	0.0171	No		0.79
20	Spain	0.0076*	0.0021	No		0.76
21	New Zealand	0.0058**	0.0118	No		0.58
22	Niger	0.0598***	0.0551***	Yes	Yes	0.47
23	Congo, Dem. Rep.	0.0354***	0.0339*	Yes	Yes	0.15
24	Azerbaijan	-0.0515***	-0.0474**	Yes	Yes	-0.41
25	Hong Kong SAR, China	-0.0058**	-0.0099	No		-0.58
26	Philippines	-0.0076**	0.0045	No		-0.76
27	Namibia	-0.0091**	-0.0059	No		-0.91
28	Botswana	-0.0094***	-0.0037	No		-0.94
29	Honduras	-0.0095***	-0.0037	No		-0.95
30	Finland	-0.0097***	-0.0092	No		-0.97
31	Jamaica	-0.0101*	0.0096	No		-1.01
32	Serbia	-0.0105***	-0.021	No		-1.05
33	Dominican Republic	-0.0108***	0.0031	No		-1.08

34	South Africa	-0.0116***	-0.013	No		-1.16
35	Mauritius	-0.0121***	-0.004	No		-1.21
36	Rwanda	-0.0122***	-0.0118	No		-1.22
37	Costa Rica	-0.0131***	-0.0058	No		-1.31
38	Belgium	-0.0135***	-0.01	No		-1.35
39	Burkina Faso	-0.0138**	-0.0078	No		-1.38
40	Sri Lanka	-0.0146***	-0.0073	No		-1.46
41	West Bank and Gaza	-0.0501***	-0.0349*	Yes	Yes	-1.52
42	Slovak Republic	-0.0164***	-0.0087	No		-1.64
43	Greece	-0.0187***	-0.0164	No		-1.87
44	Nepal	-0.0221***	-0.0079	No		-2.21
45	Singapore	-0.0226***	-0.0229	No		-2.26
46	Peru	-0.0233***	-0.0159	No		-2.33
47	Mali	-0.0241***	-0.0223	No		-2.41
48	Jordan	-0.0274***	-0.0252	No		-2.74
49	Lebanon	-0.0281***	-0.0302	No		-2.81
50	Cambodia	-0.0351***	-0.0084	No		-3.51
51	Armenia	-0.0465***	-0.0306	No		-4.65

Note: For each country, we estimates two models: $g_{iT} = \beta_0 + \beta_1 X_i + \beta_1 X_i \times T + \theta_1 Country_i + \theta_2 Country_i \times T + \gamma T + \varepsilon_{iT}$, and $g_{iT} = \beta_i + \gamma t + \beta_1 X_{iT} + \theta Country_i \times T + \varepsilon_{it}$, the latter with country fixed effects and the former without. T equals one for the post-change period and zero otherwise. Country equals one for the country in question and zero for all other countries. Continuous variables are averaged over the whole pre- and post-change periods. *, ** and *** denote significance levels of 10 per cent, 5 per cent and 1 per cent respectively. The last column lists the coefficient from the first estimation if the coefficient from the second estimation is insignificant, and the difference between the two coefficients if the coefficient from the second estimation is significant at least at the 10 per cent level.

Panel Data Dynamics: A Modified DID to Account for Country-Specific Trends

10.31 Although the generalized DID model presented in previous section mitigates the risk of omitted variable bias, the analysis must still contend with the parallel trends assumption, which is not fully satisfied in the current sample. If this assumption is not satisfied, at a minimum, one must include a trend line in the specification, as argued in Purnanandam (2019). Baseline model is not amenable to inclusion of a trend line because it has only two time periods – a pre-change and post-change period. However, one can exploit a panel data specification with each country-year treated as an individual observation to implement trend dynamics.

10.32 Purnanandam (2019) shows that in a panel data estimation with country fixed effects, year fixed effects and country-specific trends, the abnormal growth rate obtained in the cross-sectional regressions is completely explained away by differential trend lines across countries. In Table 6, the modified DID model on panel data is estimated by, regressing GDP growth rate on the same independent variables as before but with each country-year treated as an individual observation.

The first column is a baseline without fixed effects or country trends. The results in this column are comparable to a similar panel data specification in Subramanian (2019), with one significant difference – the latter study uses the *levels*, rather than *growth rates*, of all variables to establish its results. However, growth rates were chosen because in levels, the variables used in the regression are non-stationary. When variables are growing, a regression in levels can give spurious results (Goyal & Kumar, 2019). In specification, even the baseline model without fixed effects fails to yield a significant coefficient on India x post-change.

10.33 Further, the inclusion of country or year fixed effects to the baseline panel data specification serves to reduce the magnitude of the coefficient of the variable of interest, India x post-change. Lastly, the inclusion of an India trend, or a trend for each country, turns the coefficient negative (although still insignificant)!

Table 6: Estimation of abnormal growth with panel dynamics, including country-specific trends

	No FE	Country FE	Year FE	Country & Year FE	Country & Year FE, India Trend	Country & Year FE, Country Trends
India x Post-Change	**0.0221**	**0.0198**	**0.0199**	**0.0166**	**-0.0144**	**-0.0138**
	(1.4838)	**(1.4930)**	**(1.3629)**	**(1.3057)**	**(-0.6535)**	**(-0.6522)**
India	**0.0193****		**0.0209****			
	(2.2456)		**(2.4765)**			
Post-Change	-0.0006	-0.0016		0.0022	0.0019	-0.0185
	(-0.3777)	(-1.1147)		(0.6384)	(0.5477)	(-0.4221)
India x Time-Trend					0.0041*	
					(1.7200)	
Export Growth Rate	0.0670***	0.0601***	0.0587***	0.0471***	0.0475***	0.0491***
	(8.1153)	(7.8152)	(7.1055)	(6.2332)	(6.2844)	(6.6301)
Import Growth Rate	0.0936***	0.0867***	0.0839***	0.0731***	0.0729***	0.0703***
	(11.4934)	(11.6266)	(10.3110)	(10.0078)	(9.9931)	(9.5350)
Credit Growth Rate	0.0705***	0.0529***	0.0645***	0.0422***	0.0424***	0.0355***
	(13.7564)	(10.6660)	(12.5500)	(8.6036)	(8.6377)	(6.8477)
Observations	1349	1349	1349	1349	1349	1349
Adjusted R^2	0.3810	0.5102	0.4050	0.5507	0.5514	0.5897
Country FE	No	Yes	No	Yes	Yes	Yes
Year FE	No	No	Yes	Yes	Yes	Yes
Time Trend	None	None	None	None	India	Country

Note: Each column estimates a regression on a panel data of countries with annual data from 2002-2016. Column 1 includes no fixed effects, Column 2 a country fixed effect, Column 3 a year fixed effect and Column 5 both fixed effects. Column 5 includes both fixed effects and a separate time trend for India. Column 6 additionally includes a separate time trend for each country. The dependent variable is the annual growth rate in GDP. t-statistics are provided in parentheses. *, ** and *** denote significance levels of 10 per cent, 5 per cent and 1 per cent respectively.

A DIAGNOSTIC ANALYSIS

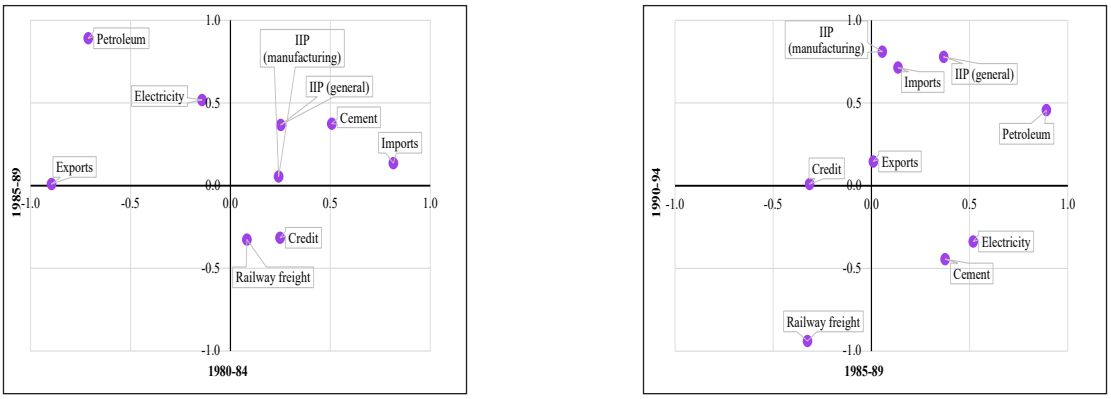
10.34 DID models fail to show any mis-estimation in the Indian GDP. The analysis is concluded by examining other signs that may indicate a problem with the GDP estimation methodology. Subramanian (2019) offers a useful diagnostic, wherein the GDP growth rates are correlated with other indicators that have not undergone any changes in methodology. In essence, the methodology involves correlating the "suspect" variable – the GDP growth rate – with several other "reliable" variables to uncover any suspicious patterns.

10.35 Figure 8 plots the correlations between GDP growth and several indicators of economic activity in successive five-year periods starting 1980-84[5]. Indeed, over half the correlations change sign in the latest period. But before attributing the counterintuitive signs to the methodology revision in 2011 and resulting mis-estimation of GDP, it is important to check whether these indicators have had a stable and predictable relationship with GDP prior to 2011. However, the relationship between these indicators and GDP growth has been far from stable in the past. The correlations have changed their signs several times even before the 2011 methodology revision. These changes in sign are summarized in Table 7.

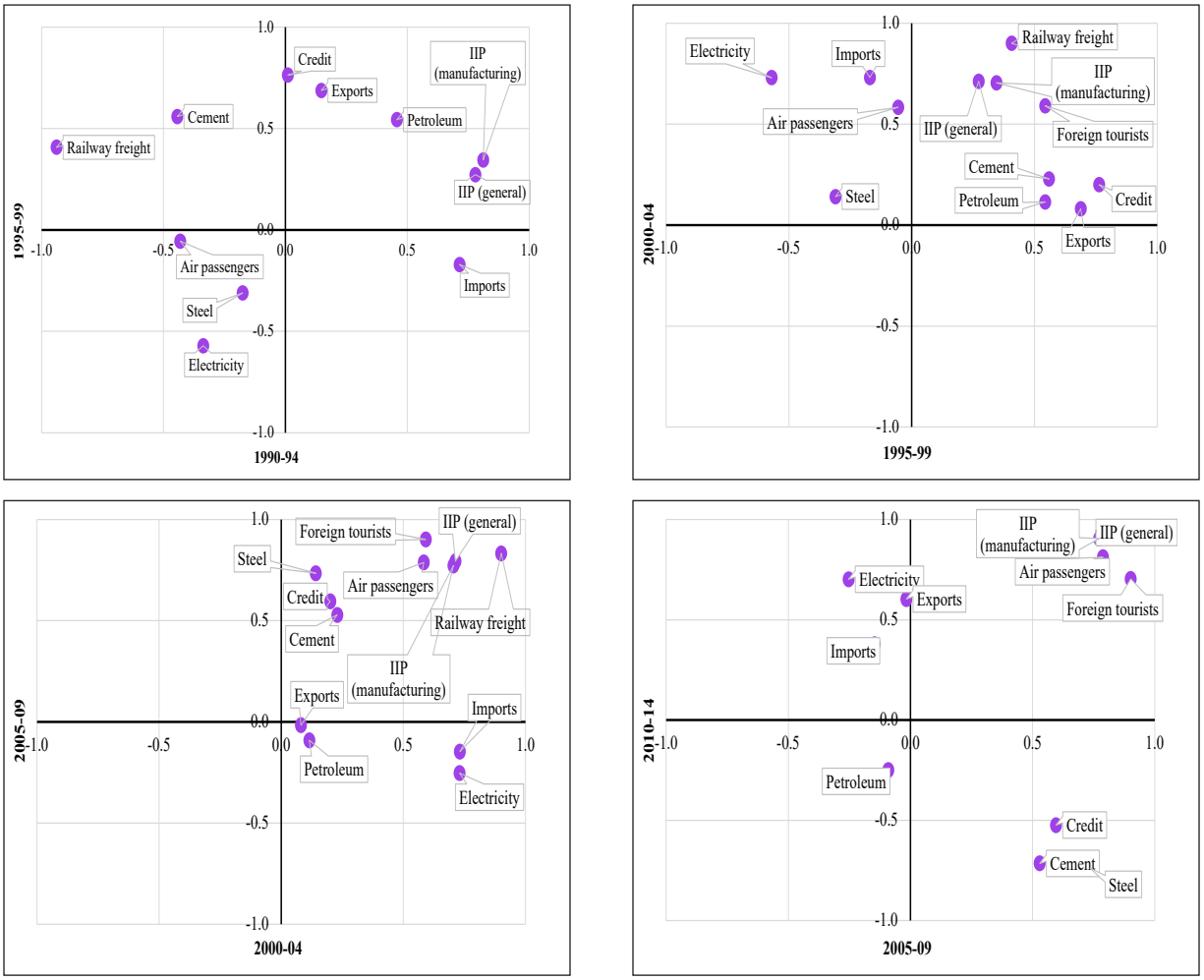
10.36 Had these indicators consistently displayed a positive relationship with GDP in the past, making a break from positive to negative only after the methodology revision in 2011, the diagnostic would have yielded a cause for concern. However, the correlations between these indicators and GDP growth have flipped signs in the past even when there were no methodology revisions.

10.37 For example, growth in electricity consumption was negatively correlated with real GDP growth in 1980-84, positively so in 1985-89, negatively so in 1990-99, positively so in 2000-04 and negatively so in 2005-09, flipping signs four times before 2011, the year of methodology revision. Similarly, real exports growth was negatively correlated with GDP growth in 1980-84, positively so in 1985-2004 and negatively so in 2005-09. Figure 9 plots the time-series values of these correlations. Clearly, negative correlations were not at all uncommon in the past. Figure 10 highlights this instability using the standard deviation of these correlations themselves.

Figure 8: Correlation between indicators and GDP growth historically



[5] The procedure is in line with Subramanian (2019), who plots the correlations in two periods: 2001-11 and 2012-16. The indicators used in Subramanian (2019) are the growth rates of the following: electricity consumption, 2-wheeler sales, commercial vehicle sales, tractor sales, airline passenger traffic, foreign tourist arrivals, railway freight traffic, index of industrial production, index of industrial production (manufacturing), index of industrial production (consumer goods), petroleum consumption, cement, steel, overall real credit, real credit to industry, exports of goods and services, and imports of goods and services.



Sources: GDP growth from IMF World Economic Outlook (matches the series used in Subramanian (2019)), sectoral indicators from World Bank WDI database, RBI, and respective Union Ministry databases.

Note: Correlations are computed between the real growth rate in the respective indicator and the real GDP growth rate.

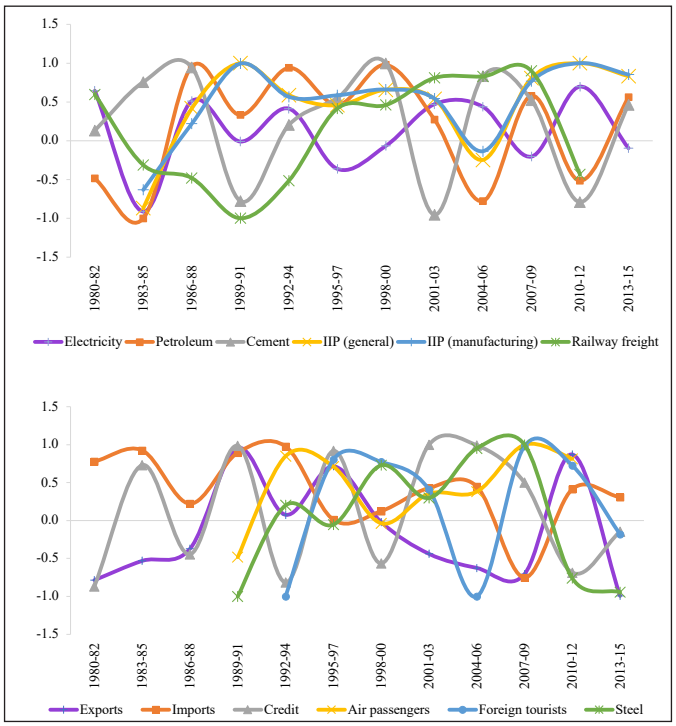
Table 7: Evidence that correlation of sectoral indicator growth with GDP growth has flipped signs many times historically

	Sign of correlation between sectoral indicator growth and GDP growth						
Indicator	1980-84	1985-89	1990-94	1995-99	2000-04	2005-09	2010-14
Exports	–	+	+	+	+	–	+
Imports	+	+	+	–	+	–	+
Credit	+	–	+	+	+	+	–
Electricity	–	+	–	–	+	–	+
Petroleum	–	+	+	+	+	–	–
Railway freight	+	–	–	+	+	+	
Cement	+	+	–	+	+	+	–
Steel			–	–	+	+	–

Sources: GDP growth from IMF World Economic Outlook (matches the series in Subramanian (2019)), sectoral indicators from World Bank WDI database, RBI, and respective Union Ministry databases.

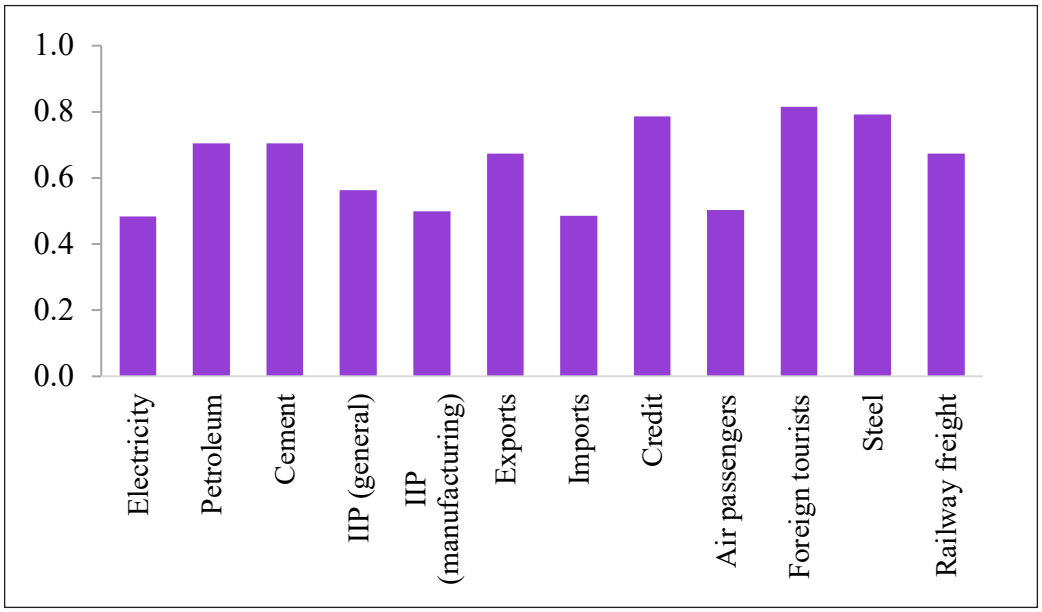
Note: Highlighted cells indicate flipping of signs of the correlations before the GDP methodology revision in 2011.

Figure 9: Variation in the correlation between sectoral indicators and GDP growth over time



Sources: GDP growth from IMF World Economic Outlook (matches the series used in Subramanian (2019)), sectoral indicators from World Bank WDI database, RBI, and respective Union Ministry databases.

Figure 10: High volatility in the correlations between indicators and GDP growth



Sources: GDP growth from IMF World Economic Outlook (matches the series in Subramanian (2019)), sectoral indicators from World Bank WDI database, RBI, and respective Union Ministry databases.

Note: For each sector, the correlation between annual sectoral growth and GDP growth was computed in each of twelve 3-year periods: 1980-82, 1983-85, and so on until 2013-15. The chart above depicts the standard deviation of these twelve correlations.

Table 8: GDP growth explained by Subramanian (2019) indicators pre-change: India and other countries

	India	Middle-income countries		All countries	
	I	II	III	IV	V
Export Growth Rate	-0.2009	0.0631**	0.0431	0.0661***	0.0398**
	(-0.7939)	(2.1967)	(1.4057)	(3.8160)	(2.3403)
Import Growth Rate	0.0870	0.1080***	0.0747**	0.1054***	0.0750***
	(0.4671)	(4.1062)	(2.3428)	(6.4254)	(4.4388)
Credit Growth Rate	0.2077	0.0598***	0.0419***	0.0618***	0.0392***
	(0.7735)	(5.2346)	(4.2707)	(6.6422)	(4.8548)
Constant	0.0661**	0.0286***	0.0312***	0.0225***	0.0254***
	(2.6757)	(10.8528)	(7.6420)	(9.9046)	(6.9846)
Observations	10	364	364	872	872
R^2	**0.1054**	**0.4125**	**0.5813**	**0.3934**	**0.6293**
Country FE	No	No	Yes	No	Yes
Year FE	No	No	Yes	No	Yes
Clustered by	No	Country	Country	Country	Country

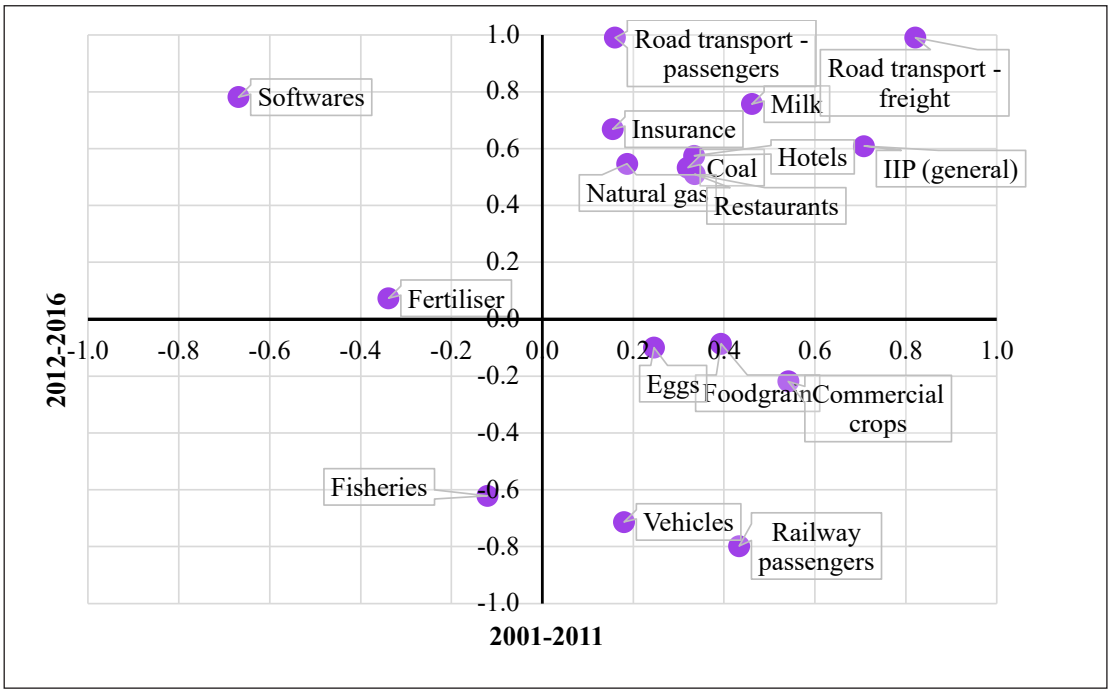
Note: Column I regresses India's GDP growth rate on its export, import and credit growth rate for the period 2002-11. Column II repeats the regression for all middle-income countries (excluding India) as per World Bank classification, and column IV repeats the regression for all countries (excluding India) in the sample. Columns III and V repeat the regressions in Columns II and IV respectively and additionally include country and year fixed effects. In Columns II through V, standard errors are robust and clustered by country. t-statistics are provided in parentheses. *, ** and *** denote significance levels of 10 per cent, 5 per cent and 1 per cent respectively.

10.38 Given that these indicators do not exhibit a stable relationship with GDP growth even before 2011, they are poorly equipped to diagnose mis-estimation post 2011. This result is more established formally as follows. To test the predictive power of these indicators prior to 2011, the real GDP growth rate was regressed on the real growth in imports, exports and credit for India. For comparison, the analysis repeats the regression for all middle-income countries, and finally repeat the regression for all countries in the sample. The analysis includes observations only from 2002 to 2011 so as to test the explanatory power of the indicators before the methodology revision. Table 8 presents results.

10.39 It is striking that none of the three indicators is statistically significant in explaining GDP growth in India before 2011, even as they assume significance for other countries. Further, only a paltry 10.5 per cent of the variation in Indian GDP growth is explained by these indicators. In contrast, the R^2 for other countries ranges from 40 per cent to 63 per cent. The results confirm the inability of these indicators to explain Indian GDP growth even before 2011. The pattern of GDP growth in India is far more complex than what a few indicators of economic activity can predict, and therefore, asserting a mis-estimation based on these indicators alone is inappropriate.

10.40 In its June 2019 report, the Economic Advisory Council to the Prime Minister highlighted the importance of agriculture- and services-based indicators in the diagnostic process (Economic Advisory Council to the Prime Minister, 2019). Therefore, a correlation chart is plotted below with an alternative set of indicators, this time including indicators from the agriculture and services sectors.

Figure 11: Most agriculture- and services- related indicators correlate positively with GDP growth in 2001-11 and 2012-16



Sources: GDP growth from IMF World Economic Outlook (matches the series in Subramanian (2019)), sectoral indicators from World Bank WDI database, RBI, and respective Union Ministry databases.

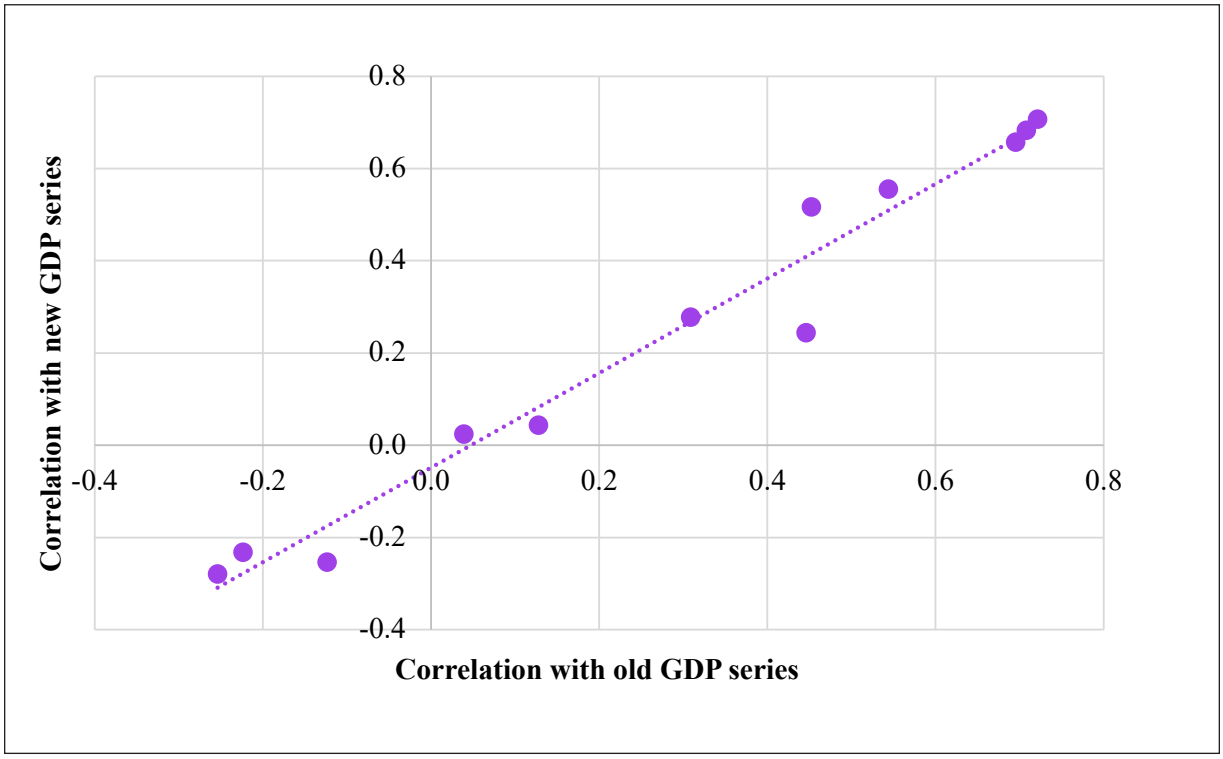
Note: Indicators are defined as follows. Agriculture sector indicators include the annual growth rates in production of foodgrains, commercial crops, fisheries, milk and eggs. Manufacturing sector indicators include the annual growth rates in the production of coal, natural gas, N and P205 fertiliser, and IIP (general). Service sector indicators include the annual growth rates in the following: number of originating passengers on the Indian Railways, weight of freight per km moved on Indian roadways, number passengers per km moved on Indian roadways, number of hotel rooms, gross insurance premiums paid, software sales, and spending on restaurants and hotels.

As shown in Figure 11, many indicators were positively correlated with GDP both before and after the methodology revision (notwithstanding the fact that correlations of this kind tend to be inherently unstable and are only naïve predictors of GDP, as argued earlier).

10.41 Given that the correlation between the sectoral indicators of economic activity and GDP growth has been unstable historically, a more useful diagnostic is a comparison of a given indicator's correlation with the old GDP series and the same indicator's correlation with the new GDP series. A divergence in the two values would indicate a problem with the new methodology. However, as Figure 12 shows unequivocally, the indicator's relationship with GDP is broadly unchanged after the methodology revision.

10.42 Figure 12 also suggests that if, instead of 2011, 2010 or 2012 was used as the separating line to catch flips in correlations, the chapter would have arrived at identical results as with 2011 as the separating line. Indeed, a study by Vaidya Nathan (2019) finds, "When we split the data in the paper one year before or after — as pre-2010 and post-2010, or pre-2012 and post-2012 — we get identical results of both flipping and negative correlations," showing that there is nothing sacrosanct about the year of methodology revision, 2011.

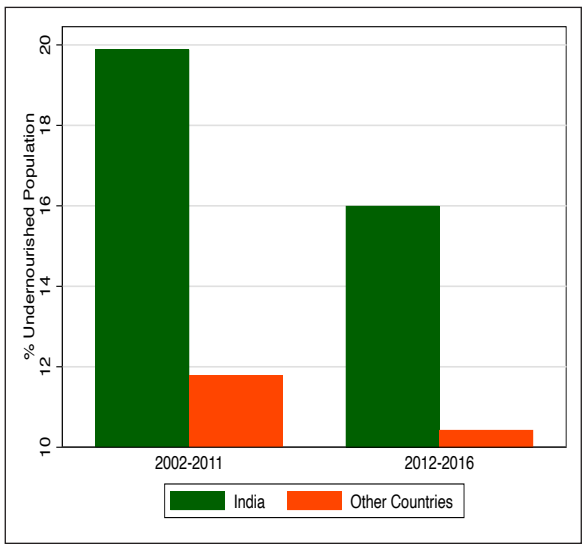
Figure 12: Relationship of indicators with previous GDP series similar to that with the new series

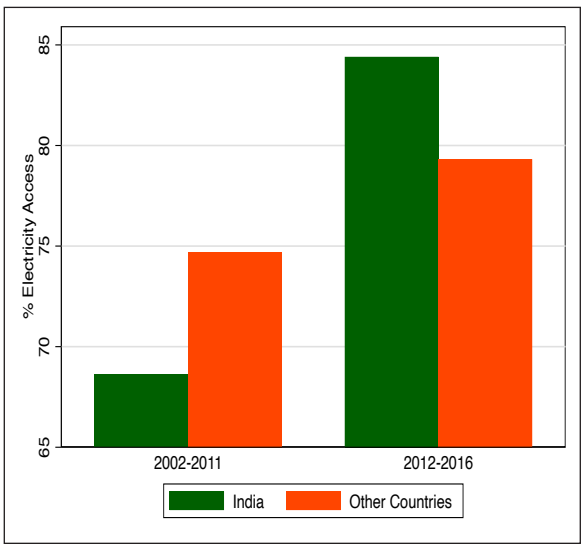


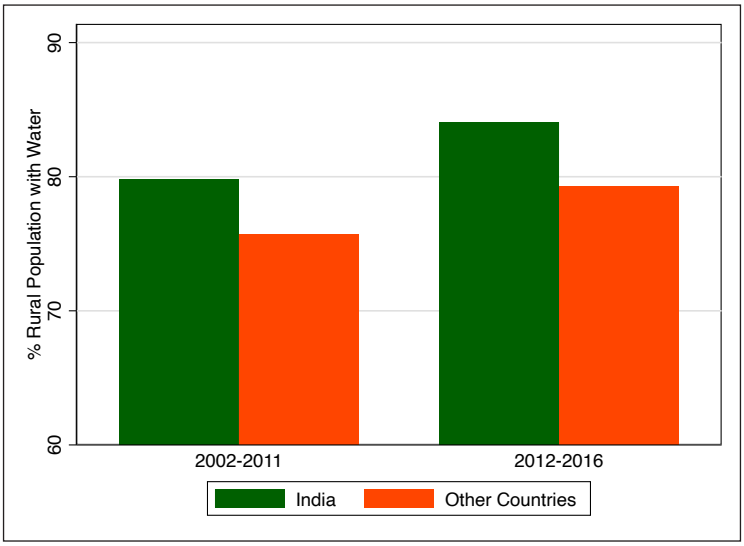
Sources: GDP growth from IMF World Economic Outlook (matches the series in Subramanian (2019)), sectoral indicators from World Bank WDI database, RBI, and respective Union Ministry databases.

Note: Correlation between real sectoral growth and real GDP growth was computed using first the GDP growth under the old methodology with 2004-05 base, then with the GDP growth under the new methodology with 2011-12 base. Both old and new series are available for the years 2001-2011.

Figure 13: Social development indicators







Source: Purnanandam (2019)

10.43 The analysis in the chapter clearly shows that the evidence in favour of an overstated Indian GDP disappears completely in a correctly specified econometric model. At the same time, more work is needed to fully understand the determinants of India's growth rate over time. As an illustrative exercise, however, it must be acknowledged that the exact pattern of India's GDP and how it evolves over time is far from clear. Much more study is required on this important phenomenon. Figure 13 shows a few potential determinants, derived from Purnanandam (2019). India has made impressive improvements in several social development indicators, such as access to nutrition and electricity, that might explain the higher growth rate in Indian GDP in the post-change period. However, it must be acknowledged that the exact pattern of India's GDP and how it evolves over time is far from clear. Much more study is required on this important phenomenon.

CONCLUSION

10.44 This chapter considers the important issue of the accuracy of India's GDP estimation. The level and growth of a country's GDP informs several critical policy initiatives as it is a barometer of the economy's size and health. It is also a pre-eminent driver of investment. Therefore, it is important that GDP is measured as accurately as possible. Recently, there has been much debate and discussion among scholars, policymakers and citizens alike on whether India's GDP is estimated correctly.

10.45 If the evidence of a mis-estimation is credible and robust, a radical upheaval of the estimation methodology should follow. However, given the cost of such a massive undertaking, it is important to be certain that there is a need to revisit the estimation methodology. In that spirit, the chapter carefully examines the evidence, leveraging existing scholarly literature and econometric methods to study whether India's GDP growth is higher than it would have been had its estimation methodology not been revised in 2011. Using a cross-country, generalized difference-in-difference model with fixed effects, the analysis demonstrate the lack of any concrete evidence in favour of a misestimated Indian GDP.

10.46 The larger point made by this chapter needs to be understood by synergistically viewing its findings with the micro-level evidence in Chapter 2, which examines new firm creation in the formal sector across

504 districts in India. Two observations are critical. First, the granular evidence shows that a 10 per cent increase in new firm creation increases district-level GDP growth by 1.8 per cent. As the pace of new firm creation in the formal sector accelerated significantly more after 2014, the resultant impact on district-level growth and thereby country-level growth must be accounted for in any analysis. Along these lines, Purnanandam (2019) shows that India's improvement in indicators such as access to nutrition and electricity might explain the higher growth rate in Indian GDP post the methodological change. Second, granular evidence on new firm creation shows that new firm creation in the Service sector is far greater than that in manufacturing, infrastructure or agriculture. This micro-level evidence squares up fully with the well-known macro fact on the relative importance of the Services sector in the Indian economy. The need to invest in ramping up India's statistical infrastructure is undoubted. In this context, the setting up of the 28-member Standing Committee on Economic Statistics (SCES) headed by India's former Chief Statistician is important. Nevertheless, carefully constructed evidence in the Survey must be taken on board when assessing the quality of Indian data.

CHAPTER AT A GLANCE

- GDP growth is a critical variable for decision-making by investors as well as policymakers. Therefore, the recent debate about whether India's GDP is correctly estimated following the revision in estimation methodology in 2011 is extremely significant.
- As countries differ in several observed and unobserved ways, cross-country comparisons have to be undertaken with care to separate out the effect of other confounding factors and isolate the effect of the methodology revision alone on GDP growth estimates.
- The models that incorrectly over-estimate GDP growth by 2.7 per cent for India post-2011 also mis-estimate GDP growth over the same time period for 51 other countries out of 95 countries in the sample. Several advanced economies such as UK, Germany and Singapore turn out to have their GDPs misestimated when the econometric model is incompletely specified.
- Correctly specified models that account for all unobserved differences among countries as well as differential trends in GDP growth across countries fail to find any misestimation of growth in India or other countries.
- Concerns of a misestimated Indian GDP are unsubstantiated by the data and are thus unfounded. More broadly, carefully constructed evidence in the Survey, especially that in this chapter combined with micro-level evidence in Chapter 2, must be taken on board when assessing the quality of Indian data.

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Thalinomics: The Economics of a Plate of Food in India

11
CHAPTER

उपनःपितवाचरशिवःशिवाभिरूतिभिः ।
मयोभुरद्विषेण्यःसखासुशेवोअद्वयाः ॥

Come hitherward to us, O Food, auspicious with auspicious help,
Health-bringing, not unkind, a dear and guileless friend.

-Rig Veda

Though economics affects the common lives of people in tangible ways, this fact often remains unnoticed. What better way to make economics relate to the common person than something that s(he) encounters every day – a plate of food? Enter "Thalinomics: The economics of a plate of food in India" – an attempt to quantify what a common person pays for a Thali across India. Has a Thali become more or less affordable? Has inflation in the price of a Thali increased or decreased? Is the inflation the same for a vegetarian Thali as for a non-vegetarian one? Is the inflation in the price of a Thali different across different states and regions in India? Which components account for the changes in the price of a Thali – the cereals, vegetables, pulses or the cost of fuel required for its preparation? Questions that can engage a dinner-table conversation in Lutyens Delhi or in a road-side Dhaba in the hinterland can now be answered and positions taken on either side of a "healthy" debate. Using the dietary guidelines for Indians (NIN, 2011), the price of Thalis are constructed. Price data from the Consumer Price Index for Industrial Workers for around 80 centres in 25 States/UTs from April 2006 to October 2019 is used. Both across India and the four regions – North, South, East and West – it is found that the absolute prices of a vegetarian Thali have decreased significantly since 2015-16 though the price has increased in 2019. As a result, an average household of five individuals that eats two vegetarian Thalis a day gained around ₹10887 on average per year while a non-vegetarian household gained ₹11787, on average, per year. Using the annual earnings of an average industrial worker, it is found that affordability of vegetarian Thalis improved 29 per cent from 2006-07 to 2019-20 while that for non-vegetarian Thalis improved by 18 per cent.

INTRODUCTION

11.1 Though economics affects each one of us in our everyday lives, this fact often remains unnoticed by the common man or woman. Economists possibly owe themselves this predicament; after all, broody, technical conversations on "heteroscedasticity" can frighten away even the most diligent and intelligent. Can we relate economics to the common person's life every day? Through the chapter on the "Behavioural Economics

of Nudge", the Economic Survey 2018-19 made a humble attempt to understand humans as humans, not self-interested automatons, so that a common person can relate to his/her idiosyncrasies and use that easy prism to understand behavioural change as an instrument of economic policy. What better way to continue this modest endeavour of forcing economics to relate to the common man than use something that s(he) encounters every day – a plate of food?

11.2 Enter "Thalinomics: The economics of a plate of food in India" – an attempt to quantify what a common person pays for a Thali across India. Has a Thali become more or less affordable? Has inflation in the price of a Thali increased or decreased? Is the inflation the same for a vegetarian Thali as for a non-vegetarian one? Is the inflation in the price of a Thali different across different states and regions in India? Which components account for the changes in the price of a Thali – the cereals, vegetables, pulses or the cost of fuel required for its preparation? Questions that can engage a dinner-table conversation in Lutyens Delhi or in a road-side Dhaba in the hinterland can now be answered and positions taken on either side of a "healthy" debate.

11.3 As food is a necessity, a rapid rise in the price of a Thali has the most direct and conspicuous effect on the common man. Indeed, food and beverages constitute around 45.9 per cent in the Consumer Price Index-Combined. The most effective way, therefore, to communicate the trends in prices to the common man is through the cost incurred in putting together one complete, homemade meal – the Indian Thali.

11.4 Given its enormous diversity, India has very diverse cuisines with variety of food items, which is a delicious mix of variety of vegetables, cereals, fruits, and spices that grow across the country. Indian traditional diet has always been a healthy mix of vegetables and cereals along with fish, meat and eggs. Thali prices are constructed for 25 States/UTs taking into account the prices for cereals (rice or wheat), sabzi (vegetables plus other ingredients), dal (pulses with other ingredients) as well as the cost of fuel that goes into making a meal in a household (Box 1). Two types of Thalis are analysed: a vegetarian Thali and a non-vegetarian one. A vegetarian Thali comprises of a serving of cereals, sabzi and dal and the non-vegetarian Thali comprises of cereals, sabzi and a non-vegetarian component. The evolution of prices of these two Thalis during the period from 2006-07 to October, 2019-20 is analysed.

11.5 Both across India and the four regions – North, South, East and West – we find that the absolute prices of a vegetarian Thali have decreased since 2015-16 though it increased during 2019. This is owing to significant moderation in the prices of vegetables and dal from 2015-16 when compared to the previous trend of increasing prices. In fact, the increase in prices of both components has contributed to the increase in the Thali price during 2019-20 (April - October) as well. If the prices of a vegetarian Thali had followed the trend obtained till 2015-16, an average household comprising of five individuals[1] would have had to spend ₹10887 more on average per year for eating minimum two healthy Thalis a day. In other words, after 2015-16, the average household gained ₹10887 per year on average from the moderation in Thali prices. Similarly, an average household that eats minimum two healthy non-vegetarian Thalis per day gained around ₹11787 on average during the same period. As another benchmark, we examine an industrial worker's ability to pay for two Thalis a day for his/her household of five individuals.

[1] The assumption of five individuals per household is based on the fact that the average household in India has 4.8 individuals (Census, 2011).

Using this measure, we find that affordability of vegetarian Thalis has improved over the time period from 2006-07 to 2019-20 by 29 per cent and that for non-vegetarian Thalis by 18 per cent. Note that though non-vegetarian Thalis are costlier than the vegetarian Thalis, the gains and therefore the affordability stem from the trends prevailing in the respective Thali till 2015-16.

Box 1: Construction of the Thali Prices

Thalis were constructed using average monthly price data (used for preparation of Consumer Price Index-Industrial Workers (CPI-IW)) for the period April 2006 to October 2019 from Labour Bureau, Government of India, for 78 centres in 25 States/UTs. Average monthly prices of various commodities are averages of the open market prices of specified variety of an item prevailing in the selected outlets in the selected markets in a given centre. For rationed items, the prices for the centres are weighted average prices, the weights being the proportion of the quantity available through Public Distribution System and quantity procured from the open market in different centres in relation to base year (2001) requirements of an average working class family.

Two types of Thali were considered for the analysis: a vegetarian Thali and a non-vegetarian Thali. The quantities of constituents required for preparation of a Thali were based on the dietary guidelines prescribed for Indians (NIN, 2011). We have taken the requirements for an adult male engaged in heavy work. Therefore, the estimated prices are likely to overestimate the cost of a meal to the average household than underestimate it. We have taken the quantities for cereals, vegetables, pulses and non-vegetarian items for each Thali assuming that atleast two full meals would be consumed in a day such that the daily dietary requirements for these elements would be met. Vegetarian Thali consists of a serving of cereals (300 grams), vegetables (150 grams) and pulses (60 grams). Two cereals have been taken: rice and wheat. Potato, onion, tomato have been taken as the staple vegetables and brinjal, cabbage, cauliflower and lady's finger have been taken as the additional vegetables, broadly covering all the seasons, pan-India availability and general consumption. For dals, arhar, gram dal, masur dal, moong dal and urad dal have been taken. Other commodities include spices and condiments used in preparation of the vegetable and dal recipes. Mustard oil, groundnut oil, and coconut oil have been taken, depending on the state-wise differences in the type of oil used for cooking. For non-vegetarian dish, prices of eggs, fish (fresh) and goat meat have been taken, which are generally consumed across regions as well as religions. In the case of non-vegetarian Thali, dal is replaced by non-vegetarian component (60 grams); rest of the components remain unchanged. For fuel, cooking gas prices as well as firewood prices have been taken for which the data is available consistently. As such, the quantities of the items should not affect the analysis as the weights of the components could be scaled in any direction, and still the direction of price changes would remain the same.

Weighted price for each serving of the cereals (300 grams) is based on the quantity weights of rice and wheat in each State based on the data from NSS 68th Round Household Consumer Expenditure Survey. Average monthly consumption, each of rice and wheat, per capita, have been calculated from the household survey data for each State. Similarly, weighted prices of portions of vegetables as well as dals have been calculated based on the same data. Similar exercise was also done for non-vegetarian food. Fuel consumption per meal is calculated by dividing the total quantity, respectively, of LPG and firewood consumed in a month for a household by the average number of meals prepared at home obtained from the NSS 68th Round data. This is then used to calculate the weighted average price of fuel for one meal.

The weights from the Consumer Expenditure Survey are used along with the prices data to arrive at the weighted prices of the main components. 'Other ingredients' weightage is based on standardised recipes used to prepare the Thalis (Table A).

Table A: Other Ingredients

Component of Thali	Other Ingredients
Sabzi	0.2 grams of turmeric, 0.5 grams of chilies-dry, 1 gram of salt, 0.5 grams of coriander, 10 grams of cooking oil
Dal	0.2 grams of turmeric, 0.2 gram of salt, 0.2 grams of chilies-dry, 1 gram of zeera/mustard seeds, 10 grams of oil
Non-Vegetarian	0.1 grams of turmeric, 0.2 grams of chilies-dry, 0.5 gram of salt, 0.2 grams of coriander, 0.1 gram of mixed spices, 0.5 gram ginger, 0.5 gram garlic, 15 grams of onion, 12 grams of tomato, 10 grams of cooking oil

The Thali prices represent the total money spent in preparing all the constituents of the respective Thalis. State-wise calculations are based on the recipe, components and weights to arrive at the state-wise prices of Thalis. Region-wise and All-India level Thalis have been constructed by taking weighted average of Thali prices in each state using the state-wise population as the weight.

THALI PRICES

11.6 The year 2015-16 can be considered as a year when there was a shift in the dynamics of Thali prices. Many reform measures were introduced during the period of analysis to enhance the productivity of the agricultural sector as well as efficiency and effectiveness of agricultural markets for better and more transparent price discovery (Table 1). This is reflected in a slowdown in the prices of Thalis at the All-India level (Figure 1). For the analysis, data from 2006-07 has been taken so that 10 years of data is available to analyse the price trend before 2015-16.

Table1: Some Major Initiatives for Enhancing Productivity of Agriculture and Efficiency of Agricultural Markets

Sl. No.	Name of Scheme	Description
1	Pradhan Mantri Annadata Aay SanraksHan Abhiyan (PM-AASHA)	PM-AASHA, launched in 2018, covers three sub-scheme i.e. Price Support Scheme (PSS), Price Deficiency Payment Scheme (PDPS) and pilot of Private Procurement & Stockist Scheme (PDPS). Under PSS, physical procurement of pulses, oilseeds and Copra is done by Central Nodal Agencies with proactive role of State governments. PDPS covers all oilseeds for which MSP is notified. Under this, direct payment of the difference between the MSP and the selling/modal price is made to pre-registered farmers selling his produce in the notified market yard through a transparent auction process.
2	Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) - Per Drop More Crop	PMKSY was implemented in the year 2015-16. It focuses on enhancing water use efficiency through expansion of cultivable area under assured irrigation, improve on-farm water use efficiency to reduce wastage of water, enhance the adoption of precision-irrigation and other water saving technologies, enhance recharge of aquifers and introduce sustainable water conservation practices.

3	Pradhan Mantri Fasal Bima Yojana (PMFBY)	PMFBY was introduced in 2015-16 to provide better insurance coverage for agricultural crops and thereby mitigate risk. A total of 69.9 lakh farmers have benefited from PMFBY. The scheme aims to provide comprehensive insurance coverage to farmers.
4	Soil Health Card	Soil Health Card scheme was introduced in the year 2014-15 to assist State Governments to issue soil health cards to all farmers in the country. Soil health card provides farmers information on the nutrient status of their soil along with recommendation on appropriate dosage of nutrients to be used for their soil conditions.
5	e-National Agricultural Market (e-NAM)	e-NAM is an online trading platform for agricultural commodities for transparent price discovery. So far, 585 wholesale regulated markets in 16 States and 2 UTs have connected to e-NAM.
6	National Food Security Mission (NFSM)	National Food Security Mission has been implemented since 2007-08. It was redesigned in 2014-15 to increase the production of rice, wheat, pulses and coarse cereals.
7	National Food Security Act (NFSA)	The National Food Security Act was enacted in July, 2013 and rolled out in 2014. The Act legally entitles 67 per cent of the population (75 per cent in rural areas and 50 per cent in urban areas) to receive highly subsidized food grains. Under the Act, food grain is allocated @ 5 kg per person per month for priority households category and @ 35 kg per family per month for AAY families at highly subsidized prices of ₹ 1/-, ₹ 2/- and ₹ 3/- per kg for nutri-cereals, wheat and rice respectively. Coverage under the Act is based on the population figures of Census, 2011. The Act is being implemented in all 36 States/UTs and covers about 81.35 core persons.

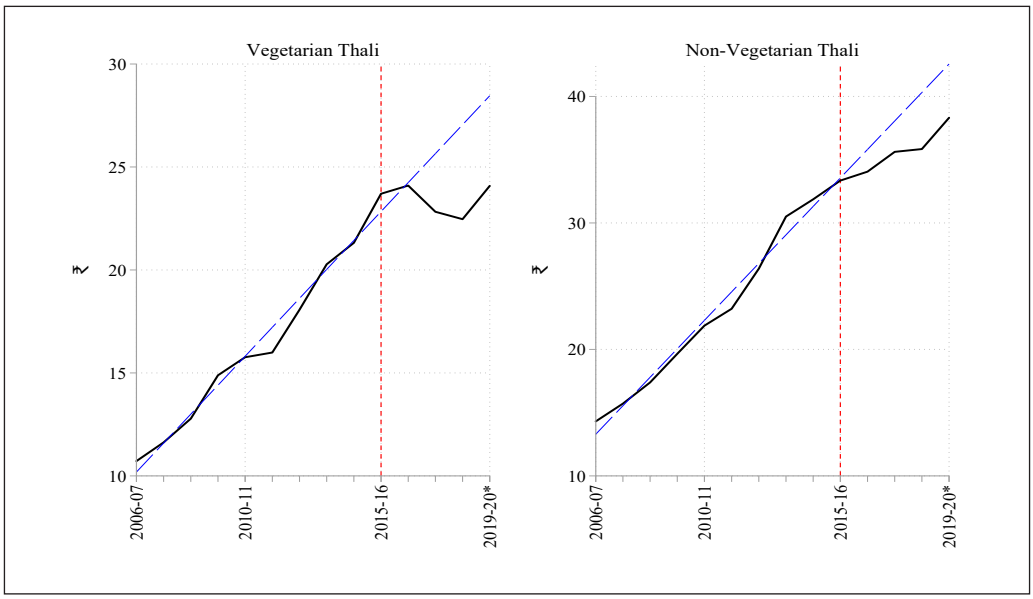
Source: Ministry of Agriculture and Farmers' Welfare, Ministry of Consumer Affairs, Food & Public Distribution

11.7 We can see what would have been the case if the prices had continued to increase at the previous rate by fitting a linear trend for ten years before 2015-16 and projecting the prices from that particular year onwards. This projection provides a counterfactual estimate of what the prices would have been if the policies described in Table 1 had not been implemented. Comparing this with the actual prices, we can calculate the nominal gain that the consumers of the Thali have achieved due to the agricultural policy programmes since 2015.

11.8 In figure 1, the year 2015-16 is shown by the red dotted vertical line. The blue dashed line is the linear fit till 2015-16 and projected further for five years till 2019. For the years after 2015-16, we calculate the gap between the projected line, which is the counterfactual, and the actual prices. At the All-India level, for the vegetarian Thali, post 2015-16, there was an average gain of around ₹3 per Thali (₹0.1 in 2016-17, ₹2.8 in 2017-18, ₹4.6 in 2018-19 and ₹4.4 in 2019-20) (Figure 1). This may seem to be a small number at first glance. However, it is a large decline in the cost of food to the households. To understand this, the gains have been estimated for a household comprising five individuals and each consuming two vegetarian Thalis a

day. Average yearly gain for this family, in nominal terms, for the periods subsequent to 2015-16, equals around ₹10887. The gain is, on average, 6.5 per cent of an individual worker's yearly wages (Table 2). For a non-vegetarian Thali, the gain per Thali was ₹1.8 in 2016-17, ₹2.4 in 2017-18, ₹4.5 in 2018-19 and ₹4.2 in 2019-20. The average yearly gain to the household consisting of 5 individuals would then be around ₹11787.

Figure 1: Thali Prices at All-India Level



Source: Survey calculations
Note: The blue dashed line represents the linear trend till 2015-16 and thereafter projection. Red dotted vertical line represents 2015-16,
*: April-October, 2019

Table 2: All-India Annualised Gain to a Household of Five Individuals with Two Meals a Day

Year	Gain in ₹	As a proportion of annual earnings of a worker (in per cent)	Gain in ₹	As a proportion of annual earnings of a worker (in per cent)
	Vegetarian Thali		Non-vegetarian Thali	
2016-17	526.9	0.4	6408.2	4.3
2017-18	10304.3	6.5	8910.3	5.6
2018-19	16744.4	10	16318.2	9.7
2019-20*	15972.3	9	15511.5	8.7

Source: Survey calculations
Note: *: Calculations for 2019-20 based on prices for the period April-October, 2019

11.9 India, being a diverse country, it is important to look at the regional variation in the price trends. States in India have therefore been divided into four regions based on geographic location:

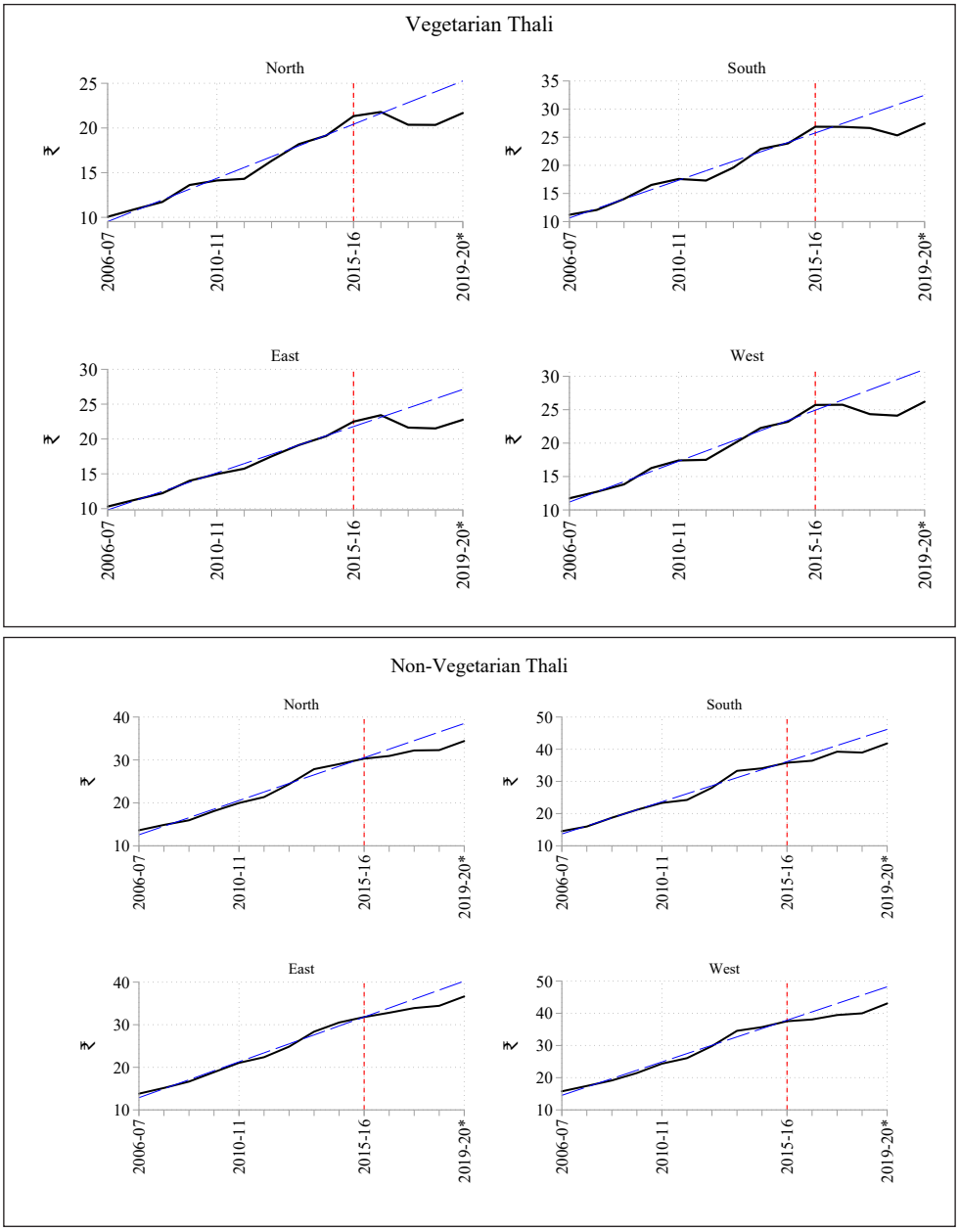
- Northern Region covers Chandigarh, Delhi, Haryana, Himachal Pradesh, Jammu & Kashmir, Madhya Pradesh, Punjab and Uttar Pradesh.
- Southern Region covers Karnataka,

Kerala, Puducherry, Tamil Nadu, Andhra Pradesh and Telangana.

- Eastern Region covers Assam, Bihar, Chhattisgarh, Jharkhand, Odisha, Tripura and West Bengal.
- Western Region covers Goa, Gujarat, Rajasthan and Maharashtra.

11.10 Similar gains are observed across regions, with the exception of Northern Region and Eastern Region in 2016-17 in the case of vegetarian Thali (Figure 2 and Table 3). The highest gain in any year was in the Southern region for a vegetarian Thali in 2018-19 of around 12 per cent of annual earnings of a worker.

Figure 2: Thali Prices at Regional Level



Source: Survey calculations
Note: The blue dashed line represents the linear trend till 2015-16 and thereafter projection.
Red dotted vertical line represents 2015-16,
*: April-October, 2019

Table 3: Region-wise Nominal Gain to a Household of Five Individuals with Two Meals a Day

Year	Gain in ₹	As a proportion of annual earnings of a worker (in per cent)	Gain in ₹	As a proportion of annual earnings of a worker (in per cent)
Northern Region				
	Vegetarian Thali		***Non-Vegetarian Thali***	
2016-17	-578.7	-0.4	5,795.3	4.3
2017-18	9,055.1	6.2	8,348.0	5.8
2018-19	13,528.9	8.8	15,354.9	10
2019-20*	13,087.3	8	14,920.3	9.2
Southern Region				
	Vegetarian Thali		***Non-Vegetarian Thali***	
2016-17	2,166.1	1.5	8,169.5	5.7
2017-18	9,031.2	6	7,035.0	4.7
2018-19	19,935.9	12.4	17,118.1	10.7
2019-20*	18,361.6	10.8	15,865.5	9.3
Eastern Region				
	Vegetarian Thali		***Non-Vegetarian Thali***	
2016-17	-1,091.9	-0.7	4,044.1	2.6
2017-18	10,254.8	6.1	7,705.6	4.6
2018-19	15,558.5	8.8	13,454.7	7.6
2019-20*	15,886.0	8.5	13,123.8	7.1
Western Region				
	Vegetarian Thali		***Non-Vegetarian Thali***	
2016-17	2,612.9	1.6	8,632.2	5.1
2017-18	13,317.6	7.5	13,053.8	7.4
2018-19	19,724.3	10.5	20,563.7	10.9
2019-20*	17,661.4	8.9	18,885.2	9.5

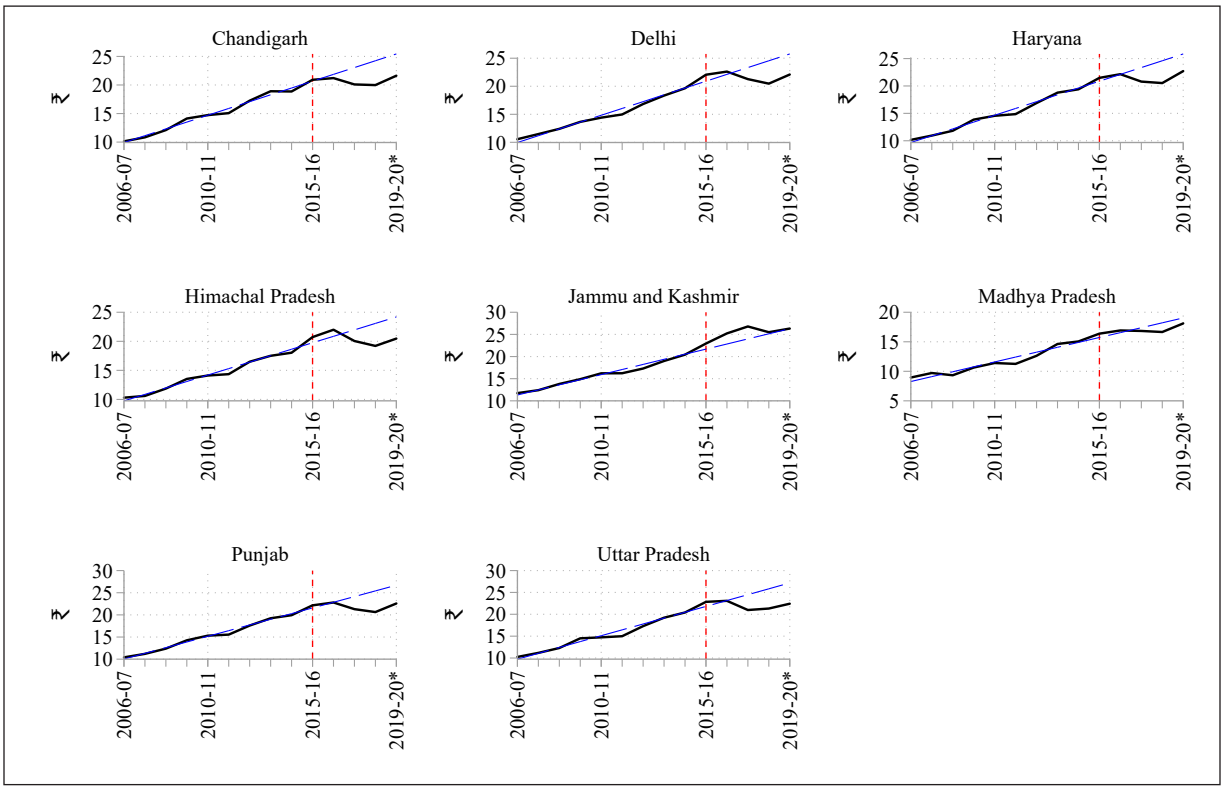
Source: Survey calculations
Note: *: Calculations for 2019-20 based on prices for the period April-October, 2019

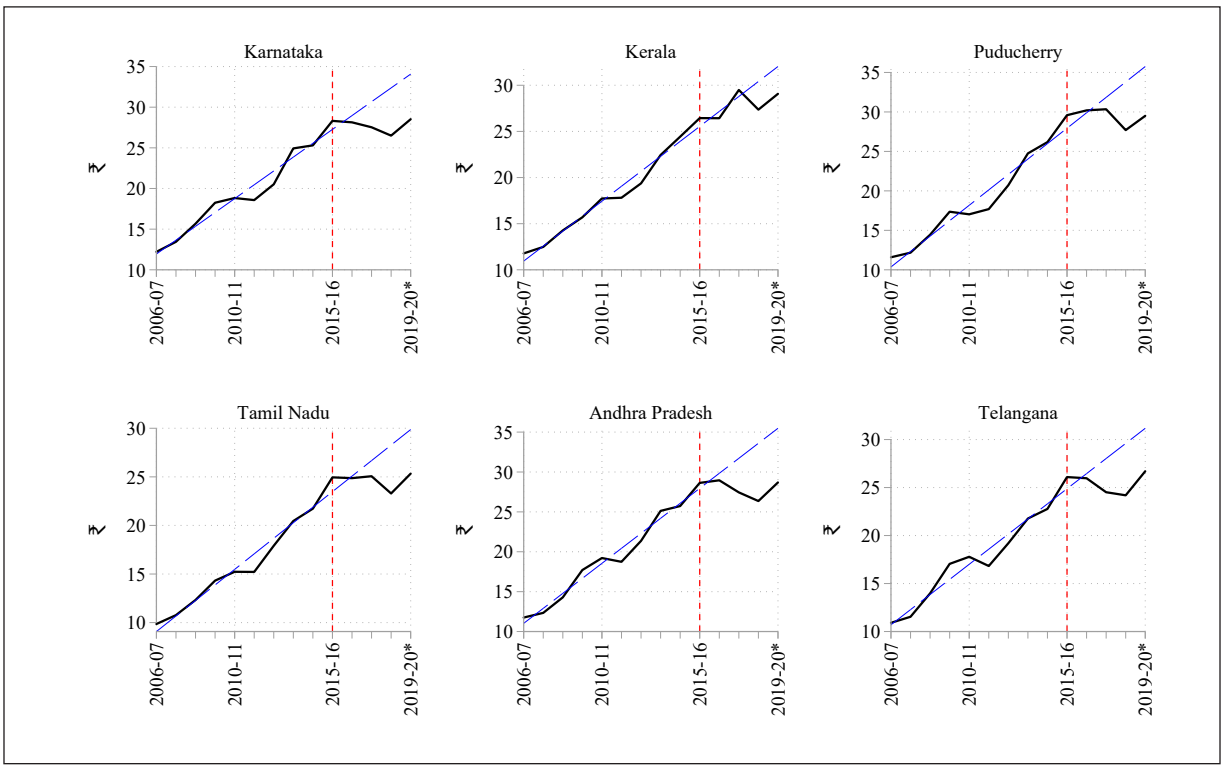
Figures 3 and 4 show the state-wise prices of Thalis. We find a similar trend.

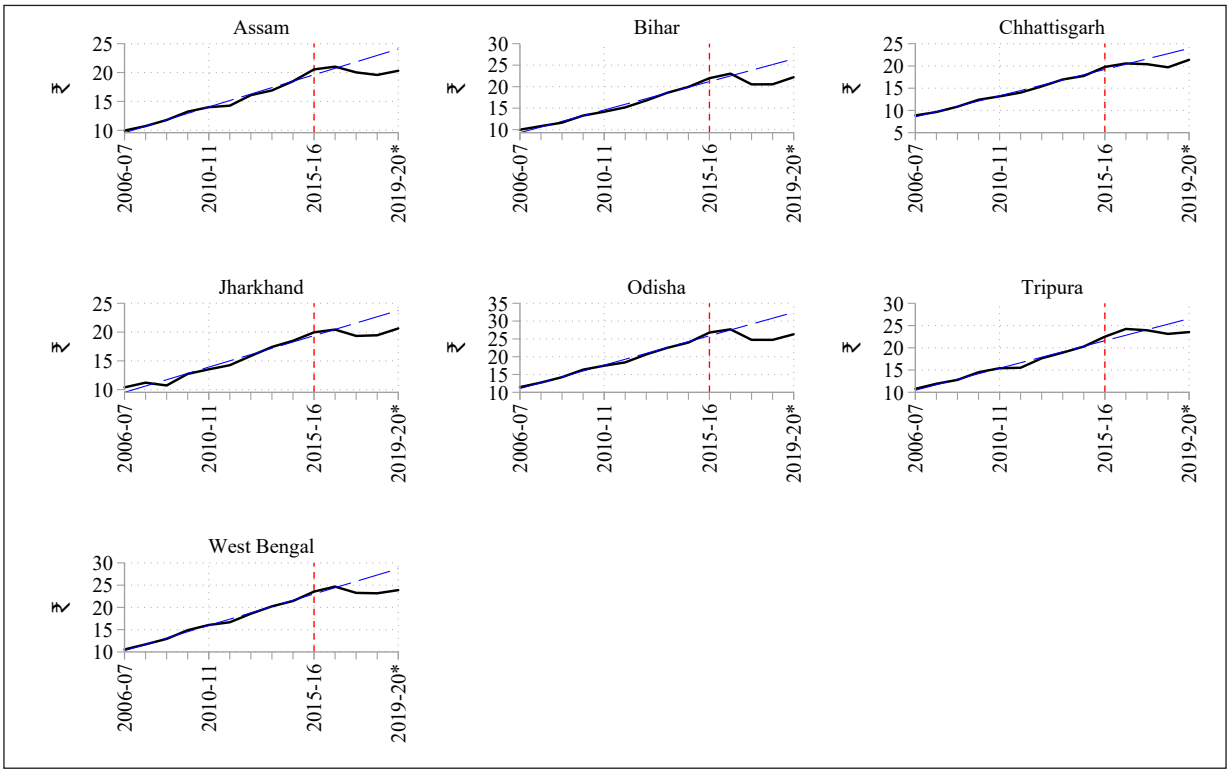
AFFORDABILITY OF THALIS

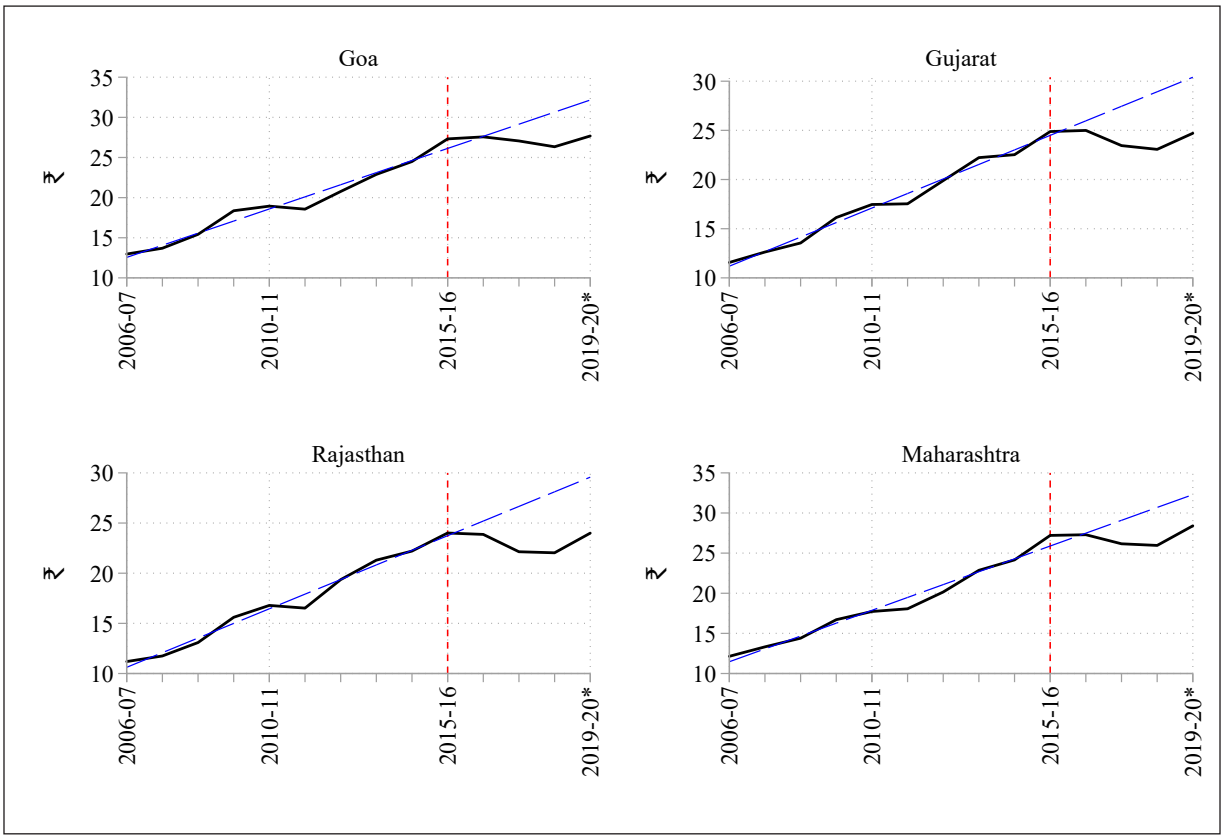
11.11 While the price of a Thali indicates the cost of consuming a healthy plate of food, knowing whether prices are increasing or decreasing is not sufficient to infer whether the common person is better-off or worse-off. What is also important to see is how have the earnings of the individual changed during the same period of time compared to the prices of a Thali. In order to do this, we can look at what share of his/her daily wages does a worker require to acquire two Thalis a day for his/her household members. If this metric decreases over time, we can conclude that the individual is better-off. On the other hand, if this metric increases, we can infer the contrary. This metric is constructed

Figure 3: State-wise Thali Prices of Vegetarian Thali



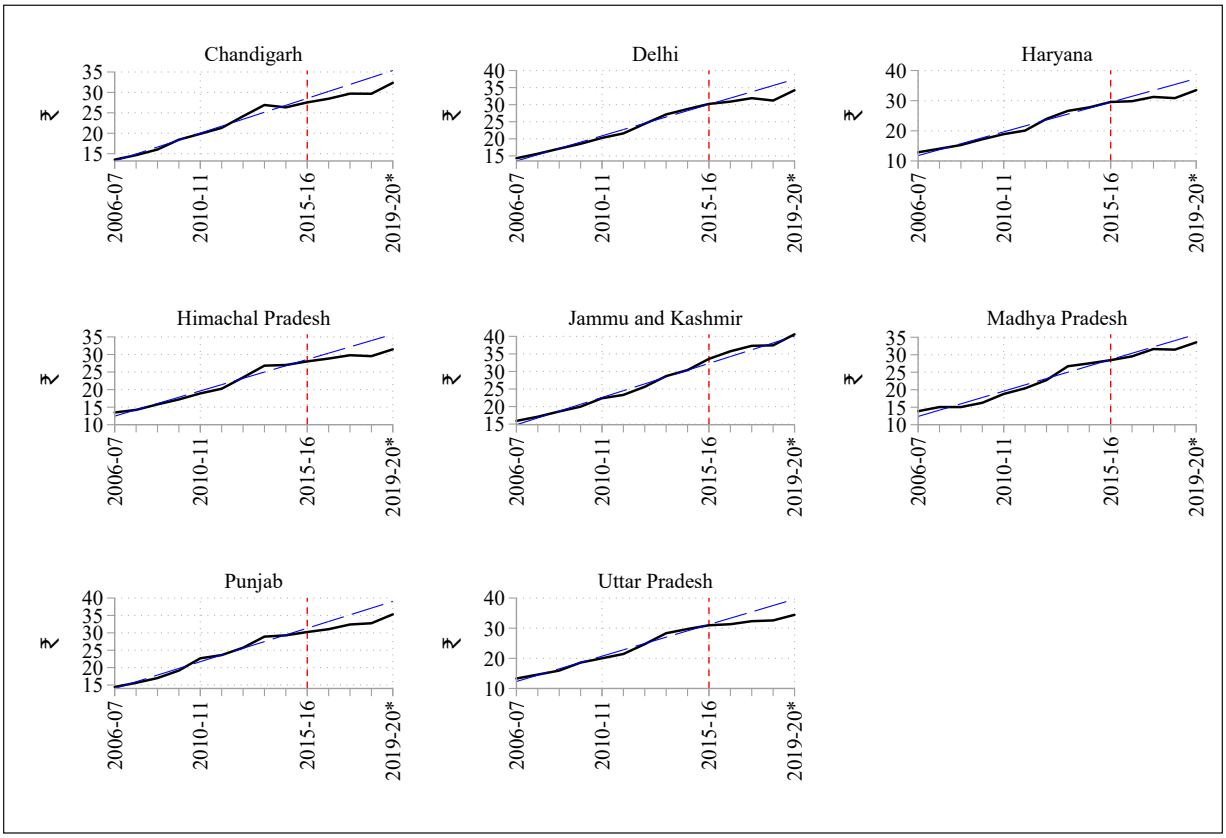


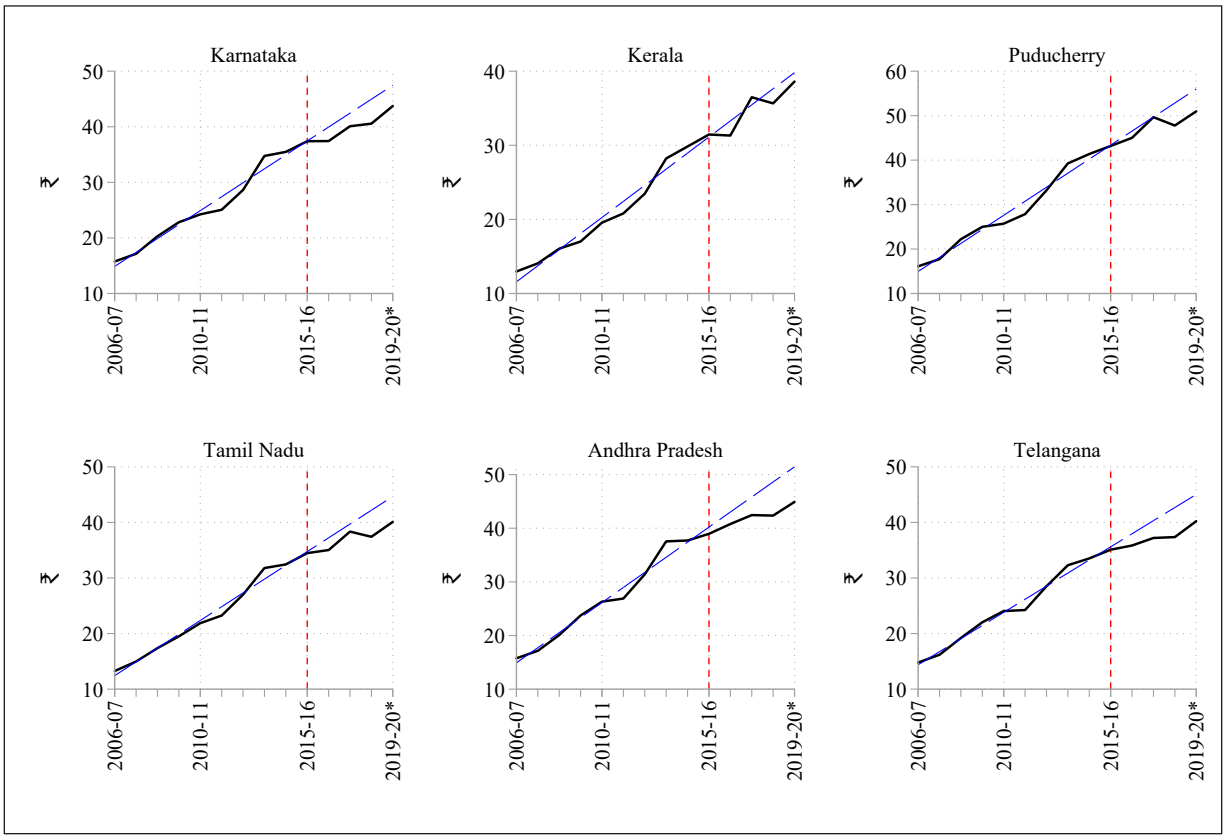


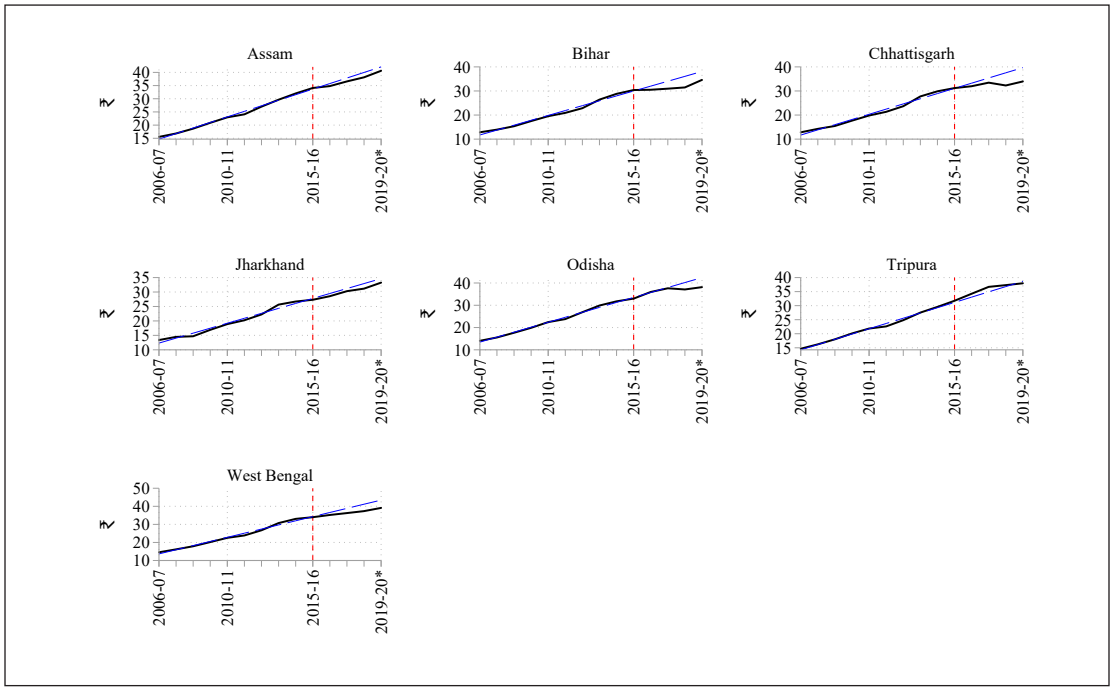


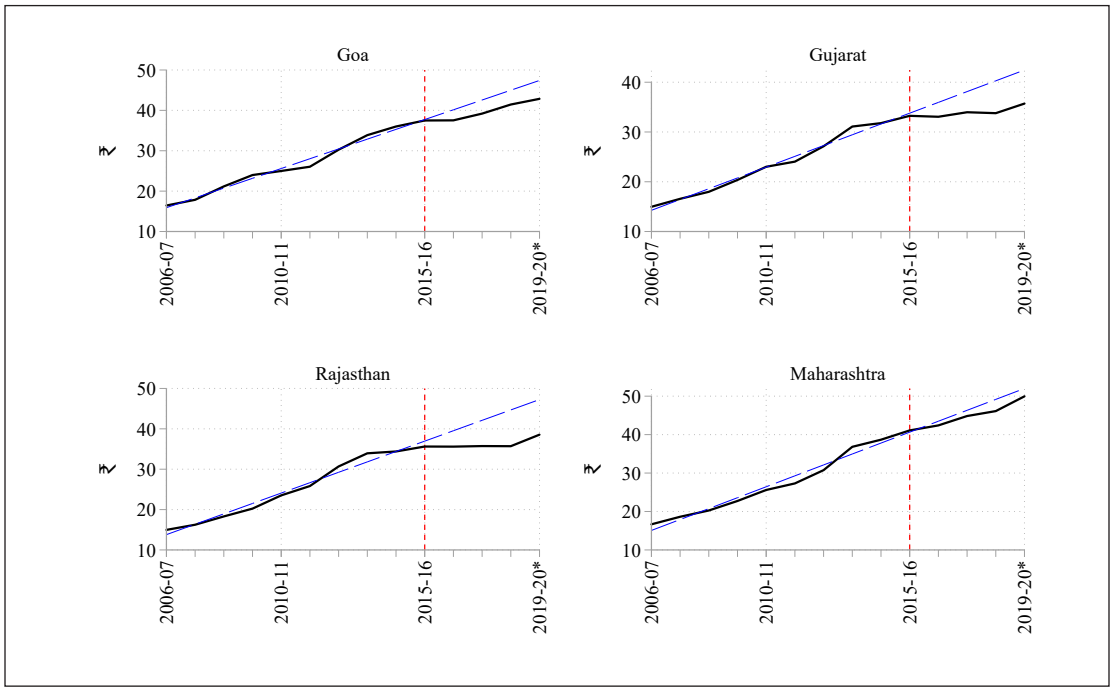
Source: Survey calculations
Note: The blue dashed line represents the linear trend till 2015-16 and thereafter projection. Red dotted vertical line represents 2015-16,
*: April-October, 2019

Figure 4: Statewise Prices of Non-Vegetarian Thali









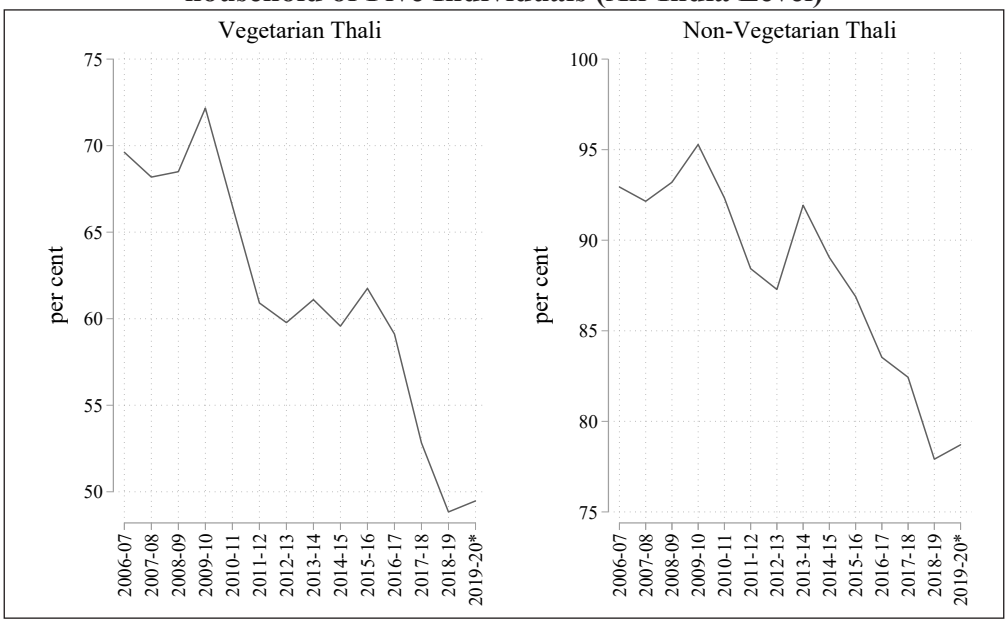
Source: Survey calculations
Note: The blue dashed line represents the linear trend till 2015-16 and thereafter projection. Red dotted vertical line represents 2015-16,
*: April-October, 2019

by dividing the price of two Thalis in that year for five individuals by the daily wage derived from Annual Survey of Industries data (available till 2017-18 and extrapolated till 2019-20 based on the trend). ASI data is used for wages because the prices of food items have been taken from data collected for construction of CPI-IW. For the time-period covered in the analysis, ASI gives an annual estimate of wages of workers engaged in the

organized manufacturing sector. The annual wages of workers are arrived at by dividing the total wages to workers by the number of workers. We divide this annual wage per worker by 365 to arrive at the daily wage for a worker. From Figure 5, it is observed that the affordability of Thalis has increased over the years. In terms of vegetarian Thali, it is found that, an individual who would have spent around 70 per cent of his/her daily wage on two Thalis for a household of five in 2006-07 is able to afford same number of Thalis from around 50 per cent of his daily wage in 2019-20 (April to October). Similarly, the affordability of non-vegetarian Thalis has also increased with the share of wages required decreasing from around 93 per cent to around 79 per cent between 2006-07 and 2019-20 (April to October).

11.12 In 2019-20 (April-October, 2019), the most affordable Thali was in Jharkhand; two vegetarian Thalis for a household of five in Jharkhand required about 25 per cent of a worker's daily wage (Figure 6). Non-vegetarian Thali was also most affordable in Jharkhand (Figure 7). Comparing between 2006-07 and 2019-20 (April-October), vegetarian Thali has become more affordable in all states under consideration. In the case of non-vegetarian Thali, affordability has increased during this period in all states except Bihar and Maharashtra, where it has shown a marginal decline.

Figure 5: Share of a Day's Wage of a Worker Needed to Afford Two Thalis for a household of Five Individuals (All-India Level)

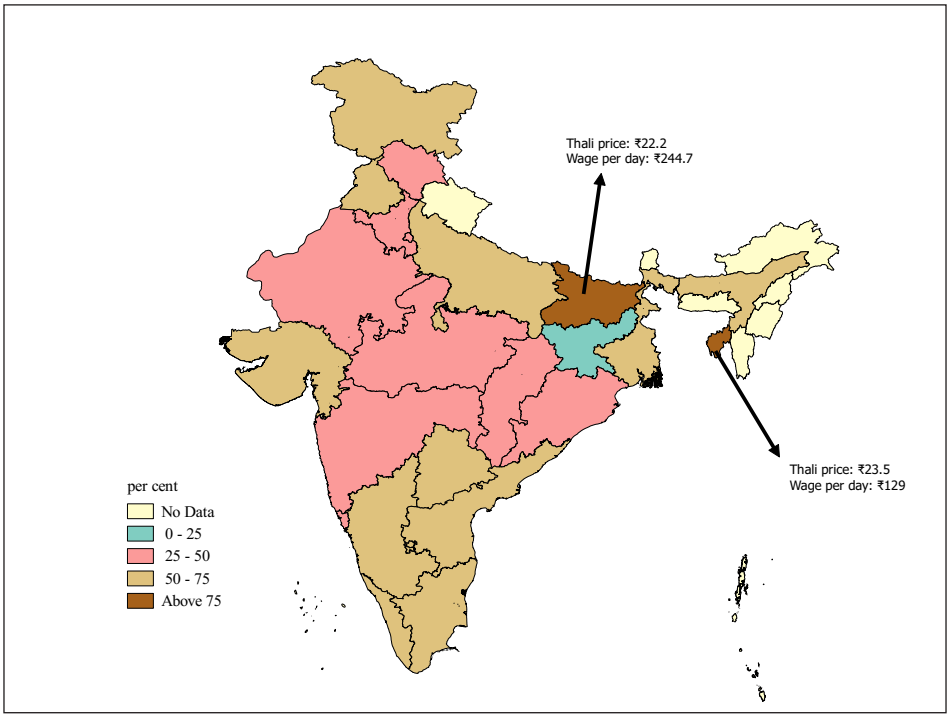


Source: Survey calculations
Note: *: Calculations for 2019-20 based on prices for the period April-October, 2019

PRICE TRENDS OF THALI COMPONENTS

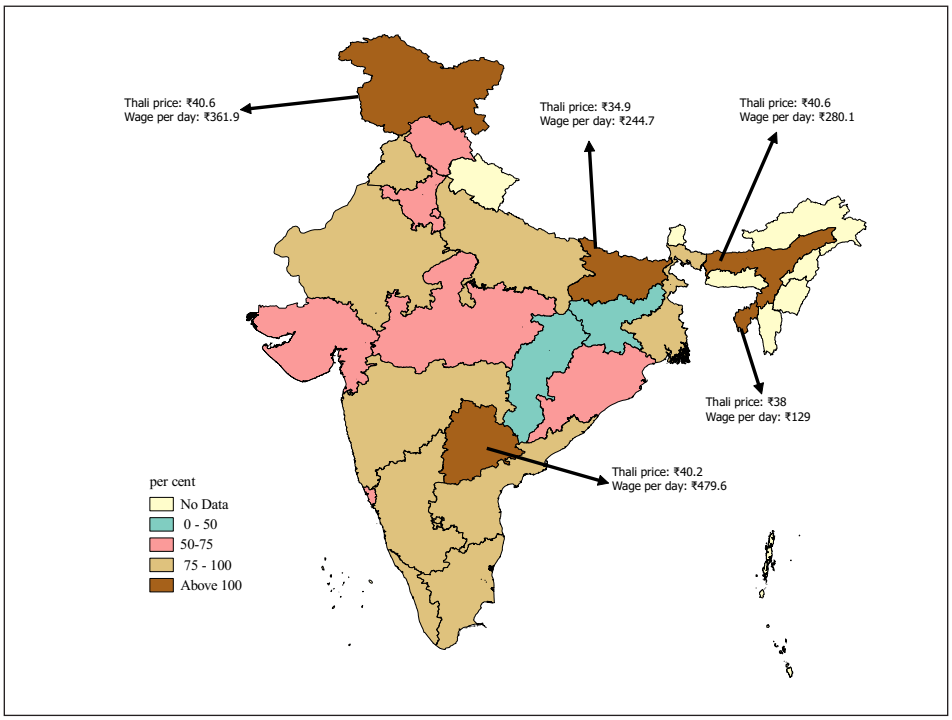
11.13 Given the national and regional trends in the prices of Thalis, it would be insightful to see what components of Thalis have contributed to the observed trends in prices of Thalis. It is observed that, at the all-India level, prices of almost all the components have been mostly lower compared to the projected prices since 2015-16 (Figure 8). Dal prices remained elevated till 2016-17,

Figure 6: Share of a Day's Wage of a Worker Needed to Afford Two Vegetarian Thalis for a Household of Five Individuals (All-India Level) in 2019-20*



Source: Survey calculations;
Note: *: April to October, 2019

Figure 7: Share of a Day's Wage of a Worker Needed to Afford Two Non-Vegetarian Thalis for a Household of Five Individuals(2019-20*)



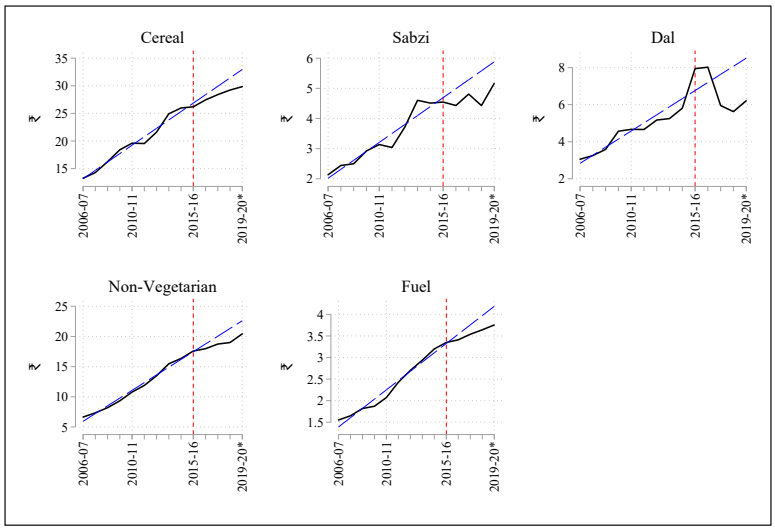
Source: Survey calculations;
Note: *: April to October, 2019

subsequent to which, a large decline was witnessed. Similar pattern is visible across the country (Figures 9-12). While in the other regions, Sabzi prices have remained clearly below the projected prices, in the Southern region, the variation has been greater and, in general, the Sabzi prices have been higher.

THALI INFLATION

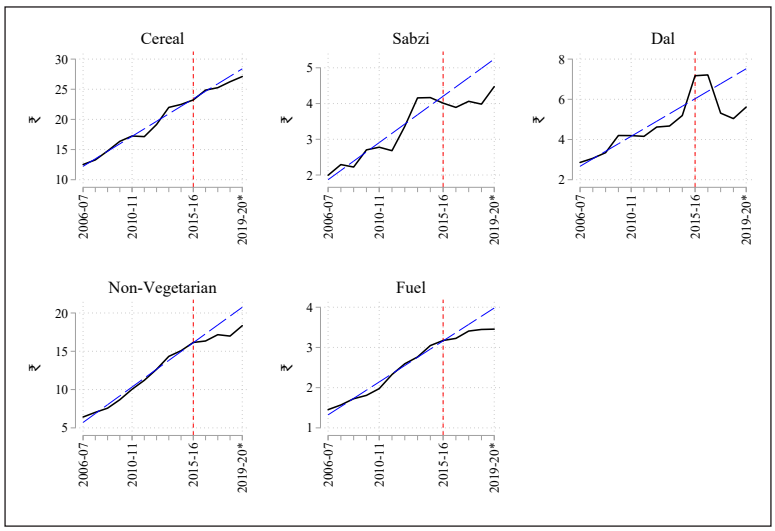
11.14 Thali inflation (year-on-year growth in Thali prices), which remained elevated during the initial part of the period of our analysis, has shown significant reduction. As Figure 13 shows clearly, the increase in the rate of inflation in vegetarian and

Figure 8: All-India Prices of Thali Constituents



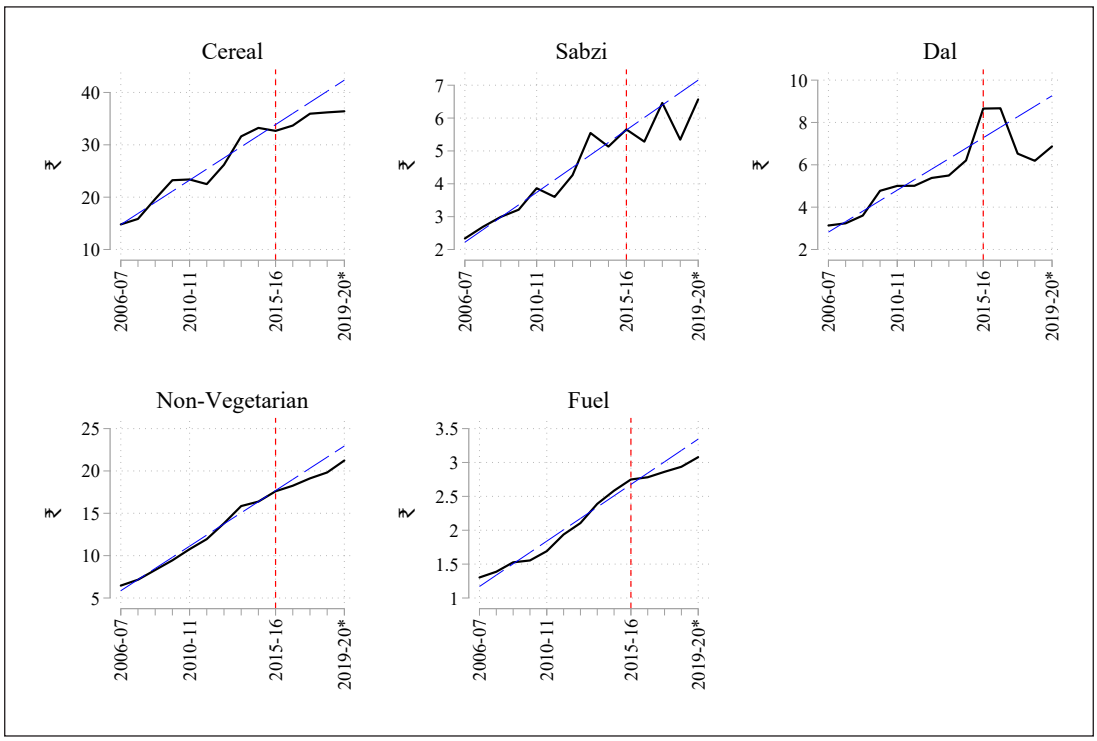
Source: Survey calculations
Note: Cereal prices are for 1 kg of cereal, other components prices are for a serving
*:April - October, 2019

Figure 9: Prices of Constituents – Northern region



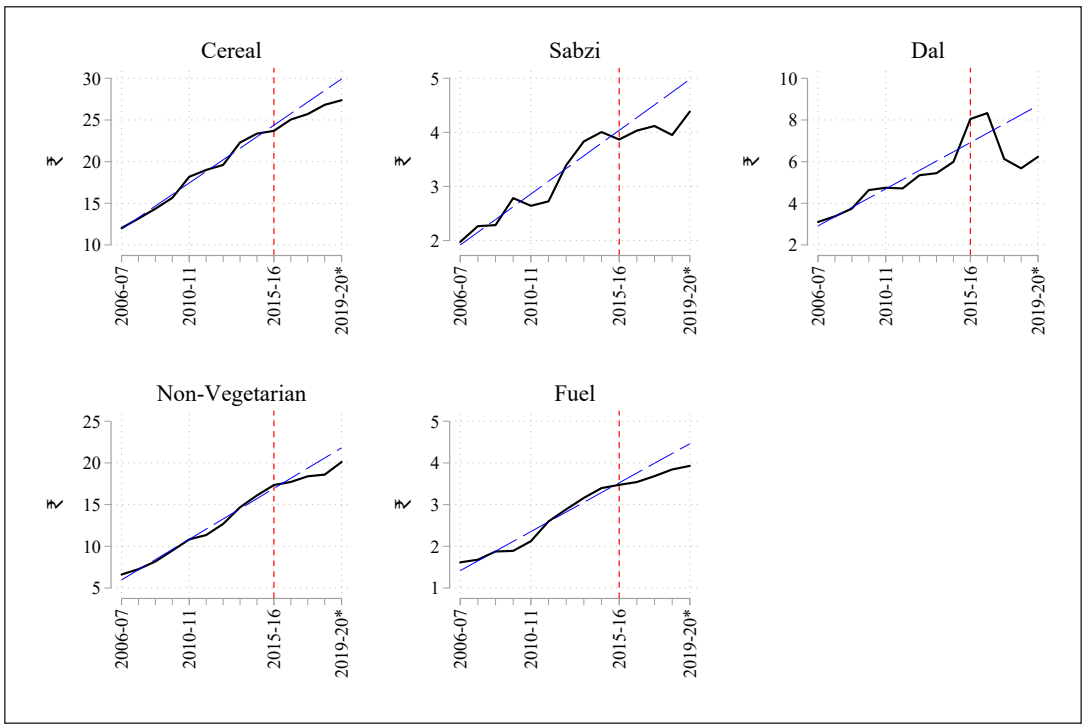
Source: Survey calculations
Note: Cereal prices are for 1 kg of cereal, other components prices are for a serving
*: April - October, 2019

Figure 10: Prices of Constituents – Southern Region



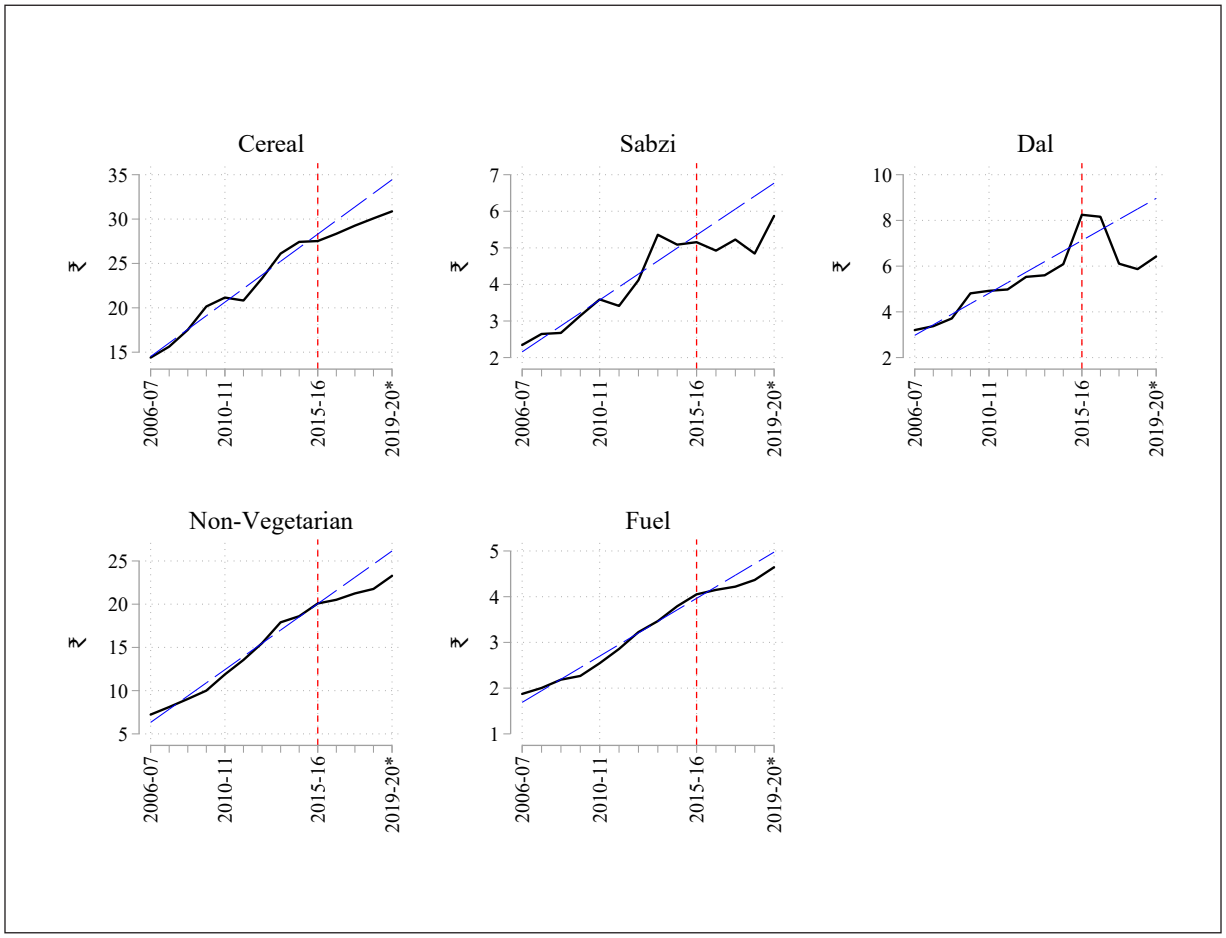
Source: Survey calculations
Note: Cereal prices are for 1 kg of cereal, other components prices are for a serving
*: April - October, 2019

Figure 11: Prices of Constituents – Eastern region



Source: Survey calculations
Note: Cereal prices are for 1 kg of cereal, other components prices are for a serving
*: April - October, 2019

Figure 12: Prices of Constituents – Western region



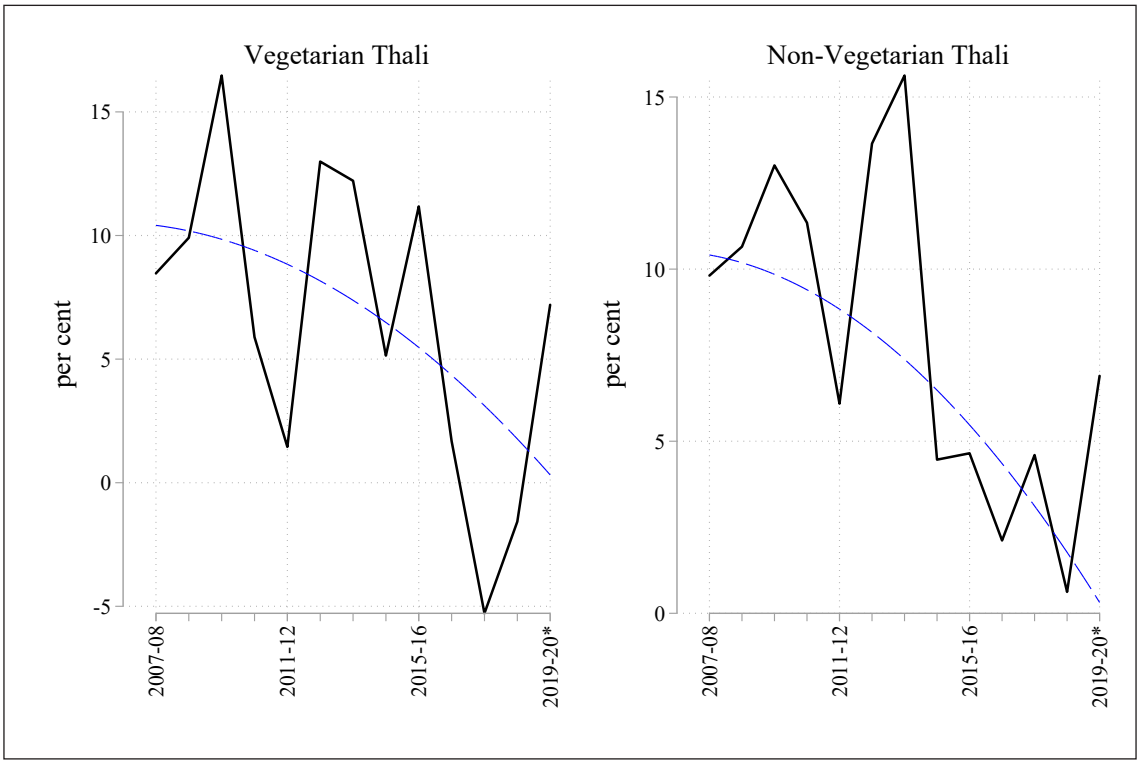
Source: Survey calculations
Note: Cereal prices are for 1 kg of cereal, other components prices are for a serving
*: April - October, 2019

non-vegetarian Thalis during 2019-20 is a temporary phenomenon that should revert back as has happened in earlier years. In the case of vegetarian Thali, inflation at the All-India level fell from the significantly high level, attained in 2015-16, to below zero level in the subsequent years. In the case of non-vegetarian Thali, inflation fell drastically after 2013-14 (Figure 13). It is observed that inflation has been declining over time in all components. While inflation in cereals have been declining at a steady rate throughout the period, the fall in inflation has accelerated in all other components except Sabzi (Figure 14). Across regions and States, a similar trend is seen in inflation with overall Thali inflation showing a downward trend (Figures 15 to 20). Over the last year, the rate of inflation for Dal, Sabzi and non-vegetarian components have increased.

VARIABILITY OF THALI PRICES

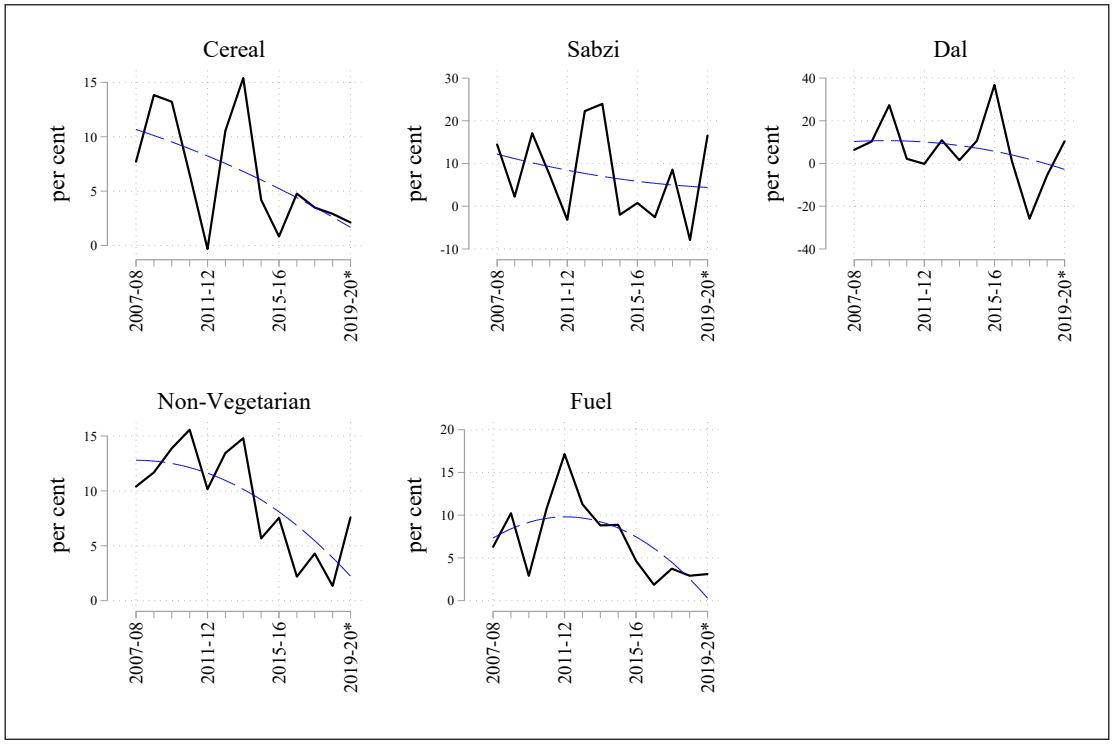
11.15 It is seen that over the years, there is no specific trend in the variability of Thali prices at the All-India level across months over the years (Figure 21). Similarly, in cases of variability across regions and across states, over time, there are no specific trends in the variability patterns (Figures 22 and 23).

Figure 13: All-India Inflation in Thali



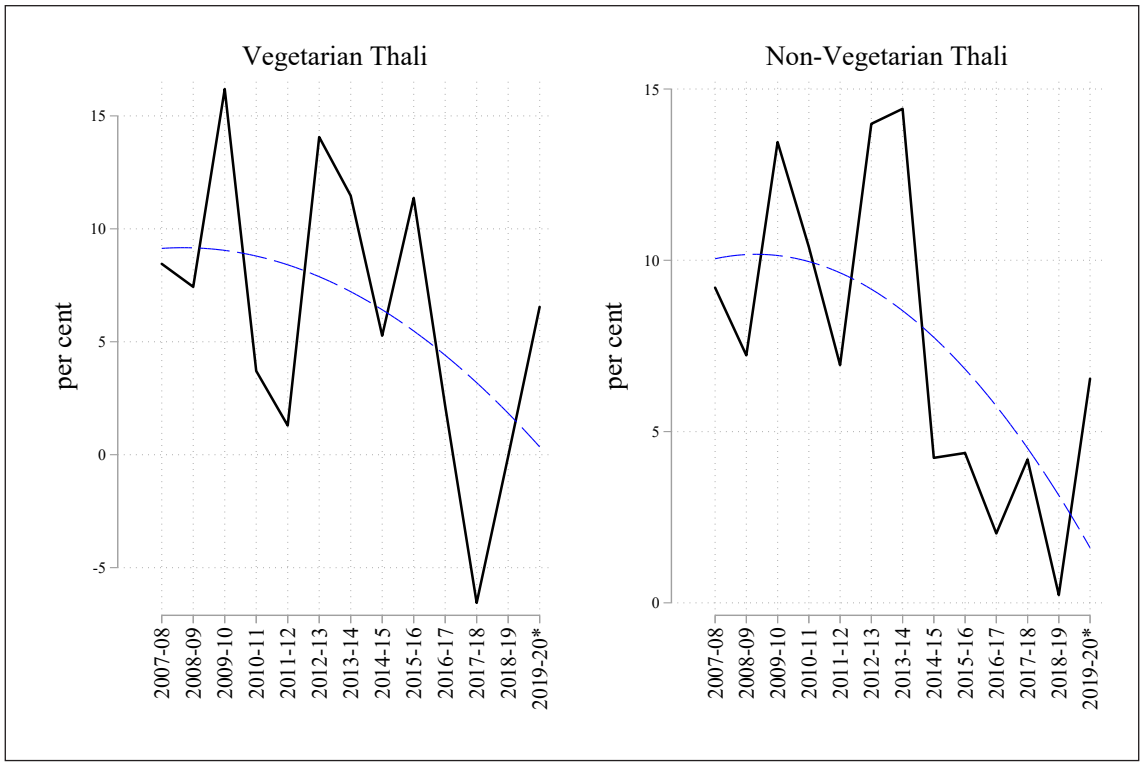
Source: Survey calculations
Note: *: April - October, 2019

Figure 14: All-India Inflation in Thali Components



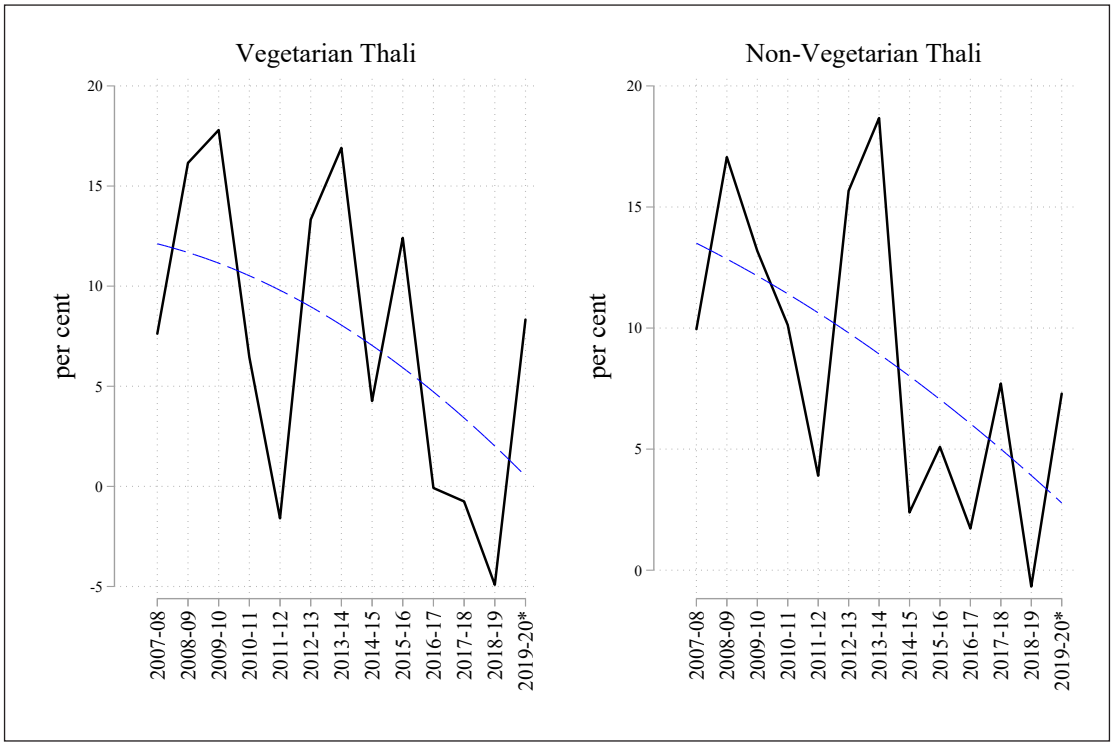
Source: Survey calculations
Note: *: April - October, 2019

Figure 15: Northern Region Inflation in Thali



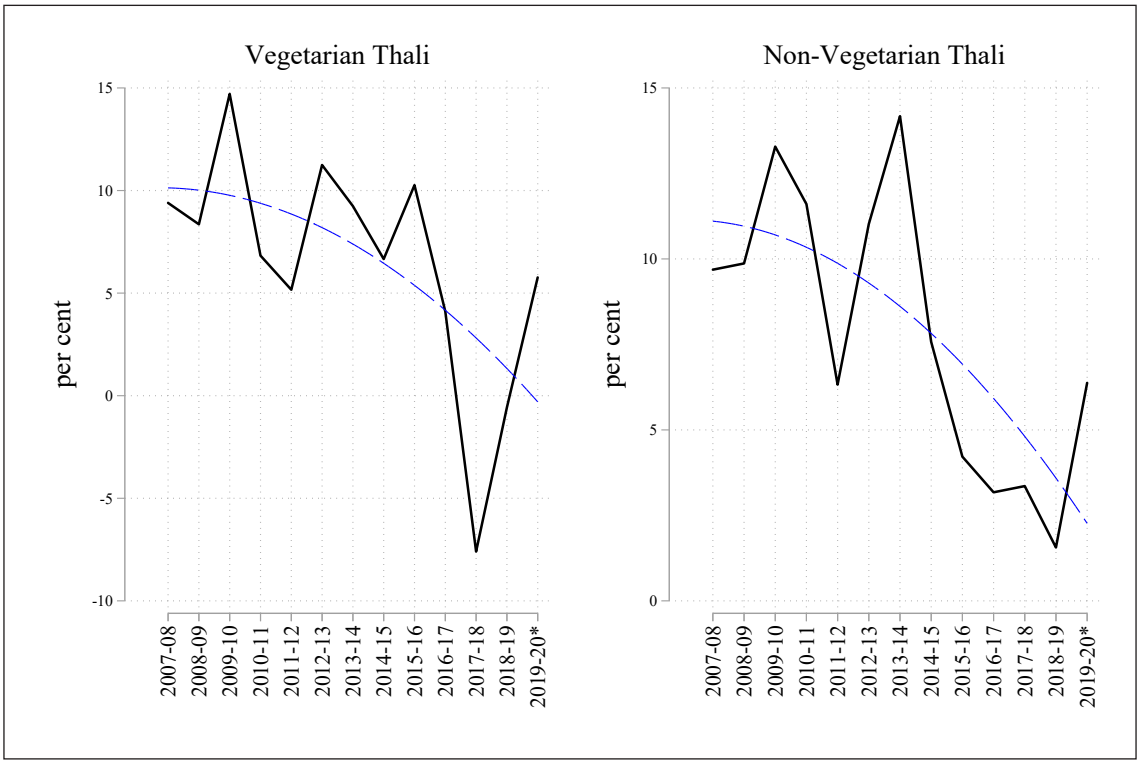
Source: Survey calculations
Note: *: April - October, 2019

Figure 16: Southern Region Inflation in Thali



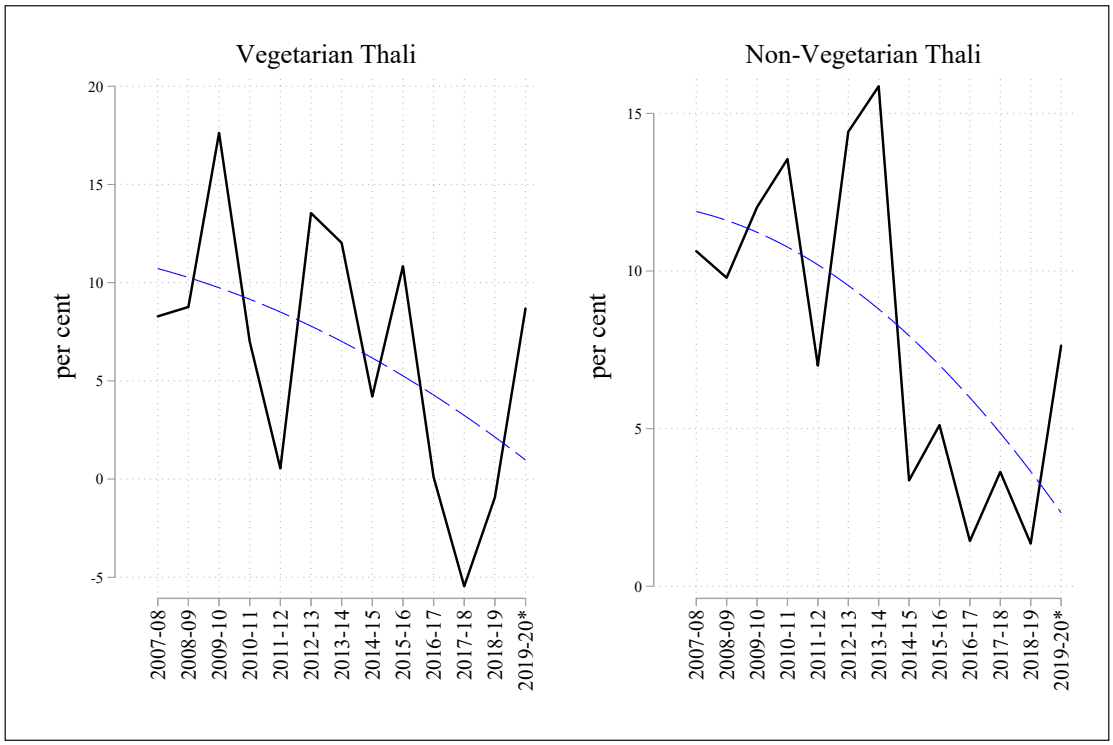
Source: Survey calculations
Note: *: April - October, 2019

Figure 17: Eastern Region Inflation in Thali



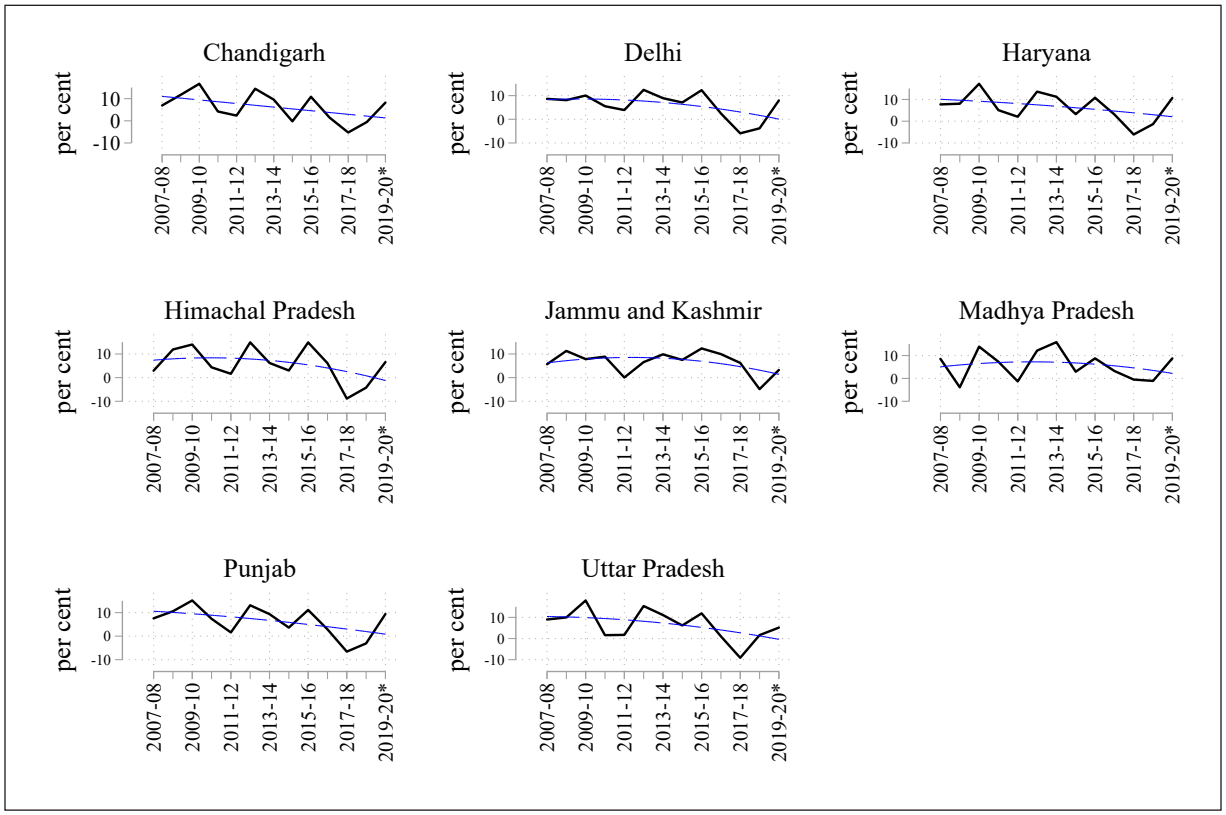
Source: Survey calculations
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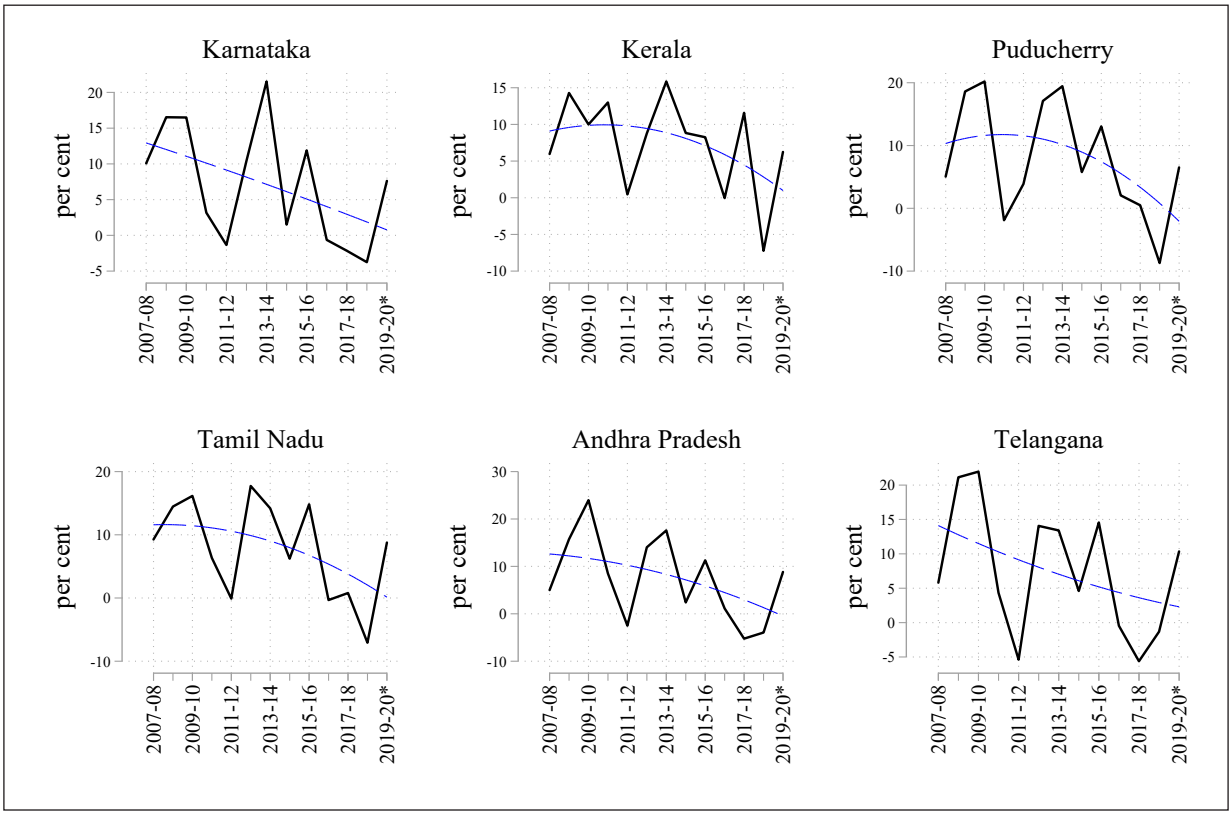
Figure 18: Western Region Inflation in Thali

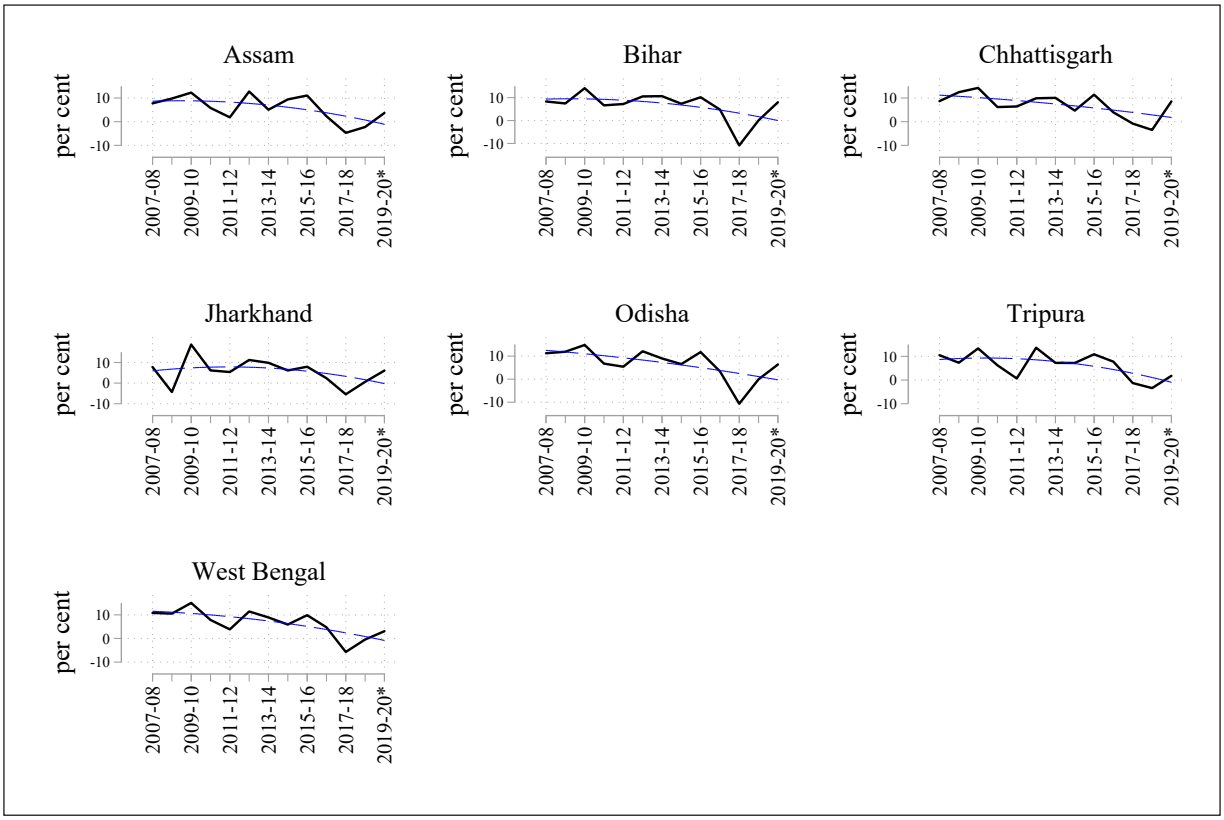


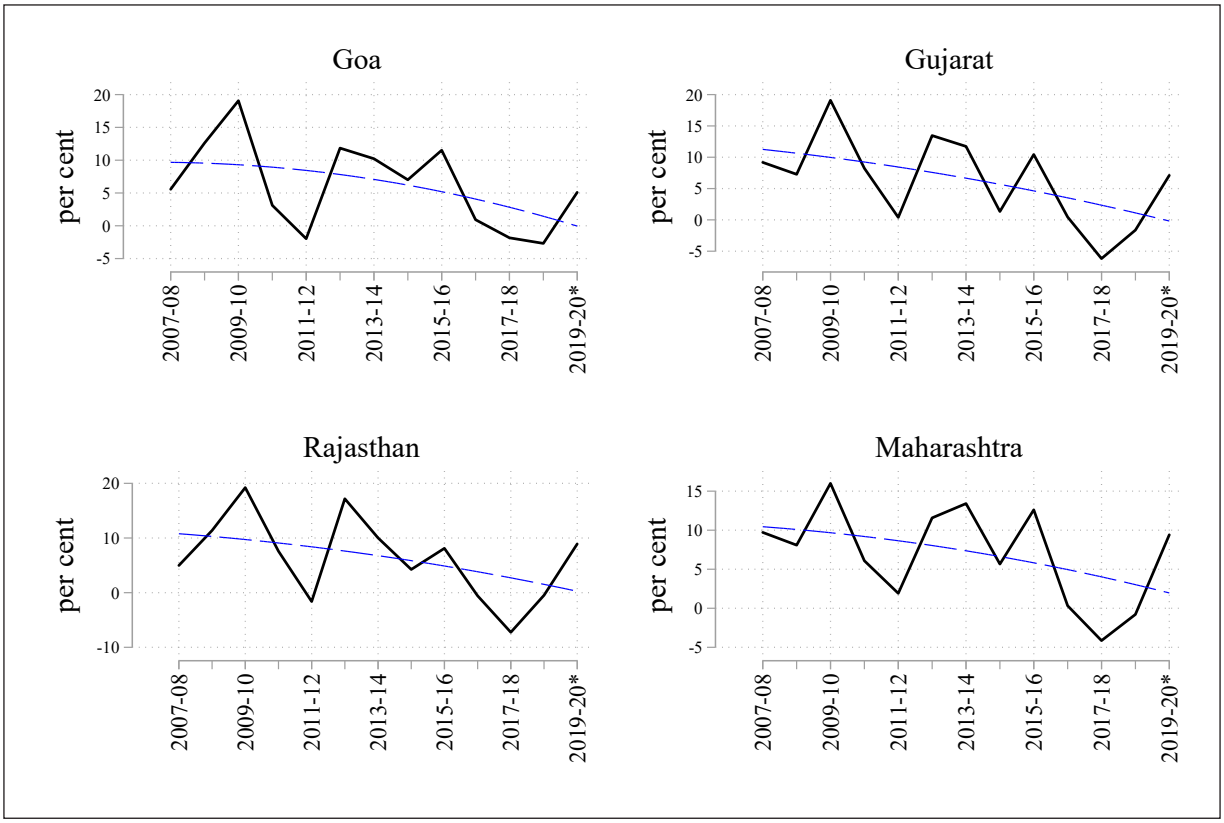
Source: Survey calculations
Note: *: April - October, 2019

Figure 19: State-wise Inflation in Vegetarian Thali Prices



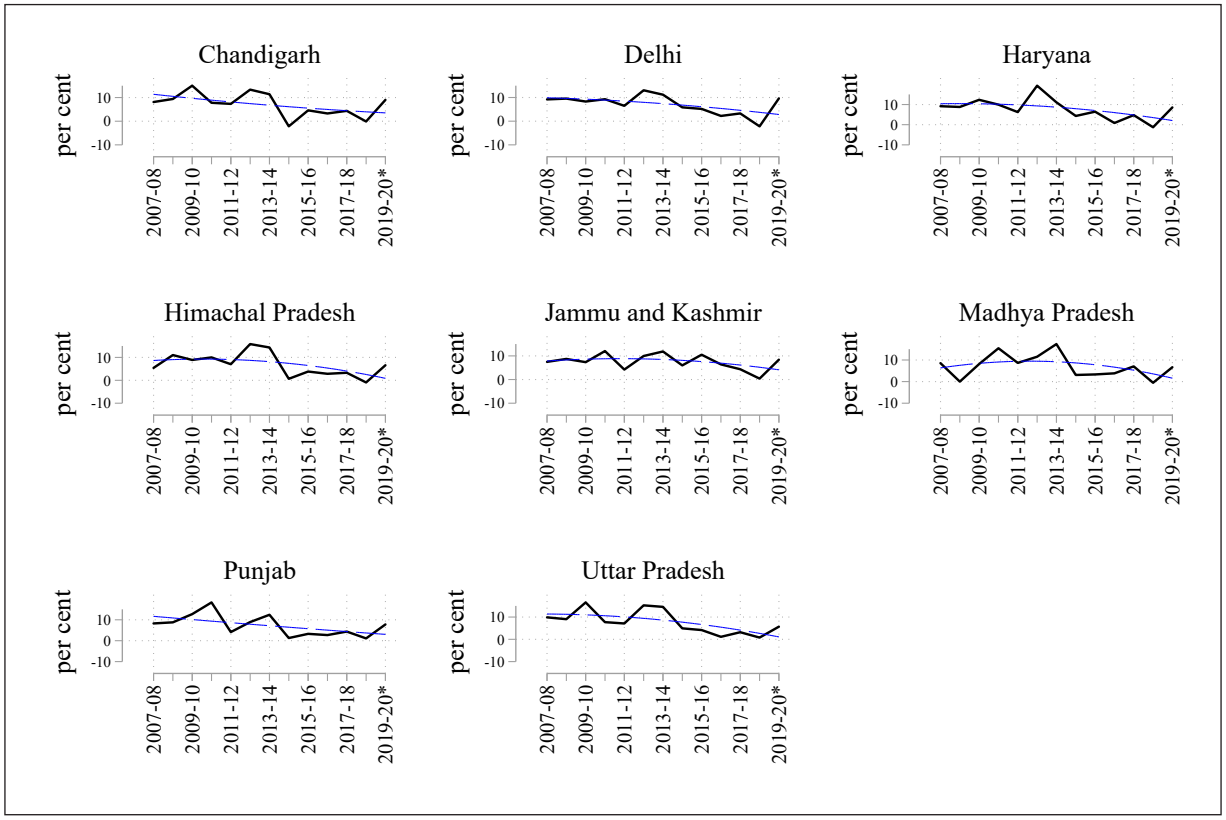


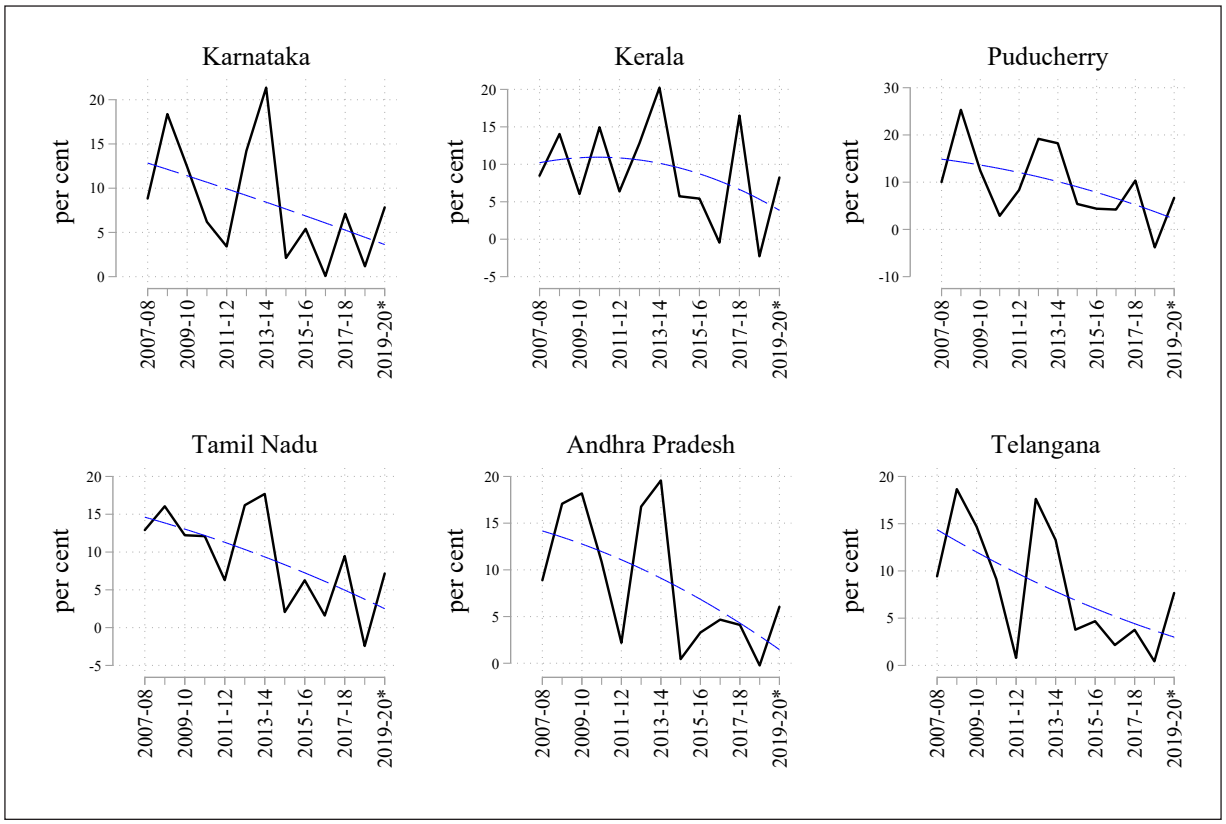


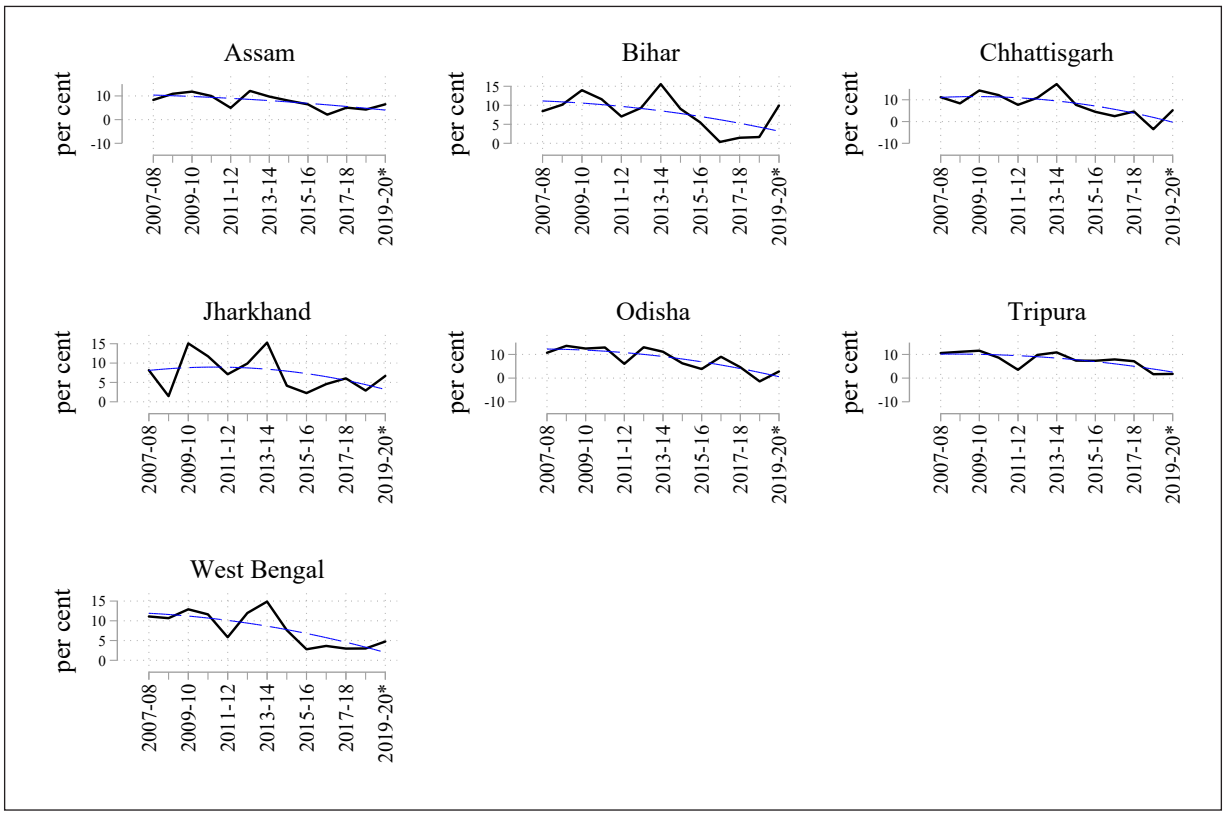


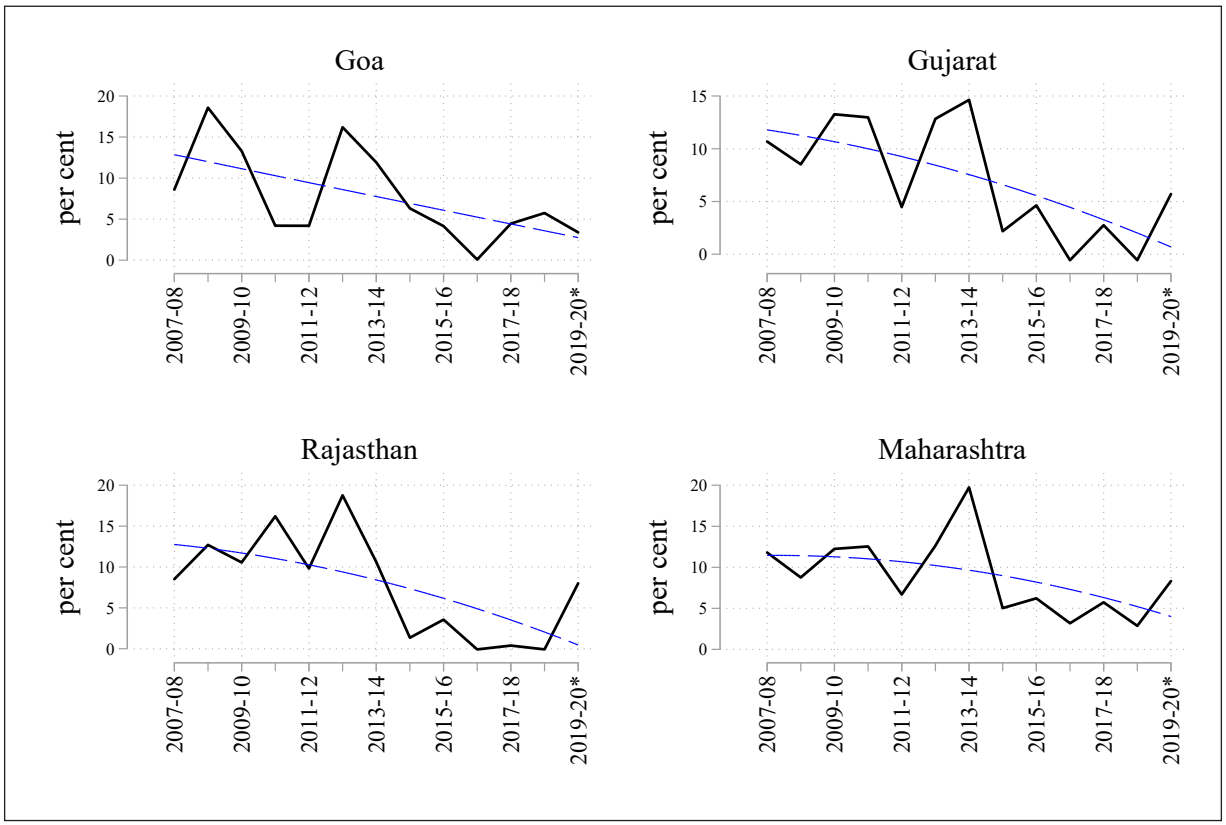
Source: Survey calculations
Note: *: April - October, 2019

Figure 20: State-wise Inflation in Non-Vegetarian Thali Prices



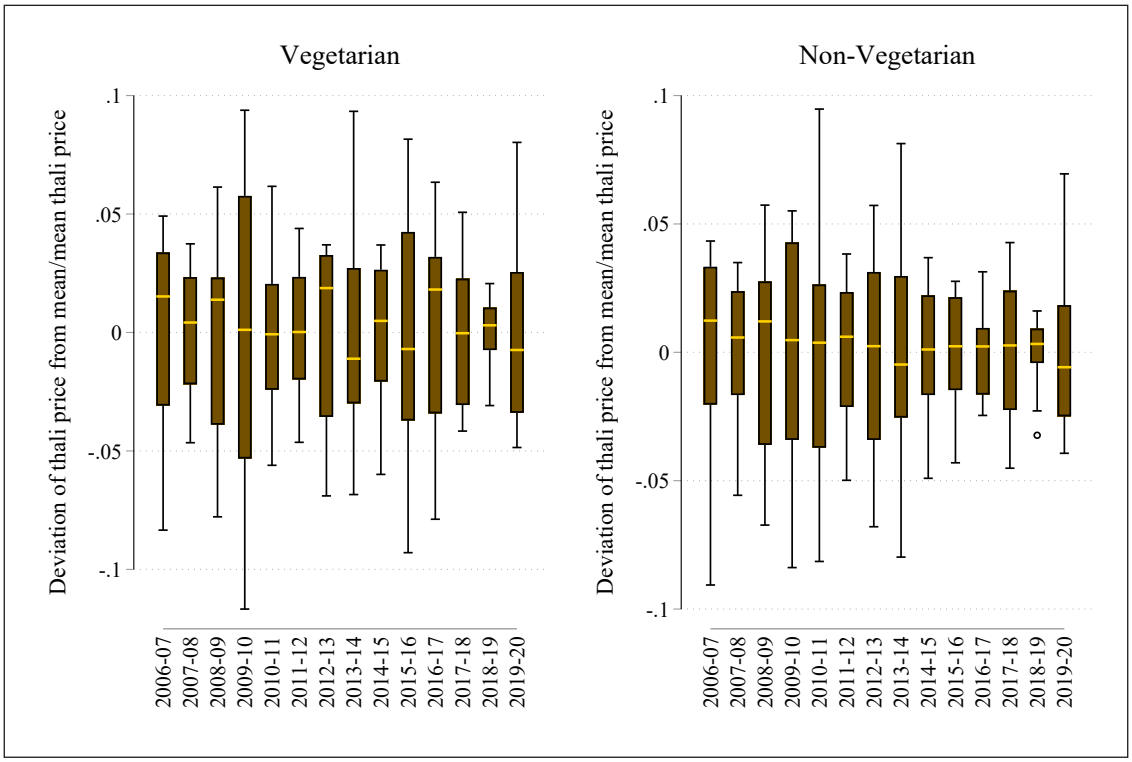






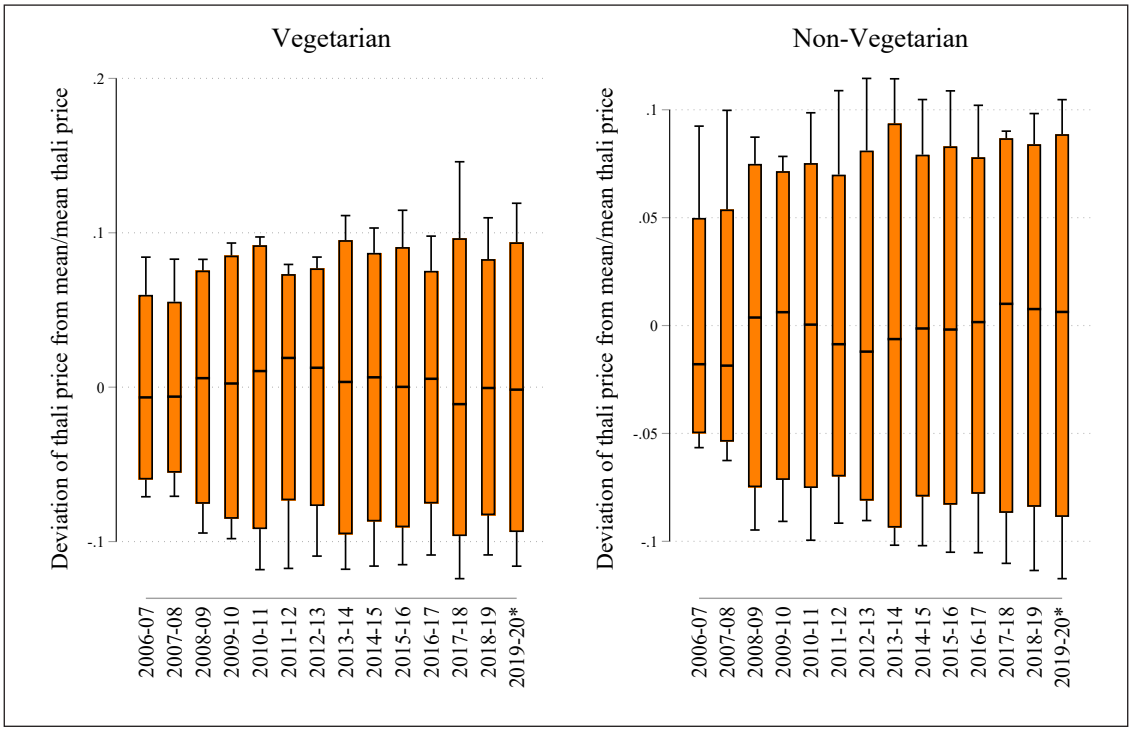
Source: Survey calculations
Note: *: April - October, 2019

Figure 21: Variability of Thali Prices Across Months at All-India Level, 2006-07 to 2019-20*



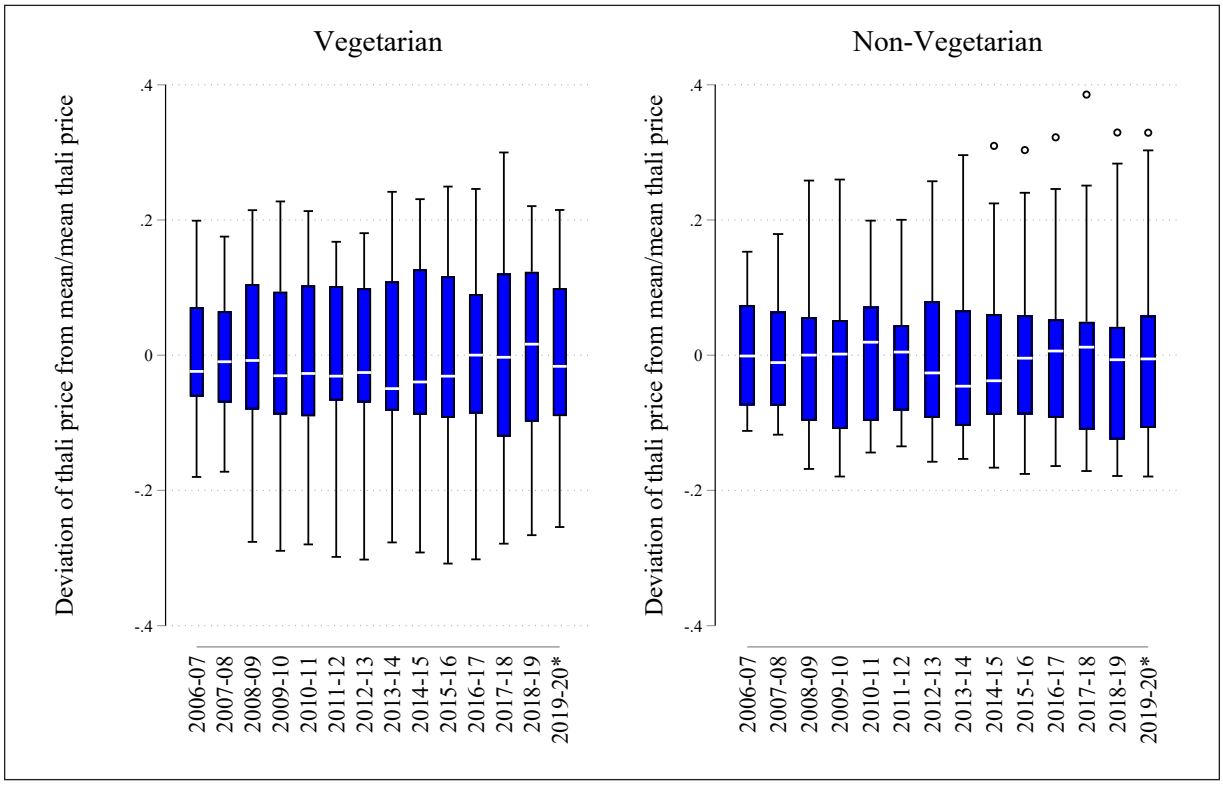
Source: Survey calculations
Note: *: April - October, 2019

Figure 22: Variability of Thali Prices Across Regions, 2006-07 to 2019-20



Source: Survey calculations
Note: *: April - October, 2019

Figure 23: Variability of Thali Prices Across States, 2006-07 to 2019-20



Source: Survey calculations
Note: *: April - October, 2019

CONCLUSION

11.16 Food is not just an end in itself but also an essential ingredient in the growth of human capital and therefore important for national wealth creation. 'Zero Hunger' has been agreed upon by nations of the world as a Sustainable Development Goal (SDG). This goal (SDG 2) is directly related to other SDGs such as Goal 1 (No poverty), Goal 4 (Quality Education), Goal 5 (Gender equality), Goal 12 (Responsible consumption and production), Goal 13 (Climate action) and Goal 15 (Life on Land).

11.17 In this chapter, the evolution of prices of food items have been looked at through the lens of Thalis during the period from 2006-07 to 2019-20 (April-October, 2019). It is found that at the all-India level as well as regional levels, moderation in prices of vegetarian Thali have been witnessed since 2015-16 though Thali prices have increased this year. This is owing to the sharp downward turn in the prices of vegetables and dal in contrast to the previous trend of increasing prices. In terms of the inflation in Thali prices and all the components, we find a distinct declining trend during the period under review. Affordability of Thalis vis-à-vis a day's pay of a worker has improved over time indicating improved welfare of the common person.

CHAPTER AT A GLANCE

- Thalinomics is an attempt to quantify what a common person pays for a Thali across India.
- Prices data from the Consumer Price Index for Industrial Workers for around 80 centres in 25 States/UTs from April 2006 to October 2019 have been used for the analysis.
- 2015-16 can be considered as a year when there was a shift in the dynamics of Thali prices. Many reform measures were introduced since 2014-15 to enhance the productivity of the agricultural sector as well as efficiency and effectiveness of agricultural markets for better and more transparent price discovery.
- Both across India and the four regions – North, South, East and West – we find that the absolute prices of a vegetarian Thali have decreased significantly since 2015-16, though the price has increased during 2019-20.
- After 2015-16, the average household gained ₹10887 on average per year from the moderation in prices in the case of vegetarian Thali. Similarly, an average household that consumes two non-vegetarian Thalis gained around ₹11787 on average per year during the same period.
- Using the annual earnings of an average industrial worker, we find that affordability of vegetarian Thalis improved 29 per cent from 2006-07 to 2019-20 while that for non-vegetarian Thalis improved by 18 per cent.

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Economic Survey 2019-20

Volume 2

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CONTENTS

Chapter No.	Page No.	Name of the Chapter
1		**State of the Economy**
	2	Global Economy In 2019-20
	4	India's Economy in 2019-20
	16	First Advance Estimates: 2019-20
	20	The Recent Growth Deceleration: Drag Of The Financial Sector On The Real Sector
	27	Outlook
2		**Fiscal Developments**
	37	Central Government Finances
	55	State Finances
	57	General Government Finances
	58	Outlook
3		**External Sector**
	71	Overview: India's Balance of Payments
	72	Current Account Deficit
	93	Foreign Direct Investment
	93	Foreign Portfolio Investment
	95	External Commercial Borrowings
	97	External Debt
	97	External Liabilities
	99	Net International Investment Position
	99	Outlook
4		**Monetary Management and Financial Intermediation**
	110	Monetary Developments during 2019-20
	113	Liquidity Conditions and its Management
	115	Developments in the G-Sec Market
	116	Banking Sector
	116	Monetary Transmission
	121	Non-Banking Financial Sector
	125	Developments in Capital Market
	127	Investment By Foreign Portfolio Investors
	127	Movement Of Indian Benchmark Indices
	129	Insurance Sector
	132	Insolvency and Bankruptcy Code
5		**Prices And Inflation**
	138	Introduction

	139	Current Trends in Inflation
	143	Inflation in States
	146	Drivers of Inflation
	146	Crude Oil and Fuel Inflation
	146	Drug Pricing
	148	Food Inflation
	156	Volatility in Essential Commodity Prices
	157	Divergence in Retail and Wholesale Prices for Essential Agricultural Commodities
	160	Has There Been a Shift in Inflation Dynamics
	163	Trends in Global Commodity Prices
	164	Measures to Contain Price Rise of Essential Commodties
	164	Conclusion
6		**Sustainable Development and Climate Change**
	167	Introduction
	168	India and the SDGs
	173	Climate Change
	179	India's Initiatives at the International Stage
	181	India and its Forests
	186	Agriculture Residue Burning - A Major Concern
	190	Way Forward
7		**Agriculture and Food Management**
	193	Introduction
	194	Overview of Agriculture
	195	Minimum Support Prices
	196	Mechanisation in Agriculture
	198	Micro Irrigation
	199	Agricultural Credit
	200	Mitigating Risks in Agriculture: Crop Insurance
	201	Agriculture Trade
	202	Agricultural Research & Education
	204	Allied Sectors: Animal Husbandry, Dairying and Fisheries
	207	Food Processing Sector
	208	Fertilizers
	209	Food Management
	215	Way Forward
8		**Industry and Infrastructure**
	218	Introduction
	218	Trends in Industrial Sector
	227	Sector Wise Issues and Initiatives
	232	Infrastructure
	234	Sectoral Developments
	251	Way Forward

9 **Services Sector**
253 Services Sector Performance: in India An Overview
263 Major Services: Sub-Sector Wise Performance and Recent Policies

10 **Social Infrastructure, Employment and Human Development**
274 Introduction
274 Trends in Social Sector Expenditure
276 Human Development
276 Education for All
281 Skill Development
283 Status of Employment in India
288 Gender Dimension of Employment
294 Health for All
298 Housing for All
299 Drinking Water and Sanitation
299 Conclusion

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ABBREVIATIONS

AA	Advance Authorization
AAGR	Average Annual Growth Rate
AAI	Airports Authority of India
AAY	Antyodaya Anna Yojana
AB-HWCs	Ayushman Bharat-Health & Wellness Centres
ABRR	Annual Business Responsibility Reporting
AE	Advance Estimate
AE	Advanced Economies
AFB	Adaptation Fund Board
AFD	Agence Française de Dévelopment
AGB	Above Ground Biomass
AHF	Affordable Housing Fund
AIF	Alternate Investment Fund
AIIMS	All India Institute of Medical Sciences
AITIGA	ASEAN India Trade in Goods Agreement
AMFFRI	Agricultural Marketing and Farmer Friendly Reforms Index
ANM	Auxiliary Nurse Midwife
APL	Above Poverty Line
APMC	Agricultural Produce Market Committee
APTA	Asia Pacific Trade Agreement
ARPIT	Annual Refresher Programme in Teaching
ARPU	Average Revenue Per User
ARTIS	Application for Remedies in Trade for Indian industry and other Stakeholders
ASEAN	Association of South East Asian countries
ASHAs	Accredited Social Health Workers
ASI	Annual Survey of Industries
AUM	Assets Under Management
AYUSH	Ayurveda, Yoga, Unani, Siddha and Homeopathy
B2B	Business to Business
B2C	Business to Consumer
BCD	Basic Customs Duty
BCM	Billion Cubic Metres
BE	Budget Estimates
BHLG	Bilateral High Level Group
BoP	Balance of Payments
BPCL	Bharat Petroleum Corporation Limited
BPL	Below Poverty Line
Bps	Basis points
BRICS	Brazil, Russia, India, China and South Africa
BRT	Bus Rapid Transit System
BSE	Bombay Stock Exchange
BSNL	Bharat Sanchar Nigam Limited
BTIA	Bilateral Trade and Investment Agreement
BTP	Bio-Technology Parks
BTS	Base Transceiver Stations
BUR	Biennial Update Report
C&D	Construction & Demolition
CAD	Current Account Deficit
CAGR	Compound Annual Growth Rate
CAP	Cover and Plinth
CAPEX	Capital expenditure
CAPS	Cyber Agro Physical Systems
CBIC	Central Board of Indirect Taxes and Customs
CBR	Crude birth rate
CCAP	Climate Change Action Programme
CCEA	Cabinet Committee on Economic Affairs
CCIL	Clearing Corporation of India
CCP	Central Counterparty
CDR	Crude death rate
CDRI	Coalition for Disaster Resilient Infrastructure
CDS	Credit Default Swaps
CECA	Comprehensive Economic Cooperation

	Agreement
CECPA	Comprehensive Economic Cooperation and Partnership Agreement
CEPA	Comprehensive Economic Partnership Agreement/ Comprehensive Economic Policy Agreement
CEPI	Custodian of Enemy Property
CFPI	Consumer Food Price Index
CGA	Controller General of Accounts
CGWA	Central Ground Water Authority
CHC	Custom Hiring Centre
CHC	Community Health Centre
CIC	Currency in Circulation
CIP	Central Issue Price
CIRP	Corporate Insolvency Resolution Process
CISF	Community Investment Support Fund
CIT	Corporate Income Tax
CMIE	Centre for Monitoring Indian Economy
CNA	Central Nodal Agencies
CNSA	China National Space Administration
CoC	Committee of Creditors
CONCOR	Container Corporation of India
COP	Conference of Parties
CPFI	Central Public Financial Institutions
CPI	Consumer Price Index
CPI-AL	Consumer Price Inflation- Agricultural Labourers
CPI-C	Consumer Price Index- Combined
CPI-IW	Consumer Price Inflation- Industrial Workers
CPI-RL	Consumer Price Inflation- Rural Labourers
CPSEs	Central Public Sector Enterprises
CPSU	Central Public Sector Undertaking
CPWD	Central Public Works Department
CRAR	Capital to Risk-weighted Asset Ratio
CSC	Common Service Centre
CSO	Central Statistics Office
CSS	Centrally Sponsored Scheme
CTCN	Climate Technology Centre and Network
CVD	Countervailing Duty
CWC	Central Warehousing Corporation
DAC&FW	Department of Agriculture Cooperation and Farmers Welfare
DARE	Department of Agricultural Research and Education
DAY-NRLM	Deendayal Antyodaya Yojana-National Rural Livelihoods Mission
DB	Doing Business
DBT	Direct Benefit Transfer
DCIL	Dredging Corporation of India Limited
DCP	Decentralized Procurement
DCs	Designated Customers
DDU-GKY	Pt. Deen Dayal Upadhyaya Grameen Kaushalya Yojana
DDWS	Department of Drinking Water and Sanitation
DEA	Department of Economic Affairs
DFIA	Duty Free Import Authorization
DFPD	Department of Food & Public Distribution
DG, WTO	Director General, World Trade Organization
DGCI&S	Directorate General of Commercial Intelligence and Statistics
DGFT	Directorate General of Foreign Trade
DGTR	Directorate General of Trade Remedies
DH	District Hospitals
DIDF	Dairy Processing and Infrastructure Development Fund
DIPAM	Department of Investment and Public Asset Management
DMRC	Delhi Metro Rail Corporation
DoE	Department of Expenditure
DOS	Depot Online System
DPCO	Drug price Control Order
DPD	Direct Port Delivery
DPE	Direct Port Entry
DPIIT	Department for Promotion of Industry and Internal Trade

DTA	Domestic Tariff Area
DWT	Dead Weight Tonnage
EBR	Extra Budgetary Resources
ECBC	Energy Conservation Building Code
ECBs	External Commercial Borrowings
ECGC	Export Credit Guarantee Corporation
ECIS	Export Credit Insurance Scheme
ECOWAS	Economic Community of West African States
EDA	Emerging and Developing Asia
EDP	Entrepreneurship Development Programme
EE	Eligible Entities
EEZ	Exclusive Economic Zone
EFTA	European Free Trade Association
EGSA	Extended Gram Swaraj Abhiyan
EHS	Early Harvest Scheme
EHTP	Electronic Hardware Technology Park
EKTA	Ekikrit Krishi Shiksha Takniki Ayaam
EMDE	Emerging Market and Developing Economies
EME	Emerging Market Economies
EmOC	Emergency Obstetric Care
e-NAM	Electronic National Agriculture Market
EOU	Export Oriented Units
EP	End Period
EPCG	Export Promotion Capital Goods
EPFO	Employees' Provident Fund,
EQUIP	Education Quality Upgradation and Inclusion Programme
ESG	Environmental, Social and Governance
ESIC	Employees' State Insurance Scheme
ETCA	Economic and Technology Cooperation Agreement
ETF	Exchange Traded Funds
EU	European Union
EUS	Employment Unemployment Survey
EV	Electrical Vehicle
EXIM	Export & Import
FAO	Food and Agriculture Organization
FBIL	Financial Benchmark India Private Ltd
FC	Financial Creditor
FCI	Food Corporation of India
FD	Fiscal Deficit
FDI	Foreign Direct Investment
FFC	Fourteenth Finance Commission
FFO	Further Fund Offer
FIDF	Fisheries and Aquaculture Infrastructure Development Fund
FII	Foreign Institutional Investors
FLFPR	Female Labour Force Participation Rate
FMCG	Fast Moving Consumer Goods
FMD	Foot and Mouth Disease
FOB	Free On Board
FPI	Foreign Portfolio Investment
FPO	Further Public Offer
FRA	Global Forest Resource Assessment
FRBM	Fiscal Responsibility and Budget Management
FSB	Financial Stability Board
FTA	Free Trade Agreements
FTP	Foreign Trade Policy
FVCI	Foreign Venture Capital Investment
FWPR	Female Worker Population Ratio
FY	Financial Year
GB	Gigabyte
GCA	Gross Cropped Area
GCC	Gulf Cooperation Council
GCF	Gross Capital Formation
GCF	Green Climate Fund
GDP	Gross Domestic Product
GeM	Government e-Marketplace
GFSI	Global Food Security Index
Gg	Gigagram
GI	Geographical Indication
GHG	Greenhouse Gas

GIAN	Global Initiative for Academics Network
GIP	Graduate Insolvency Programme
GNI	Gross National Income
GNIE	Government not included elsewhere
GNPA	Gross Non-Performing Advances
GP	Gram Panchayats
GSA	Gram Swaraj Abhiyan
GSDP	Gross State Domestic Product
G-sec	Government Securities
GSM	Global System for Mobile
GST	Goods and Services Tax
GSTIN	Goods and Services Tax Number
GSTP	Global System of Trade Preferences
GSTR	Goods and Services Tax Return
GSVA	Gross State Value Added
GT	Gross Tonnage
GTR	Gross Tax Revenue
GVA	Gross Value Added
GW	Gigawatt
ha	Hectare
HDI	Human Development Index
HDR	Human Development Report
HEFA	Higher Education Financing Agency
HEMM	Heavy Earth Moving Machinery
HFC	Housing Finance Company
HPCL	Hindustan Petroleum Corporation Limited
HS	Harmonized System
HSCC	Hospital Services Consultancy Corporation
I&FC	Irrigation & Flood Control
IBA	Indian Banks' Association
IBBI	Insolvency and Bankruptcy Board of India
IBC	Insolvency and Bankruptcy Code
IC	Insurance Company
ICA	Inter-Creditor Agreement
ICAR	Indian Council of Agricultural Research
ICC	Internal Complaint Committee
ICDS	Integrated Child Development Services
ICEDASH	Indian Customs Ease of doing business Dashboard
ICT	Information and Communication Technology
ICV	Internal Combustion Vehicle
IEBR	Internal and Extra Budgetary Resources
IES	Interest Equalization Scheme
IFPRI	International Food Policy Research Institute
IGST	Integrated Goods and Services Tax
IGST	Integrated Goods and Services Tax
IICA	Indian Institute of Corporate Affairs
IIP	Index of Industrial Production
ILFS	Infrastructure Leasing and Financing Services (ILFS)
ILO	International Labour Organisation
IMF	International Monetary Fund
IMG	Inter-Ministerial Group
IMR	Infant Mortality Rate
IPCC	Intergovernmental Panel on Climate Change
IPO	Initial Public Offer
IPR	Intellectual Property Rights
IPSF	International Platform on Sustainable Finance
IPV	Inactivated Polio Vaccine
IR	Indian Railways
IRCTC	Indian Railways Catering and Tourism Corporation
IREDA	Indian Renewable Energy Development Agency
IRF	Impulse Response Function
IRFC	Indian Railway Finance Corporation
IRM	Initial Resource Mobilization
IRSDC	Indian Railway Station Development Corporation
ISA	International Solar Alliance
ISRO	Indian Space Research Organisation

IT-BPM	Information Technology and Business Process Management
ITC	Input Tax Credit
ITI	Industrial Training Institute
ITR	Income Tax Return
ITTNC	India-Thailand Trade Negotiation committee
JAC	Joint Administrative committee
JIPMER	Jawaharlal Institute of Postgraduate Medical Education & Research
JSA	Jal Shakti Abhiyan
KALIA	Krushak Assistance for Livelihood and Income Augmentation
KCC	Kisan Credit Card
KIOCL	Kudremukh Iron Ore Company Limited
KMS	Kharif Marketing Season
KSTA	Knowledge Support and Technical Assistance
KTI	Kuntiz Trypsin Inhibitor
KVK	Krishi Vigyan Kendra
KW	Kilo Watt
LAF	Liquidity Adjustment Facility
LCC	Local Complaint Committee
LCR	Liquidity Coverage Ratio
LED	Light Emitting Diode
LFPR	Labour-Force Participation Rate
LHS	Left Hand Side
LMT	Lakh Metric Tonne
LPI	Logistics Performance Index
LSAS	Life Saving Anesthesia Skills
LULUCF	Land use, Land-Use Change and Forestry
LWE	Left Wing Extremism
M0	Reserve Money
M1	Narrow Money
MB	Megabyte
MC	Ministerial Conference
MCI	Medical Council of India
MCLR	Marginal Cost of Funds based Lending Rate
MDB	Multilateral Development Bank
MDF	Moderately Dense Forest
MDM	Mid Day Meal
MEIS	Merchandise Exports from India Scheme
MEP	Minimum Export Price
MFIs	Micro Finance Institutions
MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Scheme
MIDH	Mission for Integrated Development of Horticulture
MIF	Micro Irrigation Fund
MMR	Maximum Marginal Rate
MMR	Maternal Mortality Ratio
MMT	Million Metric Tonnes
MMTPA	Million Metric Tonne Per Annum
MoEF&CC	Ministry of Environment, Forest and Climate Change
MoHUA	Ministry of Housing and Urban Affairs
MoM	Month -on -Monto
MoP	Muriate of Potash
MORTH	Ministry of Road Transport and Highways
MOSPI	Ministry of Statistics & Programme Implementation
MOVCDNER	Mission Organic Value Chain Development for North Eastern Region
MPC	Monetary Policy Committee
MR	Measles-Rubella
MRO	Maintenance, Repair & Overhaul
MRP	Maximum Retail Price
MSDE	Ministry of Skill Development and Entrepreneurship
MSEs	Micro and Small Enterprises
MSF	Marginal Standing Facility
MSMEs	Micro, Small and Medium Enterprises
MSP	Minimum Support Price
MSS	Market Stabilisation Scheme
MT	Million Tonnes

MT	Metric Tonne
MTFP	Medium Term Fiscal Policy
MTM	Market-to-Market
MTNL	Mahanagar Telephone Nigam Limited
Mtoe	Millions of Tonnes of Oil Equivalent
MTPA	Million Tonnes Per Annum
MUDRA	Micro Units Development and Refinance Agency Ltd.
MW	Mega Watt
NABARD	National Bank for Agriculture and Rural Development
NAFCC	National Adaptation Fund for Climate Change
NAFED	National Agricultural Cooperative Marketing Federation of India
NAFTA	North America Free Trade Agreement
NAPCC	National Action Plan on Climate Change
NASA	National Aeronautics and Space Administration
NASSCOM	National Association of Software and Services Companies
NBFC	Non Banking Financial Companies
NCCF	National Cooperative Consumers' Federation
NCDC	National Cooperatives Development Corporation
NCDs	Non-Communicable Diseases
NCEUS	National Commission for Enterprises in Unorganized Sector
NCIP	National Crop Insurance Portal
NCLT	National Company Law Tribunal
NCR	National Capital Region
NCTE	National Council for Teacher Education (NCTE)
NCTF	National Committee on Trade Facilitation
NDA	Net Domestic Assets
NDC	Nationally Determined Contribution
NDTL	Net Demand and Time Liabilities
NEAT	National Educational Alliance for Technology
NEEPCO	North Eastern Electric Power Corporation Limited
NEET	National Eligibility cum Entrance Test
NEMMP	National Electric Mobility Mission Plan
NER	Net Enrolment Ratio
NER	Nominal Exchange Rate
NFA	Net Foreign Assets
NFC	Non Food Credit
NFEE	Net Foreign Exchange Earnings
NFSA	National Food Security Act
NFSM	National Food Security Mission
NGT	National Green Tribunal
NH	National Highways
NHA	National Health Accounts
NHAI	National Highway Authority of India
NHB	National Housing Bank
NHM	National Health Mission
NIFAP	National lnland Fisheries and Aquaculture Policy
NIIP	Net International Investment Position
NIMH	National Institute of Miners' Health
NINL	Neelachal Ispat Nigam Ltd.
NIOSH	National Institute of Occupational Safety & Health
NIP	National Infrastructure Pipeline
NISHTHA	National Initiative for School Heads' and Teachers' Holistic Advancement
NLE	Nodal Loaning Entities
NLEM	National List of Essential Medicines
NMEEE	National Mission for Enhanced Energy Efficiency
NMOOP	National Mission on Oilseeds and Oil Palm
NMSA	National Mission for Sustainable Agriculture
NPA	Non-Performing Assets
NPCC	National Projects Construction Corporation Limited
NPPA	National Pharmaceutical Pricing Authority

NPS	National Pension System
NRCs	National Resource Centres
NRI	Non-Resident Indians
NSDL	National Securities Depository Limited
NSO	National Statistical Office
NSSF	National Social Security Fund
NSSF	National Small Savings Fund
NSSO	National Sample Survey Office
NSSO	National Sample Survey Organization
NTFAP	National Trade Facilitation Action Plan
NTT	Net Terms of Trade
NUHF	National Urban Housing Funds
NUIH	National Urban Innovation Hub
NVGs	National Voluntary Guidelines
ODF	Open Defecation Free
ODMS	Online Depot Management System
OECD	Organisation for Economic Co
OF	Open Forest
OFS	Offer for Sale
OHS	Occupational Health Services
OMO	Open Market Operation
OMSS	Open Market Sale Scheme
OOPE	Out of Pocket Expenditure
OSC	One Stop Centre
P	Provisional
PA	Provisional Actuals
PCV	Pneumococcal Conjugate Vaccine
PE	Provisional Estimates
PE	Private Equity
PE	Provisional Estimates
PEG	Private Entrepreneurs Guarantee
PHC	Primary Health Centre
PKVY	Paramparagat Krishi Vikas Yojana
PL	Personal Loan
PLFS	Periodic Labour Force Survey
PM KISAN	Pradhan Mantri Kisan Samman Nidhi
PM10	Suspended Particulate Matter
PM2.5	Fine Particulate Matter
PMAY	Pradhan Mantri Awas Yojana
PMAY-G	Pradhan Mantri Aawash Yojana Gramin
PMAY-U	Pradhan Mantri Awas Yojana-Urban
PMAY-U	Pradhan Mantri Aawash Yojana-Gramin -Urban
PMC	Project Management Consultants
PMEGP	Prime Minister's Employment Generation Programme
PMFBY	Pradhan Mantri Fasal Bima Yojana
PMI	Purchasing Managers' Index
PM-KISAN	Pradhan Mantri Kisan Samman Nidhi
PMKSY	Pradhan Mantri Krishi Sinchayee Yojana
PMKSY	Pradhan Mantri Kisan Sampada Yojana
PMKSY-PDMC	Pradhan Mantri Krishi Sinchayee Yojana - Per Drop More Crop
PMKVY	Pradhan Mantri Kaushal Vikas Yojana
PMMMNMTT	Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching
PMMSY	Pradhan Mantri Matsya Sampad Yojana
PMMY	Pradhan Mantri Mudra Yojana
PMUY	Pradhan Mantri Ujjwala Yojana
POL	Petroleum, Oil and Lubricants
PoS	Point of Sale
PPAC	Petroleum Planning and Analysis Cell
PPPs	Public Private Partnerships
PS	Principal status
PS	Primary status
PSB	Public Sector Banks
PSE	Public Sector Enterprises
PSF	Price Stabilisation Fund
PSU	Public Sector Undertaking
PTA	Preferential Trade Agreement
PVB	Private Sector Bank
QE	Quick Estimates
QIP	Qualified Institutional Placement
QTL	Quintal
RBI	Reserve Bank of India
RD	Revenue Deficit
RE	Revised Estimates

REC	Rural Electrification Corporation Limited
REER	Real Effective Exchange Rate
ReMS	Rashtriya e-Market Services
RFID	Radio-frequency Identification
RGM	Rashtriya Gokul Mission
RHS	Right hand side
RITES	Railway Infrastructure Technical & Economic Services
RKVY	Rashtriya Krishi Vikas Yojana
RMK	Rashtriya Mahila Kosh
RMSA	Rashtriya Madhyamik Shiksha Abhiyan
RoA	Return on Assets
RoDTEP	Remission of Duties or Taxes on Export Product
RoE	Return on Equity
RPL	Recognition of Prior Learning
RRR	Reverse Repo Rate
RSA	Restructured Standard Advances
RTE	Right of Children to Free and Compulsory Education
RUSA	Rashtriya Uchchatar Shiksha Abhiyan
RVNL	Rail Vikas Nigam Limited
RVV	Rotavirus Vaccine
RWBCIS	Restructured Weather Based Crop Insurance Scheme
S&T	Scientific & Technological
SA	Stressed Advances
SAARC	South Asian Association for Regional Cooperation
SACU	Southern African Custom Union
SAFTA	South Asian Free Trade Area
SAPTA	SAARC Preferential Trading Agreement
SAUBHAGYA	Sahaj Bijli Har Ghar Yojana
SBM	Swachh Bharat Mission
SBM-G	Swachh Bharat Mission Grameen
SC	Scheduled Caste
SCB	Scheduled Commercial Bank
SCI	Shipping Corporation of India
SCM	Smart Cities Mission
SDG	Sustainable Development Goals
SDH	Sub District Hospitals
SDMS	Skill Development Management System
SDR	Special Drawing Rights
SEBI	Securities and Exchange Board of India
SEIS	Service Export from India Scheme
SHC	Sub-health Centres
SHG	Self Help Group
SIDBI	Small Industries Development Bank of India
SION	Standard Input Output Norms
SLAC	State Level Appraisal Committee
SLR	Statutory Liquidity Ratio
SLSMC	State Level Sanctioning and Monitoring Committee
SMAM	Sub Mission on Agricultural Mechanization
SPS	Sanitary and Phytosanitary
SRI	System of Rice Intensification
SS	Subsidiary Status
SS	Secondary status
SSA	Sarva Shiksha Abhiyan (SSA)
SSCs	Sector Skill Councils
ST	Scheduled Tribe
STP	Software Technology Parks
STT	Securities Transaction Tax
STT	Short Term Training
SWC	State Warehousing Corporation
SWIFT	Single Window Interface for Facilitating Trade
TB	Treasury Bill
TBT	Technical Barriers to Trade
TCIL	Telecommunications Consultants India Limited
TCs/TPs	Training Centres /Training Providers
TDGVA	Tourism Direct Gross Value Added
TDS	Tax Deduction at Source
TE	Teacher Education
TEC	Technology Executive Committee

TEPA	Trade and Economic Partnership Agreement
TEQIP	Technical Education Quality Improvement Programme
TFA	Trade Facilitation Agreement
TFR	Total fertility rate
THDCIL	Tehri Hydro Power Development Corporation
TIES	Trade Infrastructure for Export Scheme
TMA	Transport and Marketing Assistance
TMR	Trade Margin Rationalisation
ToI	Tax on Income other than Corporation Tax
ToT	Terms of Trade
TPD	Tons Per Day
TPDS	Targeted Public Distribution System
TPRU	Tax Policy Research Unit
TReDS	Trade Receivables electronic Discount System
TSP	Telecom Service Providers
U5MR	Under-five Mortality
UAE	United Arab Emirates
UDAN	Ude Desh ka Aam Naagarik
UDAY	Ujwal DISCOM Assurance Yojana
U-DISE	Unified District Information System for Education
UED	Union Excise Duties
UJALA	Unnat Jeevan by Affordable LEDs and Appliances for All
UN	United Nations
UNCCD	United Nations Convention to Combat Desertification
UNCTAD	United Nations Conference on Trade and Development
UNDESA	United Nations Department of Economic & Social Affairs
UNESCAP	United Nations Economic and Social Commission for Asia and Pacific
UNFCCC	United Nations Framework Convention on Climate Change
USA	United States of America
UTs	Union Territories
UTs	Union Territories
VAR	Vector Auto regression
VDF	Very Dense Forest
VIIRS	Visible Infrared Imaging Radiometer Suite
WACR	Weighted Average Call Rate
WALR	Weighted Average Lending Rate
WAPCOS	Water and Power Consultancy Services
WEF	World Economic Forum
WEO	World Economic Outlook
WHL	Women Helpline Scheme
WIM	Warsaw International Mechanism
WPI	Wholesale Price Index
WTO	World Trade Organization
YoY	Year on Year
ZBNF	Zero Budget Natural Farming

01 CHAPTER

State of the Economy

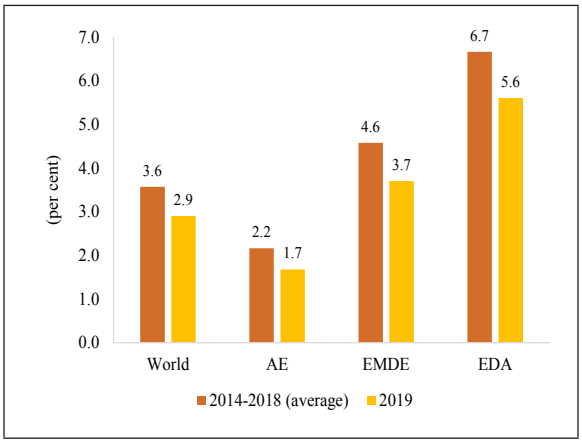
The year 2019 was a difficult year for the global economy with world output growth estimated to grow at its slowest pace of 2.9 per cent since the global financial crisis of 2009, declining from a subdued 3.6 per cent in 2018 and 3.8 per cent in 2017. Uncertainties, although declining, are still elevated due to protectionist tendencies of China and USA and rising USA-Iran geo-political tensions. Amidst a weak environment for global manufacturing, trade and demand, the Indian economy slowed down with GDP growth moderating to 4.8 per cent in H1 of 2019-20, lower than 6.2 per cent in H2 of 2018-19. A sharp decline in real fixed investment induced by a sluggish growth of real consumption has weighed down GDP growth from H2 of 2018-19 to H1 of 2019-20. Real consumption growth, however, has recovered in Q2 of 2019-20, cushioned by a significant growth in government final consumption. At the same time, India's external sector gained further stability in H1 of 2019-20, with a narrowing of Current Account Deficit (CAD) as percentage of GDP from 2.1 in 2018-19 to 1.5 in H1 of 2019-20, impressive Foreign Direct Investment (FDI), rebounding of portfolio flows and accretion of foreign exchange reserves. Imports have contracted more sharply than exports in H1 of 2019-20, with easing of crude prices, which has mainly driven the narrowing of CAD. On the supply side, agricultural growth, though weak, is moderately higher in H1 of 2019-20 than in H2 of 2018-19. Headline inflation rose from 3.3 per cent in H1 of 2019-20 to 7.4 per cent in December 2019 on the back of temporary increase in food inflation, which is expected to decline by year end. Rise in CPI-core and WPI inflation in December 2019 suggests building of demand pressure.

The deceleration in GDP growth can be understood within the framework of a slowing cycle of growth with the financial sector acting as a drag on the real sector. In an attempt to boost demand, 2019-20 has witnessed significant easing of monetary policy with the repo rate having been cut by RBI by 110 basis points. Having duly recognized the financial stresses built up in the economy, the government has taken significant steps this year towards speeding up the insolvency resolution process under Insolvency and Bankruptcy Code (IBC) and easing of credit, particularly for the stressed real estate and Non-Banking Financial Companies (NBFCs) sectors. At the same time, impact of critical measures taken to boost investment, particularly under the National Infrastructure Pipeline, present green shoots for growth in H2 of 2019-20 and 2020-21. Based on first Advance Estimates of India's GDP growth for 2019-20 recorded at 5 per cent, an uptick in GDP growth is expected in H2 of 2019-20. The government must use its strong mandate to deliver expeditiously on reforms, which will enable the economy to strongly rebound in 2020-21.

GLOBAL ECONOMY IN 2019-20

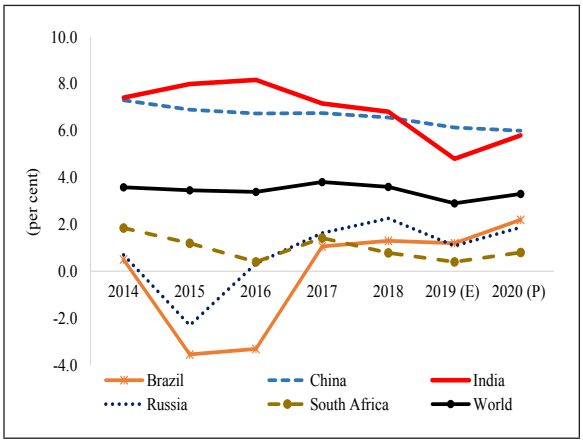
1.1 The World Economic Outlook (WEO) Update of January 2020 published by IMF has estimated the global output to grow at 2.9 per cent in 2019, declining from 3.6 per cent in 2018 and 3.8 per cent in 2017. The global output growth in 2019 is estimated to be the slowest since the global financial crisis of 2009, arising from a geographically broad-based decline in manufacturing activity and trade. Stabilising, yet uncertain, trade tensions between China and the USA have contributed to the decline of world output and trade. The growth of advanced economies has similarly declined from 2.5 per cent in 2017 to 2.2 per cent in 2018 and is estimated to further decline to 1.7 per cent in 2019 (Figure 1). The larger group of OECD countries has also seen a drop in their growth from 2.6 per cent in 2017 to 2.3 per cent in 2018 and is estimated to grow at 1.7 per cent in 2019. WEO has projected the declining growth of global output to rebound in 2020 with a modest uptick to 3.3 per cent.

Figure 1: Growth of global output



Data Source: World Economic Outlook, October 2019 database and January 2020 update
Note: AE – Advanced Economies, EMDE – Emerging Market and Developing Economies, EDA – Emerging and Developing Asia.

Figure 2: Growth of individual BRICS countries

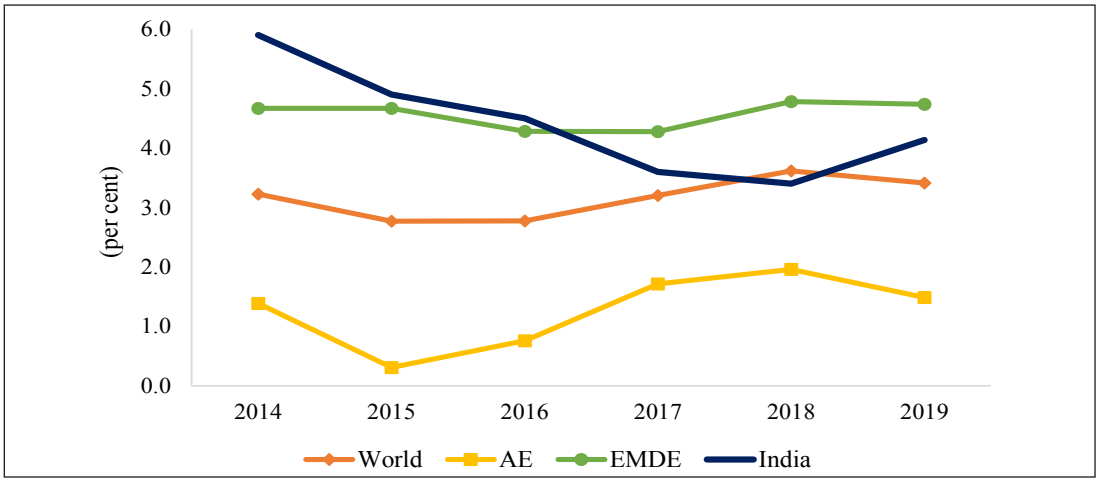


Data Source: World Economic Outlook, October 2019 database and January 2020 update
Note: E – Estimates of IMF, P – Projections of IMF

1.2 As in other major economies, India's Gross Domestic Product (GDP) growth also correlates with the growth of global output, an observation earlier made in the Economic Survey of 2015-16. Not surprisingly, the deceleration in India's GDP growth since 2017 has tracked the decline in world output (Figure 2). However, for three years prior to 2017, when global output growth was not declining, India surged ahead of the rest of the world, recording in 2014-18 an average growth significantly higher than that of any comparable peer, both among advanced and emerging market economies. The WEO Update of January 2020 has projected the growth of Indian economy to increase to 5.8 per cent in 2020 expecting India to contribute significantly to an eventual pickup in the growth of world output. India's GDP in nominal prices was ₹ 190.1 lakh crore (US$ 2.7 trillion) in 2018-19.

1.3 Along with the weakening of global economic activity, inflation the world over also remained muted in 2019 (Figure 3). Inflation softened in advanced and emerging

Figure 3: Consumer Price inflation across country groups

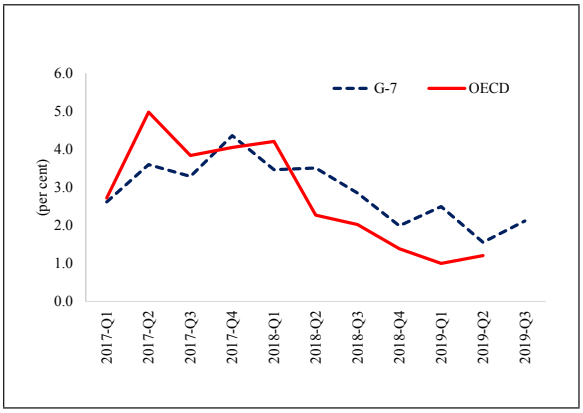


Data Source: World Economic Outlook, October 2019 database, National Statistical Office
Notes: 1. AE – Advanced Economies, EMDE – Emerging Market and Developing Economies, EDA – Emerging and Developing Asia.
2. For India, years are from April to March and data for 2019 is for April to December.

economies reflecting a slack in consumer demand. From the supply side, lower energy prices in 2019 also contributed to softening of inflation. In India, inflation slightly rose to 4.1 per cent in April-December 2019, after a sharp decline from 5.9 per cent in 2014 to 3.4 per cent in 2018.

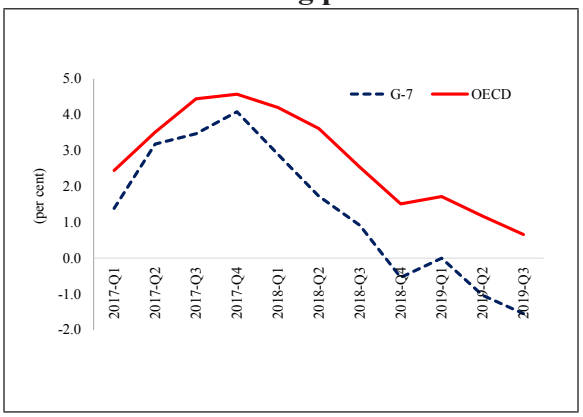
1.4 The global slack in consumer demand affected industrial activity, which slumped in most of the major economies in 2019 (Figure 4 and Figure 5). In particular, global production in automobile industry fell sharply due to a decline in demand, which was caused by changes in technology and emission standards in many countries.

Figure 4: Growth of fixed investment



Data Source: OECD database
Note: Quarters are on calendar year basis.
G-7 refers to the group of seven large advanced economies in the world; namely Canada, France, Germany, Italy, Japan, the United Kingdom and the United States

Figure 5: Growth of index of manufacturing production



Data Source: OECD database
Note: Quarters are on calendar year basis.
OECD is the Organisation for Economic Co-operation and Development with 36 member countries.

India also experienced a similar downturn in the auto industry (IMF's World Economic Outlook October, 2019 and January 2020).

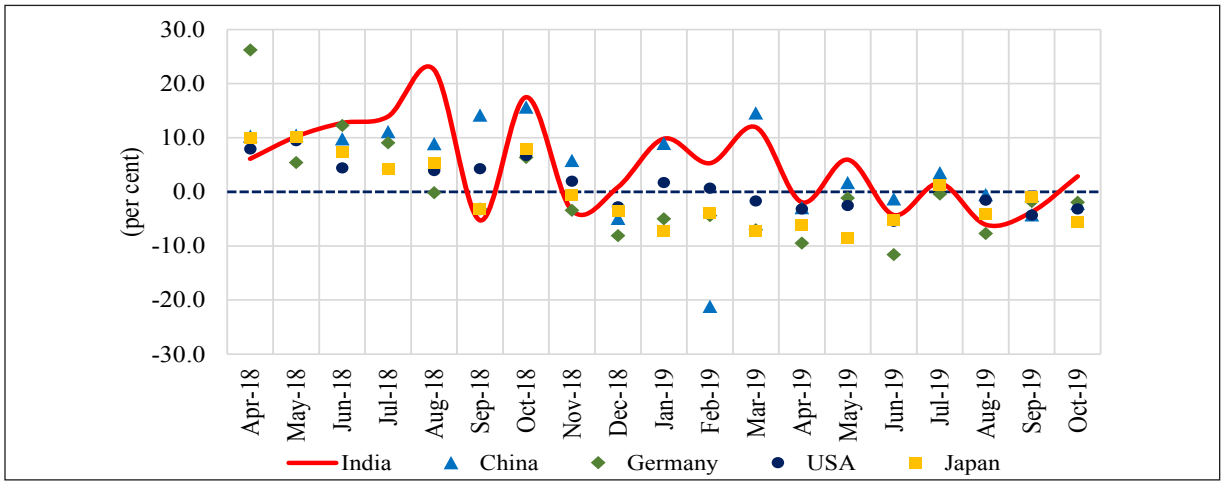
1.5 As global industrial activity slowed down, there was a drop in growth of manufacturing exports from major economies. Increasing trade barriers as well as trade uncertainty stemming from growing trade tensions also weakened business confidence and further limited trade. India's manufacturing exports also fell (Figure 6).

INDIAN ECONOMY IN 2019-20

Size of the economy

1.6 The WEO of October 2019 has estimated India's economy to become the fifth largest in the world, as measured using GDP at current US$ prices, moving past United Kingdom and France. The size of the economy is estimated at US$ 2.9 trillion in 2019 (Table 1).

Figure 6: Non-agriculture, non-fuel merchandise export[1] growth



Data Source: Trade Map Database

Table 1: Top 10 Economies in the world in terms of GDP at current US$ trillion

Sl. No.	Country	2017	2018	2019 (E)	Change in position in 2019
1	United States	19.5	20.6	21.4	-
2	China	12.1	13.4	14.1	-
3	Japan	4.9	5.0	5.2	-
4	Germany	3.7	4.0	3.9	-
5	India	2.7	2.7	2.9	▲
6	United Kingdom	2.6	2.8	2.7	▼
7	France	2.6	2.8	2.7	▼
8	Italy	2.0	2.1	2.0	-
9	Brazil	2.1	1.9	1.8	-
10	Korea	1.6	1.7	1.6	-

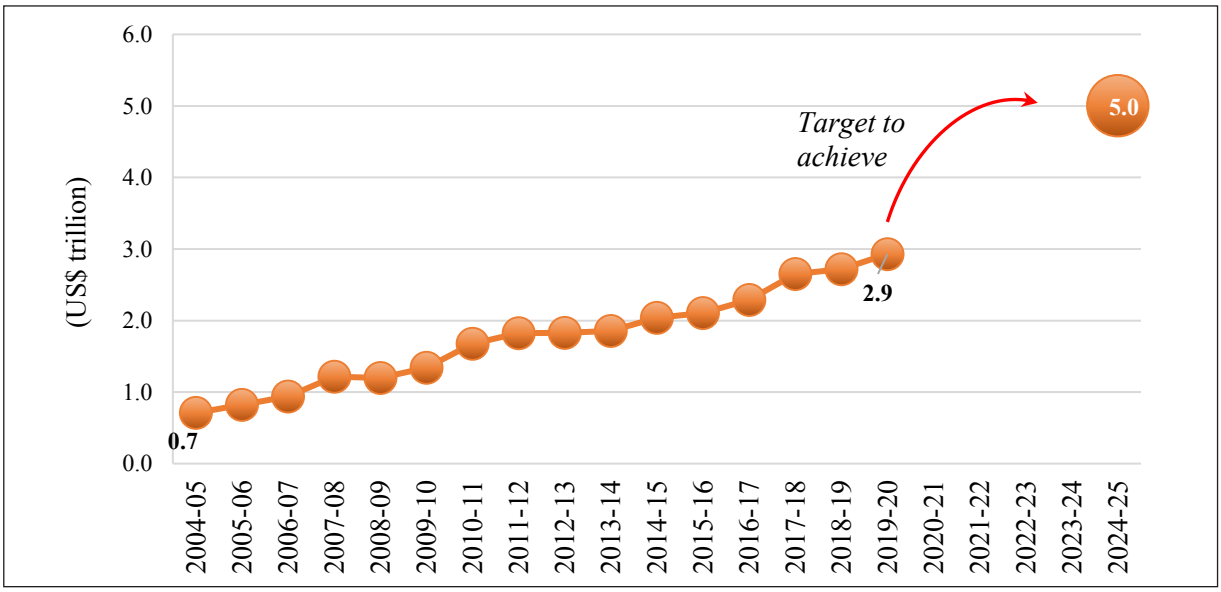
Data Source: World Economic Outlook, October 2019 database

Notes: E : IMF's estimate; ▲ indicates improvement in rank; ▼ indicates drop in rank and - indicates unchanged rank

1. Total merchandise exports of product categories under HS code 28 to 96 are considered as manufacturing exports.

1.7 In July 2019, the Union Budget 2019-20 had articulated the vision of the Hon'ble Prime Minister to make India a US$ 5 trillion economy by 2024-25. The march towards this milestone has, however, been challenged by less than expected growth of India's GDP so far this year, on the back of a decline in world output. Yet, given India's record of growth with macroeconomic stability over the last five years (annual average growth rate of 7.5 per cent and annual average inflation of 4.5 per cent), the economy is poised for a rebound towards the US$ 5 trillion goal (Figure 7).

Figure 7: Increasing size of the Indian economy (GDP at current US$)



Data Source: National Statistical Office, Reserve Bank of India (RBI) and IMF

GVA and GDP growth

1.8 The National Statistical Office (NSO) has estimated India's GDP to have grown at 4.8 per cent in the first half (H1) (April-September) of 2019-20, lower than 6.2 per cent recorded in the second half (H2) (October-March) of 2018-19. On the supply side, the deceleration in GDP growth has been contributed generally by all sectors save 'Agriculture and allied activities' and 'Public administration, defence, and other services', whose growth in H1 of 2019-20 was higher than in H2 of 2018-19 (Table 2).

Table 2: Quarter wise growth of real Gross Value Added (GVA) and GDP (per cent)

	2018-19				2019-20	
	Q1	Q2	Q3	Q4	Q1	Q2
GVA at basic prices	7.7	6.9	6.3	5.7	4.9	4.3
Agriculture, forestry & fishing	5.1	4.9	2.8	–0.1	2.0	2.1
Industry	9.8	6.7	7.0	4.2	2.7	0.5
Services	7.1	7.3	7.2	8.4	6.9	6.8
GDP at market prices	8.0	7.0	6.6	5.8	5.0	4.5

Data Source: National Statistical Office

1.9 On the demand side, the deceleration in GDP growth was caused by a decline in the growth of real fixed investment in H1 of 2019-20 when compared to 2018-19 induced in part by a sluggish growth of real consumption. However, growth of real consumption started picking up in Q2 of 2019-20, mostly driven by a significant jump in government final consumption. Growth of private final consumption expenditure also picked up in the same quarter. The contribution of net exports to GDP in Q2 of 2019-20 became less negative as in real terms the contraction of exports was much smaller than contraction of imports. Lower growth of GDP and softer price of crude oil caused a large contraction of imports (Table 3).

Table 3: Real growth of GDP (per cent)

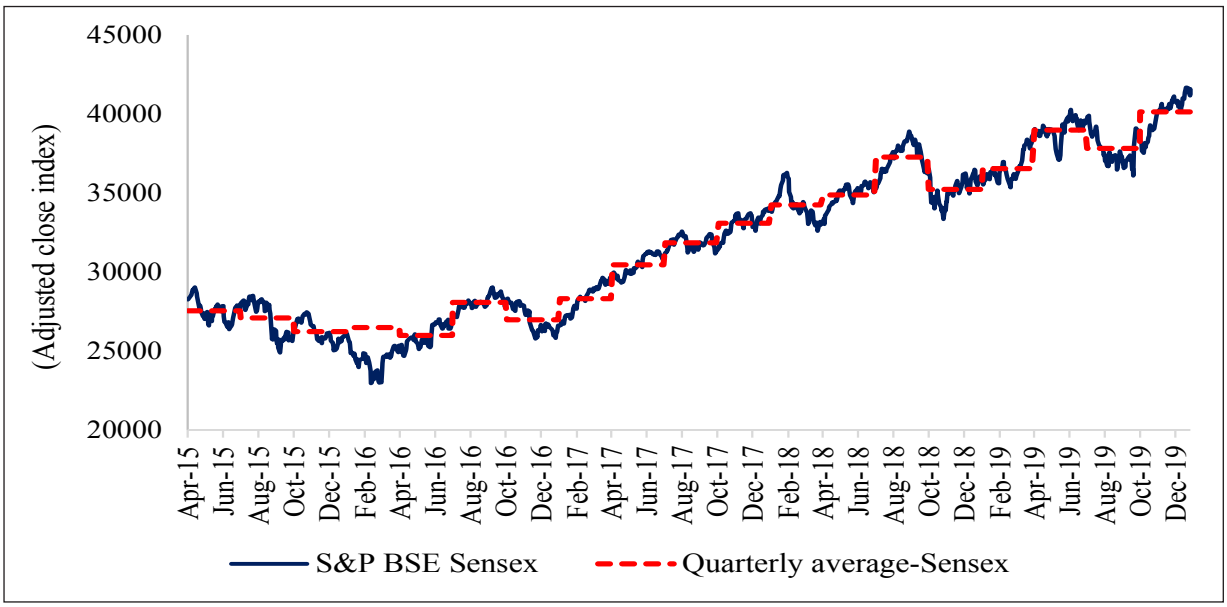
	2017-18	2018-19 (PE)	2019-20	
			Q1	Q2
Gross Domestic Product	7.2	6.8	5.0	4.5
Total consumption	8.6	8.3	4.1	6.9
Government consumption	15.0	9.2	8.8	15.6
Private consumption	7.4	8.1	3.1	5.1
Fixed investment	9.3	10.0	4.0	1.0
Exports of goods and services	4.7	12.5	5.7	-0.4
Imports of goods and services	17.6	15.4	4.2	-6.9

Data Source: National Statistical Office
Note: PE – Provisional Estimates.

1.10 Despite the deceleration in GDP growth for the sixth consecutive quarter, the stock market continues to be upbeat about the country's growth prospects. The Bombay Stock Exchange (BSE) Sensex increased by 7.0 per cent at end December 2019 over end March 2019 (Figure 8). This may also reflect the growing perception of India becoming an attractive destination for investment in the backdrop of a decline in the growth of major economies of the world and continued easing of monetary policy by the US Fed. The net FDI and net Foreign Portfolio Investment (FPI) in first eight months of 2019-20 stood at US$ 24.4 billion and US$ 12.6 billion respectively, more than the inflows received in the corresponding period of 2018-19.

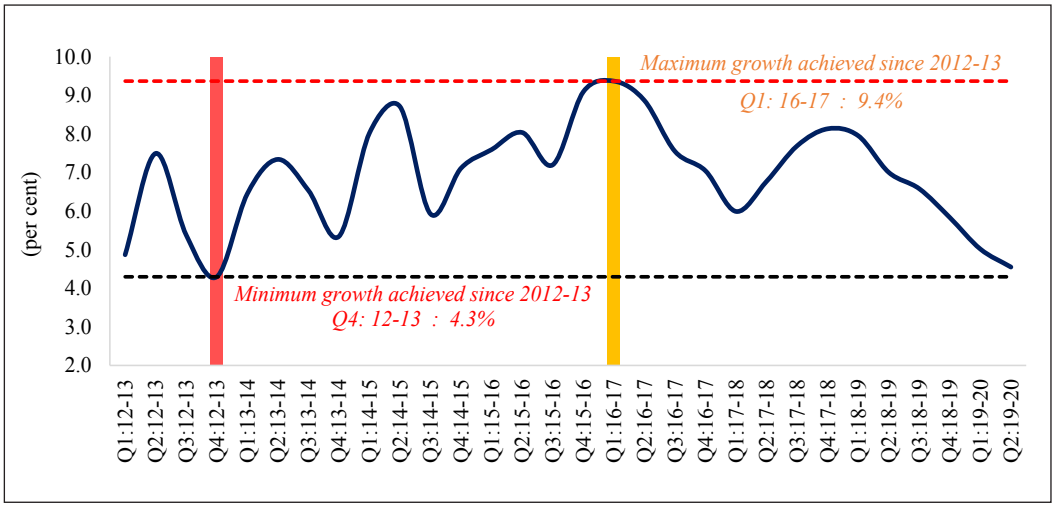
1.11 Since 2011-12, India recorded its lowest quarterly GDP growth in Q4 of 2012-13 (Figure 9). After 13 quarters, the economy achieved its highest quarterly growth of 9.4 per cent in Q1 of 2016-17. Again after 13 quarters, the economy has recorded a low growth of 4.5 per cent in Q2 of 2019-20. It appears that the length of the business cycle is about 13 quarters. A study on business cycle measurement in India (Pandey et al. 2018) using growth data since 1996 shows similar results. Their study indicates that when GDP is accelerating the business cycle on average is 12 quarters. However, in the deceleration phase, the business cycle on average reduces to 9 quarters. A resurgence in growth is, accordingly, expected to begin in H2 of 2019-20.

Figure 8: Movement in BSE Sensex



Data Source: BSE

Figure 9: Quarter wise growth of real GDP

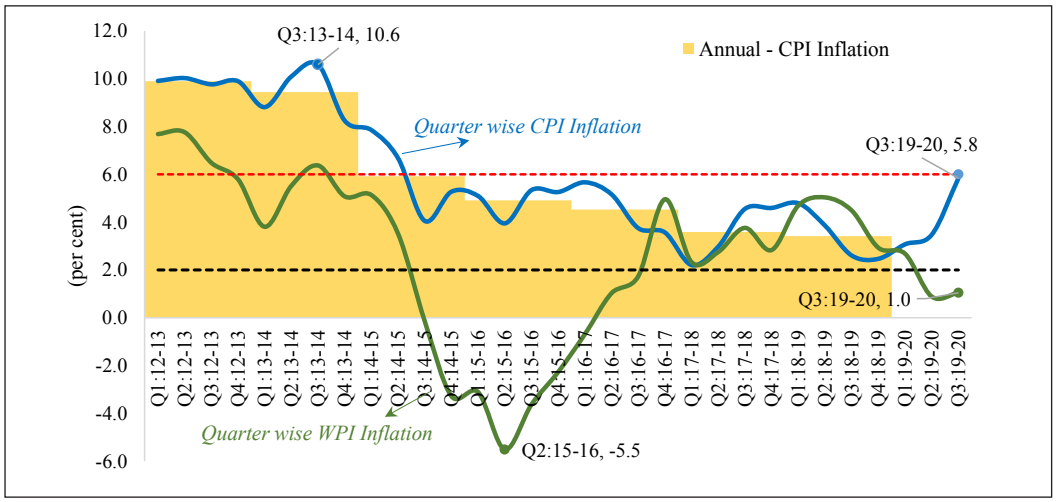


Data Source: National Statistical Office

Inflation

1.12 In H1 of 2019-20, CPI (Headline) inflation was estimated at 3.3 per cent, slightly higher than that in H2 of the previous year. There has been a further uptick in headline inflation in the month of December 2019 to 7.35 per cent contributed mainly by supply-side factors. The food prices spiked following unseasonal rainfall and a flood-like situation in many parts of the country, which affected agricultural crop production. The Wholesale Price Index (WPI) inflation, on the other hand, declined sharply from 3.2 per cent in April 2019 to 2.6 per cent in December 2019, reflecting weakening of demand pressure in the economy (Figure 10).

Figure 10: CPI and WPI inflation



Data Source: National Statistical Office and Department for Promotion of Industry and Internal Trade (DPIIT)

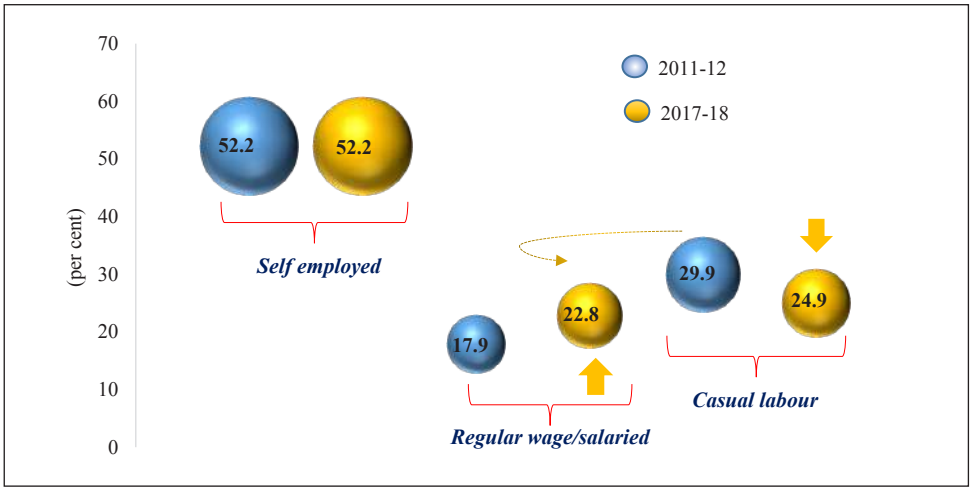
1.13 Core inflation (headline less food and fuel inflation) further reflects the state of demand in the economy. There has been a secular moderation in CPI-core inflation from 6.3 per cent in Q1 of 2018-19 to 4.3 per cent in Q2 of 2019-20, which also reflects a weakening of demand pressure in the economy. The core-CPI and WPI inflation together moderated inflation, as captured by the GDP deflator, which fell from 3.7 per cent in H2 of 2018-19 to 2.1 per cent in H1 of 2019-20. This significantly lowered the nominal growth of GDP as well.

Employment: Formal vs. Informal

1.14 As several polices have been implemented to enhance the formalization of the economy, examining the impact of the same is crucial Due to the changes in methodology and sampling design, labour market estimates based on Periodic Labour Force Survey (PLFS) are not strictly comparable with the results of earlier quinquennial surveys on Employment-Unemployment conducted by National Sample Survey Organization (NSSO). Yet a limited comparability has been attempted to highlight the shift towards increased employability in formal sector jobs.

1.15 As per the latest available data on employment, there has been an increase in the share of formal employment, as captured by 'Regular wage/salaried', from 17.9 per cent in 2011-12 to 22.8 per cent in 2017-18 (Figure 11). This 5 percentage points increase in the share of 'Regular wage/salaried' group has been on account of 5 percentage points decrease in the share of casual workers, which reflects formalization in the economy. As a result, in absolute terms, there was a significant jump of around 2.62 crore new jobs over this period in the usual status category with 1.21 crore in rural areas and 1.39 crore in urban areas. Remarkably, the proportion of women workers in 'Regular wage/salaried' employees category has increased by 8 percentage points (from 13 percent in 2011-12 to 21 per cent in 2017-18) with addition of 0.7 crore new jobs for female workers in this category. The drop in casual labour has mainly originated from the rural sector where rural labourers have shifted from agricultural to industrial and services activity. In urban region, there has been a shift of employment from self- employed to salaried jobs.

Figure 11: Distribution of workers by all ages in usual status (PS+SS) by statuses in employment



Data Source: Periodic Labour Force Survey 2017-18, Ministry of Statistics & Programme Implementation
Note: PS- Principal Status, SS- Subsidiary Status.

1.16 The provisional Annual Survey of Industries for fiscal year ending March 2018, also shows an increase in jobs in the organized manufacturing sector. Between 2014-15 and 2017-18, total number of workers increased by 14.7 lakh and total persons engaged increased by 17.3 lakh, in the organised manufacturing sector in India.

Fiscal situation

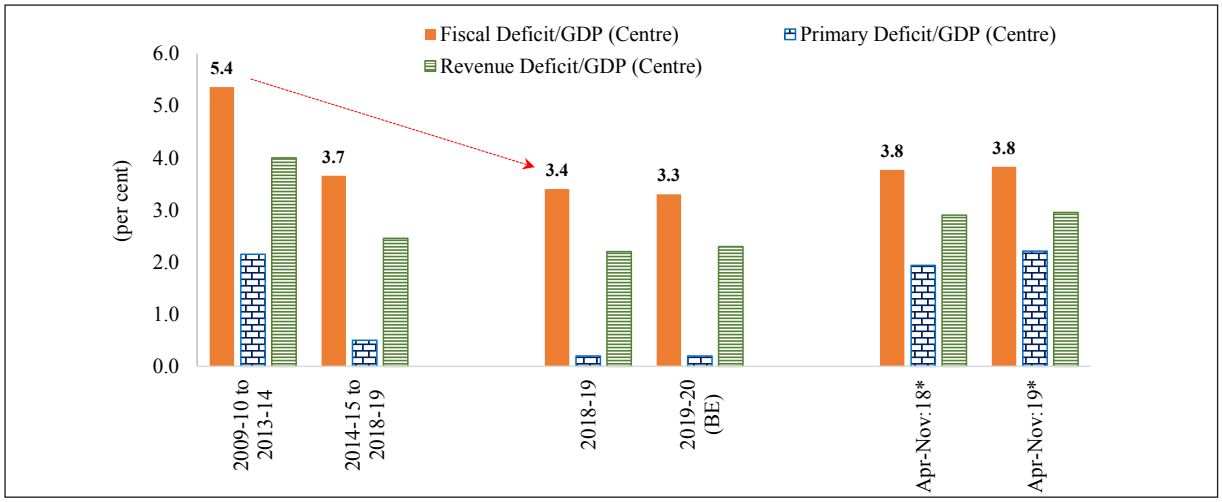
1.17 In 2019-20, Centre's fiscal deficit was budgeted at ₹ 7.04 lakh crore (3.3 per cent of GDP), as compared to ₹ 6.49 lakh crore (3.4 per cent of GDP) in 2018-19 PA (Figure 12). In the first eight months of 2019-20, fiscal deficit stood at 114.8 per cent of the budgeted level .

1.18 Net Tax revenue to the Centre, which was envisaged to grow at more than 25 per cent in 2019-20 BE relative to 2018-19 PA, grew at 2.6 per cent during April to November 2019, which was nearly half its' growth rate for the corresponding period last year. This is primarily owing to low growth in Gross Tax Revenue (GTR) of 0.8 per cent during first eight months of 2019-20 vis-a-vis 7.1 per cent growth for the corresponding period in 2018-19 (Table 6, Chapter 2). Goods and Services Tax (GST) collections, the biggest component of indirect taxes, grew by 4.1 per cent for the Centre during April-November 2019. However, the uptick in growth of cumulative GST collections for the Centre started in October 2019 and has sustained its momentum in November and December 2019 as well.

1.19 Specifically, the GST (Centre + States) collection for the month of November 2019 was the third highest monthly collection since introduction of GST (July 2017). From April-December 2019, gross GST revenue collection has crossed the mark of ₹ 1 lakh crore five times with a revenue of ₹ 1.03 lakh crore in December 2019. This may be the result of concerted efforts taken by the Government to improve tax compliance and revenue collection as well as a reflection of a rebounding economy.

1.20 On the expenditure side, the budgeted expenditure of the Central government grew at 12.8 per cent in April-November 2019 over

Figure 12: Gross Fiscal Deficit (Centre) as percentage of GDP



Data Source: Union Budget and CGA
Note: * : The figures for 2018 are with respect to GDP (PE) data for 2018-19 and figures for 2019 are provisional and with respect to budgeted GDP for 2019-20.

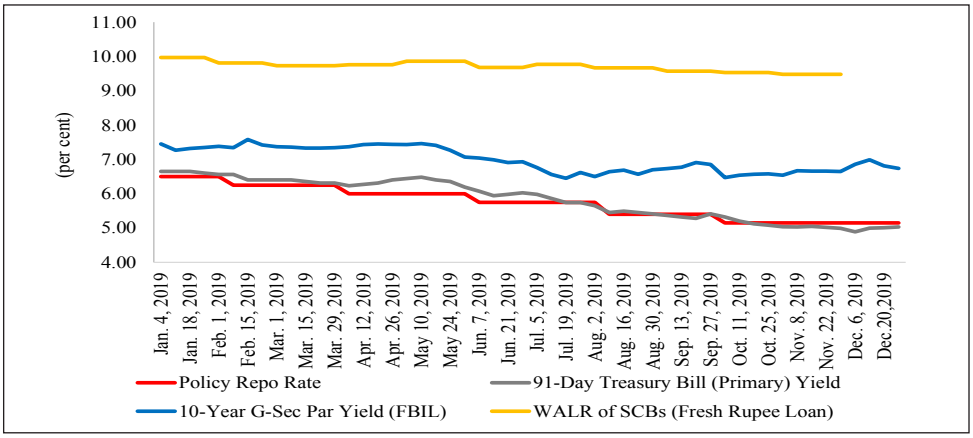
the corresponding period of the previous year, expending almost 60 per cent of the budget. The capital expenditure during April to November 2019-20 has grown at roughly three times vis-à-vis the same period in 2018-19. Also, revenue expenditure has grown at a higher rate during these eight months of 2019-20, compared to the same period previous year (Chapter 2, Figure 8).

Monetary policy

1.21 The liquidity condition of banks became comfortable after June 2019 and has remained healthy since then (Chapter 4, Figure 5). Average daily net absorption soared from ₹ 45.6 thousand crore in June 2019 to ₹ 256.4 thousand crore in December 2019. Durable liquidity injection was undertaken through four open market operation (OMO) purchase auctions and a US$ 5 billion buy/sell swap auction. Abundant liquidity in the banking system is also reflected in the weighted call money rate, which has mostly traded within the Liquidity Adjustment Facility (LAF) corridor (LAF corridor is the spread between the repo and the reverse repo rate) (Chapter 4, Figure 6).

1.22 The stance of the Monetary Policy Committee of Reserve Bank of India continued to be accommodative as it reduced the policy repo rate by 135 basis points since February 2019. The rate cut along with excess liquidity in banks was expected to transmit well into lowering interest rates. However, the transmission has varied across different market segments (Figure 13). The transmission to short term treasury bills was full during this period while it was partial for long term securities. The transmission to credit market was also partial as Weighted Average Lending Rate (WALR) of Scheduled Commercial Banks (SCBs) on fresh rupee loan reduced by only 33 basis points (bps) between February and November 2019. Thus, less than a quarter of the rate cuts by RBI was transmitted by banks to new borrowers. The median of 1-year Marginal Cost of Funds based Lending Rate (MCLR) reduced by 49 bps between February and November 2019; which represents a transmission of about a third of the rate cut by RBI.

Figure 13: Policy rate, yield and lending rate



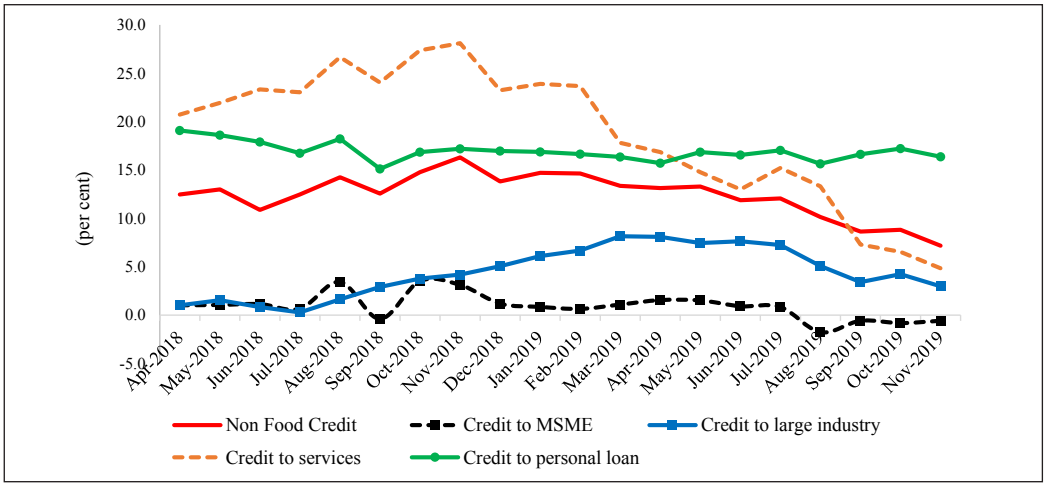
Data Source: RBI
Note: WALR refers to Weighted Average Lending Rate

Credit growth

1.23 The growth of bank credit which was picking up in H1 of 2018-19, started decelerating in H2 of 2018-19 and further in H1 of 2019-20. The deceleration was witnessed across all major segments of non-food credit, save personal loans which continued to grow at a steady and robust pace. The deceleration in credit growth was most in the services sector. Credit growth to industry also witnessed a significant decline in recent months, both for MSME sector as well as large industries. Agriculture and allied activities benefited from a higher growth of credit (Figure 14).

1.24 Decline in credit growth has been attributed to growing risk aversion of banks that continue to apprehend the build-up of Non-Performing Assets (NPAs). This is despite the admission of more than 2000 corporate insolvency resolution processes between December 2016 and June 2019.

Figure 14: Growth of non-food bank credit



Data Source: RBI
Note: Growth of sectoral credit corresponds to select 41 Scheduled Commercial Banks.

The IBC process contributed to reducing the NPAs from 11.2 per cent of gross advances in March 2018 to 9.3 per cent in March 2019. However, the NPA ratio remains the same six months forward, at 9.3 per cent, in end September 2019.

1.25 The prospects of easy investment in G-secs is possibly running complementary to the risk aversion being displayed by SCBs. During the first eight months of 2019-20, scheduled commercial banks mobilized the same amount of deposits as in the corresponding period of the previous year. Yet, the SCBs chose to invest thrice the amount in G-secs in the current year, as compared to the previous year while reducing their credit off-take by more than four-fifths. It appears that risk aversion towards lending to the private sector has increased in 2019 (Table 4).

1.26 The risk aversion to lending to the private sector appears to be relatively more in respect of Public Sector Banks (PSBs). As Figure 15 shows, growth of credit from the PSBs was not only much lower than that of private sector banks but credit growth of PSBs also dipped sharply from December 2018 onwards.

External sector performance

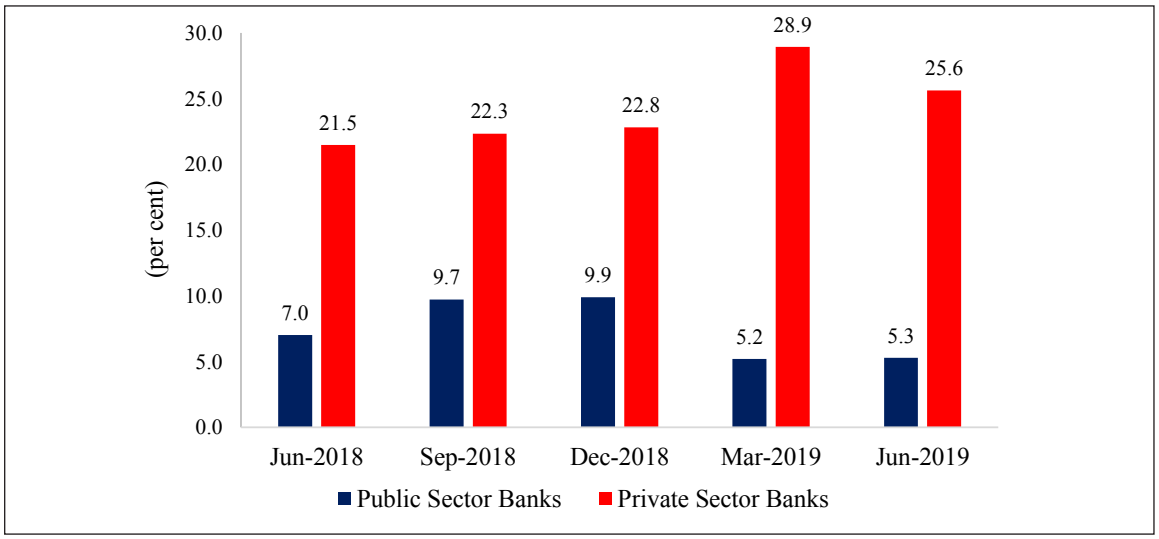
1.27 In October and November 2019, major commodity groups have shown a positive

Table 4: Net Scheduled Commercial Bank Credit (in ₹ lakh crore)

	April-November	
	2018-19	2019-20
Net Credit of Scheduled Commercial Banks	5.07	0.89
Net Aggregate Deposits of Scheduled Commercial Banks	3.87	3.85
Incremental Credit-Deposit Ratio (per cent)	131.0	23.1
Investment in Government Securities	1.07	3.37

Data Source: RBI

Figure 15: Growth in credit of Public & Private Sector Banks



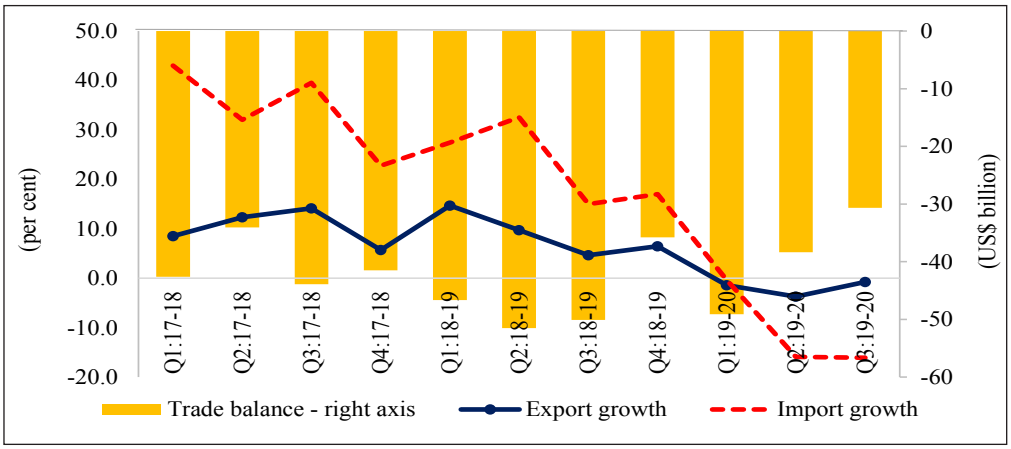
Data Source: RBI

growth in exports over the corresponding month of the previous year while imports of major commodity groups have contracted. However, the slower contraction in merchandise exports as compared to imports has so far resulted in improvement in trade balance in 2019-20 (Figure 16).

1.28 The contraction in import bill was partly contributed by a decline in oil prices in the current year as compared to 2018-19 (Figure 17), while slower contraction of exports may have resulted from a pick-up in global activity. The depreciation of real exchange rate since July 2019 may have been supportive of resurgence in India's exports (Figure 18), though the evidence for exchange rate depreciation contributing to exports seems tenuous (Volume 1, Chapter 5).

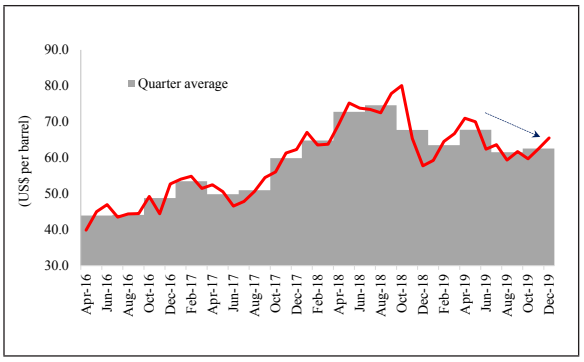
1.29 Despite muted growth of services exports, the trade balance on the services account continued to be positive in 2019-20. The trade surplus on services account has been estimated at US$ 40.5 billion in H1 of 2019-20 (Figure 19), as compared to US$ 38.9 billion in 2018-19.

Figure 16: Growth of merchandise exports and imports



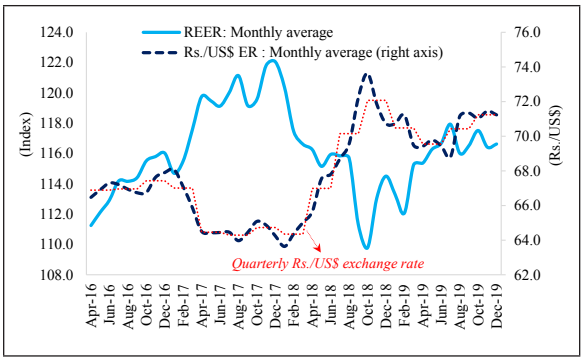
Data Source: Department of Commerce, Ministry of Commerce and Industry

Figure 17: Crude oil prices (Indian Basket) – US$ per barrel



Data Source: Petroleum Planning and Analysis Cell

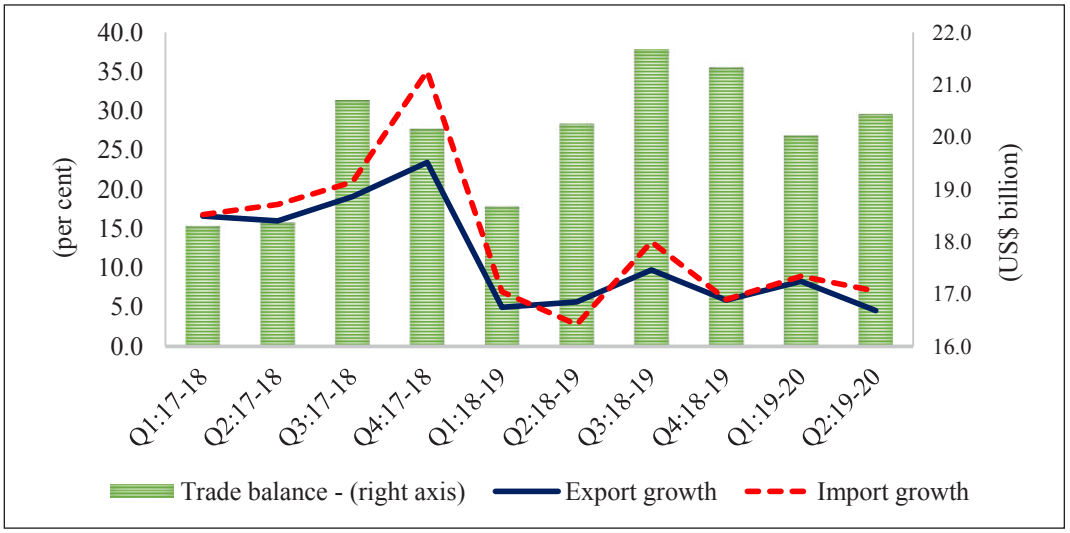
Figure 18: Exchange Rate of Indian Rupee



Data Source: RBI

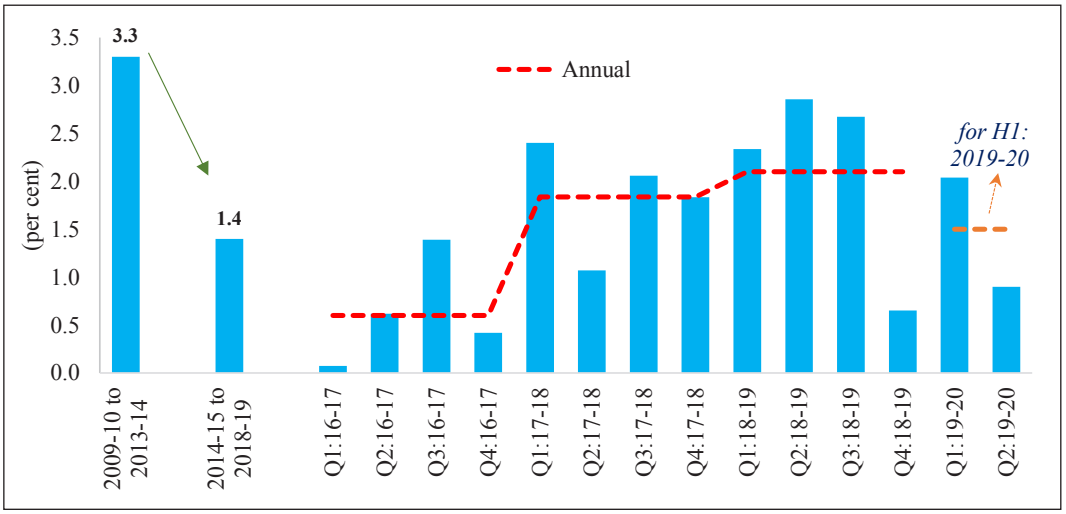
Note: REER refers to Real Effective Exchange Rate (36 currency trade weights)

Figure 19: Growth of services exports and imports



Data Source: RBI

Figure 20: Current Account Deficit as percentage of GDP

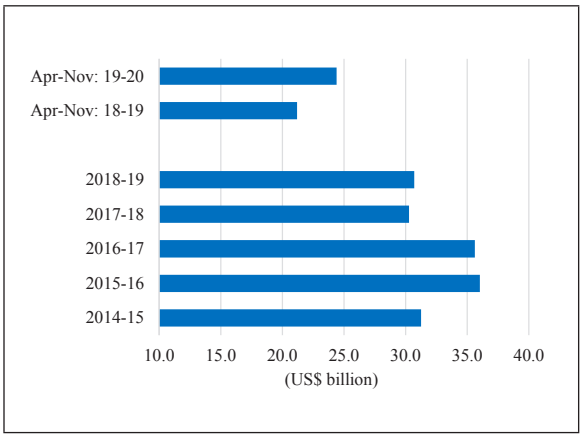


Data Source: RBI

1.30 Lower Current Account Deficit (CAD) reflects reduced external indebtedness of the country making domestic economic policy increasingly independent of external influence. The CAD, which was 2.1 per cent of GDP in 2018-19, has improved to 1.5 per cent in H1 of 2019-20 on the back of significant reduction in trade deficit (Figure 20).

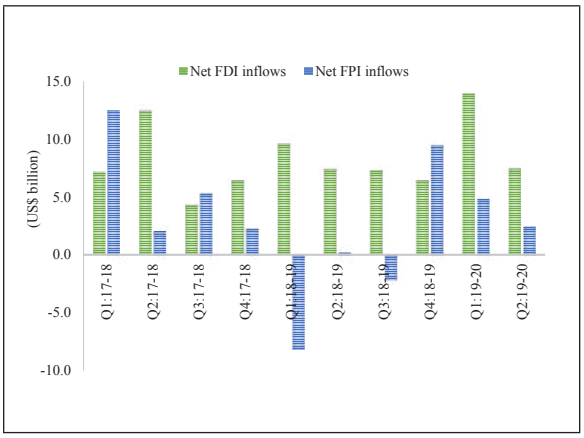
1.31 Foreign Direct Investment (FDI) provides a more stable source of financing the CAD as compared to external borrowings. During 2014-19, gross FDI to India has been robust as compared to the previous five years; the trend has continued in 2019-20 as well (Figure 21). In the first eight months of 2019-20, both gross and net FDI flows to the country have been more than the flows received in corresponding period of 2018-19. Net FPI inflow in H1 of 2019-20 was also robust at US$ 7.3 billion as against an

Figure 21: Net annual FDI inflows



Data Source: RBI's monthly bulletins

Figure 22: Quarterly trends in capital inflows



Data Source: RBI

outflow of US$ 7.9 billion in H1 of 2018-19 (Figure 22).

1.32 Consequent to the improvement in current account and higher capital flows into the country, the Balance of Payments (BoP) position of the country has improved from foreign exchange reserves of US$ 302 billion in end March, 2019 to US$ 461.2 billion as on 10th January 2020.

Sectoral developments

1.33 Resources move across sectors in response to changes in relative prices causing different sectors of the economy to grow at different rates. A high growth of GDP does not attract much attention to sectoral contribution to growth as much as low growth of GDP does. Yet, at all levels of growth, structural change is imminent and it is the pace of change that becomes a matter of interest (Table 5).

1.34 Share of agriculture and allied sectors in the total GVA of the country has declined from 2009-14 to 2014-19 mainly on account of relatively higher growth performance of tertiary sectors. This is a natural outcome of the development process

Table 5: Sectoral shares in GVA (per cent)

	2009-10 to 2013-14	2014-15 to 2018-19	2018-19	H1: 2019-20
Agriculture, forestry & fishing	18.3	17.4	16.1	13.9
Industry	32.3	29.6	29.6	28.3
Mining & Quarrying	3.2	2.4	2.4	2.1
Manufacturing	17.5	16.6	16.4	15.4
Electricity, Gas, Water supply & other utility services	2.4	2.6	2.8	2.9
Construction	9.2	8.0	8.0	8.0
Services	49.4	52.9	54.3	57.8

Trade, Hotel, Transport, Storage, Communication and services related to broadcasting	17.5	18.3	18.3	18.1
Financial, Real estate & Professional services	19.2	20.9	21.3	24.5
Public Administration, Defence and other services	12.7	13.7	14.7	15.2

Source: National Statistical Office

that leads to faster growth of non-agricultural sectors.

1.35 The contribution of industrial activities to GVA has also declined from 2009-14 to 2014-19. Manufacturing sector, which contributes more than 50 per cent of industrial GVA, has driven the decline while the share of construction sector has also moderated.

1.36 Services sector has moved ahead faster, distancing itself further from agriculture and industry. Financial, real estate and professional services has driven the increase in the contribution of service sector followed by public administration. Even globally, the services sector has supported global growth partly offsetting the decline in manufacturing activity.

FIRST ADVANCE ESTIMATES: 2019-20

1.37 As per First Advance Estimates, growth in real GDP during 2019-20 is estimated at 5.0 per cent, as compared to the growth rate of 6.8 per cent in 2018-19. The nominal GDP is estimated at ₹ 204.4 lakh crore in 2019-20 with a growth of 7.5 per cent over the provisional estimates of GDP (₹ 190.1 lakh crore) for 2018-19.

1.38 The contribution of total consumption and net exports in GDP at current prices are estimated to increase in 2019-20 vis-à-vis 2018-19. Fixed investment as percentage of GDP at current prices is estimated to be 28.1 per cent in 2019-20, lower as compared to 29.3 per cent in 2018-19 (Table 6).

Table 6: Demand side components (as per cent of GDP)

	2017-18	2018-19	2019-20	Percentage points change in share in 2019-20 over 2018-19
	1st RE	PE	1st AE	[Increase (+)/ Decrease (-)]
Total consumption	70.0	70.6	72.1	1.5
Government consumption	11.0	11.2	11.9	0.7
Private consumption	59.0	59.4	60.2	0.8
Gross Fixed Capital Formation	28.6	29.3	28.1	-1.2
Net exports	-3.2	-3.9	-2.8	1.1
Exports of goods & services	18.8	19.7	18.4	-1.3
Imports of goods & services	22.0	23.6	21.2	-2.4

Source: National Statistical Office

Note: RE - Revised Estimate, PE - Provisional Estimate, AE - Advance Estimate

Table 7: Growth of GVA and GDP at constant (2011-12) prices (per cent)

	2017-18	2018-19	2019-20	Percentage points Change in growth in 2019-20 over 2018-19
	1st RE	PE	1st AE	[Increase (+)/ Decrease (-)]
GVA at basic prices	**6.9**	**6.6**	**4.9**	**-1.7**
Agriculture & Allied Sectors	**5.0**	**2.9**	**2.8**	**-0.1**
Industry	**5.9**	**6.9**	**2.5**	**-4.4**
Mining & quarrying	5.1	1.3	1.5	0.2
Manufacturing	5.9	6.9	2.0	-5.0
Electricity, Gas, Water supply & other utility services	8.6	7.0	5.4	-1.6
Construction	5.6	8.7	3.2	-5.6
Services	**8.1**	**7.5**	**6.9**	**-0.7**
Trade, hotel, transport, communication and services related to broadcasting	7.8	6.9	5.9	-1.0
Financial, real estate & professional services	6.2	7.4	6.4	-1.1
Public administration, defence and other services	11.9	8.6	9.1	0.5
GDP at market prices	**7.2**	**6.8**	**5.0**	**-1.8**

Source: National Statistical Office
Note: RE - Revised Estimates, PE - Provisional Estimates, AE - Advance Estimates

1.39 Growth of real GVA at basic prices is estimated at 4.9 per cent in 2019-20, as compared to 6.6 per cent in 2018-19. Deceleration in GVA growth is estimated across all subsectors except 'Public administration, defence and other services' (Table 7).

1.40 Key indicators of the economy are reflected in Table 8. Given a 4.8 per cent real GDP growth in H1 of 2019-20, the first Advance Estimates imply that growth in H2 of 2019-20 will witness an uptick over H1 of 2019-20. The following developments suggest why it may be so:

First, NIFTY India Consumption Index picked up for the first time this year with a positive year-on-year growth of 10.1 per cent in October 2019 as compared to negative growth in the previous months. The growth continues to remain positive at 5.7 per cent in November 2019 and 0.2 per cent in December 2019.

Second, reinstating the positive confidence in Indian economy the secondary market continues to be upbeat and the BSE Sensex increased by 7.0 per cent (up to 31st December 2019) over end March 2019.

Third, foreign investors continue to show confidence in India. The country has attracted a net FDI of US$ 24.4 billion in April-November of 2019-20 as compared to US$ 21.2 billion in April-November of 2018-19. Net FPI inflow in April-November 2019-20

Table 8 : Key Indicators

Data categories	Unit	2016-17	2017-18	2018-19	2019-20
GDP and Related Indicators					
GDP at current market prices	₹ lakh Crore	153.6	171.0	190.1[a]	204.4[b]
GDP at constant market prices	₹ lakh Crore	123.0	131.8	140.8[a]	147.8[b]
Growth Rate	(per cent)	8.2	7.2	6.8[a]	5.0[b]
GVA at current basic prices	₹ lakh Crore	139.4	154.8	172.0[a]	185.0[b]
GVA at constant basic prices	₹ lakh Crore	113.2	121.0	129.1[a]	135.4[b]
Growth Rate	(per cent)	7.9	6.9	6.6[a]	4.9[b]
Gross Savings	% of GDP	30.3	30.5	na	na
Gross Capital Formation	% of GDP	30.9	32.3	na	na
Per Capita Net National Income (at current prices)	₹	104659	114958	126406[a]	135050[b]
Production					
Food grains	Million tonnes	275.1	285.0	285.0[c]	140.6[c]
Index of Industrial Production (growth)	(per cent)	4.6	4.4	3.8	0.6[d]
Electricity Generation (growth)	(per cent)	4.7	4.0	3.5	0.3[d]
Prices					
WPI inflation (average)	(per cent)	1.7	3.0	4.3	1.5[e]
CPI (Combined) inflation (average)	(per cent)	4.5	3.6	3.4	4.1[e]
External Sector					
Merchandise export growth (in US$ term)	(per cent)	5.2	10.0	8.8	-2.0[e]
Merchandise import growth (in US$ term)	(per cent)	0.9	21.1	10.4	-8.9[e]
Current Account Balance	% of GDP	-0.6	-1.8	-2.1	1.5[f]
Foreign Exchange Reserves (end of year)	US$ Billion	370.0	424.5	412.9	457.5[j]
Average Exchange Rate	₹ /US$	67.1	64.5	69.9	70.4[e]
Money and Credit					
Broad Money (M3) growth (annual)	(per cent)	10.1	9.2	10.5	9.8[g]
Scheduled Commercial Bank Credit (growth)	(per cent)	8.2	10.0	13.3	7.2[g]

Data categories	Unit	2016-17	2017-18	2018-19	2019-20
Fiscal Indicators (Centre)					
Gross Fiscal Deficit	% of GDP	3.5	3.5	3.4[h]	3.3[i]
Revenue Deficit	% of GDP	2.1	2.6	2.2[h]	2.3[i]
Primary Deficit	% of GDP	0.4	0.4	0.2[h]	0.2[i]

Notes: Na: Not available,
a: Provisional estimates, b: First advance estimate, c: Fouth AE for 2018-19 and first AE for 2019-20,
d: (April-November) 2019, e: (April-December) 2019, f: (April-September) 2019, g: November 2019,
h: Revised Estimate i. Budget Estimate j. End of December 2019

was positive at US$ 12.6 billion as against an outflow of US$ 8.7 billion in April-November 2018-19.

Fourth, the lagged effect of previous cuts in the repo rate is showing up in the build-up of demand pressure. CPI-core inflation has risen from 3.4 per cent in October 2019 to 3.6 per cent in November 2019 and further to 3.8 per cent in December 2019. WPI Inflation has also been rising from zero per cent in October 2019 to 0.6 per cent in November 2019 and 2.6 per cent in December 2019.

Fifth, the terms of trade for farmers has been improving and will lead to increase in rural consumption. Food inflation since April 2019 has been rising.

Sixth, industrial activity is on a rebound and is showing signs of pick up. IIP in November 2019 has registered a growth of 1.8 per cent as compared to a contraction by 3.4 per cent in October 2019 and by 4.3 per cent in September 2019. Along with IIP, growth of eight core industries is also showing signs of recovery by registering a smaller contraction of 1.5 per cent in November 2019 as compared to a contraction of 5.8 per cent in October 2019. This is consistent with business cycle.

Seventh, PMI Manufacturing has registered a steady improvement increasing from 50.6 in October 2019 to 51.2 and 52.7 in November 2019 and December 2019 respectively. PMI Services has also increased from 49.2 in October 2019 to 52.7 in November 2019 and further to 53.3 in December 2019.

Eighth, growth in merchandize exports has been improving as reflected in a contraction by 0.8 percent in Q3 2019-20 which was smaller as compared to a contraction by 3.7 per cent in Q2 2019-20. Accordingly inducement of exports to GDP growth is expected to increase. As per first Advance Estimates of 2019-20, contribution of net exports to the growth of GDP is estimated to increase by 1.1 percentage points over 2018-19.

Ninth, forex reserves have built up from US$ 413 billion in end March 2019 to US$ 461.2 billion as on 10th January, 2020 reflective of increasing confidence of overseas investors in India's economy.

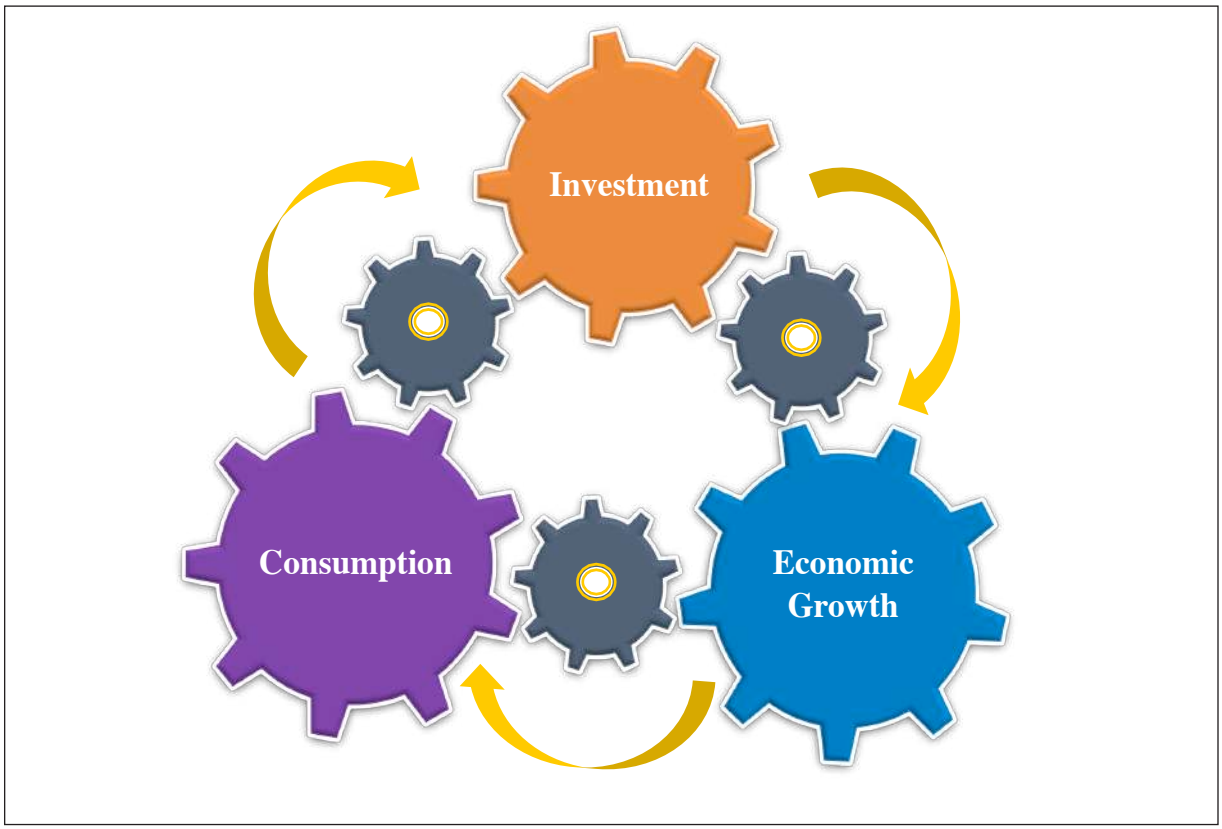
Tenth, the gross GST revenue collected in the month of December 2019 and November 2019 registered a positive growth rate of 9 per cent and 6 per cent respectively over the corresponding month of the previous year after registering negative growth rates in September and October 2019. During April-December 2019, the gross GST revenue collected has surpassed ₹ 1 lakh crore five times, pointing towards an increased economic activity overall.

THE RECENT GROWTH DECELERATION: DRAG OF THE FINANCIAL SECTOR ON THE REAL SECTOR

The Slowing Cycle of growth

1.41 The Economic Survey, 2018-19 describes the virtuous cycle of growth wherein increase in the rate of fixed investment accelerates the growth of GDP that in turn induces a higher growth in consumption. Higher growth of consumption improves the investment outlook, which results in still higher growth of fixed investment that further accelerates the growth of GDP, inducing a still higher growth of consumption. This virtuous cycle of higher fixed investment-higher GDP growth-higher consumption growth (Figure 23) generates economic development in the country.

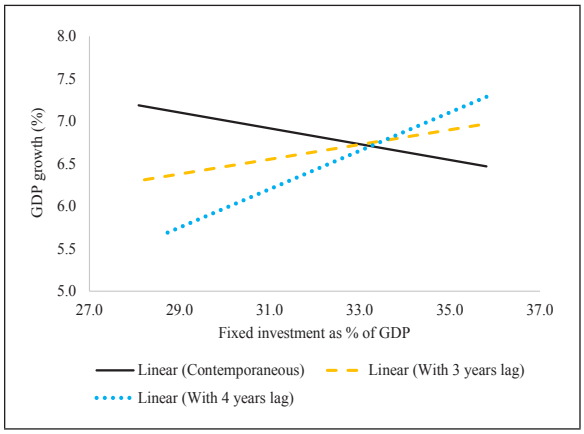
Figure 23: Virtuous cycle of growth



1.42 Conversely, when this virtuous cycle rotates slowly, declining rate of fixed investment decelerates GDP growth with a lag, which eventually causes a deceleration in the growth of consumption as well. In case of India, the lag between rate of fixed investment and its impact on GDP growth is seen to be of three to four years (Figure 24). Similarly, the impact of GDP growth on consumption growth gets reflected in one to two years (Figure 25). Therefore, a contemporaneous comparison of trends of GDP growth and investment is not appropriate, given the negative correlation seen between the two.

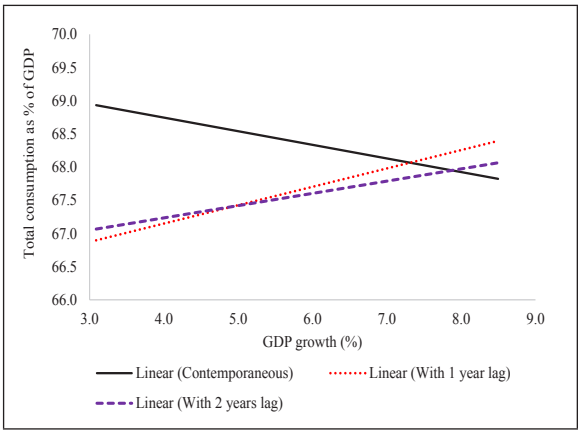
1.43 The Indian economy, since 2011-12, has been under the influence of slowing

Figure 24: Lagged effect of Investment on growth (2004-2019)



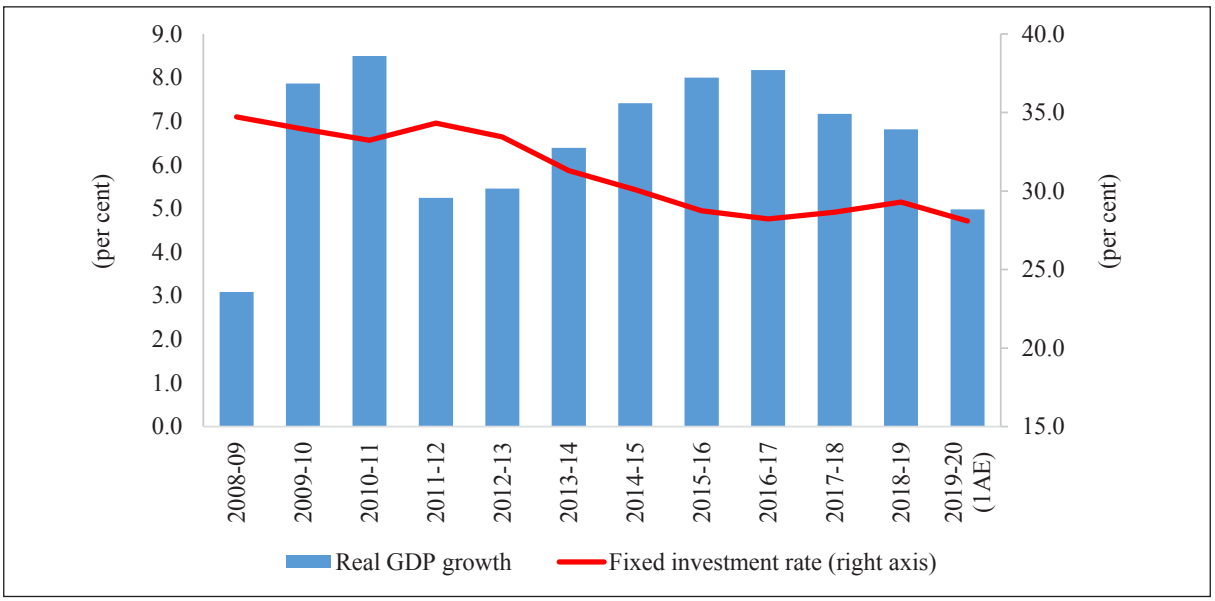
Data Source: National Statistical Office

Figure 25: Lagged effect of growth on Consumption (2004-2019)



Data Source: National Statistical Office

Figure 26: Real GDP growth and Investment – Annual movement



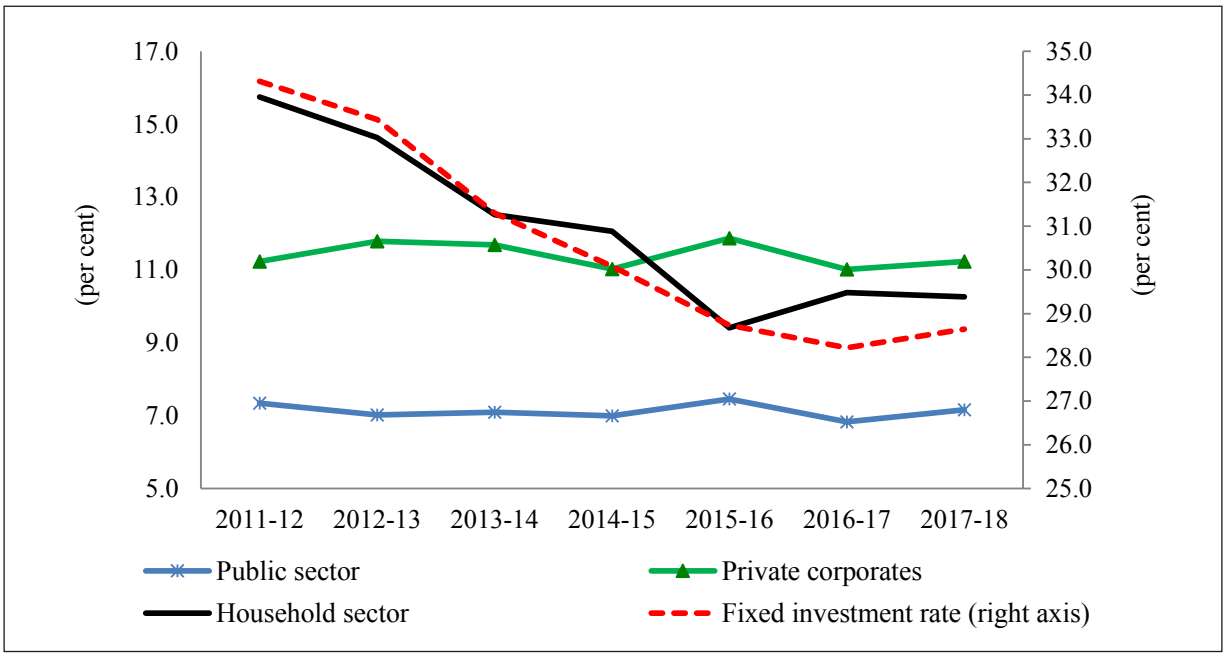
Data Source: National Statistical Office

cycle of growth. The fixed investment rate has started declining sharply since 2011-12 and subsequently plateaued from 2016-17 onwards. Given the lagged impact of the investment rate on GDP growth shown in Figure 24 (with the effect being most pronounced after four years), the deceleration in growth since 2017-18 is consistent with the framework described here (Figure 26).

Decline in fixed investment rate

1.44 The drop in fixed investment by households from 14.3 per cent to 10.5 per cent explains most of the decline in overall fixed investment between 2009-14 to 2014-19 (Figure 27). Fixed investment in the public sector marginally decreased from 7.2 per cent of GDP to 7.1 per cent during the two

Figure 27: Fixed investment by institutional sector (as per cent of GDP)



Data Source: National Statistical Office

periods. However, the stagnation in private corporate investment at approximately 11.5 per cent of GDP between 2011-12 to 2017-18 has a critical role to play in explaining the slowing cycle of growth and, in particular, the recent deceleration of GDP and consumption.

Drag of financial sector on private corporate investment

1.45 To make sense of the decline in corporate investment when it stems from issues related to the financial sector, we must understand the boom in credit (Mian and Sufi, 2018). It is now well recognized that a sudden credit expansion, which is purely supply led, results in short lived expansion of output and employment but causes significant contraction in the long run. The International Monetary Fund (2017) finds this relationship for 80 countries. In most of these cases, the credit channel works through household debt where households increase demand using debt in the short run and reduce demand later during the deleveraging phase, thereby, resulting in recessions.

1.46 In the Indian context, the credit channel has worked through corporate investment.The bust following the boom was characterized by deleveraging and low investment rate in the corporate sector, eventually causing the recent deceleration of GDP growth. Here, it may be useful to ask if the origins of slowing cycle of growth lie in the enormous lending boom of the mid and late 2000s when non-food bank credit almost tripled between 2003-04 to 2007-08 and doubled between 2007-08 to 2011-12. Is it possible that this excessive bank lending, driven by the irrational exuberance of the boom period, led to a decline in corporate investments in the future?

1.47 To provide careful evidence on this phenomenon, the relationship between credit expansion by a firm and its future investment is examined. Following the methodology used in Mian & Sufi (2018), the data is organized at firm-year level. For any firm

year t, the dependent variable is the growth in investments from year t to t+4 and the explanatory variable is the credit expansion during t-5 to t-1. For instance, in the year 2012, investment growth is the log of difference in fixed assets between 2011-12 and 2015-16 while credit expansion is the difference in the debt to total assets ratio between 2006-07 and 2010-11. For each of the five firm-years (2011 to 2015), the dependent variable is regressed on the explanatory variable across a cross-section of firms. The statistical significance of the relationship between the two is tabulated below (Table 9).

1.48 Crucially, we note that for the year 2013, the relationship is both negative and statistically significant. This implies that firms that excessively borrowed between 2007-08 to 2011-12 actually ended up investing significantly less during 2012-13 to 2016-2017. As this result is statistically not significant for any other five-year periods, the year 2013 becomes pivotal in explaining the impact of credit exuberance on investment. In fact, the year 2013 being pivotal in the analysis above matches exactly with the fall in investment rate at the macro level seen in Figure 26.

Table 9 : Relationship between credit expansion and investment

Firm Year	Credit Expansion (Increase in debt/assets ratio)	Investment (Growth in Fixed Assets)	Relationship
2011	2006-10	2011-15	Not Significant
2012	2007-11	2012-16	Not Significant
2013	2008-12	2013-17	Significant and Negative
2014	2009-13	2014-18	Not Significant
2015	2010-14	2015-19	Not Significant

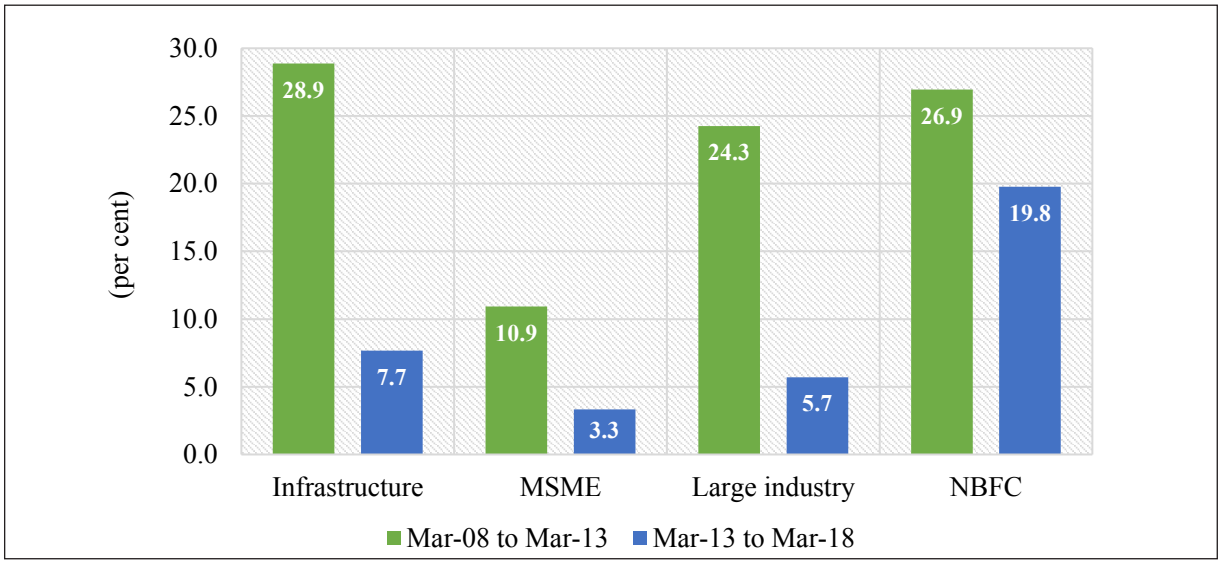
1.49 The year 2007-08 when firms started to borrow excessively coincides with the year in which RBI extended regulatory forbearance to almost all loans (RBI, Prudential Guidelines on Restructuring of Advances by Banks, August 27, 2008). It appears that the firms that were beneficiaries of excess lending, facilitated by regulatory forbearance, seem to have cut down investment the most. Perhaps, the beneficiary firms were the ones that were more focused at de-leveraging, owing to their higher debt to asset ratio, than investing in new assets.

1.50 Post the credit boom, the credit growth of banks also started to slow down. Growth (CAGR) of non-food credit for Scheduled Commercial Banks' (SCBs) fell from 16.7 per cent in 2009-14 to 10.5 per cent in 2014-19. The decline in the growth of non-food SCB credit followed a rise in the Non- Performing Assets (NPA) of banks from an average of 3.0 per cent of gross advances in 2009-14 to 8.3 per cent in 2014-19. Bank credit growth (CAGR) to large units, MSMEs, infrastructure and even Non-Banking Financial Companies (NBFCs) significantly fell in 2014-19 as compared to 2009-14 (Figure 28).

Decline in household investment

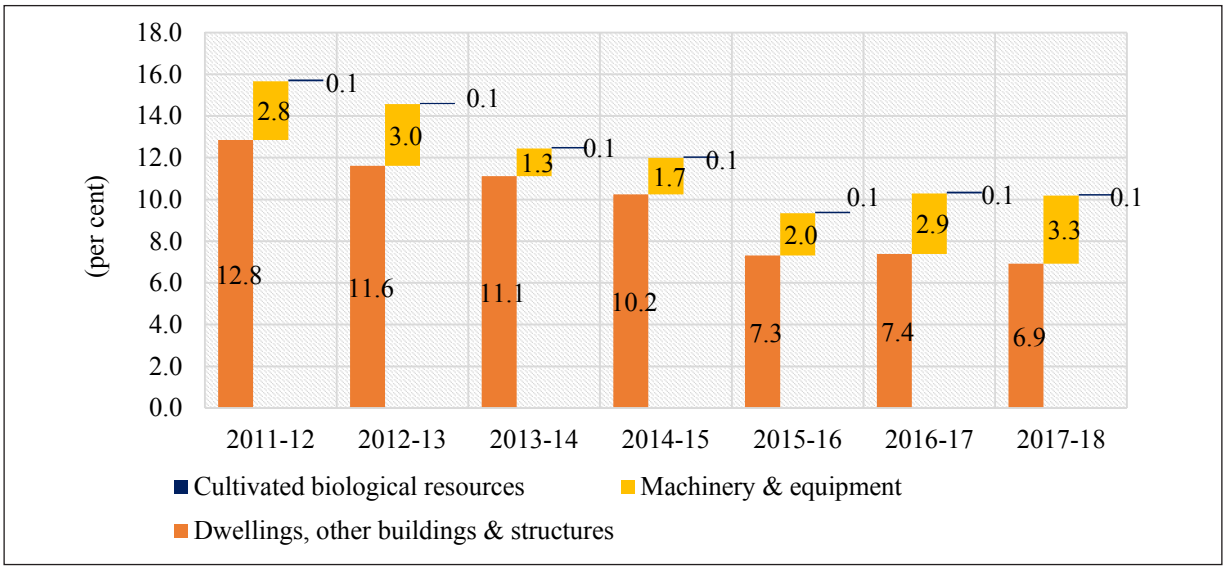
1.51 The household sector includes family households as well as 'quasi-corporates'.

Figure 28: Credit growth (CAGR) across sectors



Data Source: RBI

Figure 29: Household Fixed investment by asset (as percentage of GDP)



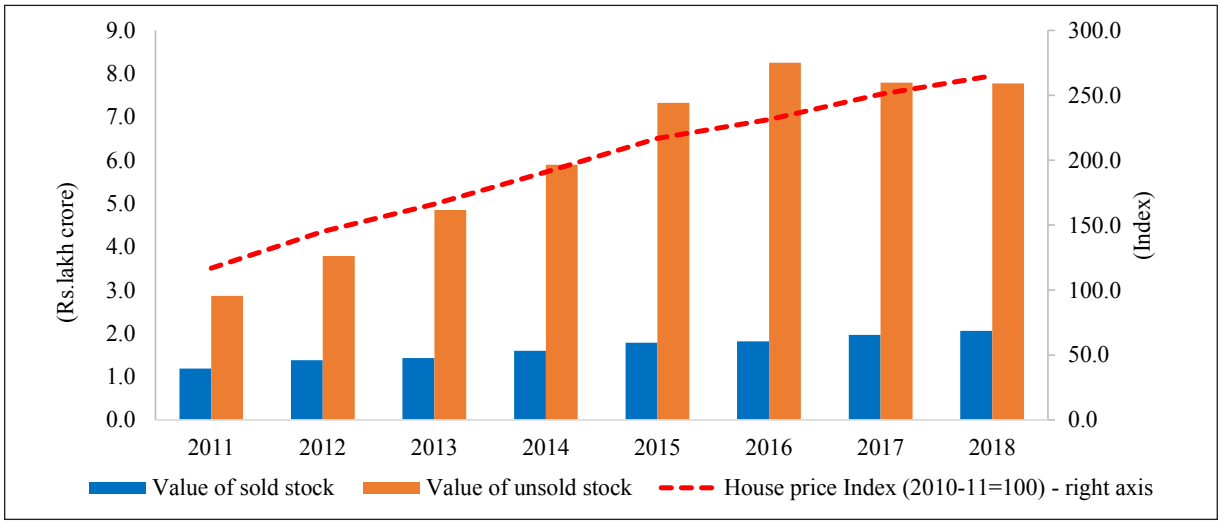
Data Source: National Statistical Office

Unincorporated enterprises belonging to households, which have complete sets of accounts, are called 'quasi-corporates'. A break-down of household sector investment shows that investment in the groups 'Machinery and equipment' and 'Dwellings, other buildings and Structures' together account for more than two-thirds of total household sector investment.

1.52 Unincorporated household enterprises, in addition to supplying directly for retail consumption, are also suppliers to incorporated enterprises from the back end of the value chain. The stagnation in machinery and equipment investment of households at around 2.4 per cent of GDP, from 2011-12 to 2017-18 (Figure 29), can possibly be linked with the leveling of private corporate investment during the same period.

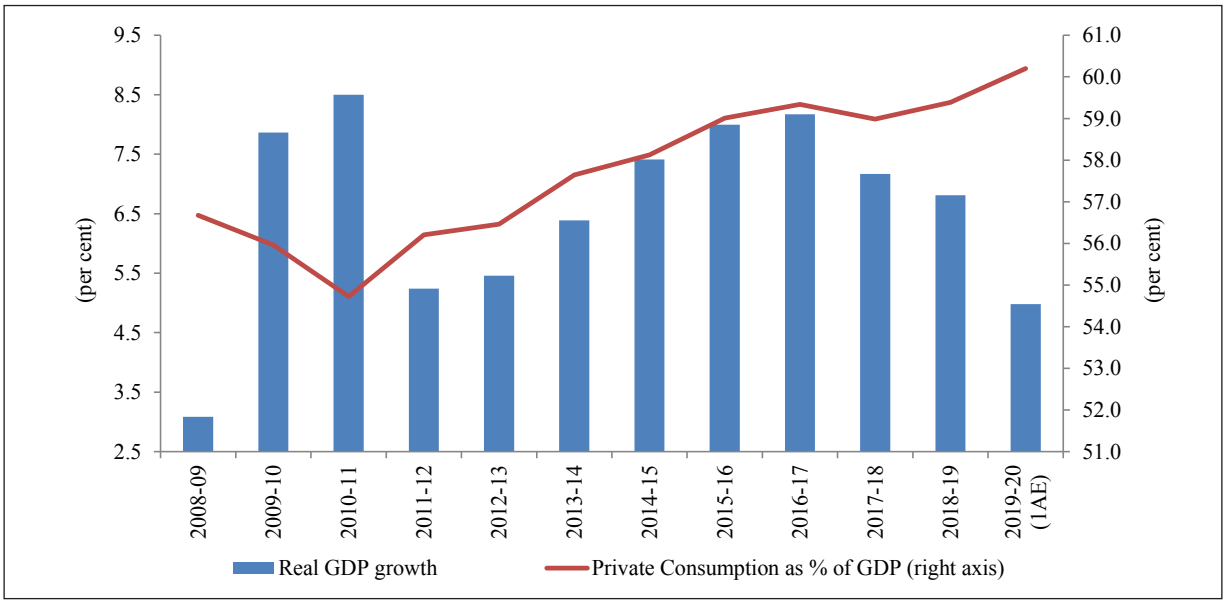
1.53 The decline in household investment in 'Dwellings, other buildings and Structures', over 2011-12 to 2017-18 is a reflection of slower growth in purchase of houses by households. The real estate sector, and residential property in particular, has been reeling with issues of delayed project deliveries and stalled projects leading to a build-up of unsold inventory over the years. Housing prices have remained elevated, even though growth in prices has fallen sharply since Q1 of 2015-16 and remained muted since then. As at end of December 2018, about 9.43 lakh units worth ₹ 7.77 lakh crore with 41 months of inventory are stuck in various stages of the project cycle across top 8 cities (Figure 30).

Figure 30: Housing unsold inventory, sales and price index



Data Source: Liases Foras (2019), RBI
Note: Years here are calendar years.

Figure 31: Real GDP growth and Private consumption (as percentage of GDP) Annual movement

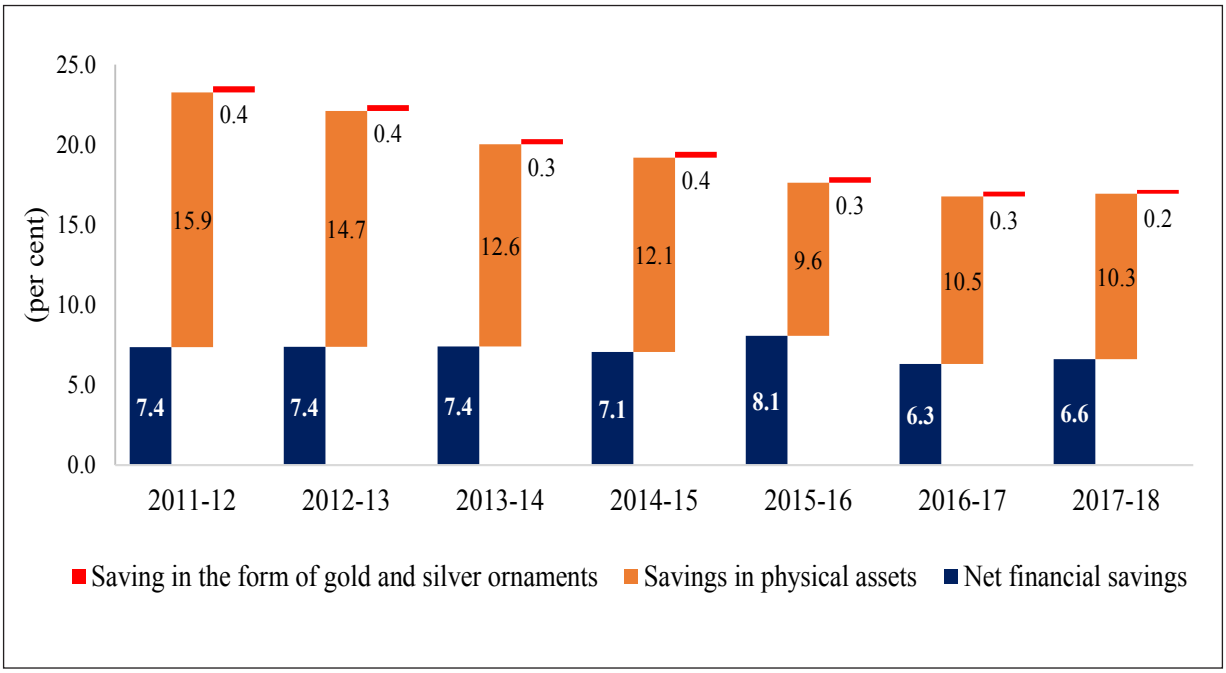


Data Source: National Statistical Office

Delayed decline in private consumption

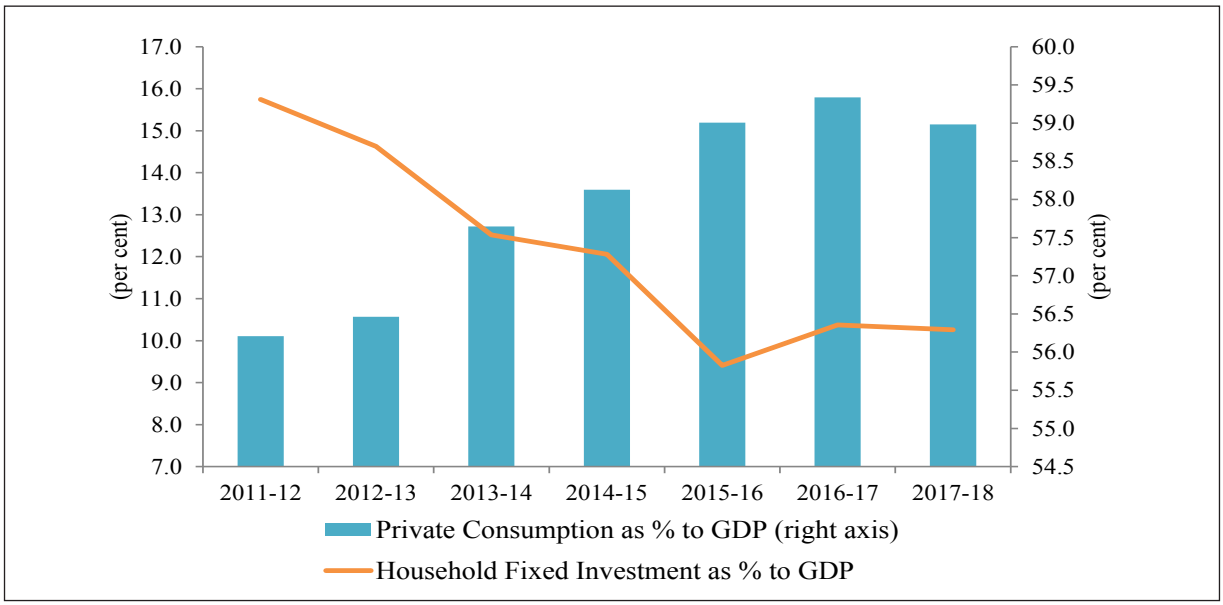
1.54 Private consumption increased as a proportion of GDP from 2009-16, particularly in 2014-16 (Figure 31). Thereafter, it declined in 2017-18 and rose again in 2018-19, before declining sharply in H1 of 2019-20. As shown in Figure 25, the effect of GDP growth on consumption manifests after a lag of 1-2 years. Therefore, the declining

Figure 32: Household savings by asset type (as percentage of GDP)



Data source: National Statistical Office

Figure 33: Household fixed investment and Private Consumption (as percentage of GDP)



Data source: National Statistical Office

trend in consumption from 2017-18 reflects partly the effect of decline in GDP growth on consumption.

1.55 Change in household investment contributed to increasing consumption in the period until 2016-17 (Figure 33). A drop in savings in physical assets of households has been observed over this period (Figure 32). Income not saved in physical assets by households is either saved in the form of valuables (gold or silver) or as net household financial savings or is consumed. During 2011-12 to 2016-17, when savings in physical assets dropped, neither savings in gold and silver by households nor net household financial savings rose as a proportion of GDP. Thus, it appears that resources not deployed by households in physical assets 2011-12 onwards were mostly expended on consumption.

OUTLOOK

1.56 The IMF in its January 2020 update of World Economic Outlook has projected India's real GDP to grow at 5.8 per cent in 2020-21. World Bank in its January 2020 issue of Global Economic Prospects also sees India's real GDP growing at 5.8 per cent in 2020-21.

1.57 Based on the first Advance Estimates of India's real GDP growth in 2019-20, an uptick in GDP growth in H2 of 2019-20 is expected as compared to first half of the same year. With a view to making an assessment of the likely growth in GDP, both the downside and upside risks to an expected acceleration in GDP growth are discussed below.

Downside Risks

- Continued global trade tensions could delay the recovery in the growth of global output, which may constrain the export performance of the country. Weaker export growth may reduce the inducement to increase the fixed investment rate in the economy.
- Escalation in US-Iran geo-political tensions may increase the price of crude oil and depreciate the rupee. Net FPI inflows may weaken, as a result, adding further pressure on the rupee to depreciate. If a fuller pass-through of the costlier crude oil is allowed, it may fuel inflationary pressure in the economy, cause the growth of private consumption to decline and weaken the inducement to invest. Even if a partial pass-through happens, fiscal deficit may swell, may increase the yield on G-sec and thereby, increase the cost of capital that may again weaken the inducement to invest.
- Growth in advanced countries has weakened with very low inflation. The conventional monetary policy has almost run its full course. Subsequently, quantitative easing may fuel inflation and reduce the real interest rate. At some point in future, if short-term interest rates are raised by the central banks to contain inflation, it may result in capital flight from emerging and developing market economies (EMEs) including India. The rupee may come under pressure making imports costlier. Leakage from the domestic circular flow of income may increase which may adversely impact private consumption and investment. If instead, fiscal expansion is the preferred policy option in advanced countries, increase

in short-term interest rates may happen all the more earlier and weaken the growth impulse in EMEs including India.

- The implementation of IBC Code is making progress, albeit slowly. Unless this speeds up, the risk aversion of banks to lend further may not reduce. Risk premiums may then continue to be high and cuts in repo rates may not transmit to lowering lending rates. Private investment may, therefore, remain muted.
- Investment in the public sector may increase, as is expected after the announcement of the National Infrastructure Pipeline (NIP) of projects worth ₹ 102 lakh crore. If this leads to expansion of fiscal deficit, bond yields may increase, thereby, possibly crowding out private investment. If instead private investment seeks external funding, CAD would widen and depreciate the rupee, bringing in its wake the adverse impact on consumption, investment and growth.
- Should productivity gains not significantly increase with reforms, it may raise the requirement of fixed investment rate to boost economic growth.
- A non-rising gross domestic savings rate may further deteriorate the CAD, depreciate the rupee and make the virtuous cycle more difficult to realize.

Upside Risks

- There are tentative signs that manufacturing activity and global trade are bottoming out. This may positively impact India's exports. At the same time, there is renewed initiative to boost exports through various reform measures including scaling up of logistics infrastructure that may increase export competitiveness.
- Government's thrust on affordable housing is evident, in order to boost the real estate sector and consequently the construction activity in the country. Higher investment in housing by households may increase the fixed investment in the economy. Existing unsold housing inventory can be cleared and the balance sheets of both bank/non-bank lenders cleaned if the real estate developers are willing to take a 'hair-cut' by allowing the house-prices to drop.
- Global sentiment continues to favor India as reflected in robust and rising inflows of net FDI into the country. Relocation of investors from other countries to India in the wake of trade tensions will also add to the flow. The announcement of NIP may further increase FDI inflows into the country in both brown-field and green-field infrastructure projects. Continuous relaxation of FDI guidelines may address the concerns of foreign investors and improve the investment climate.
- A boost to Make in India may not only enhance exports but replace imports of products in which India has sufficient scope for expansion in domestic manufacturing.
- India has been making steady progress in improving its rank in the Ease of Doing

Business, assessed for about 190 countries by the World Bank. Earlier the rank had improved with the implementation of GST. Lately the improvement in rank has resulted from progress in trade facilitation as cross-border movement of goods has involved lesser waiting time. As the implementation of GST further settles down, the increased unification of the domestic market may reduce business costs and facilitate fresh investment. Reforms in land and labor market may further reduce business costs.

- Reduction in the base corporate tax rate to 15 per cent for new manufacturing companies may increase the rate of return on investment above the hurdle rate of the cost of capital and encourage a surge in new investments.
- Merger of public sector banks may increase the financial strength of the merged entities, lower the risk aversion and result in lowering of lending rates.

Projection of GDP growth in 2020-21

1.58 On a net assessment, it appears that the upside risks should prevail, particularly when the government, with a strong mandate, has the capacity to deliver expeditiously on reforms. GDP growth of India should strongly rebound in 2020-21 and more so on a low statistical base of 5 per cent growth in 2019-20.

1.59 On a net assessment of both the downside/upside risks, India's GDP growth is expected to grow in the range of 6.0 to 6.5 per cent in 2020-21.

CHAPTER AT A GLANCE

- The year 2019 was a difficult year for the global economy with world output growth estimated to grow at its slowest pace of 2.9 per cent since the global financial crisis of 2009, declining from a subdued 3.6 per cent in 2018 and 3.8 per cent in 2017.
- Amidst a weak environment for global manufacturing, trade and demand, the Indian economy slowed down with GDP growth moderating to 4.8 per cent in H1 of 2019-20, lower than 6.2 per cent in H2 of 2018-19.
- A sharp decline in real fixed investment induced by a sluggish growth of real consumption has weighed down GDP growth from H2 of 2018-19 to H1 of 2019-20. Real consumption growth, however, has recovered in Q2 of 2019-20, cushioned by a significant growth in government final consumption.
- On the supply side, the deceleration in GVA growth has been contributed generally by all sectors save 'Agriculture and allied activities' and 'Public administration, defence, and other services', whose growth in H1 of 2019-20 was higher than in H2 of 2018-19.
- India's external sector gained further stability in H1 of 2019-20, with a narrowing of current account deficit (CAD) as percentage of GDP from 2.1 in 2018-19 to 1.5 in H1 of 2019-20, impressive foreign direct investment (FDI), rebounding of portfolio flows and accretion of foreign exchange reserves. Imports have contracted more sharply than exports in H1 of 2019-20, with easing of crude prices, which has mainly driven the narrowing of CAD.
- Headline inflation rose from 3.3 per cent in H1 of 2019-20 to 7.35 per cent in December 2019-20 on the back of temporary increase in food inflation, which is expected to decline by year end. Rise in CPI-core and WPI inflation in December 2019-20 suggests building of demand pressure.
- The deceleration in GDP growth can be understood within the framework of a slowing cycle of growth. The financial sector acted as a drag on the real sector: investment-growth-consumption, as described in the Economic Survey of 2018-19.
- In an attempt to boost investment, consumption and exports, the government in 2019-20 has taken important reforms towards speeding up the insolvency resolution process under Insolvency and Bankruptcy Code (IBC), easing of credit, particularly for the stressed real estate and NBFC sectors, and announcing the National Infrastructure Pipeline 2019-2025 amongst other measures.
- Based on CSO's first Advance Estimates of India's GDP growth for 2019-20 at 5 per cent, an uptick in GDP growth is expected in H2 of 2019-20. The government must use its strong mandate to deliver expeditiously on reforms, which will enable the economy to strongly rebound in 2020-21.

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ANNEX

RECENT REFORMS

Government in 2019-20 has taken important reforms to boost the overall investment, consumption and exports in the economy. Some of the major reforms in this regard are as enumerated below:

Measures to Boost Investment

- In December 2019, Cabinet approved the Insolvency and Bankruptcy Code (Second Amendment) Bill, 2019. The amendments aim at fast-tracking the insolvency resolution process and to further improve the ease of doing business.
- On 31st December 2019, the government released the Report of the Task Force on National Infrastructure Pipeline (NIP) for each of the years from 2019-20 to 2024-25. The report has submitted proposals for projects whose aggregate value is estimated at ₹ 102 lakh crore.
- Government has brought in Taxation Laws (Amendment) Ordinance 2019 to make certain amendments in the Income-tax Act 1961 and the Finance (No. 2) Act 2019.

  (i) A new provision has been inserted in the Income-tax Act with effect from 2019-20 which allows any domestic company an option to pay income-tax at the rate of 22 per cent subject to condition that they will not avail any exemption/incentive. The effective tax rate for these companies shall be 25.17 per cent inclusive of surcharge & cess. Also, such companies shall not be required to pay Minimum Alternate Tax.

  (ii) In order to attract fresh investment in manufacturing and thereby boost the 'Make-in-India' initiative of the Government, a new provision has been inserted in the Income-tax Act with effect from 2019-20 which allows any new domestic company incorporated on or after 1st October 2019 making fresh investment in manufacturing, an option to pay income-tax at the rate of 15 per cent. This benefit is available to companies which do not avail any exemption/incentive and commences their production on or before 31st March, 2023. The effective tax rate for these companies shall be 17.01 per cent inclusive of surcharge & cess. Also, such companies shall not be required to pay Minimum Alternate Tax. Corporate income tax rates in India are now amongst the lowest in the world.

- Rapid growth requires rapid investment which in turn is dependent on robust supply of credit. Government has taken notable steps in this regard:

  (i) Budget 2019-20 announced an infusion of ₹ 70,000 crore into Public Sector Banks (PSBs) to boost credit and investment in the economy. As of November 2019, ₹ 60,314 crore has been infused from this provision, thereby, equipping banks for growth and investment.

  (ii) Strong banks are imperative to achieve a US$ 5 trillion economy. Along with numerous governance reforms, government has proposed an amalgamation of 10 PSBs to form 4 merged entities with a view to create next generation banks with strong national presence and global reach. Operational efficiency gains arising due to this consolidation are expected to reduce the cost of lending.

(iii) The Monetary Policy Committee of RBI changed its stance from calibrated tightening to neutral in February 2019 and to accommodative from June 2019 onwards. Accordingly, the policy rate has been reduced by 135 bps since February 2019.

(iv) In order to enhance debt flow to housing and infrastructure projects, government has proposed to establish an organization, Credit Enhancement for Infrastructure and Housing Projects.

(v) As per RBI, all new floating rate retail loans and floating rate loans to micro and small enterprises extended by banks with effect from 1st October 2019 are to be linked to one of the specified external benchmarks. These benchmarks consist of the policy repo rate, Government of India 3-months or 6-months Treasury Bill yields, or any other benchmark indicated by the Financial Benchmarks India Private Ltd (FBIL).

- Government has taken various measures to boost the growth of the auto sector:

  (i) one-time registration fees being deferred till June 2020,

  (ii) BS IV vehicles purchased till 31st March 2020 to remain operational for entire period of registration

  (iii) additional 15 per cent depreciation on all vehicles to increase to 30 per cent acquired during the period from now till 31st March 2020,

  (iv) both Electrical Vehicles (EVs) and Internal Combustion Vehicles (ICVs) will continue to be registered and,

  (v) to boost demand, government will lift the ban on replacing old vehicles with purchage of new vehicles by Goverment Departments.

- In December 2019, modifications to the MSME Interest Subvention Scheme were approved to further smoothen operational difficulties and to improve access to credit at a reduced cost.

- Government has approved creation and launch of Bharat Bond Exchange Traded Fund (ETF) to create an additional source of funding for Central Public Sector Undertakings (CPSUs), Central Public Sector Enterprises (CPSEs), Central Public Financial Institutions (CPFIs) and other government organizations. Bharat Bond ETF would be the first corporate bond ETF in the country.

- With a view to boosting the realty sector and incentivising the consumers to buy houses, the government has taken some notable measures

  (i) Government has approved the establishment of a 'Special Window' fund to provide priority debt financing for the completion of stalled housing projects that are in the 'Affordable and Middle-Income' Housing sector. For the purpose of the fund, government shall act as the Sponsor and the total commitment to be infused by the government would be upto ₹ 10,000 crores. The fund is seeking matching contributions from banks, LIC and others to generate a total corpus of around ₹ 25,000 crore. The fund will be set up as a Category-II AIF (Alternate Investment Fund) debt fund registered with SEBI and would be run professionally.

  (ii) Eligible beneficiaries of Pradhan Mantri Awas Yojana (Gramin) are to be provided 1.95

crore houses with amenities like toilets, electricity and LPG connections during its second phase (2019-20 to 2021-22).

(iii) External Commercial Borrowings (ECB) guidelines will be relaxed to facilitate financing of home buyers who are eligible under the Pradhan Mantri Awas Yojana (PMAY), in consultation with RBI. This is in addition to the existing norms for ECB for affordable housing.

(iv) House Building Advance: The interest rate on House Building Advance shall be lowered and linked with the 10 Year G Sec Yields.

(v) Additional deduction up to ₹ 1.5 lakh for interest paid on loans borrowed up to 31st March, 2020 for purchase of house valued up to ₹ 45 lakh to promote affordable housing.

(vi) Banks to launch Repo rate /external benchmark linked loan products. Reduced EMI for housing loans by directly linking Repo rate to interest rates

(vii) Additional liquidity support to HFCs of ₹ 20,000 crore by National Housing Bank (NHB), thereby, increasing it to ₹ 30,000 crore.

- To guarantee support and enable NBFCs/Housing Finance Companies (HFCs) to resolve any temporary liquidity or cash flow mismatch issues, government has rolled out the 'Partial Credit Guarantee Scheme' for purchase of high-rated pooled assets from financially sound NBFCs / HFCs by PSBs. The amount of overall guarantee is limited to first loss of up to 10 per cent of fair value of assets being purchased by the banks under the Scheme, or ₹ 10,000 crore, whichever is lower, as agreed by Department of Economic Affairs (DEA). The scheme would cover NBFCs / HFCs that may have slipped into SMA-0 category during the one-year period prior to 1st August 2018, and asset pools rated 'BBB+' or higher.
- The Stand Up India Scheme has been extended upto the year 2025. The Scheme aims to facilitate bank loans between ₹ 10 lakh to ₹ 100 lakh to atleast one Scheduled Caste (SC) or Scheduled Tribe (ST) borrower and atleast one woman borrower per bank branch for setting up a greenfield enterprise. In case of non-individual enterprises, at least 51 per cent of the shareholding and controlling stake should be held by either an SC/ST or woman entrepreneur.
- Government has put in place an investor friendly FDI policy by liberalizing the policy to allow upto 100 per cent FDI by automatic route on most of the sectors.
- To mitigate genuine difficulties of startups and their investors, Section 56(2)(viib) of the Income-Tax Act (regarding angel tax) will no longer be applicable to startups registered with DPIIT.

Measures to boost Consumption

1.41 Government has taken various measures to boost the incomes especially rural incomes to usher spending and consumption levels in the economy.

- Increase in the Minimum Support Prices (MSPs) for all mandated Rabi crops and Kharif crops for 2019-20 season.

- To provide an assured income support to the small and marginal farmers, the cash transfer scheme Pradhan Mantri Kisan Samman Nidhi (PM-KISAN) providing an income support of ₹ 6,000 per year has been extended to all eligible farmer families irrespective of the size of land holdings.
- With a move towards attaining universal social security, Government has approved a new scheme that offers pension coverage to the trading community. Under this scheme all shopkeepers, retail traders and self-employed persons are assured a minimum monthly pension of ₹ 3,000 per month after attaining the age of 60 years.
- W.e.f. 1st August 2019, GST rate on all electric vehicles has been reduced from 12 per cent to 5 per cent and of charger or charging stations for EVs from 18 per cent to 5 per cent . Hiring of electric buses (of carrying capacity of more than 12 passengers) by local authorities will be exempted from GST.

Measures to boost Exports

- The scheme for Remission of Duties or Taxes on Export Product (RoDTEP) will replace Merchandise Exports from India Scheme (MEIS) for reimbursement of taxes & duties for export promotion. Textiles and all other sectors which currently enjoy incentives upto 2 per cent over MEIS will transit into RoDTEP. In effect, RoDTEP will more than adequately incentivize exporters than existing schemes put together.
- Special Economic Zones (Amendment) Bill, 2019 has been approved wherein a trust or any entity notified by the Central Government will be eligible to be considered for grant of permission to set up a unit in Special Economic Zones.
- In order to boost credit to the export sector, RBI enhanced the sanctioned limit to be eligible under priority sector lending norms. The limit has been raised from ₹ 25 crore to ₹ 40 crore per borrower. Furthermore, the existing criterion of 'units having turnover of up to ₹ 100 crore' has been removed.
- Export Credit Guarantee Corporation (ECGC) will expand the scope of Export Credit Insurance Scheme (ECIS) to offer higher insurance cover to banks lending working capital for exports. This will enable reduction in overall cost of export credit including interest rates, especially to MSMEs
- Government has approved the Sugar export policy for evacuation of surplus stocks during sugar season 2019-20. This shall involve providing a lump sum export subsidy at the rate of ₹ 10,448 per Metric Tonne (MT) to sugar mills for the sugar season 2019-20. The total estimated expenditure of about ₹ 6,268 crore will be incurred for this purpose.
- For enabling handicrafts industry to effectively harness e-commerce for exports, mass enrolment of artisans across India will be effected in collaboration with Ministry of Textiles.

02 CHAPTER

Fiscal Developments

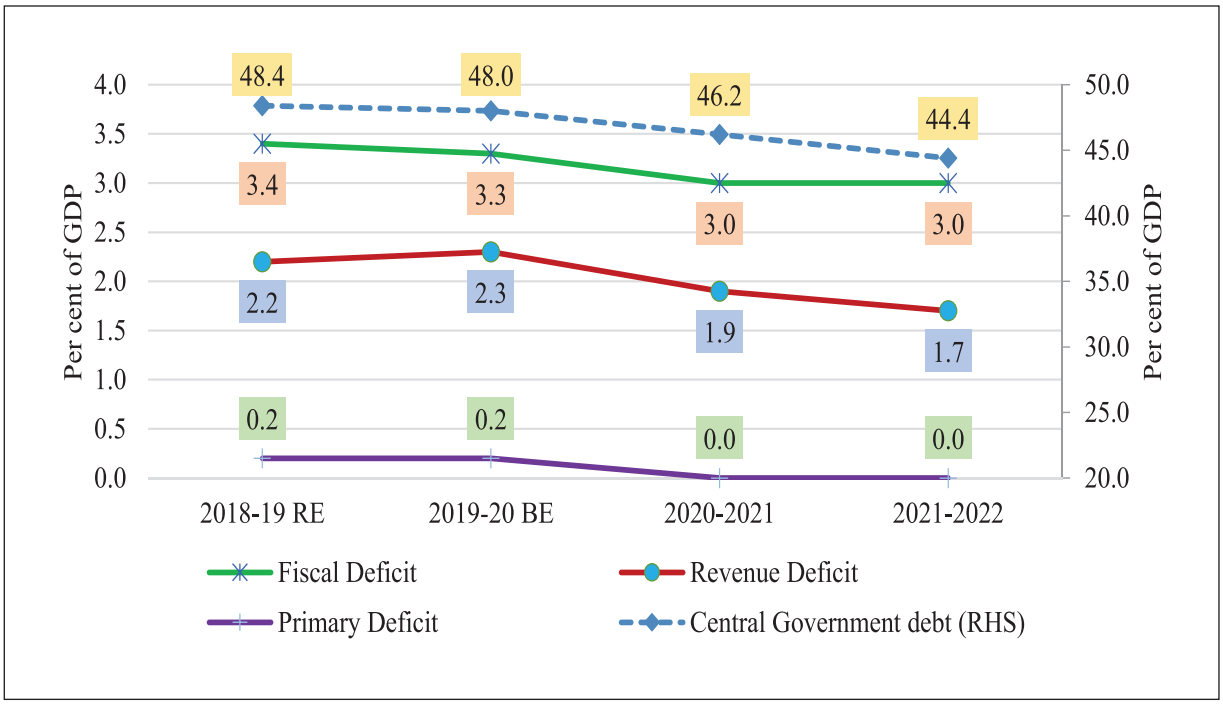
The year 2019-20 has been challenging for the Indian economy owing to the decelerating growth rate experienced in the first half of the year. Amongst the various reforms introduced during the year to promote growth and investment, reduction in corporate income tax rate was a major structural reform. The fiscal policy 2019-20 was characterized by sluggish growth in Tax revenue relative to the budget estimates. The Non-Tax revenue registered a considerably higher growth in the first eight months of this financial year compared to the same period last year. On the expenditure side, Total Expenditure has increased at a considerable pace during April to November 2019-20 with Capital Expenditure growing at roughly three times the growth registered during the same period last year. The fiscal deficit as a per cent of Budget Estimate during the first eight months of this financial year was at a similar level as that in the corresponding period last year. Going forward, considering the urgent priority of the Government to revive growth in the economy, the fiscal deficit target may have to be relaxed for the current year.

2.1 Amidst the global setting of subdued growth and intensified trade tensions, the Budget 2019-20 presented in July 2019 reaffirmed Government's commitment to growth with macroeconomic stability.

2.2 The Medium Term Fiscal Policy (MTFP) Statement presented with the Budget 2019-20, pegged the fiscal deficit target for 2019-20 at 3.3 per cent of GDP, which was further expected to follow a gradual path of reduction and attain the targeted level of 3 per cent of GDP in 2020-21, and continue at the same level in 2021-22. It was further projected that Central Government liabilities will come down to 48.0 per cent of GDP in 2019-20. The declining path of Central government debt was expected to continue with debt reaching 46.2 per cent of GDP and 44.4 per cent of GDP in 2020-21 and 2021-22, respectively. This declining debt trajectory was expected based on a stable inflation regime and reduction in fiscal deficit. The fiscal indicators of deficits and debt as presented in the MTFP (July 2019) may be seen in Figure 1.

2.3 This chapter reviews the fiscal developments in India during the year 2019-20. It begins with discussion of Central Government finances over the recent years, followed by analysis of the fiscal performance during the current financial year based on data released by the Controller General of Accounts (CGA) upto November 2019. Thereafter, it briefly touches upon

Figure 1: Medium Term Fiscal Policy Statement: Fiscal Indicators



Source: Medium Term Fiscal Policy Statement, Budget 2019-20 (July 2019)

the combined fiscal health of States and finally concludes with a snapshot of General Government finances, and an outline of the outlook for 2020-21.

CENTRAL GOVERNMENT FINANCES

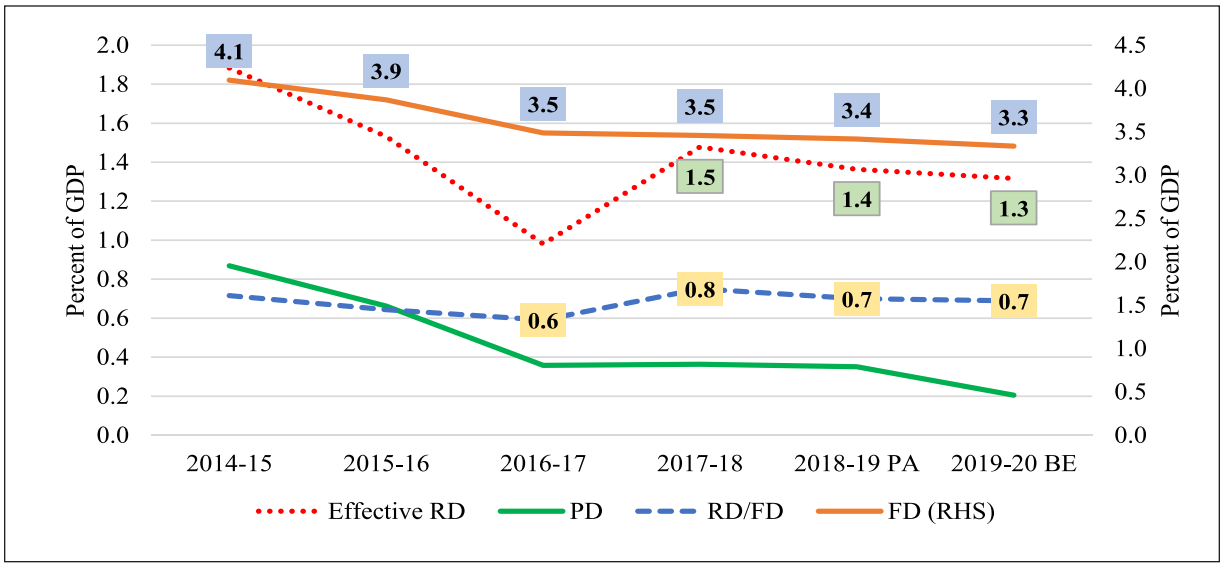
2.4 Following the path of fiscal consolidation, the Union Budget 2019-20 sought to contain the fiscal deficit, which is reflective of the total borrowing requirements of Government, at ₹ 7,03,760 crore i.e. 3.3 per cent of the GDP, as against 3.4 per cent of GDP in 2018-19 Provisional Actuals (PA) (refer to Figure 2). The ratio of revenue deficit to fiscal deficit broadly measures the extent of borrowings used for financing current expenditure of the Government. In 2019-20 BE, it was pegged at roughly the same level as in 2018-19 PA (Figure 2).

2.5 Major fiscal indicators of the Central Government and their growth rates are presented in Table 1 and Table 2, respectively. The prominent changes in the Central Government finances evident from these tables include improvement in the tax to GDP ratio and reduction in primary deficit as a per cent of GDP.

Trends in Receipts

2.6 Central government receipts can broadly be divided into Non-debt and debt receipts. The Non-debt receipts comprise of Tax revenue, Non-Tax revenue and Non-debt Capital receipts like recovery of loans and disinvestment receipts. Debt receipts mostly comprise of market borrowings and other liabilities, which the government is obliged to repay in the future. The Budget 2019-20 targeted a high growth in Non-debt receipts of the Central Government, which was driven by high expected growth in Net Tax

Figure 2: Trends in Deficits



Source: Union Budget Documents & CGA BE: Budget Estimate, PA: Provisional Actuals FD: Fiscal Deficit; RD: Revenue Deficit; PD: Primary Deficit.
Note: RD/FD has no units.

Table 1: Central Government's Fiscal Parameters

	2014-15	2015-16	2016-17	2017-18	2018-19 PA	2019-20 BE
					(in ₹ Lakh crore) (Figures in parenthesis are as a per cent of GDP)	
Revenue Receipts	11.01	11.95	13.74	14.35	15.53	19.63
	(8.8)	(8.7)	(8.9)	(8.4)	(8.2)	(9.3)
Gross Tax Revenue	12.45	14.56	17.16	19.19	20.8	24.61
	(10)	(10.6)	(11.2)	(11.2)	(10.9)	(11.7)
Net Tax Revenue	9.04	9.44	11.01	12.42	13.17	16.5
	(7.2)	(6.9)	(7.2)	(7.3)	(6.9)	(7.8)
Non-Tax Revenue	1.98	2.51	2.73	1.93	2.36	3.13
	(1.6)	(1.8)	(1.8)	(1.1)	(1.2)	(1.5)
Non-debt Capital Receipts*	0.51	0.63	0.65	1.16	1.13	1.2
	(0.4)	(0.5)	(0.4)	(0.7)	(0.6)	(0.6)
Non-debt Receipts	11.53	12.58	14.4	15.51	16.66	20.83
	(9.2)	(9.1)	(9.4)	(9.1)	(8.8)	(9.9)
Total Expenditure	16.64	17.91	19.75	21.42	23.15	27.86
	(13.3)	(13.0)	(12.9)	(12.5)	(12.2)	(13.2)
Revenue Expenditure	14.67	15.38	16.91	18.79	20.07	24.48
	(11.8)	(11.2)	(11.0)	(11.0)	(10.6)	(11.6)

Capital Expenditure	1.97	2.53	2.85	2.63	3.08	3.39
	(1.6)	(1.8)	(1.9)	(1.5)	(1.6)	(1.6)
Fiscal Deficit	5.11	5.33	5.36	5.91	6.49	7.04
	(4.1)	(3.9)	(3.5)	(3.5)	(3.4)	(3.3)
Revenue Deficit	3.66	3.43	3.16	4.44	4.54	4.85
	(2.9)	(2.5)	(2.1)	(2.6)	(2.4)	(2.3)
Primary Deficit	1.08	0.91	0.55	0.62	0.67	0.43
	(0.9)	(0.7)	(0.4)	(0.4)	(0.4)	(0.2)
Memo Item						
GDP at Market Price	124.68	137.72	153.62	170.95	190.1	211.01

Source: Union Budget Documents & CGA
BE: Budget Estimate, PA: Provisional Actuals
*includes disinvestment proceeds

Table 2: Growth rate of Central Government's Fiscal Indicators (in per cent)

Items	2014-15	2015-16	2016-17	2017-18	2018-19 PA	2019-20 BE*
Revenue Receipts	8.5	8.5	15.0	4.4	8.2	26.4
Gross Tax Revenue	9.3	16.9	17.9	11.8	8.4	18.3
Net Tax Revenue	10.8	4.4	16.7	12.8	6.0	25.3
Non-Tax Revenue	-0.5	27.0	8.6	-29.4	22.3	32.9
Non-debt Capital Receipts#	23.0	22.3	3.8	77.0	-2.5	6.3
Non-debt Receipts	9.1	9.1	14.4	7.7	7.4	25.0
Total Expenditure	6.7	7.6	10.3	8.4	8.1	20.4
Revenue Expenditure	6.9	4.8	9.9	11.1	6.8	21.9
Capital Expenditure	4.8	28.6	12.5	-7.5	16.9	10.0

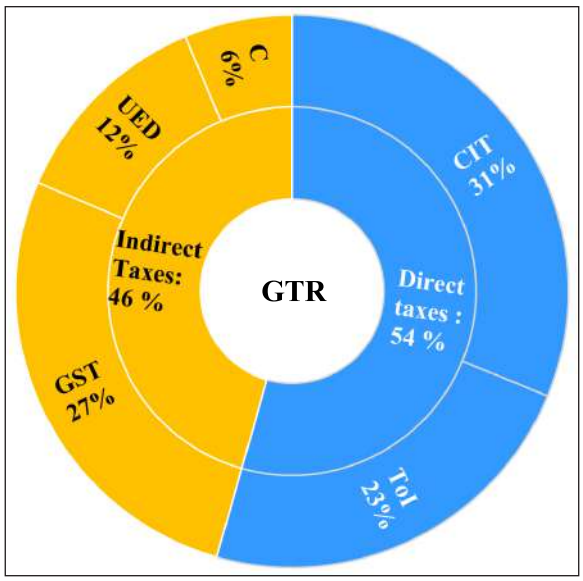
Source: Union Budget Documents & CGA
BE: Budget Estimate, PA: Provisional Actuals
* Rate of growth vis-à-vis 2018-19 PA
#includes disinvestment proceeds

revenue and Non-Tax revenue (refer to Table 2)

Tax Revenue

2.7 Budget 2019-20 estimated the Gross Tax Revenue (GTR) to be ₹24.61 lakh crore which is 11.7 per cent of GDP. This builds into growth of 9.5 per cent over the revised estimates (RE) of 2018-19 and 18.3 per cent over 2018-19 PA. The direct taxes, comprising mainly of corporate and personal income tax, constitute around 54 per cent of GTR. These were envisaged to grow at 11.3 per cent relative to 2018-19 RE and 18.7 per cent relative to 2018-19 PA. On the other hand, the indirect taxes were expected to grow at 7.3 per cent vis-a-vis 2018-19 RE and 20.6 per cent as against 2018-19 PA. The contribution of different taxes in GTR for 2019-20 BE is shown in Figure 3.

Figure 3: Composition of taxes in Gross Tax Revenue in 2019-20 BE



Source: Union Budget Documents & CGA
GTR: Gross Tax Revenue, CIT: Corporation Tax, ToI: Taxes on Income other than Corporation Tax (includes STT), C: Customs, UED: Union Excise Duties, GST: Goods and Services Tax

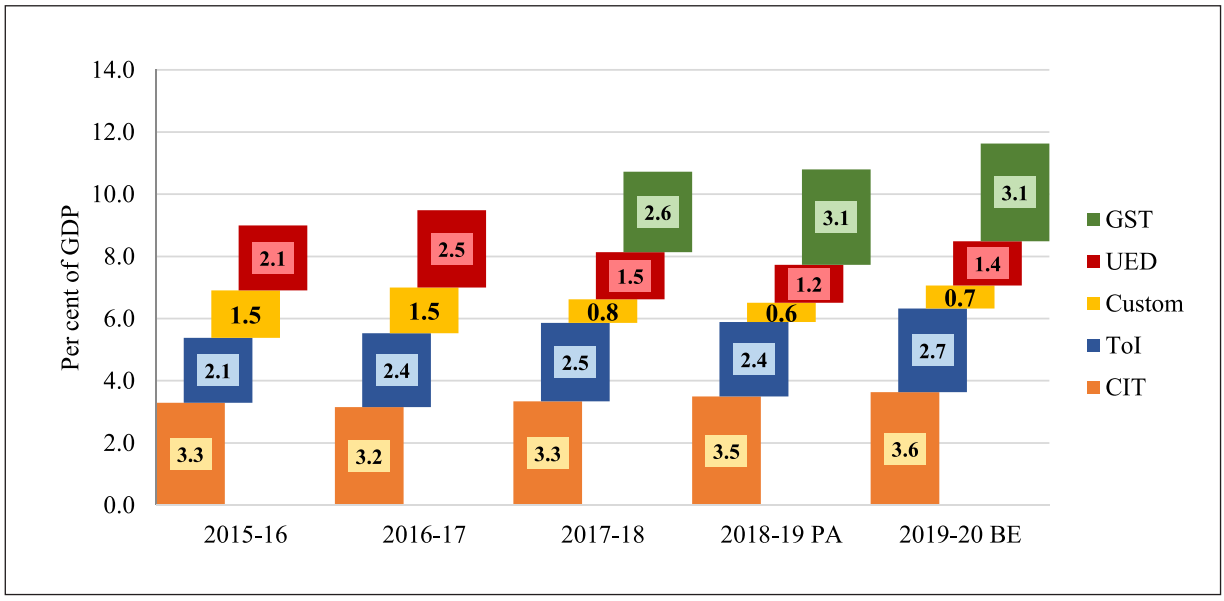
2.8 The direct taxes were estimated at 6.3 per cent of GDP in 2019-20 BE. Trends in major taxes in relation to GDP displayed in Figure 4 show that receipts from corporate and personal income tax have improved over the last few years. Better tax administration, widening of TDS carried over the years, anti-tax evasion measures and increase in effective tax payers base have contributed to direct tax buoyancy. Widening of tax base due to increase in the number of indirect tax filers in the GST regime has also led to improved tax buoyancy. Going forward, sustaining improvement in tax collection would depend on the revenue buoyancy of GST. Major measures taken for indirect and direct taxes in the year 2019-20 are presented at Annex.

2.9 During the year 2019-20 (upto November), the actual realization of Net Tax Revenue to the Center has been ₹ 7.51 lakh crore, which is 45.5 per cent of BE.

Non-Tax Revenue

2.10 Non-Tax revenue comprises mainly of interest receipts on loans to States and

Figure 4: Taxes as a percent of GDP



Source: Union Budget Documents & CGA
Note: 1. CIT: Corporation Tax, ToI: Taxes on Income other than Corporation Tax (includes STT), UED: Union Excise Duties, GST: Goods and Services Tax, 2. GST includes CGST, IGST and Compensation Cess

Table 3: Trends in Non-Tax Revenue of Central Government

	2014-15	2015-16	2016-17	2017-18	2018-19 PA	2019-20 BE
						(in ₹ Lakh crore)
Interest receipts	0.24	0.25	0.16	0.14	0.12	0.14
Dividends & Profits	0.90	1.12	1.23	0.91	1.13	1.64
External Grants	0.02	0.02	0.01	0.04	0.01	0.01
Others	0.83	1.12	1.32	0.84	1.09	1.35
Non-Tax Revenue	1.98	2.51	2.73	1.93	2.36	3.13

Source: Union Budget Documents & CGA
BE: Budget Estimate, PA: Provisional Actuals

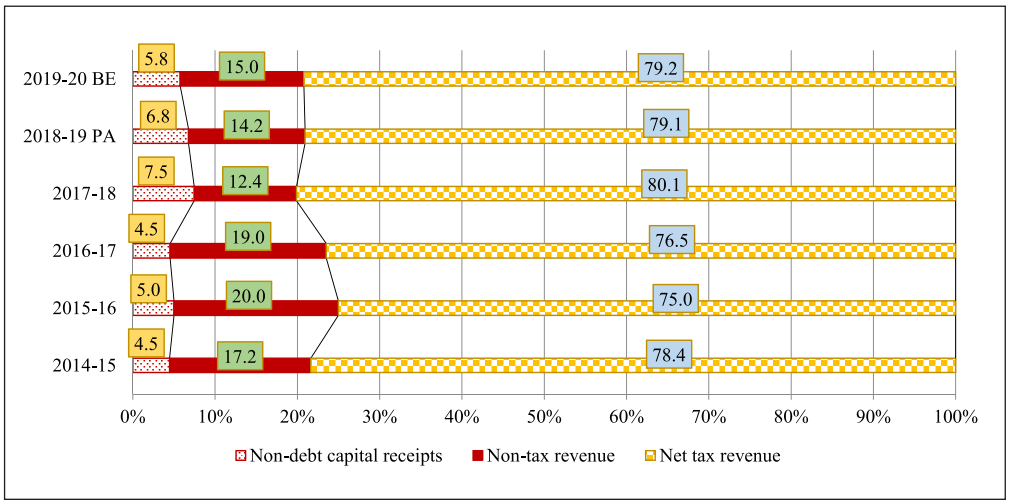
Union Territories, dividends and profits from Public Sector Enterprises including surplus of Reserve Bank of India (RBI) transferred to Government of India, receipts from services provided by the Central Government and external grants. The Budget 2019-20 aimed to raise ₹ 3.13 lakh crore of Non-Tax revenue, 1.5 per cent of the GDP, 0.3 percentage points more than that in 2018-19 PA. Roughly, two third of this increase in the BE is envisaged from dividends and profits especially surplus transferred by RBI (refer to Table 3).

2.11 As against the 2019-20 BE of ₹3.13 lakh crore for Non-Tax Revenue, the actual realization upto November 2019 has been 74.3 per cent of the BE.

Non-debt Capital receipts

2.12 Non-debt Capital receipts mainly consist of recovery of loans and advances, and disinvestment receipts. Over the last few years, the contribution of Non-debt Capital receipts have improved in the total pool of Non-debt receipts (Figure 5). They have been pegged at ₹1.20 lakh crore, 0.6 per cent of GDP, in 2019-20 BE owing to an envisaged growth of 6.3 per cent over 2018-19 PA. The receipts from recovery of loans and advances

Figure 5: Composition of Non-debt receipts of Central Government



Source: Union Budget Documents & CGA
BE: Budget Estimate, PA: Provisional Actuals

have been declining over the years and are pegged at 12.4 per cent of Non-debt Capital receipts in 2019-20 BE. The major component of Non-debt Capital receipts is disinvestment receipts that accrue to the government on sale of public sector enterprises owned by the government (including sale of strategic assets). Government aimed at mobilising ₹ 1.05 lakh crore on account of disinvestment proceeds as per 2019-20 BE.

2.13 During the year 2019-20 (upto November), the actual realization of Non-debt Capital receipts to the Centre has been ₹ 0.29 lakh crore as against BE of ₹ 1.20 lakh crore. Given the significant pipeline of deals that are in process, realizations are likely to accelerate.

Trends in Expenditure

2.14 It is imperative for any developing economy to optimally allocate the available resources without compromising on the crucial developmental and macroeconomic goals. As India's tax to GDP ratio is low, Government faces the challenge of providing sufficient funds for investment and infrastructure expansion while staying within the bounds of fiscal prudence. Therefore, improving the composition and quality of expenditure becomes significant.

2.15 The composition of government expenditure in the last few years reveals that expenditure on defence services, salaries, pensions, interest payments and major subsidies account for more than sixty per cent of total expenditure. Several initiatives have been undertaken by the Ministry of Defence to improve efficiency and utilization of defence expenditure, promote self-reliance, and encourage private sector participation in the defence sector. Expenditures on salaries, pensions and interest payments are, generally speaking, committed in nature and therefore have limited headroom for creation of additional fiscal space. Budgetary expenditure on subsidies has seen significant moderation through improved targeting. There is still headroom available for further

Table 4: Major Items of Revenue Expenditure

Items	2014-15	2015-16	2016-17	2017-18	2018-19 PA*	2019-20 BE
						In ₹ lakh crore
Revenue Expenditure	14.67	15.38	16.91	18.79	20.07	24.48
	(6.9)	(4.8)	(9.9)	(11.2)	(6.8)	(21.9)
of which,						
a. Salaries (pay & allowances)	1.34	1.45	1.77	1.94	2.18	2.35
	(13.6)	(7.9)	(22.6)	(9.3)	(12.7)	(7.5)
b. Pensions	0.94	0.97	1.31	1.46	1.60	1.74
	(25.0)	(3.4)	(35.8)	(10.9)	(9.9)	(8.9)
c. Interest payment	4.02	4.42	4.81	5.29	5.83	6.60
	(7.5)	(9.7)	(8.8)	(10.0)	(10.2)	(13.4)
d. Major subsidies	2.49	2.42	2.07	1.91	1.97	3.02
	(1.6)	(-2.7)	(-14.8)	(-7.5)	(3.1)	(53.1)
e. Defence Services	1.40	1.46	1.65	1.86	1.96	2.02
	(12.9)	(3.9)	(13.3)	(12.5)	(5.3)	(3.0)

Source: Union Budget Documents & CGA

BE: Budget Estimate, PA: Provisional Actuals

Numbers in parenthesis are growth rates

*The figure for Salaries (Pay & allowances) for 2018-19 is Revised Estimate (RE).

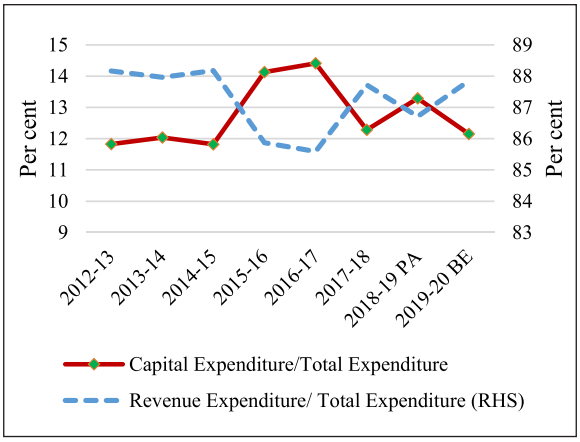
rationalization of subsidies especially food subsidy. There has been considerable restructuring and reclassification of Central sector and Centrally Sponsored Schemes in the recent years

2.16 Budget 2019-20 estimated total expenditure at 27.86 lakh crore, comprising revenue expenditure of ₹24.48 lakh crore and capital expenditure of ₹3.39 lakh crore, which work out to be 11.6 per cent and 1.6 per cent of GDP, respectively. Analysis of Budget Estimates of expenditure in 2019-20 over 2018-19 PA suggests that Central Government budgetary expenditure is envisaged to increase by one percentage point of GDP in 2019-20. The entire increase is on revenue account with capital spending remaining unchanged as per cent of GDP. Within revenue expenditure, more than forty per cent of the increase is explained by increase in interest payments and major subsidies (refer to Table 4).

2.17 The expenditure on major subsidies, which is a significant component of non-committed revenue expenditure was pegged at 1.4 per cent of GDP in 2019-20 BE. The budgetary expenditure on major subsidies has shown a declining trend over the past years. In 2019-20 BE, the major subsidies are estimated at ₹ 3.02 lakh crore owing to requirements for food, fertilizer and petroleum subsidies.

2.18 The quality of expenditure is captured by the share of capital expenditure in total expenditure. Figure 6 shows that share of capital expenditure in total expenditure is envisaged to decline roughly by a percentage point in 2019-20 BE over 2018-19 PA. However, capital spending in 2019-20 BE is estimated to grow by 10 per cent over 2018-19 PA to reach ₹3.39 lakh crore. Major sectors apart from defence services, that account for bulk of capital expenditure

Figure 6: Share of Revenue and Capital Expenditure in Total Expenditure



Source: Union Budget Documents & CGA
BE: Budget Estimate, PA: Provisional Actuals.

allocation in 2019-20 BE include internal security, investments in Financial Institutions, pass through assistance for metro projects, space technology and construction of Roads and Railways. Apart from budgetary spending, Extra Budgetary Resources (EBR) have also been mobilized to finance infrastructure investment since 2016-17. EBRs are those financial liabilities that are raised by public sector undertakings for which repayment of entire principal and interest is done from the Central Government Budget. Government has raised EBRs of ₹88,454 crore during three years from 2016-17 to 2018-19. It proposes to raise EBR of ₹57,004 crore in 2019-20 BE which is 0.27 per cent of GDP. These EBRs are not taken into account while calculating the Fiscal Deficit. However, they are considered in the calculations of Government Debt.

Transfer to States

2.19 The Fourteenth Finance Commission (FFC) for the award period 2015-20 had made far-reaching changes to strengthen fiscal federalism in the country. Consequently, States have obtained larger fund transfers as well as greater autonomy to utilise funds as

per their needs. Transfer of funds to States comprises essentially of three components: share of States in Central taxes devolved to the States, Finance Commission Grants, and Centrally Sponsored Schemes (CSS), and other transfers. Till 2013-14, funds for CSS were routed through two channels, the Consolidated Funds of the States and directly to the State implementing agencies. In 2014-15, direct transfers to State implementing agencies were discontinued and all transfers to States including for the CSS were routed through the Consolidated Funds of the States.

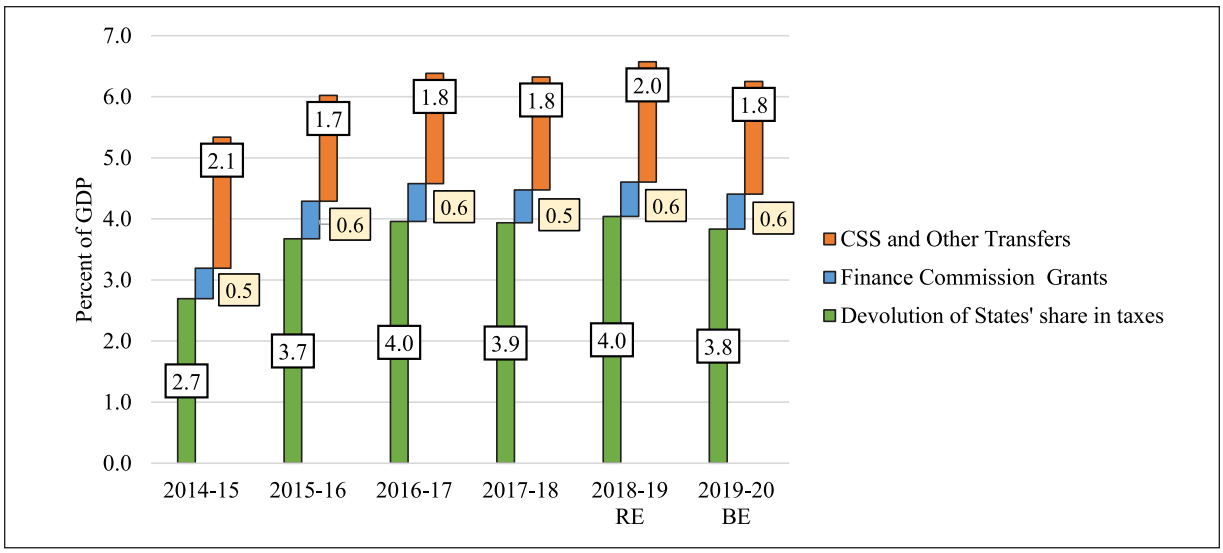
2.20 The total transfers to States are given in Table 5 and Figure7. Both in absolute terms, and as a percentage of GDP, total transfers to States have risen between 2014-15 and 2018-19 RE by 1.2 percentage points of GDP. The Budget 2019-20 envisages an increase in expected grants and loan to States by ₹73,963 crore relative to 2018-19 RE, on account of higher requirements under compensation to States for revenue losses on roll out of GST, grants to rural and urban bodies and releases under Samagra Shiksha.

Table 5: Transfers to States (in ₹ lakh crore)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19 RE	2019-20 BE
Devolution of States' share in Taxes	3.36	5.06	6.08	6.73	7.61	8.09
Finance Commission Grants	0.62	0.85	0.96	0.92	1.06	1.20
CSS and Other Transfers	2.68	2.39	2.77	3.16	3.71	3.90
Total transfers to States	6.66	8.29	9.81	10.81	12.38	13.19

Source: Union Budget Documents
BE: Budget Estimates, RE: Revised Estimates
Note: States includes only 29 States.

Figure 7: Central Government transfers to States



Source: Union Budget Documents
BE: Budget Estimates, RE: Revised Estimates
Note: States includes only 29 States.

Fiscal outcome in 2019-20 (upto November 2019) vis-à-vis 2019-20 BE

2.21 Indian economy registered a sluggish growth during first half of 2019-20. A series of measures were introduced by the Government during the financial year to boost the economy, which are expected to have a substantial direct and indirect impact on the fiscal performance of the economy.

2.22 The accounts for April to November 2019-20, released by the Controller General of Accounts, show that the fiscal deficit of the Central Government at end November 2019 stood at 114.8 per cent of the BE, same as in the corresponding period of the last year (Table 6)

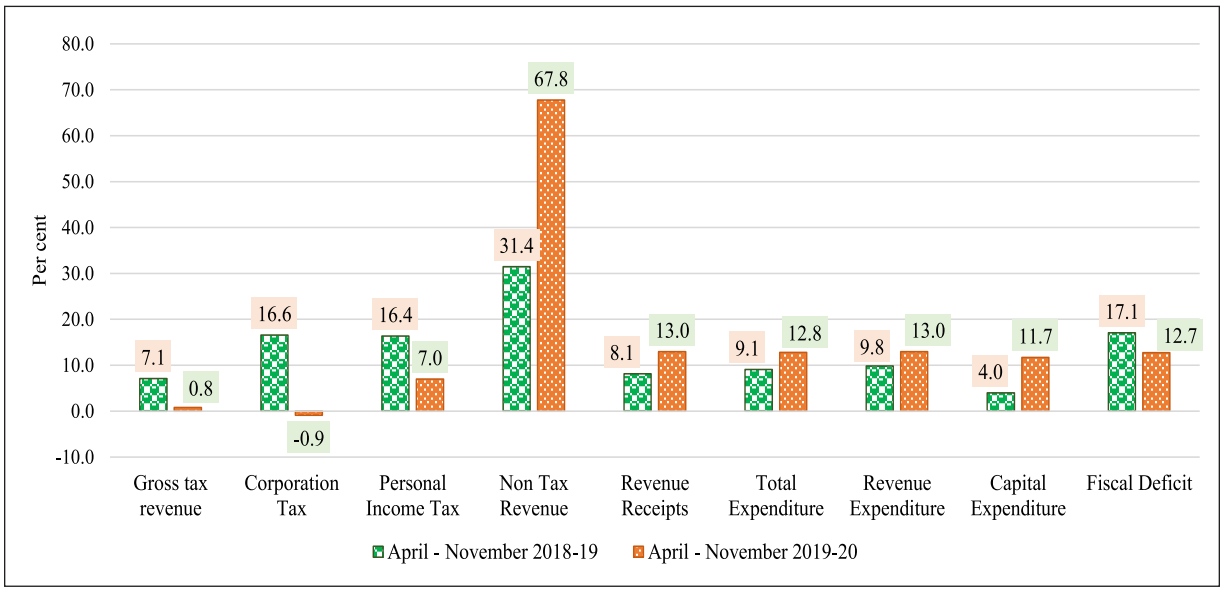
2.23 Revenue receipts have grown at a much higher pace during the current financial year (April to November 2019) over the corresponding period last year (Figure 8). Considerable growth in Non-Tax revenue, especially dividends and profits, which offset the low growth in Net Tax revenue, underlie it. Dividends and profits led by transfer from RBI grew at roughly three times in April-November 2019 over the same period last year. It was ₹1.58 lakh crore in April - November 2019 compared to ₹0.55 lakh crore in the same period last year.

Table 6: Fiscal Outcome for 2019-20 (till November 2019)

		2019-20 BE (In ₹ lakh crore)	April to November					
			In ₹ lakh crore		Percentage of respective BE		Growth over last year (per cent)	
			2018-19	2019-20	2018-19	2019-20	2018-19	2019-20
1	Revenue Receipts	19.63	8.70	9.83	50.4	50.1	8.1	13.0
2	Gross Tax Revenue	24.61	11.65	11.74	51.3	47.7	7.1	0.8
3	Assignment to States	8.09	4.32	4.22	54.8	52.1	12.1	-2.3
4	Tax Revenue (Net to Centre)	16.50	7.32	7.51	49.4	45.5	4.6	2.6
5	Non-Tax Revenue	3.13	1.39	2.33	56.6	74.3	31.4	67.8
6	Non-debt Capital receipts	1.20	0.26	0.29	28.5	24.2	-57.5	10.4
7	Non-debt receipts	20.83	8.97	10.12	49.3	48.6	3.4	12.9
8	Total Expenditure	27.86	16.13	18.20	66.1	65.3	9.1	12.8
9	Revenue Expenditure	24.48	14.22	16.06	66.4	65.6	9.8	13.0
10	Capital Expenditure	3.39	1.91	2.14	63.7	63.2	4.0	11.7
11	Revenue Deficit	4.85	5.51	6.23	132.6	128.4	12.6	13.0
12	Effective Revenue Deficit	2.78	4.17	4.94	188.8	177.8	15.3	18.5
13	Fiscal Deficit	7.04	7.17	8.08	114.8	114.8	17.1	12.7
14	Primary Deficit	0.43	3.68	4.66	759.9	1076.5	21.9	26.5

Source: CGA Monthly Accounts; BE: Budget Estimates

Figure 8: Growth rate of fiscal indicators in 2019-20 (upto November 2019)



Source: CGA Monthly Accounts

2.24 Net Tax revenue to the Centre, which was envisaged to grow at more than 25 per cent in 2019-20 BE relative to 2018-19 PA, grew at 2.6 per cent during April to November 2019, which was nearly half its' growth rate for the corresponding period last year. This is primarily owing to low growth in GTR of 0.8 per cent during first eight months of 2019-20 vis-a-vis 7.1 per cent growth for the corresponding period in 2018-19. Within direct taxes, personal income tax has grown at 7 per cent while corporate tax has registered a negative growth during the first eight months of the current financial year. This compares poorly with growth recorded by these taxes at 16.4 per cent and 16.6 per cent respectively, over the same period last year (Figure 8). Recently Government has undertaken major changes in the corporate tax rate which are given in Box 1.

Box 1: Major reform in corporate taxation

On Sept 20, 2019, the Government announced a major cut in the corporate income tax (CIT) rate applicable to the domestic companies. This was followed by the 'Taxation Laws (Amendment) Act, 2019 dated Dec 12, 2019, which introduced two new sections viz. 115BAA and 115BAB in the Income Tax Act. The existing companies have been given an option to forego certain deductions and exemptions availed under the Act and choose a new CIT rate structure with a maximum marginal rate (MMR), inclusive of surcharge and cess, of 25.17 per cent as against the existing MMR of 34.61 per cent. In order to give boost to the manufacturing sector, the new manufacturing companies registered on or after 1.10.2019 have been given an option to choose a CIT rate with MMR of 17.16 per cent. The new CIT rate structure is available with effect from the current financial year i.e. 2019-20. However the CIT rate applicable to the foreign companies remained unchanged. The table below gives an overview of the existing and new CIT rate structure applicable to the domestic companies for the financial year 2019-20.

Table- Comparison of existing and new rates of corporate income tax for domestic companies for the financial year 2019-20

	Existing rate		New rate	
	Criteria	Rate	Criteria	Rate
Base CIT rate	If Total turnover or gross receipt in the financial year 2017-18 does not exceed ₹ 400 Crore	25%	(a) If a company opts for section115BAA*	22%
	If a manufacturing company set up on or after 1.3.2016 opts for section 115BA		(b) If a manufacturing company set up on or after 1.10.2019 opts for section115BAB** and commences manufacturing on or before 31.03.2023.	15%
	If not covered by (a) or (b)	30%	If not covered by (a) or (b)	Old rate structure applicable
MAT rate	All companies	18.5%	If not in (a) or (b)	15%
			If in (a) or (b)	NIL
Surcharge rate	If Total Income not more than ₹1 crore	0%	All companies	10%
	If total income more than ₹ 1 crore but not more than ₹10 crore	7%		
	If total income is more than ₹10 crore	12%		
Cess rate	All companies	4%	All companies	4%

** Companies included under Section 115BAA: Existing domestic companies that opt for new CIT rate and satisfy the following pre-conditions:*

- *Deductions or exemptions are not claimed under section 10AA, or 32(1) (iia), or 32AD, or 33AB, or 33ABA, or 32(2AA)/(2AB) (1)(ii)/(iia)/(iii), or 35AD, or 35CCC, or 35 CCD, or under any provisions of Chap VI-A other than section 80JJAA.*
- *Set-off of carried forward / current losses or depreciation attributable to any of the aforesaid deductions is not availed.*
- *Only depreciation other than additional depreciation under section 32(1)(iia) is claimed*

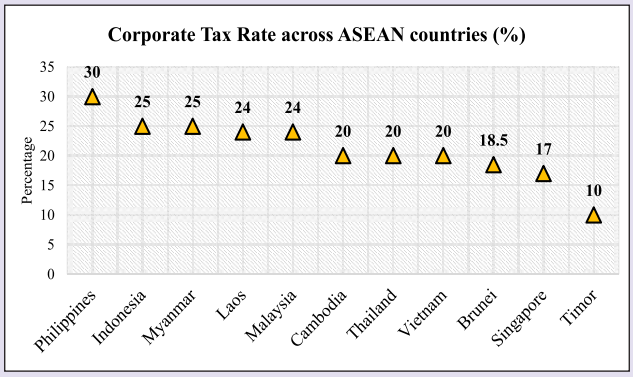
*** Companies included under Section 115BAB: New manufacturing companies that are set up and registered on or after Oct 1, 2019, which bring in fresh investment, commence manufacturing on or before March 31, 2023 and satisfy certain pre-conditions including the aforesaid pre-conditions.*

Rationale behind the reform

All over the world, many countries had reduced CIT rate to attract investment and create employment opportunities. The act of reduction of CIT rate by other countries, in particular Asian developing countries, which compete with India to attract investments, provided an impetus to lower the CIT rates in India. It is expected that this would spur investment, stimulate growth and create job opportunities in India. A comparison of the CIT rates in ASEAN countries, with the reduced CIT rate in India (for new manufacturing companies in particular), presented in the figure below, shows that the CIT rate in India is now lower than most ASEAN countries. The stimulus provided by the corporate tax cut is also expected to have a multiplier effect on the economy. Fresh investments in the coming future are

expected to not only result in creation of new jobs but also lead to increased income levels. As a result, tax collections are also likely to rise in the medium to long run.

Figure : Corporate Tax Rate across ASEAN countries



Who will benefit?

An analysis conducted by Tax Policy Research Unit (TPRU), based on income tax return (ITR) data of corporates for the financial year 2016-17, points out that most of the companies (99.1 per cent) have a gross turnover of below ₹ 400 crore (say small and medium companies) and are already taxed at the base CIT rate of 25 per cent. With surcharge and cess, their MMR varies from 26 per cent to 29.12 per cent. On the other hand, only 0.9 per cent of the companies i.e. 4,698 companies have gross turnover of over ₹ 400 crore (say large companies) and their MMR varies from 30.9 per cent to 34.61 per cent. Thus, the impact of CIT rate cut varies from gain of about 3.2 per cent to 13.5 per cent of the existing tax liability for small/medium companies to about 18.5 per cent to 27.3 per cent of the existing tax liability for large companies.

Source: Department of Revenue, Ministry of Finance

2.25 The indirect tax receipts have registered a growth of -0.9 per cent in the first eight months of this fiscal year. Gross GST collections, Centre and States taken together, was ₹ 8.05 lakh crore in April to November 2019, which is an increase of 3.7 per cent over the corresponding period last year. The GST collections for the Centre for the same period registered a growth of 4.1per cent over the corresponding period last year.

2.26 Notably, so far, during 2019-20, despite the rationalisation of GST rates, the gross GST monthly collections has crossed the mark of ₹ one lakh crore, for a total of five times, including the consecutive months of November 2019 and December 2019. An analysis to estimate the impact of GST rate rationalisation on GST revenue collection may be seen in Box 2. The increase in GST collections may be a result of concerted efforts taken by the government to improve tax compliance and Tax revenue collection. These include extensive automation of business processes, application of e-way bill mechanism, targeted action on compliance verification, enforcement based on risk assessment and proposed introduction of electronic invoice system. The details of reforms in GST may be seen at Annex 1. Amongst the reforms undertaken for increasing GST compliance, the GSTN has taken several initiatives to incorporate behavioural parameters to induce voluntary compliance by taxpayers. Some of these may be seen in Box 3.

Box 2: Vector Autoregression Analysis (VAR) of GST rate rationalisation on GST collections

Variable and Data

Variables: GDP, GST collection and GST rationalisation.

Variable description: GST rationalisation is the number of goods in the 28% category, as this is the only category which has witnessed drastic changes in the past GST Council meetings. The GST collection includes revenue from CGST, SGST, and IGST. Values of GDP and GST collections are taken in logarithmic form.

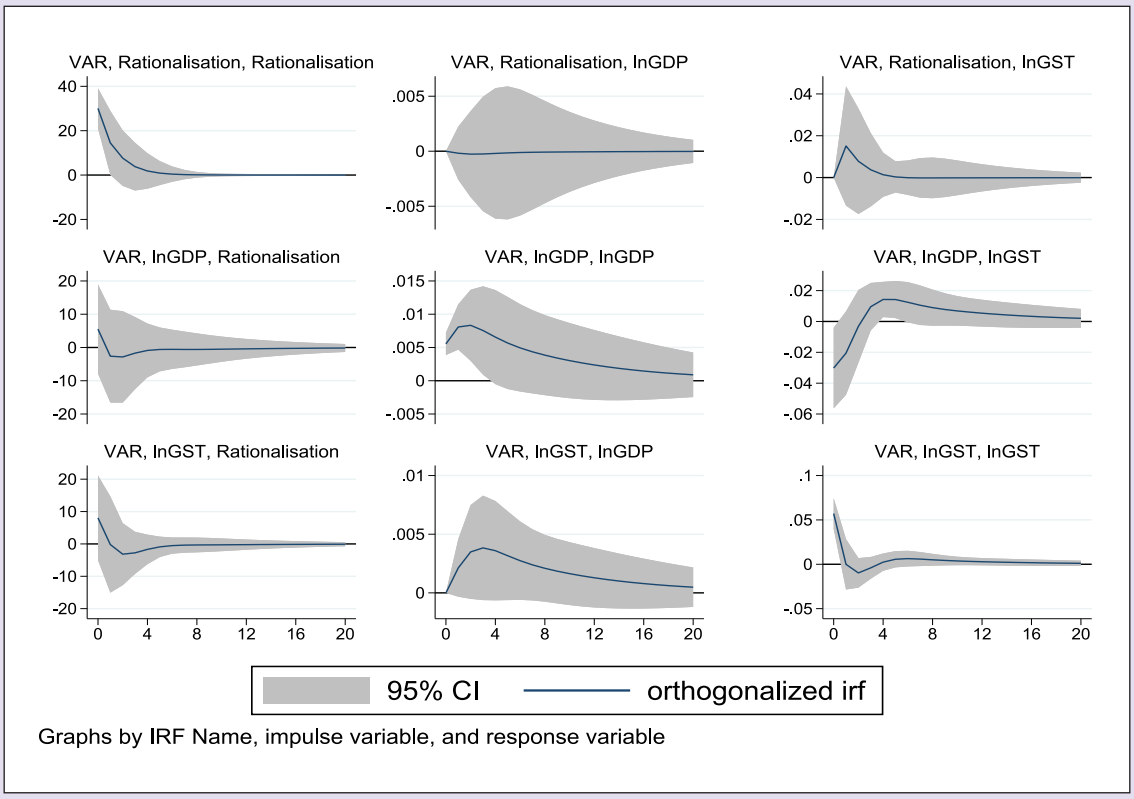
Data: The data for GST collections is from GSTN, GST rationalisation from CBIC, and GDP data from CSO, MOSPI. The data for GST rationalisation and GST collection are available on a monthly basis, whereas the GDP data is available at quarterly interval. Monthly data for GDP has been interpolated to make the data comparable with other data series.

Methodology

Using the Vector Autoregression (VAR) model we analysed the impact of a shock through GST rates on GST collection. We selected two lags for our analysis using AIC criterion and estimated the VAR model. Post estimation of the model, we used the standard impulse response function (IRF) to see the impact of a shock to the GST rates on GST collections. The IRFs from the VAR model is given in the graph below.

Conclusion

It is found that a positive shock to the GST rationalisation variable (implying increasing the number of goods under GST) leads to an increase in GST collection in first few months, specifically one to three months after the shock and then the impact tappers off.



Source: Survey calculations, CSO (MOSPI), CBIC, GSTN

Box 3: Use of Behavioural parameters by GSTN to enhance voluntary compliance

Amongst the various measures taken by the Government to simplify the GST tax system, several initiatives by GSTN to create an environment of voluntary compliance are based on taxpayers behaviour parameters incorporating factors such as deterrence, developing social and personal norms, reducing complexity, and enhancing fairness and trust. Some of these are discussed below:

- **E-way bill**

The GST rules provide for electronic generation of e-way bill for transportation of goods above a certain threshold of value of the goods being transported. Comparison of data from e-way bill portal to that in GST portal enables verification of the supply of goods involving physical movement. This acts as an effective tool of deterrence to prevent misreporting of information.

- **PIN code to PIN code distance mapping in e-way bill system**

The inclusion of origin and destination PIN Codes in the e-way bill portal prevents any over-reporting of distance which could lead to misuse of the e-way bill for multiple trips. This is enabled through a technology based solution. This deters misreporting by tax payers and help curb tax evasion.

- **Return filing status of a GSTIN visible in public domain on the GST Portal**

The publicly available information on the return filing status of GSTIN enables the buyers to choose the compliant taxpayers for doing business, and minimise the business risk by increasing the probability of availing a timely ITC. This initiative of the Government thus encourages a better compliance environment through social and market pressures.

- **Caution against mismatch in GSTR-2A & GSTR-3B; and GSTR-1 & GSTR-3B, above a certain threshold**

While filing the GST returns, tax liability is declared in both GSTR-1(invoice level detail) and GSTR-3B (summary), and ITC is declared in GSTR-3B (summary) and is also auto-populated in GSTR-2A (through GSTR-1). In case the liability declared in GSTR-3B is lesser than GSTR-1, or the ITC claimed in GSTR-3B is more than GSTR-2A, a comparison of this anomaly is visible on suppliers' GST dashboard to induce the taxpayer to correct it and avoid future litigation. Making this information available to the taxpayers, on a month-wise basis; and sending regular SMSs regarding such mismatch in data, encourages them to take timely corrective action, if so required.

- **SMSs for reminders of due date of monthly return (On 10th, 13th, and 15th of every month) and non-filing of return.**

SMS reminders are sent to Authorised Signatories of firms for gently reminding upcoming Due Date of filing summary return GSTR-3B, and, to both Authorised Signatories and Directors/Partners of the firms (non-filers) in case the Due Date is missed, induces taxpayers to inculcate the behaviour of timely filing of returns by way of creating internal organisational pressures and hence build on their personal norms.

- **Free accounting & billing software provided to small taxpayers**

In order to ease the compliance in the technology driven GST regime, GST Council has decided to offer free services like preparing invoices, GST returns, Income Tax returns, Balance sheet and Profit & Loss statement through accounting & billing software for the small businesses, which constituted more than 80% of all GST taxpayers in March 2019.

- **Questionnaire based filing of return and showing the relevant tables**

In order to reduce the complexity of returns and simplify the process, the GST portal adopts a questionnaire based return filing system, whereby based on the reply given by the taxpayer in the questionnaire, only

relevant tables for filing will be visible to taxpayer on returns dashboard. This simplification is meant to ease compliance for the taxpayers.

- **Compliance rating score of the taxpayers available in the public domain**

GST Act provides for public display of compliance rating score of every registered GST tax-payer based on taxpayer record of compliance with provisions of GST Act. Government is in the process of finalising the method of computation of this compliance rating. Once finalised and made available in public domain, this would enable buyers to choose compliant taxpayers for doing business, as their timely ITC claim is dependent on timely filing of GST return by the seller. The deterrence of a possible loss of business on account of a low compliance rating score would induce taxpayers to be more compliant. In addition, public display of this information would increase the transparency and lead to improved trust of the businesses in the tax administration and develop a social norm of good compliance in the long run.

- **Acknowledging contribution of compliant taxpayers**

Government has decided to issue a certificate to compliant GST taxpayers, and acknowledge their contribution towards nation building. This appreciation serves to motivate taxpayers to continue their compliant behaviour in future as well.

Source: Goods and Services Tax Network (GSTN)

2.27 The Non-debt Capital receipts includes recovery of loans and disinvestment receipts. Government has targeted to mobilise ₹1.05 lakh crore from disinvestment proceeds. So far, it has been able to raise ₹0.18 lakh crore which is 17.2 per cent of 2019-20 BE. The details of disinvestment during 2019-20 and new initiatives being undertaken by Department of Investment and Public Asset Management (DIPAM) are given in Box 4.

Box 4: Disinvestment

The B.E. for disinvestment proceeds for the year 2019-20 was fixed at ₹1.05 lakh crore. As on 31st December 2019, the Government has mobilised ₹0.18 lakh crore using a variety of instruments like Initial Public Offers (IPOs), Offer for Sale (OFS), Exchange Traded Funds (ETF) etc. Details are as under:

Listing of shares (IPO): During the year 2019-20, two IPOs namely Indian Railway Catering and Tourism Corporation (IRCTC) and Rail Vikas Nigam Ltd (RVNL) were successfully listed yielding ₹636 crore and ₹475.89 crore respectively, while five more PSEs, namely, Indian Railway Finance Corporation (IRFC), Kudremukh Iron Ore Company Limited (KIOCL) (FPO), RailTel, Water and Power Consultancy Services (WAPCOS) and Telecommunications Consultants India Limited (TCIL) are in the process of listing (as on 31.12.2019).

Offer for sale (OFS): During the year 2019-20, OFS of Railway Infrastructure Technical and Economic Service (RITES) has been concluded yielding ₹729.45 crore.

ETFs: ETFs were the biggest source of receipts during current year with Further Fund Offer-5 (FFO) of CPSE-ETF fetching ₹10,000.39 crore and FFO-2 of Bharat 22 ETF fetching ₹4,368.80 crore in July 2019 and October 2019 respectively. In aggregate, ETFs have fetched ₹14,369.19 crore in 2019-20 (as on 31.12.2019).

Others: Sale of Enemy Shares by Custodian of Enemy Property for India (CEPI): ₹1,881.21 crore

Major Initiatives taken by DIPAM

1. Strategic Disinvestment:

The CCEA has given in-principle approval (on 20.11.2019) for strategic disinvestment of the GoI shareholding in five public sector enterprises along with management control. These are: Bharat Petroleum Corporation Ltd (BPCL); Shipping Corporation of India (SCI); Container Corporation of India (CONCOR); Tehri Hydro Power Development Corporation (THDCIL), and North Eastern Electric Power Corporation Ltd (NEEPCO). The strategic sale of THDC, NEEPCO and Numaligarh subsidiary of BPCL will be made to a CPSE buyer. The CCEA has also given in principle approval (on 08.01.2020) of strategic disinvestment of Government of India shareholding in Neelachal Ispat Nigam Ltd. (NINL). With this, a total of 34 CPSEs/Subsidiaries/Units of CPSEs (including Air India) have now been accorded 'in-principle' approval by the government for strategic disinvestment. The Government strategically sold its stake in 5 CPSEs namely Hindustan Petroleum Corporation Limited (HPCL), Rural Electrification Corporation Limited (REC), Dredging Corporation of India Limited (DCIL), Hospital Services Consultancy Corporation Limited (HSCC) & National Projects Construction Corporation Limited (NPCC) in last two years which resulted in a yield of ₹52,869 crore. The process for strategic disinvestment in identified CPSEs in the current year has been initiated.

Streamlining the procedure for strategic disinvestment: In order to make the procedure for strategic disinvestment more expeditious and result-oriented, CCEA has approved a modified procedure for strategic disinvestment, whereby, the Inter-Ministerial Group (IMG) chaired by the Secretary, DIPAM and Co-Chaired by Secretary of the Administrative ministry/department concerned will drive the procedure and play a pivotal role in the entire process.

2. Reduction of Shareholding in select CPSEs below 51% while retaining management control: In the Budget Speech of 2019-20 the Government had announced the decision to modify present policy of retaining 51% Government stake to retaining 51% stake inclusive of the stake of government controlled institutions. Accordingly, the CCEA has given in principle approval (on 20.11.2019) for reduction of Government of India paid-up share capital below 51% in select CPSEs while retaining the management control, taking into account the Government shareholding post such reduction and the shareholding of Government controlled institutions. This policy decision will increase the bandwidth for disinvestment through minority stake sale.

3. Asset Monetization Framework: The Union Cabinet in February 2019 approved the procedure and mechanism for Asset Monetization of CPSEs/PSUs/other Government organizations and Immovable Enemy Properties. This will enable monetization of identified non-core assets of CPSEs under strategic disinvestment and Immovable Enemy Property under the custody of Custodian of Enemy Property (CEPI), Ministry of Home Affairs. This Framework is also available to monetize assets of other CPSEs/PSUs/other Government Organizations and loss making/sick CPSEs.

4. Debt ETF: Cabinet Committee on Economic Affairs (CCEA) has approved the creation and launch of India's first corporate Debt Exchange Traded Fund (Debt ETF) which would create an additional source of funding for Central Public Sector Enterprises (CPSEs), Central Public Financial Institutions (CPFIs), and other Government organizations and would increase the retail participation in the Indian corporate bond market.

Bharat Bond ETF was launched on 12th December, 2019 which received a strong response from investors across different segments and was oversubscribed by 1.7 times. It has provided a new window of access to retail investors in bond market. With regular issuances, the Bharat bond ETF will help in deepening the bond market in India and develop a yield curve for CPSEs over a period of time.

Source: Department of Investment and Public Asset Management (DIPAM)

2.28 On the expenditure side, the capital expenditure during April to November 2019-20 has grown at roughly three times vis-à-vis the same period in 2018-19. Also revenue expenditure has grown at a higher rate during these eight months of 2019-20, compared to the same period previous year. Among the major subsidies, the growth in expenditure on Urea and Petroleum subsidies has been higher during this period as compared to April to November 2018-19 (refer to Table 7).

Table 7: Expenditure on major subsidies

Items	Budget Estimate (In ₹ lakh crore)	April to November (In ₹ lakh crore)		
	2019-20	2017	2018	2019
Total Major Subsidies	3.02	2.06	2.19	2.35
Food Subsidy	1.84	1.35	1.42	1.32
Nutrient Based Fertilizers Subsidy	0.26	0.18	0.20	0.22
Urea Subsidy	0.54	0.32	0.33	0.51
Petroleum	0.37	0.21	0.23	0.30

Source: CGA Monthly Accounts

2.29 Based on the above analysis there is an apprehension that the Tax revenue for the current fiscal year would be muted relative to the target envisaged in 2019-20 BE. The gap due to lower tax receipts could be to some extent compensated by higher mobilisation of Non-Tax revenue and disinvestment proceeds for 2019-20. However, high growth in Non-Tax revenue may not be sustainable year after year. The realization from Non-Tax revenue and disinvestment being uncertain adds to the volatility in revenue projection.

2.30 Thus in order to be on track with the fiscal path outlined by the Medium Term Fiscal Policy Statement, it would be imperative to rationalize expenditure. However, given the sluggish demand and decline in growth of private consumption expenditure reported in first half of the fiscal year, any cut in expenditure especially capital expenditure would have adverse implications for growth. Moreover, since a considerable proportion of revenue expenditure like interest payments, wages and salaries and pensions is committed in nature, this leaves a little fiscal headroom for manoeuvre. Therefore, the focus of the Government should lie on rationalization of non-committed revenue expenditure like subsidies. Further, to boost the domestic demand which is crucial for revival of growth, fiscal deficit target may have to be relaxed for the current year.

Central Government Debt

2.31 Total liabilities of the Central Government include debt contracted against the Consolidated Fund of India, technically defined as Public Debt, as well as liabilities in the Public Account. These liabilities include[1] external debt (end-of-the financial year) at current exchange rate but exclude part of NSSF liabilities to the extent of States' borrowings from the NSSF and investments in public agencies out of the NSSF, which do not finance Central Government deficit. Total liabilities of the Central Government at end March 2019 stood at ₹84.7 lakh crore and 90 per cent of which was public debt (refer to Table 8).

[1] As per Status Paper on Government Debt.

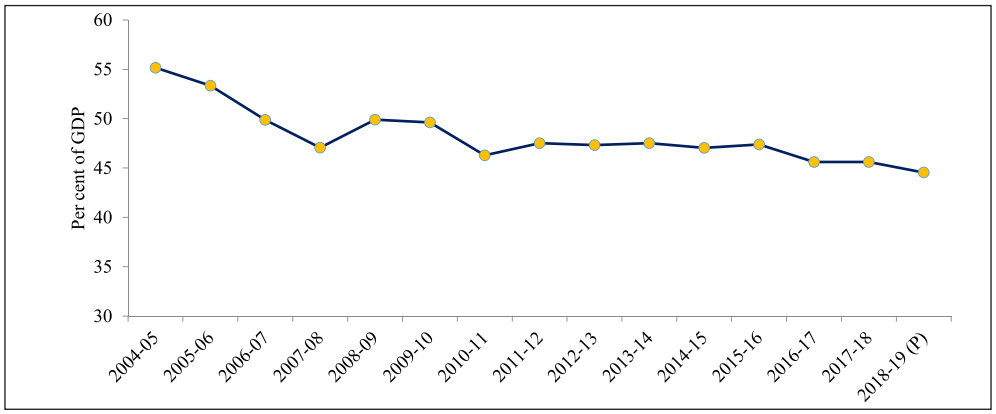
Table 8: Debt Position of the Central Government (in ₹ Lakh crore)

	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19 (P)
A. Public Debt (A1+A2)	40.97	46.15	51.05	57.11	61.50	68.84	75.79
A1. Internal Debt (a+b)	37.65	42.41	47.38	53.05	57.42	64.01	70.66
a. Marketable Securities	33.61	38.54	43.09	47.28	50.49	55.10	59.68
b. Non-marketable Securities	4.04	3.87	4.29	5.77	6.93	8.91	10.98
A2. External Debt*	3.32	3.74	3.66	4.07	4.08	4.83	5.13
B. Public Account - Other Liabilities	6.10	7.23	7.62	8.16	8.57	9.15	8.89
C. Total Liabilities (A+B)	47.07	53.39	58.66	65.27	70.07	77.99	84.68

Source: Various issues of Status Paper on Government Debt and Quarterly Report on Public Debt for December 2018; P: Provisional * The external debt at current exchange rates from Aid, Account and Audit Division, Ministry of Finance. Data for 2017-18 and 2018-19 include net cumulative SDR allocations by the IMF.

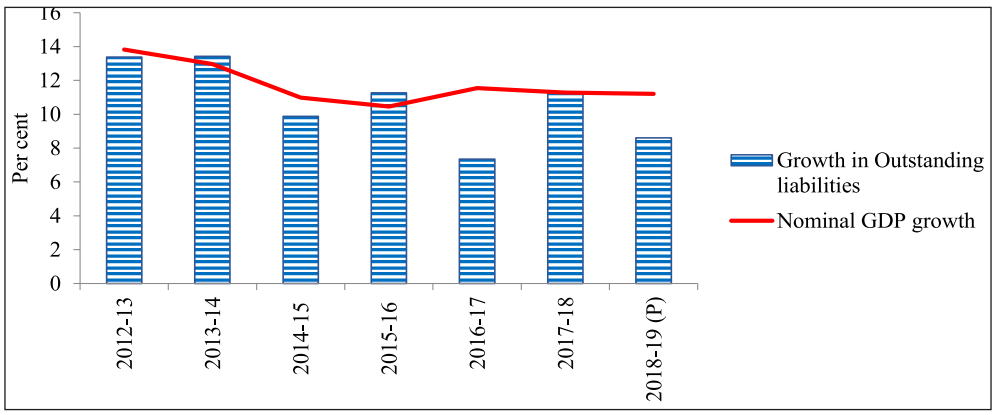
2.32 Figure 9 shows that total liabilities of the Central Government, as a ratio of GDP, has been consistently declining, particularly after the enactment of the FRBM Act, 2003. This is an outcome of both fiscal consolidation efforts as well as relatively high GDP growth (Figure 10).

Figure 9: Trend in Centre's Debt-GDP ratio



Source: Various issues of Status Paper on Government Debt; P: Provisional

Figure 10: GDP growth and growth in Outstanding Liabilities

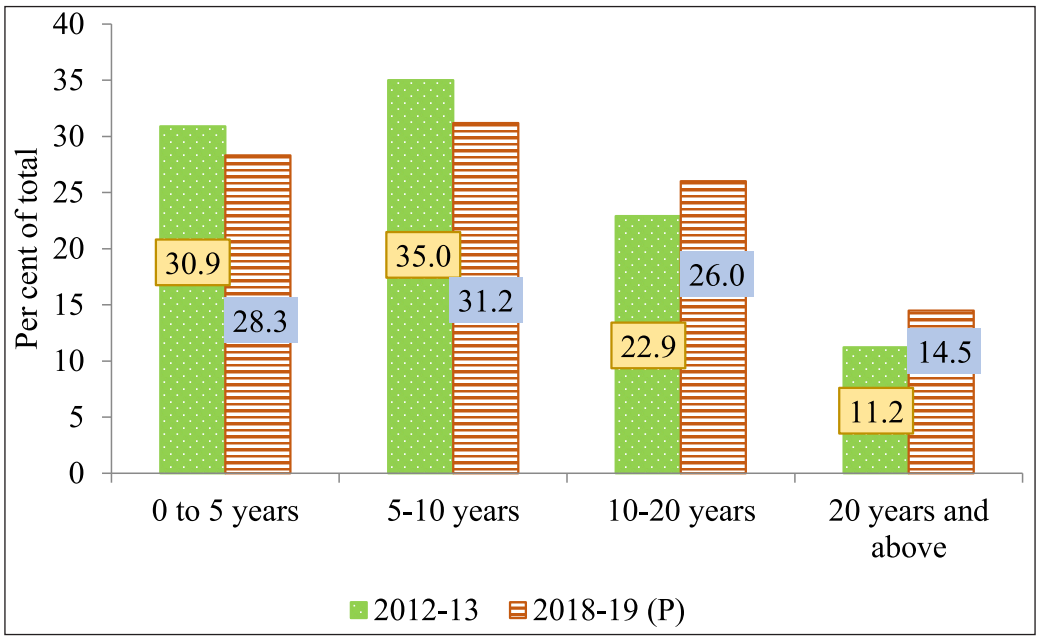


Source: Various issues of Status Paper on Government Debt; P: Provisional

2.33 Central Government debt is characterised by low currency and interest rate risks. This is owing to low share of external debt in the debt portfolio and almost entire external borrowings being from official sources. Further, most of the public debt has been contracted at fixed interest rate making India's debt stock virtually insulated from interest rate volatility. This lends certainty and stability to budget in terms of interest payments.

2.34 The other salient feature is the gradual elongation of the maturity profile of the Central Government's debt (refer to Figure 11) leading to reduced rollover risks. The proportion of dated securities maturing in less than five years has seen consistent decline in recent years. The weighted average maturity of outstanding stock of dated securities of the Government of India has increased from 9.7 years at end March 2010 to 10.4 years at end March 2019.

Figure 11: Maturity Profile of Outstanding Dated Central Government Securities (as per cent of Total)



Source: Status Paper on Government Debt, 2017-18; Quarterly Report on Public Debt Management for April- March 2018-19; P: Provisional

STATE FINANCES

2.35 As per 2019-20 budget estimates of the State Governments, the States' combined own Tax revenue and own Non-Tax revenue is anticipated to grow at 11.1 per cent and 9.9 per cent respectively, which is low relative to the robust growth displayed in 2018-19 RE. The envisaged growth of 8.4 per cent in total expenditure in 2019-20 BE w.r.t. 2018-19 RE is largely led by 9.4 per cent growth in revenue expenditure, whereas the capital expenditure is placed to grow at only 3.7 per cent (refer to Table 9). The rising trend in revenue expenditure is driven by rise in committed expenditure including pension and interest. In fact, the RBI Study on State Finances attributes the fiscal consolidation of the States in the last four to five years to the steep decline in expenditure, mainly capital, which may have adverse implications for the pace and quality of economic development,

given the large welfare effects of a much wider interface with the lives of people at the federal level.

2.36 The States have thus continued on the path of fiscal consolidation and contained the fiscal deficit within the targets set out by the FRBM Act. For the year 2019-20, the States have budgeted for gross fiscal deficit of 2.6 per cent of GDP as against an estimate of 2.9 per cent in 2018-19 RE (2.4 per cent in 2018-19 PA) and 2.4 per cent in 2017-18. The financing pattern of Gross Fiscal Deficit for States has also changed over the years. Financing via market borrowings has increased from 61.6 per cent in 2015-16 to 73.7 per cent in 2018-19 RE and is further expected to rise to 87.9 per cent in 2019-20 BE.

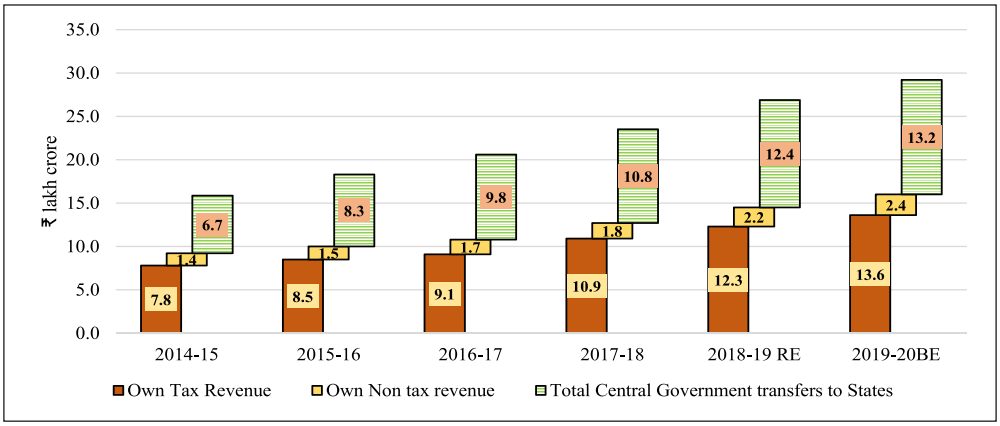
2.37 On the other hand, the debt to GDP ratio for States has risen since 2014-15 owing to the issuance of UDAY bonds in 2015-16 and 2016-17, farm loan waivers, and the

Table 9: Fiscal Indicators of States

Items	2014-15	2015-16	2016-17	2017-18	2018-19 RE	2019-20 BE
						(in ₹ lakh crore)
Own Tax Revenue	7.8	8.5	9.1	10.9	12.3	13.6
	(9.4)	(8.7)	(7.8)	(19.6)	(12.4)	(11.1)
Own Non-Tax Revenue	1.4	1.5	1.7	1.8	2.2	2.4
	(8.4)	(6.95)	(10.3)	(4.7)	(24.4)	(9.9)
Revenue Expenditure	16.4	18.4	20.9	23.0	28.3	30.9
	(18.7)	(12.3)	(13.5)	(10.2)	(22.9)	(9.4)
Capital Expenditure	3.0	4.2	5.1	4.3	5.9	6.1
	(23.3)	(40.5)	(20.4)	(-16.6)	(38.1)	(3.7)
Total Expenditure	19.4	22.6	26.0	27.3	34.2	37.0
	(19.4)	(16.7)	(14.8)	(5.0)	(25.3)	(8.4)

Source: RBI State Finances: A Study of Budget and Union Budget Documents,
RE: Revised Estimates; BE: Budget Estimates; Numbers in parenthesis are growth rates
Note: States include only 29 States

Figure 12: Revenue Receipts of States

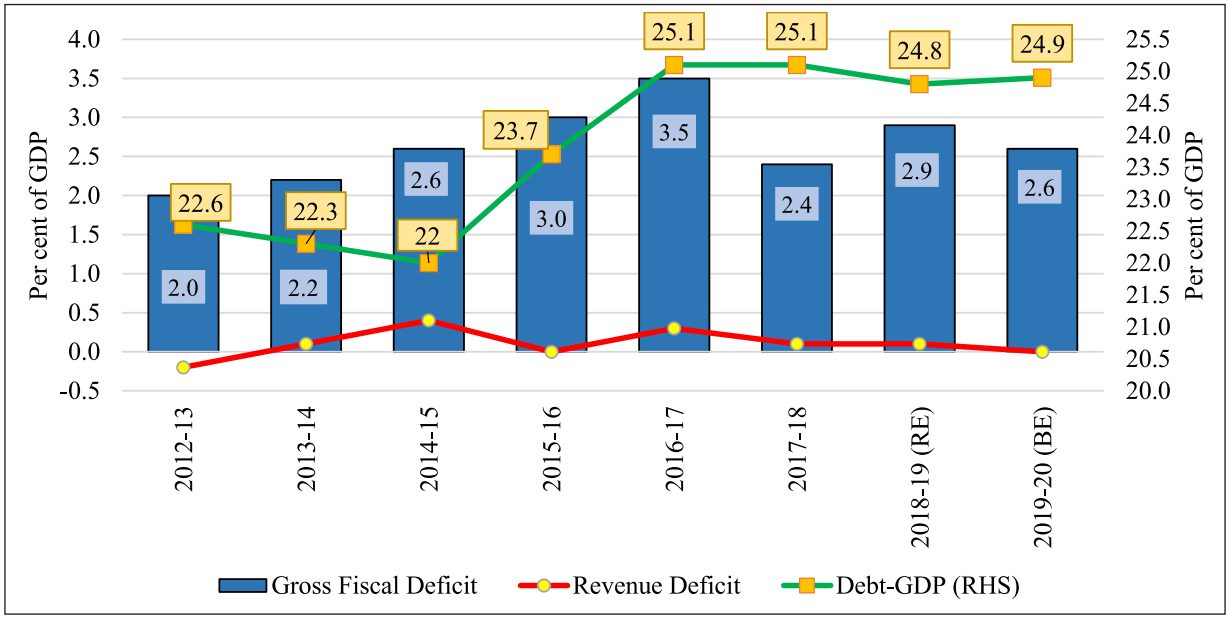


Source: RBI State Finances: A Study of Budget and Union Budget Documents
RE: Revised Estimates; BE: Budget Estimates
Note: States include only 29 States

implementation of Pay Commission awards (Figure 13). The Debt to GDP for States is likely to remain around 25 per cent of GDP in 2019-20, clearly making the sustainability of debt the main medium term fiscal challenge for States.

2.38 Net borrowing ceilings of the States for the year 2019-20 has been fixed at ₹6,11,186 crore anchoring the fiscal deficit target of 3 per cent of respective State GSDP as recommended by Fourteenth Finance Commission (FFC) for its award period

Figure 13: Major deficit and debt indicators of States



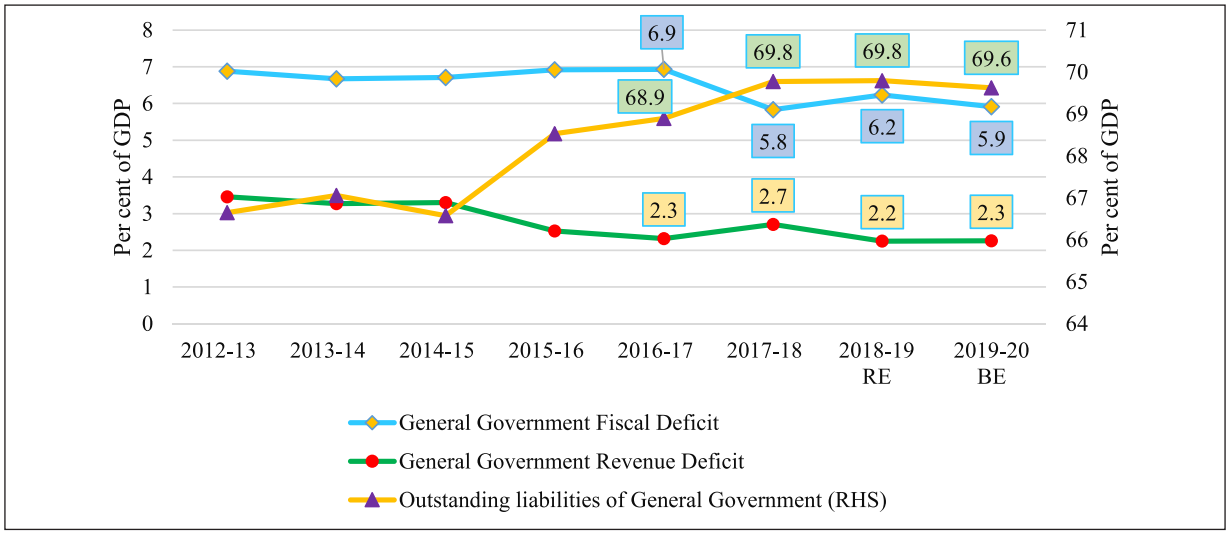
Source: RBI State Finances: A Study of Budget; RE: Revised Estimates; BE: Budget Estimates
Note: States include 29 states and 2 Union Territories with legislatures.

(2015-20). As per the recommendation of FFC, the Union Government has approved year-to-year flexibility for additional fiscal deficit to States for the period 2016-17 to 2019-20 to a maximum of 0.5 per cent over and above the normal limit of 3 per cent in any given year to the States subject to the States maintaining the debt-GSDP ratio within 25 per cent and Interest Payments to the Total Revenue Receipts ratio within 10 per cent in the previous year. However, the flexibility in availing the additional fiscal deficit will be available to State if there is no revenue deficit in the year in which borrowing limits are to be fixed and immediately preceding year. After complying with these conditions, the additional borrowings of ₹ 12,269 crore in 2016-17 to seven eligible States, ₹ 12,873 crore in 2017-18 to nine eligible States, ₹ 12,664 crore in 2018-19 to ten eligible States and ₹4,214 crore in 2019-20 (till 04 November, 2019) to four eligible States have been allowed under flexibility options recommended by FFC.

GENERAL GOVERNMENT FINANCES

2.39 It is critical to analyse the General Government finances to get an overview of fiscal position of the Government as a whole. The General Government (Centre plus States) is expected to continue on the path of fiscal consolidation as the fiscal deficit of General Government is expected to decline from 6.2

Figure 14: Trends in General Government Debt and Deficits (as a per cent of GDP)



Source: RBI
BE: Budget Estimates; RE: Revised Estimates

per cent of GDP in 2018-19 RE to 5.9 per cent of GDP in 2019-20 BE (Figure 14). However the combined liabilities of Centre and States have increased to 69.8 per cent of GDP as on end-March 2019 (RE) from 68.5 per cent of GDP as on end-March 2016.

OUTLOOK

2.40 The year 2020-21 is expected to pose challenges on the fiscal front. While on one hand the outlook for global growth persists to be weak, with escalated trade tensions adding to the risk; on the other hand, the pace of recovery of growth will have implications for revenue collections.

2.41 In order to boost the sluggish demand and consumer sentiments, counter-cyclical fiscal policy may have to be adopted to create additional fiscal headroom. During the first eight months of 2019-20, the indirect tax collections have been muted. Therefore, revenue buoyancy of GST would be key to the resource position of both Central and State Governments. On the expenditure side, rationalisation of subsidies especially food subsidy could be an important tool for expanding the headroom for fiscal manoeuvre. The Fifteenth Finance Commission reportedly has also submitted its Interim Report and its recommendations especially on tax devolution would have implications for Central Government finances.

2.42 Finally, the geopolitical situation unfolding in West Asia is likely to have implications for oil prices and thereby on the petroleum subsidy, apart from having implications for current account balance.

CHAPTER AT A GLANCE	
➢	During the first eight months of 2019-20, the Revenue Receipts registered a higher growth compared to the same period last year, which was led by considerable growth in Non-Tax revenue.
➢	During 2019-20 (upto December 2019), the gross GST monthly collections has crossed the mark of ₹ one lakh crore for a total of five times.
➢	Structural reforms undertaken in taxation during the current financial year include change in corporate tax rate and measures to ease the implementation of GST.
➢	The States have continued on the path of fiscal consolidation and contained the fiscal deficit within the targets set out by the FRBM Act.
➢	The General Government (Centre plus States) has been on path of fiscal consolidation
➢	Going forward, considering the urgent priority of the Government to revive growth in the economy, the fiscal deficit target may have to be relaxed for the current year.

Annex 1

Major measures taken for Indirect taxes during 2019-20

A. Basic Custom Duty (BCD)

- The basic customs duty rates in general are Nil/2.5%/5%/7.5% on the inputs/ intermediate products [industrial chemicals, ores and concentrates, fuels, textile fibres and yarns etc] used in industries for manufacturing. Finished items of consumption attract higher duty, e.g., items like paper and paper products, marble slabs, auto parts, electronic items etc.
- In line with the efforts made to remove inversions in duty structure, Tariff Commission and Department for Promotion of Industry and Internal Trade (DPIIT) examined the issues of inversion/ negative effective protection to the domestic industry. In majority of cases Tariff Commission did not find any inversion. Appropriate corrections were made in few cases recommended by them. The inversion now being spoken about essentially emanates from Free Trade agreements (FTA) and ITA.
- To safeguard the strategic interests of the country specified Defence equipment and their parts, imported by the Ministry of Defence or the Armed Forces, have been exempted from Basic Customs Duty in the Budget 2019-20.
- In line with "Make in India" initiative of the Government, and to provide level playing field, ensure better capacity utilization and achieve import substitutions, custom duty was increased on goods like specified electrical/electronics/telecom equipment and hardware, Poly Vinyl Chloride, specified articles of nylon, HDPE and plastics, stainless steel and other alloy steel and their semi-finished products, wires of alloy steels, certain automobile parts, newsprint, uncoated paper used for printing of newspapers and lightweight coated paper used for printing of magazines. The end use based exemption granted to Palm stearin and fatty oils was also withdrawn.
- Further, to reduce input costs and/or to remove duty inversion, and in turn incentivize the domestic value addition in these sectors, customs duty was reduced on certain goods like specified parts for manufacture of electric vehicles, naphtha, ethylene dichloride (EDC), propylene oxide (PO) and raw material for manufacture of artificial kidneys, disposable sterilized dialyzer and micro-barrier of artificial kidney. Moreover, capital goods used for manufacturing of electronic items, namely populated PCBA, camera module of cellular mobile phones, charger/adapter of cellular mobile phone, lithium ion cell, display module, set top box and compact camera module were exempted from BCD.
- To incentivize exports, the export duty on EI leather has been abolished and on Hides, skins and leathers (tanned and untanned, all sorts) the export duty has been reduced.
- Moreover, as part of revenue augmentation exercise, customs duty rates on all precious metals like gold, silver, platinum, waste of precious metal etc. (other than rhodium), gold and silver dore, gold/silver bought by an eligible passenger has been raised by 2.5% (10% to 12.5%).

B. Goods and Services Tax (GST)

- The introduction of GST has been a game changer for the Indian economy as it has replaced multi-layered, complex indirect tax structure with a simple, transparent and technology-

driven tax regime. GST has integrated India into a single common market by breaking barriers to inter-state trade and commerce. By eliminating cascading of taxes and reducing transaction costs, it has enhanced ease of doing business and has provided an impetus to 'Make in India' campaign.

- However, there are criticisms of the implementation of the GST. There are too many rates, too large a set of commodities has been excluded, and the system is more complex than it needs to be especially in the matter of crediting taxes paid on inputs and providing refunds to exporters. The government has acknowledged many of these problems and they are being addressed on regular basis.

- To bring about further reforms in the indirect tax system, the government is coming up with following measures:

I. A single source fully automated return system:

- Since the inception of Goods and Services Tax (GST), the main intention of the government was to have a robust system for allowing invoice level reconciliation of transactions. It was envisioned in the form of the returns GSTR-1, GSTR-2 and GSTR-3. However, keeping taxpayer convenience and revenue interest, a simplified return in Form GSTR 3B read with GSTR 1 was introduced. The government intended to implement its principle idea of invoice-level reconciliation by following the sequence of returns GSTR-1, GSTR-2 and GSTR-3.

- The New Return System, which is proposed to be introduced w.e.f. 01.04.2020 aims to reduce manual efforts and uses technology extensively, while maintaining a similar working model.It aims to achieve this by having a single main return (GST RET-1/2/3) supported by two annexures (GST ANX-1 & GST ANX-2) that work dynamically on a separate facility.

II. Fully electronic refund process through FORM GST RFD-01 and single disbursement:

- The necessary capabilities for making the refund procedure fully electronic, in which all steps of submission and processing shall be undertaken electronically, have been deployed on the common portal with effect from 26.09.2019.

- Further, separate disbursement of refund amounts under different tax heads by different tax authorities, i.e. disbursement of Central tax, Integrated tax and Compensation Cess by Central tax officers and disbursement of State tax by State tax officers, was causing undue hardship to the refund applicants. In order to facilitate refund applicants on this account, both the sanction order and the corresponding payment order for the sanctioned refund amount, under all tax heads, is issued by one officer only.

III. Rationalization of cash ledger:

- With regards to single cash ledger, rationalisation of the ledger in such a manner that earlier 20 heads are merged into 5 major heads is on the anvil. Unified Cash Ledger will be rolled out w.e.f. 01.02.2020.

IV. Generation and quoting of Document Identification Number

- In keeping with the Government's objective of transparency and accountability in indirect

tax administration through widespread use of information technology CBIC w.e.f. 08.11.2019 has introduced Document Identification Number (DIN), for all communications sent by its offices to taxpayers and other concerned persons. Presently DIN is applicable for search authorization, summons, arrest memos, inspection notices and letters issued in the course of any enquiry.

V. Sabka Vishwas (Legacy Dispute Settlement) Scheme 2019

- The scheme is a one-time measure for liquidation of past disputes of Central Excise, Service Tax and 26 other indirect tax enactments. It provides an opportunity of voluntary disclosure to non-compliant taxpayers. Cases covered under the scheme are (i) A show cause notice or appeals arising out of a show cause notice pending as on the 30th day of June, 2019 (ii) An amount in arrears (iii) An enquiry, investigation or audit where the amount has been quantified on or before the 30th day of June, 2019 and (iv) A voluntary disclosure.
- The scheme provides that eligible persons shall declare the unpaid tax dues and pay the same in accordance with the provisions of the scheme. The scheme provides for certain immunities including penalty, interest or any other proceedings including prosecution to those persons who pay the declared tax dues.

VI. Electronic invoicing

- The Government has proposed to introduce electronic invoicing system (e-invoice) for all B2B invoices in a phased manner. Phase 1 would be voluntary and is proposed to be rolled out from Jan 2020. Further, it is proposed to make e-invoicing mandatory for those having annual turnover of more than 100 crores w.e.f. 01.04.2020. This would help in seamless flow of credit and invoice matching as envisaged in the GST regime. Further, it would help in real-time updation of data on the GSTN system and thereby, drastically reducing the time taken in filing the returns.

VII. Quick Response (QR) Code

- The Government is proposing to implement the system of invoice with dynamic QR code for all B2C invoices for the taxpayers having annual aggregate turnover of more than 500 crores w.e.f. 01.04.2020. Further, to ensure the smooth roll out, these taxpayers would have an option to voluntarily issue invoices with QR code w.e.f. 01.03.2020.

VIII. Exemption from filing of Annual Returns for small taxpayers:

- The Government has exempted the small taxpayers having annual aggregate turnover of ₹ 2 crores and less from filing the annual returns in the format GSTR 9 for the period 2017-18 and 2018-19 vide Notification No. 47/2019-CT dated 09.10.2019 which provides that if these taxpayers have not filed their annual returns by the due date, it should be considered as deemed to be furnished by due date.

IX. Changes with respect to rates on Goods:

- The changes in GST rates during the year 2019 have been made to make the GST rate structure simpler, promote exports, address issues of credit accumulation, resolve disputes for past periods etc. The details are mentioned below:

a) Reduction in the GST rate on supply of goods:

i. 12% to 5% on all electric vehicles

ii. 18% to 5% on charger or charging stations for Electric vehicles

iii. 18% to 12% on parts of Slide Fasteners

iv. 18% to 5% on Marine Fuel 0.5% (FO)

v. 12% to 5% on Wet Grinders (consisting stone as a grinder)

vi. 5% to Nil on Dried tamarind and Plates and cups made up of leaves/ flowers/bark

vii. 3% to 0.25% on cut and polished semi- precious stones

viii. Applicable rate to 5% on specified goods for petroleum operations undertaken under Hydrocarbon Exploration Licensing Policy (HELP)

b) Exemptions from GST/IGST on:

i. imports of specified defence goods not being manufactured indigenously (upto 2024)

ii. supply of goods and services to FIFA and other specified persons for organizing the Under-17 Women's Football World Cup in India.

iii. supply of goods and services to Food and Agriculture Organisation (FAO) for specified projects in India.

c) GST rates have been increased from, -

i. 5% to 12% on goods, falling under chapter 86 of tariff like railway wagons, coaches, rolling stock (without refund of accumulated ITC). This is to address the concern of ITC accumulation with suppliers of these goods.

ii. 18% to 28% +12% compensation cess on caffeinated Beverages

d) Measures for Export Promotion

i. Exemption from GST/IGST:

(a). at the time of import on Silver/Platinum by specified nominated agencies

(b). supply of Silver/Platinum by specified nominated agency to exporters for exports of Jewellery.

ii. Inclusion of Diamond India Limited (DIL) in the list of nominated agencies eligible for IGST exemption on imports of Gold/ Silver/Platinum so as to supply at Nil GST to Jewellery exporters.

e) GST concession in certain cases for specific period: -

i. Exemption to Fishmeal for the period 01.07.17 to 30.09.19. There were doubts as regards taxability of fishmeal in view of the interpretational issues. However, any tax collected for this period shall be required to be deposited.

ii. 12% GST during the period 1.07.2017 to 31.12.2018, on pulley, wheels and other parts (falling under heading 8483) and used as parts of agricultural machinery.

- GST rate structure on auto and auto parts has been discussed and debated significantly in last few months. Auto sector contributes significantly to GST revenue. Therefore, any change in GST rate of automobiles and parts will have a significant implication to revenue and compensation requirement. The GST rates on auto sectors has been discussed in the GST Council. The Council did not recommend any change. It was felt that temporary auto slowdown may be attributable to certain other reasons such as lack of credit, base effect (as in last few years auto sector has grown rapidly), and structural changes like adoption of newer fuel standards from BS-IV to BS-VI from April 20 etc.

X. Changes with respect to rates on Services:

- The GST rates on services were fitted into 4 slabs i.e 5%, 12%, 18% and 28%, largely based on the Pre-GST indirect tax incidence both of Centre and States, including the embedded taxes. These rates were recommended by the GST Council in its 14th and 15th meetings held on 18.05.2017 and 03.06.2017 respectively.
- The said GST rate structure was reviewed by the GST Council in its subsequent meetings and certain changes in the rate structure were recommended.
- Notably multiple reliefs from GST taxation have been provided to following categories of services: Agriculture, farming and food processing industry, Education, training and skill development, Pension, social security and old age support, Banking/ Finance/ Insurance services, Government Services, Tourism and hospitality services, Construction and works contract services, Transportation services, Hospitality and tourism industry
- Details of major decisions taken in 2019-20 for GST rates on services is as below:

a) Measures taken for Common Man during 2019-20

i. In order to boost the demand of real estate sector, with effective from 01.04.2019, GST at effective rate of 1% without ITC on affordable residential apartments and 5% without ITC on residential apartments outside affordable segment has been levied.

ii. Intermediate tax on development right, such as Transfer of Development Rights, long term lease (premium), Floor Space Index has been exempted to address the cash flow issues in the real estate sector.

iii. GST rate on hotel accommodation service are redistributed under following tax slabs:

Transaction Value per Unit (₹) per day	GST
₹ 1000 and less	Nil
₹ 1001 to ₹ 7500	12%
₹ 7501 and more	18%

iv. GST on outdoor catering services other than in premises having daily tariff of unit of accommodation of ₹ 7501 has been reduced from 18% to 5% without ITC.

b) Measures taken for MSMEs during 2019-20

i. To boost the MSME sector, with effect from 01.04.2019, composition scheme for service providers has been introduced. The scheme can be availed by a registered person having annual turnover upto ₹ 50 lakhs in the preceding financial year. The service providers opting

for new composition scheme can now pay GST @ 6% and would not be eligible to avail any input tax.

ii. GST rate on supply of job work services in relation to diamonds has been reduced from 5% to 1.5%.

iii. GST rate has been reduced from 18% to 12% on supply of all job work services, which are not currently eligible for the 5% rate (such as machine job work in engineering industry), except supply of job work in relation to bus body building which would remain at 18%.

Annex 2

Major measures taken for Direct taxes during 2019-20 and other measures

A. Summary of important measures announced in the Union Budget 2019-20:

- **Reduction in corporate tax rate** - The rate of income-tax for companies with a turnover up to ₹ 400 crore in FY 2017-18 has been reduced to 25 per cent as against prevailing rate of 30% for others.
- **Provisions of Tax Deducted at Source (TDS) –** It has been provided that:
  - deduction of TDS at the rate of 5% is to be done by individual or HUF on payments made to contractors or professionals exceeding ₹ 50 lakhs;
  - a deduction at the rate of two per cent is to be done on cash withdrawal in excess of one crore rupees in aggregate during the year from a banking company/cooperative bank/post office unless the persons making the withdrawals have been exempted;
  - while deducting TDS of one percent on the consideration paid for purchase of immovable property, the consideration shall include all charges of the nature of club membership fee, car parking fee, electricity and water facility fees, maintenance fee, advance fee or any other charges of similar nature, which are incidental to transfer of the immovable property;
  - at the time of pay out of any sum under life insurance policy, TDS will be deducted at the rate of five per cent on income component of the pay-out i.e. sum paid out minus amount of premium paid.
  - that in case of non-deduction of TDS on payment made to a non-resident, the deductor will not to be considered as assessee in default, if the non-resident has filed ITR declaring such income before the due date of filing of return.
- **Deemed accrual of gift made to a person outside India-** It has been provided that certain gifts made by residents to persons outside India on or after 05.07.2019, shall be income deemed to accrue or arise in India subject to provisions of Double Taxation Avoidance Agreement (DTAA) between India and the foreign country.

- **Mandatory furnishing of ITR-** It has been provided that persons entering into high value transactions such as having a deposit of an amount/aggregate of the amounts exceeding one crore rupees in one or more current account, incurred expenditure of an amount/aggregate of the amounts exceeding two lakh rupees for himself or any other person foreign travel, has paid an electricity bill of an amount/aggregate of the amounts exceeding one lakh rupees or fulfils any other prescribed condition shall be mandatorily required to file ITR.
- **Interchangeability of PAN and Aadhaar –** It has been provided that in case of a person who does not have PAN but has Aadhaar, PAN will be allotted to such person on the basis of Aadhaar if the person enters into certain reportable transactions. Further, a person who has linked his Aadhaar to his PAN can use Aadhaar instead of his PAN wherever required.
- **Pre-filling of return -** Pre-filled Income tax Returns (ITR) have been provided to individual taxpayers with income from salary, house property, capital gains from securities, bank interest, dividends and various tax deductions. Information regarding these incomes and deductions are being collected from concerned sources such as banks, mutual funds, EPFO etc. to enable pre-filling. The scope of furnishing of Statement of Financial Transactions (SFT) has been widened by requiring more organisations/institutions to submit information in respect of financial transactions facilitated or undertaken by them.
- **Promoting Digital Payments –** In order to promote digitalization of the economy it has been provided that certain prescribed electronic modes will also be acceptable forms of electronic modes of payment under the Act. Further, section 269SU has been introduced in the Income-tax Act, 1961(the Act) to provide that with effect from 01.11.2019 every person, carrying on business in which the total sales exceeds ₹ 50 cr. in the previous financial year, shall be required to provide a facility for accepting payment through the prescribed electronic modes, in addition to the facility for other electronic modes of payment, if any.
- **Incentives to International Financial Services Centre (IFSC)** - Several direct tax incentives have been provided to an IFSC such as 100 % profit-linked deduction under section 80-LA of the Act in any ten-year block within a fifteen-year period, exemption from dividend distribution tax from current and accumulated income to companies and mutual funds, exemptions on capital gain to Category-III AIF and interest payment on loan taken from non-residents.
- **Incentives to certain Non-banking Financial Companies (NBFCs)-** It has been provided that interest on bad or doubtful debts made by RBI-regulated NBFCs will be taxed on receipt basis and deduction on such interest payment will also be allowed to borrowers on payment basis if it is actually paid on or before the due date of furnishing the return of income of the relevant previous year.
- **Relaxation in conditions of special taxation regime for offshore funds-** Section 9A of the Act which provides for the conditions under which the operation of an offshore fund will not constitute business connection in India has been amended to provide that minimum corpus amount of ₹ 100 crore can be met by a new fund, either within six months of it being set up or by the end of the financial year, whichever is later and the renumeration paid to the fund manager should be at least equivalent to the amount calculated as per the prescribed manner.

- **Promotion of Electric Vehicles** – Section 80EEB has been inserted to the Act to provide deduction in respect of interest on loan taken for purchase of an electrical vehicle from any financial institution up to a maximum of ₹ 1,50,000/- subject to the condition that the loan has been sanctioned during the period beginning on the 01.04.2019 to 31.03.2023.
- **Exemption of certain interest income of a non-resident -** In order to incentivize low cost foreign borrowings, section 194LC and section 10 of the Act have been amended to provide that the interest income on account of interest payable by an Indian company or a business trust to a non-resident, including a foreign company, in respect of rupee denominated bond issued outside India during the period 17.09.2018 to 31.03.2019 shall be exempt.
- **Housing for All-** For realization of the goal of affordable housing for all, section 80IBA of the Act has been amended to extend the profit linked deduction up to 31.03.2020 for developers of affordable housing projects. Section 80EEA has also been amended to provide an additional deduction of up to ₹ 1,50,000/- for interest paid on loans borrowed up to 31.03.2020 for purchase of an affordable house valued up to ₹ 45 lakh.
- **Incentives to National Pension System (NPS) subscribers -** The limit of exemption has been increased to 60 per cent of the total amount payable to the person at the time of closure or his opting out of the NPS scheme. Section 80 CCD has been amended to increase the limit from 10 to 14 per cent of contribution made by the Central Government to the account of its employee. In addition, any amount paid or deposited by a Central Government employee as a contribution to Tier-II account of the new pension scheme shall be eligible for deduction under section 80C subject to the specified conditions.
- **Incentives for start-ups –** To facilitate ease of doing business in the case of an eligible start-up, it has been provided to allow previous year losses to be carried forward and set off against the income of the previous year if the existing shareholders continue as shareholders in the closely held eligible start-up, irrespective of the change in shareholding pattern. Further the period of exemption of capital gains arising from sale of residential house for investment in start-ups up has been extended up to 31.3.2021.
- **Incentives for Category II Alternative Investment Fund (AIF)-** In order to facilitate venture capital undertakings, section 56 of the Act has been amended to exempt Category II AIF from payment of tax on the excess amount of consideration received, in case when the aggregate consideration received for issue of shares exceeds the fair market value.
- **Incentive for resolution of distressed companies –** It has been provided that distressed companies whose Board of Directors have been suspended by the NCLT and temporary directors have been appointed on the recommendation of the Central Government and a change in the shareholding has taken place in accordance with a resolution plan approved by NCLT, then such companies will be allowed to carry forward and set off their losses.
- **Exemption from deeming of fair market value of shares for certain transactions -** It has been provided that certain class of persons will be exempted from the provisions relating to deeming of fair market value of shares while computing capital gains and deemed gift, in case the parties to the transaction have no control over the determination

of price of shares.

- **Tax on buy-back of shares of listed companies-** Section 115QA of the Act has amended to provide that tax on the buy-back of shares of listed companies will be applicable. The Taxation Laws Amendment, Act (2019) (TLAA) amended the date of effectivity to provide that buy-back tax on listed shares will not apply in case of buy-backs announced on or before 05.07.2019.
- **Cancellation of registration of exempt institution-** It has been provided that a charitable institution/trust which is exempt under the Act, is required to comply with the provisions of any law which is material for its purpose, violation of which will lead to cancellation of the registration.
- **Facilitating demerger of Ind-AS compliant companies**- Section 2 of the Act has been amended to provide that in case of demerger, the requirement of recording property and liabilities at book value by the resulting company shall not be applicable in a case where the property and liabilities of the undertakings received by it are recorded at a value different from the value appearing in the books of account of the demerged company immediately before the demerger in compliance to the Indian Accounting Standards.
- **Modification of return of income filed in consequence to signing of the Advance Pricing Agreement (APA)** - Section 92CD of the Act has been amended to clarify that in cases where assessment or reassessment has already been completed and modified return of income has been filed by the tax payer pursuant to signing of APA, the total income is to be computed accordingly by the Assessing Officer.
- **Secondary Adjustment-** In order to make the secondary adjustment regime more effective and easy to comply with, section 92CE has been amended to, *inter alia*, provide that the excess money may be repatriated from any of the associated enterprises of the assessee which is not resident in India and in a case where the excess money or part thereof has not been repatriated in time, the assessee will have the option to pay additional income-tax at the rate of eighteen per cent on such excess money or part thereof which will be considered as the final payment of tax and no credit shall be allowed in respect of the amount of tax so paid.
- **Concessional rate of Short-term Capital Gains (STCG) tax to certain equity-oriented fund of funds –** In order to incentivise fund of funds set up for disinvestment of Central Public Sector Enterprises (CPSEs), the concessional rate of tax for short-term capital gains has been extended in respect of transfer of units of such fund of funds.
- **Pass through of losses in cases of Category I and Category II AIF -** Section 115UB of the Act has been amended to provide pass through of certain losses in cases of Category I and Category II AIF.
- **Definition of the "accounting year" in section 286 –** Section 286 of the Act which provides for furnishing of a Country-by Country Report (CbCR) by a parent entity or alternate reporting entity (ARE) resident in India of an international group of which it is a constituent , has been amended to provide that in case when the CbCR is to be furnished by the ARE, the reporting accounting year shall be the one applicable to the parent entity.

- **Maintenance of Master File-** Section 92D of the Act has been amended to provide that the Master File will be maintained by a constituent entity of an international group resident in India, even when there is not international transaction undertaken by the constituent entity.
- **Determination of penalty for under reporting of income –** Section 270A of the Act has been amended to provide a manner of computing the quantum of penalty in a case where the person has under-reported income and furnished his return for the first time under section 148.
- **Prosecution in case of failure to file return of income-** It has been provided that prosecution for failure of filing return of Income shall not be initiated in cases where the total tax payable after adjusting for self-assessment tax and tax collected at source in addition to other taxes already paid does not exceed ₹ 10,000/-.
- **Recovery of tax in pursuance of agreements with foreign countries-** It has been provided that in case where a tax defaulter is resident in India or other any country, the relevant tax recovery officer having jurisdiction over that person can recover tax against the properties of the said defaulter (irrespective of whether details of property are available or not) in respective countries.
- **Claim of refund-** The procedure for claiming of refund has been simplified by amending section 239 of the Act so as to provide that every claim for refund shall be made by furnishing return in accordance with the provisions of section 139 of the Act.

B. Other Measures taken during the year 2019-20

- The Taxation Laws (Amendment) Ordinance, 2019 was promulgated on 20.09.2019. Subsequently the Ordinance has been replaced by the TLAA which provides that:
    - existing domestic companies may opt for a concessional tax regime at an effective tax rate of 25.17% (22% tax, plus surcharge at 10% and cess at 4%), if they do not avail the specified deductions and incentives and fulfill certain pre-conditions.
    - new manufacturing domestic companies set up on or after 01.10.2019 and which commence manufacturing or production by 31.03.2023 may opt to be taxed at an effective tax rate of 17.16% (15% tax, plus surcharge at 10% and cess at 4%), provided that they do not avail of any specified incentives or deductions and fulfill certain pre-conditions.
    - the companies opting for the concessional tax regime will not be required to pay MAT.
    - for companies which do not opt for the concessional tax regimes, the rate of MAT has been reduced from 18.5% to 15.5%.
    - the enhanced surcharge introduced vide the Finance (No.2) Act, 2019 will not apply on the capital gains arising on account of transfer of certain securities and units on which securities transaction tax has been paid. The enhanced surcharge will also not apply to the capital gains income of FPIs arising out of transfer of any security including derivatives, having concessional tax regime

- **Prescribed electronic modes for purpose of section 269SU** – It has been notified vide Notification No. 105/2019 dated 30.12.2019 through GSR. 960 (E) published in the Official Gazette, that with effect from 01.01.2020, any debit card powered by Rupay, Unified Payments Interface(UPI)(BHIM-UPI) and Unified Payments Interface Quick Response Code (UPI QR Code)(BHIM-UPI QR Code) shall be the prescribed electronic modes as mandated under section 269SU, for accepting payments by businesses whose total sales exceeds ₹ 50 crore in the year immediately preceding the financial year.

- **Enhanced Depreciation on Automobiles** - In order to provide relief to tax payers purchasing new vehicles for the purpose of business or profession, enhanced depreciation of 30 % for motor cars and 45 % for motors buses/lorries has been provided with effect from 23.08.2019 vide Notification no. 69/2019 dated 20.09.2019 through GSR No. 679(E) published in the Official Gazette.

- **E-Assessment Scheme-2019-** In order to remove the existing human interface and personal interaction prevailing in the assessment procedure, a scheme of faceless assessment in electronic mode involving no human interface has been notified vide Notification No. 61/2019 dated 12.09.2019 through **S.O. 3264(E) published in the Official Gazette.**

- **Simplification of compliance norms for Startups -** A Start-up Cell under the aegis of Member (IT&C), CBDT has been constituted to redress grievances and to address various tax related issues in the cases of Start-ups. A consolidated circular clarifying the provisions pertaining to assessment of Startups has also been issued which clarifies that the outstanding income-tax demand relating to additions made relating to angel tax would not be pursued and no communication in respect of outstanding demand would be made with the Start-up entity. Further, other income-tax demand of the Start-ups would not be pursued unless the demand was confirmed by ITAT.

- **Document Identification Number (DIN)-** Every communication of the department whether it is related to assessment, appeals, investigation, penalty, and rectification among other things issued from 01.10.2019 onwards will mandatorily have a computer-generated unique document identification number (DIN). Any communication such as tax notice, summon or letter issued to any corporate or individual tax payer will be invalid without this number.

- **Reduction in Litigation -** The monetary thresholds for filing of departmental appeals have been raised from ₹ 20 lakh to ₹ 50 lakh for appeal before ITAT, from ₹ 50 lakh to ₹ 1 crore for appeal before High Court and from ₹ 1 crore to ₹ 2 crore for appeal before Supreme Court. Pending appeals involving tax effect lower than these thresholds shall also be withdrawn or not pressed by the Department.

- **Relaxation in norms for prosecution –** It has been provided that prosecution in appropriate cases will be launched only if the quantum of tax evasion is above a minimum threshold. Further, in cases where evasion is below the minimum monetary threshold, launch of prosecution has to be approved by a collegium comprising of two high ranking officers. Further, the 12-month time limit for filing compounding application has been relaxed as a one-time measure, to mitigate hardship in genuine cases.

03 CHAPTER

External Sector

India's external sector gained further stability in the first half of 2019-20, witnessing improvement in Balance of Payments (BoP) position. India's foreign reserves are comfortably placed at US$ 461.2 billion as on 10th January, 2020. The improvement in BoP was anchored by narrowing of current account deficit (CAD) from 2.1 per cent in 2018-19 to 1.5 per cent of GDP in H1 of 2019-20. The contraction of CAD has emanated from easing of crude prices. Export growth remains subdued with external demand weakened by slowdown in global investment, output and heightened trade tensions, notwithstanding resilient service exports. Increase in service imports is inevitable with increasing foreign direct investment (FDI) and 'Make in India'. Petroleum products, precious stones, drug formulations & biologicals, gold and other precious metals continue to be top exported commodities, with fastest growth seen in drug formulations & biologicals in 2019-20 (April to November). Crude petroleum, gold, petroleum products, coal, coke & briquittes constitute top import items, with fastest growth seen in electronics in 2019-20 (April to November). India's top five trading partners continue to be USA, China, UAE, Saudi Arabia and Hong Kong. Further improvement in BoP was contributed by easing of external financial conditions, impressive FDI, rebounding of portfolio flows and receipt of robust remittances. Net FDI inflows have continued to be buoyant in 2019-20 attracting US$ 24.4 billion in the first eight months, higher than the corresponding period of 2018-19. This reflects a global sentiment that increasingly believes in India's growth story and reform measures being undertaken by the government. External debt as at end September, 2019 remains low at 20.1 per cent of GDP. India's Net International Investment Position (NIIP) to GDP ratio has also improved compared to 2018-19. After witnessing significant decline since 2014-15, India's external liabilities (debt and equity) to GDP has increased at the end of June, 2019 primarily driven by increase in FDI, portfolio flows and external commercial borrowings (ECBs).

OVERVIEW: INDIA's BALANCE OF PAYMENTS

3.1 Almost synchronous with the acceleration in GDP growth to 7.5 per cent in 2014-19, the Balance of Payments (BoP) position of India improved from accumulated foreign reserves of US$ 304.2 billion at end of 2013-14 to US$ 412.9 billion at end of 2018-19. For an open emerging market economy like India, improvement in BoP position is critical. It ensures financing of essential imports like crude oil and other such inputs that drive the manufacturing sector which provides livelihood to crores of people in the country. For a country that has mostly remained in current account deficit, injecting into its income stream not

as much earnings from abroad as permitting leakage from it through payments overseas, a continuous improvement in its BoP position is a reflection of a global sentiment that increasingly believes in India's growth story. This belief will hold the country in good stead when it looks to access foreign savings to meet the investment requirement for a US$ 5 trillion-economy.

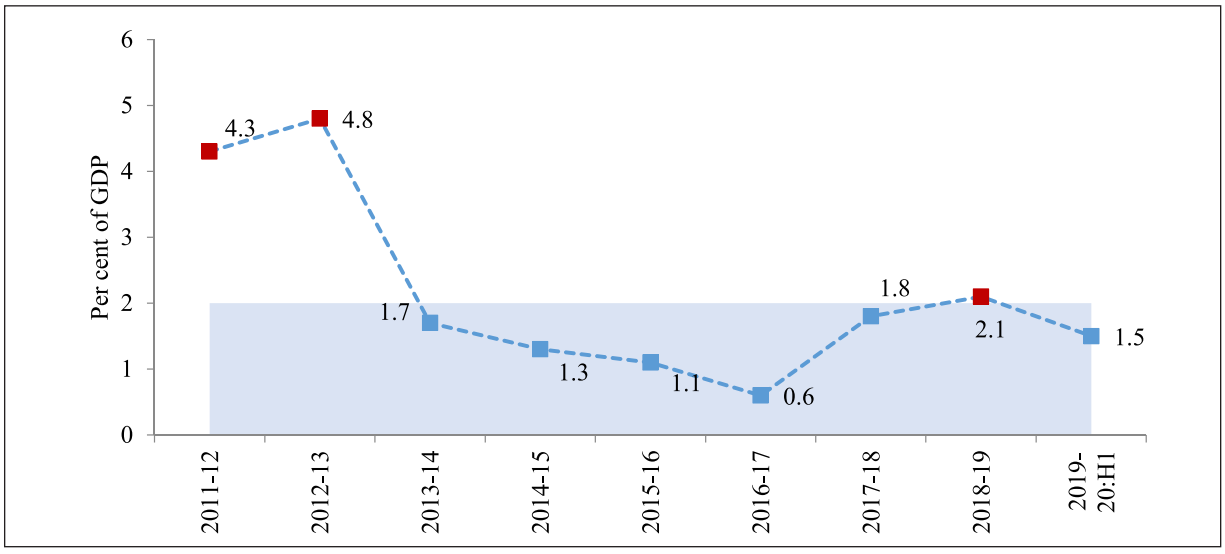
3.2 Despite GDP growth decelerating in 2019-20 the global sentiment has remained positive. The BoP has improved from US$ 412.9 billion of forex reserves in end March, 2019 to US$ 433.7 billion in end September, 2019 and further to US$ 461.2 billion as on 10th January, 2020. Yet the improvement has an undercurrent of vulnerability. Unlike in 2014-19 when a sharp decline in crude price combined with high FDI inflows to engineer an improvement in BoP position, the improvement in the first half of 2019-20 has emanated from a lower growth of imports following a sharp deceleration in GDP growth and some easing of crude prices besides continued acceleration in FDI inflows. The weakening of the GDP growth poses a challenge to both net FDI and net FPI inflows in improving the BoP position of the country. Should such inflows become smaller on the back of growing pessimism on India's prospective growth, the BoP position may worsen making access to foreign savings much more difficult in times to come.

3.3 Some of the components of BoP have contributed to improving the BoP position and some have not, both in the period 2014-19 and in 2019-20. The components that have contributed favorably will need to be further enhanced and those that have not will need to be re-energized, through an effective mix of policies. The data pertaining to 2019-20 is provisional. The balance of payments table from 2014-19 to 2019-20 (April to September) is placed at Annexure I.

A. Current Account Deficit (CAD)

3.4 An increase in CAD as a ratio to GDP worsens the BoP by drawing down on forex reserves or building the potential to worsen it by increasing the external debt burden. Yet that has not been the case with CAD to GDP ratio significantly improving from 2009-14 to 2014-19 (Table 1). The improvement has continued going forward with the CAD to GDP ratio lower in the first half of 2019-20 as compared to 2018-19 (Figure 1).

Figure 1: Current Account Deficit (CAD) as per cent of GDP



Source: Reserve Bank of India.

Table 1: Current account deficit (CAD) as per cent of GDP

2009-14	2014-19	2018-19	2019-20 H1
-3.3	-1.4	-2.1	-1.5

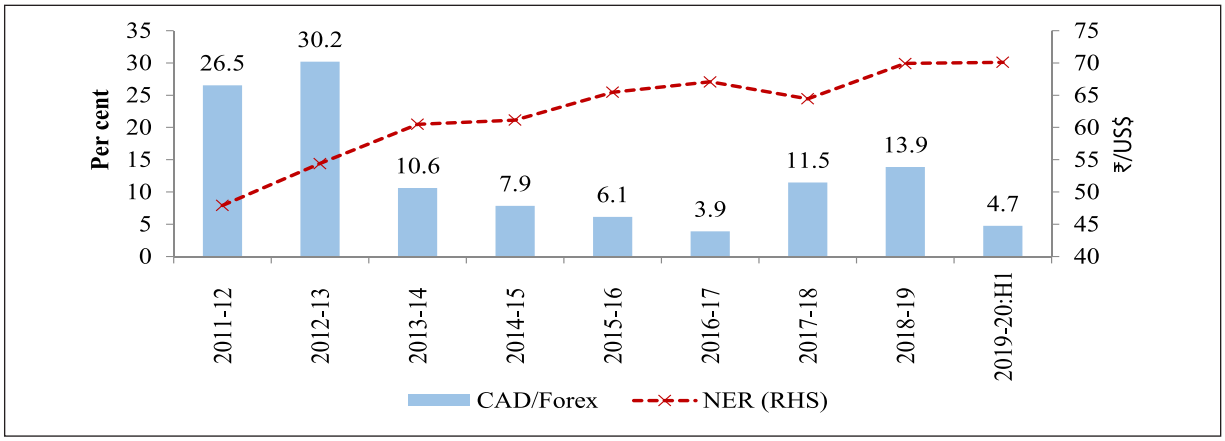
Source: Reserve Bank of India.

3.5 The backup to CAD is the forex reserves with increase in CAD/forex ratio reflecting the decreasing strength of the backup. The decreasing strength spills into depreciating the currency. The ratio increased from 10.6 per cent in 2013-14 to 13.9 per cent in 2018-19 and depreciated the rupee from ₹ 60.50:1 US$ to ₹ 69.92:1 US$ between the two points in time (Figure 2). As the Nominal Exchange Rate (NER) has more or less stayed stable in 2019-20 it appears that the strength of the backup has not changed. Ceteris paribus, depreciation in NER makes imports costlier besides disincentivising foreign portfolio investors, which increases the pressure on BoP to worsen.

A.1 Merchandise Trade Deficit

3.6 Merchandise trade deficit is the largest component of India's current account deficit

Figure 2: Movements in CAD/Forex and NER



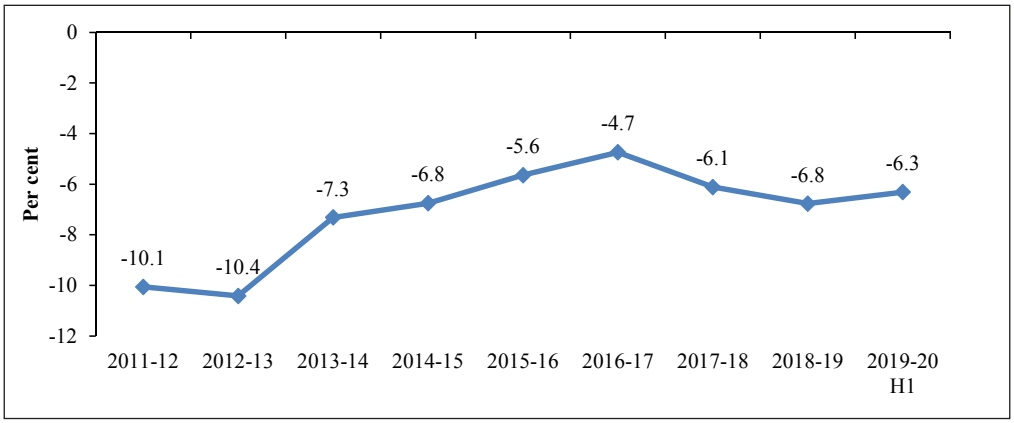
Source: Reserve Bank of India.

significantly impacting the BoP position. Over the recent years, the escalation of global trade tensions leading to slowdown in world trade has increased the fragility of India's trade deficit with the potential of worsening the BoP. In sync with an estimated 2.9 per cent growth in global output in 2019, growth in global trade is estimated to grow at 1.0 per cent after having peaked in 2017 at 5.7 per cent. The slowdown of world trade reflects a confluence of factors, including a slowdown in investment, reduced spending on heavily traded capital goods and a sizable decline in trade in cars and car parts. Global trade growth is however projected to recover to 2.9 per cent in 2020 with recovery in global economic activity. However, there is heightened uncertainty regarding the future structure of global value chains and the repercussions of trade tensions on technology, which may continue to weigh down the growth in world trade.[1]

3.7 On average, India's merchandise trade balance has improved from 2009-14 to 2014-19 (Table 2), although most of the improvement in the latter period was on account of more than fifty per cent decline in crude prices in 2016-17. Lately the improvement in trade balance has positively contributed to the improvement in BoP position (Figure 3).

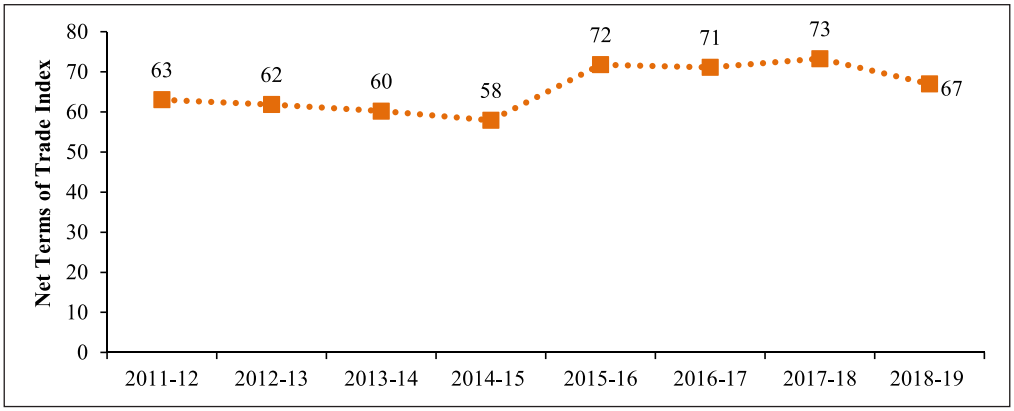
1. Arguments guided by World Economic Outlook of IMF.

Figure 3: Merchandise Trade Balance as per cent of GDP



Source: Department of Commerce & Central Statistics Office (CSO).

Figure 4: Terms of Trade (Base Year 1999-2000)



Source: Directorate General of Commercial Intelligence and Statistics (DGCI&S), Kolkata.

Table 2: Merchandise Trade Balance as per cent of GDP

2009-14	2014-19	2018-19	2019-20 H1
-8.6	-6.0	-6.8	-6.3

Source: Department of Commerce & Central Statistics Office (CSO).

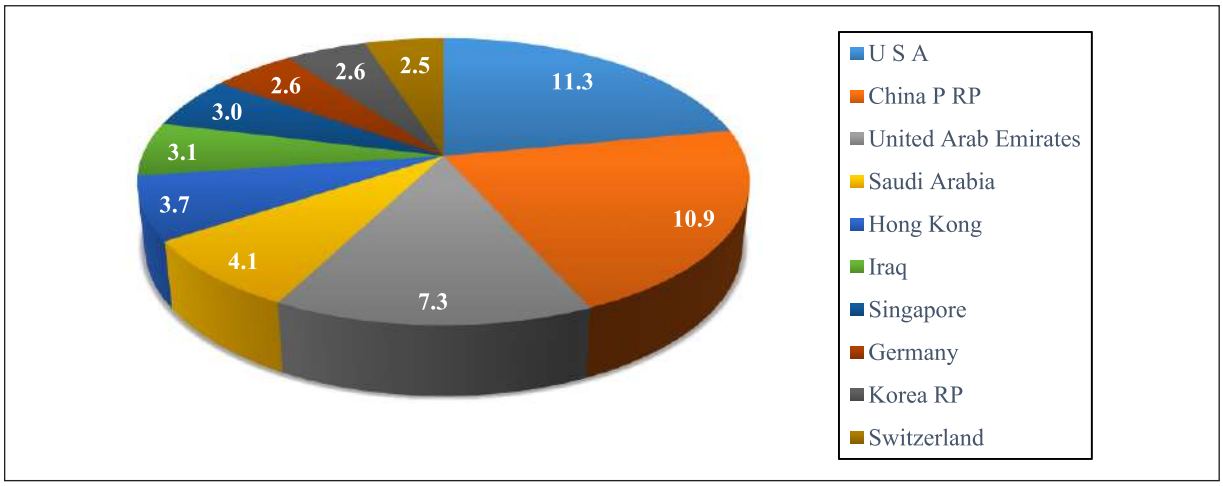
3.8 The adverse movement in Net terms of trade[2] (NTT) between export and import prices may immiserize exporters but can lead to improvement in merchandise trade deficit as costlier imports lead to smaller purchase of quantity imports. Since 2017-18 the adverse movement has started which has contributed to the improvement in trade balance in the BoP (Figure 4).

3.9 India's top 10 trading partners during 2019-20 (April-November) jointly account for more than 50 per cent[3] of India's total merchandise trade (Figure 5).

3.10 The bilateral trade position with respect to top trading partners over a period of time

2. Net terms of trade (NTT) of a country is the ratio of unit value index of export to that of import.
3. Exports plus imports from a trade partner as a share of total imports plus exports of India determines the share of the trade partner in India's merchandize trade.

Figure 5: Top 10 Trading Partners of India in 2019-20 (April-November)(in Per cent)



Source: Computed from latest data available on Department of Commerce's website, 'https://commerce-app.gov.in/eidb/default.asp'.

is shown in Table 3. With two top trading countries i.e. USA and United Arab Emirates, India has consistently run trade surplus since 2014-15. On the other hand, India has trade deficit continuously since 2014-15 with respect to other major trading partners i.e. China PRP, Saudi Arabia, Iraq, Germany, Korea RP, Indonesia and Switzerland. India had trade surplus with Hong Kong and Singapore till 2017-18, before it changed to trade deficit in 2018-19. The bilateral imbalances have remained stable in most cases.

Table 3: Bilateral Trade Surplus/Deficit (Sorted on Year: 2018-19)

(Values in US$ Billion)

	Country	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20 (April-November)
Trade Surplus Countries	U S A	20.63	18.55	19.90	21.27	16.86	10.91
	United Arab Emirates	6.89	10.87	9.67	6.41	0.34	0.25
Trade Deficit Countries	China PRP	-48.48	-52.70	-51.11	-63.05	-53.57	-35.32
	Saudi Arabia	-16.95	-13.94	-14.86	-16.66	-22.92	-14.32
	Iraq	-13.42	-9.83	-10.60	-16.15	-20.58	-13.98
	Germany	-5.25	-5.00	-4.40	-4.61	-6.26	-3.09
	Korea RP	-8.93	-9.52	-8.34	-11.90	-12.05	-7.80
	Indonesia	-10.96	-10.31	-9.94	-12.48	-10.57	-6.99
	Switzerland	-21.06	-18.32	-16.27	-17.84	-16.90	-11.97
	Hong Kong	8.03	6.04	5.84	4.01	-4.99	-3.88
	Singapore	2.68	0.41	2.48	2.74	-4.71	-3.15

Source: Computed from latest data available on Department of Commerce's website, 'https://commerce-app.gov.in/eidb/default.asp'.

A.1.1 Merchandise Exports

3.11 An increase in merchandise exports to GDP ratio has a net positive impact on BOP position. Over the years the merchandise exports to GDP ratio has been declining, entailing a negative impact on the BoP position (Table 4 and Figure 6).

Table 4: Merchandise Exports as per cent of GDP

2009-14	2014-19	2018-19	2019-20 H1
15.7	12.7	12.1	11.3

Source: Department of Commerce & Central Statistics Office (CSO).

3.12 The slowdown of world output has definitely had an impact on reducing the export to GDP ratio, particularly from 2018-19 to H1 of 2019-20. The appreciation in the real exchange rate (Table 5 and Figure 6) has also contributed to the declining exports to GDP ratio.

Table 5: Real Effective Exchange Rate (Base 2004-05=100)

2009-14	2014-19	2018-19	2019-20 H1
107.1	113.9	114.0	116.5

Source: Reserve Bank of India

3.13 The impact on India's exports of a slowdown in world output and appreciation of India's real exchange rate has been an outcome of increasing integration of India's exports with global value chain. The integration with the global value chain has increased following a relatively higher growth in manufacturing exports. In view of government's growing emphasis on "Make in India" programme, increase in the share of manufacturing exports in total exports is inevitable (Table 6 and Figure 7).

Table 6: India's Manufactured exports share in Total merchandise exports

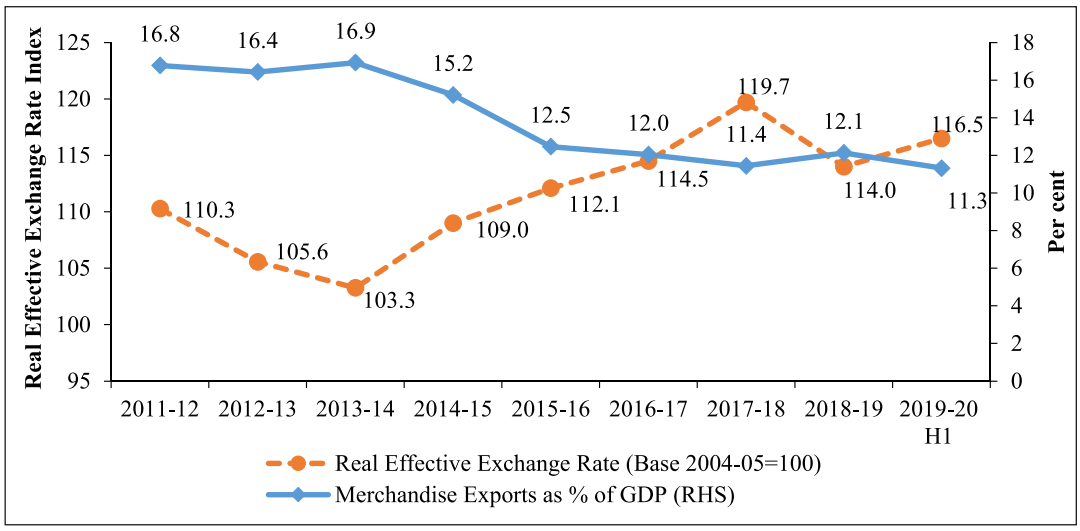
2009-13	2014-18	2017	2018
66.5	72.8	74.4	72.8

Source: Trademap.org.

Note: The years mentioned are calendar years.

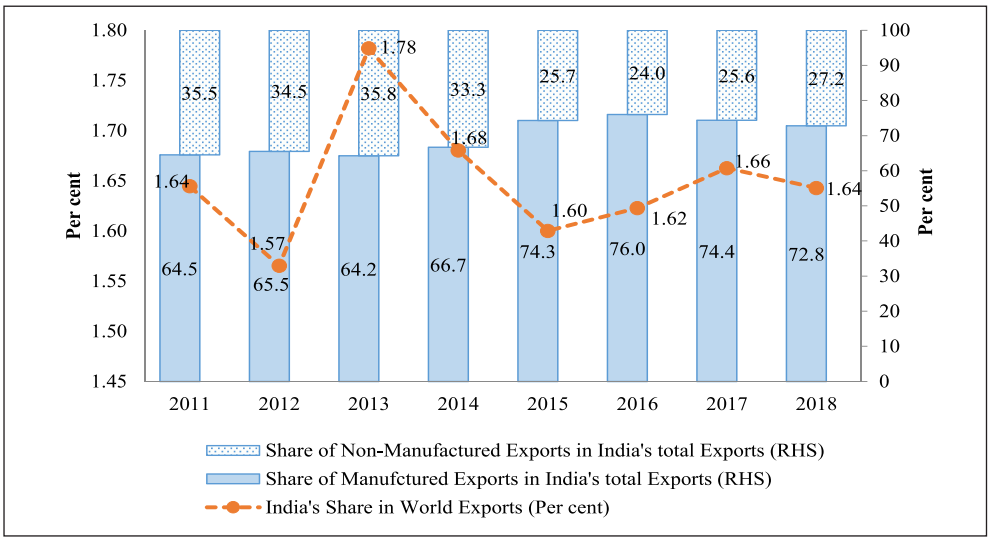
3.14 Petroleum, Oil and Lubricants (POL) exports have a dominant share in India's export basket. However, since petroleum exports are a value-added pass through of petroleum imports, exports net of POL

Figure 6: Movement in 36 Currency REER (Base 2004-05) & Merchandise Exports as per cent of GDP



Source: Reserve Bank of India, Department of Commerce & Central Statistics Office (CSO).

Figure 7: India's share in World Exports, Share of Manufactured &Non-Manufactured Items in India's Total Merchandise Exports



Source: Trademap.org.
Note: The years mentioned are calendar years.

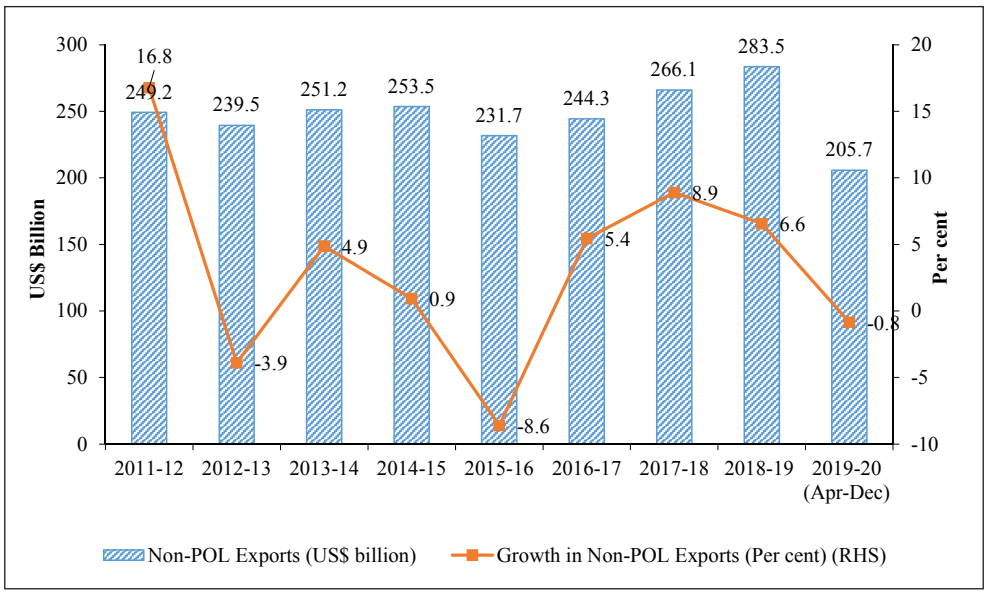
exports reflects how broad-based India's exports are in generating value addition in the country. Growth in Non-POL exports dropped significantly from 2009-14 to 2014-19 (Table 7 and Figure 8). This is a challenge that needs to be addressed in times to come.

Table 7: Growth of Non-POL Exports

2009-14	2014-19	2018-19	2019-20 (Apr-Dec)
11.0	2.6	6.6	-0.8

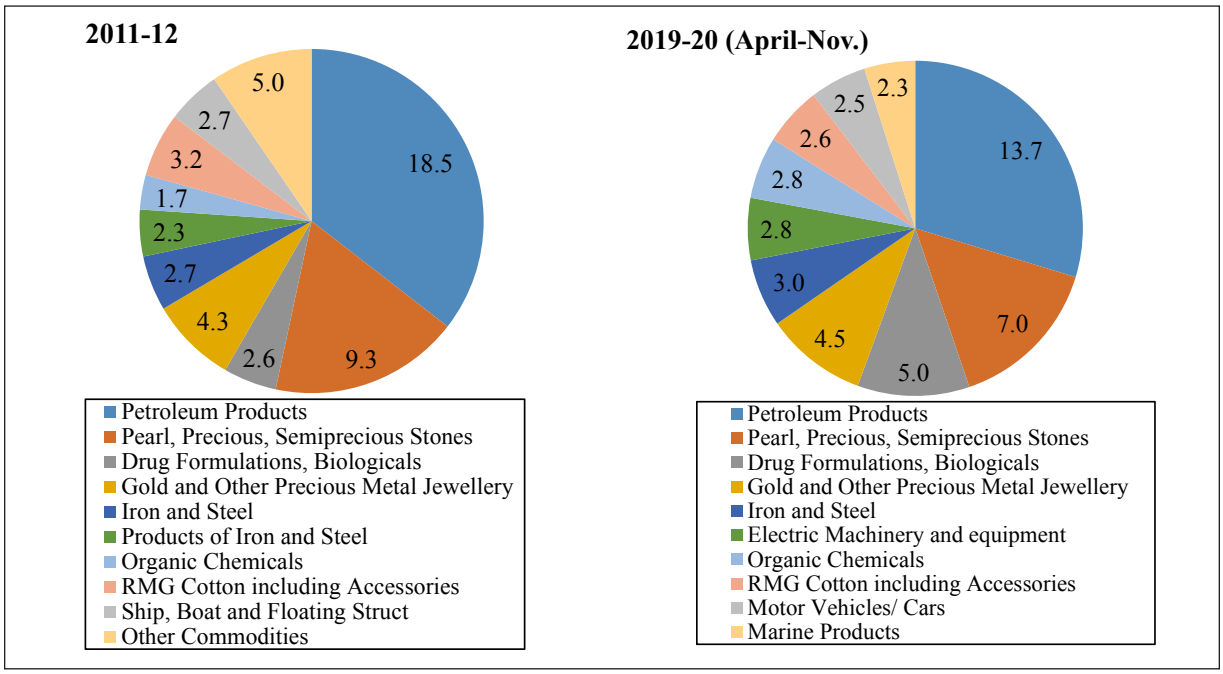
Source: Department of Commerce.

Figure 8: Non-POL Exports and its Growth rate



Source: Department of Commerce.

Figure 9: Commodity-wise Composition of Exports (By Share in Per cent)

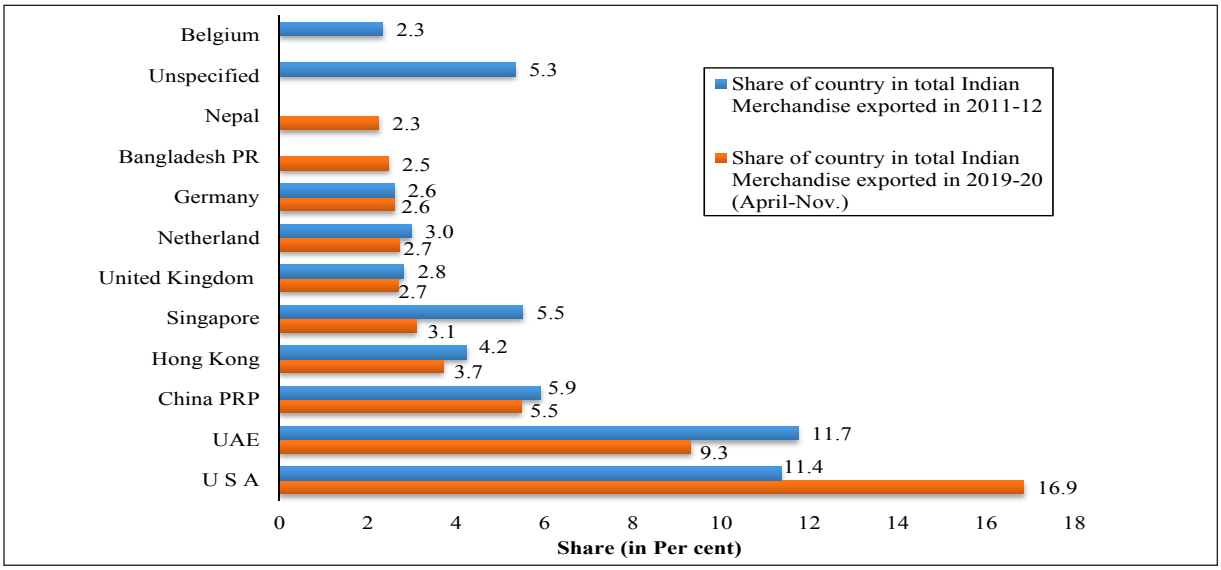


Source: Department of Commerce.

3.15 In 2019-20 (April-November), petroleum products continued to be the largest exported commodity, in value terms. In terms of growth, it was drug formulations, biologicals which grew the highest between 2011-12 and 2019-20 (April-November) (Figure 9).

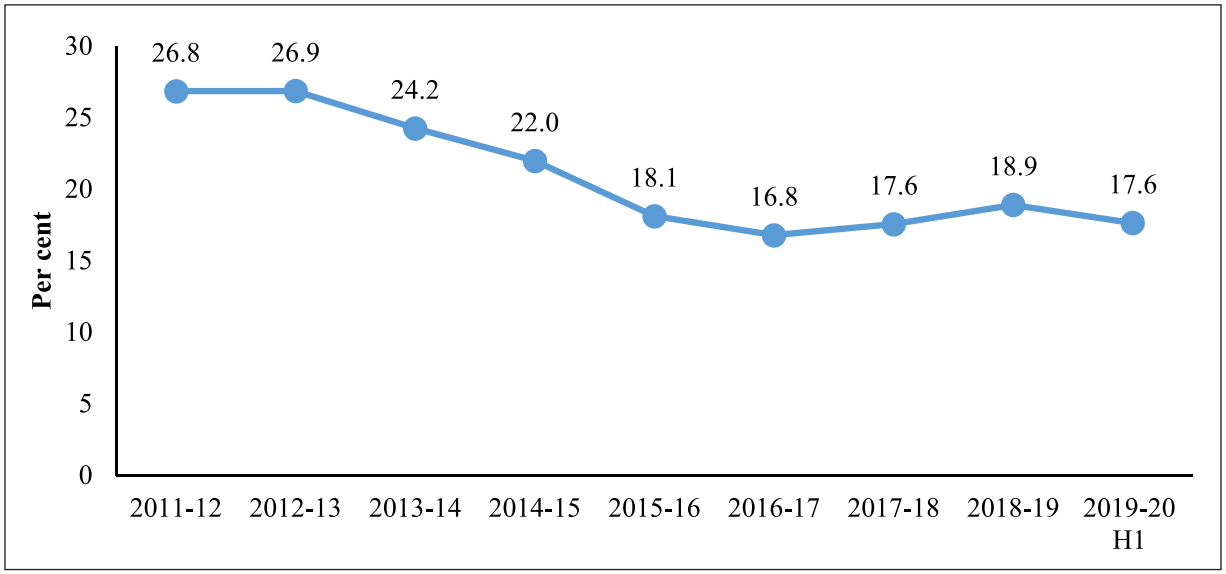
3.16 India's largest export destination country continues to be the United States of America (USA) in 2019-20 (April-November), followed by United Arab Emirates (UAE), China and Hong Kong. Between 2011-12 and 2019-20, India's exports to USA grew the highest (Figure 10).

Figure 10: Top 10 Export Destinations in 2011-12 and 2019-20 (April-November)



Source: Department of Commerce.

Figure 11: India's Merchandise Imports as percent of GDP



Source: Department of Commerce & Central Statistics Office (CSO).

A.1.2 Merchandise Imports

3.17 An increase in the merchandise imports to GDP ratio has a net negative impact on the BoP position. Over the years the ratio has been declining for India entailing a net positive impact on the BoP position (Table 8 and Figure 11).

3.18 Crude oil imports have a large presence in the import basket that correlates India's total imports with crude prices. Evidence also bears this out. As crude price rises so does the share of crude in total imports that increases imports to GDP ratio (Table 9 and Figure 12).

Table 8: India's Merchandise Imports as percent of GDP

2009-14	2014-19	2018-19	2019-20-H1
24.3	18.7	18.9	17.6

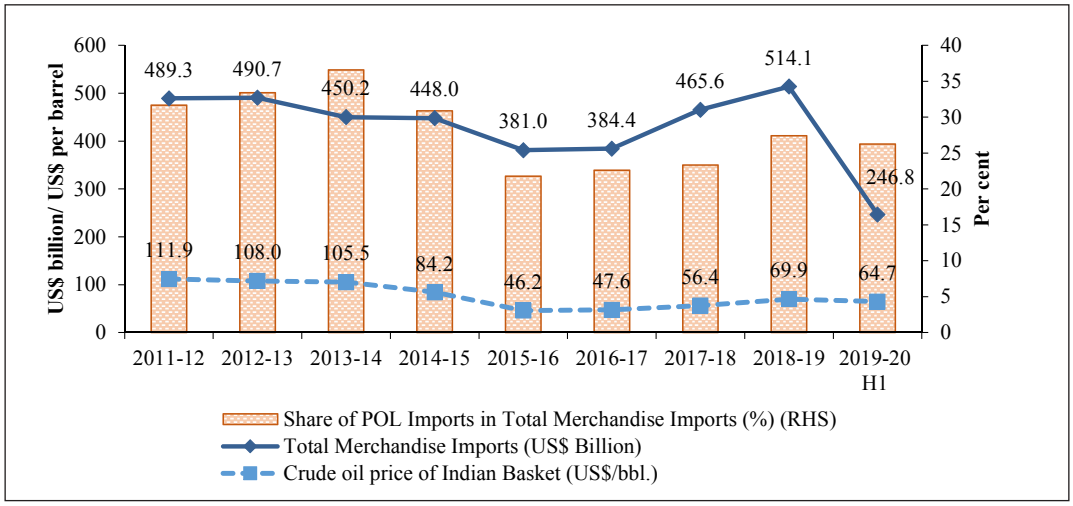
Source: Department of Commerce & Central Statistics Office (CSO).

Table 9: Share of POL Import in Total Imports and Crude Oil Price (Indian Basket)

Item	2009-14	2014-19	2018-19	2019-20-H1
Share of POL imports in total imports (per cent)	32.1	25.2	27.4	26.3
Crude oil price of Indian Basket (US$/bbl.)	96.0	60.8	69.9	64.7
Merchandise Imports as percent of GDP	24.3	18.7	18.9	17.6

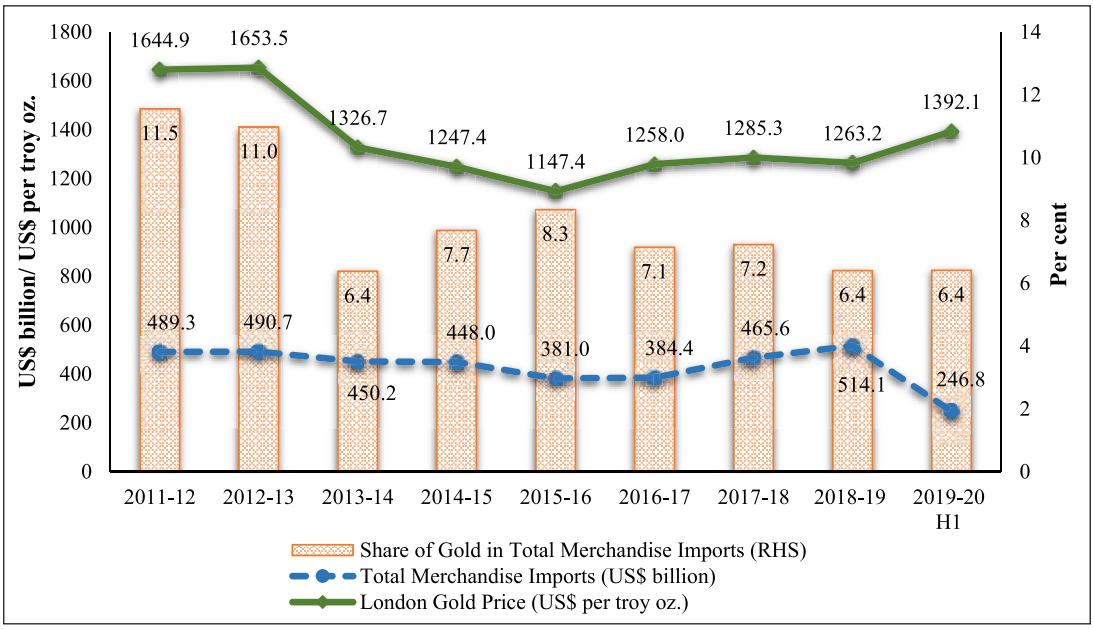
Source: Department of Commerce and Ministry of Petroleum and Natural Gas.

Figure 12: India's Imports, Share of POL import in Total Imports and Crude Oil Price



Source: Department of Commerce and Ministry of Petroleum and Natural Gas.

Figure 13: India's Gold Import Value and share vis-à-vis Gold Price



Source: Department of Commerce & World Bank Pink Sheet.

3.19 Gold imports also have a significant presence in the import basket that correlates India's total imports with gold prices. While broadly that has been true for the two five-year periods, 2009-14 and 2014-19, the share remained the same between 2018-19 and the first half of 2019-20, despite an increase in gold prices, possibly due to increase in import duty that reduced the import of gold (Table 10 and Figure 13).

3.20 Although a fall in merchandise imports to GDP ratio entails a net positive impact on the BoP position, it may be a reflection of a deceleration in GDP growth. Non-pol-non-gold imports are understood to be positively correlated with GDP growth. However, non-pol-non-oil imports fell as a proportion to GDP from 2009-14 to 2014-19 when GDP growth accelerated between the two periods

Table 10: Share of Gold Imports in Total Imports and London Gold Price

Item	2009-14	2014-19	2018-19	2019-20-H1
Share of gold imports in total imports (per cent)	10.0	7.4	6.4	6.4
London Gold Price (US$ per troy oz.)	1388.3	1240.3	1263.2	1392.1
Merchandise Imports as percent of GDP (per cent)	24.3	18.7	18.9	17.6

Source: Department of Commerce & World Bank Pink Sheet.

Table 11: Non-POL, Non- Gold Imports and Growth in Real GDP

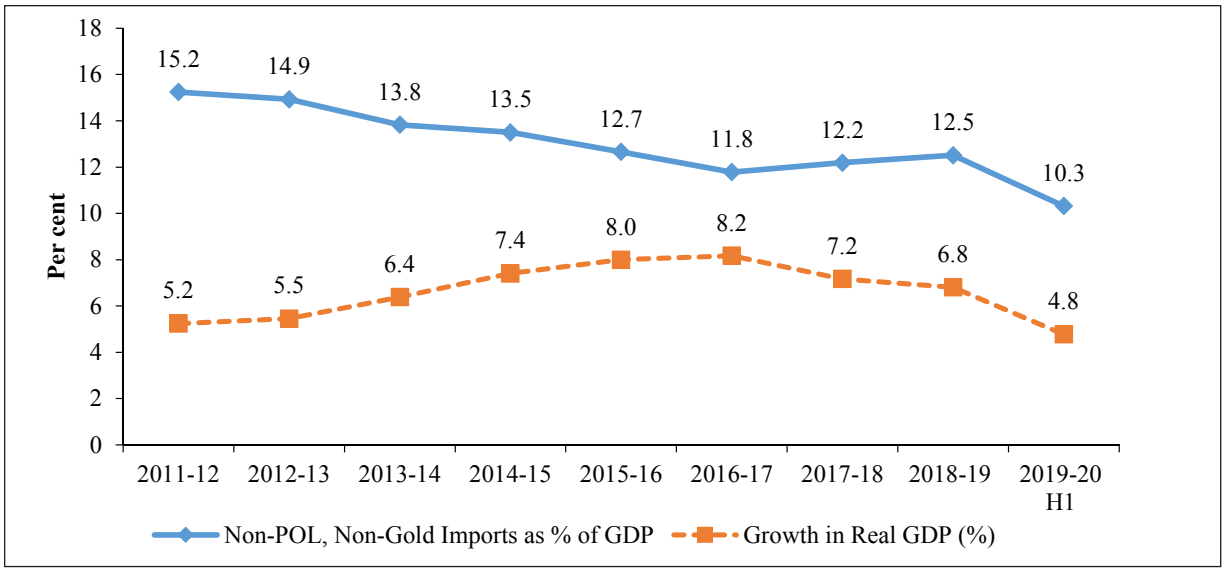
Item	2009-14	2014-19	2018-19	2019-20-H1
Non-POL, Non- gold imports as percent of GDP (per cent)	14.0	12.5	12.5	10.3
Growth in Real GDP (per cent)	6.7	7.5	6.8	4.8

Source: Department of Commerce & Central Statistics Office (CSO).

(Table 11). This may have happened because of consumption driven growth while the investment rate declined lowering non-pol-non-gold imports. Continuous decline in investment rate decelerated GDP growth, weakened consumption, dampened the investment outlook, which further reduced GDP growth and along with it non-pol-non-gold imports as a proportion of GDP from 2018-19 to H1 of 2019-20 (Figure 14).

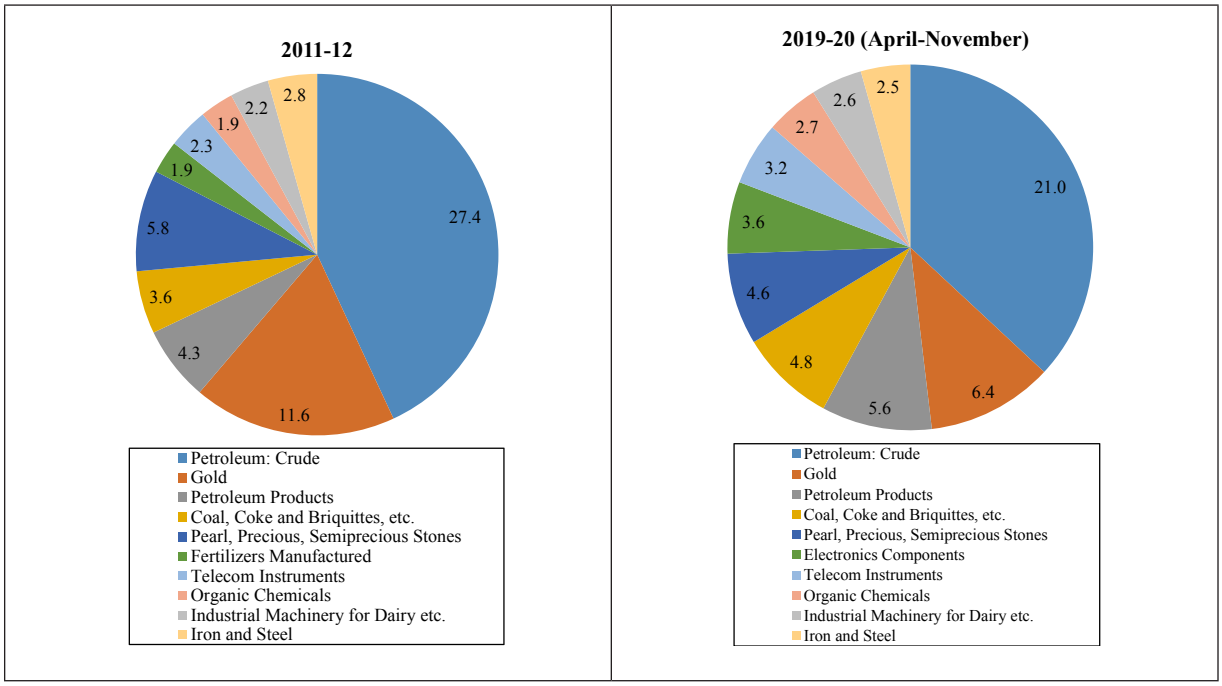
3.21 In the import basket of 2019-20 (April-November), crude petroleum had the largest share followed by gold and petroleum products. However, between 2011-12 and 2019-20, imports of Electronics grew the fastest from a negligible share to 3.6 per cent (Figure 15).

Figure 14: Non-POL, Non-Gold Imports as per cent of GDP and Growth in Real GDP



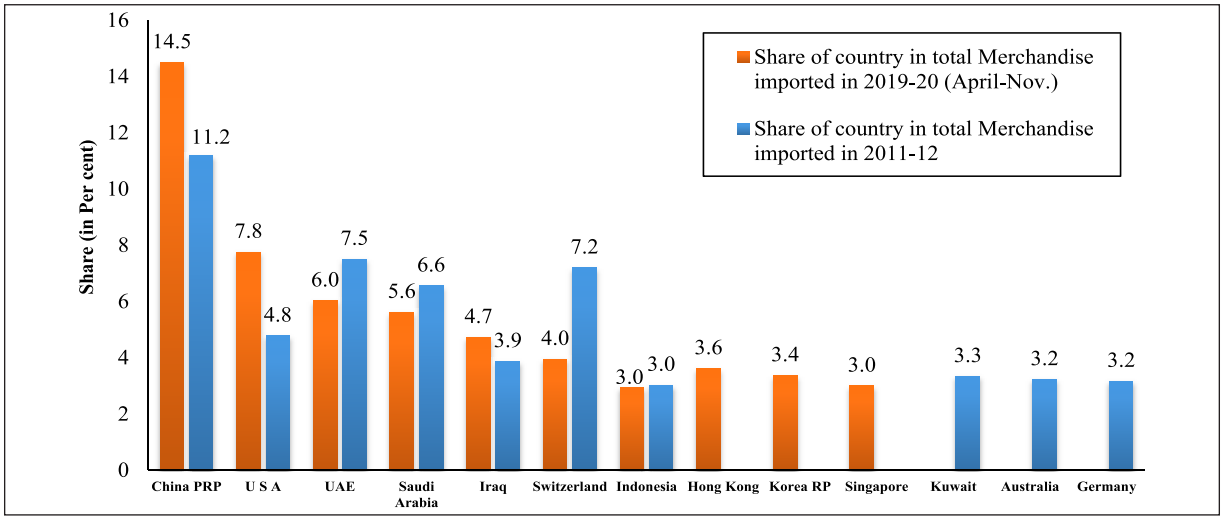
Source: Department of Commerce & Central Statistics Office (CSO).

Figure 15: Commodity-wise Composition of Imports in (By Share in Per cent)



Source: Department of Commerce.

Figure 16: Top 10 Import Origins of India in 2011-12 and 2019-20 (April-November) (By Share in Per cent)

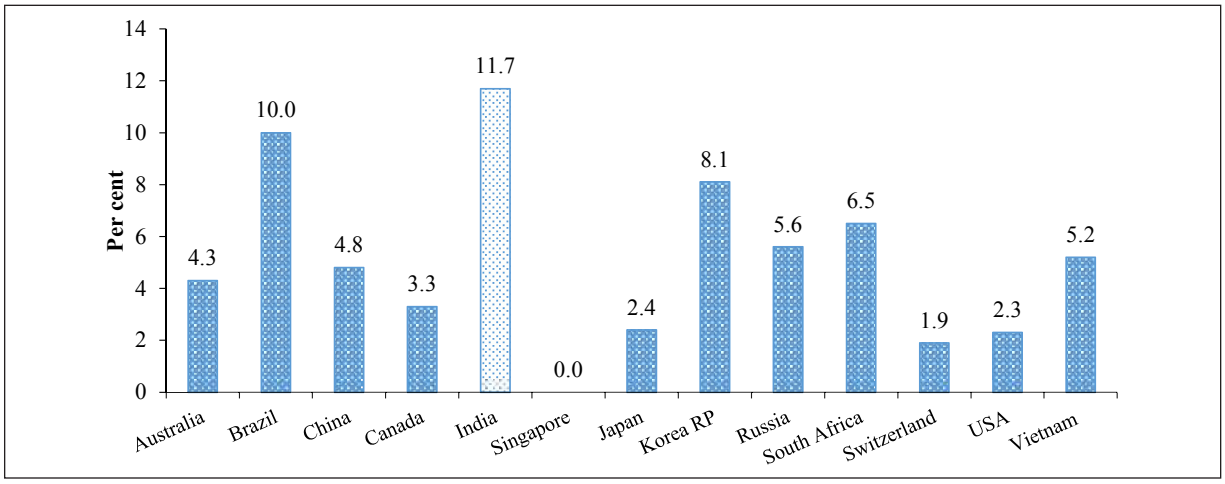


Source: Department of Commerce.

3.22 China continues to be the largest exporter to India followed by USA, UAE and Saudi Arabia. In recent times, Hong Kong, Korea and Singapore have also emerged as significant exporters to India (Figure 16).

3.23 In the presence of high custom duties, the impact of acceleration in the growth of GDP on increasing non-pol-non-gold imports is somewhat muted, which limits the worsening impact on BoP. On the other hand, when GDP growth decelerates, high tariffs amplify the impact on lowering non-pol-non-gold imports thereby making a more than proportionate improvement in BoP. In this regard, India has also benefitted with tariff levels steeper than that in other countries (Figure 17).

Figure 17: Trade Weighted Average Import Tariff (Total) during 2017



Source: WTO Tariff Profiles database, 'https://www.wto.org/english/res_e/statis_e/tariff_profiles_list_e.htm'

A.2 Net Services

3.24 Net services as a proportion of GDP reflects the net impact of service exports and imports on BoP. India's net services surplus has been steadily declining in relation to GDP (Table 12 and Figure 18).

Table 12: Net services as per cent of GDP

2009-14	2014-19	2018-19	2019-20 H1
3.3	3.2	3.1	2.9

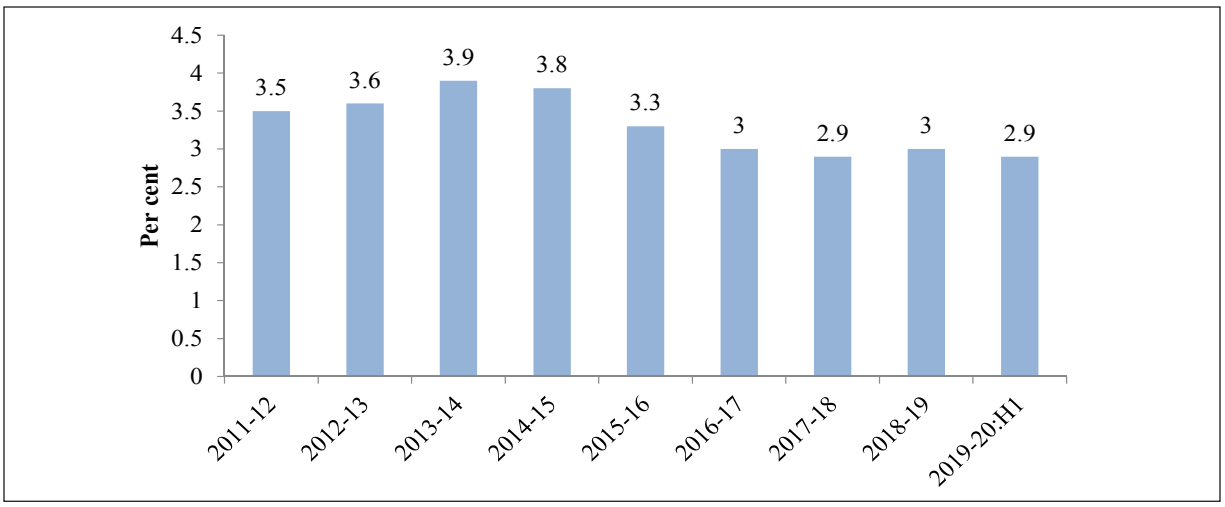
Source: Reserve Bank of India.

3.25 The surplus on net services has been significantly financing the merchandise trade deficit. The financing reached its peak to about two-thirds of merchandise deficit in 2016-17 before declining to less than half in the last couple of years (Figure 19). Given a steady decline in net services to GDP ratio, the extent of financing will steadily fall unless merchandise trade deficit improves in relation to GDP.

A.2.1 Service Exports

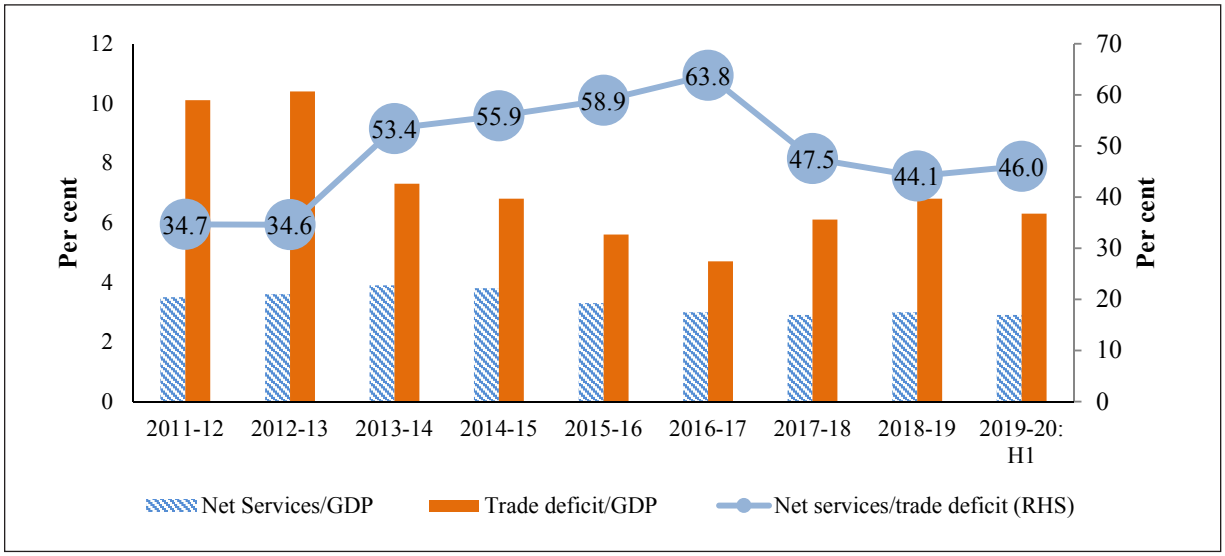
3.26 An increase in service exports to GDP ratio has a net positive impact on the

Figure 18: Net services as per cent of GDP



Source: Reserve Bank of India.

Figure 19: Net services and trade deficit



Source: Reserve Bank of India

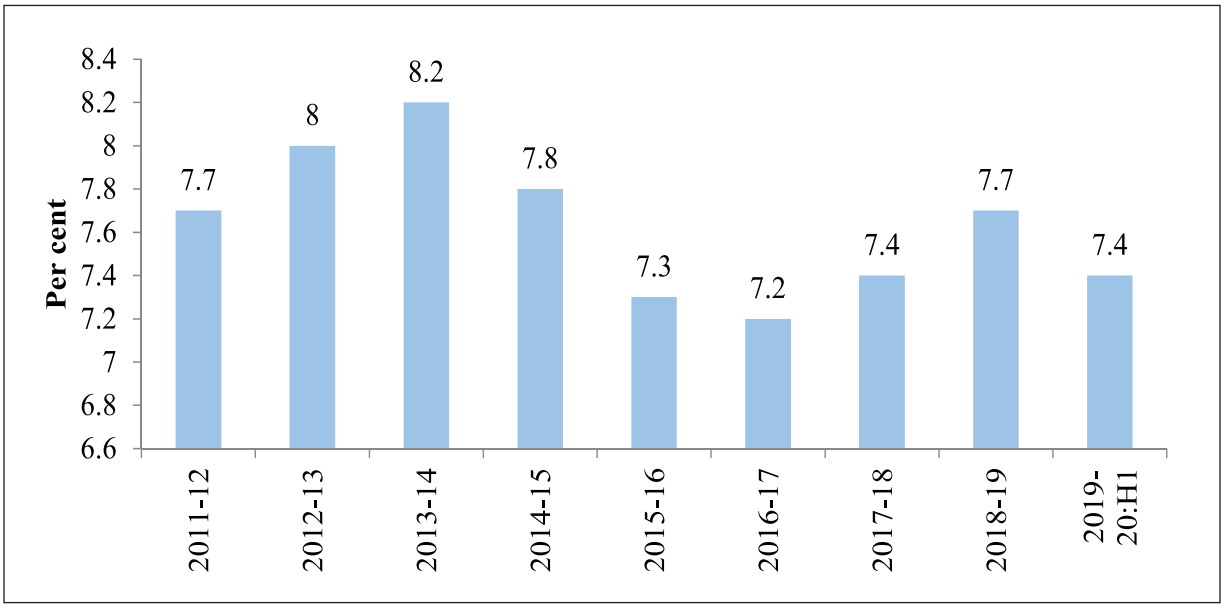
BoP position. India's service exports have however consistently hovered between 7.4 to 7.7 per cent of GDP reflecting the steadiness of this source in contributing to the stability of BoP (Table 13 and Figure 20).

Table 13: Service Exports as per cent of GDP

2009-14	2014-19	2018-19	2019-20 H1
7.7	7.5	7.7	7.4

Source: Reserve Bank of India.

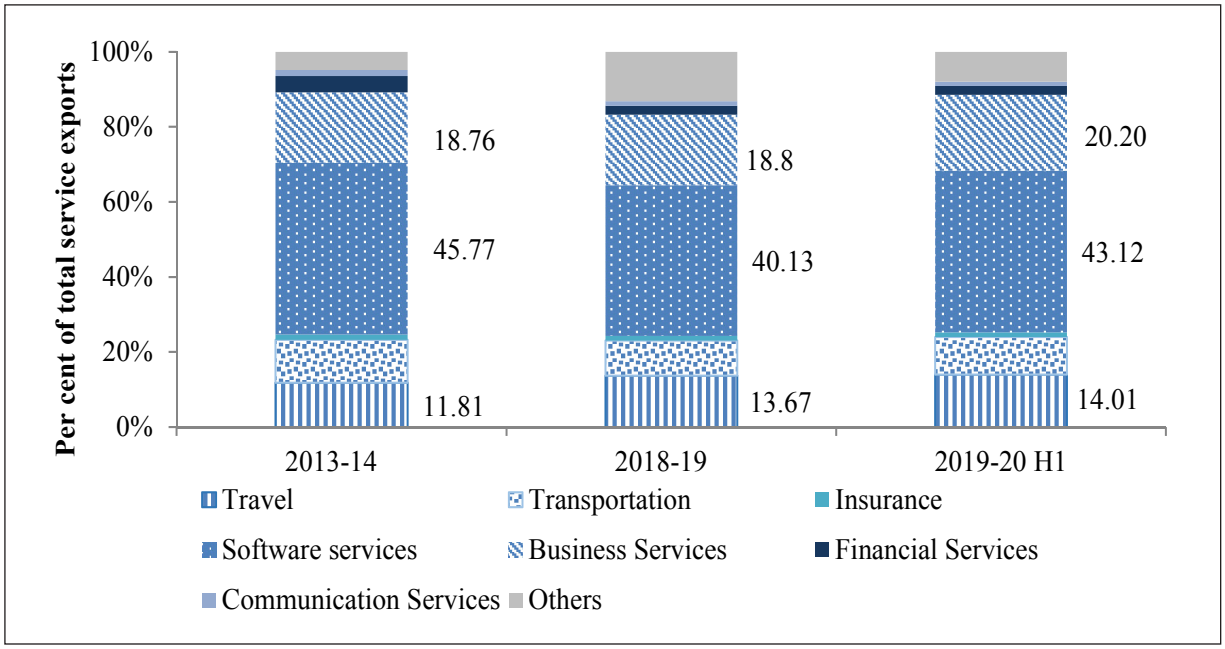
Figure 20: Service exports as per cent of GDP



Source: Reserve Bank of India.

3.27 The composition of service exports has remained largely unchanged over the years. Software services constitute the bulk of it at around 40-45 per cent, followed by business services at about 18-20 per cent, travel at 11-14 per cent and transportation at 9-11 per cent (Figure 21).

Figure 21: Composition of service exports



Source: Reserve Bank of India

A.2.2 Service Imports

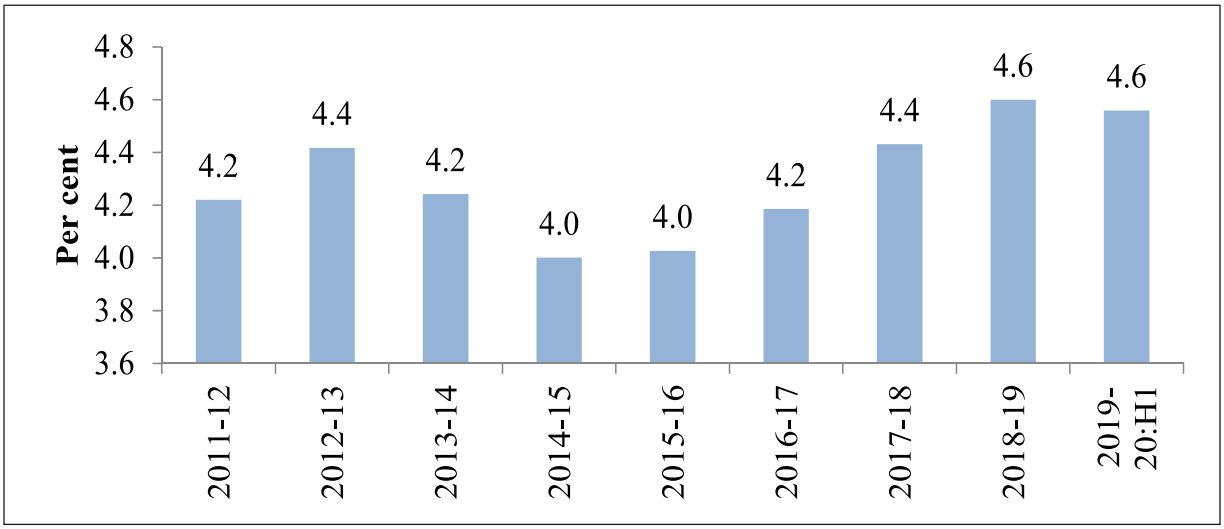
3.28 An increase in service imports to GDP ratio has a net negative impact on the BoP position. Over the years, service imports in relation to GDP has been steadily rising putting pressure on BoP to worsen (Table 14 and Figure 22). However, increase in service imports to GDP ratio is inevitable given a rising level of FDI and a gradual upscaling of the Make in India program.

Table 14: Service Imports as per cent of GDP

2009-14	2014-19	2018-19	2019-20 H1
4.4	4.3	4.6	4.6

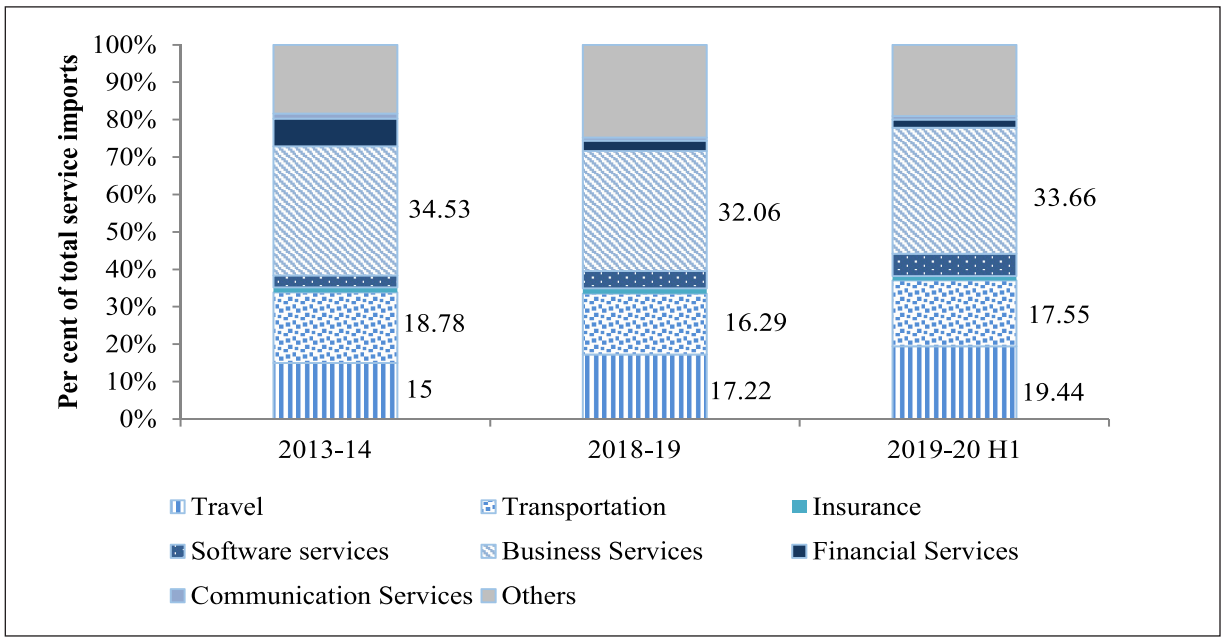
Source: Reserve Bank of India.

Figure 22: Service imports as per cent of GDP



Source: Reserve Bank of India.

Figure 23: Composition of service imports



Source: Reserve Bank of India

3.29 The relative shares of the various constituents of service imports have also not varied much with business services constituting about a third of service imports, which is in consonance with the rising level of economic activity in the country. The component of travel services has however been steadily increasing reflecting the growing attractiveness of global destinations to the domestic tourists in the country (Figure 23).

A.3 Policy Environment

A.3.1 India and WTO

3.30 India hosted a WTO Ministerial Meeting of Trade Ministers on 13-14 May 2019 in New Delhi wherein sixteen developing and six least developed countries along with the DG, WTO participated to deliberate on matters of concern to the member countries. The meeting culminated in an outcome document, which lays out priorities for developing countries in various areas and envisages addressing the challenges being faced by the Dispute Settlement system of the WTO.

3.31 India has also been working collectively with other developing countries and has submitted a paper in the General Council meeting of the WTO spelling out the priorities that are required to be taken into consideration while undertaking reforms in the WTO. The submission calls for preservation of core principles of the Multilateral Trading System, safeguarding special and differential treatment provisions, resolution of the Appellate Body crisis, addressing unilateral actions and continuation of negotiations in mandated areas, among others. In particular, India has emphasized that special and differential treatment provisions are essential for better integration of the developing countries in the global trading system. These provisions are at the core of the WTO and must be preserved.

3.32 In addition, a submission on transparency and notification requirements at the WTO has also been made by India along with other WTO members including Cuba, African group. The submission outlines

that transparency should be a common thread running in all the operations of the WTO. Developing countries including the least developed countries, who are already resource/capacity constrained should not be penalized in the name of improving transparency.

3.33 The twelfth Ministerial Conference of the WTO (MC12) is scheduled to be held in June 2020 in Nur-Sultan, Kazakhstan. Discussions for an outcome at MC12 are underway at various informal Ministerial meetings and regular meetings at the WTO. Despite wide divergences among members in the positions taken by them in different areas of negotiation, India is regularly engaging with members with a view to find solutions which addresses the issues of concern to the larger membership of the WTO.

3.34 India has, time and again, underscored the need of a permanent solution in public stockholding for food security programmes. There has, however not been constructive engagement in this area of negotiation. Besides, India is also fully engaged in the fisheries subsidies negotiations in the WTO and considers safeguarding the interests of poor, small and artisanal farmers as a priority in the negotiations.

3.35 India has bilateral trade arrangements with many major regional groupings/ countries. The list of Free Trade Agreements (FTAs) and Preferential Trade agreements (PTAs) already in force and the list of on-going trade negotiations are placed at Annexure II.

A.3.2 Trade Facilitation

3.36 India ratified the WTO Agreement on Trade Facilitation (TFA) in April 2016 and subsequently constituted a National Committee on Trade Facilitation (NCTF) to commence the implementation. In order to optimize the gains of trade facilitation, National Trade Facilitation Action Plan (NTFAP 2017-20) containing specific activities to further ease out the bottlenecks to trade was released on 20th July, 2017 with an overall vision of the Government to see India as an active facilitator of trade. Since then, the NCTF has played an important role in reducing the high cost of imports and exports so as to integrate the country's cross-border trade with the global value chain. As a result of consistent trade facilitation efforts, India has improved its ranking from **143** in 2016 to **68** in 2019 under the indicator, "Trading across Borders", which is monitored by World Bank in determining the overall ranking of around 190 countries in its Ease of Doing Business Report.

3.37 Sub-parameters of indicator "Trading Across Borders" namely time and cost required to comply with documentary requirement and border requirement for export and import have shown significant improvement since India ratified the WTO's trade facilitation agreement in 2016. Further, in order to achieve cargo release time targets, India is undertaking a national level Time Release Study (TRS) for the first time in 2019 across multiple locations covering seaports, Inland Container Depots (ICDs), air cargo complex and integrated check posts. The intended objectives of national TRS are to assess impact of extant measures to reduce release time, examine extant procedures, technologies and infrastructure and administrative concerns and thereby identify manual processes and physical touchpoints, bottlenecks and inefficiencies (by stakeholders) to bring down the overall release time.

3.38 The key initiatives contributing to reduction in overall cargo release time and

Box 1: Major Schemes for Export Promotion

Merchandise Exports from India Scheme (MEIS): Introduced w.e.f. 01.04.2015, the objective of MEIS is to offset infrastructural inefficiencies and associated costs involved in exporting goods/ products which are produced/ manufactured in India. The scheme incentivizes exporters in terms of Duty Credit Scrips at the rate 2, 3, 4, 5, 7 per cent of Free On Board (FOB) value of exports realized. These scrips are transferable and can be used to pay certain Central Duties/ taxes including customs duties. The scheme covers exports of more than 8000 tariff lines. The process from application till final issuance of the MEIS scrip is digitized end to end, without any manual interface for more than 99 per cent of HS Codes on which MEIS is eligible.

Services Exports from India Scheme (SEIS): Under this scheme, rewards on Net foreign exchange earnings, to service providers of notified services who are providing service from India to the rest of the World, in the form of Duty Credit scrips are available. The scrips, just like MEIS are transferable and can be used to pay certain Central Duties/ taxes including customs duties. The service exporters are eligible for SEIS at the rate of 5 per cent and 7 per cent of the Net Foreign Exchange Earnings (NFEE) for exports made in a Financial Year.

Export Promotion Capital Goods (EPCG) Scheme: This Scheme allows exporters to import capital goods (except certain specified items under the Scheme) for pre-production, production and post-production at zero customs duty. In return, the exporters are required to fulfill the export obligation to the tune of six times the import duties, taxes and cess saved amount on capital goods, to be fulfilled in six years from date of issue of the Authorization. Capital goods imported under EPCG authorizations for physical exports are also exempt from Integrated Goods and Services Tax (IGST) and Compensation Cess, at present up to 31.03.2020.

Advance Authorization Scheme: Advance Authorization (AA) is issued to allow duty free import of inputs, which are physically incorporated in export products (making normal allowance for wastage). In addition, fuel, oil, catalyst which are consumed/ utilized in the process of production of export products are also be allowed.

Duty Free Import Authorization (DFIA): Duty Free Import Authorization (DFIA) is issued on post export basis for products for which Standard Input Output Norms (SION) have been notified. One of the objectives of the scheme is to facilitate transfer of the authorization or the inputs imported as per SION, once export is completed. Provisions of DFIA Scheme are similar to Advance Authorization Scheme.

Interest Equalization Scheme (IES): The scheme came into effect from 01.04.2015 for a period of 5 years. This scheme is being implemented by the DGFT through Reserve Bank of India (RBI) for pre and post Shipment Rupee Export Credit. Under the Scheme, interest equalization @ 3 per cent per annum has been made available to eligible exporters. W.e.f. 02.11.2018, the interest equalization rate has been increased from 3 per cent to 5 per cent for exports made by MSME sector under the ongoing Interest Equalization Scheme (IES) on Pre and post Shipment Rupee Export Credit. The merchant exporters have also been included at the interest equalization rate of 3 per cent under this scheme w.e.f. 02.01.2019.

Export Oriented Units (EOU)/Electronic Hardware Technology Park(EHTP)/Software Technology Parks (STP)/Bio-Technology Parks (BTP) Scheme: The objectives of these four schemes, i.e.; Export Oriented Units (EOU), Electronic Hardware Technology Park (EHTP), Software Technology Parks (STP) and Bio-Technology Parks (BTP) Scheme; are to promote exports, enhance foreign exchange earnings, attract investment for export production and employment generation. The units undertaking to export their entire production of goods and services (except permissible sales in DTA) may be set up under the schemes. Trading units are not covered under these schemes. Under this scheme, the EOUs etc. are permitted to import and/ or procure from DTA or bonded warehouse in DTA or from international exhibition held in India till 31.03.2020 (as provided by GST Council and notifications issued there under) without payment of customs duty as provided under First Schedule to the Customs Tariff Act, 1975 and additional duty, if any, of Customs leviable under Section 3(1), 3(3) and 3(5) and without payment of Integrated Tax and GST Compensation Cess leviable under section 3(7) and 3(9) of the said Act as per notification issued by the Department of Revenue from time to time.

Deemed Exports Scheme: Deemed Exports refers to those transactions in which the goods supplied do not leave the country and the payment for such supplies is received either in Indian rupees or in free foreign exchange. Under the scheme of deemed exports, exemption/ refund of duties on the goods manufactured and supplied to specified categories of deemed exports as given under the Foreign Trade Policy (FTP) is provided to ensure a level playing field to domestic manufacturers. The benefits under the Scheme are duty exemption, refund of terminal excise duty, refund of duties suffered by the inputs utilized in manufacture and supply of the goods to the specified categories of deemed exports. Under the GST regime, the Duty Drawback is limited to exemption/ refund of basic custom duties.

Transport and Marketing Assistance (TMA) for Specified Agriculture Products Scheme: To mitigate disadvantage of higher cost of transportation of export of specified agriculture products due to trans-shipment and to promote brand recognition for Indian agricultural products in specified overseas markets, the "Transport and Marketing Assistance" (TMA) scheme for specified agriculture products was launched in February, 2019 and is available for exports occurring from 01.03.2019 to 31.03.2020.

Trade Infrastructure for Export Scheme (TIES): The Government of India has launched a scheme namely, Trade Infrastructure for Export Scheme (TIES), from FY 2017-18 with the objective to assist Central and State Government Agencies for creation of appropriate infrastructure for growth of exports from the States. The Scheme provides financial assistance in the form of grant-in-aid to Central/State Government owned agencies for setting up or for up-gradation of export infrastructure as per the guidelines of the Scheme. Establishment of facility for the identification of origin and authenticity at Export Inspection Agency, Mumbai and Construction of office-cum-lab complex of EIA Chennai SO Visakhapatnam are two projects, approved under TIES.

Source: Department of Commerce.

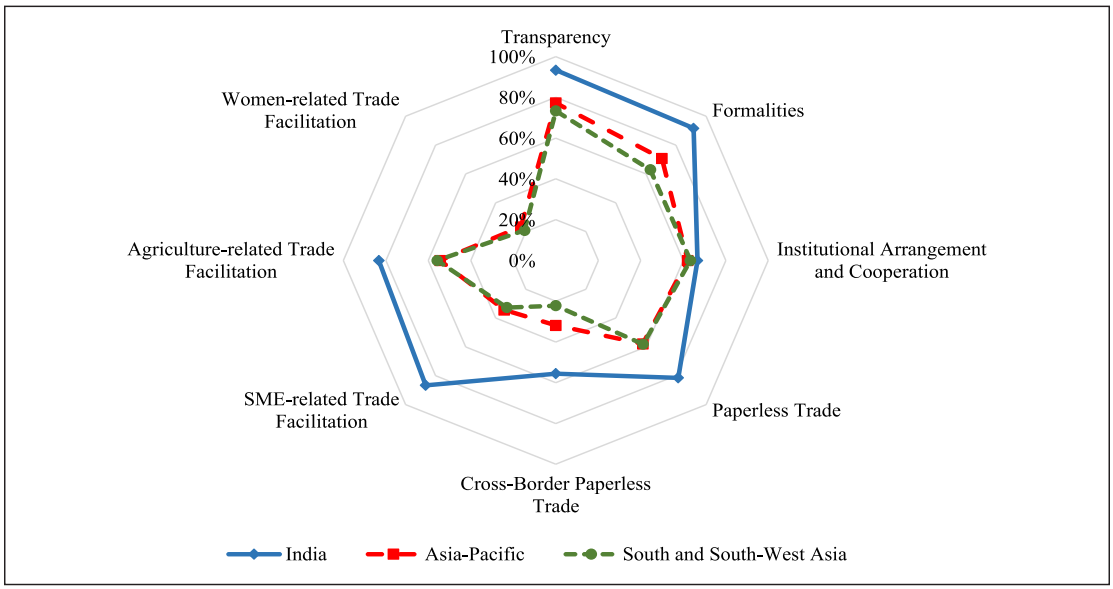
consequent improvement in ranking of India under the indicator "Trading across Borders" include the following:

- Enablement of Single Window Interface for Facilitating Trade (SWIFT) on Customs Portal,
- Enablement of post clearance audit,
- Self e-sealing through RFID tag by trusted exporters,
- Requirement of only 3 mandatory documents for import/export,
- Introduction of 'E-Sanchit' for lodging supporting documents online,
- Tracking of imported cargo clearance time through Indian Customs Ease of Doing Business Dashboard (ICEDASH),
- 24X7 online customs clearance facility,
- Elimination of merchant overtime fees,
- Launch of Atithi mobile App for international passengers and
- Elimination of merchant overtime fees and installation of drive through scanners.

3.39 New schemes like Direct Port Delivery (DPD) for imports and Direct Port Entry (DPE) for exports are facilitating faster clearances at the ports. Up-gradation of port infrastructure, putting up new scanners at ports, development of robust risk based measures and introduction of new Port Community System at all major ports, have led to improvement in average dwell time at sea ports. New initiatives like 'Turant'[4] customs will make customs clearance faster and faceless.

3.40 In a recently released UN global survey on digital and sustainable trade facilitation 2019, India has not only improved its overall trade facilitation score from 69 per cent to 80 per cent but also outperformed other countries in the Asia-pacific and South and South-west Asia region (Figure 24).

Figure 24: India's performance in Digital and Sustainable Trade Facilitation, in comparison to Asia-Pacific and South and South-West Asia (2019)



Source: UN Global Survey on Digital and Sustainable Trade Facilitation, 'https://untfsurvey.org/economy?id=IND'

4. It is a set of next generation of reforms, under which a new functionality in software systems of Indian customs is enabled, that obviates the need of producing import related documents physically to custom officials for approval, thereby reducing release time.

Table 15: World Bank Logistics Performance Index in 2018

Country	LPI Rank	Customs	Infrastructure	International shipments	Logistics competence	Tracking & tracing	Timeliness
Germany	1	1	1	4	1	2	3
Sweden	2	2	3	2	10	17	7
Belgium	3	14	14	1	2	9	1
Austria	4	12	5	3	6	7	12
Japan	5	3	2	14	4	10	10
India	44	40	52	44	42	38	52

Source: World Bank.

A.3.3 Trade related Logistics

3.41 Indian logistics sector is riding a growth wave and is a sunshine industry. According to estimates, Indian logistics sector is expected to grow at 8-10 per cent over the medium term. The logistics industry of India is currently estimated to be around US$ 160 billion and is expected to touch US$ 215 billion by 2020[5].

3.42 The Indian warehousing and logistic market received around US$ 3.4 billion of institutional capital over the last few years (January 2014 - January 2018). Investments into the warehousing sector account for around 26 per cent of the total private equity investments into real estate during this period. Many new startups are coming up in logistics eco-system with already 350 startups registered in Logistics. Agri-logistcs is also attracting attention. Solar powered micro cold stores are being developed and app based grading facilities are being created. Startups are also working on providing solution to making vehicles more fuel-efficient and environment friendly. In terms of job creation, experts predict that logistics sector can be the largest job creator by 2022. The sector currently provides employment to more than 22 million people in the country.

3.43 According to World Bank's Logistics Performance Index, India ranks 44th in 2018 globally, up from 54th rank in 2014. The top 5 countries in the world in Logistics Performance Index (LPI) are shown in Table 15, along with India, with their rankings in LPI and each separate indicator.

3.44 To improve trade logistics, Government is building infrastructure through ambitious projects like the Bharatmala, Sagarmala and the Dedicated Freight Corridors. Inland waterways are being developed as a cost effective means of transportation. Multimodal logistic parks are being created to promote multimodal transportation. These are part of the infrastructure project pipeline worth ₹102 lakh crore whose details have been released by government in December, 2019. The infrastructure projects will be created over the next five years.

3.45 The Government of India is working on a National Logistics Policy and a National Logistics Action Plan. Major commodities have been identified and will be encouraged to be transported by the cheapest mode. Movement by other modes like railways, coastal, waterways and slurry pipelines are being promoted through infrastructure and policy interventions. Fast-tags have been

5. As per inputs received from Department of Commerce.

made mandatory to cut delays at toll plazas. Qualification packs have been created to improve skilling in the sector. Apprentice programmes are being promoted through industry participation. Standards are being developed to bring in efficiency.

3.46 The government's focus going forward is to bring down the cost of logistics which will boost the competitiveness of our manufacturing sector. Driving logistics cost down from estimated current levels of 13-14 per cent of GDP to 10 per cent in line with best-in class global standards is essential for India to become globally competitive.

A.3.4 Anti-dumping and Safeguard Measures

3.47 India conducts anti-dumping investigations on the basis of applications filed by the domestic industry with prima facie evidence of dumping of goods in the country, injury to the domestic industry and causal link between dumping and injury to the domestic industry. The countries involved in these investigations are China PR, Hong Kong, Korea, Germany, EU, USA, Malaysia, South Africa, Thailand, Brazil, among others.

3.48 During the period from 01.04.2019 to 30.11.2019, Directorate General of Trade Remedies (DGTR) initiated 25 anti-dumping investigations, 5 countervailing duty investigations and 6 safeguard investigations. Final findings in 14 anti-dumping investigations, 4 countervailing duty investigations and preliminary findings in 5 investigations were issued during this period.

3.49 In its efforts to promote transparency, efficiency and expedited relief to the domestic producers, DGTR has introduced online portal to submit online petitions for different trade remedies like anti-dumping duty, safeguard duty and countervailing duty. The portal is named ARTIS (Application for Remedies in Trade for Indian industry and other Stakeholders). Applicants can monitor the current status of their applications through online portal.

3.50 Outreach programmes to sensitize various stakeholders about the available Trade Remedy Measures are being conducted by officers of DGTR from time to time. In addition, seminar and interactive sessions on Trade Remedy Mechanism for delegations from GCC and Zimbabwe have been held. A Help Desk & Facilitation Centre has been established to facilitate optimal utilization by different stakeholders of available trade remedial measures aimed at curbing 'unfair trade'.

A.4 Net Remittances

3.51 An increase in net remittances improves the BoP position. Net remittances from Indians employed overseas has been constantly increasing year after year and has continued doing so with the amount received in the first half of 2019-20 being more than 50 per cent of the total receivables in 2018-19 (Table 16). The pro-cyclicality of India's remittances with respect to crude oil price movements has been established empirically by various studies including the Economic Survey 2016-17. Apparently because of this link, remittances had fallen in 2016-17 when crude prices had significantly declined (Figure 25).

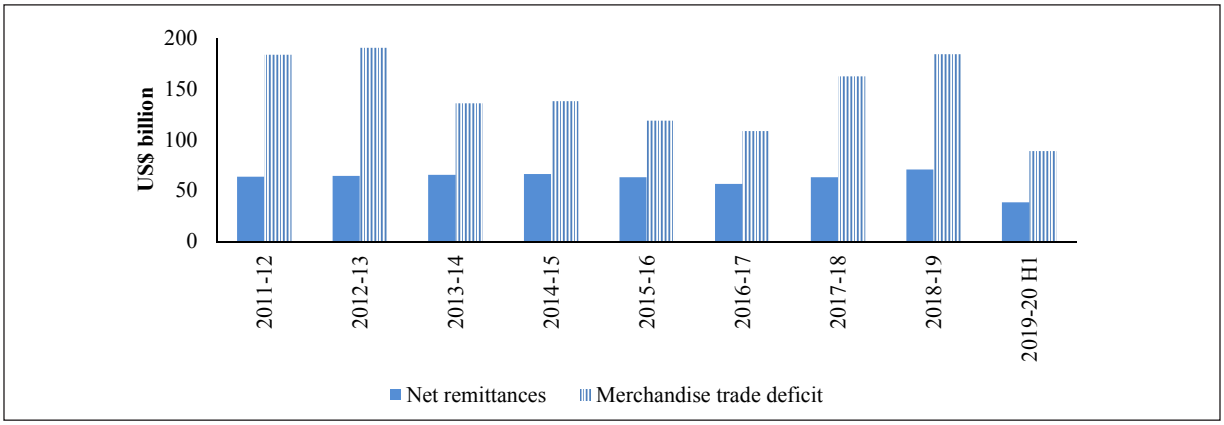
Table 16: Net Remittances (US$ billion)

2009-14	2014-19	2018-19	2019-20 H1
298.21	319.53	70.60	38.4

Source: Reserve Bank of India

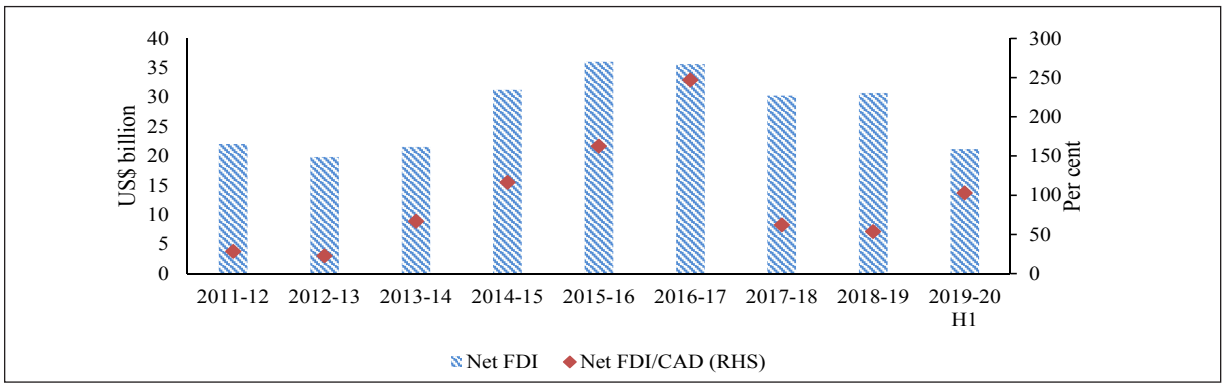
3.52 The Migration Report 2019 released by the United Nations has placed India as the leading country of origin of international migrants in 2019 with a diaspora strength

Figure 25: Remittances and Merchandise trade deficit



Source: Reserve Bank of India & Department of Commerce.

Figure 26: Net FDI and CAD



Source: Reserve Bank of India

of 17.5 million. Further, as per the October 2019 report of World Bank, India remained the top remittance recipient country in 2018, followed by China, Mexico, the Philippines and Egypt.

B. Foreign Direct Investment (FDI)

3.53 Net FDI in the first eight months of 2019-20 stood at US$ 24.4 billion. An increase in net FDI improves the BoP position. The impressive improvement in BoP position from March, 2014 to March, 2019 is mainly attributed to almost doubling of net FDI into the country from 2009-14 to 2014-19. Net FDI inflows have continued to be buoyant in 2019-20 attracting in the first half itself an amount more than 50 per cent of the previous year level (Table 17). Continuous liberalization of FDI guidelines has been responsible for rising inflows of foreign investment into the country.

Table 17: Net FDI (US$ billion)

2009-14	2014-19	2018-19	2019-20 H1
92.51	163.87	30.7	21.3

Source: Reserve Bank of India

3.54 An increase in net FDI also provides a more stable source of funding the CAD and in that sense provides greater stability to the improvement in BoP position as compared to other capital inflows. Net FDI's financing of CAD in the first half of 2019-20 has been higher than the same period of 2018-19 (Figure 26).

C. Foreign Portfolio Investment (FPI)

3.55 Net FPI in the first eight months of 2019-20 stood at US$ 12.6 billion. An increase in

net FPI flows improves the BoP position and arises on account of cross-border transactions involving debt or equity securities, other than those included in direct investment or reserve assets. However, FPI is often referred to as "hot money" because of its tendency to flee at the first signs of trouble in an economy or improvement in investment attractiveness elsewhere in the world, particularly in the US at the hands of the Federal Reserve. In relation to net FDI, dependence on net FPI to finance the CAD was less in 2014-19 at 17.1 per cent as compared to 45.6 per cent in 2009-14 (Figure 27). In 2018-19, there was a net portfolio outflow from the country that was seen as weakening of confidence of investors in India's economy. However, portfolio flows in H1 of 2019-20 have turned positive which could be attributed to the dovish monetary policy stance of the US, enhanced liquidity in global markets and reinforced growth prospects for India post budget announcements and reform measures (Table 18).

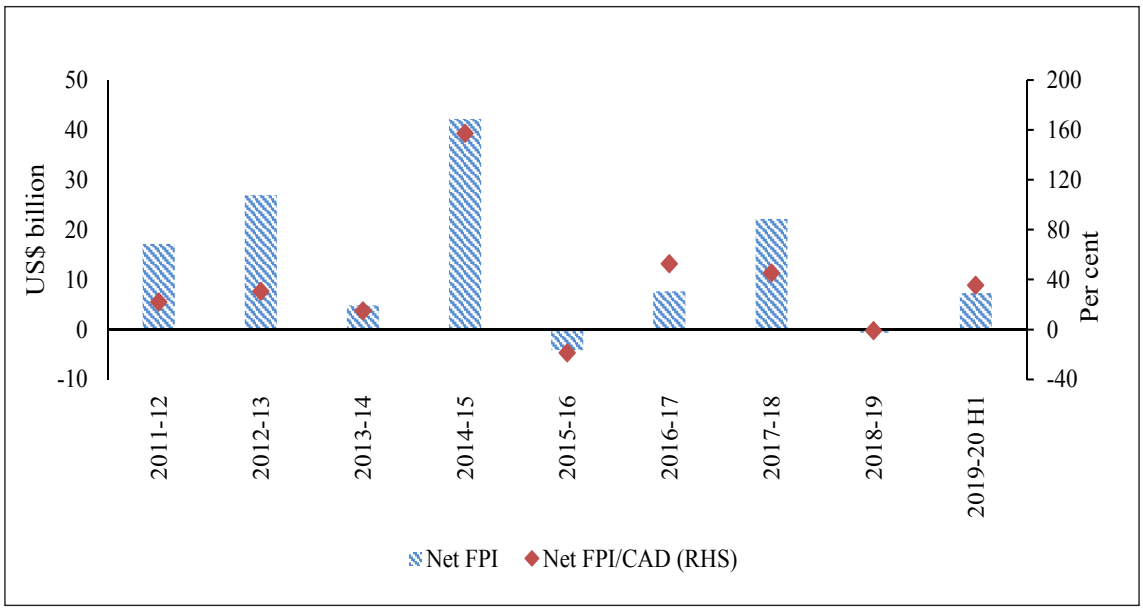
Table 18: Net FPI (US$ billion)

2009-14	2014-19	2018-19	2019-20 H1
59.1	67.18	-0.62	7.3

Source: Reserve Bank of India

3.56 The debt-equity composition of net FPI matters in terms of impacting servicing of external debt. A lower debt component reduces the debt servicing burden and improves the BoP position. In recent quarters until Q1 of 2019-20, a change in the composition of FPI flows towards more non debt creating equity and investment funds is discernible (Figure 28). However, on the flip side increase in investment in debt instruments is important to deepen the debt market in the country.

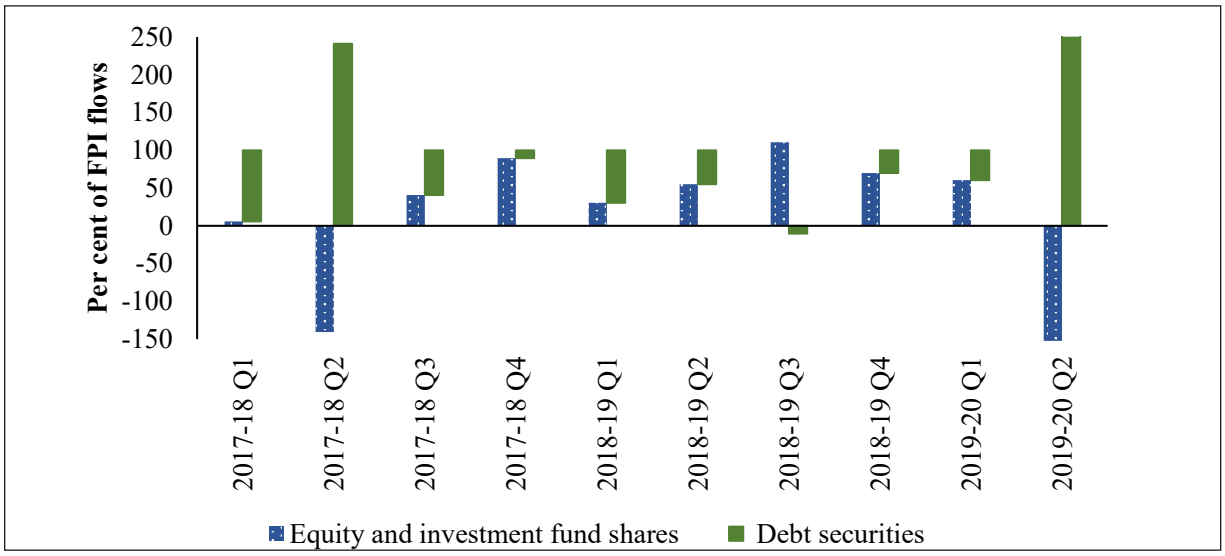
Figure 27: Net FPI and CAD



Source: Reserve Bank of India

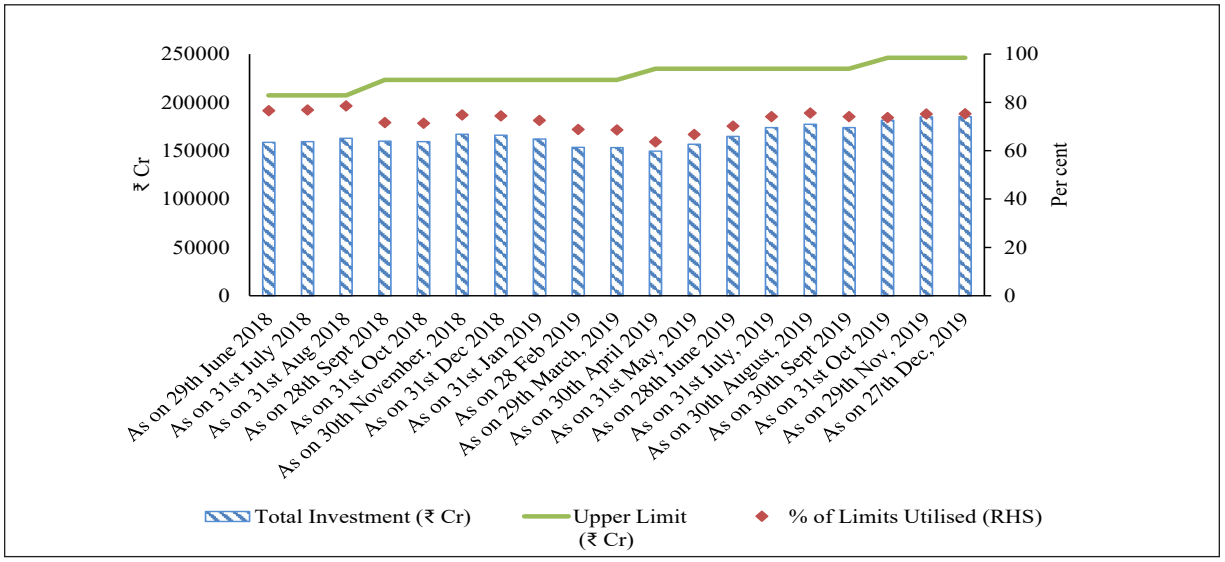
3.57 A report on assessment of India's BoP in 2018-19 published by RBI in November, 2019 stated that the highest FPI outflow in the debt segment took place from the sovereign sector (i.e., G-Secs). In this regard the recent policy initiatives of enhancing investment limits of FPIs in government securities and easing of minimum residual maturity are

Figure 28: Composition of FPI flows



Source: Reserve Bank of India

Figure 29: FPI in government securities.



Source: Clearing Corporation of India (CCIL).

likely to boost FPI flows. In April, 2018, RBI revised the limit for FPI investment in central government securities (G-secs) wherein the limit would be increased by 0.5 per cent each year to 5.5 per cent of outstanding stock of securities in 2018-19 and 6 per cent of outstanding stock of securities in 2019-20. Based on latest data available, the utilization rate of FPI limits in G-secs increased from 68.6 per cent in March 2019 to 75.6 per cent in December, 2019 (Figure 29).

D. External Commercial Borrowings (ECBs)

3.58 An increase in net ECBs improves the BoP position but it worsened the BoP by turning negative during 2014-19, from a healthy positive level in 2009-14 (Table 19). In

2018-19 however there was a surge in net ECB inflows and almost a matching amount has already flowed into the country in the first half of 2019-20.

Table 19: Net ECB (US$ billion)

2009-14	2014-19	2018-19	2019-20 H1
42.80	-4.24	9.77	9.76

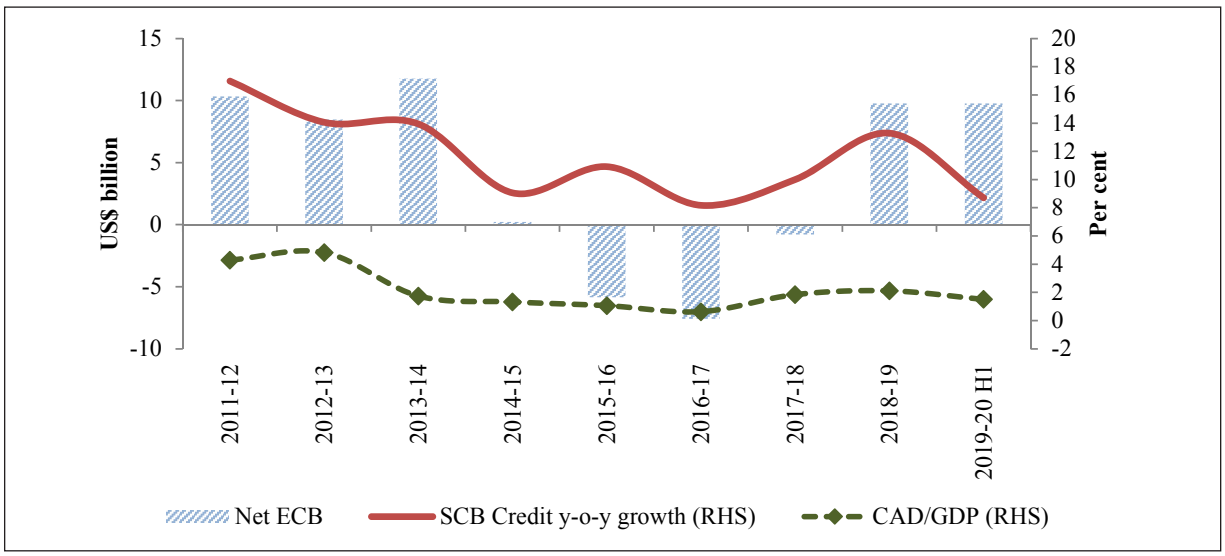
Source: Reserve Bank of India

3.59 While domestic bank credit growth has remained subdued in recent years, credit through the ECB route has witnessed significant growth since 2017-18 (Figure 30). The increasing preference of corporates for the ECB route may be attributed to low global interest rates and improved liquidity overseas. In addition, a host of measures introduced recently by the government towards liberalization of ECBs, rationalisation of all-in-cost of ECBs, expansion of list of eligible borrowers, removal of sector-wise borrowing limits for all eligible borrowers up to US$ 750 million and approval of oil marketing companies to raise up to US$ 10 billion for working capital, has increased the attractiveness of ECBs.

3.60 The availability of ECB avenue and an increasingly easier one at that raises a question mark on the assertion that increase in fiscal deficit crowds out private investment for want of funds. In an open economy foreign savings are always available and India has benefited from that by attracting FDI and ECBs. In this regard if fixed corporate investment rate during 2014-19 did not rise it was not because government was crowding out the corporate sector by pre-empting commercial bank credit. For had that been the reason, the corporate sector could have easily accessed ECBs as it did post 2017-18.

3.61 In an open economy framework a rising fiscal deficit gives rise to two problems. First, it increases the domestic cost of capital tempting corporates to invest their surplus in the domestic market while seeking to finance their investment through ECBs. Low interest rate abroad plus the cost of hedging turns out to be lower than the domestic cost of capital. Second, as higher fiscal deficit pushes corporates into seeking

Figure 30: ECBs, Scheduled Commercial Bank (SCB) credit (y-o-y) and CAD



Source: Reserve Bank of India

larger amounts of foreign savings, the CAD widens, bringing the country closer to the twin-deficit challenge, wherein even a small loss of investor confidence can result in capital flight and sharp depreciation of the rupee. In this situation a default on the BoP becomes highly probable.

E. External Debt

3.62 An increase in external debt to GDP ratio increases debt servicing and draws down on forex reserves worsening BoP position. After a significant reduction in 2014-19 relative to 2009-14, India's external debt to GDP ratio slightly increased by 0.3 per cent at the end of first half of 2020 over its level at end-March 2019, primarily on account of an increase in commercial borrowings, non-resident deposits and short-term trade credit (Table 20 and Figure 31). However, the increase was partially offset by valuation gains resulting from appreciation of the US dollar against Indian rupee and other major currencies in Q2 of 2019-20. India's external debt remains low as compared to the average external debt to GDP ratio of all developing countries (25.6 per cent) according to World Bank's International Debt Statistics, 2020.

Table 20: External Debt (Per cent of GDP)

2009-14	2014-19	2018-19	2019-20 H1
23.9	19.7	19.8	20.1

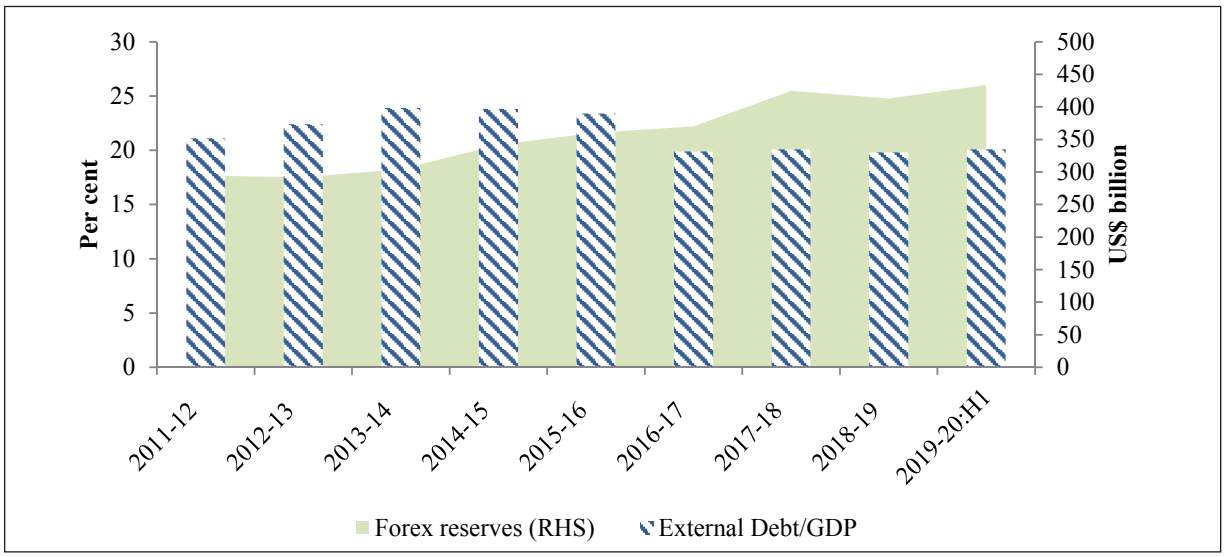
Source: Reserve Bank of India, Quarterly external debt report, DEA, M/o Finance.

3.63 A rising share of short-term debt makes the BoP position more vulnerable because of relatively higher rates of interest on such borrowings. However, a contraction of short term debt is visible in the falling share of short term debt (with original maturity of up to one year) in total external debt since 2012-13 (Figure 32). At a time when exports are not growing rapidly, loans at high interest rates can create pressure on BoP in the future.

F. External liabilities (Debt + Equity)

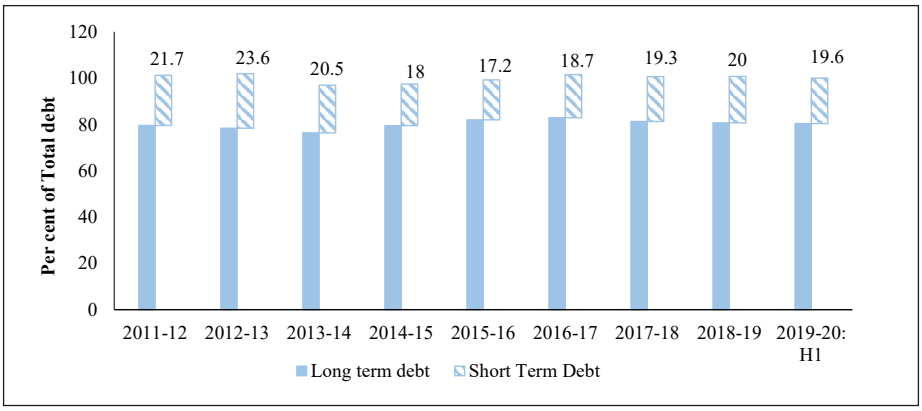
3.64 External liabilities (Debt + Equity)/ GDP ratio is a more comprehensive measure of external liabilities as it adds dividend payout to debt servicing. A rise in this ratio draws down to a greater extent the forex reserves and worsens the BoP position. A recall of equity investment, both under FPI and FDI can increase the vulnerability of BoP position. India's external liabilities to GDP

Figure 31: External debt/GDP and Foreign exchange reserves



Source: Reserve Bank of India, Quarterly external debt report, DEA, M/o Finance

Figure 32: Short term debt



Source: Reserve Bank of India, Quarterly external debt report, DEA, M/o Finance

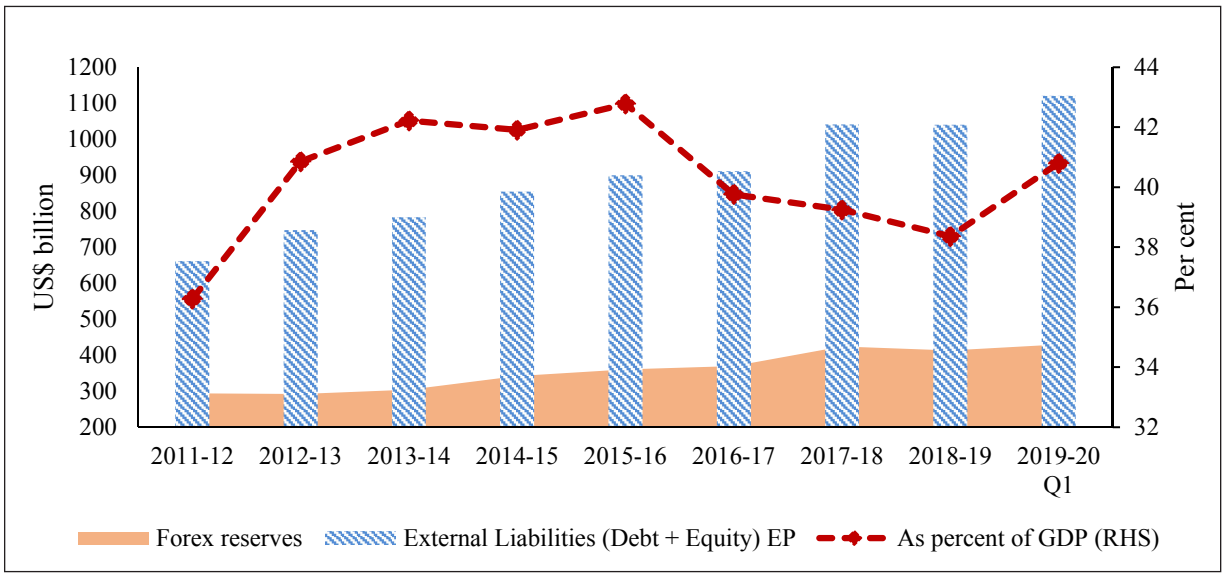
ratio has witnessed significant decline during 2014-19 as against 2009-14 (Table 21 and Figure 33). The recent surge in this ratio in Q1 of 2019-20 despite modest external debt level indicates that total external liabilities are relatively skewed towards equities. This may be attributed to the rise in FDI and FPI inflows, a larger part of which is accounted for by equity. An increase in non-debt liabilities in the form of dividend pay outs on foreign investment in equity will exert strain on BoP. However, on the flip side such investment holds potential for future wealth creation and the pressure on BoP may be lifted to some extent if the dividend payouts are deployed back in the country.

Table 21: External Liabilities (Debt + Equity)/GDP (End Period)

2009-14	2014-19	2018-19	2019-20 Q1
42.2	38.2	38.4	40.8

Source: IMF (based on latest data available)

Figure 33: External Liabilities (Debt + Equity)-End Period (EP)



Source: Reserve Bank of India, IMF (based on latest data available)

G. Net International Investment Position (NIIP)

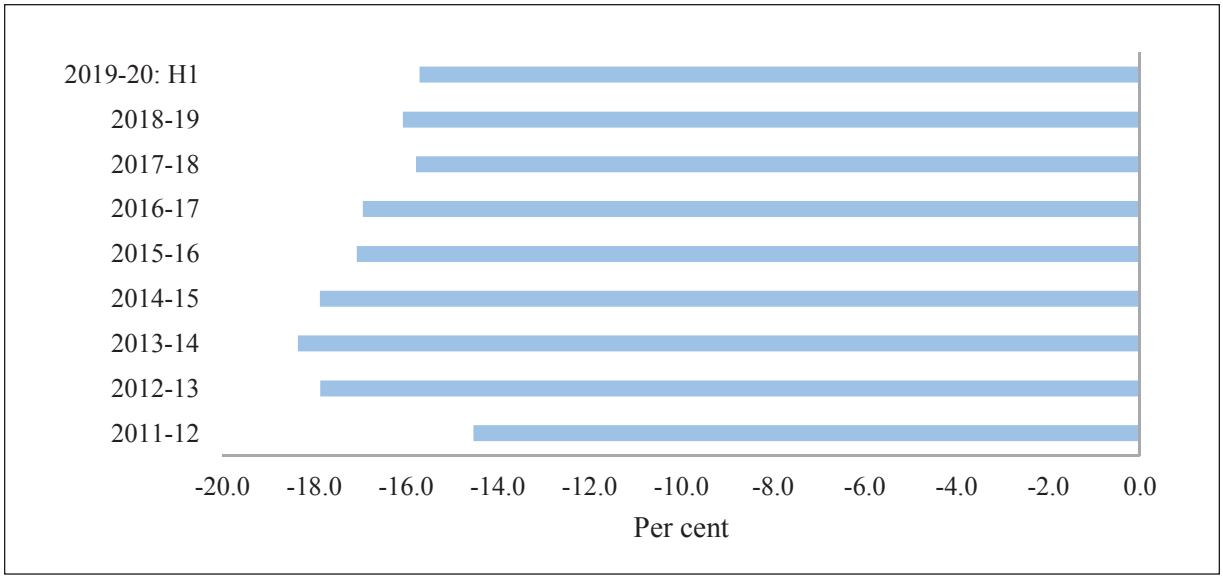
3.65 NIIP measures the gap between a nation's stock of foreign assets and foreigner's stock of that nation's assets at a specific point in time. Changes in NIIP/GDP ratio nets out the impact of investment made by the country abroad from the external liabilities borne by the country thereby measuring the net changes in the debt and equity servicing burden in relation to GDP. The surge in net FDI inflows has worsened the absolute NIIP level from 2009-14 to 2014-19 (Table 22). However, in relation to GDP the burden has reduced and so has the debt and equity servicing obligations. At the end of 2019-20:H1, NIIP/GDP ratio has remained the same as at end of 2018-19 (Figur 34).

Table 22: Net IIP (End Period)

Item	2009-14	2014-19	2018-19	2019-20 H1
NIIP ($US billion)	-340.8	-436.8	-436.8	-436.7
NIIP/GDP	-18.4	-16.1	-16.1	-15.7

Source: Reserve Bank of India

Figure 34: Net IIP/GDP

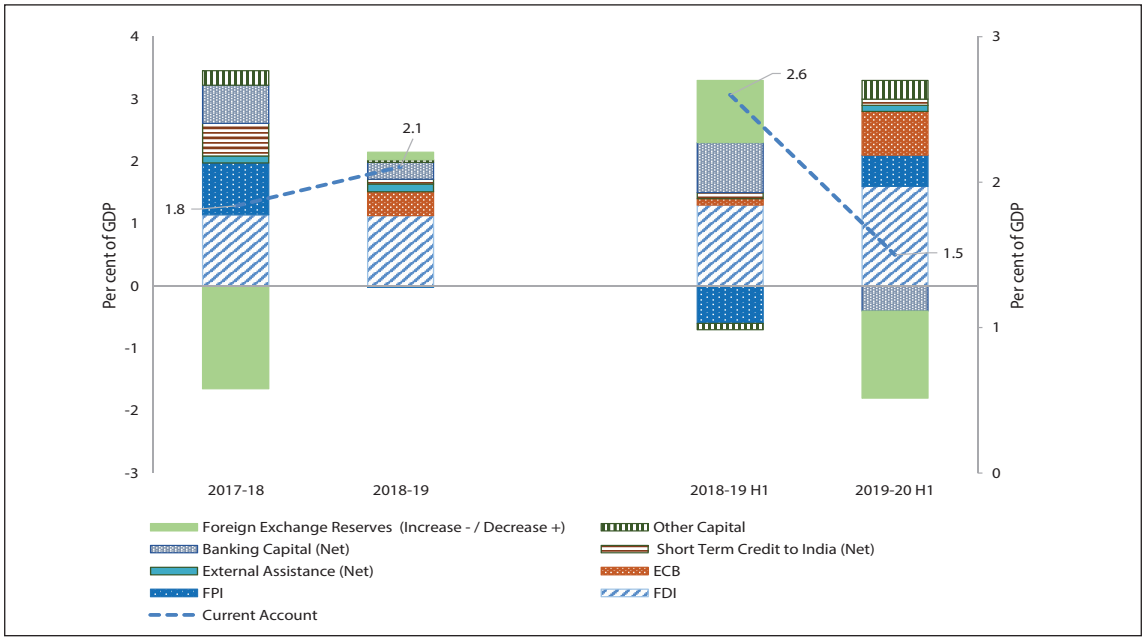


Source: Reserve Bank of India

OUTLOOK

3.66 After witnessing a rise in vulnerabilities in 2018-19 leading to a modest depletion of foreign exchange reserves, India's external sector has gained further stability in the first half of 2019-20 with improvement in BoP position anchored by capital flows bouncing back through FDI, FPI and ECBs, receipt of robust remittances and contraction of CAD to GDP ratio. External debt remains low at 20 per cent of GDP. As on 10th January, 2020, India's foreign exchange reserves stood at US$ 461.2 billion, recording an accretion of US$ 27.5 billion from H1 of 2019-20. Summary of changes in foreign exchange reserves over the years is placed at Annexure-III. Financing of CAD in recent years is depicted in Figure 35.

Figure 35: Financing of CAD



Source: Reserve Bank of India

3.67 In recent times India's tariff regime have come under pressure from trade partners who seek a cut in the country's basic custom duties. India has defended its tariff regime stating that it is necessary for protecting the vulnerable businesses in India. However, independent of trade partners, Government is aware that some reduction in tariff rates may have to be done in respect of intermediate inputs and raw material to correct the presently inverted duty structure. A corrected duty structure will reduce the cost of intermediate inputs imported for manufacturing of exports thereby making the country's exports more competitive. The resulting increase in exports will strengthen India's BoP position. Box 2 discusses that every time India's imports of intermediate inputs have risen so have the exports of associated consumption goods with an elasticity of greater than 1. Accordingly, a reduction in basic custom duty on intermediate inputs will not only correct the inverted duty structure creating the right incentives for boosting manufacturing but will also increase the growth of exports of consumption goods that significantly use imported intermediate goods.

Box 2: IMPORT ELASTICITY OF EXPORTS

An analysis of the relation between exports of finished goods and imports of raw materials and intermediate goods for India is being undertaken. The raw/ intermediate goods are being imported for production of goods that can be consumed domestically or exported. For instance, trans-axles and its parts are imported for production of trucks; gold is imported for making jewellery; etc. This analysis is done by using data available from e-way bills during the period October, 2018 to September, 2019. The product level classification of World Integrated Trade Solution (WITS) viz., raw materials, intermediate goods, consumer goods and capital goods is used to further disaggregate this data at the 4-digit level. For illustration, in the leather sector, WITS product-level classification has been used only for chapters 41, 42 and 43 of harmonized system codes to identify raw materials/ intermediate

goods and consumer/ capital goods at the 4-digit level. The E-Way bill product level data is also available at 4-digit. For sectors like automobiles and pharmaceuticals, research papers and reports have been used that have classified raw materials and final goods at 4-digit level.

At an aggregate level, the import elasticity of exports is 1.1 (as shown in Figure A), i.e., 1 per cent increase in imports of raw materials and intermediate goods leads to 1.1 per cent increase in exports of finished goods from India. Figures B and C show the import elasticities of export of consumer goods and capital goods as 1.1 and 0.9 respectively. This implies that exports of consumer goods are more sensitive to imports of raw materials and intermediate goods, as compared to capital goods.

Import elasticity of export

Figure A: Aggregate

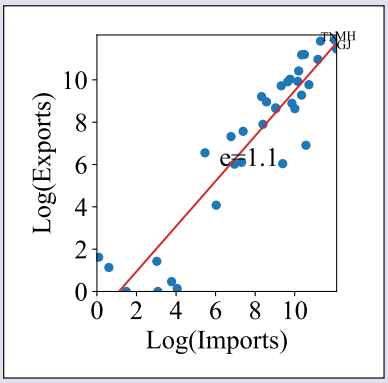


Figure B: Consumer Goods

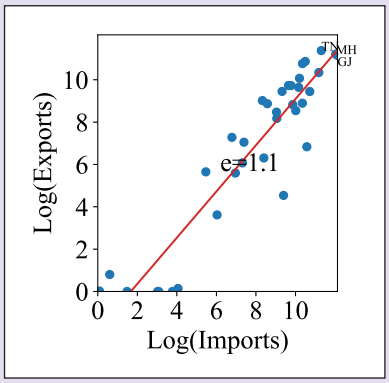
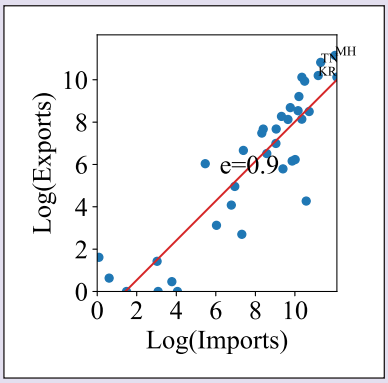


Figure C: Capital Goods



Source: E-Way bill data and Survey Calculations.

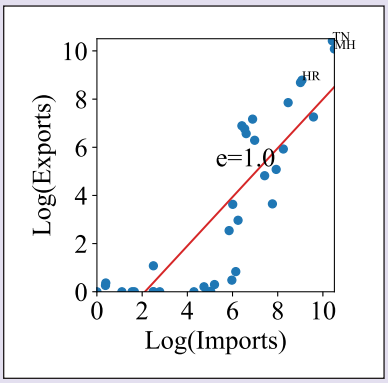
Note: Based on chapters 10 to 99

Sector-wise Analysis

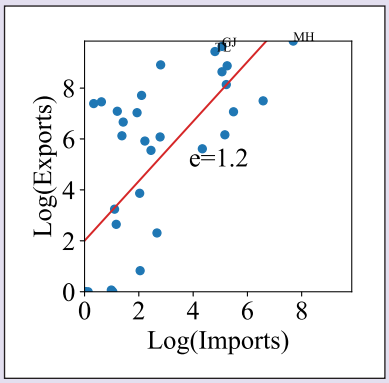
Sector wise analysis shows that sectors like automobiles, motorcycles, organic and inorganic chemicals, pharmaceutical products, machinery, articles of apparel, articles of leather, footwear, miscellaneous manufactured articles like toys and cushions, glassware and ceramic products, optical instruments, boilers, stainless steel and switches have import elasticity of export greater than 1. Figure D shows the import elasticities for some of the sectors.

Figure D: Sectors with import elasticity of exports greater than 1

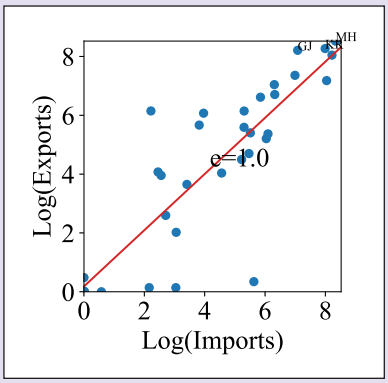
Automobiles



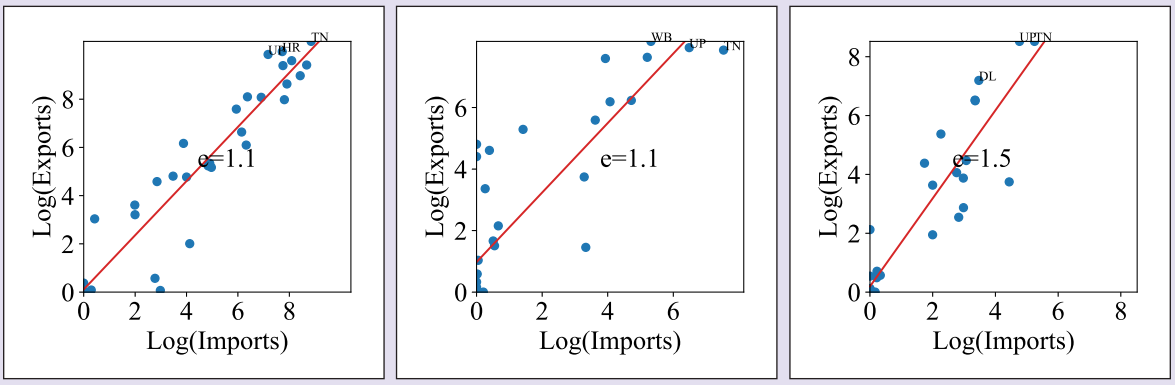
Pharmaceuticals products



Machinery



Articles of Apparel **Articles of Leather** **Footwear**



Source: E-Way bill data and Survey calculations.

The following table shows the raw materials/ intermediate goods used in the production of the finished good in the aforementioned sectors.

Sector	Raw Materials/ Intermediate Goods	Final Goods
Automobiles	Chassis, bodies, auto parts and accessories, tubes and pipes of vulcanized rubber, safety glass	Tractors, motor vehicles, dumpers, special purpose motor vehicles, motorcycles
Pharmaceuticals	Antisera, vaccines, immunological products, drugs of animal origin not for retail sale	Medicines and drugs for retail sale
Machinery	Parts of shavers, electric transformers, primary cells,	Fans, dish-washing machines, washing machines, vacuum cleaners, ovens, filament lamps, DC motors, generators, transformers
Articles of apparel	Cotton, silk, yarn, wool, woven fabrics, synthetic staple fibres, jute	Sanitary towels, carpets, cloths, wall coverings, blankets, shawls, mattresses
Articles of leather	Skin and fur-skins of animals, animal leather	Trunks, handbags, gloves, jackets, belts
Footwear	Leather soles, sheep lining, umbrella frames, felt hat forms and bodies	Footwear, hats, umbrellas

Source: World Integrated Trade Solution (WITS)

This shows that through value addition, India is exporting a processed final product after importing raw materials in these sectors. This moves India up in the value chain in these sectors. To support this further, it is necessary to facilitate ease of import of raw materials and intermediate goods in these sectors, by reducing basic custom duty on intermediate inputs. This will not only correct the inverted duty structure but would also create right incentives for boosting manufacturing, employment and growth of exports of consumer goods.

CHAPTER AT A GLANCE

- India's Balance of Payments (BoP) position witnessed improvement from US$ 412.9 billion of forex reserves in end March, 2019 to US$ 433.7 billion in end September, 2019, anchored by narrowing of current account deficit (CAD) from 2.1 per cent in 2018-19 to 1.5 per cent of GDP in H1 of 2019-20. India's foreign reserves stood at US$ 461.2 billion as on 10th January, 2020.
- In sync with an estimated 2.9 per cent growth in global output in 2019, global trade is estimated to grow at 1.0 per cent after having peaked in 2017 at 5.7 per cent. However, it is projected to recover to 2.9 per cent in 2020 with recovery in global economic activity.
- India's merchandise trade balance has improved from 2009-14 to 2014-19 although most of the improvement in the latter period was on account of more than fifty per cent decline in crude prices in 2016-17.
- Petroleum products, precious stones, drug formulations & biologicals, gold and other precious metals continue to be top exported commodities. Crude petroleum, gold, petroleum products, coal, coke & briquittes constitute top import items. India's top five trading partners continue to be USA, China, UAE, Saudi Arabia and Hong Kong.
- India's net services surplus has been steadily declining in relation to GDP. It financed two-thirds of merchandise deficit in 2016-17 before declining to less than half in the last couple of years.
- Under trade facilitation, India has improved its ranking from 143 in 2016 to 68 in 2019 under the indicator, "Trading across Borders", monitored by World Bank in determining the overall ranking of around 190 countries in its Ease of Doing Business Report.
- The logistics industry of India is currently estimated to be around US$ 160 billion and is expected to touch US$ 215 billion by 2020.
- Net remittances from Indians employed overseas has been constantly increasing year after year and has continued doing so with the amount received in H1 of 2019-20 being more than fifty per cent of the previous year level.
- Net FDI inflows have continued to be buoyant in 2019-20 attracting US$ 24.4 billion in the first eight months, higher than the corresponding period of 2018-19. Net FPI in the first eight months of 2019-20 stood at US$ 12.6 billion.
- External debt as at end September, 2019 remains low at 20.1 per cent of GDP. After witnessing significant decline since 2014-15, India's external liabilities (debt and equity) to GDP has increased at the end of June, 2019 primarily driven by increase in FDI, portfolio flows and external commercial borrowings (ECBs).

Annexure I

Balance of Payments

(US$ Million)

Sl No	Item	2014-15	2015-16	2016-17	2017-18	2018-19	2018-19 Apr-Sep	2019-20 Apr-Sep
1	2	3	4	5	6	7	8	9
I	**Current Account**							
1	Exports	3,16,545	2,66,365	2,80,138	3,08,970	3,37,237	1,66,788	1,62,743
2	Imports	4,61,484	3,96,444	3,92,580	4,69,006	5,17,519	2,62,575	2,47,037
3	Trade Balance (1-2)	-1,44,940	-1,30,079	-1,12,442	-1,60,036	-1,80,283	-95,788	-84,294
4	Invisibles (net)	1,18,081	1,07,928	98,026	1,11,319	1,23,026	60,931	63,673
	A. Services	76,529	69,676	68,345	77,562	81,941	38,932	40,474
	B. Income	-24,140	-24,375	-26,302	-28,681	-28,861	-14,363	-14,739
	C. Transfers	65,692	62,627	55,983	62,438	69,946	36,362	37,938
5	Goods and Services Balance	-68,411	-60,402	-44,098	-82,474	-98,342	-51,240	-43,820
6	**Current Account Balance (3+4)**	**-26,859**	**-22,151**	**-14,417**	**-48,717**	**-57,256**	**-34,857**	**-20,621**
II	**Capital Account**							
	Capital Account Balance	**89,286**	**41,128**	**36,447**	**91,390**	**54,403**	**21,391**	**39,935**
	i. External Assistance (net)	1,725	1,505	2,013	2,944	3,413	478	1,913
	ii. External Commercial Borrowings (net)	1,570	-4,529	-6,102	-183	10,416	877	9,767
	iii. Short-term credit	-111	-1,610	6,467	13,900	2,021	1,298	1344
	iv. Banking Capital(net) of which:	11,618	10,630	-16,616	16,190	7,433	10,583	-5,702
	Non-Resident Deposits (net)	14,057	16,052	-12,367	9,676	10,387	6,838	5,034
	v. Foreign Investment(net) of which	73,456	31,891	43,224	52,401	30,094	9,040	28,646
	A. FDI (net)	31,251	36,021	35,612	30,286	30,712	16,983	21,327
	B. Portfolio (net)	42,205	-4,130	7,612	22,115	-618	-7,943	7,319
	vi. Other Flows (net)	1,028	3,242	7,460	6,138	1,026	-885	3967
III	**Errors and Omission**	**-1,021**	**-1,073**	**-480**	**902**	**-486**	**259**	**-211**
IV	**Overall Balance**	**61,406**	**17,905**	**21,550**	**43,574**	**-3,339**	**-13,206**	**19102**
V	Reserves change [increase (-) / Decrease (+)]	-61,406	-17,905	-21,550	-43,574	3,339	13,206	-19,102

Source: Reserve Bank of India.

Note: P: Preliminary

Annexure II

Free Trade Agreements (FTAs) already in force

S.No.	Name of the Agreement	Date of Signing of the Agreement	Date of Implementation of the Agreement & Recent Developments
1	India - Sri Lanka FTA	28th December. 1998	Date of implementation of treaty was 1st March, 2000, The negotiations for the proposed Economic and Technology Cooperation Agreement (ETCA) between India and Sri Lanka, covering trade in goods, trade in services, investment and economic and technology cooperation are in progress. Eleven Round of Negotiations have been completed.
2	Agreement on SAFTA (India, Pakistan, Nepal, Sri Lanka, Bangladesh, Bhutan, the Maldives and Afghanistan)	4th January, 2004	Date of implementation of treaty was 1st January, 2006 *(Tariff concessions implemented from 1st July, 2006)*
3	India Nepal Treaty of Trade	27th October, 2009	The Treaty has been extended for a further period of seven years and is currently in force till 26th October 2023. A Comprehensive Review of the India-Nepal Treaty of Trade, initiated in 2018, is in progress.
4	India - Bhutan Agreement on Trade Commerce and Transit	17th January, 1972	Renewed periodically, with mutually agreed modifications. Agreement dated 29th July 2006 was valid for ten years. With mutual consent, the validity was extended for a period of one year or the period till the proposed new Agreement comes into force. The renewed Agreement has been signed on 12th November, 2016 and came into force with effect from 29th July, 2017.
5	India - Thailand FTA - Early Harvest Scheme (EHS)	9th October, 2003	Date of implementation of treaty was 1st September, 2004
6	India - Singapore CECA	29th June, 2005	Date of implementation of treaty was 1st August, 2005. The second review of India Singapore CECA was jointly concluded and announced on 1st June, 2018 during the state visit of Prime Minister of India to Singapore.
7	India - ASEAN- CECA - Trade in Goods, Services and Investment Agreement (Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam)	13th August, 2009 for goods and November, 2014 for Services and Investment	Date of implementation of treaty for **Goods** • 1st January, 2010 in respect of India and Malaysia, Singapore, Thailand. • 1st June, 2010 in respect of India and Vietnam. • 1st September, 2010 in respect of India and Myanmar. • 1st October, 2010 in respect of India and Indonesia. • 1st November, 2010 in respect of India and Brunei. • 24th January, 2011 in respect of India and Laos. • 1st June, 2011 in respect of India and the Philippines. • 1st August, 2011 in respect of India and Cambodia. **Services and Investment** For Services and Investment, date of implementation of treaty was 1stJuly, 2015.
8	India - South Korea CEPA	7th August, 2009	Date of implementation of treaty was 1st January, 2010. The two sides have commenced negotiations for upgradation of CEPA in 2016 to explore the possibility of providing further tariff concessions/ simplification of Rules of Origin to Indian exporters. 8th round of negotiations for upgrading India-Korea CEPA was held in June, 2019 in India.
9	India - Japan CEPA	16th February, 2011	Date of implementation of treaty was 1st August, 2011
10	India - Malaysia CECA	18th February, 2011	Date of implementation of treaty was 1st July, 2011

Source: Department of Commerce.

Annexure II (contd.)

Preferential Trade Agreements (PTAs) already in force

S.No.	Name of the Agreement	Date of Signing of the Agreement	Date of Implementation of the Agreement & Recent Developments
1	Asia Pacific Trade Agreement (APTA) (Bangladesh, China, India, Republic of Korea, Lao People's Democratic Republic and Sri Lanka)	July, 1975 (revised on 2nd November, 2005)	Date of implementation of treaty was 1st November, 1976.
2	Global System of Trade Preferences (GSTP) (Algeria, Argentina, Bangladesh, Benin, Bolivia, Brazil, Cameroon, Chile, Colombia, Cuba, Democratic People's Republic of Korea, Ecuador, Egypt, Ghana, Guinea, Guyana, India, Indonesia, Iran, Iraq, Libya, Malaysia, Mexico, Morocco, Mozambique, Myanmar, Nicaragua, Nigeria, Pakistan, Peru, Philippines, Republic of Korea, Romania, Singapore, Sri Lanka, Sudan, Thailand, Trinidad and Tobago, Tunisia, Tanzania, Venezuela, Viet Nam, Yugoslavia, Zimbabwe)	13th April, 1988	Date of implementation of treaty was 19th April, 1989.
3	SAARC Preferential Trading Agreement (SAPTA) (Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka)	11th April, 1993	Date of implementation of treaty was 7th December, 1995
4	India - Afghanistan	6th March, 2003	Date of implementation of treaty was 13th May, 2003
5	India – MERCOSUR (Argentina, Brazil, Paraguay and Uruguay)	25th January, 2004	Date of implementation of treaty was 1st June, 2009.
6	India – Chile	8th March, 2006	Date of implementation of treaty was 11th September, 2007. The agreement has been expanded on 6th September, 2016 and came into force w.e.f. 16th May, 2017.

Source: Department of Commerce.

Annexure II (contd.)

On-going Trade Negotiations

S. No.	Name of the Agreement	Status
1	India - EU BTIA	Negotiations launched on 28th June, 2007 in the areas of Goods, Services, Investment, Sanitary and Phyto-sanitary Measures, Technical Barriers to Trade, Trade Facilitation and Customs Cooperation, Competition, IPR & GIs. Etc. Sixteen rounds of have been held till date.
2	India - Sri Lanka Economic and Technical Cooperation Agreements (ETCA)	Eleven rounds of negotiations have been held so far.
3	India - Thailand CECA	Early Harvest Scheme on 83 items implemented. So far, thirty rounds of India-Thailand Trade Negotiation committee (ITTNC) meetings have been held.
4	India - Mauritius Comprehensive Economic Cooperation and Partnership Agreement (CECPA)	The negotiations under CECPA include Trade in Goods, Trade in Services, Trade Remedies, SPS/TBT issues and Dispute Settlements. The negotiations for CECPA has been finalized.
5	India - EFTA TEPA (Iceland, Norway, Liechtenstein and Switzerland)	The India- EFTA TEPA (Trade and Economic Partnership Agreement) was launched in January, 2008. So far, seventeen rounds of negotiations have been held.
6	India - New Zealand FTA/CECA	Ten Rounds of negotiation of CECA have been held so far. The 10th Round was held in New Delhi on 17-18 February, 2015.
7	India – Israel Trade Agreement	Nine rounds of negotiations on India-Israel FTA have been held so far.
8	India - Singapore CECA (3rd review)	Third review of India Singapore CECA was launched on 1st September, 2018.
9	India - SACU PTA (South Africa, Botswana, Lesotho, Swaziland and Namibia)	Five rounds of negotiations have been held so far.
10	India - Mercosur PTA expansion (Argentina, Brazil, Paraguay and Uruguay)	The existing India-MERCOSUR PTA is being expanded. The third meeting of Joint Administrative Committee (JAC) was held in Brasilia on 29th September, 2016. Both sides have exchanged their initial offers on 14th September, 2017.
11	BIMSTEC CECA (Bangladesh, India, Myanmar, Sri Lanka, Thailand, Bhutan and Nepal)	Twenty one meetings of the Trade Negotiation Committee (TNC) have taken place. The 21st Meeting of BIMSTEC Trade Negotiating Committee (TNC) was held during 18-19 November, 2018 in Dhaka, Bangladesh.
12	India - Gulf Cooperation Council (GCC) Framework Agreement	Two rounds of negotiations have been held so far in 2006 and 2008. In 2011, GCC Secretariat stated to have deferred negotiations with all countries until GCC States completely review the issue of negotiations. Recently GCC Secretariat vide its Note Verbale dated 6th November, 2019 has informed that GCC welcomes resumption of India-GCC FTA negotiations.
13	India – Canada FTA	Ten rounds of negotiation on India-Canada CEPA have been held so far. The 10th round was held in August, 2017 in New Delhi. An Inter-Sessional round was held in February, 2018 at Ottawa.
14	India - Australia	Nine rounds of negotiations have been held. The 9th round of negotiations was held on 21-23 September, 2015 in New Delhi, India.

(Contd.)

Annexure II (contd.)

On-going Trade Negotiations

S. No.	Name of the Agreement	Status
15	India-Malaysia CECA (1st Review)	The first meeting of the India-Malaysia Joint Committee meeting to review implementation of India-Malaysia CECA was held on 8th December, 2014.
16.	India-ASEAN Trade in Goods Agreement (1st Review)	India has requested for the review of India ASEAN Trade in Goods Agreement (AITIGA).
17	India-Korea CEPA review	Eight rounds of negotiations for upgrading India-Korea CEPA have been held so far. The 8th round was held on 17-18 June, 2019 in New Delhi.
18	India-Iran PTA	Four meetings have taken place so far
19	India-Peru Trade Agreement	The four rounds of negotiations have taken place so far.
20	India-EAEU Technical Consultations	The first round of technical consultations were held on 30-31 January, 2018 in New Delhi.
21	India-Bangladesh CEPA	A Joint Study for examining the feasibility of CEPA is to be carried out. India has identified Centre for Regional Trade for conducting the study and Bangladesh has been requested to identify a suitable organisation for this purpose.
22	India-Chile PTA (2nd Expansion)	First meeting of the 2nd Expansion of India Chile PTA was held in New Delhi on 10-11 December, 2019.

Source: Department of Commerce.

Annexure III

Summary of Changes in Foreign Exchange Reserves

(US$ billion)

Sl. No.	Year	Foreign Exchange reserves at the end of financial year (end March)	Total Increase (+)/ Decrease (-) in reserves	Increase (+) / decrease (-) in reserves on a BoP basis	Gain (+)/Loss (-) in reserves due to valuation effect
1	2007-08	309.7	110.5	92.2	18.4
2	2008-09	252.0	-57.7	-20.1	-37.7
3	2009-10	279.1	27.1	13.4	13.6
4	2010-11	304.8	25.8	13.1	12.7
5	2011-12	294.4	-10.4	-12.8	2.4
6	2012-13	292.0	-2.4	3.8	-6.2
7	2013-14	304.2	12.2	15.5	-3.3
8	2014-15	341.6	37.4	61.4	-24.0
9	2015-16	360.2	18.5	17.9	0.6
10	2016-17	370.0	9.8	21.6	-11.8
11	2017-18	424.5	54.6	43.6	11.0
12	2018-19	412.9	-11.7	-3.3	-8.3
13	H1: 2018-19	400.5	-24.0	-13.2	-10.8
14	H1: 2019-20	433.7	20.8	19.1	1.7

Source: Reserve Bank of India (RBI).

Monetary Management and Financial Intermediation

04
CHAPTER

Monetary policy remained accommodative in 2019-20. The repo rate was cut by 110 basis points in four consecutive Monetary Policy Committee meetings in the financial year due to slower growth and lower inflation. However, it was kept unchanged in the fifth meeting held in December 2019. Liquidity conditions were tight for initial two months of 2019-20; but subsequently it has remained comfortable. The financial flows to the economy however, remained constrained as credit growth declined for both banks and Non-Banking Financial Corporations. The Gross Non Performing Advances ratio of Scheduled Commercial Banks has remained unchanged at 9.3 per cent between March and September 2019 and increased slightly for the Non-Banking Financial Corporations from 6.1 per cent to 6.3 per cent. Capital to Risk-weighted Asset ratio of Scheduled Commercial Banks increased from 14.3 per cent to 15.1 per cent between March 2019 and September 2019. Nifty50 and S&P BSE Sensex indices, reached record high closing of 12,355 and 41,952 respectively during 2019-20 (upto January 16, 2020). The resolution under IBC has been much higher as compared to previous resolution channels. Amount recovered as percentage of amount involved was 49.6 per cent in 2017-18 and 42.5 per cent in 2018-19. The proceedings under IBC take on average about 340 days, including time spent on litigation, in contrast with the previous regime where processes took about 4.3 years.

MONETARY DEVELOPMENTS DURING 2019-20

4.1 Monetary policy during 2019-20 was conducted under the revised statutory framework, which became effective from June 27, 2016. As on end January 2020, five meetings of the Monetary Policy Committee (MPC) have been held in financial year 2019-20. In the first four meetings, the MPC decided to cut the policy repo rate changing the stance of monetary policy from neutral to accommodative. The repo rate was reduced by 110 basis points (bps) from 6.25 per cent in April 2019 to 5.15 per cent in October 2019 (Table 1). MPC's decision was guided by low inflation and the need to strengthen domestic growth by spurring private investment in the economy.

4.2 In its fifth bi-monthly monetary policy statement in December 2019, MPC decided to keep the repo rate unchanged at 5.15 per cent, underlining the rising consumer price inflation as one of the reasons. MPC also signaled its intention to wait until effective monetary policy transmission happens.

Various high frequency indicators along with surveys conducted by the Reserve Bank indicated a weakening of both domestic and external demand conditions; hence the real GDP projections were revised downwards to 5 per cent for 2019-20.

Table 1: Revision in Policy Rates

Effective Date	Repo Rate (per cent)	Reverse Repo Rate (per cent)	Bank Rate/ MSF Rate* (per cent)	Cash Reserve Ratio (per cent of NDTL)	Statutory Liquidity Ratio (per cent of NDTL)
04-04-19	6.00	5.75	6.25	4.00	19.25
06-06-19	5.75	5.50	6.00	4.00	19.00
07-08-19	5.40	5.15	5.65	4.00	18.75
04-10-19	5.15	4.90	5.40	4.00	18.50**
05-12-19	5.15	4.90	5.40	4.00	18.50
04-01-20	5.15	4.90	5.40	4.00	18.25

Source: RBI.

Notes: NDTL is Net Demand and Time Liabilities.
*: Bank Rate was aligned to MSF rate with effect from February 13, 2012.
**: See RBI notification dated December 5, 2018 to reduce in SLR to 18 per cent in phases, viz., w.e.f. January 5, 2019 - 19.25 per cent; April 13, 2019 - 19.00 per cent; July 6, 2019 - 18.75 per cent; October 12, 2019 -18.50 per cent; January 4, 2020 - 18.25 per cent; and April 11, 2020 - 18.00 per cent.

Table 2: Year on Year (YoY) Change in Monetary Aggregates as on end March of each year (per cent)

Items	2013-14	2014-15	2015-16	2016-17*	2017-18	2018-19	2019-20#
Currency in Circulation	9.2	11.3	14.9	-19.7	37	16.8	11.9
Cash with Banks	10.7	12.4	6.6	4.2	-2.1	21.4	15.8
Currency with the Public	9.2	11.3	15.2	-20.8	39.2	16.6	11.8
Bankers' Deposits with the RBI	34	8.3	7.8	8.4	3.9	6.4	17.1
Demand Deposits	7.8	9.8	11	18.4	6.2	9.6	13.1
Time Deposits	14.9	10.7	9.2	10.2	5.8	9.6	9.8
Reserve Money (M0)	14.4	11.3	13.1	-12.9	27.3	14.5	13.2
Narrow Money (M1)	8.5	11.3	13.5	-3.9	21.8	13.6	12.5
Broad Money (M3)	13.4	10.9	10.1	6.9	9.2	10.5	10.4

Source: RBI.

Notes: * March 31, 2017 over April 1, 2016 (barring M0, CIC, and Bankers' Deposits with the RBI).
As on December 2019.

4.3 During 2018-19, the growth rates of monetary aggregates witnessed reversion to their long-term trend after experiencing unusual behavior in 2016-17 due to demonetisation and again in 2017-18 due to the process of remonetisation.

4.4 The growth of reserve money as on December 2019 was 13.2 per cent (Table 2 and Figure 1). On the component side, the expansion in reserve money was led by Currency in Circulation (CIC) (Table 2). From the sources side, expansion in M0 during 2019-20 so far (as on December 27, 2019) was contributed mainly by RBI's Net Foreign Assets (NFA) as against Net Domestic Assets (NDA) during the previous year. Within NDA, while net RBI credit to the Government has contributed to the expansion in M0, it has been at a lower magnitude vis-à-vis last year. Among other sources, RBI's claims on banks decreased, indicating surplus liquidity conditions in 2019-20 so far (discussed in more detail in the next section).

Figure 1: Reserve Money Growth (Year on Year (YoY))

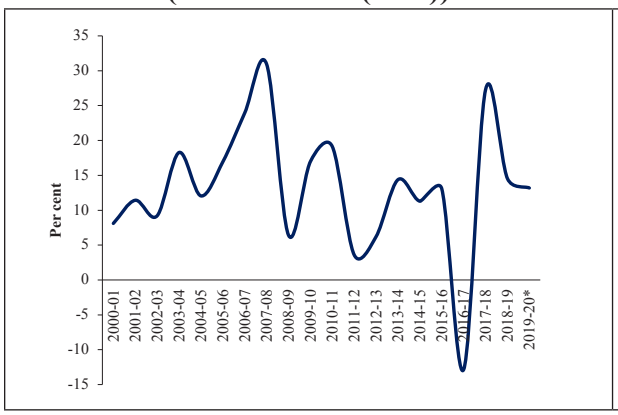
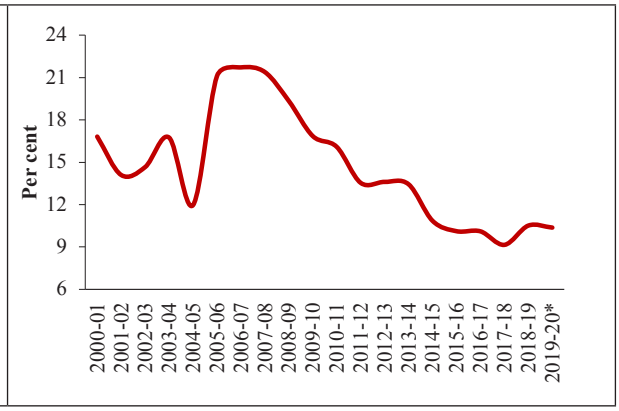
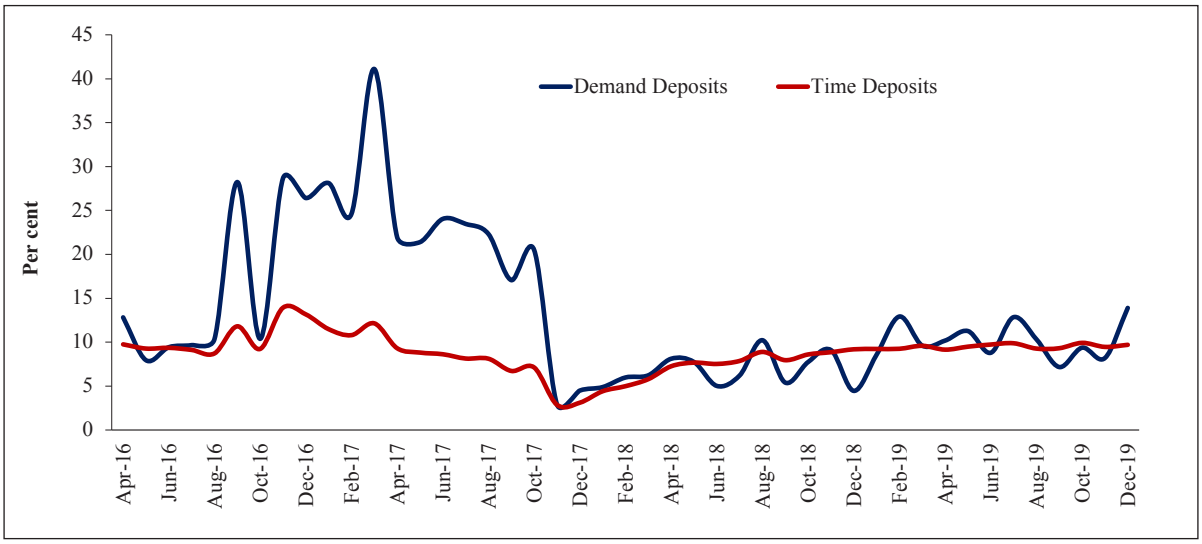


Figure 2: Broad Money Growth (YoY)



Source: RBI.
Notes: *: As on December 2019.

Figure 3: Deposits Growth (YoY)

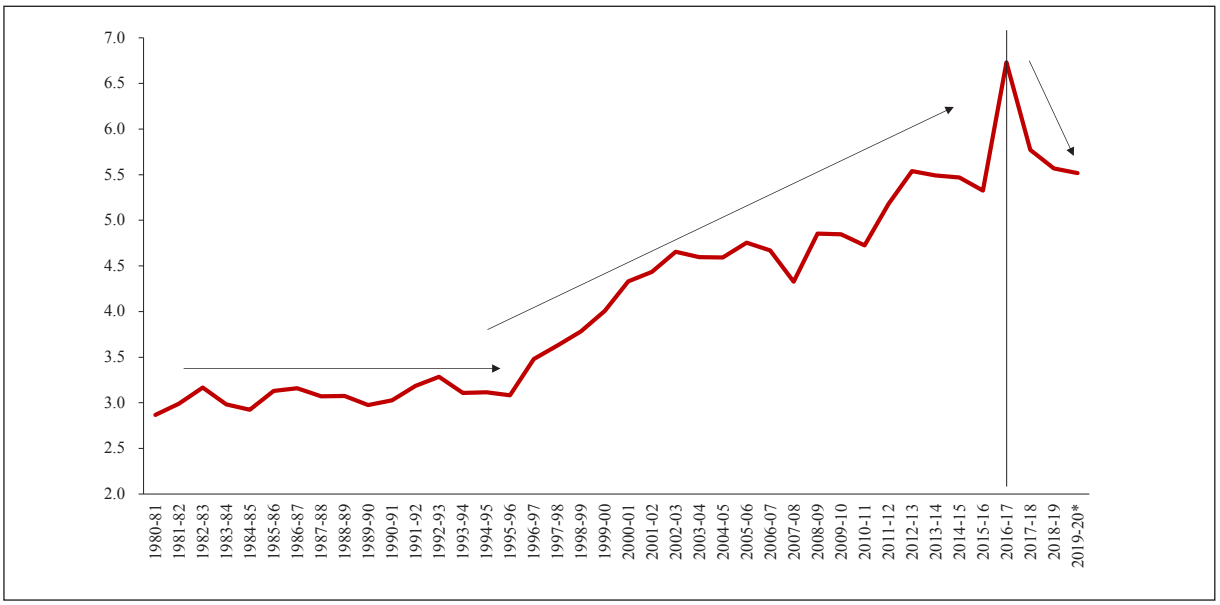


Source: RBI.
Note: Figures for December 2019 are as of December 20.

4.5 Broad money (M3) growth has been on declining trend since 2009 (Figure 2). However, since 2018-19 it has picked up marginally, mainly driven by the growth in aggregate deposits and stands at 10.4 per cent as on December 2019. Note that this is far below average growth of 14.9 per cent from 2000-01 to 2018-19 (Figure 2). From the component side, the expansion in M3 so far during the year is attributable to aggregate deposits, which recorded a higher growth of 10.1 per cent as on December 20, 2019 as compared with 9.2 per cent a year ago. Growth in both, time deposits and demand deposits picked up in 2019-20 and was higher in December 2019 as compared to December 2018 (Figure 3). On the sources side, banks' credit to the government mainly contributed to M3 expansion.

4.6 Between mid- 1990's to 2016-17, the money multiplier (measured as a ratio of M3/M0) was mostly increasing; however, it has been declining since 2017-18. Money Multiplier recorded a slight decline in 2019-20 as well (Figure 4).

Figure 4: Money Multiplier (M3/M0)

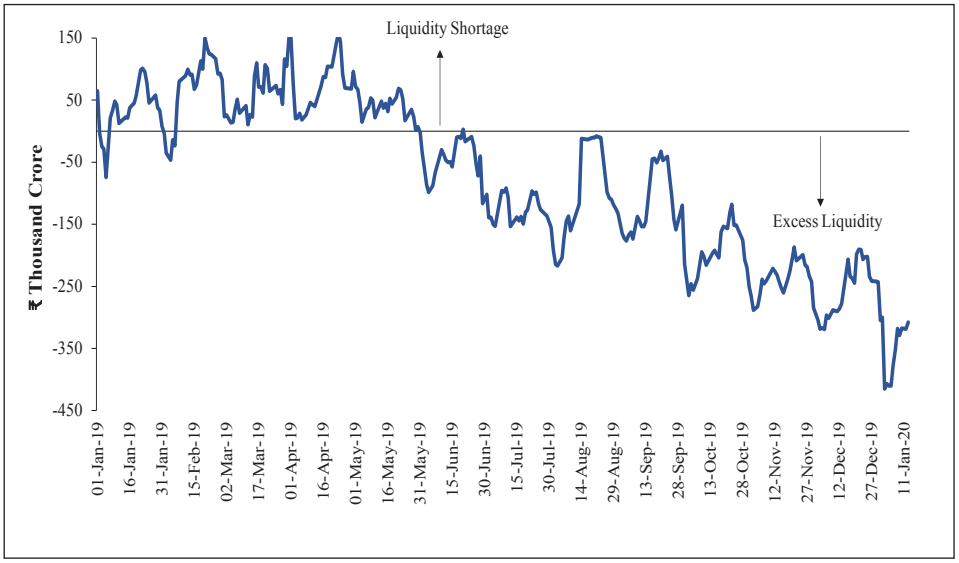


Source: RBI.
Note:*: As on December 2019.

LIQUIDITY CONDITIONS AND ITS MANAGEMENT

4.7 Systemic liquidity in 2019-20 has been largely in surplus since June 2019 (Figure 5). Durable liquidity injection was undertaken through four Open Market Operations (OMOs) purchase auctions and one US$ 5 billion buy/sell swap auction, all conducted during first quarter of 2019-20. Moreover, the Reserve Bank's forex operations augmented the domestic rupee liquidity in contrast to absorption last year. Furthermore, the Statutory Liquidity Ratio (SLR) has been reduced by 25 bps each in four steps effective April 13, 2019, July 6, 2019, October 12, 2019 and January 4, 2020 respectively, to 18.25 per cent of Net Demand and Time Liabilities (NDTL) of banks, in accordance with the roadmap announced in December 2018 with a view to aligning the SLR with the Liquidity Coverage Ratio (LCR). Other factors creating surplus liquidity are moderation in currency demand after two years of high demand following demonetisation.

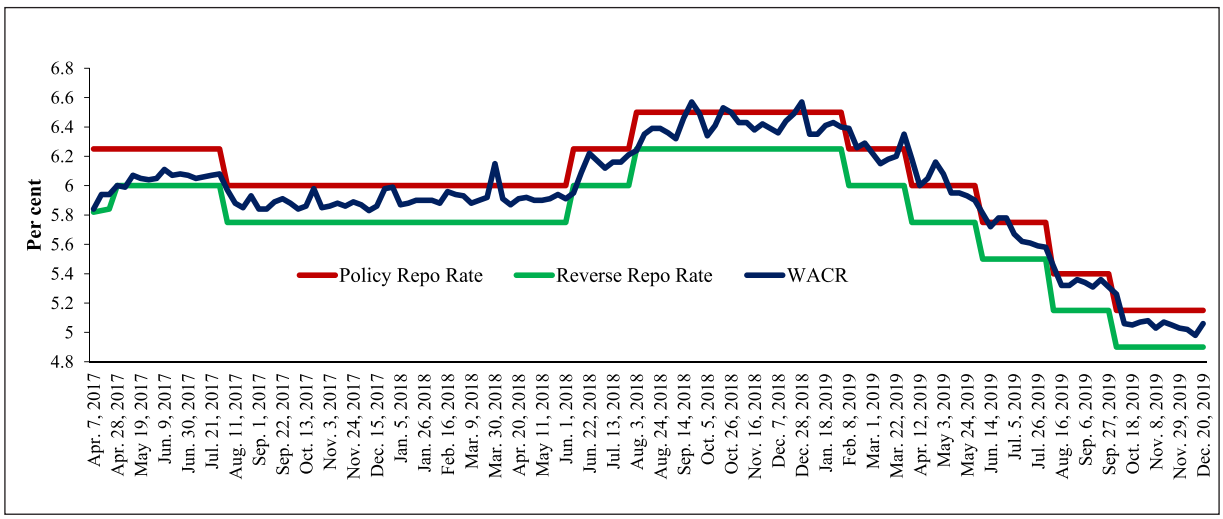
Figure 5: Daily Liquidity Management



Source: Net liquidity injected data from Money Market Operation, RBI

4.8. April and May were the only two months in 2019-20 (upto January 2020) when liquidity was in deficit due to restrained government spending and high demand for cash. The unwinding of Government of India cash balances – a regular feature every year in April – was much lower in the current year due to the imposition of the model code of conduct during elections restraining government spending. RBI conducted a US$/₹ buy/sell swap auction of US$ 5 billion for a tenor of three years in April, thereby injecting ₹ 34,874 crore, and two OMO purchase auctions in May amounting to ₹ 25,000 crore. The increased spending by the government, net forex purchases by the RBI and return of currency to the banking system combined with the two OMO purchase auctions amounting to ₹ 27,500 crore conducted by the Reserve Bank resulted in surplus liquidity in June. Liquidity has remained in surplus despite some episodes of forex sales in July and August.

Figure 6: Policy Corridor and Call Rate



Source: RBI.

4.9 Comfortable liquidity situation is also evident in the Weighted Average Call Money Rate (WACR) being mostly been close to the repo rate within the Liquidity Adjustment Facility (LAF) corridor (Figure 6).

4.10 With a view of moving further towards harmonization of the effective liquidity requirements of banks with LCR a roadmap was given in April 2019 to increase the Facility to Avail Liquidity for LCR by 50 bps in four steps to reach 15 per cent of NDTL by April 2020. Thus, by April 1, 2020, the total High Quality Liquid Assets carve out from SLR would be 17.0 per cent of NDTL of banks.

DEVELOPMENTS IN THE G-SEC MARKET

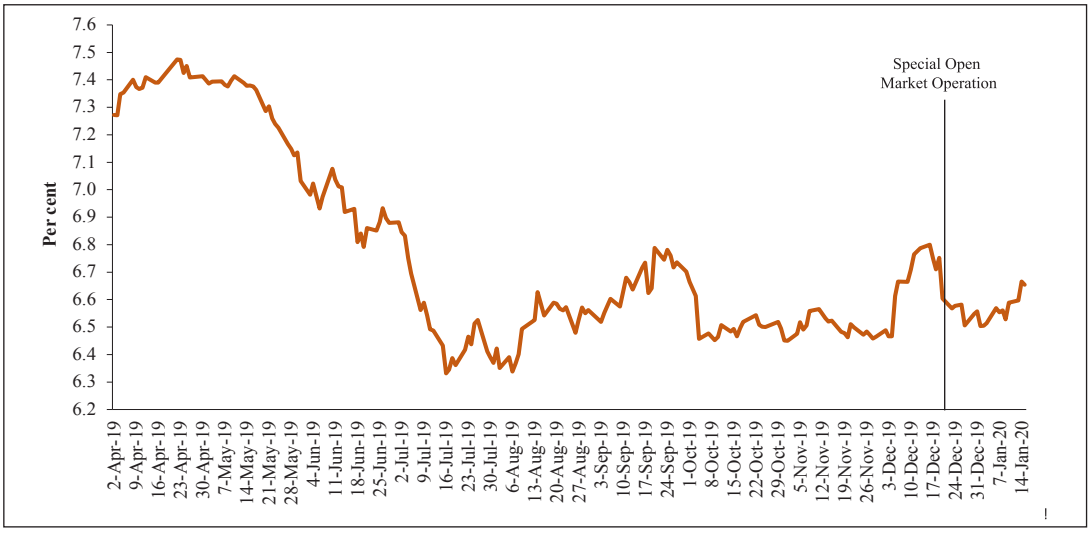
4.11 During the first half of 2019-20, the 10-year benchmark G-Sec yield mostly softened (Figure 7), tracking subdued crude oil prices, surplus liquidity, and four consecutive policy rate cuts amounting to 110 bps.

4.12 In first quarter of 2019-20, initially from April to mid-May 2019, 10-year benchmark yield hardened marginally on account of rise in crude oil prices. Thereafter, it largely followed a downward trend. The primary drivers for the softening of yield may be attributed to change in monetary policy stance of the U.S. Fed (on global growth concerns and ongoing trade tensions), easing of liquidity condition of the banking system, consecutive policy rate cuts by the RBI along with change of stance from neutral to accommodative. Additionally, benign crude oil prices aided the sentiment. Transfer of RBI surplus to the Government, accommodative stance by MPC, significant and sustained surplus liquidity, also, capped further upside in yields.

4.13 The softening of the benchmark yield continued during early period of second quarter of 2019-20 amidst expectation of another rate cut on the back of slowing economy. Thereafter, the yield started to harden on the back of news of launch of a new 10-year security and unexpected rise in crude oil prices. After the December 2019 MPC meeting where policy repo rates were kept unchanged, the 10 year G-Sec yields went up and stood at 6.8 per cent on December 16, 2019.

4.14 "Special Open Market Operation" by Reserve Bank of India, which means purchase of long term securities and simultaneous sale

Figure 7: 10-Year Benchmark G-Sec Yield



Source: CCIL.

of short term securities helped bring down the yield slightly on 10 year G-Secs. This is expected to bring down the term premium by reducing the differential between the long and short term bond yields. The first round of sale and purchase worth ₹10,000 crore was done on December 23, 2019. The second and third round was on December 30, 2019 and January 6, 2020 respectively for the same amount. This led to a slight decline in the yield of 10-year G-Sec. The 10-year benchmark bond (6.45% GS 2020) yield closed at 6.8 per cent on December 16, 2019 and declined to 6.6 per cent on December 20, 2019 and 6.5 per cent on January 2, 2020. However, the yield on 10-year benchmark bond drifted up again and stood at 6.63 per cent on January 15, 2020.

BANKING SECTOR

4.15 Gross Non Performing Advances (GNPA) ratio (i.e. GNPAs as a percentage of Gross Advances) of Scheduled Commercial Banks remained flat at 9.3 per cent at end September 2019, as was at end March 2019. Similarly their Restructured Standard Advances (RSA) ratio remained unchanged at 0.4 per cent during the same period. The Stressed Advances (SA) ratio of Scheduled Commercial Banks (SCBs) followed suit by remaining flat at 9.7 per cent as at end-September 2019. GNPA ratio of Public Sector Banks (PSBs) was unchanged at 12.3 per cent while stressed advances ratios increased from 12.7 per cent at end March 2019 to 12.9 per cent at end September 2019.

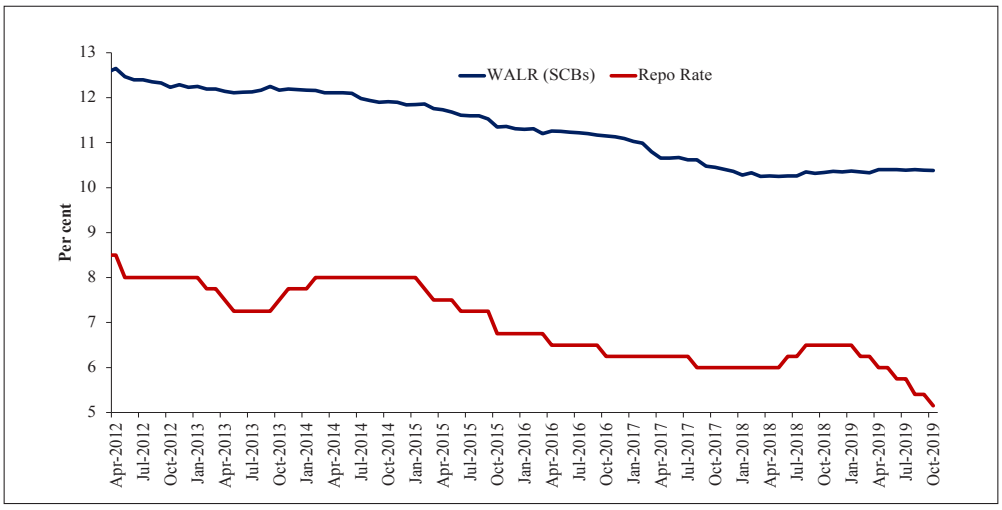
4.16 Capital to risk-weighted asset ratio (CRAR) of SCBs increased from 14.3 per cent to 15.1 per cent between March 2019 and September 2019, largely due to improvement in CRAR of PSBs. SCBs' Return on Assets (RoA) recovered from (-) 0.1 per cent to 0.4 per cent during H1 of 2019-20, while their Return on Equity (RoE) recovered from (-) 1.6 per cent to 4.1 per cent during the same period. However, many PSBs have continued to record negative profitability ratios since March 2016, mainly on account of provisioning requirements.

MONETARY TRANSMISSION

4.17 Transmission of monetary transmission has been weak in 2019 on all three accounts: Rate Structure, Quantity of Credit, and Term Structure.

(a) Rate Structure: The Weighted Average Lending Rate (WALR) of SCBs has not

Figure 8: Weighted Average Lending Rate on outstanding loans and Repo rate

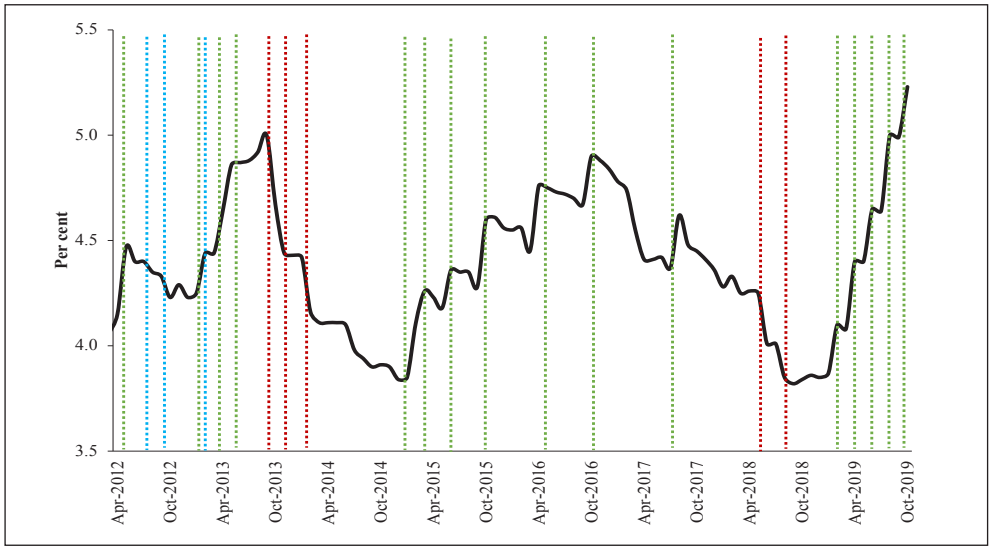


Source: RBI.

declined at all in 2019 despite reduction of repo rate by 135 bps since January 2019 (Figure 8). WALR on outstanding rupee loans of SCBs was 10.38 per cent in January 2019 and 10.40 per cent in October 2019. The monetary transmission has been slightly better for fresh loans. WALR on fresh loans of Public Sector Banks reduced by 47 bps and that of Private Sector Banks reduced by 40 bps from January to October 2019. However, even this has been much less than the repo rate cut of 135 bps (in 2019).

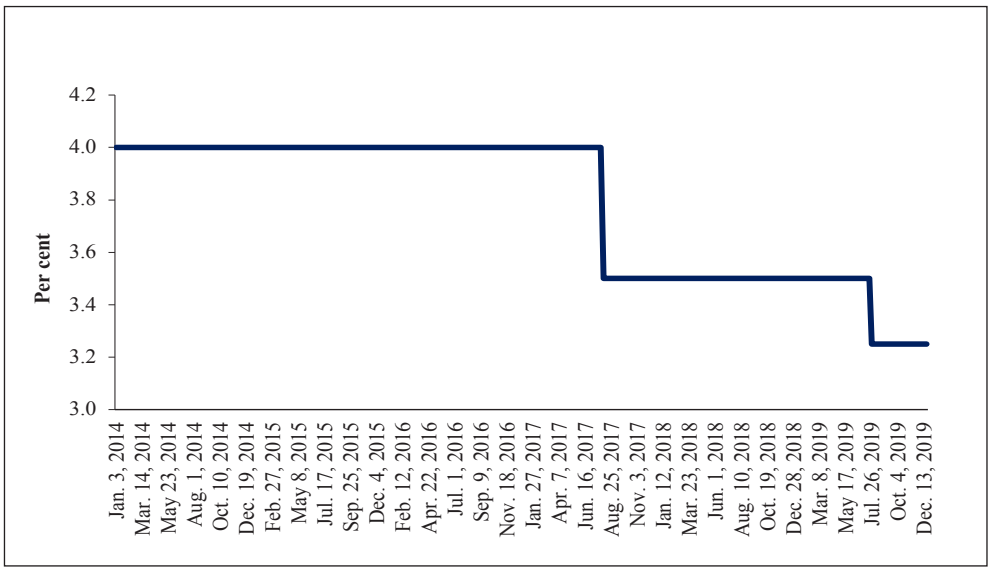
4.18 The credit spread (difference between repo rate and WALR) is at the highest level in this decade. WALR on outstanding loans of SCBs is 525 bps higher than the repo rate, suggesting that there has been no transmission

Figure 9: Credit spread



Source: RBI.
Note: Blue means CRR cut, Red denotes Repo hike, Green denotes Repo cut.
Credit spread is defined as difference between repo rate and WALR on outstanding loans.

Figure 10: Saving Deposit Rate



Source: RBI.

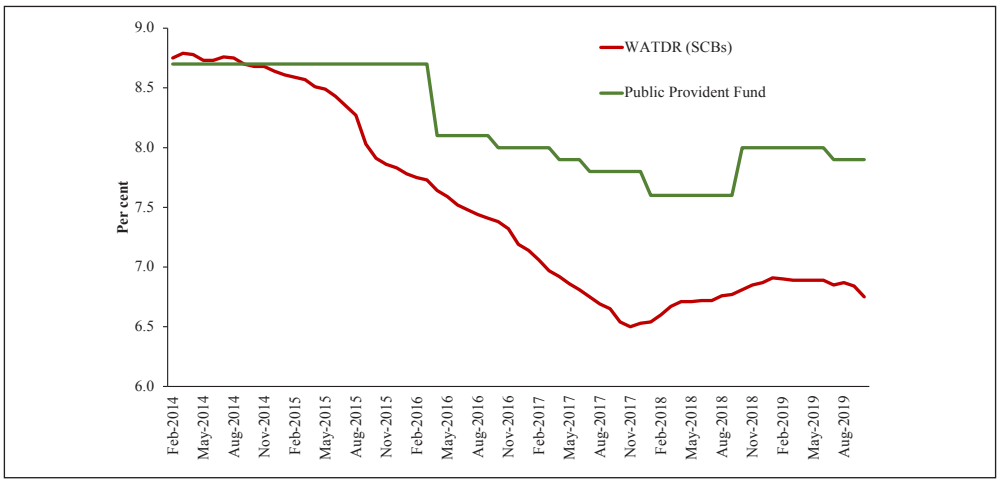
of the cut in repo rate to lending rates of the banks in 2019. (Figure 9).

4.19 There has been a reduction in the saving deposit rate by 25 bps in 2019 (Figure 10). The term deposit rate which is more important has seen a decline of only 16 bps from January 2019 to October 2019. An important limiting factor seems to be the rate on small savings scheme like Public Provident Fund (PPF). In 2014, the Weighted Average Term Deposit Rate (WATDR) was same as PPF, however the gap between them is 115 bps at end October 2019 (Figure 11). It is unlikely that the term deposit rates can decline without a decrease in administered rates on schemes like these.

(b) Term structure

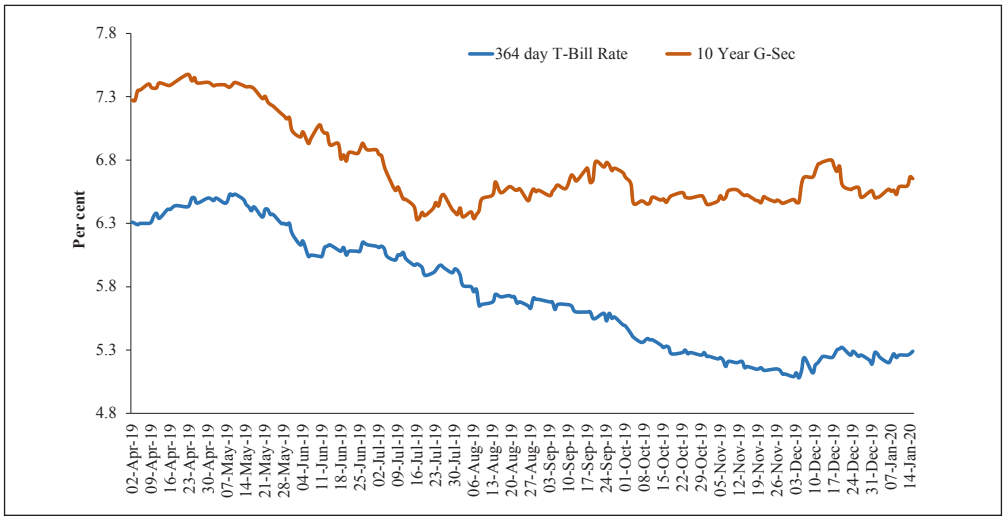
4.20 RBI's monetary easing and LAF liquidity has had some impact on short term interest rates. However, this impulse is not feeding through to longer term maturities. Since the beginning of the year, the yields on short term government securities (364 days T-bill) have declined much faster than that

Figure 11: Term Deposit Rate of SCBs and rate of interest on Public Provident Fund



Source: RBI and Ministry of Finance.

Figure 12: Bond yields (per cent)



Source: CCIL.

of long term Government securities (10-year G-sec). Infact, after August 2019 the yield on 10-year G-Sec have not declined much, barring the small decline after Special Open Market Operation by RBI (details in previous section) (Figure 12).

(c) Credit Growth

4.21 Despite a decrease in policy rates, the credit growth in the economy has been declining since the beginning of this year. Bank Credit growth (YoY) moderated from 12.9 per cent in April 2019 to 7.1 per cent as on December 20, 2019. The credit growth has been moderating from December 2018, when it was 13.9 per cent (Figure 13(a)). The moderation in credit growth was witnessed across all the major segments of non-food credit, except personal loans, which continued to grow at a steady and robust pace during 2019-20 so far (data available till November 2019). The moderation was led by a sharp deceleration in credit growth to the services sector. Credit growth to industry has been very low in the recent months (Figure 13(b)). The main contributor to this slowdown has been a negative growth of credit to Micro, Small and Medium Enterprises and Textiles (Table 3).

Figure 13 (a): Bank Credit Growth (YoY)

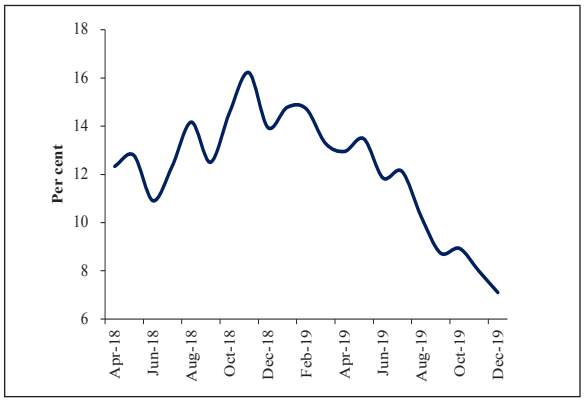
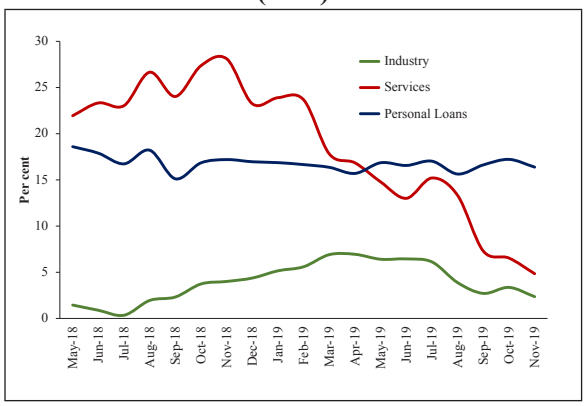


Figure 13 (b): Sectoral Bank Credit Growth (YoY)



Source: RBI.

Table 3: Growth in Industry-wise Deployment of Bank Credit by Major Sectors (YoY, per cent)

Item	Mar-15	Mar-16	Mar-17	Mar-18	Mar-19	Nov-19#
Non Food Credit	8.6	9.1	8.4	8.4	12.3	7.2
Industry	5.6	2.7	-1.9	0.7	6.9	2.4
Micro & Small	9.1	-2.3	-0.5	0.9	0.7	-0.1
Medium	0.4	-7.8	-8.7	-1.1	2.6	-2.4
Large	5.3	4.2	-1.7	0.8	8.2	3.0
Textiles	-0.1	1.9	-4.6	6.9	-3.0	-6.1
Infrastructure	10.5	4.4	-6.1	-1.7	18.5	7.0

Source: RBI.

Note: Data are provisional and relate to select banks which cover about 90 per cent of total non-food credit extended by all scheduled commercial banks.
as on November 22, 2019.

Box 1: Major Policy Changes related to Banking Regulations

1. ***Permitting One-time Restructuring of Existing Loans to MSMEs Classified as 'Standard' without a Downgrade in the Asset Classification***

A one-time restructuring of existing loans to MSMEs that were in default but with asset classification as 'standard' as on January 1, 2019, was permitted without an asset classification downgrade. The scheme is available to MSMEs qualifying with objective criteria including, *inter alia*, a cap of ₹ 25 crore on the aggregate exposure of banks and NBFCs as on January 1, 2019. The restructuring will have to be implemented by March 31, 2020 and an additional provision of 5 per cent will have to be maintained in respect of accounts restructured under this scheme.

2. Bank Lending to Infrastructure Investment Trusts (InvITs)

It was decided to permit banks to lend to InvITs, subject to certain safeguards which include a Board approved policy on exposures to InvITs, assessment of all critical parameters including sufficiency of cash flows at InvIT level, overall leverage of the InvITs and the underlying SPVs to be within the leverage permitted under the Board approved policy, monitoring of performance of the underlying SPVs on an ongoing basis and lending to only those InvITs where none of the underlying SPVs are facing 'financial difficulty'.

3. Resolution of Stressed Assets

Reserve Bank released the new Prudential Framework for Resolution of Stressed Assets. The fundamental principles underlying the regulatory approach for resolution of stressed assets are as under:

(i) Early recognition and reporting of default in respect of large borrowers by banks, FIs and NBFCs;

(ii) Complete discretion to lenders with regard to design and implementation of resolution plans, subject to the specified timeline and independent credit evaluation;

(iii) Harmonised framework for resolution of stressed assets, in supersession of all earlier resolution schemes (S4A, SDR, 5/25, *etc*.);

(iv) A system of disincentives in the form of additional provisioning for delay in implementation of resolution plan or initiation of insolvency proceedings;

(v) Withdrawal of asset classification dispensations on restructuring. Future upgrades to be contingent on a meaningful demonstration of satisfactory performance for a reasonable period;

(vi) For the purpose of restructuring, the definition of 'financial difficulty' to be aligned with the guidelines issued by the Basel Committee on Banking Supervision; and,

(vii) Signing of inter-creditor agreement (ICA) by all lenders to be mandatory, which will provide for a majority decision making criteria.

4. External Benchmark Based Lending

As the transmission of policy rate changes to the lending rate of the banks under the current MCLR framework was not satisfactory, guidelines were issued to banks on September 4, 2019 mandating banks *w.e.f*. October 1, 2019 to link all new floating rate personal or retail loans and floating rate loans to MSE to an external benchmark as under:

a) *Benchmarks:* The banks are free to choose one of the several benchmarks from Repo Rate, 3 Months or 6 Months Treasury Bill yield and any other benchmark market interest rate published by the Financial Benchmark India Private Ltd (FBIL).

b) *Spread*: Banks are free to decide the spread over the external benchmark. However, credit risk premium may undergo change only when borrower's credit assessment undergoes a substantial change, as agreed upon in the loan contract. Further, other components of spread including operating cost could be altered once in three years.

c) *Reset of interest rates:* The interest rate under external benchmark shall be reset at least once in three months.

5. Revised guidelines on compensation of Whole Time Directors/Chief Executive Officers/Material Risk Takers and Control Function Staff for all Private Sector Banks (including LABs, SFBs, PBs, WOS, and foreign banks) to be effective from April 01, 2020:

a) Substantial portion of compensation *i.e.* at least 50 per cent should be variable (Earlier no threshold was prescribed)

b) Employee Stock Ownership Plans (ESOPs) to be included as a component of Variable Pay as share-linked instruments. (Earlier excluded)

c) Variable Pay is to be capped at 300 per cent of Fixed Pay (Earlier Variable Pay was capped at 70 per cent of Fixed Pay but did not include ESOPs/share-linked instruments)

d) Minimum 50 per cent of Variable Pay is to be via non-cash component (such as ESOPs). (Earlier no specific proportion was prescribed)

e) Mandating a compulsory deferral mechanism for Variable Pay, regardless of quantum of variable pay (Earlier it was mandated only beyond a specified threshold)

f) Mandating imposition of malus in case of divergence in NPA/provisioning beyond RBI prescribed threshold for public disclosure. (New addition)

g) Quantitative and Qualitative criteria are being prescribed for identification of Material Risk Takers (New addition).

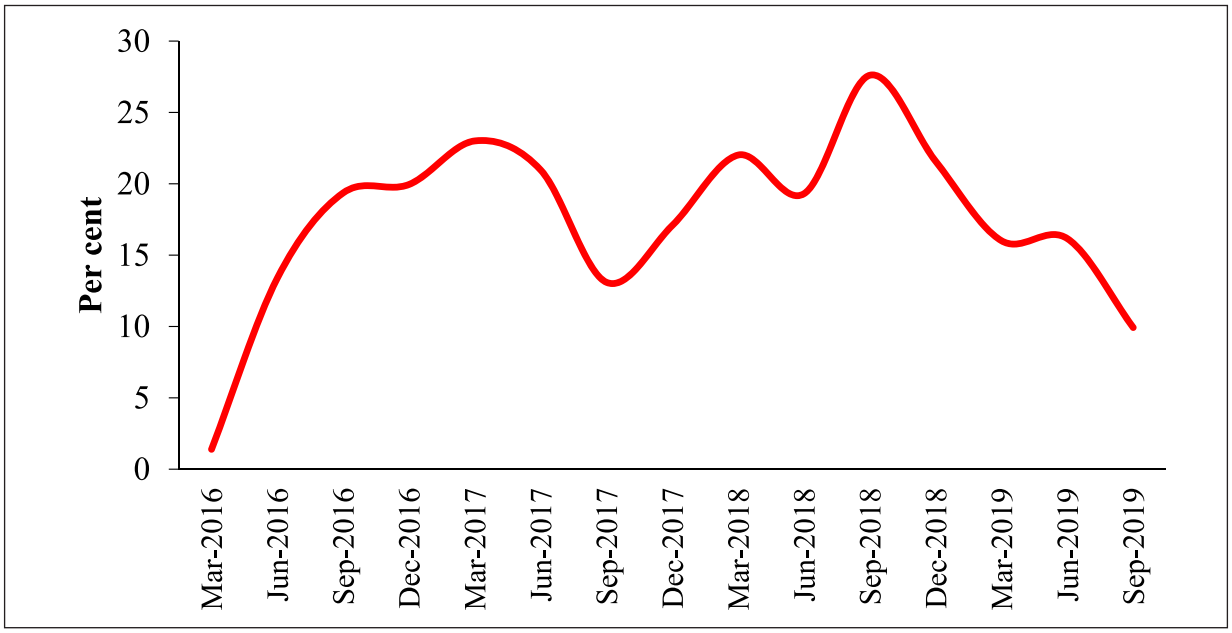
NON-BANKING FINANCIAL SECTOR (NBFC)

4.22 After growing very fast in 2017-18 and in first half of 2018-19, the sector has decelerated sharply since then. The growth of loans from NBFCs declined from 27.6 per cent in September 2018 and 21.6 per cent in December 2018 to 9.9 per cent at end September 2019 (Figure 14).

4.23 The balance sheet of the NBFC sector grew by 17.9 per cent from ₹ 26.18 lakh crore to ₹ 30.85 lakh crore during 2018-19. This growth was on top of a growth of 21.3 per cent recorded during 2017-18 despite concerns over NBFCs. The third quarter of 2018-19 witnessed liquidity stress. The cost of funds for NBFCs declined by March 2019 and further by September 2019, as reflected in the 3-month CP discount rate[1] (Figure 15).

1. Data for September 2019 is provisional.

Figure 14: Growth in Loans and advances by NBFCs (YoY)

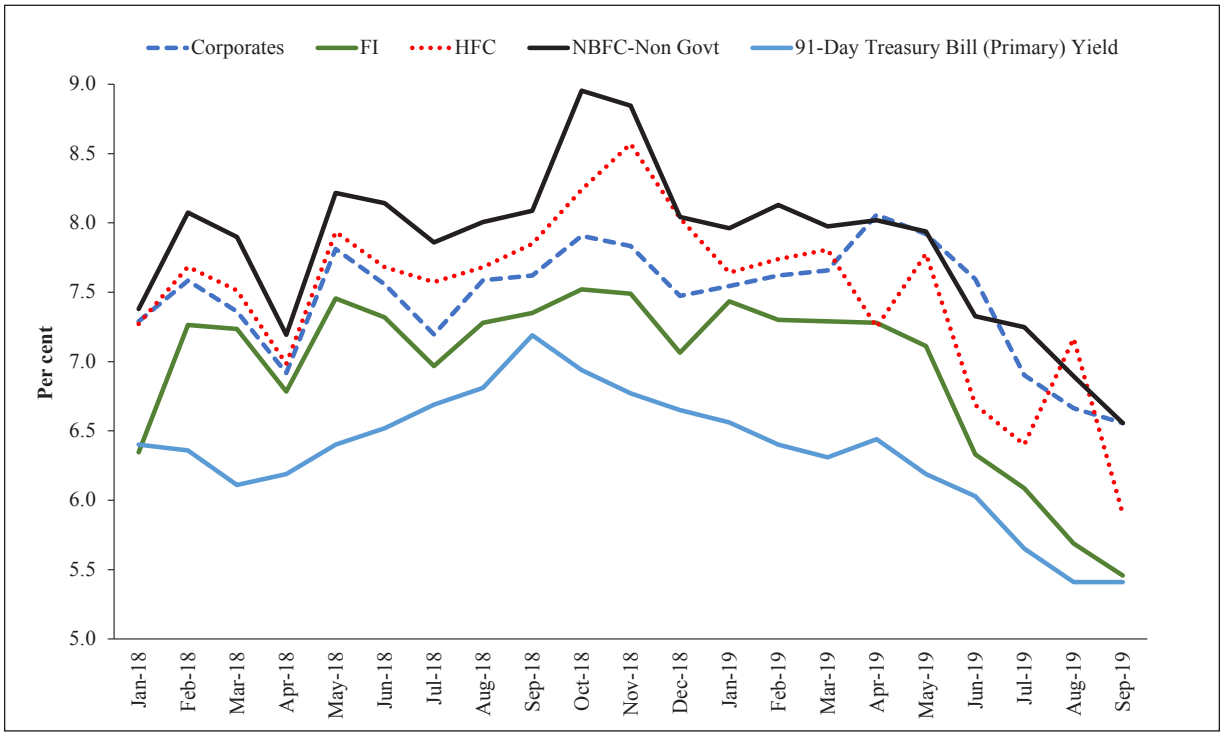


Source: RBI.

Note: 1. Data pertains to deposit taking NBFCs and Non-Deposit Taking Systematic Important NBFCs including Government Companies.

2. Data from June 2018 onwards is provisional.

Figure15: Category wise 3-Month CP Rate[2]



Source: RBI.

2. Data for September 2019 is provisional.

4.24 There is an observable shift in the sources of funding of NBFCs. Bank borrowings increased from ₹5.62 lakh crore in October 2018 to ₹ 7.13 lakh crore in October 2019 i.e. a growth of 26.8 per cent (Figure 16 (a)). However, this growth is much lower as compared to end October 2018. Deployment of credit by mutual funds to NBFCs has been contracting since October 2018 (Figure 16 (b)).

4.25 The market borrowings increased from ₹ 10.4 lakh crore to ₹ 10.5 lakh crore during September 2018 to September 2019. Among the instruments of market borrowing, the share of Commercial Papers decreased by 31.2 per cent from September 2018 to September 2019, while the share of Non-Convertible Debentures (NCDs) increased by 7.7 per cent from ₹ 8.61 lakh crore to ₹ 9.27 lakh crore in the same period.

4.26 As against the regulatory requirement of 15 per cent, the Capital to risk weighted assets ratio (CRAR) of NBFC sector remained at 19.5 per cent at end March 2019 and end September 2019. The gross NPAs ratio of NBFC sector increased from 5.8 per cent at end March 2018 to 6.1 per cent at end March 2019 and further increased marginally to 6.3 per cent at end September 2019. The net NPAs ratio marginally increased from 3.3 per cent in March 2018 to 3.4 per cent in March 2019 and remained same as on September 2019. The Return on Assets (RoA) of the sector decreased to 1.5 per cent as on March 2019 from 1.6 per cent as on March 2018. Further, the Return on Equity (RoE) moderated to 6.6 per cent as on March 2019 from 6.9 per cent as on March 2018.

Figure 16 (a): Growth in Bank Credit to NBFCs

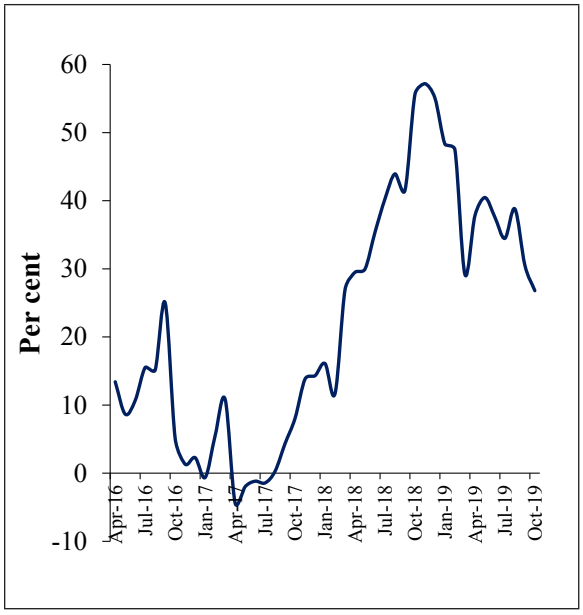
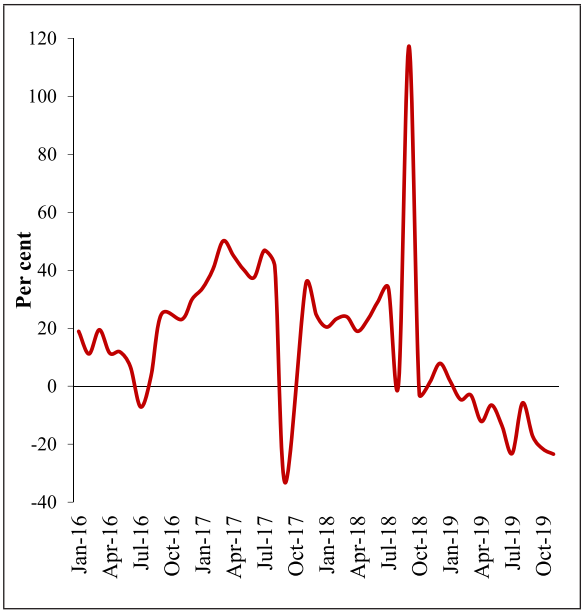


Figure 16 (b): Growth in Deployment of Funds by MFs to NBFCs



Source: SEBI & RBI (Sectoral deployment of bank credit by major sectors)

Note for figure 16(a)

1. This data includes HFCs as well.
2. Data are provisional and relate to select banks which cover about 90 per cent of total non-food credit extended by all scheduled commercial banks.

Box 2: Major Policy Changes related to Non-banking Financial Regulation /Supervision

In the aftermath of the IL&FS event, several measures were undertaken to strengthen the regulation and supervision of the NBFC sector, as set out below.

1. Amendment to the RBI Act, 1934 to Strengthen the Regulation and Supervision of the NBFC Sector vesting additional powers with the Reserve Bank to:

a. Raise the minimum net owned fund requirement for NBFCs up to ₹ 100 crore (from existing ₹ 2 crore);

b. Remove Director of an NBFC from the office (other than Government companies);

c. Supersede the Board of Directors of NBFC (other than Government companies);

d. Remove or debar statutory auditor from exercising the duties as auditor of any of the RBI regulated entities;

e. Resolve NBFCs through amalgamation, reconstruction, splitting the viable and non-viable businesses in separate units;

f. Direct an NBFC to annex its financial statements such as statements and information relating to the business or affairs of any group company of the NBFC and to cause an inspection or audit to be made of any group company of an NBFC and its books of account.

g. To increase the quantum of penalties that the Reserve Bank may impose.

2. Eligible NBFC-ND-SIs as Authorised Dealers (ADs) - Category II: The Reserve Bank allowed non-deposit taking systemically important NBFC-ICCs to obtain AD-Category II license, effective April 16, 2019, in order to increase accessibility and efficiency of the services extended to the members of the public for their day-to-day non-trade current account transactions. Eligible NBFCs will have to satisfy certain conditions and seek specific permission from the Reserve Bank.

3. Liquidity Risk Framework for NBFCs: All non-deposit taking NBFCs with asset size of ₹ 100 crore and above, systemically important Core Investment Companies and all deposit taking NBFCs irrespective of their asset size, shall adhere to the set of liquidity risk management guidelines:

a) Granular maturity buckets and tolerance limits,

b) Liquidity risk monitoring tools/ metrics to capture strains in liquidity position,

c) Adoption of "stock" approach to liquidity, in addition to structural & dynamic liquidity,

d) Extension of principles of sound liquidity risk management to aspects like off-balance sheet and contingent liabilities, intra-group fund transfers, etc., and

e) Introduction of Liquidity Coverage Ratio (LCR) for all non deposit taking NBFCs (excluding Core Investment Companies, Non-operating Financial Holding Companies Standalone Primary Dealers and Type-I NBFCs) with asset size ₹ 5,000 crore and above and all deposit taking NBFCs irrespective of size to maintain sufficient High Quality Liquid Assets (HQLA) to survive any acute liquidity stress. The LCR will be progressively increased to 100 per cent by December 1, 2024.

4. Review of Limits for NBFC-Micro Finance Institutions (NBFC-MFIs): The household income limits for borrowers of NBFC-MFIs have been raised from the current level of ₹ 1,00,000 for rural areas and ₹ 1,60,000 for urban/semi urban areas to ₹ 1,25,000 and ₹ 2,00,000, respectively, along with

increase in lending limit from ₹ 1,00,000 to ₹ 1,25,000 per eligible borrower effective November 8, 2019.

Housing Finance Companies: The regulation of Housing Finance Companies (HFCs) has been transferred by Government of India from National Housing Bank (NHB) to the RBI with effect from August 9, 2019.

DEVELOPMENTS IN CAPITAL MARKET

Primary Market

A. Public Issue

4.27 The total money raised by public and rights issue increased to ₹ 73,896 crore in the year 2019-20 (up to December 31, 2019) from ₹ 44,355 crore in the corresponding period last year. In the same period in 2018-19, the Primary market resource mobilisation through public and rights issues had declined as compared to 2017-18.

Equity

4.28 The resource mobilisation through public issue (equity) decreased in April-December 2019 compared to the similar period for previous year, continuing with the declining trend of last year. During April-December 2019, 47 companies mobilized ₹ 10,895 crore through public equity issuance compared to 103 companies raising ₹ 13,947 crore in April-December 2018, indicating a decrease of 21.9 per cent over the period. On the other hand, resource mobilization through rights issues (equity) during April-December 2019 increased sharply with resource mobilization of ₹ 51,255 crore, as compared to ₹ 1,843 crore in the corresponding period of last year (Table 4).

Table 4: Primary Market Resource Mobilisation through Public and Rights Issues

Issue Type	2016-17 (upto Dec 31, 2016)		2017-18 (upto Dec 31, 2017)		2018-19 (upto Dec 31, 2018)		2019-20 (upto Dec 31, 2019)	
	No of issues	Amount (₹ crore)	No of issues	Amount (₹ crore)	No of issues	Amount (₹ crore)	No of issues	Amount (₹ crore)
Public Issue (Equity)	70	24,515	134	64,141	103	13,947	47	10,895
Rights Issue (Equity)	5	1,297	14	4,522	6	1,843	11	51,255
Public Issue (Debt)	12	27,161	4	3,896	15	28,565	27	11,746
Total Public Issue	**87**	**52,973**	**152**	**72,559**	**124**	**44,355**	**85**	**73,896**

Source: SEBI.

Debt

4.29 Resource mobilization through issuance of debt securities to public declined significantly to ₹ 11,746 crore raised through 27 issues during April-December 2019, as compared to ₹ 28,565 crore through 15 issues in the corresponding period of the previous year.

B. Private Placement

4.30 During 2019-20 (up to December 31, 2019), Indian corporates preferred private placement route to gear up the capital in the corresponding period in previous year. ₹ 6.29 lakh crore was raised through 1,520 issues in April-December 2019 through private placements, as compared to ₹ 5.3 lakh crore through 2,006 issues in the corresponding period of previous year (Table 5).

Equity

4.31 There were 225 issues which raised ₹ 1.79 lakh crore through private placement of equity securities in April-December 2019, compared to 335 issues which raised ₹ 1.57 lakh crore in April-December 2018. Out of the 225 issues, there were 9 qualified institutional placement (QIP) allotments and 216 preferential allotments which raised ₹ 34,029 crore and ₹ 1.45 lakh crore, respectively, during April-December 2019, as compared to 11 QIPs allotments and 324 preferential allotments which raised ₹ 6,958 crore and ₹ 1.50 lakh crore, respectively, in April-December 2018.

Debt

4.32 Further, the resource mobilization through private placement of corporate bonds stood at ₹ 4.50 lakh crore during April-

Table 5: Primary Market Resource Mobilisation through Private Placements

Issue Type	2016-17 (upto Dec 31, 2016)		2017-18 (upto Dec 31, 2017)		2018-19 (upto Dec 31, 2018)		2019-20 (upto Dec 31, 2019)	
	No of issues	Amount (₹ crore)	No of issues	Amount (₹ crore)	No of issues	Amount (₹crore)	No of issues	Amount (₹crore)
QIPs Allotment (Equity)	14	4,395	37	57,711	11	6,958	9	34,029
Preferential Allotment (Equity)	299	30,224	307	40,668	324	1,49,921	216	1,45,404
Private Placement of Bonds	2,662	4,78,974	1,943	4,60,061	1,671	3,73,375	1,295	4,49,939
Total Private Placement	**2,975**	**5,13,593**	**2,287**	**5,58,440**	**2,006**	**5,30,254**	**1,520**	**6,29,372**

Source: BSE, NSE, MSEI and SEBI.

December 2019, as compared to ₹ 3.73 lakh crore during April-December 2018.

Mutual Fund Activities

4.33 There was a net inflow of ₹1.9 lakh crore into the mutual funds industry during April-December 2019 as compared to a net inflow of ₹ 0.8 lakh crore for the corresponding period in last year. The net Assets Under Management (AUM) of all mutual funds increased by 18.4 per cent to ₹ 26.3 lakh crore at the end of December 31, 2019 from ₹ 22.2 lakh crore at the end of December 31, 2018 (Table 6).

INVESTMENT BY FOREIGN PORTFOLIO INVESTORS (FPIs)

4.34. There were net inflows to the tune of ₹ 0.81 lakh crore on account of the FPIs in the Indian capital market during April-December 2019, as compared to net outflows of ₹ 0.94 lakh crore during April-December 2018. The total cumulative investment by FPIs (at the acquisition cost) increased by 7.8 per cent to US$ 259.5 billion as on December 31, 2019 from US$ 240.1 billion as on December 31, 2018 (Table 7).

MOVEMENT OF INDIAN BENCHMARK INDICES

4.35. India's benchmark indices, namely, Nifty50 and S&P BSE Sensex, reached record highs during 2019-20 (upto January 16, 2020). The S&P BSE Sensex, the benchmark index of Bombay Stock Exchange (BSE), reached an all-time high closing of 41,952 on January 14, 2020, witnessing an increase of 7.9 per cent from 38,871 level on April 1, 2019. Nifty 50 index reached an all time high closing at 12,355 on January 16, 2020 (Figure 17).

Table 6: Mobilization of Funds by Mutual Funds

Period	No. of Folios (crore)	Gross Mobilization (₹ lakh crore)	Redemption (₹ lakh crore)	Net Inflows (₹ lakh crore)	Net AUM at the end of the period (₹ lakh crore)
2018-19 (upto December 31, 2018)	8.03	139.30	138.50	0.80	22.20
2019-20 (upto December 31, 2019)	8.71	134.30	132.50	1.90	26.30

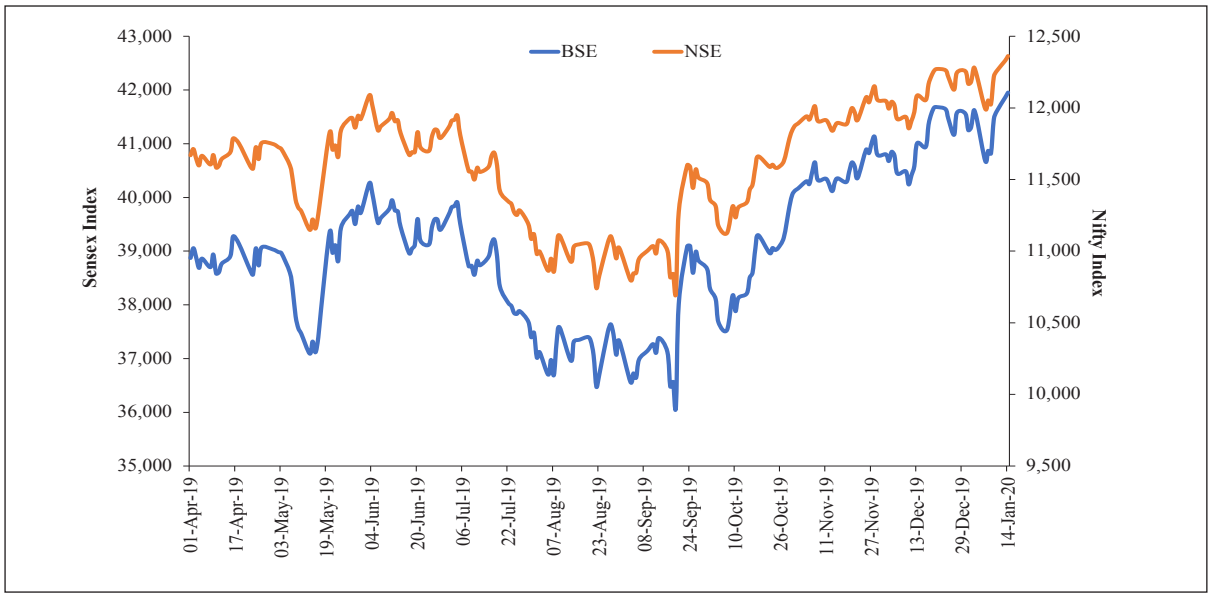
Source: SEBI.

Table 7: Investment by Foreign Portfolio Investors

Year/Month	Gross Purchase (₹ crore)	Gross Sales (₹ crore)	Net Investment (₹ crore)	Net Investment (US $ mn.)	Cumulative Net Investment (US $ mn.)
2018-19 (upto December 31, 2018)	11,78,809	12,72,988	-94,179	-13,442	2,40,171
2019-20 (upto December 31, 2019)	13,79,888	12,99,141	80,746	11,465	2,59,579

Source: NSDL.

Figure 17: Movement of Indian Benchmark Indices



Source: BSE and NSE.

Box 3: Benefits of Enabling Bilateral Netting for Financial Contracts in India

A *bilateral netting* agreement enables two counterparties in a financial contract to offset claims against each other to determine a single net payment obligation due from one counterparty to the other. Similarly, a *multilateral netting* agreement allows counterparties to offset claims against each other through a Central Counterparty (CCP) in a clearing house. Under instances of default, including insolvency, dissolution or winding-up of counterparty, *close-out netting* enables the non-defaulting counterparty to prematurely terminate the financial contract and sum the mutual claims to determine a single net amount due from one counterparty to the other.

At present, there are legal provisions for multilateral close-out netting for financial transactions intermediated through a CCP, such as the Clearing Corporation of India Limited (CCIL), under the *Payment and Settlement Systems (Amendment) Act (2015)*. However, bilateral netting for financial contracts is not permitted in India. This negatively impacts banks and other financial market participants via several channels:

(i) In the absence of bilateral netting, RBI's regulations require banks to measure credit exposure to a counterparty for OTC derivative contracts based on *gross* marked-to-market (MTM) exposure instead of *net* MTM exposure. This increases credit risk for financial market participants, especially in the event of insolvency of a counterparty, which could then raise systemic risk.

(ii) In implementing the Basel III regulatory reforms[3], RBI requires banks to calculate regulatory capital requirements for OTC derivative transactions based on *gross* MTM exposure to a counterparty instead of *net* MTM exposure. This forces banks to hold more regulatory capital than what would be required under bilateral netting. According to RBI estimates, bilateral netting

3. The post-crisis G20 and Basel reforms in the OTC derivatives market require non-centrally cleared derivative transactions to be subject to higher capital requirements relative to transactions intermediated through a CCP.

arrangements could have helped 31 major banks participating in India's OTC derivatives market save about ₹ 22.58 billion in regulatory capital during FY2017-18.

(iii) The RBI's current proposal for implementing global OTC derivatives market reforms[4] requires financial institutions to exchange *margin*[5](collateral) with counterparties for OTC derivative transactions based on *gross* counterparty exposure instead of *net* counterparty exposure. Implementation of this reform going forward would force banks to divert more capital towards collateral requirements than what would be required if bilateral netting is permitted. According to CCIL estimates, banks and primary dealers would have had to hold about ₹436.98 billion of additional capital as *margin*[6] as of March 2018 if margin regulations were implemented.

(iv) Higher regulatory capital burden makes trading activity for financial contracts more capital intensive, translating into higher cost of transaction. This discourages market participation by banks and primary dealers, affecting market liquidity and market development in terms of depth. This is one of the major factors hindering activity in India's Credit Default Swaps (CDS) market (*RBI Report of Working Group on Development of Corporate Bond Market in India, 2016*).

Global regulatory bodies such as the Financial Stability Board (FSB) and the Basel Committee on Banking Supervision have supported the use of close-out netting due to its positive impact on financial stability. At present, major jurisdictions such as the U.S., U.K., Australia, Canada, Japan, France, Germany, Singapore and Malaysia have legal provisions in place for netting agreements.

Hence, establishing a legal framework for bilateral close-out netting in India would help: (a) reduce credit risk and regulatory capital burden for banks, freeing up capital for other productive uses; (b) reduce hedging costs and liquidity needs for banks, primary dealers and other market-makers, thereby encouraging participation in the OTC derivatives market to hedge against risk. Increased market participation in the CDS market would also provide an impetus for corporate bond market development; (c) establish an efficient recovery mechanism for financial contracts under instances of default by a counterparty; and (d) adhere to India's G20 and FSB commitment to implement global regulatory reforms in the OTC derivatives market.

INSURANCE SECTOR

4.36. Internationally, the potential and performance of the insurance sector are generally assessed on the basis of two parameters, viz., insurance penetration and insurance density. The measure of insurance penetration and density reflects the level of development of insurance sector in a country. While insurance penetration is measured as the percentage of insurance premium to GDP, insurance density is calculated as the ratio of premium to population (measured in US$ for convenience of international comparison).

4.37. The insurance density in India which was US$ 11.5 in 2001, reached to US$ 74 in 2018 (Life- US$ 55 and Non-Life – US$ 19). The comparative figures for Malaysia, Thailand and China during the same period were US$ 518, US$ 385 and US$ 406 respectively. Penetration

4. The post-crisis G20, Basel and International Organization of Securities Commissions (IOSCO) reforms in the OTC derivatives market require counterparties to exchange 'margin' (collateral) for non-centrally cleared derivative transactions.
5. There are two types of margins based on two kinds of counterparty exposure in OTC derivative transactions. Variation margin protects a counterparty from current exposure based on the MTM value of the derivative at any point in time. Initial marginprotects a counterparty from potential future exposure due to changes in the MTM value of the derivative contract during the time it takes to close out and replace the position in the event of default by the counterparty.
6. These estimates are for initial margin. Capital needs would be much higher if variation margin estimates are included.

Box 4: Defined Contributory Pension Scheme: National Pension System

The New Pension Scheme, now renamed as National Pension System (NPS) was introduced by the Government on December 22, 2003 and it was made mandatory for Central Government employees (except armed forces) who join service w.e.f. January 1, 2004. The Scheme was extended to the State Governments and as of now 28 State Governments have notified NPS for their employees. The Scheme was extended to all citizens of the country on voluntary basis from May 2009.

Till September 30, 2019, a total of around 3.06 crore subscribers (including Atal Pension Yojana) have been enrolled under NPS. Assets Under Management (AUM) which includes the returns on the corpus, under the NPS have witnessed an increase from ₹ 3.18 lakh crore as on 31st March 2019 to ₹ 3.71 lakh crore as on September 30, 2019, registering an increase of 16.71 per cent. The APY has a total of 1.78 crore subscribers and AUM of ₹ 8,743 crore as on September 30, 2019 (Table 1).

Table 1: Number of Subscribers, Corpus and Assets Under Management under NPS/APY (As on 30th September 2019)

Sector	Number of Subscribers		Contribution* (₹ Crore)		Asset Under Management (₹ Crore)	
	Absolute	%	Absolute	%	Absolute	%
Central Government	18,31,307	14	75,504	28	1,07,409	30
Central Autonomous Bodies (CAB)	1,94,419	2	12,796	5	17,294	5
State Government	38,56,844	30	1,26,668	46	1,68,547	46
State Autonomous Bodies	7,01,274	5	17,229	6	18,412	5
Corporate	9,68,019	8	28,307	10	36,580	10
Unorganised Sector	9,25,810	7	10,986	4	10,777	3
NPS Lite	43,39,836	34	2,624	1	3,631	1
Total	1,28,17,509	100	2,74,115	100	3,62,650	100
APY	1,78,21,441		7,927		8,743	
Total	3,06,38,950		2,82,042		3,71,393	

Source: CRA Report
Note: *Matched and Booked.

Within the government, Uttar Pradesh has maximum number of subscribers followed by Madhya Pradesh, Rajasthan, and Maharashtra. The largest Assets under Management are with Rajasthan followed by Uttar Pradesh, Madhya Pradesh and Maharashtra (Table 2).

Table 2: Geographical Coverage under NPS (Govt Sector)

Sl. No.	State Govt.	Total No. of Subscribers	Contribution (₹ Crore)	AUM (₹ Crore)
1.	Andhra Pradesh	1,85,951	7,946.11	10,408.51
2.	Arunachal Pradesh	17,411	406.50	485.19
3.	Assam	1,55,251	5,296.16	6,814.88
4.	Bihar	1,68,073	5,423.78	7,297.47
5.	Chandigarh**	10,968	630.45	836.18

6.	Chhattisgarh	2,96,468	7,317.75	9,428.50
7.	Goa	32,450	1,394.32	1,756.79
8.	Gujarat	2,17,338	7,331.63	9,531.89
9.	Haryana	1,71,028	6,807.18	9,071.93
10.	Himachal Pradesh	93,260	3,865.18	4,716.86
11.	J & K	1,22,831	3,541.61	4,525.77
12.	Jharkhand	1,08,136	4,226.41	5,814.52
13.	Karnataka	2,40,767	8,304.64	11,426.90
14.	Kerala	1,25,480	2,164.48	2,558.24
15.	Madhya Pradesh	4,87,695	12,703.13	16,465.36
16.	Maharashtra	3,14,158	12,019.46	14,936.13
17.	Manipur	41,973	971.69	1,252.80
18.	Meghalaya	14,554	333.18	411.49
19.	Mizoram	7,985	211.56	250.44
20.	Nagaland	21,073	402.80	476.23
21.	Odisha	1,64,378	4,406.22	5,662.72
22.	Puducherry**	13,207	729.50	970.02
23.	Punjab	1,82,190	6,740.35	8,931.20
24.	Rajasthan	4,81,493	16,897.74	22,118.90
25.	Sikkim	15,344	443.08	577.30
26.	Telangana	1,53,764	5,449.12	7,372.21
27.	Uttarakhand	80,962	4,005.84	5,410.68
28.	Uttar Pradesh	6,26,116	13,800.19	17,280.20
29.	Tamil Nadu*	187	18.25	20.75
30.	Tripura	652	3.76	4.47
31.	West Bengal*	330	23.47	34.09
	Total	45,51,473	1,43,815.54	1,86,848.62

Source: PFRDA.
Note: *: Executed agreement with CRA and NPS trust only for All India Service officer.
**: Status included under the State Government.

Major steps taken during FY 2019-20

It has been decided to introduce the following options for Central Government NPS subscribers (change in the Pension Funds or investment pattern is allowed in respect of incremental flows only):

a. **Choice of Pension Fund**: As in the case of subscribers in the private sector, the Government subscribers shall also be allowed to choose any one of the pension funds including Private sector pension funds. They could change their option once in a year. However, the current provision of combination of the Public-Sector Pension Funds will be available as the default option for both existing as well as new Government subscribers.

b. **Choice of Investment pattern**: Government employees may exercise one of the following choices of Investment Pattern twice in a financial year :

- The existing scheme in which funds are allocated by the PFRDA among the three Public Sector Undertaking fund managers based on their past performance in accordance with the guidelines of PFRDA for Government employees shall continue as default scheme for both existing and new subscribers.

- Government employees who prefer a fixed return with minimum amount of risk shall be given an option to invest 100 per cent of the funds in Government securities.
- Government employees who prefer higher returns shall be given the options of the following two Life Cycle based schemes:
  - Conservative Life Cycle Fund with maximum exposure to equity capped at 25 per cent.
  - Moderate Life Cycle Fund with maximum exposure to equity capped at 50 per cent.

for Life insurance has declined from 2011, whereas for the non-life insurance has increased consistently and is 2.74 per cent for Life Insurance and 0.97 per cent for Non-Life insurance in 2018 (Table 8 and 9). Globally insurance penetration and density were 3.31 per cent and US$ 370 for the life segment and 2.78 per cent and US$ 312 for the non-life segment respectively in 2018.

4.38. During 2018-19, the gross direct premium of Non-Life insurers was ₹ 1.69 lakh crore, as against ₹1.51 lakh crore in 2017-18, registering a growth of 12.47 per cent. Motor and health segments primarily helped the industry report this growth. Life insurance industry recorded a premium income of ₹ 5.08 lakh crore in 2018-19 as against ₹ 4.59 lakh crore in the previous financial year, registering a growth of 10.75 per cent. While renewal premium accounted for 57.68 per cent of the total premium received by the life insurers, new business contributed the remaining 42.32 per cent.

INSOLVENCY AND BANKRUPTCY CODE

Important Developments

4.39. Three years into operation, the regime under the Insolvency and Bankruptcy Code (IBC) boasts of a strong ecosystem, comprising the Adjudicating Authority, the IBBI, three insolvency professional agencies, 11 registered valuer organisations and 2,374 registered valuers[7] and 2,911 insolvency professionals (as on December 31, 2019). The debtors and

Table 8: Penetration in Life Insurance

Particulars	2011	2012	2013	2014	2015	2016	2017	2018
Insurance Penetration (in per cent)	3.40	3.17	3.10	2.60	2.72	2.72	2.76	2.74
Insurance Density (in US$)	49.0	42.7	41.0	44.0	43.2	46.5	55.0	55.0

Source: SwissRe, Sigma various issues.

Table 9: Penetration in Non-Life Insurance

Particulars	2011	2012	2013	2014	2015	2016	2017	2018
Insurance Penetration (in per cent)	0.70	0.78	0.80	0.70	0.72	0.77	0.93	0.97
Insurance Density (in US$)	10.0	10.5	11.0	11.0	12.0	13.2	18.0	19.0

Source: SwissRe, Sigma various issues.

7. Data as on September 30, 2019, published in IBBI Quarterly Newsletter for the quarter July-September, 2019.

creditors alike are initiating the processes under the Code with 2,542 corporates, some of them having very large non-performing assets account, and undergoing corporate insolvency resolution process. Upto September 2019, about 743 of them have completed the process yielding either resolution or liquidation and 498 corporates have commenced voluntary liquidation process[8]. Out of the 562 Corporate Insolvency Resolution Process (CIRPs) initiated in October-December 2019, 132 are under liquidation, and 14 have been already settled (Table 10). As on end December 2019, ₹1.58 lakh crore were realizable in cases resolved (Table 11).

4.40. These cases have been filed under various sectors. 41.2 per cent of the cases admitted by NCLT for CIRP are in

Table 10: Quarterly trends of cases

Quarterly trends of cases	April-Jun 2019	July-Sep 2019	Oct-Dec 2019
Total No. of CIRPs initiated/admitted during the quarter	300	565	562
Total No. of cases in which resolution plan has been approved during the quarter	27	32	30
Total No. of cases withdrawn during the quarter	24	18	5
Total No. of cases settled during the quarter	22	24	14
Total No. of cases under liquidation during the quarter	96	153	132
Category wise distribution (Financial creditor, Operational Creditor, Corporate Debtor) of all the admitted cases in which CIRP has been initiated.	Financial Creditor-129 Operational Creditor- 154 Corporate Debtor-17	Financial Creditor-265 Operational Creditor-291 Corporate Debtor-9	Financial Creditor-245 Operational Creditor-301 Corporate Debtor-16

Source: IBBI.

Table 11: Realisable value for cases resolved under Corporate Insolvency Resolution Processes (Amount in ₹ Crore)

	April-June 2019	July-September 2019#	October-December 2019##
Overall realisable value by Financial Creditors and Operational Creditors in cases resolved	7,331.90	27,534.48	1,900.52
Total realisable value till the end of respective quarters	1,28,095.16	1,55,861.99	1,57,762.51

Source: IBBI.
Note: #: Data of 1 case awaited.
##: Data of 8 cases awaited.
Cases are included as per the date of NCLT orders rather than date of final payment.

8. Data as on September 30, 2019, published in IBBI Quarterly Newsletter for the quarter July-September, 2019.

manufacturing sector followed by 19 per cent in Real Estate, Renting and Business Activities sector (Table 12).

4.41. The Government has been proactively addressing the issues that come up in implementation of the reform. Since its enactment in 2016, the Code has been amended three times, within a short span of time, mainly to streamline the processes and address any lacuna to ensure proper operationalizing of the provisions of the Code.

4.42. The first amendment introduced section 29A, which deals with the provision introduced to bar promoters from bidding for their own companies. It prevented defaulters from regaining control of their companies at a cheaper value. The second amendment introduced section 12A to provide creditors option to withdraw insolvency application within 30 days of filing the petition. The amendment also stated that home buyers shall be treated as financial creditors to give home buyers a voice in the insolvency proceedings as they, also provide funding for projects by making advance payments, and to discourage real estate developers from defaulting on commitments not only to banks but also to their customers. The third amendment primarily focused upon the revival of a CD by ensuring timely admission and completion

Table 12: Sector-wise breakup of the total cases admitted by NCLT for CIRP during the quarter

Sector*	April-Jun 2019	July-Sep 2019	Oct-Dec 2019
Extraterritorial organizations and bodies	1	4	3
Agriculture, Hunting and Forestry	9	18	15
Construction	28	64	65
Education	2	1	2
Electricity, Gas And Water Supply	7	23	22
Financial Intermediation	4	6	5
Health And Social Work	3	5	9
Hotels And Restaurants	8	12	12
Manufacturing	125	208	232
Mining and Quarrying	2	5	5
Other Community, Social And Personal Service Activities	4	5	7
Others	4	8	8
Real Estate, Renting And Business Activities	62	125	109
Transport, Storage And Communications	8	22	12
Wholesale And Retail Trade; Repair Of Motor Vehicles, Motorcycles And Personal And Household Goods	33	59	55
Fishing	0	0	1
Grand Total	**300**	**565**	**562**

Source: IBBI.

Note: *The distribution is based on the CIN of Corporate Debtors (CDs) as per the National Industrial Classification 2004.

of the resolution process. The amendment ensures that 14 days period deadline given to the NCLT for admitting or rejecting a resolution application shall be strictly adhered to. The amendment further specifying the mandatory time frame of 330 days to complete the Corporate Insolvency Resolution Process (CIRP) without exception, tries to instill discipline amongst the stakeholders to avoid inordinate delays in the insolvency resolution process. The Government also reaffirms its stance as a facilitator in the third amendment by specifically making a resolution plan binding on the Central Government, State Governments or a local authority to whom debt in respect of payment of dues is owed.

4.43. IBBI has conceptualized a 24-month Graduate Insolvency Programme. There are 2,911 Insolvency Professionals registered as on December 31, 2019 (Table 13). The Indian Institute of Corporate Affairs commenced the first batch of GIP on July 1, 2019.

4.44. The resolution under IBC has been much higher as compared to other processes. As per the data provided in Report on Trend and Progress of Banking in India 2018-19, the amount recovered as a percentage of amount involved in 2017-18 and 2018-19 has been much higher as compared to Lok Adalat, DRTs etc (Table 14). The Code provides a timeline of 330 days to conclude a CIRP. This push has meant that proceedings under the Code take on average about 340 days, including time spent on litigation, in contrast with the previous regime where processes took about 4.3 years.

Table 13: Insolvency Professionals registered as on December 31, 2019

City / Region	Indian Institute of Insolvency Professionals of ICAI	ICSI Institute of Insolvency Professionals	Insolvency Professional Agency of Institute of Cost Accountants of India	Total
New Delhi	355	223	60	638
Rest of Northern Region	287	161	46	494
Mumbai	340	114	31	485
Rest of Western Region	208	89	29	326
Chennai	113	72	11	196
Rest of Southern Region	288	153	43	484
Kolkata	169	34	16	219
Rest of Eastern Region	50	18	5	73
Total Registered	**1,810**	**864**	**241**	**2,915**
Cancellations	1	3	0	4
Registered as on 31st December 2019	**1,809**	**861**	**241**	**2,911**

Source: IBBI.

Table 14: NPAs of SCBs recovered through various channels

Amount in ₹crore

Recovery Channel	2017-18				2018-19(P)			
	No. of cases referred	Amount involved	Amount recovered*	Col. (4) as per cent of Col. (3)	No. of cases referred	Amount involved	Amount recovered*	Col. (8) as percent of Col. (7)
1	2	3	4	5	6	7	8	9
Lok Adalats	33,17,897	45,728	1,811	4.0	40,80,947	53,506	2,816	5.3
DRTs	29,345	1,33,095	7,235	5.4	52,175	30,66,499	10,574	3.5
SARFAESI Act	91,330	81,897	26,380	32.2	2,48,312	2,89,073	41,876	14.5
IBC	704@	9,929	4,926	49.6	1,135@	1,66,600	70,819	42.5
Total	**34,39,276**	**2,70,631**	**40,352**	**14.9**	**43,82,569**	**8,15,678**	**1,26,085**	**15.5**

Source: Report on Trend and Progress of Banking in India 2018-19 (which sourced from Off-site returns, RBI and IBBI).

Notes: P : Provisional.
* : Refers to the amount recovered during the given year, which could be with reference to the cases referred during the given year as during the earlier year.
DRTs: Debt Recovery Tribunals; SARFAESI Act: The Securitisation and Reconstruction of Financial Assets and Enforcement of Securities Interest Act, 2002.
@ : Cases admitted by National Company Law Tribunals (NCLTs).
Figures relating to IBC for 2017-18 and 2018-19 are calculated by adding quarterly numbers from IBBI newsletters.

CHAPTER AT A GLANCE

- Monetary policy remained accommodative in 2019-20.
- The repo rate was cut in four out of five meetings held in 2019-20 (till December). The repo rate has been cut by 110 bps in 2019-20 so far.
- Bank credit growth slowed down in 2019-20 and stands at 7.1 per cent (YoY) as of December 20, 2019, as compared to a growth of 12.9 per cent in April 2019.
- The growth (YoY) of loans from NBFCs declined from 27.6 per cent in September 2018 and 21.6 per cent in December 2018 to 9.9 per cent at end September 2019.
- Gross NPA ratio of SCBs remained unchanged at 9.1 per cent between March and September 2019.
- Systemic liquidity has been largely in surplus in 2019-20. Weighted Average Call Money Rate remeined mostly close to repo rate within the Liquidity Adjustment Facility (LAF) corridor.

- Nifty50 and S&P BSE Sensex indices reached record high closing of 12,355 and 41,952 respectively during 2019-20 (upto January 16, 2020).
- The total money raised by public issue and rights increased to ₹ 73,896 crore in 2019-20 (up to December 31, 2019) from ₹ 44,355 crore in the corresponding period last year. ₹ 6.29 lakh crore was raised through private placements in 2019-20 (up to December 31, 2019) as compared to ₹ 5.3 lakh crore in the corresponding period of previous year.
- As on end December 2019, ₹1.58 lakh crore were realizable in cases resolved under Corporate Insolvency Resolution Processes. The proceedings under IBC take on average about 340 days, including time spent on litigation, in contrast with the previous regime where processes took about 4.3 years.

05 CHAPTER

Prices and Inflation

Inflation has been witnessing moderation since 2014 backed by low food inflation. During the current financial year, however, food and beverages inflation has been trending differently. Food inflation has been on an upward trend mainly backed by rising vegetables, fruits and pulses prices. However, the volatility in prices of most of the essential agricultural commodities with some exceptions like pulses has been on a downward trend. Since July 2018, CPI-Urban inflation has been consistently higher than CPI-Rural inflation, which is in contrast to earlier trend where rural inflation was higher than urban inflation. Inflation has been declining in most of the States, however, the variability of inflation has been increasing. Since 2012, there has been a change in inflation dynamics. There is evidence for a strong reversion of headline inflation to core inflation. Transmission of inflation from non-core components to core components is minimal.

INTRODUCTION

5.1 The global economy has been witnessing a steep decline in inflation over the past five decades (World Bank, 2019). Inflation has declined in almost all the countries around the world. Emerging market economies have also experienced a remarkable decline in inflation over the same period. Inflation peaked in 1993 at 118.7 percent and then declined to 4.8 per cent in 2018 in emerging market and developing economies (World Economic Outlook, October 2019). There can be many reasons that could have contributed to the steep decline in inflation in the emerging market economies like the adoption of a more resilient monetary and fiscal policy frameworks, structural reforms of labour and product markets that strengthen competition, and adoption of monetary policy framework for inflation targeting. Twenty-four emerging market and developing economies have introduced monetary policy frameworks for inflation targeting, since the late 1990s (World Bank, 2019). India introduced inflation targeting on 5th August, 2016 for a period of five years ending on 31st March, 2021.

5.2 In India, inflation has been witnessing moderation since 2014. However, recently inflation has shown an uptick. Headline Consumer Price Index-Combined (CPI-C) inflation increased to 4.1 per cent in 2019-20 (April to December, 2019) as compared to 3.7 per cent in 2018-19 (April to December, 2018). Though, Wholesale Price Index (WPI) inflation has seen an increase between 2015-16 and 2018-19, it fell from 4.7 per cent in 2018-19 (April to December, 2018) to 1.5 per cent during 2019-20 (April to December, 2019) (Table 1). Fall in food inflation has been a major contributing factor in the drastic reductions observed in inflation between

Table 1: General inflation based on different price indices (in per cent)

	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2018-19*	2019-20*
WPI	5.2	1.2	-3.7	1.7	3.0	4.3	4.7	1.5 (P)
CPI - C	9.4	5.9	4.9	4.5	3.6	3.4	3.7	4.1 (P)
CPI - IW	9.7	6.3	5.6	4.1	3.1	5.4	4.9	7.6
CPI - AL	11.6	6.6	4.4	4.2	2.2	2.1	1.7	7.3
CPI - RL	11.5	6.9	4.6	4.2	2.3	2.2	1.9	7.1

Source: Office of the Economic Adviser, Department for Promotion of Industry and Internal Trade (DPIIT) for Wholesale Price Index, National Statistical Office (NSO) for CPI-C and Labour Bureau for CPI-IW, CPI-AL and CPI-RL.

Note: CPI-C inflation for 2013-14 is based on old series 2010=100; (P) - Provisional; C stands for Combined, IW stands for Industrial Workers, AL stands for Agricultural Labourers and RL stands for Rural Labourers.

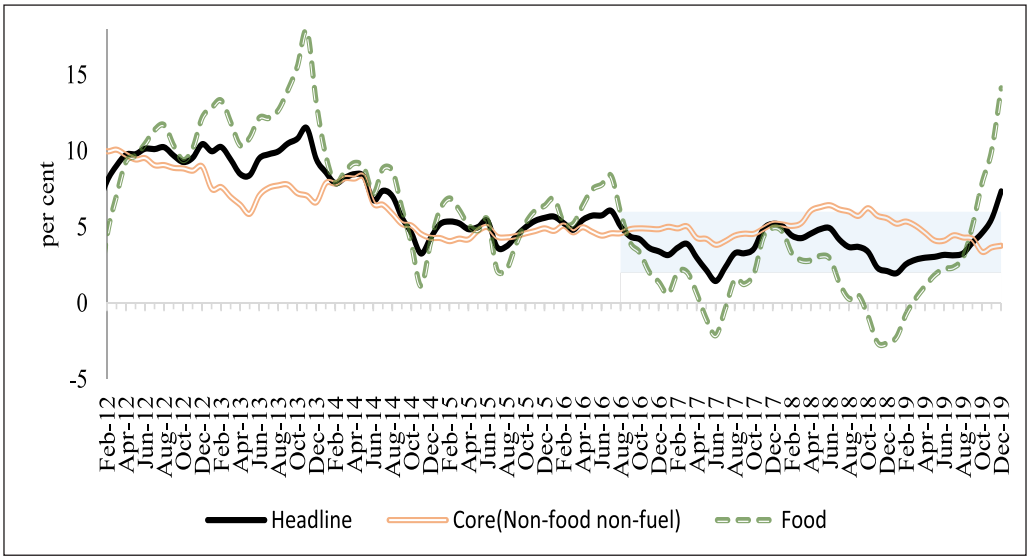
* 2019-20 refers to April to December 2019 for CPI-C, WPI, CPI-AL, CPI-RL and April to November 2019 for CPI-IW.

2014-15 and 2018-19. Also, it has been observed that there has been a shift in inflation dynamics. The average levels of inflation have fallen considerably since 2013-14. Not only have the average levels of inflation come down, the peak levels of inflation during the financial year are now much lower. Further, observe that there is convergence of headline towards core inflation from 2012 onwards as per CPI-C.

CURRENT TRENDS IN INFLATION

5.3 Headline inflation based on CPI-C has been sliding on a downward path since 2014 (Figure 1). The average CPI-C headline inflation, which was 5.9 per cent in 2014-15, has fallen continuously to around 3.4 per cent in 2018-19. This has been led by a drastic fall in food inflation, which has fallen from 6.4 per cent in 2014-15 to 0.1 per cent in

Figure 1: Trends in CPI-C Headline, Core and Food inflation



Source: NSO.

Table 2: Inflation in selected groups of CPI-C Base 2012 (in per cent)

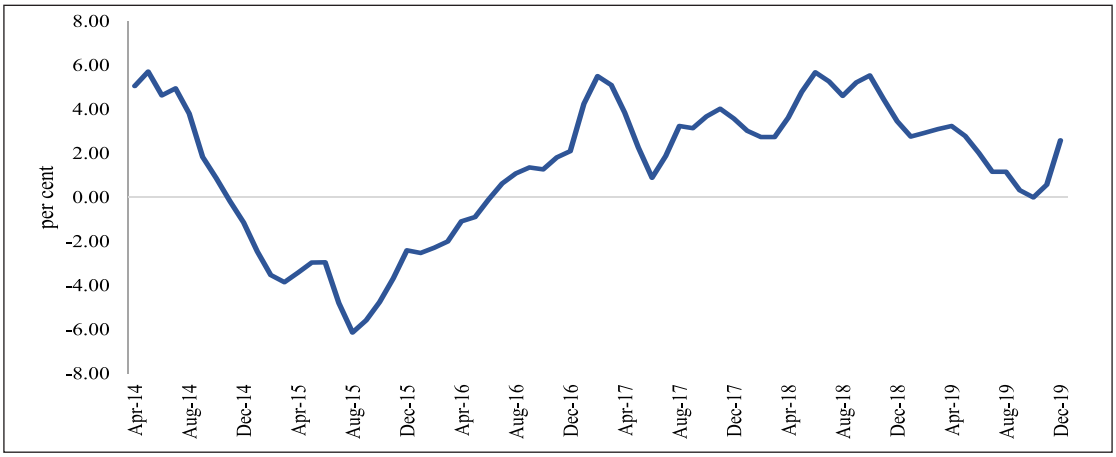
Description	Weights	2017-18	2018-19	2019-20#	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19 (P)
All Groups	100	3.6	3.4	4.1	3.2	3.3	4.0	4.6	5.5	7.4
CFPI*	39.1	1.8	0.1	5.3	2.4	3.0	5.1	7.9	10.0	14.1
Food & beverages	45.9	2.2	0.7	4.8	2.3	3.0	4.7	6.9	8.7	12.2
Cereals & products	9.7	3.5	2.1	2.0	1.3	1.3	1.7	2.2	3.7	4.4
Meat & fish	3.6	3.2	4.0	9.0	9.1	8.5	10.3	9.8	9.4	9.6
Egg	0.4	3.6	2.3	3.4	0.6	0.3	3.3	6.3	6.2	8.8
Milk & products	6.6	4.1	1.8	1.8	1.1	1.5	1.8	3.1	3.5	4.2
Oils & fats	3.6	1.6	2.1	1.4	0.9	0.6	1.2	2.0	2.6	3.1
Fruits	2.9	4.6	2.3	-0.5	-0.9	-0.8	0.8	4.1	3.2	4.4
Vegetables	6.0	5.8	-5.2	17.6	2.8	6.9	15.5	26.1	36.1	60.5
Pulses & products	2.4	-21.0	-8.3	7.8	6.8	6.9	8.4	11.7	13.9	15.4
Sugar & confectionery	1.4	6.1	-7.0	-0.2	-2.1	-2.4	-0.4	1.3	2.1	3.4
Fuel & Light	6.8	6.2	5.7	-0.1	-0.3	-1.7	-2.2	-2.0	-1.9	0.7
CPI excl. food and fuel group (Core)	47.3	4.6	5.8	4.1	4.5	4.3	4.2	3.4	3.6	3.8

Source: NSO.
Note: P: Provisional, * Consumer Food Price Index (CFPI), # April to December 2019.

2018-19. In 2019-20, there has been slight uptick in the headline and food inflation numbers since August, 2019. Overall, CPI -C headline inflation in December, 2019 stood at 7.4 per cent, while CPI-food inflation increased to 14.1 per cent mainly driven by the rise in vegetable prices. Core (non-food non-fuel) inflation has also increased to 3.8 per cent in December, 2019. (Table 2)

5.4 During 2019-20, WPI based inflation has been on a continuous fall declining from 3.2 per cent in April 2019 to 0.6 per cent in November 2019, but increased to 2.6 per cent in December 2019 (Figure 2). Food index which declined on an annual basis between 2017-18 and 2018-19, saw an uptick during the current financial year (April-December, 2019) (Table 3).

Figure 2: WPI inflation



Source: Office of Economic Adviser, DPIIT.

Table 3: Inflation in selected groups of WPI- Base 2011-12 (in per cent)

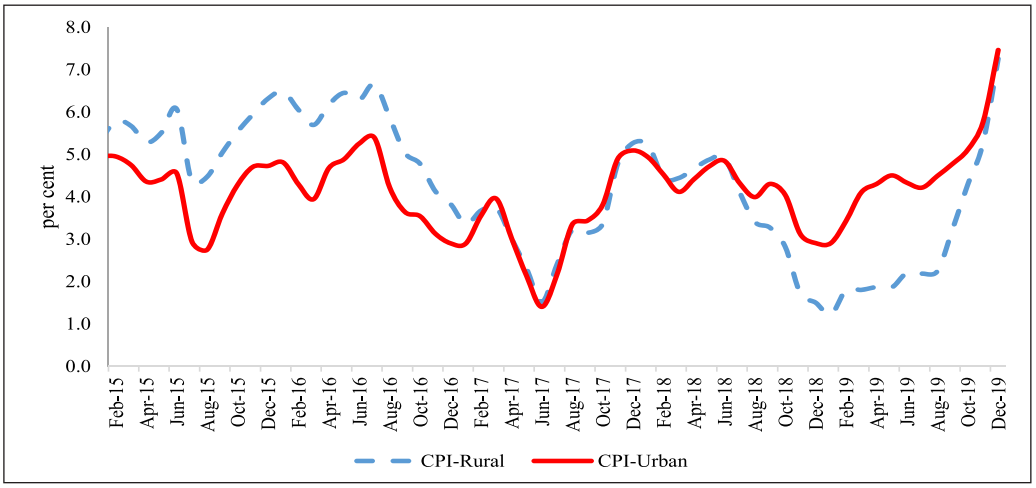
	Weight	2017-18	2018-19	2019-20*	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19(P)	Dec-19(P)
All Commodities	100	3.0	4.3	1.5	1.2	1.2	0.3	0.0	0.6	2.6
Food Index	24.4	1.9	0.6	6.7	4.9	5.9	6.1	7.6	9.0	11.0
Food articles	*15.3*	*2.1*	*0.4*	8.6	*6.6*	7.8	7.5	9.8	11.1	13.2
Cereals	2.8	0.3	5.5	8.2	8.7	8.5	8.7	8.3	7.9	7.7
Pulses	0.6	-27.1	-9.4	17.3	20.0	16.4	17.9	16.6	16.6	13.1
Vegetables	1.9	18.8	-8.4	31.4	10.5	12.9	19.3	39.0	45.3	69.7
Fruits	1.6	5.0	-1.7	4.4	*15.4*	*19.8*	*6.7*	*2.7*	*4.3*	*3.5*
Milk	4.4	4.0	2.4	1.7	1.5	1.5	1.5	1.5	1.6	2.6
Egg, meat & fish	2.4	2.0	1.7	6.6	3.6	7.0	7.7	7.6	8.2	6.2
Food products	*9.1*	*1.6*	*0.9*	3.2	1.8	2.2	3.6	3.8	5.0	6.9
Vegetable and animal oils and fats	2.6	2.2	7.5	-2.4	*-6.6*	*-4.1*	*-2.8*	*-1.9*	*2.2*	*9.7*
Sugar	1.1	3.4	-10.7	4.0	-1.0	1.4	4.7	3.2	3.1	4.7
Fuel & power	13.2	8.1	11.6	-3.1	-3.6	-3.5	-6.7	-8.1	-7.3	-1.5
Non-Food manu-factured products (Core)	*55.1*	*3.0*	*4.2*	-0.3	0.0	-0.4	-1.2	-1.8	-1.9	-1.6

Source: Office of the Economic Adviser, DPIIT.

Note: P: Provisional, *April to December 2019.

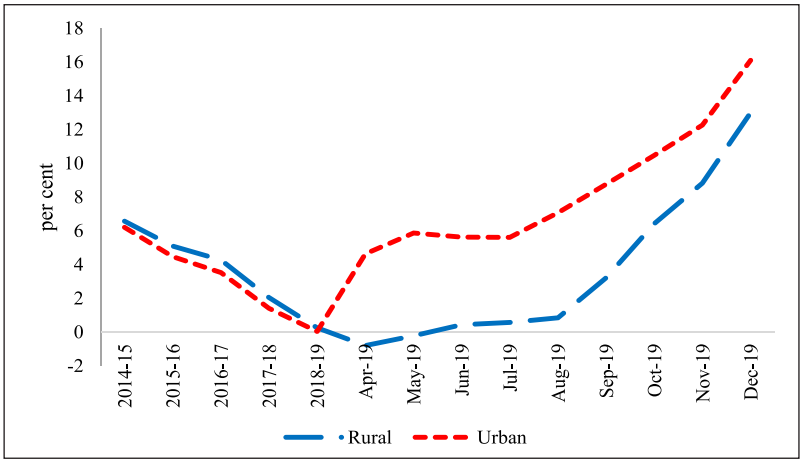
5.5 Since July 2018, CPI-Urban inflation, has been consistently above CPI-Rural inflation (Figure 3). This is in contrast to earlier experience where rural inflation has been mostly higher than urban inflation. The divergence has been mainly on account of the differential rates of food inflation between rural and urban areas witnessed during this period. In 2019-20, there has been sudden change in the trend. Since July 2019, urban areas have registered much higher food inflation when compared to rural areas (Figure 4). Divergence in rural-urban food inflation in 2019-20 was mainly led by cereals, eggs, fruits, vegetables etc. (Figures 5 (a) to (d)).

Figure 3: CPI Rural and Urban inflation



Source: NSO.

Figure 4: Rural Urban CPI food inflation



Source: NSO.

Figure 5 (a): CPI inflation rate of cereals

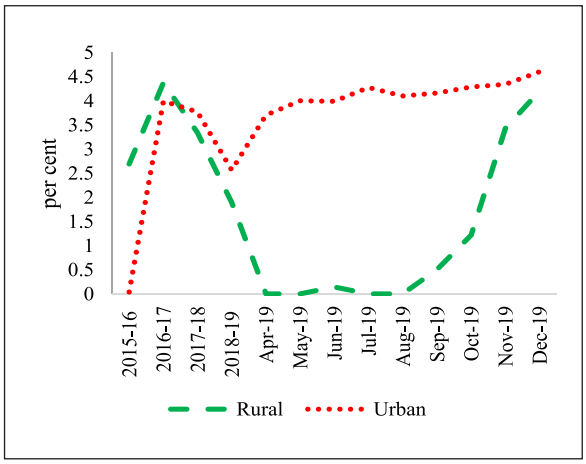


Figure 5 (b): CPI inflation rate of vegetables

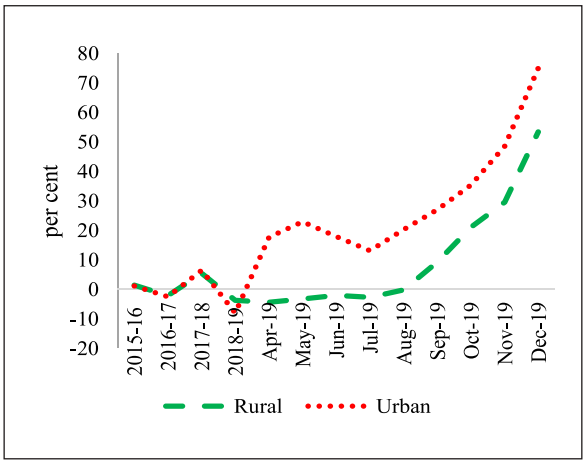


Figure 5 (c): CPI inflation rate of fruits

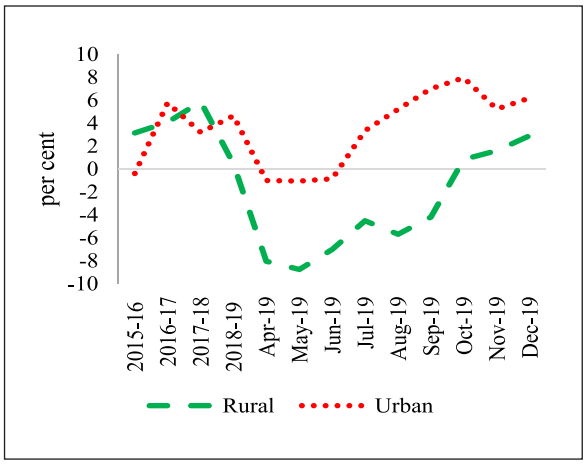
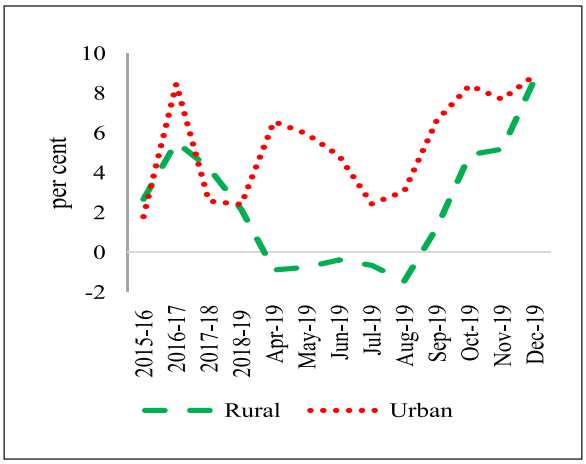
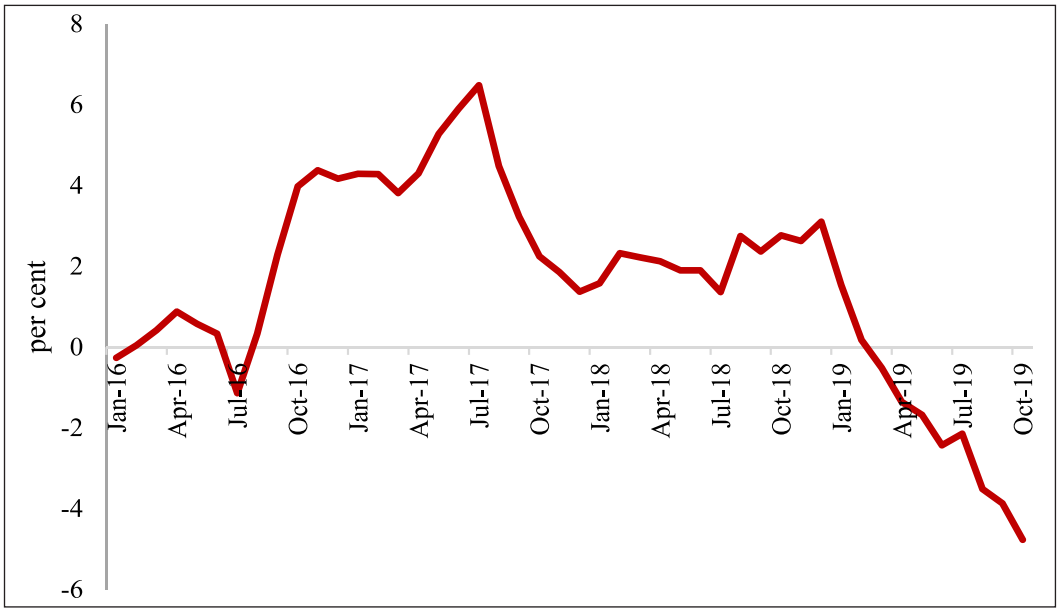


Figure 5 (d): CPI inflation rate of eggs



Source: NSO.

Figure 6: Year on year growth of average real wage rate for agricultural workers during 2016 to 2019 (upto October, 2019)



Source: Labour Bureau, Ministry of Labour and Employment.

Note : Real wage rate is calculated by dividing Nominal general agriculture workers wage rate by CPI AL.

5.6 The slide in rural inflation could be because of fall in the growth of real rural wages (Figure 6).

5.7 The divergence in rural-urban inflation is not just observed in the food component but in other components also. Figure 7 shows the component wise rural and urban inflation. In clothing and footwear, inflation in urban areas is 3.3 per cent in 2019-20 (April-December), approximately 3 percentage points higher than that observed in rural areas. For Pan, tobacco and intoxicants, Fuel and light and Miscellaneous groups, inflation observed in rural areas was higher than that in the urban areas. Miscellaneous basket comprises of household goods and services, health, transport and communication, recreation and amusement, education, personal care and effects. However, due to the high overall weight attached to the food and clothing & footwear groups in the rural index, the overall inflation observed in rural areas at 3.4 per cent was lower than the overall inflation observed in urban areas which was at 5.0 per cent in 2019-20 (April-December). The decline in rural inflation in items like clothing and footwear, fuel and light could be due to fall in growth of real rural wages, while rise in rural price index for items like education, health, personal care etc. also raises the question of affordability of these items to the rural segment.

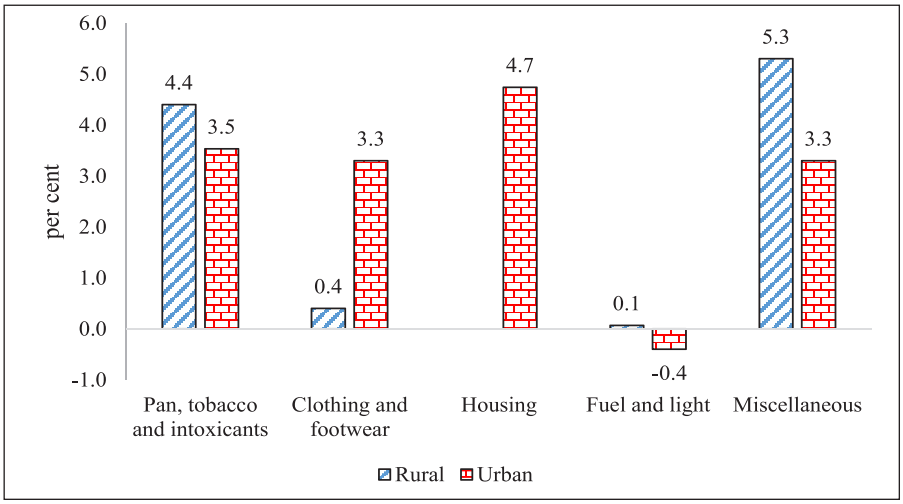
INFLATION IN STATES

5.8 CPI-C inflation has continued to be highly variable across States. Inflation ranged between (-)0.04 per cent to 8.1 per cent across States/UTs in financial year (FY) 2019-20 (April-December) compared to (-)1.3 per cent to 9.1 per cent in FY 2018-19 (April-December). However, the overall inflation rate has been quite low in almost all the States. Inflation in fifteen States/UTs was below 4 per cent in FY 2019-20 (April- December). Comparing FY 2018-19 (April- December)

with FY 2019-20 (April- December), it was observed that inflation has actually decreased in eight States. Nineteen States/UTs had inflation rate lower than All India average for FY 2019-20 (April-December) with Daman & Diu having the lowest inflation followed by Bihar and Chhattisgarh (Figure 8).

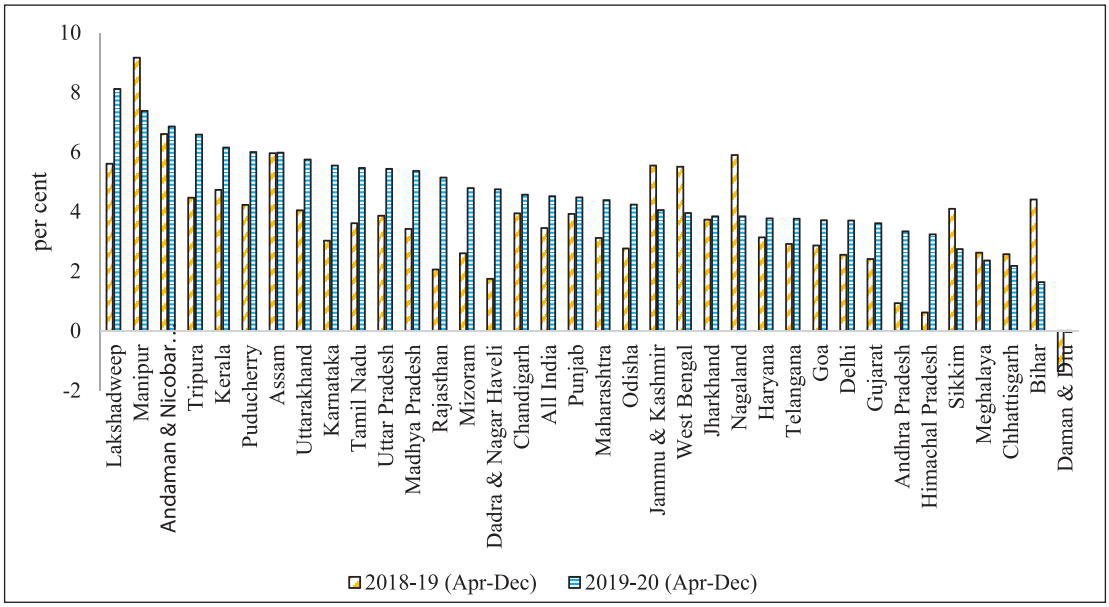
5.9 Though in most of the states the overall inflation rate in rural areas is lower than the overall inflation rate in urban areas, the overall variability of rural inflation in a particular month across States was higher than the variability of urban inflation across states. Figure 9 looks at the variability of rural and urban inflation and it was observed that the variability of rural inflation to be very high as compared to variability of urban inflation. (Figure 9 and 10).

Figure 7: Component-wise rural and urban inflation in 2019-20 (April- December)



Source: NSO.

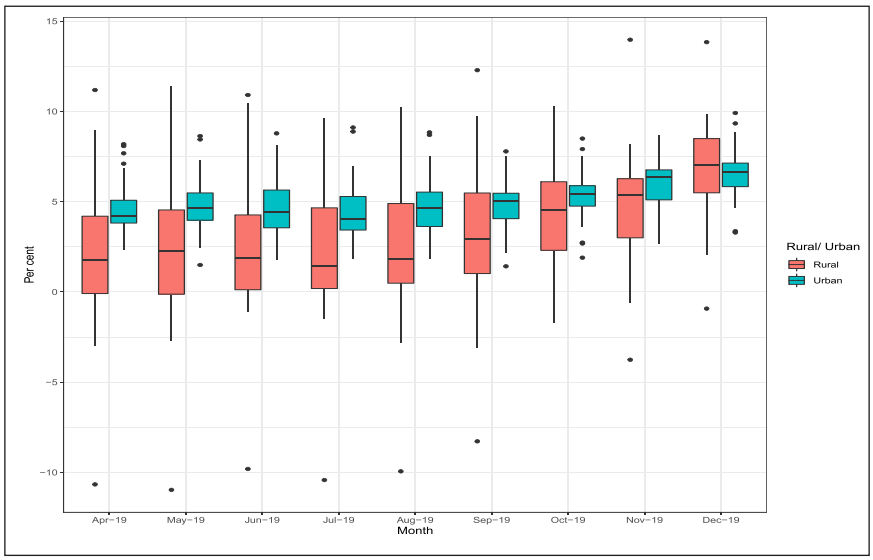
Figure 8: CPI- Combined inflation for States/Union Territories (in per cent)



Source: NSO.

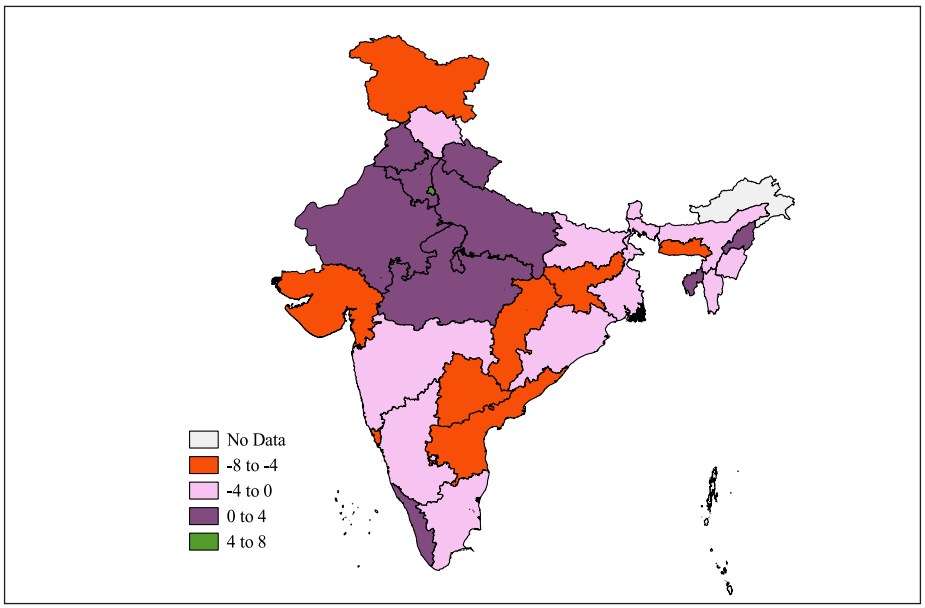
5.10 Figure 3 and 9 indicate that though the overall inflation in rural areas is lower at an All India level but due to the high variability across states some states might actually have inflation in rural areas higher than inflation in urban areas. Figure 10 shows that in Punjab, Haryana, Uttarakhand, Delhi, Rajasthan, Uttar Pradesh, Madhya Pradesh, Nagaland, Tripura and Kerala rural inflation was indeed higher than urban inflation during April-December, 2019.

Figure 9: Variability in rural and urban inflation across States in 2019-20 (April- December)



Source: NSO.

Figure 10: Difference in rural and urban CPI inflation across States 2019-20 (April-December)



Source: NSO.

DRIVERS OF INFLATION

5.11 During 2018-19, the major driver of CPI-C inflation was the miscellaneous group. Compared to 2017-18, the contribution of food and beverages to total inflation was lower in 2018-19 (Figure 11). However, during 2019-20 (April- December), food and beverages emerged as the main contributor to CPI-C inflation, with 54 per cent of the inflation during this period attributable to this group. Miscellaneous group was the second largest contributor to inflation during this period (Figure 12).

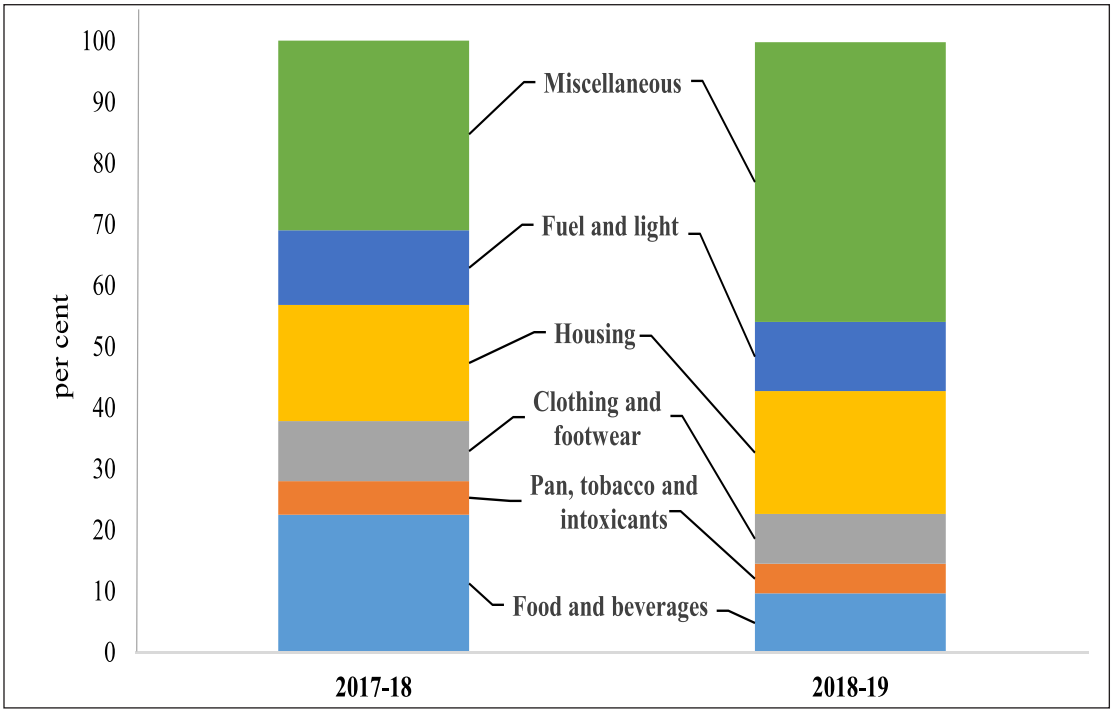
CRUDE OIL AND FUEL INFLATION

5.12 During April-December 2019, world crude oil prices declined owing to weak global demand. As oil has a major share in the country's import basket, it impacts considerably domestic prices of petroleum products. The mineral oils group in WPI saw an inflation of 5.8 per cent in April 2019, thereafter saw continuous decline to end at (-)3.2 per cent in December 2019 (Figure 13). Actually, this group in WPI closely tracks the direction of movements in the Indian Crude Basket. The fuel components of CPI also show a movement in a similar direction (Figure 13).

DRUG PRICING

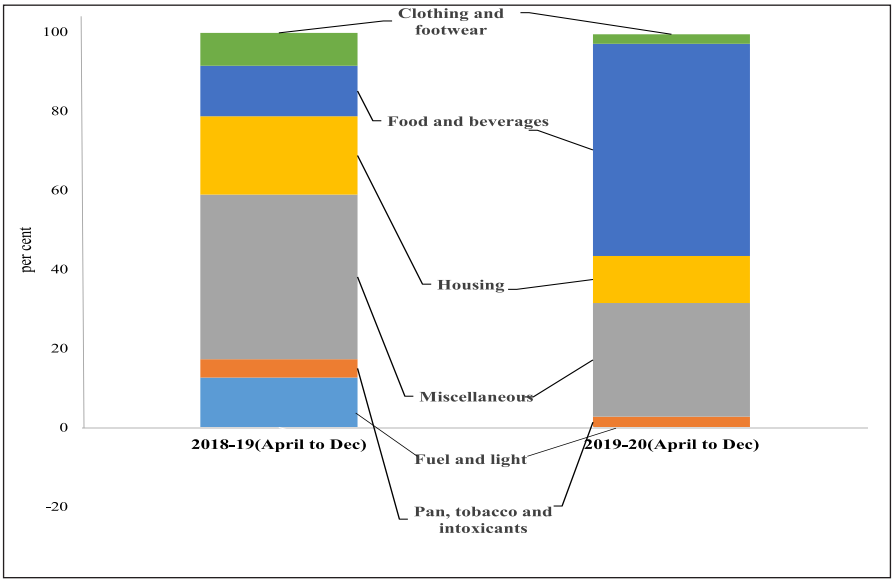
5.13 Ensuring access to affordable health care is one of the primary focus of the Government of India. Out of the total out of pocket expenditure of individuals on health, the major portion is that of medicines. This makes the provision of affordable drugs an imperative. Indian pharmaceutical sector is an important sector not only because of the welfare implications it has, but also because of its economic importance as a sector with a proven record of technical capability and global standing. The sector has grown considerably in the recent years and has potential for further development in the coming years.

Figure 11: Contributions to CPI-C inflation in 2017-18 and 2018-19



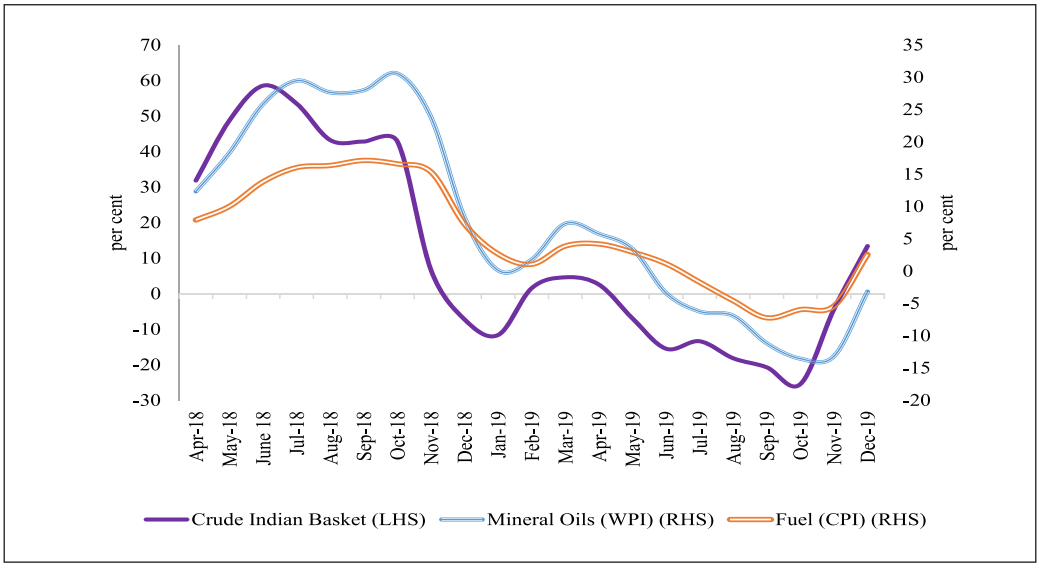
Source: NSO.

Figure 12: Contributions to CPI-C inflation in 2018-19 (April to December) and 2019-20 (April to December)



Source: NSO.

Figure 13: Year-on-year growth in price of Indian Crude Basket, inflation in Mineral oils in WPI and Fuel in CPI-C



Source: CPI data from NSO, Price of Indian Crude Basket from Petroleum Planning and Analysis Cell and WPI data Office of Economic Adviser, DPIIT; Survey calculations.

Note: Inflation for fuel in CPI has been calculated based on LPG, kerosene, diesel, other fuel, petrol for vehicle, diesel for vehicle, lubricants & other fuels for vehicle.

5.14 The Government came out with National Pharmaceutical Pricing Policy, 2012 with an objective to put in place a regulatory framework for pricing of drugs so as to ensure availability of required medicines – "essential medicines" – at reasonable prices even while providing sufficient opportunity for innovation and competition to support the growth of industry, thereby meeting the goals of employment and shared economic well-being for all.

5.15 The essential drugs and medicines are placed under the National List of Essential Medicines 2011 (NLEM) and included in the First Schedule of Drug Price Control Order (DPCO), 2013 and then brought under price control. National Pharmaceutical Pricing Authority (NPPA) has so far fixed the ceiling prices of 860 formulations/packs of drugs included in First Schedule up to December 2019. The details of reduction in prices of scheduled formulations effected under DPCO, 2013 as compared to the highest price prevailing prior to the announcement of DPCO, 2013 for formulation of NLEM 2015 are shown in Table 4.

5.16 The fixation of ceiling prices/Maximum Retail Price (MRP) has resulted in a total saving of ₹12,447 crores to the public after implementation of DPCO, 2013. This includes the saving of ₹4,547 crores on account of fixation of ceiling price of coronary stents, ₹1,500 crores on account of price fixation of Knee implants and ₹984 crores on account of Trade Margin Rationalisation (TMR) on Anti-cancer drugs.

5.17 In case of cardiac stents, in the post price capping period (2017) over the period of two years, it has been observed that there is 26 per cent increase in the sales of the cardiac stents in the Indian market. It has also been observed that indigenous manufacturers have benefited from the price capping of the cardiac stents as their share in the production has increased by 10 per cent in post price capping period.

FOOD INFLATION

5.18 As discussed in para 5.3, food inflation has been the major driver of inflation during the current financial year, 2019-20. Some commodities such as onion, tomato and pulses have shown high inflation since August 2019. Untimely rains have caused lower production as well as constricted the movement of onion and tomato to the markets. In the case of pulses, the progress in sowing has been at much lower levels than in the previous year.

Table 4: Statement showing range of reduction in ceiling price of scheduled formulation with respect to the highest price prevailing prior to announcement of DPCO, 2013

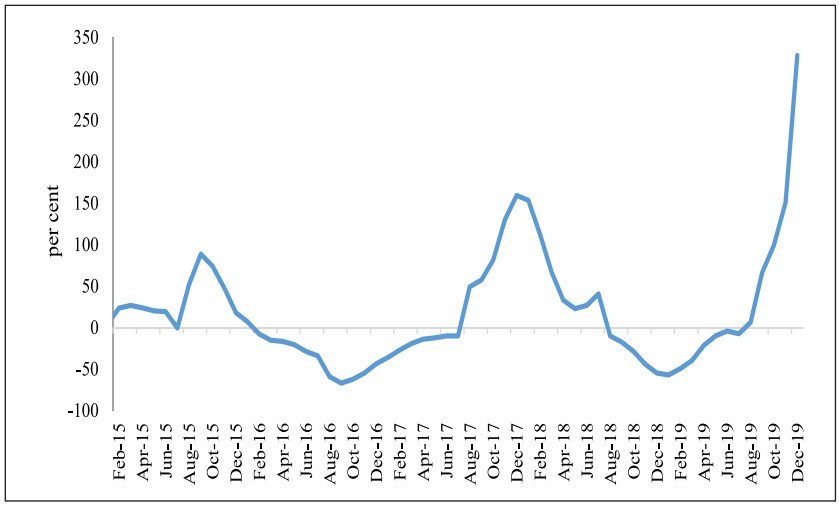
Per cent reduction with respect to Maximum Price	No. of formulations
0<= 5%*	236
5<=10%	138
10<=15%	98
15<=20%	100
20<=25%	92
25<=30%	65
30<=35%	46
35<=40%	26
Above 40%	59
Total formulations in NLEM 2015	860

Source: NPPA, Department of Pharmaceuticals.

(a) Onion

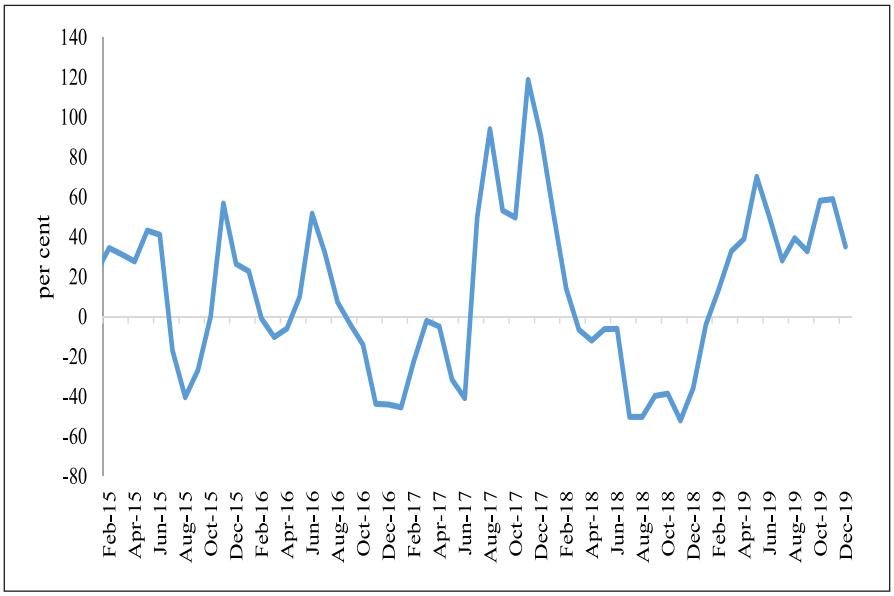
5.19 CPI based Inflation rate of onion showed an increasing trend since April, 2019 and rose up by 328.0 per cent during the month of December, 2019 as compared to December, 2018 on a Year on Year (YoY basis) (Figure 14). The WPI based inflation rate of onion during the month of December, 2019 also increased to 455.8 per cent as compared to a decline of (-) 63.8 per cent in December, 2018 on a Year on Year (YoY) basis.

Figure-14: Month-wise trends in CPI (Combined) inflation rate of Onion (in per cent during 2015-2019



Source: NSO.

Figure 15: Month-wise trends in CPI (Combined) inflation rate of Tomato (in per cent) during 2015-2019



Source: NSO.

Table-5: All India monthly arrivals of Onion

Month	All India Arrivals (in Lakh Tonnes)		
	Five Year Average (2013-2017)	2018	2019
January	12.9	11.1	13.0
February	10.5	11.0	13.6
March	9.9	9.5	12.0
April	10.0	8.9	12.8
May	11.6	12.5	11.6
June	10.5	12.9	13.5
July	8.0	9.8	11.0
August	7.2	10.3	10.0
September	7.1	10.0	7.4
October	8.0	10.8	7.4
November	8.7	8.3	6.1
December	11.1	10.6	N.A.

Source: Monthly Report Onion, November 2019, Horticulture Statistics Division.

5.20 There can be many reasons for the rise in onion prices. One of the primary reasons that is observed every year is driven by demand-supply mismatch which can be primarily attributed to the seasonal factors. Other reasons that further exacerbated this demand supply mismatch are the fall in area sown and damage to Kharif onion due to rain. As reported from major Kharif growing States (Maharashtra, Karnataka, Madhya Pradesh, Andhra Pradesh, Gujarat and Rajasthan), area sown/transplanted is around 7 per cent less as compared to previous year. Damage to Kharif onion crop also occurred due to heavy rains in September/October, 2019. As reported by State Directorates of Horticulture, damage in Madhya Pradesh was 58 per cent, Karnataka 18 per cent and Andhra Pradesh 2 per cent. The crop in Maharashtra was ready for harvest but got delayed due to continuous rains which was reflected in the low market arrivals of onion during the months from July to November 2019 (Table 5).

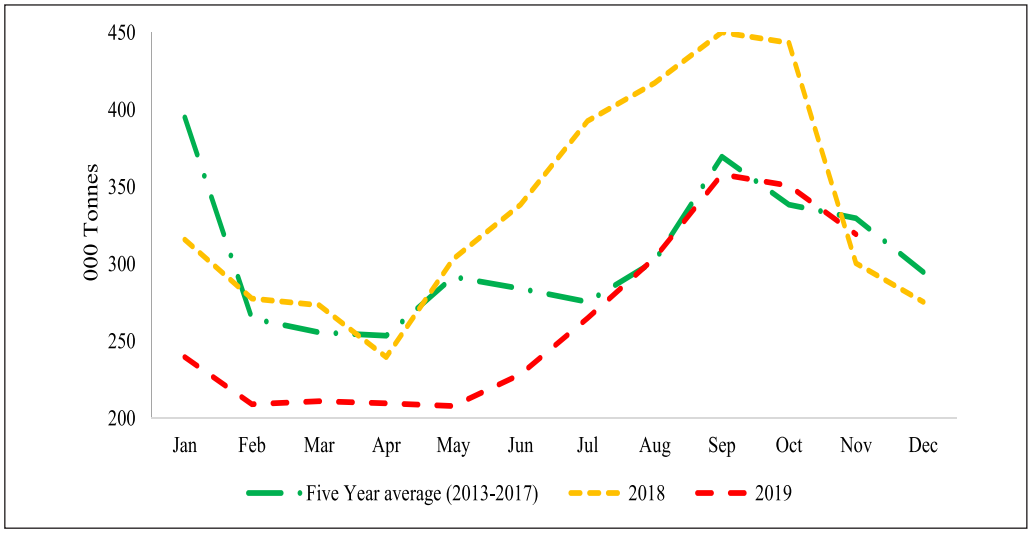
(b) Tomato

5.21 CPI based Inflation rate of Tomato showed an increasing trend since July, 2019 and rose up by 35.2 per cent during the month of December, 2019 as compared to December, 2018 on a Year on Year (YoY basis) (Figure 15).

5.22 The price rise in tomato during July-December, 2019 was relatively lower than that observed during 2017. The current spike in the tomato prices in 2019 is mainly due to the excess rains in Maharashtra and Karnataka etc. which are major producers of tomato thus disrupting the supply of tomato.

The market arrivals of tomato in November, 2019 were lower than October, 2019 and also lower than average of five years (2013-17), but higher than corresponding month of last year. As the market arrivals of tomato declines, the wholesale prices of tomato tend to spike due to demand-supply mismatch as seen since September, 2019. The All India Monthly Arrivals of tomato are shown in Figure 16.

Figure 16: Month wise All India monthly arrivals of Tomato

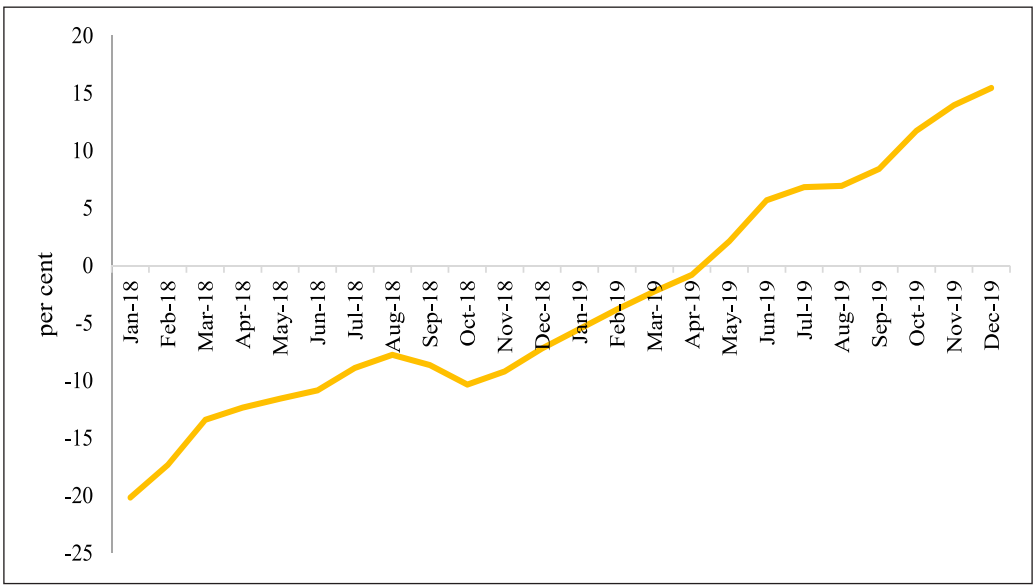


Source: AGMARKETNET, Ministry of Agriculture, Cooperation and Farmers Welfare.

(c) Pulses

5.23 The CPI inflation rate of pulses increased from -20.2 per cent in January 2018 to 15.4 per cent in December 2019. The overall rate of inflation, based on CPI, for Pulses during the month of December 2019 stood at 15.4 per cent as compared to -7.2 per cent during December 2018 (Figure 17).

Figure 17: CPI based inflation rates in Pulses (in per cent)

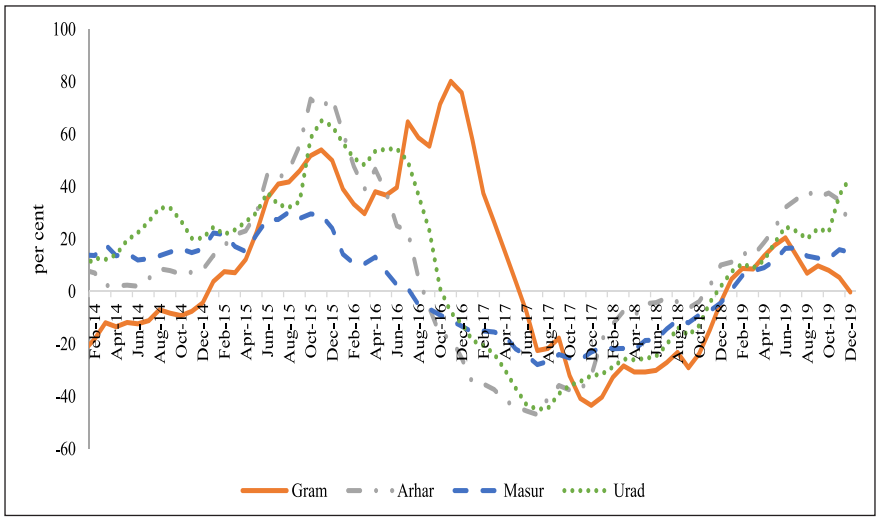


Source: NSO.

5.24 However, a comparison of the inflation trend of pulses item-wise reveals that the current hike in prices of various pulses compared to their long-term trends is not very high (Figure 18).

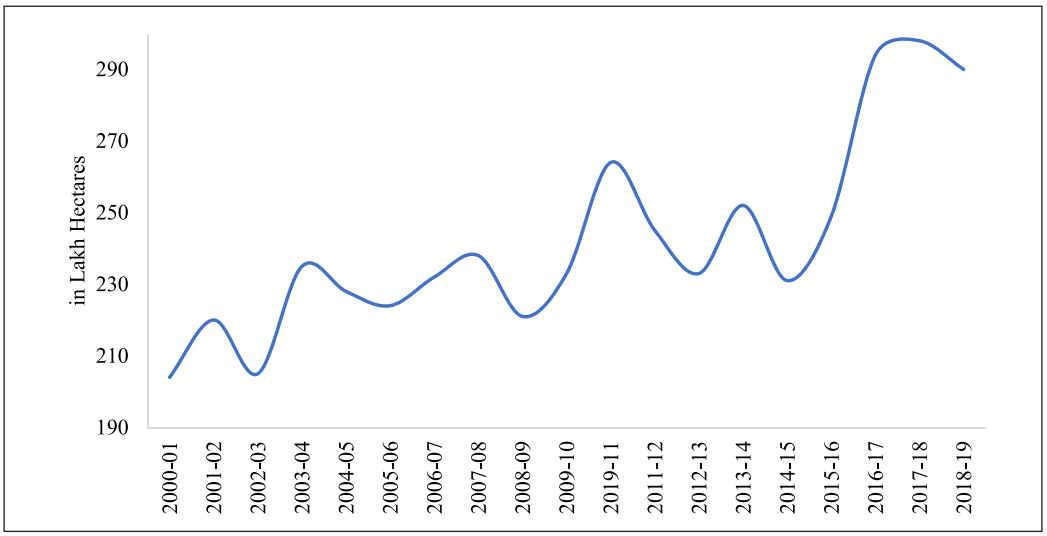
5.25 The phase of price rise during 2019 could be due to fall in acreage resulting from rains in the growing states and also because of low price realisation due to glut in the market following increased production of earlier years. It may be noted here that the production of pulses increased to 231.3 mn tonnes in 2016-17 from 163.5 mn tonnes in 2015-16 – a jump of 41 per cent in a span of one year. In 2018-19 the acreage marginally declined to 290 lakh ha as compared to 298 lakh ha and 294 lakh ha in 2017-18 and 2016-17 (Figure 19). Low market prices during 2018-19 may have resulted in significant reduction in acreage of some pulses.

Figure 18: Long term inflation trend of various Pulses



Source: Office of the Economic Adviser, DPIIT.

Figure 19: Area under Pulses in India

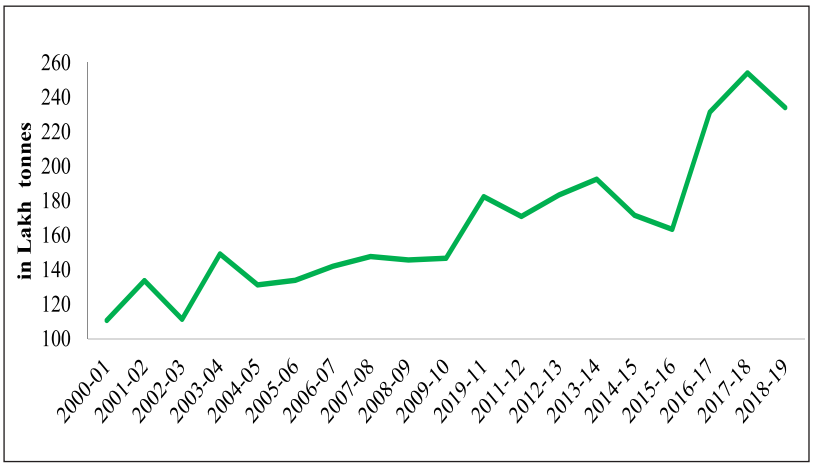


Source: Pocket Book of Agricultural Statistics, Ministry of Agriculture and Farmers Welfare.

5.26 Production of pulses in which there was a steady increase in production since 2015-16 shows a steady decline from 2017-18 to 2018-19- a decline of 7.9 per cent during 2018-19 over the previous year (Figure 20).

Box 1 presents the analysis to check for the possibility of presence of cobweb phenomenon in Pulses.

Figure 20: Production of Pulses in India (in Lakh Tonnes)



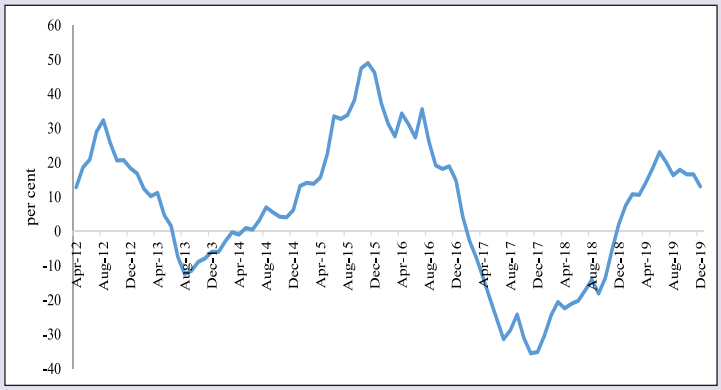
Source: Pocket Book of Agricultural Statistics, Ministry of Agriculture and Farmers Welfare

BOX 1: The cobweb phenomeon in Pulses

Cobweb theory is the idea that price fluctuations can lead to fluctuations in supply which cause a cycle of rising and falling prices. The farmers are caught in the cobweb phenomenon when they base their sowing decisions on prices witnessed in the previous marketing period. So, if the farmer observes a higher price for a specific crop in period 't-1', he would opt to produce more of it in period 't'. However, if the production of the crop exceeds market demand, prices fall in period 't', signalling farmers to produce less of the commodity in period 't+1'.

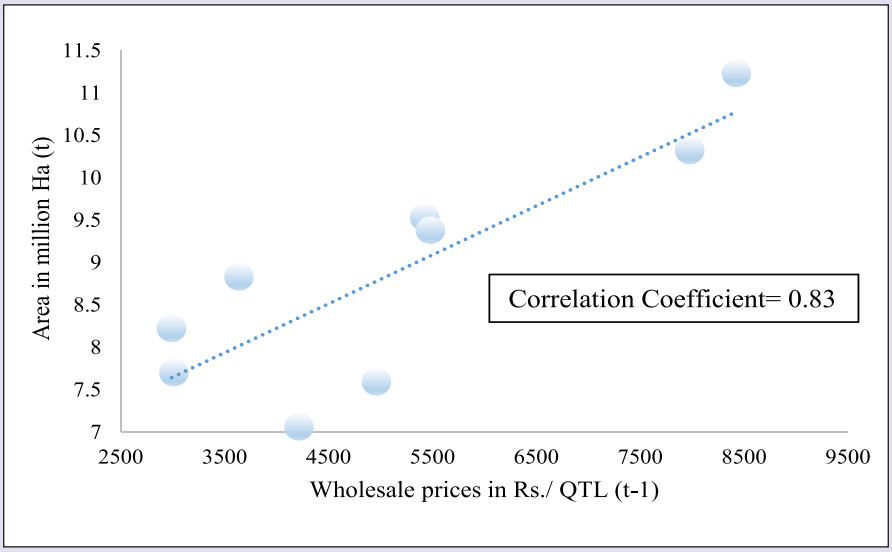
The figure below shows the trend of inflation rate of pulses. High peaks are observed on either side. The current peak observed is less than the peak observed in 2015-16. The presence of peaks might indicate towards the presence of cobweb phenomeon in pulses.

WPI inflation rate of Pulses from April 2012 to December 2019



Source: Office of Economic Advisor, DPIIT.

Relation between wholesale price of Gram in Period (t-1) and area sown in period t



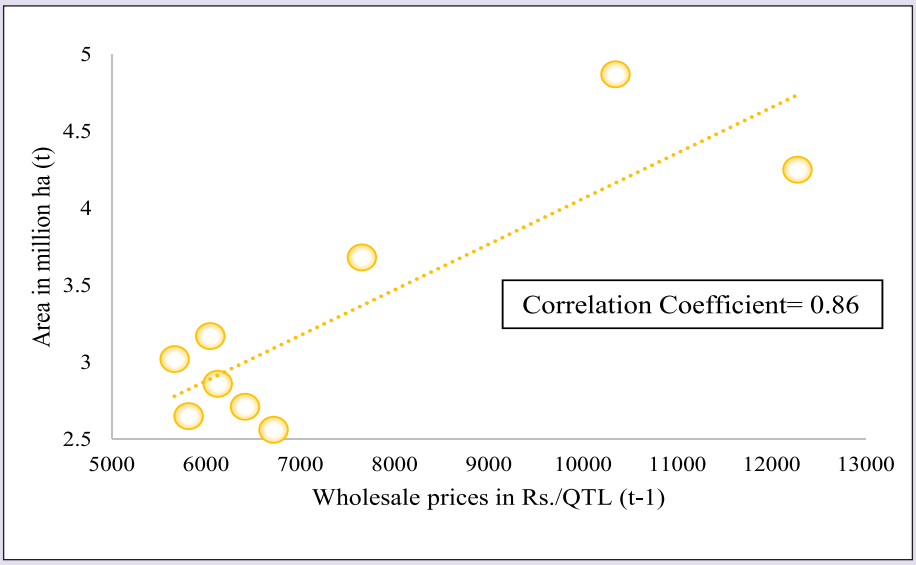
Source: PMC, Department of Consumer Affairs and Ministry of Agriculture.

Analysing the area sown and wholesale prices for Gram, Tur, Urad and Moong for the period 2009-10 to 2017-18. Area sown in period 't' and wholesale prices of period 't-1' are considered.

The figure above shows a positive relation between wholesale prices in period t-1 and area sown in period t. The correlation coefficient measures the strength and direction of relation between the two variables. In the case of Gram the correlation coefficient comes out to be 0.83.

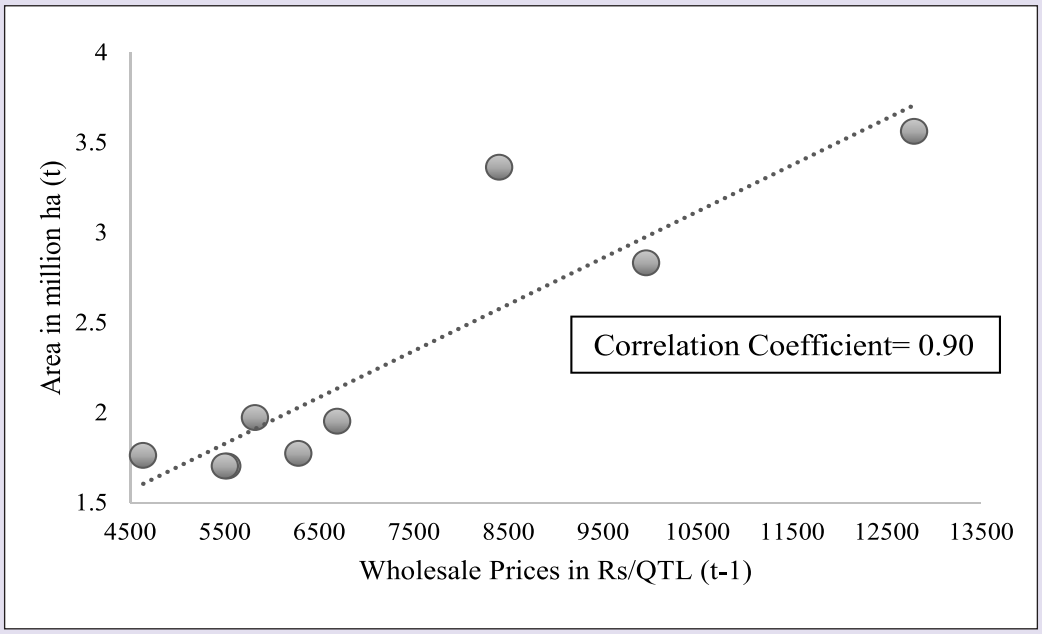
Even in the case of Tur, the association between the two variables is positive and turns out to be even more strong (0.86) as indicated by the value of correlation coefficient.

Relation between wholesale price of Tur in Period (t-1) and area sown in period t



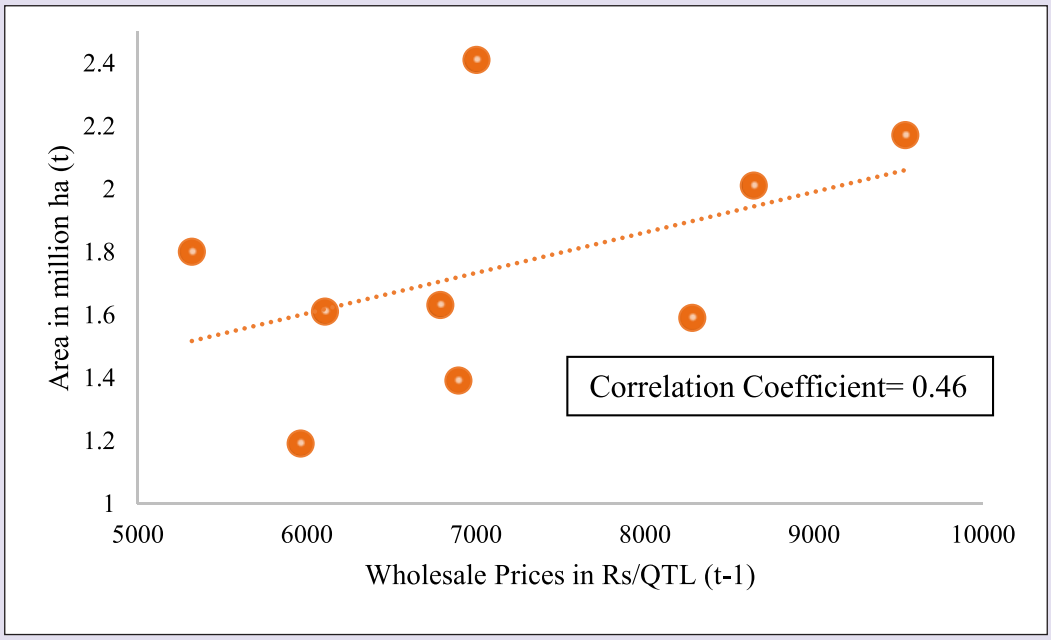
Source: PMC, Department of Consumer Affairs and Ministry of Agriculture.

Relation between wholesale price of Urad in Period (t-1) and area sown in period t



Source: PMC, Department of Consumer Affairs and Ministry of Agriculture.

Relation between wholesale price of Moong in Period (t-1) and area sown in period t.



Source: PMC, Department of Consumer Affairs and Ministry of Agriculture.

In case of Urad, again positive correlation was observed and the correlation coefficient turned out to be 0.90. A similar positive association for Moong was observed as well, however, in case of Moong the correlation coefficient was relatively weak, at 0.46.

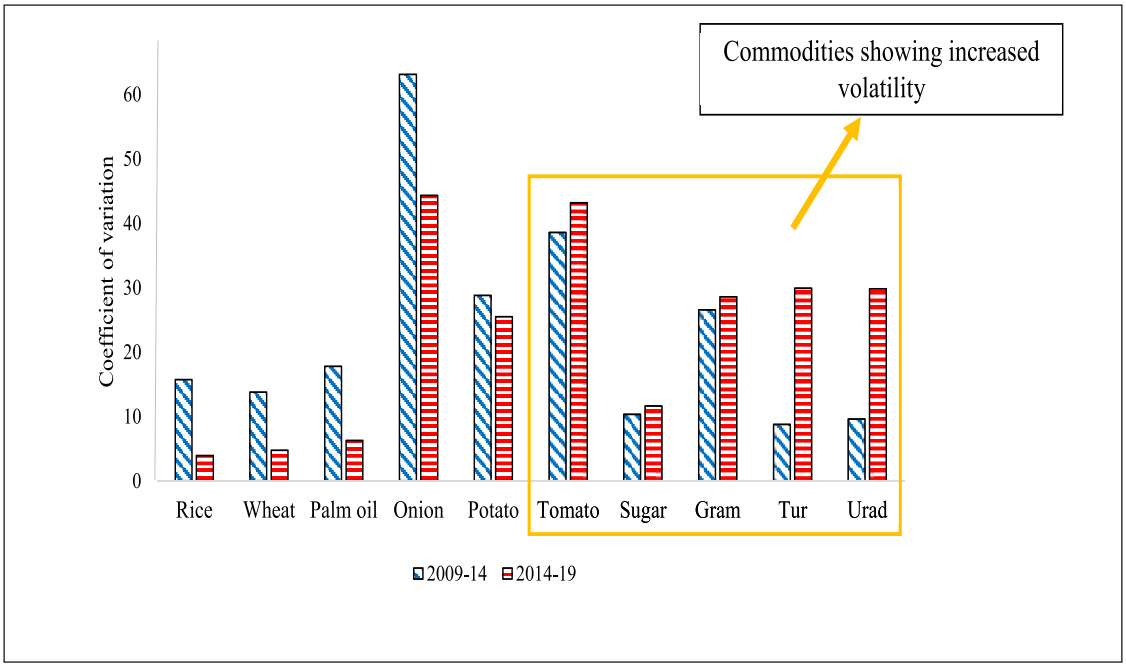
To prevent the occurrence of the cobweb phenomenon, it is essential that apart from existing measures in place to safeguard pulses farmers from crop failure/price shocks like market intervention under Price Stabilization Fund (PSF), coverage under Pradhan Mantri Fasal Bima Yojana, PM-AASHA, providing warehouses, improving transportation, price discovery through e-NAM etc, free export of pulses also needs to be encouraged for India to become self-sufficient in pulses production.

Studies have also suggested that efforts to strengthening procurement by government agencies, increasing openess of external trade, stabilising the prices, reduce transportation cost for farmers by linking them via better roads and effective marketing channels so that production as well as net availability of pulses can be increase thus, leading to improvement in supply of pulses. (CRISIL, 2017)

VOLATILITY IN ESSENTIAL COMMODITY PRICES

5.27 Wholesale price volatility was analysed for various essential commodities over two time periods i.e. 2009-14 and 2014-19. Coefficient of variation has been used as a measure of volatility. The coefficient of variation is a statistical measure of the dispersion of data points in a data series around the mean. Prices of rice and wheat remained stable since 2014 due to adequate supply arising out of sufficient domestic production and also due to maintenance of adequate buffer stock of rice and wheat for meeting the food security requirements. As a result, the price volatility was lower in the case of rice and wheat (Figure 21). It may be seen that overall price volatility was highest for vegetables and lowest for rice, wheat and palm oil. There was a significant rise in volatility for pulses, sugar and tomatoes during 2014 - 2019.

Figure 21: Coefficient of variation of various essential agricultural commodities



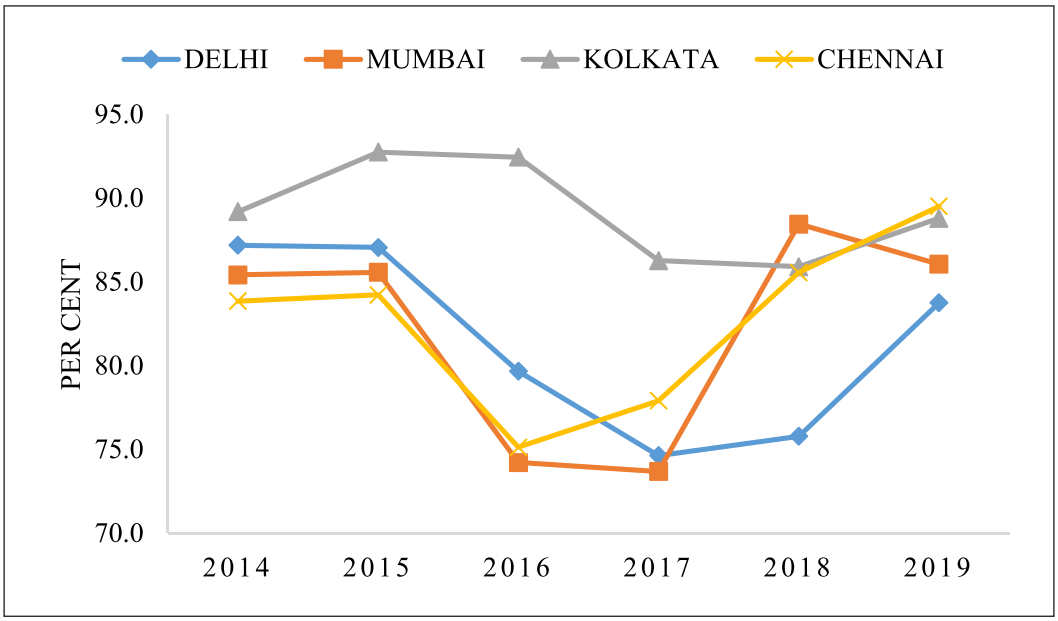
Source: PMC, Department of Consumer Affairs.

5.28 The extent to which given production and consumption shocks translate into price volatility depends on supply and demand elasticities. Stockholding and speculation can have major impact on price variability, either stabilising or destabilising. Perishability of the commodities also adds to price volatility. Presence of marketing channels, storage facilities, effective MSP system can help limit price volatility.

DIVERGENCE IN RETAIL AND WHOLESALE PRICES FOR ESSENTIAL AGRICULTURAL COMMODITIES

5.29 A divergence between the retail and wholesale price of various essential commodities was observed in the four metropolitan cities of the country over the period 2014 to 2019. A price wedge[1] of 10 to 15 per cent per kg is not excessive if one compares this with the marketing costs and margins (Sharma & Pramod, 2001). In 2019 the margins are excessive for some of the commodities, and for all the commodities the margins are highest in Delhi and Mumbai. In case of arhar margins are low at the level of 16 per cent per kg in Delhi and 14 per cent per kg in Mumbai (Figure 22). In case of gram, the margin in Delhi turns out to be around 28 per cent per kg and around 20 per cent per kg in case of Mumbai (Figure 23). In the case of groundnut oil, margins between the wholesale and the retail prices were around 15 per cent in Delhi, while in Kolkata and Chennai margins were at 5-7 per cent. The margins were highest in Mumbai at around 26 per cent for groundnut oil (Figure 24). In the case of vegetables, onion and tomato are analysed. For both price wedge was excessive especially in Delhi and Mumbai. In Delhi, the price margin was 51 per cent for onion and in the case of tomatoes it was 59 per cent (Figure 25 and 26). This implies that vertical spreads in prices is maximum for vegetables that are perishable, then for pulses and the least for edible oils.

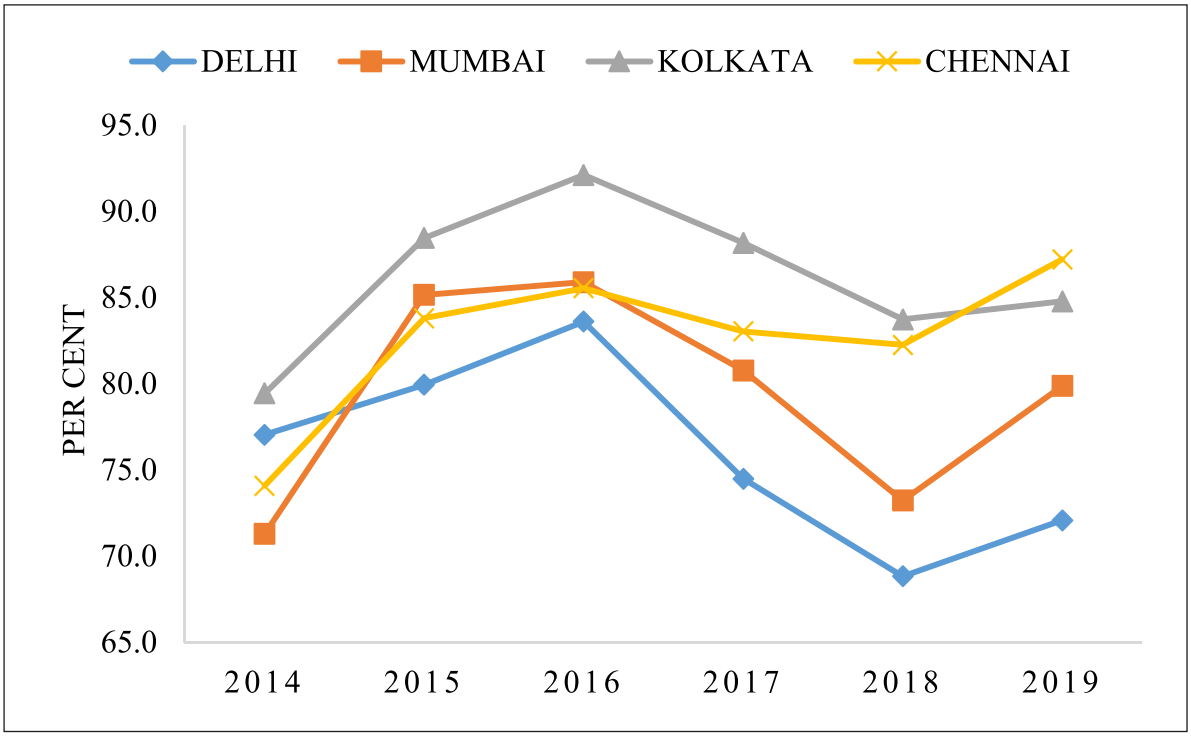
Figure 22: Arhar wholesale to retail prices ratio



Source: PMC, Department of Consumer Affairs.

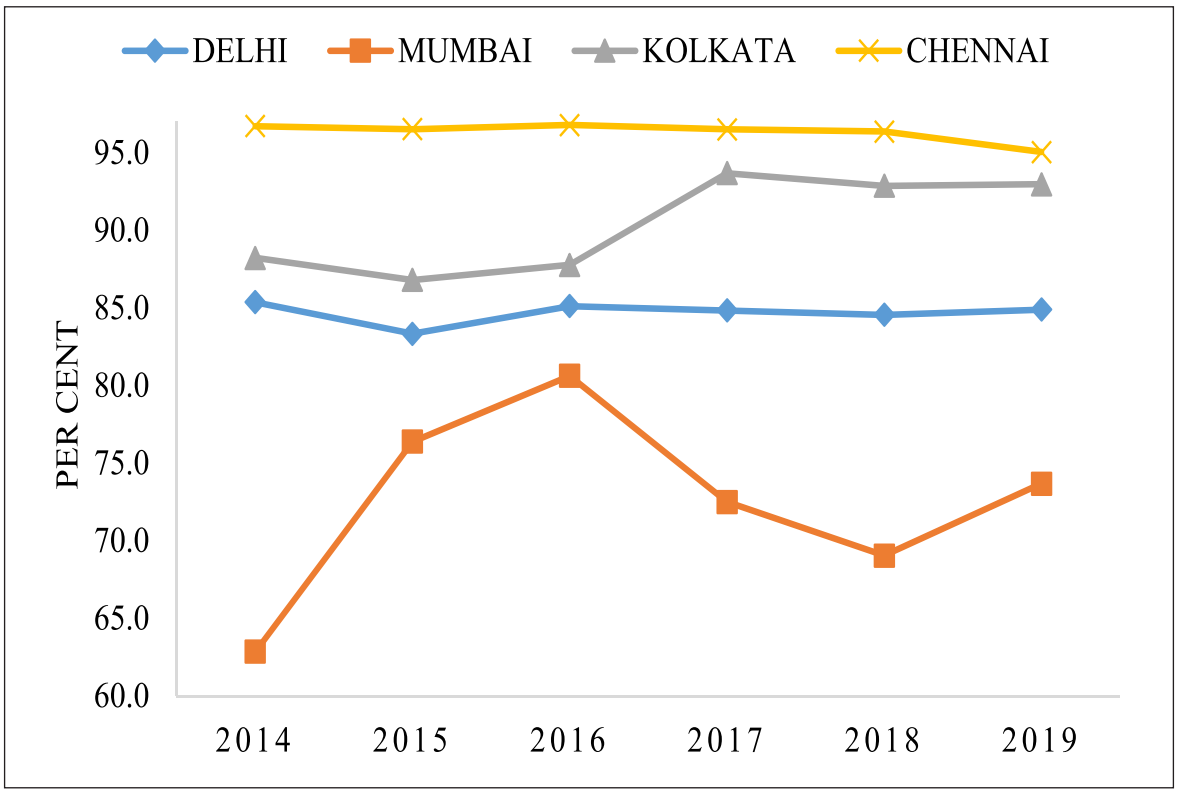
[1] Wedge= [1- (Wholesale price per kg/Retail price per kg)]*100.

Figure 23: Gram wholesale to retail prices ratio



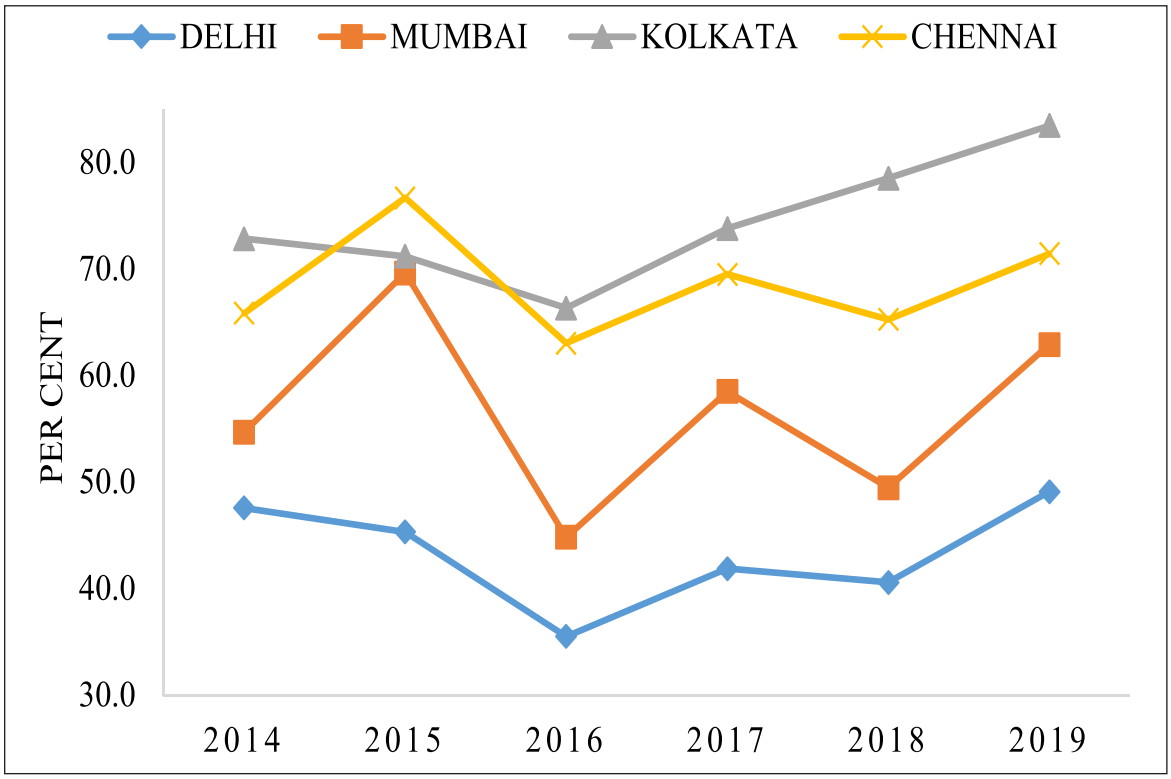
Source: PMC, Department of Consumer Affairs.

Figure 24: Groundnut oil wholesale to retail prices ratio



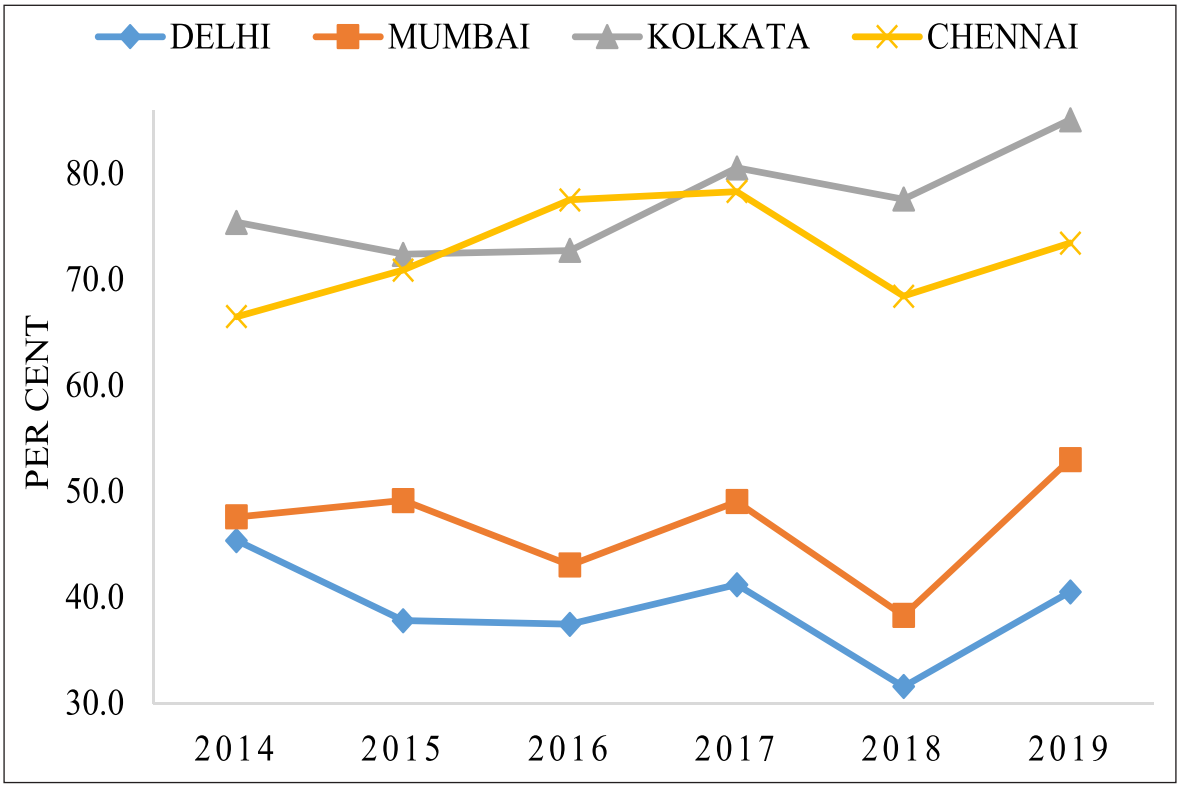
Source: PMC, Department of Consumer Affairs.

Figure 25: Onion wholesale to retail prices ratio



Source: PMC, Department of Consumer Affairs.

Figure 26: Tomato wholesale to retail prices ratio



Source: PMC, Department of Consumer Affairs.

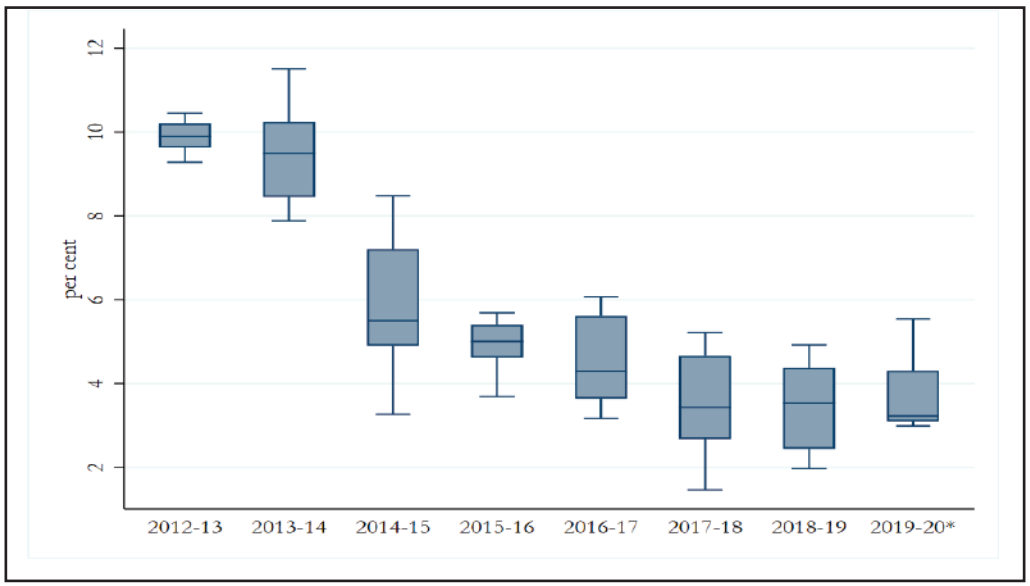
5.30 The reasons for such a high spread between the wholesale and retail prices could be due to several reasons such as high transaction costs, weak infrastructure and information systems, poor marketing facilities, huge margins of middleman etc. It is a fact that transaction costs in the northern states of the country are high compared to other States (Sharma & Pramod, 2001). The market structure is also different across States. If there is a fair amount of competition in the market between traders, price wedge will not be very high. On the other hand, if traders collude, price wedge will be much higher. Another possible reason for this could be asymmetry in the transmission of price signals from wholesale to retail prices and vice versa, this can happen due to action of intermediaries. Therefore, to reduce the wedge it is important that market barriers and structural rigidities in the system that lead to higher transaction costs are removed.

HAS THERE BEEN A SHIFT IN INFLATION DYNAMICS?

5.31 As discussed earlier in the para No. 5.3, after witnessing high levels of inflation during 2012-13, CPI-C inflation fell in 2013-14 and witnessed a drastic fall from 2014-15 onwards. Given the falling trend in inflation in the recent years, it is pertinent to ask whether there has been a shift in the inflationary process. Figure 27 presents the financial year-wise box-plots[2] for CPI-C series for the periods 2012-13 to 2019-20 (Apr-Nov). The average levels of inflation have fallen considerably during this period. Not only have the average levels of inflation come down, the peak levels of inflation during the financial year are now much lower.

5.32 It has been generally believed that, food and fuel inflation in India have had strong

Figure 27: Distribution of CPI-C inflation from 2012-13 to 2019-20*



Source: Calculations based on CPI-C data from MoSPI.
Note *: 2019-20 corresponds to April – November, 2019.

[2] Box and whisker plots enable us to study the characteristics of a distribution. The box shows the inter-quartile range, that is the 75th and 25th points on the distribution. The horizontal line in the box indicates median of the distribution and the whiskers are lines running from the box to the maximum and minimum values.

secondary effects leading to persistence in household inflation expectations. This feeds into core inflation and therefore prolongs the effects on headline inflation (Anand et. al, 2014; Raj and Misra, 2011). One way to check for the presence of secondary effects of food and fuel inflation is to look at the swiftness with which headline inflation converges to core inflation after the occurrence of a food or fuel price shock. If headline inflation does not completely revert back to core inflation within a reasonably short span of time, it may indicate the presence of strong secondary effects. The reversion of headline inflation to core inflation has considerable implications for the conduct of monetary policy in an inflation targeting framework. In an economy with strong secondary effects, monetary policy may have to be tighter in an event of a food or fuel price shock compared to an economy where such effects are minimal.

5.33 It was observed that from 2012, there is convergence of headline towards core inflation as per the CPI-C data. The analysis for monthly CPI-C inflation data between January 2012 and November, 2019 was done. The following commonly used equation to test for reversion of headline to core inflation was estimated.

$$\pi_t^{Headline} - \pi_{t-12}^{Headline} = \alpha_1 + \beta_1(\pi_{t-12}^{Headline} - \pi_{t-12}^{Core}) + e_t$$

where, $\pi_t^{Headline}$ is the headline CPI-C inflation at time point *t*, $\pi_{t-12}^{Headline}$ is the headline CPI-C inflation 12 months prior to *t* and π_{t-12}^{Core} is the core inflation 12 months prior to *t*.

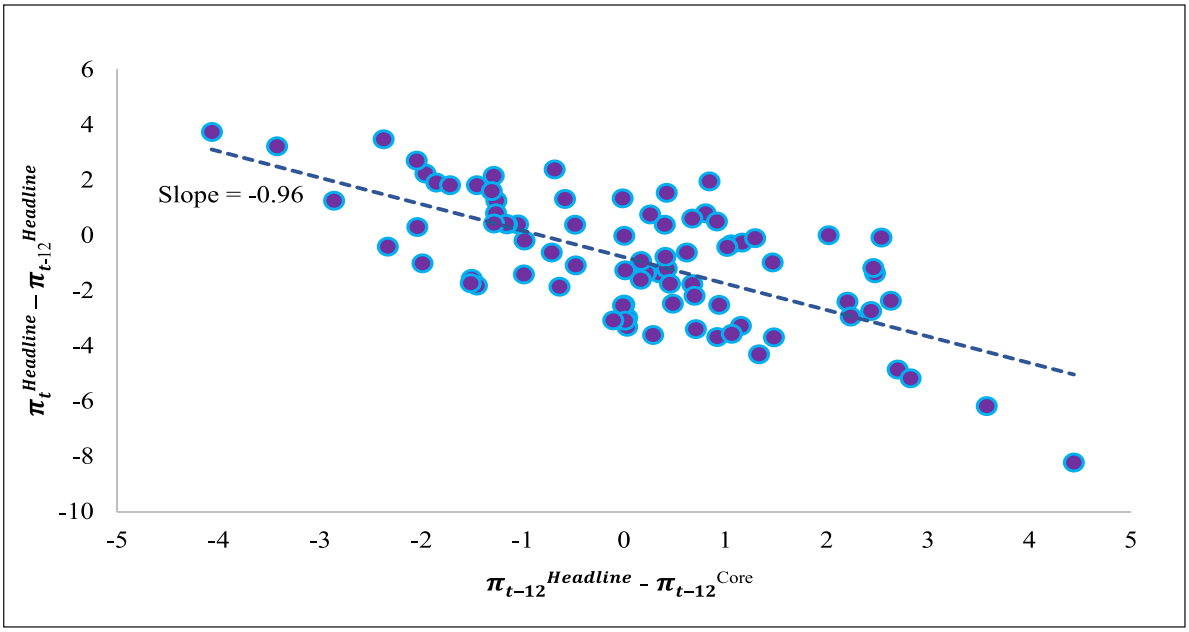
5.34 The results (Table 6 and Figure 28) indicate that in the period under consideration there is evidence of strong reversion of headline inflation to core inflation. The slope for the regression for the period is negative and close to -1, indicating complete reversion of headline inflation to core within a period of 12 months. A similar regression to test for the reversion of core to headline inflation does not provide evidence for the same (Table 6). This implies that secondary effects from non-core components to core components are minimal. This may have implications for the response of monetary policy to food and fuel price shocks: monetary policy need not become tighter in face of short-term, transitory price shocks in non-core components. However, owning to the large weightage of food and fuel in the consumption basket of consumers in India and the fact that demand-side pressures (and not just supply side factors) are important for food and fuel inflation-focus on headline inflation for monetary policy decisions may be warranted.

Table 6: Testing for reversion of CPI-C Headline to Core inflation

January 2012 to November 2019			
Dependent Variable: $\pi_t^{Headline} - \pi_{t-12}^{Headline}$			
	Slope Coefficient	**p-value for F statistic**	**R^2**
$\pi_{t-12}^{Headline} - \pi_{t-12}^{Core}$	-0.96***	0.000	0.47
Dependent Variable: $\pi_t^{Core} - \pi_{t-12}^{Core}$			
$\pi_{t-12}^{Headline} - \pi_{t-12}^{Core}$	-0.045	0.6865	0.002

*** p<0.01, ** p<0.05.

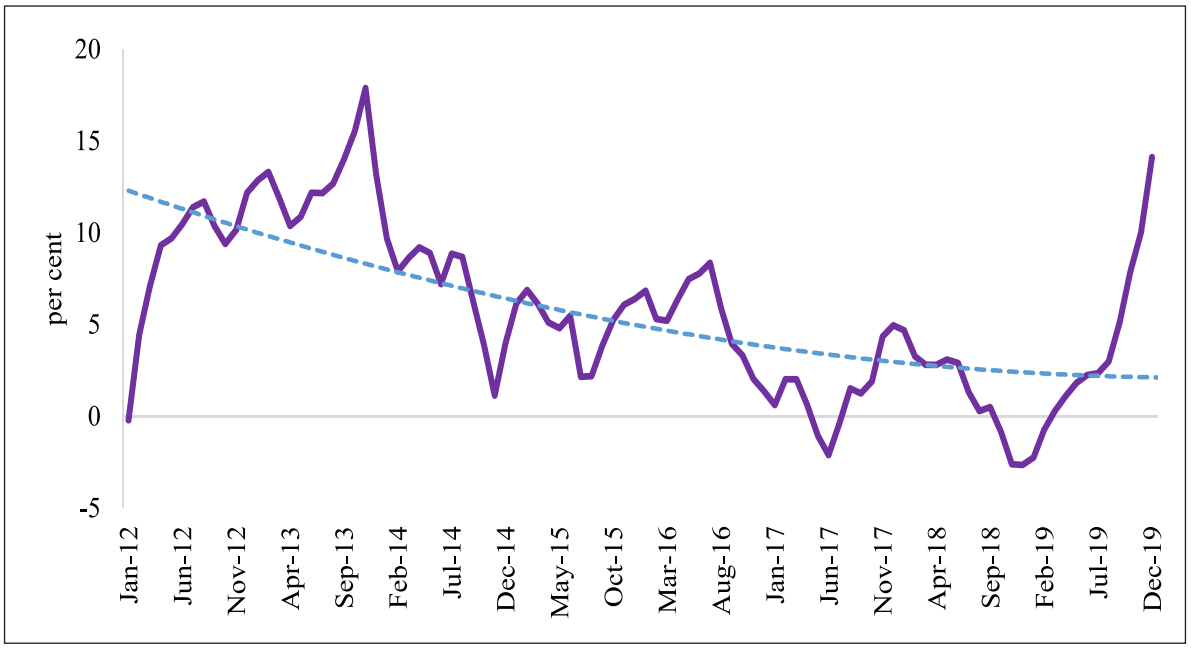
Figure 28: Reversion of CPI-C Headline to Core inflation



Source: Calculations based on CPI-C data for the period Jan 2012-Nov 2019.

5.35 Two major factors could have contributed to the changing dynamics of inflation in India. First, it was observed that food inflation has seen a declining trend during the period under consideration (Figure 29). The decline in inflation has been witnessed in most categories of food group including those with a high weightage such as cereals and products, fruits, vegetables and pulses and products. Second, inflation expectations have been declining since 2015 (Figure 30). This could be partly because of the success

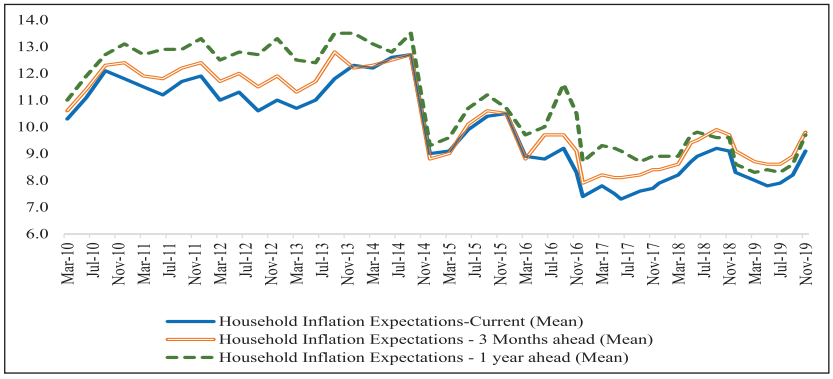
Figure 29: Consumer Food price inflation



Source: NSO.

of inflation targeting approach of monetary policy adopted by RBI in anchoring inflation expectations. On the other hand, household inflation expectations are known to move closely with food inflation. The fall in food inflation during this period could have had the effect of reducing the overall inflation expectations of the households. This is also reflected in the fact that proportion of the households expecting the prices of food products for one year ahead to increase has fallen consistently between September 2013 and November 2019.

Figure 30: Inflation Expectations Survey of Households

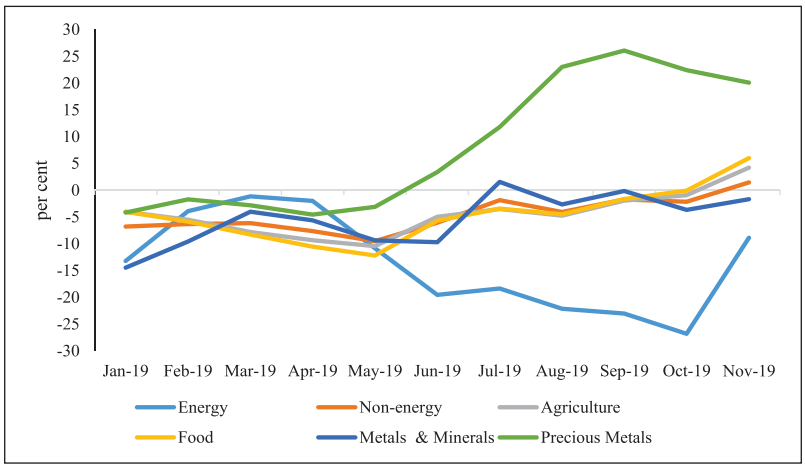


Source: Reserve Bank of India.

TRENDS IN GLOBAL COMMODITY PRICES

5.36 As per the commodity prices published by the World Bank, energy commodity prices have shown a decreasing trend in 2019-20 (April-November). They recorded average inflation of (-)16.8 per cent in 2019-20 (April-November) as compared to 35.5 per cent in 2018-19 (April-November). In terms of food prices, the deflationary trend continued with inflation of (-)4.3 per cent in 2019-20 (April-November) compared to 0.3 per cent in 2018-19 (April-November). The metals and minerals index also showed a deflationary trend, indicative of the gloomy global economic scenario prevalent during the year (Figure 31).

Figure 31: Inflation trend in global commodity prices (Jan 2019-Nov 2019)



Source: World Bank.

MEASURES TO CONTAIN PRICE RISE OF ESSENTIAL COMMODITIES

5.37 Government takes various measures from time to time to stabilize prices of essential food items which, inter-alia, include utilizing trade and fiscal policy instruments like import duty, Minimum Export Price, export restrictions, imposition of stock limits and advising States for effective action against hoarders & black marketers etc. to regulate domestic availability and moderate prices. Also, Government incentivizes farmers by announcing Minimum Support Prices for increasing production and is implementing Schemes which, inter alia, include Mission for Integrated Development of Horticulture (MIDH), National Food Security Mission (NFSM), National Mission on Oilseeds and Oil Palm (NMOOP), etc. for increasing production and productivity through appropriate interventions. Besides, Government is also implementing Price Stabilization Fund (PSF) to help moderate the volatility in prices of agri-horticultural commodities like pulses, onion, and potato. Onion prices saw a hike during 2019-20 starting from August, 2019, and various measures were taken by the Government to ease the situation which included:

- During 2019-20, buffer stock of 57,373 metric tonnes (MT) Rabi onion was created under Price Stabilization Fund (PSF) through procurement from Maharashtra (48,184 MT) and Gujarat (9,189 MT) which was distributed to various State Governments, other agencies and also sold in various mandis through open auction.

- Onions were supplied to State Governments of Haryana, Kerala, Andhra Pradesh and Uttar Pradesh at no-profit no-loss basis to improve prices and availability situation. During July-Oct., 2019, onions were supplied from the buffer stock for direct retailing in Delhi-NCR through Mother Dairy, NCCF, NAFED and Govt. of NCT of Delhi at regulated retail rates to ensure availability of onions at reasonable prices.

- The benefit to exporters of onions under Merchandise Exports from India Scheme (MEIS) was withdrawn w.e.f. 11th June 2019.

- Minimum Export Price (MEP) of $850/MT was imposed on onion on 13th September 2019, and subsequently its export was banned by Government on 29th September 2019 in view of its continued high prices.

- Government, on 29th September 2019, imposed stock limits on traders across the country – 100 quintals on retail traders and 500 quintals on wholesale traders under the Essential Commodities Act, 1955, which was subsequently, revised to 20 quintals (2 MT) for retailers and 250 quintals (25 MT) for wholesalers. Further, Government of India urged State Governments to hold regular meetings with the traders of Onions at State and District level to prevent hoarding, speculative trading and profiteering, unfair and illegal trade practices like cartelling, etc.

- Facilitated private imports of onions by relaxing its fumigation norms and exempting importers from stock limits.

- Government imported onions through MMTC from countries like Egypt and Turkey and directed NAFED to procure surplus Kharif onion from producing States like Rajasthan, Maharashtra and undertake distribution in deficit States.

CONCLUSION

5.38 Overall, while the WPI inflation remained low during the financial year 2019-20, CPI-C inflation saw a slight uptick, driven mainly by food prices. Supply-side shocks in agricultural commodities such as

onion due to erratic rains led to the sudden spike in the prices of these commodities. The Government has been taking necessary measures to tackle the rising prices in these commodities. The volatility in inflation of most of the essential agricultural commodities with the exception of pulses has also come down over time. However, one major issue that still remains is the high wedge between retail and wholesale prices of some of the commodities like onion and tomato. The price wedge also varies between different centres indicating presence of large number of intermediaries and high transportation costs. Analysing inflation figures at State level, a divergence is observed in inflation across the States and also between the rural and urban areas within each state. The inflation dynamics have also been changing over time. In the current period, there is evidence for a strong reversion of headline inflation to core inflation. Future inflationary prospects and inflation dynamics crucially depend on the overall macroeconomic scenario as well as the containment of rising prices in certain agricultural commodities.

CHAPTER AT A GLANCE

- Headline Consumer Price Index (CPI) inflation was 3.7 per cent in 2018-19 (April to December, 2018), compared to 4.1 per cent in 2019-20 (April to December, 2019).
- During 2019-20, WPI based inflation has been on a continuous fall declining from 3.2 per cent in April 2019, only marginally rising in November and December to end at 2.6 per cent in December 2019.
- Food index which declined on an annual basis between 2017-18 and 2018-19, saw an uptick during the current financial year (April-December, 2019).
- Since July 2018, CPI-Urban inflation has been consistently higher than CPI-Rural inflation, which is in contrast to earlier trend where rural inflation was higher than urban inflation.
- During 2019-20 (April- December), food and beverages emerged as the main contributor to CPI-C inflation, with 54 per cent of the inflation during this period attributable to this group.
- In the four metropolitan cities of the country, retail prices of various essential commodities have diverged from wholesale prices over the years.
- Since 2012, there has been a change in inflation dynamics. There is evidence for a strong reversion of headline inflation to core inflation. However, transmission of inflation from non-core components to core components is minimal. Therefore, there may be a case for monetary policy to not respond to transitory shocks in non-core components of inflation.
- Inflation in fifteen States/Union Territories (UTs) was below 4 percent in FY 2019-20 (April-December). Comparing FY 2018-19 (April- December) with FY 2019-20 (April- December), inflation has actually decreased in eight states.
- Inflation expectations have declined thereby indicating that the inflation targeting framework has started influencing expectations of inflation in the economy.

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Sustainable Development and Climate Change

06
CHAPTER

The Sustainable Development Goals (SDGs) constitute a befitting framework to answer the developmental challenges to achieve a sustainable future, free from social, economic, and environmental inequalities and thereby ensuring a greener and healthy Planet for future generations. India's achievement in the composite SDG index is commendable as the score has improved from 57 in 2018 to 60 in 2019. Along with following the holistic approach for achieving the SDGs by implementing a comprehensive array of schemes, India's progress in adopting, implementing, and monitoring SDGs stands noteworthy. The SDG indicator linked reporting and monitoring framework helped in exploring the nexus approach to attain development goals of India. As a responsible nation, with the introduction of various schemes, India has been continuously moving towards economic growth, keeping in mind the imperatives of sustainable development. India is among a few countries in the world where forest and tree cover have increased considerably. The forest and tree cover have reached 80.73 million hectare which is 24.56 per cent of the geographical area of the country. Increased focus on sustainability requires various actions towards building individual and institutional capacity, accelerating knowledge and enhancing technology transfer and deployment, enabling financial mechanisms, implementing early warning systems, undertaking risk management and addressing gaps in implementation and upscaling. These fair and justified demands have been discussed in various multilateral negotiations but remain largely unresolved. Global agenda of delivering sustainable development and addressing climate change can be delivered only if all nations act upon their fair share of responsibilities including the fulfillment on means of implementation by the developed world to the developing countries. Therefore, enhanced ambition and enhanced support should be on equal footing.

INTRODUCTION

6.1 The year 2019 marked the fourth anniversary of adoption of 2030 Agenda for Sustainable Development and the Paris Agreement. India is striving to combine the element of 'sustainability' to economic development through well-designed initiatives for inclusive development enshrined in its policies: electrify rural households, augment the usage of renewable sources, eliminate malnutrition, eradicate poverty, access to primary education to all girls, provide sanitation and housing for all, equip young people with skills to compete in the global labor market, enable access to finance and financial services. India's efforts towards

the achievement of SDGs will contribute to their success at the global level. India is moving forward on the path of SDG implementation. India is among a few countries in the world where, despite ongoing developmental efforts, forest and tree cover are increasing considerably. A comparison with some other emerging economies shows that India's growth in forest cover has been in positive territory. Simultaneously, India's sustained actions on addressing climate change have helped her to achieve great strides which are reflected in reduction in the emission intensity of India's GDP by 21 per cent during 2005-2014. While India is on the path of sustained progress, global agenda of delivering sustainable development and addressing climate change can be delivered if and only if all nations exhibit the requisite momentum to act upon their fair share of responsibilities including the fulfillment of financial obligation by the developed world to the developing countries.

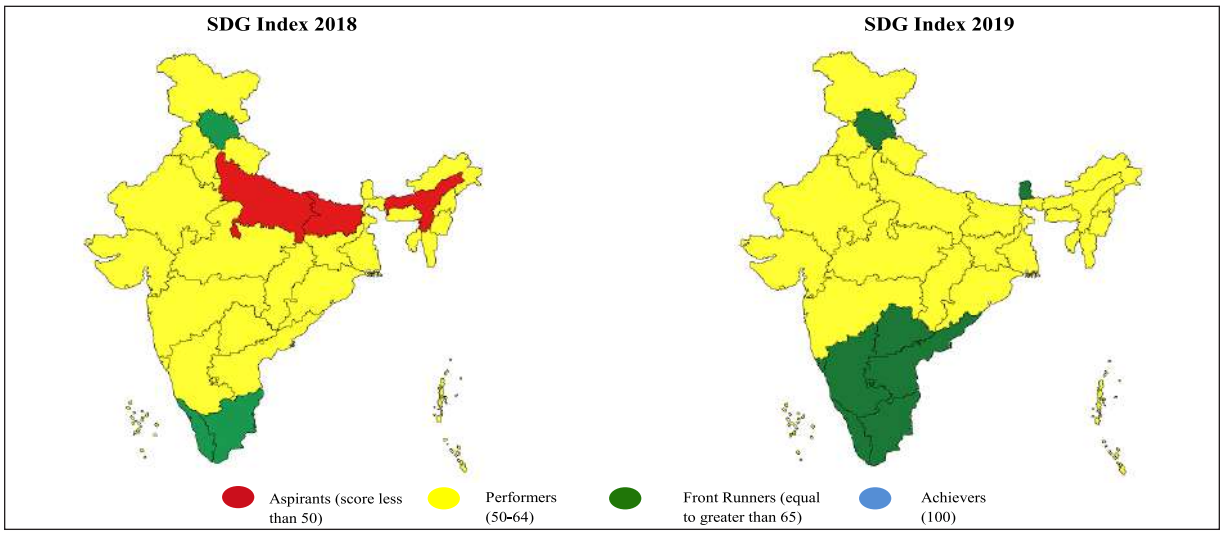
INDIA AND THE SDGs

6.2 India follows a holistic approach for achieving the SDGs by implementing a comprehensive array of schemes. The progress towards SDGs has been assessed by SDG India Index 2019. The salient features of the SDG India Index Report, 2018 have been discussed in detail in the previous Economic Survey 2018-19, Volume II, Chapter 5. While the first edition measured progress of the States/ Union Territories (UTs) on a set of 62 indicators across 13 goals, the 2019 Index is more comprehensive and highlights the progress being made by the States/UTs on a wider set of 100 indicators spread across 16 goals. The Index also includes a qualitative assessment on SDG goal 17. Additionally, this year the SDG India Index 2019 report has a new section on profiles of States/UTs.

6.3 The States/UTs are ranked based on their aggregate performance across the 16 SDGs. The SDG score varies from 0 to 100. A score of 100 implies that the States/UTs have achieved the targets set for 2030; a score of 0 implies that the particular State/UT is at the bottom of the table. States with scores equal to/greater than 65 are considered as Front-Runners (in Green); as Performers (in Yellow) in the range of 50-64 and as Aspirants (in Red) if the score is less than 50. As per the SDG Index, Kerala, Himachal Pradesh, Tamil Nadu, Andhra Pradesh, Telangana, Karnataka, Goa, Sikkim, Chandigarh and Puducherry are the front runners (Map 1). It is noteworthy that none of the States/ UTs fall in the Aspirant category in 2019.

6.4 Overall, it is encouraging to note that the composite score for India has improved from 57 in 2018 to 60 in 2019, indicating the impressive progress made by the country in its journey towards achieving the SDGs. This positive stride towards achieving the target is largely driven by commendable country wide performance in five goals - 6 (Clean Water and Sanitation), 7 (Affordable and Clean Energy), 9 (Industry, Innovation and Infrastructure), 15 (Life on Land) and 16 (Peace, Justice and Social Institutions) - where India has scored between 65 and 99. The goals that demand special attention are – 2 (Zero Hunger) and 5 (Gender Equality) – where the overall country score is below 50. The overall country score lies between 50 and 64, indicates the scope for improvement in the coming years.

Map 1: India SDG Index 2018 & 2019



Source: NITI Aayog.

SDG Nexus: A New Paradigm Approach

6.5 There exist interlinkages among SDGs and targets. Target-based approach can help reinforcement of policies and its implementation. With the adoption of SDGs, the aim of the government is to reinforce its development priorities with SDG indicators. There are linkages among the various SDGs and have strong impacts on reinforcement of policies. However, this approach needs to be further explored. The 'nexus' approach employs the principles of integrating management and governance across sectors and scales. It necessitates looking at systems instead of individual components or short-term outcomes; looking at the inter-related feedbacks from other sectors; and promoting cooperation among sectors while reducing competition for scarce resources. This approach recognizes the various socio-ecological processes that are inter-linked, and pressures felt on certain resources can get further exacerbated leading to serious long-term challenges due to demands from other 'nexus' sector activities. This demands greater co-ordination across institutions at local, national and international levels. This approach aims to achieve the balance between environmental, social, and economic boundaries and simultaneously ensure well-being of the people. To follow this basic concept in India, the SDG goals are used as a medium which allows for interlinkages of different sectors and thematic areas. Since, a few SDGs have overlapping objectives with one another, the policies developed and aligned to achieve the goals must consider and identify these linkages and in-turn identify the potential trade-offs that might limit the physical achievement of the target under a goal.

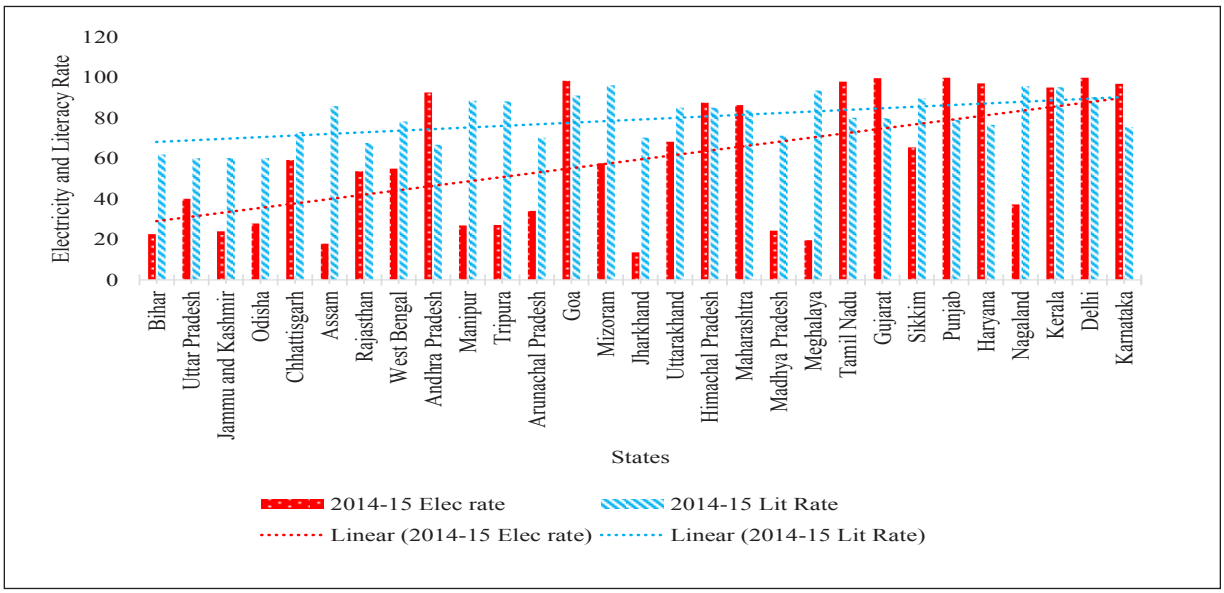
Examples of Nexus in Select Sectors

Education and Electricity Nexus

6.6 Electricity in schools is a part of basic infrastructure requirements to provide quality education. It has been observed that basic infrastructure like electricity, separate toilets for girls and boys in schools create a healthy and positive environment at schools (UNDESA, 2014). It is observed that with electricity, the schools' access to modern methods and techniques of teaching helps holistic development of students and increase their attraction towards learning. Access to

Information and Communication Technologies (ICTs) methods and imparting knowledge of computer at schools requires reliable electricity connections. It then becomes obvious that schools having quality and reliable power would generally tend to have the facilities that the Government is providing under its Sarva Shiksha Abhiyan programme. Globally it is observed that schools with electricity outperform the non-electrified schools in terms of staff-retention, drop-outs and other educational indicators. It is observed that States with lower literacy rates have low electricity rates at the schools and vice-versa (Figures 1a and 1b).

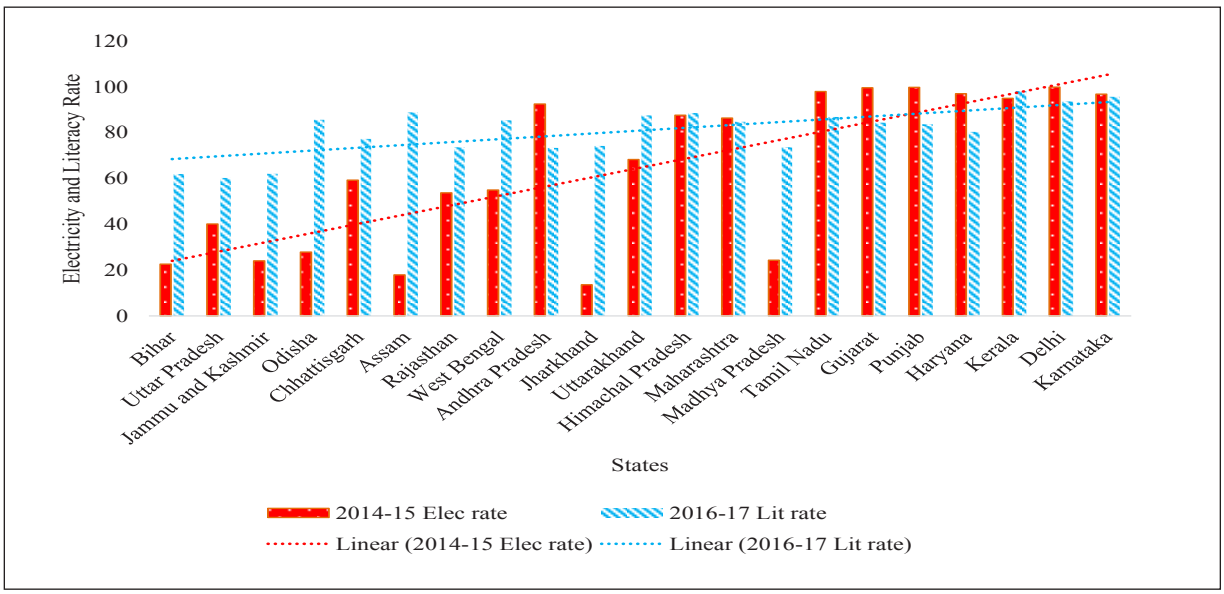
Figure 1 (a) : Electricity Rate and Literacy rate nexus in Schools (all States) (in per cent)



Source: DISE database for electricity rate & NSSO for literacy rate.

* Electricity Rate = No. of school electrified / Total No. of school getting constructed (in particular year).

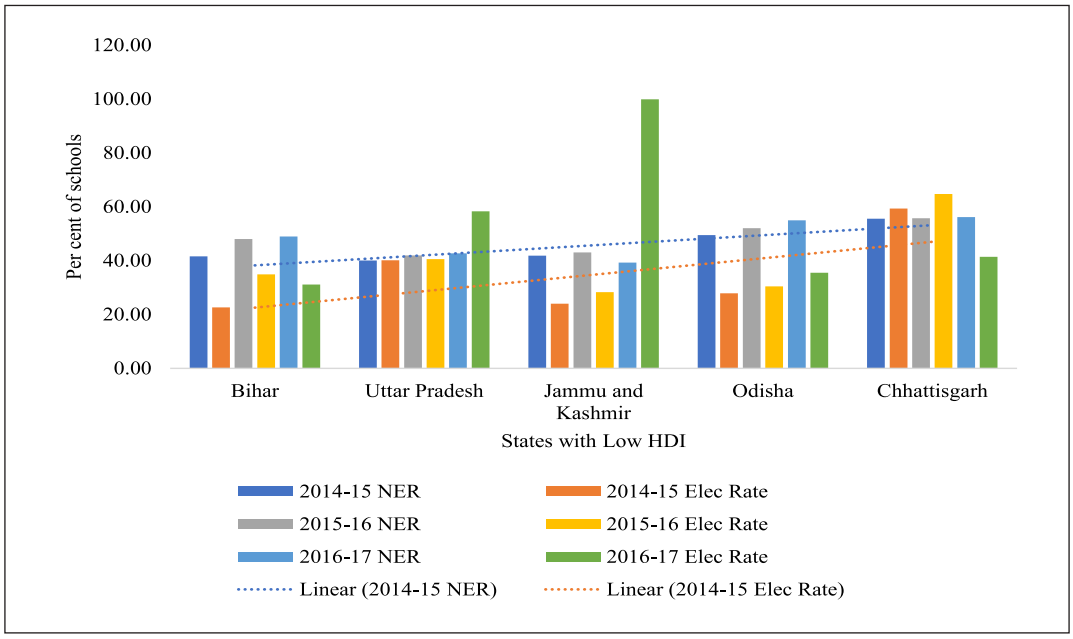
Figure 1 (b): Electricity Rate and Literacy rate nexus in Schools (all States)



Source: DISE database for electricity rate & NSSO for literacy rate.

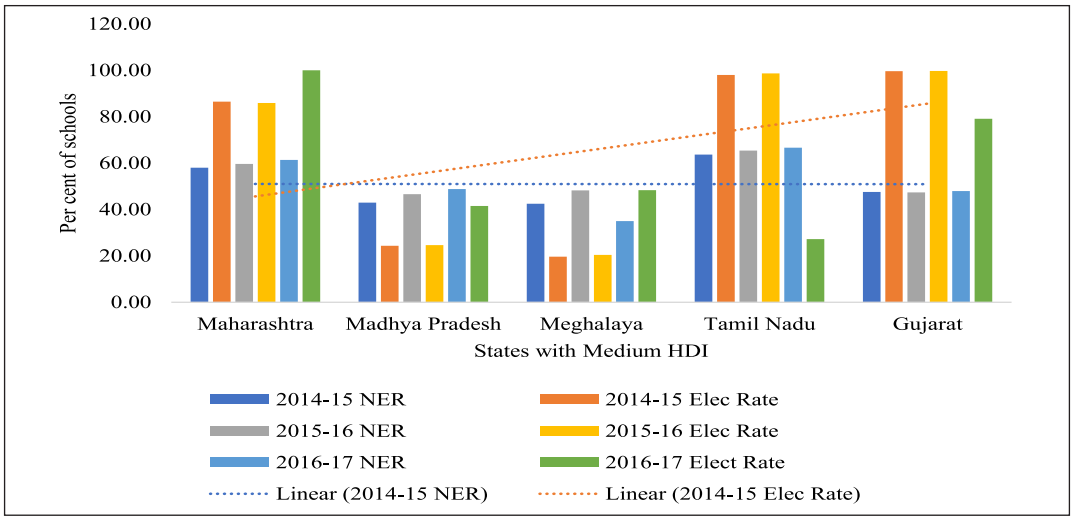
6.7 Figure 2, 3 and 4 showcase nexus between Net Enrolment Ratio (NER) and electrification of schools for selected States with low, medium and high Human Development Index (HDI) respectively. In case low and high HDI states, NER and electricity rate shows positive trend during 2014 to 2017. In case of medium HDI states, there is no conclusive trend because of the rate of growth of electrified school is not so high to the of number of schools getting constructed as compared to high and low HDI states during the same time period.

Figure 2: NER and Electricity Rate Nexus for selected States in India



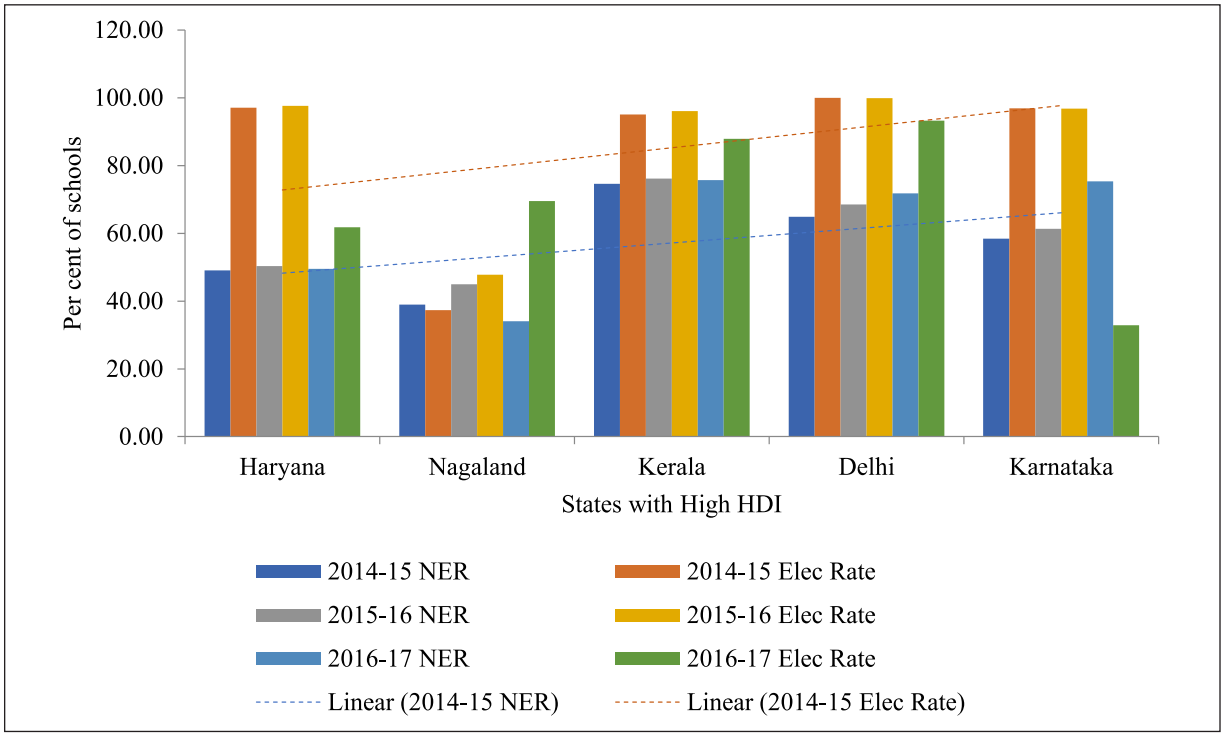
Source: DISE database.

Figure 3: NER and Electricity Rate Nexus for selected States in India



Source: DISE database.

Figure 4: NER and Electricity Rate Nexus for selected States in India

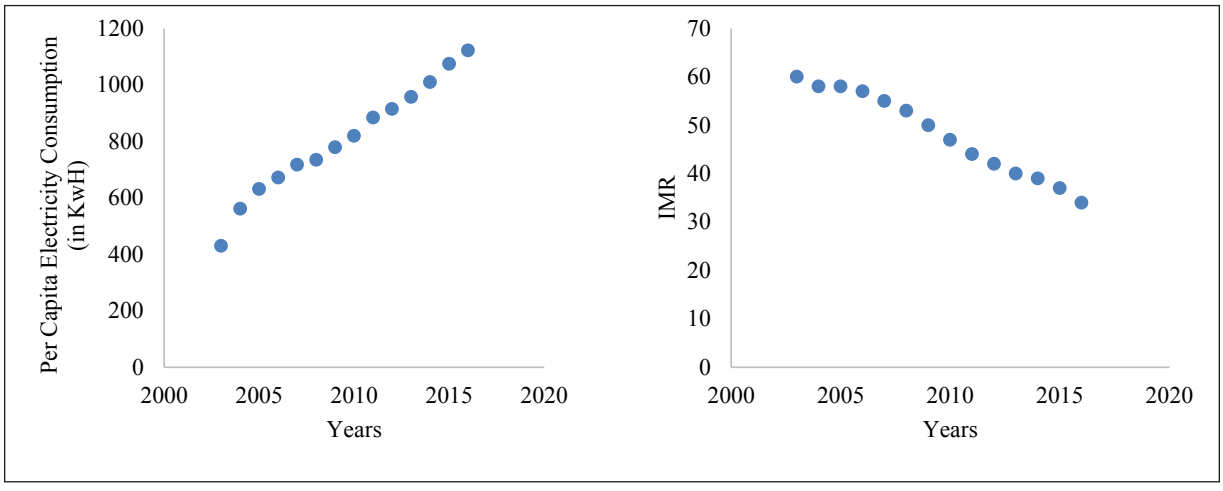


Source: DISE database.

Health and Energy Nexus

6.8 Many of the health improvement schemes- providing pediatric care, new-born emergency services, and successful vaccination rely heavily on the availability of electricity at the health centers. With the growing importance of the indicators under the SDG goals, it is important that reliable electricity connections are provided at the health care centers. As witnessed, there is a positive relationship between the electricity consumption and fall in the Infant Mortality Rate (IMR) in the country (Figure 5).

Figure 5: Nexus between Energy and Health



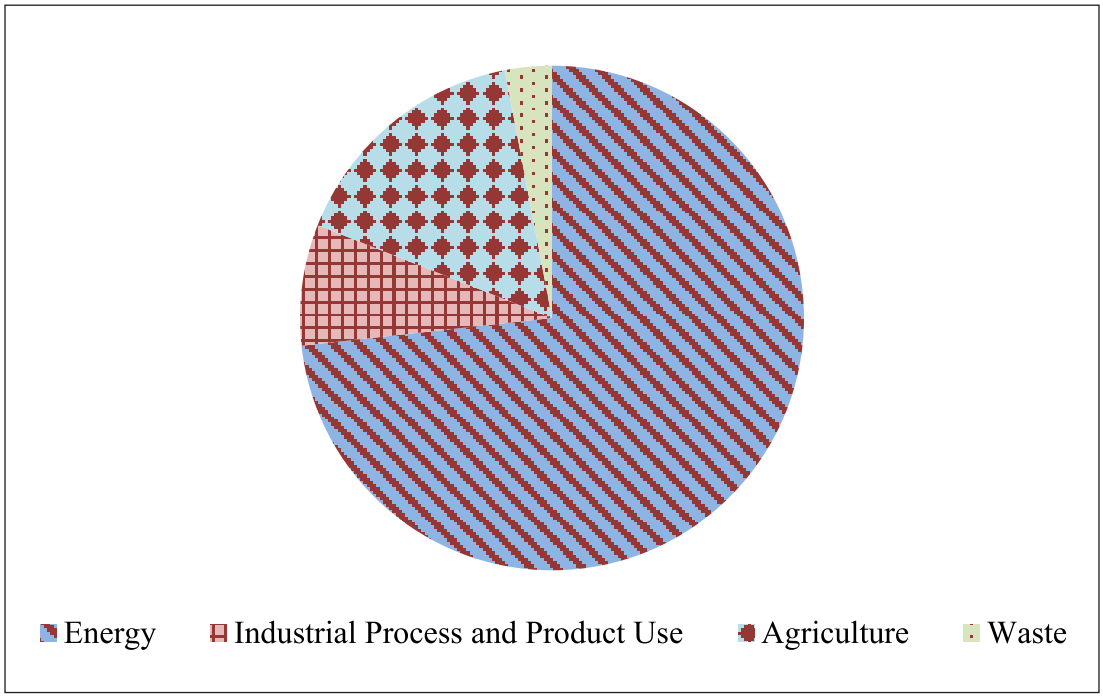
Source: Electricity Consumption: CEA various years, IMR: NITI Aayog various years.

CLIMATE CHANGE

6.9 India submitted its Nationally Determined Contribution (NDC) under the Paris Agreement on a "best effort basis" keeping in mind the developmental imperatives of the country. In its NDC, India promised to reduce its emission intensity of GDP by 33 to 35 per cent below 2005 levels by the year 2030; 40 per cent of cumulative electric power installed capacity would be from non-fossil fuel sources by 2030 and increase its forest cover and additional carbon sink equivalent to 2.5 to 3 billion tons of carbon dioxide by 2030. The Paris Agreement is to be implemented in post-2020 period in line with the guidelines adopted under Paris Agreement Work Programme.

6.10 India has strived to ensure that it follows a growth path that delivers sustainable development and protects the environment by investing in various schemes aligned with its NDC, like Swachh Bharat Mission, National Smart Grid Mission, Atal Mission for Rejuvenation and Urban Transformation etc. Notwithstanding the economic actualities, India's mitigation strategies have emphasized on clean and efficient energy system, enhanced energy efficiency, resilient urban infrastructure, safe, smart and sustainable green transportation network, planned afforestation, as well as holistic participation across all sectors. Swachh Bharat Mission (Urban) was launched in 2014 with the twin objectives of ensuring 100 per cent scientific solid waste management and making urban India open defecation free (ODF), to achieve

Figure 6: India's national GHG inventory (2014)* (Gigagram)



Source: Ministry of Environment, Forest and Climate Change, Government of India.
1 Gigagram (Gg) = 10^9 grams; Greenhouse gases are converted to CO_2 equivalent (CO_2e or CO_2eq) using their respective Global Warming Potentials. *TOTAL without LULUCF.

total environmental improvement. In a span of five years, the Mission has made significant progress- all urban areas of 35 States/ UTs have become ODF and the percentage of waste processing rose from around 18 per cent in 2014 to 60 per cent. The year 2019 has seen a significant leap forward for renewable energy with India undertaking one of the world's largest renewable energy expansion programmes in the world. India had announced 175 Gigawatt (GW) targets for renewables by 2022 and has already achieved 83 GW. Further, Hon'ble Prime Minister in his address at the UN Climate Action Summit in September 2019 has stated that "India's renewable energy capacity would be increased to much beyond 175 GW and later till 450 GW". As a Party to the UNFCCC, India submitted its Second Biennial Update Report (BUR) to the UNFCCC towards fulfillment of the reporting obligation under the Convention. As per the BUR, the emission intensity of India's GDP has reduced by 21 per cent over the period of 2005-2014 which is the result of India's proactive and sustained actions on climate change. India is on track to achieve its nationally determined targets. In 2014, the net national GHG emissions after including LULUCF (Land Use, Land Use Change and Forestry) were 23,06,295Gg CO_2 equivalent (around 2.306 billion tons of CO_2 equivalent) (Figure 6).

Progress in India's Climate Change Policies

6.11 Launched in 2008, India's National Action Plan on Climate Change (NAPCC) identifies a number of measures that simultaneously advance the country's development and climate change related objectives of adaptation and mitigation through focused National Missions. It was also meant to focus on key adaptation requirements and creation of scientific knowledge and preparedness as climate change acts as a "risk multiplier" for the vulnerable groups, worsening existing social, economic and environmental stresses. India has decided to revise the NAPCC in line with the NDCs under the Paris Agreement to make it more comprehensive in terms of priority areas. The progress of implementation of eight national missions is briefly explained in Box 1.

Box 1: National Missions and Progress

The Perform, Achieve and Trade (PAT) scheme under National Mission for Enhanced Energy Efficiency (NMEEE) designed on the concept of reduction in Specific Energy Consumption. In PAT cycle –V (April 2019), 110 Designated Customers (DC) from the existing sectors have been notified. The total energy consumption of these DCs comes out to be 15.244 Million Tons of Oil Equivalent (Mtoe) and it is expected to get a total energy savings of 0.5130 Mtoe. It is envisaged that by 2020, about 20 Mtoe of energy savings will be achieved through the implementation of this scheme.

National Solar Mission aims to increase the share of solar energy in the total energy mix. The cumulative targets under the mission for Grid Connected Solar Power Projects consists of 40 GW Grid connected Rooftop projects and 60 GW large and medium size land based solar power projects. The combined target is now set at 100 GW. The total investment in setting up 100 GW will be

around ₹ 6,00,000 crore. A cumulative 32.5 GW of solar electric generation capacity has been installed

National Water Mission focuses on monitoring of ground water, aquifer mapping, capacity building, water quality monitoring and other baseline studies. There are 1071 assessment units categorized as over exploited as per 2011 assessment of Central Ground Water Authority (CGWA). Directions have been issued by CGWA under Section 5 of "The Environment Protection Act, 1986" for mandatory Rain Water Harvesting / Roof Top Rain Water Harvesting for all target areas in the country including UTs. While granting 'No Objection Certificate' for drawing ground water, CGWA insists for mandatory rain water harvesting as per the guidelines issued.

National Mission for a Green India envisages a holistic view of greening and focuses on multiple ecosystem services along with carbon sequestration and emission reduction. The mission emphasized the landscape approach to treat large contiguous areas of both forest and non-forest, public and private lands with a key role of the local communities in planning, implementation and monitoring. A sum of ₹ 343.08 crore has so far been released under the mission for undertaking afforestation activities over an area of 126916.32 ha in 13 states. Energy efficient devices have been provided to 56,319 households to promote alternative energy sources in project areas. Convergence Guidelines with Mahatma Gandhi National Rural Employment Guarantee Scheme and Compensatory Afforestation Fund Management and Planning Authority have been issued.

National Mission on Sustainable Habitat is being implemented through three programmes: Atal Mission on Rejuvenation and Urban Transformation, Swachh Bharat Mission, and Smart Cities Mission. Energy Conservation Building Rules 2018 for commercial buildings having connected load of 100 KW or above has been made mandatory. Mass Rapid Transit Systems are being implemented across the country and standards have been developed for six sub-sectors namely, solid waste management, water and sanitation, storm water drainage, urban planning, energy efficiency and urban transport. Under Mass Rapid Transit System, 585 km of metro rail is in operation; 620 km is under construction. Under the Bus Rapid Transit System (BRT), 223 kms of BRT corridors operational in 8 cities and 505 kilometers of BRT corridors are under construction in 14 cities.

National Mission for Sustainable Agriculture aims at enhancing food security and protection of resources. Key targets include covering 3.5 lakh hectare of area under organic farming, 3.70 under precision irrigation, 4.0 lakh hectare under System of Rice Intensification, 3.41 lakh hectare under diversification to less water consuming crop, 3.09 lakh hectare additional area under plantation in arable land and 7 bypass protein feed making. The mission has resulted in the formation of National Innovations on Climate Resilient Agriculture, a network project.

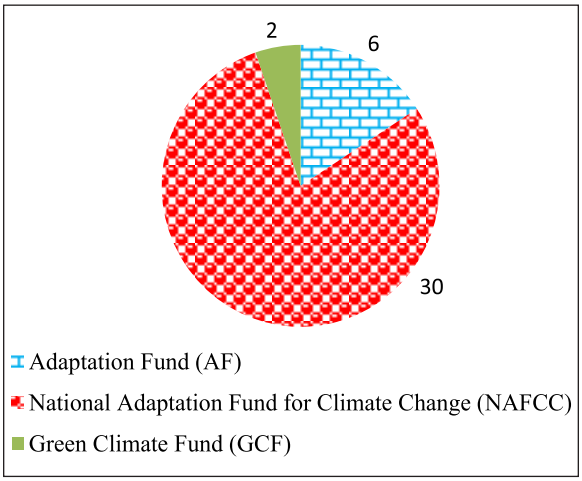
National Mission for Sustaining the Himalayan Ecosystem aims to evolve suitable management and policy measures for sustaining and safeguarding the Himalayan Ecosystem. The key achievements include setting up of: - Centre of Glaciology at Wadia Institute of Himalayan Geology, thematic task forces in 6 lead institutions, State Climate Change Centers in 11 out of 12 Himalayan States, 40 Training Programmes under State Climate Change Centres organized with 5500 people trained, formation of Inter-University Consortium of 4 universities on Himalayan Cryosphere and Climate Change.

National Mission on Strategic Knowledge for Climate Change seeks to build a knowledge system that would inform and support national action for ecologically sustainable development. Key achievements include setting up of 11 Centres of Excellence and 10 State Climate Change

Centres. 116 Training programmes have been launched and 14000 people have been trained; a total of 23 major R&D programmes have been spread over the country; 7 Human Capacity Building and National Knowledge Network programmes in the areas of climate change science, adaptation and mitigation have been launched. 8 Global Technology Watch Groups in the areas of Renewable Energy Technology, Advance Coal Technology, Enhanced Energy Efficiency, Green Forest, Sustainable Habitat, Water, Sustainable Agriculture and Manufacturing have been set up.

6.12 Another major initiative is launching of Climate Change Action Program (CCAP) in 2014, a central sector scheme, with a total cost of ₹ 290 crore for five years, to build and support capacity at central and state levels, strengthening scientific and analytical capacity for climate change assessment, establishing appropriate institutional framework and implementing climate actions. Energy Audit Studies have revealed savings potential to the extent of 40 per cent in end use. The Energy Conservation Building Code (ECBC) sets minimum energy performance standards. It resulted in estimated energy saving of 84.34 million kWh, reduction in GHG emission of 69,154 tons of CO_2 per year. The same is also launched for residential sector. ECBC 2017 prescribes energy performance standards for new commercial buildings to be constructed across India to achieve a 50 per cent reduction in energy use by 2030 translating to energy savings of about 300 Billion Units by 2030 and peak demand reduction of over 15 GW in a year. Schemes like UJALA for LED bulb distribution has crossed 360 million whereas under street light national program, 10 million conventional streetlights have been replaced by LED street lights thus cumulatively saving 43 million tons of CO_2 emission. As part of the National Electric Mobility Mission Plan (NEMMP) 2020, Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles in India (FAME India) scheme was formulated in 2015 to promote manufacturing and sustainable growth of electric and hybrid vehicle technology. As of November 2019, a total of 280,994 vehicles have been sold. The National Bio-fuels Policy 2018 targets 20 per cent blending of ethanol in petrol and 5 per cent blending of biodiesel in diesel by 2030. National Adaptation Fund on Climate Change (2015) supports concrete adaptation activities for the States/UTs that are particularly vulnerable to the adverse effects of climate change and are not covered under on-going schemes. The allocation for the period 2017-18 to 2019-20 is of ₹ 364 crores. The Scheme has been taken as Central Sector Scheme with National Bank for Agriculture and Rural Development (NABARD) as the National Implementing Entity. Till date 30 projects on adaptation in agriculture, water, forestry, ecosystem & biodiversity, etc. have been approved. NABARD is implementing a number of climate adaptation and mitigation projects involving a total financial support of ₹ 1819.62 Crore across India, supported under both multilateral and domestic national funds (Figure 7).

Figure 7: Climate Change Projects (as on 31 December 2019) by NABARD (In Number)



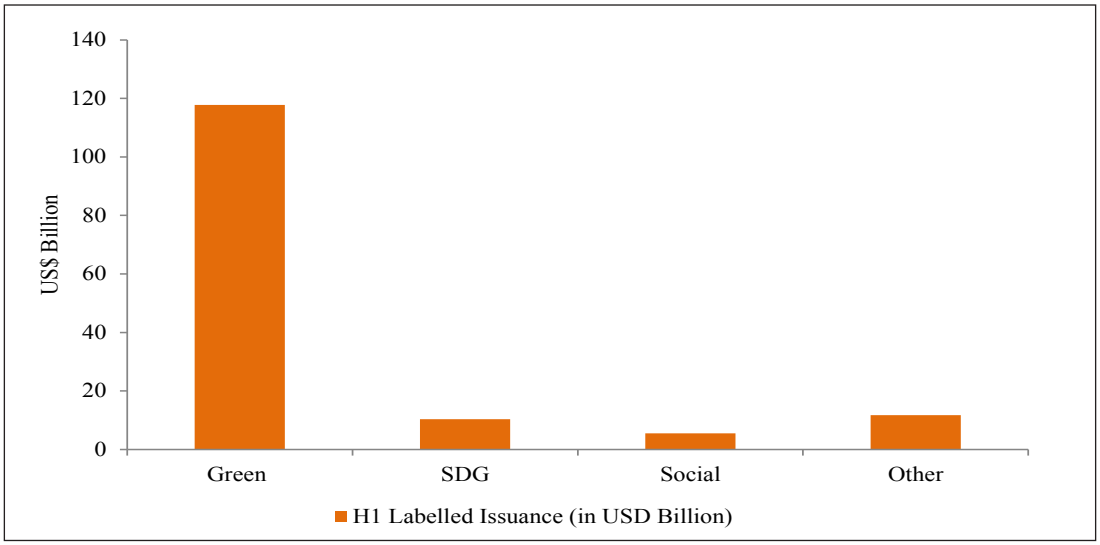
Source: NABARD.

Aligning Financial System with Sustainability

6.13 Cleaner forms of production essentially require a sound financial system. This is more so as estimates points towards requirement of trillions of dollars to achieve SDGs globally. Hence, the spotlight is now on aligning the financial system with sustainable development. In December 2007, RBI had sensitized banks in India to the various international initiatives and was asked to keep abreast of the developments in the field of sustainability and dovetail/modify their lending strategies/plans in the light of such developments. In 2012, the Securities and Exchange Board of India (SEBI), mandated the Annual Business Responsibility Reporting (ABRR), a reporting framework based on the National Voluntary Guidelines (NVGs) on Social, Environmental and Economic Responsibilities of Business released by the Ministry of Corporate Affairs. These guidelines serve as a driver to pursue sustainable management practices. Indian Institute of Corporate Affairs in 2011 developed a concept of NVG for adoption by the corporate sector. SEBI mandated adoption of NVGs by the listed Indian companies including banks. In 2014-15, a Working Group was set up by Indian Banks' Association (IBA) to generate the concept of responsible financing. The Working Group finalized the guidelines on 'NVGs for Responsible Financing'. These guidelines lay down 8 principles, which cover different aspects of environmental, social and governance (ESG) responsibilities to informed business action. Each principle details its 'Description and Applicability' and 'Areas of Disclosure' which would enable Financial Institutions to integrate the ESG principles in their business decision making, structure and processes.

6.14 Green bonds are debt securities issued by financial, non-financial or public entities where the proceeds are used to finance 100 per cent green projects and assets. The first half of 2019 saw sustainability/SDG bonds maintaining their place in a wider labeled market with US$ 10.3 billion of transactions (Figure 8) as issuers and investors continues to adopt policies and strategies linked to

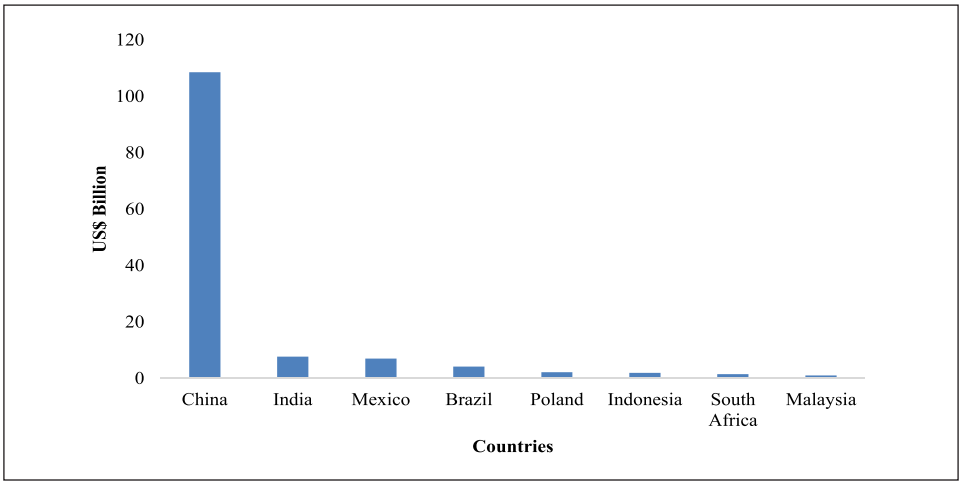
Figure 8: H1* 2019 Labeled Issuance of Bonds (in US$ Billion)



Source: Climate Bonds Initiative (as on 19.12.2019).
*H1: January - June

SDGs. Social bonds also maintained visibility with US$ 5.5 billion of issuance within the labeled market which totals a healthy US$ 145.4 billion for the half year. Climate Bonds remains focused on green bonds, which are specifically linked to climate-change mitigation, adaptation and resilience. India has the second largest Emerging green bond market after China (Figure 9). A number of Government agencies have contributed to issuance: Indian Renewable Energy Development Agency (IREDA) and the Indian Railway Finance Corporation (IRFC). In 2018, the SBI entered the market with an US$ 650 million Certified Climate Bond.

Figure 9: Major Emerging Markets for Green Bonds Issuance 2012-18 (US$ Billion)



Source: Emerging Market Green Bonds Report 2018.

6.15 In order to scale up the environmentally sustainable investments, India joined the International Platform on Sustainable Finance (IPSF) in October 2019. The Platform acknowledges the global nature of financial markets which has the potential to help finance the transition to a green, low carbon and climate resilient economy by linking financing needs to the global sources of funding. The main objectives are exchange and disseminate information to promote best practices in environmentally sustainable finance; compare the different initiatives and identify barriers and opportunities to help scale up environmentally sustainable finance internationally while respecting national and regional contexts.

Green Climate Fund

6.16 Under the UNFCCC and also Paris Agreement, the intent and obligation of climate finance is unambiguous, that developed country Parties shall provide financial resources to developing countries to undertake adaptation and mitigation actions in accordance with the country needs and priorities. In 2009, developed countries committed to a goal of mobilizing jointly US$ 100 billion a year by 2020 to address the needs of developing countries and decided that a significant portion of such funding should flow through the GCF. In contrast, the total pledges to the GCF in the Initial Resource Mobilization (IRM) in 2014, the largest dedicated climate fund, are a meagre US$ 10.3 billion. Approximately US$ 10.2 billion of the pledges had been converted into contribution agreements/arrangements. The GCF Board has approved US$ 5.2 billion to support the implementation of 111 climate change adaptation and mitigation projects and programmes in 99 developing

countries. GCF's first replenishment (2020-2023) process so far witnessed 28 countries pledging resources to replenish the Fund for an amount of US$ 9.7 billion, which is even quantitatively lower than the IRM period. While the calls for raising of the ambition level of all countries and closing the emissions gap to limit temperature rise by 1.5 – 2 degree C above pre-industrial level were very intense at the recent climate talks, the key enabler, the climate finance, the major crunch issue remained unresolved (Box 2).

Box 2: India and COP 25

The 25th session of the Conference of the Parties (COP 25) to the UNFCCC was held at Madrid, Spain under the Chilean Presidency. India reiterated its commitment to implement the Paris Agreement in its letter and spirit and to act collectively to address climate change including consideration of principles of equity and common but differentiated responsibilities and respective capabilities. The COP 25 decision, titled Chile Madrid Time for Action, emphasizes the continued challenges that developing countries face in accessing financial, technology and capacity-building support, and recognizes the urgent need to enhance the provision of support to developing country Parties for strengthening their national adaptation and mitigation efforts. The decision also recalls the commitment made by developed country Parties to a goal of mobilizing jointly US$ 100 billion per year by 2020 to address the needs of developing countries. On the issue of global ambition for combating climate change, the decision adopted provides for a balanced and integrated view of ambition that includes not only efforts for climate change mitigation, but also for adaptation and means of implementation support from developed country parties to developing country parties.

Under the review of Warsaw International Mechanism (WIM) for Loss and Damage, the decision recognizes urgency of scaling-up of action and support, including finance, technology and capacity-building, for developing countries for averting, minimizing and addressing loss and damage. The decision also established the Santiago network for catalyzing technical assistance for implementation of relevant approaches in developing countries. On adaptation matters, the COP 25 decision recalls that the provision of scaled-up financial resources should aim to achieve a balance between adaptation and mitigation, taking into account country-driven strategies, and the priorities and needs of developing country Parties, considering the need for public and grant-based resources for adaptation. On technology matters, the adopted decision requests the Technology Executive Committee (TEC) and the Climate Technology Centre and Network (CTCN) to continue to implement their mandates with strengthened efforts on all themes of the technology framework. GCF has also been requested to collaborate with CTCN and TEC for strengthening cooperative action on technology development and transfer at different stages of the technology cycle. India hosted 'India Pavilion' at COP-25 with the theme '150 years of celebrating the Mahatma', designed to depict Mahatma Gandhi's life and messages around sustainable living.

INDIA'S INITIATIVES AT THE INTERNATIONAL STAGE

International Solar Alliance (ISA)

6.17 ISA is the first treaty based inter-governmental organization headquartered in India. With 83 signatory countries, ISA creates a multi-stakeholder ecosystem where sovereign nations, multilateral organizations, industry, policymakers and innovators work together to promote the common and shared goal of meeting energy demands of a secure and sustainable world. The ISA aims to pave the way for future solar generation, storage and technologies for Member countries' needs by mobilizing over US$ 1000 billion by 2030. Achievement of ISA's objectives will also strengthen the climate action in Member countries, helping them fulfill the commitments expressed in their NDCs.

6.18 In 2019, ISA has taken up the role of an 'enabler' by institutionalizing 30 Fellowships from the Member countries with a premier institution (IIT Delhi) in the host country, and training 200 Master Trainers from ISA Member countries; of a 'facilitator' by getting the lines of credit worth US$ 2 Billion from EXIM Bank of India and US$ 1.5 Billion from Agence Francaise de Development (AfD), France, by ensuring MDB investments in solar, and garnering project preparation support; of an 'incubator' by nurturing initiatives like the Solar Risk Mitigation Initiative and of an 'accelerator' by developing tools to aggregate demand for more than 1000 MW solar rooftop, 10,000 MW of Solar Mini-Grid and 270,000 solar water pumping systems.

6.19 The ISA's Programme on Scaling Solar Applications for Agriculture Use focuses on providing greater energy access and a sustainable irrigation solution through deployment of Solar Water Pumping Systems in member countries. To make the projects viable and affordable, the ISA aggregated demand for solar water pumps from various countries in an effort to substantially reduce the system costs. The ISA received a cumulative demand of approx. 2.72 lakhs of solar water pumping systems from 22 member countries. The discovered prices through the tender would serve as the benchmark or reference prices for these member countries for procuring pumps.

6.20 In the field of innovative financing instruments, the Solar Risk Mitigation Initiative, launched by World Bank and AfD in support of the ISA, aims at supporting the development of bankable solar programs in developing countries leveraging private sector investments. World Bank has also committed US$ 337 million Risk Mitigation Fund for 23 member countries in off grid sector in Africa in partnership with ISA. The European Investment Bank has started working on a 60 Million Euros grant project to create a concessional financial facility and risk mitigation Fund to promote off grid applications in Africa. The ISA secretariat is also developing a robust implementation plan for the Scaling Solar Mini-grids Programme. The Asian Development Bank is providing a US$ 2 Million Knowledge Support and Technical Assistance (KSTA) to Six South Asian Countries in partnership with the ISA. The KSTA will facilitate deployment of Solar Energy at scale via three pillars: Identification and preliminary development of Solar Project Pipeline; Identification of Financial Instruments and mobilization of low-cost finance; and Knowledge support & Capacity Building.

6.21 To strengthen ISA's partnership with the UN and its agencies and responding to the mandate received from the first Assembly of the ISA, the Secretariat has initiated follow-up actions for requesting a Permanent Observer Status of the ISA at the UN General Assembly and for negotiating a cooperation agreement with the UN for establishing institutional linkages between the ISA and the UN. ISA has also signed MoU with UNESCAP in May 2019 and with Sustainable Energy (SE4) All in June 2019, institutionalized solar awards in collaboration with Government of Haryana (Kalpana Chawla Solar Award), Government of Madhya Pradesh (Acharya Vinoba Bhave international award) and Government of Karnataka (Sri Visveswaraya Award) to strengthen the institution.

Coalition for Disaster Resilient Infrastructure

6.22 India launched the Coalition for Disaster Resilient Infrastructure (CDRI) on the sidelines of UN Secretary General's Climate Action Summit in September, 2019. This international partnership of national governments, UN agencies, multilateral development banks, private sector, and

knowledge institutions will promote the resilience of new and existing infrastructure systems to climate and disaster risks, thereby ensuring sustainable development. Developed through consultations with more than 35 countries, CDRI envisions enabling measurable reduction in infrastructure losses from disasters, including extreme climate events. CDRI aims to enable the achievement of objectives of expanding universal access to basic services and enabling prosperity as enshrined in the SDGs, while also working at the intersection of the Sendai Framework for Disaster Risk Reduction and the Paris Climate Agreement.

6.23 CDRI will conduct country-specific and global activities and provide member countries technical support and capacity development, partnerships to facilitate and encourage investment in disaster resilient infrastructure systems. In its formative stage, CDRI will focus on developing resilience in ecological infrastructure, social infrastructure with a concerted emphasis on health and education, and economic infrastructure with special attention to transportation, telecommunications, energy, and water. Within 2-3 years, the coalition aims to have a 3-fold impact of achieving considerable changes in member countries' policy frameworks, future infrastructure investments and high reduction in economic losses from climate-related events and natural disasters across sectors.

India and the UNCCD

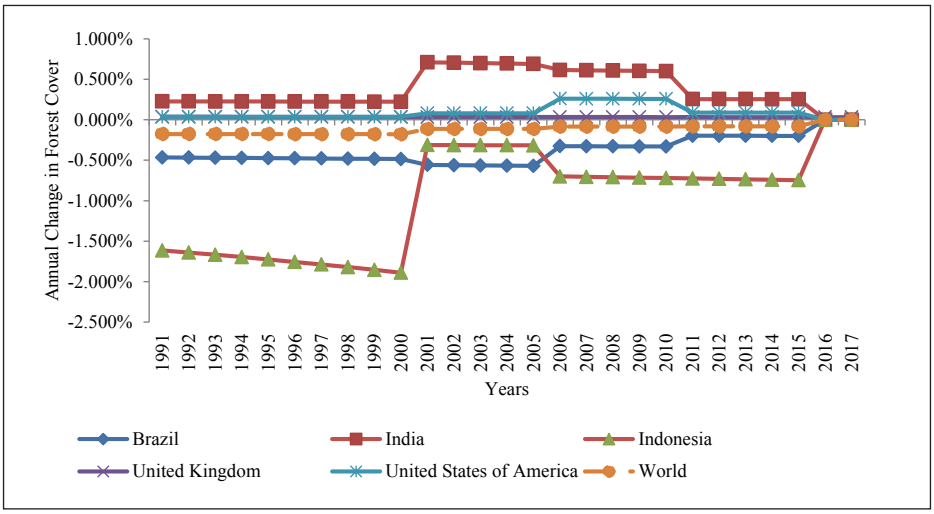
6.24 India hosted 14th session of the Conference of Parties (COP 14) to the United Nations Convention to Combat Desertification (UNCCD) from 2-13 September, 2019. The commemoration of World Day to Combat Desertification 2019 envisaged the release of COP 14 Logo with the Slogan "Restore Land, Sustain Future". India, as President of COP to UNCCD stated that human actions have contributed to accelerating climate change, land degradation, and biodiversity loss and that, similarly, strong human intent, intelligence as well as technology will be needed to reverse the damage. Hon'ble Prime Minister of India while addressing the High-Level Segment on 9th September, 2019 announced India's support for, among other actions, for enhanced South-South Cooperation that aims to share India's experiences with cost-effective and sustainable land management strategies; and a "Global Water Action Agenda" to maximize synergies through holistic land and water management. As a party to the UNCCD, India has voluntarily committed to raise its ambition of the total area that would be restored from its land degradation status, from 21 million to 26 million hectares between now and 2030. His announcement, inter-alia, include, to set up a centre for excellence in India at the Indian Council of Forestry Research and Education; and has offered its resources in space and remote sensing technology to member countries who wish to manage their land degradation programmes through cutting-edge technology. COP 14 adopted the New Delhi Declaration: Investing in Land and Unlocking Opportunities. Through the Declaration, Ministers expressed support for new initiatives or coalitions aiming to improve human health and well-being, the health of ecosystems, and to advance peace and security. Attention was also drawn to the role of private sector in land restoration, including through promoting sustainable value chains.

INDIA AND ITS FORESTS

6.25 India is among a few countries in the world where, despite ongoing developmental efforts, forest and tree cover are increasing considerably. A comparison with some other emerging and advanced economies shows that India's growth in forest cover has been

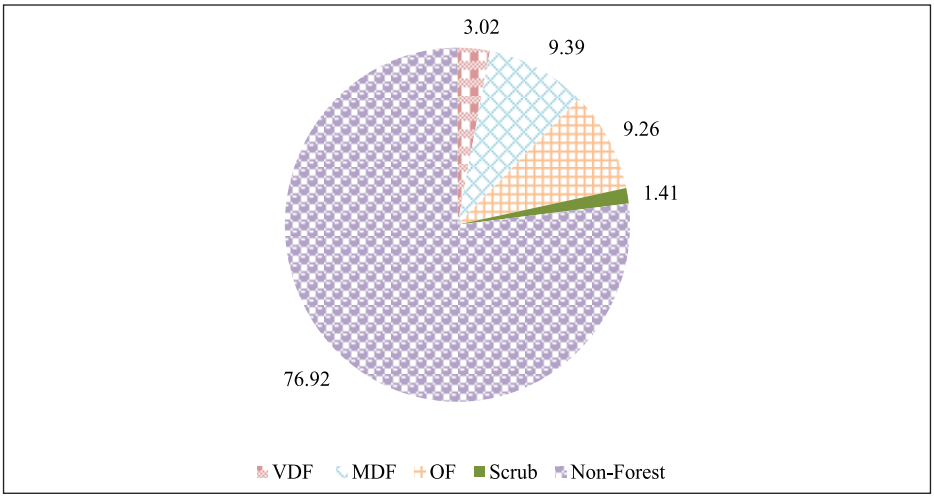
in positive territory (Figure 10). In terms of canopy density classes, area covered by Very Dense Forest (VDF) is 99,278 sq. km (3.02 per cent), Moderately Dense Forest (MDF) is 3,08,472 sq. km (9.39 per cent) and Open Forest (OF) is 3,04,499 sq. km (9.26 per cent) (Figure 11). The forest and tree cover have reached 80.73 million hectare which is 24.56 per cent of the geographical area of the country. The total forest cover of the country, as per current assessment 2019 is 7,12,249 sq. km which is 21.67 per cent of the total geographic area of the country. There has been an increase of 3,976 sq. km (0.56 per cent) of forest cover, 1,212 sq. km (1.29 per cent) of tree cover and 5,188 sq. km (0.65 per cent) of forest and tree cover put together, at the national level as compared to the previous assessment 2017.

Figure 10: Annual change in forest cover (per cent)



Source: World Development Indicators.

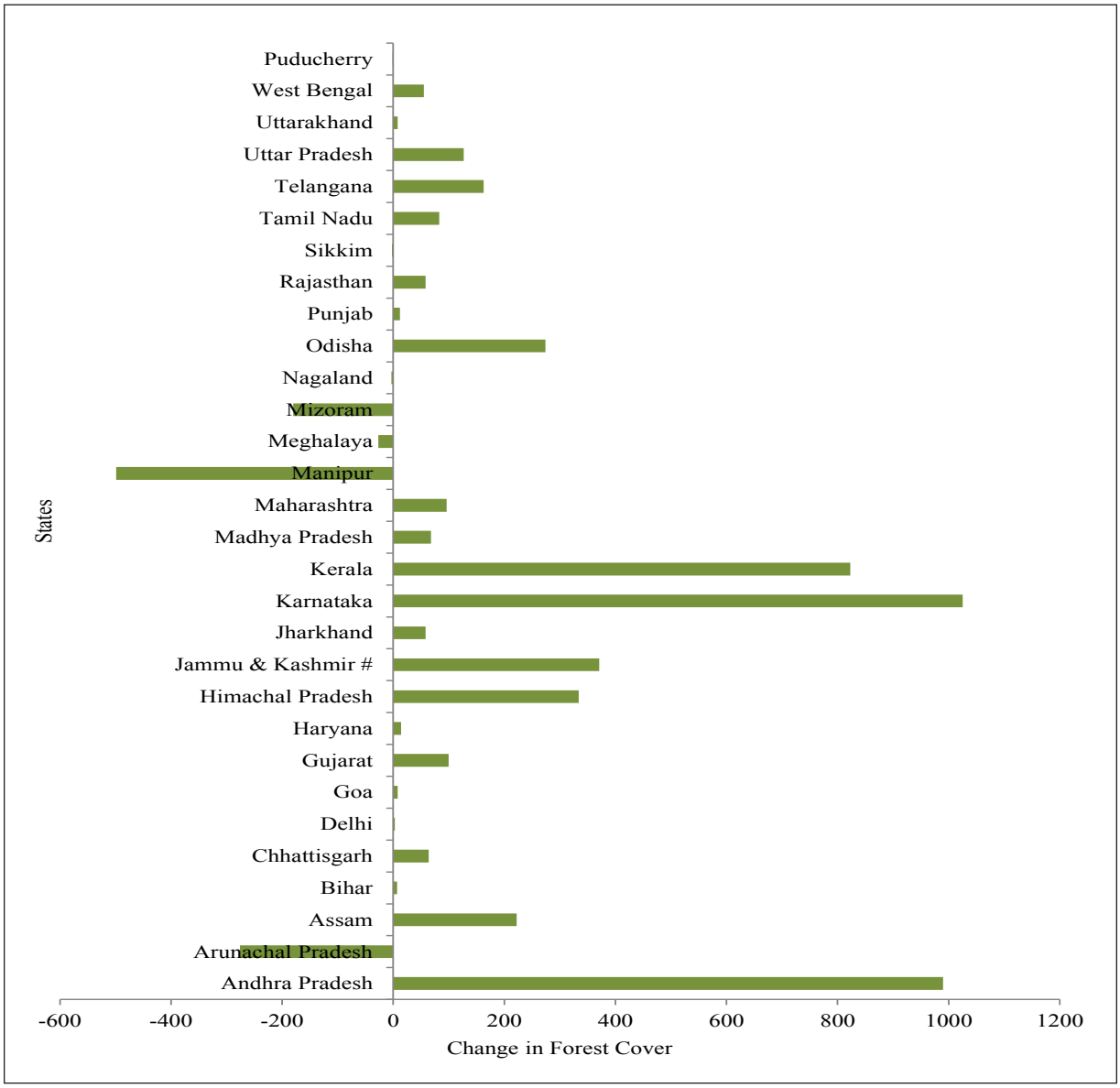
Figure 11: Forest Cover of India (2019) (per cent)



Source: India State of Forest Report 2019.

6.26 The States/UTs showing significant gain in forest cover are Karnataka (1,025 sq. km), Andhra Pradesh (990 sq. km), Kerala (823 sq. km) and Jammu & Kashmir (371 sq. km) whereas States showing loss in forest cover are Manipur, Meghalaya, Arunachal Pradesh and Mizoram (Figure 12).

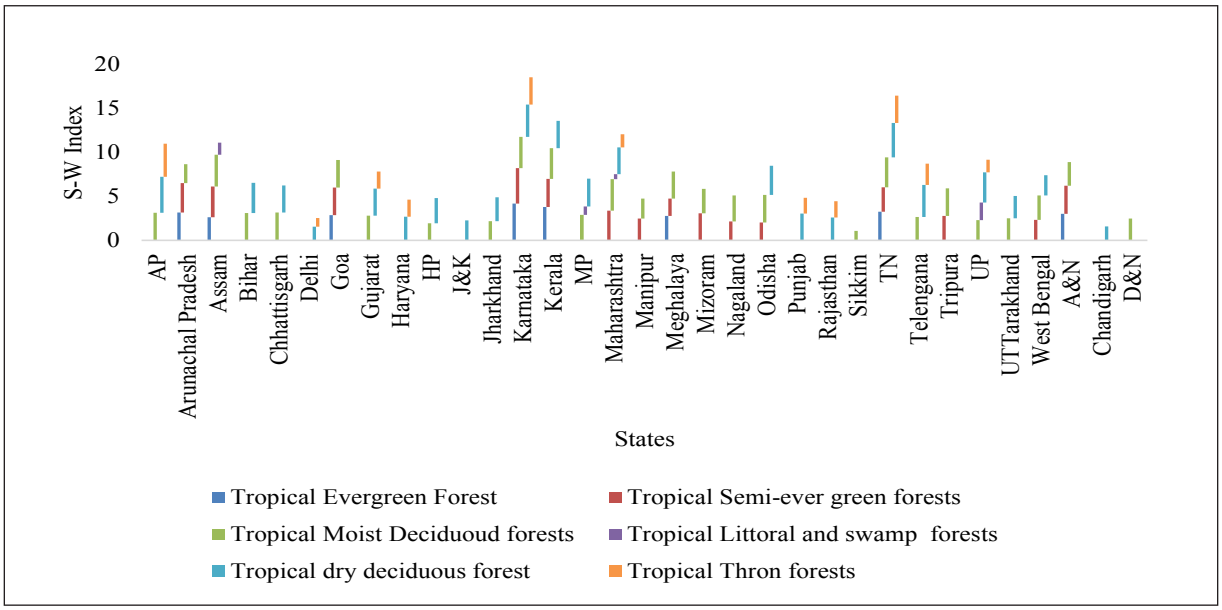
Figure 12: Change in the forest cover for India in 2019 as compared to 2017(area in sq. km)



Source: World Development Indicators.

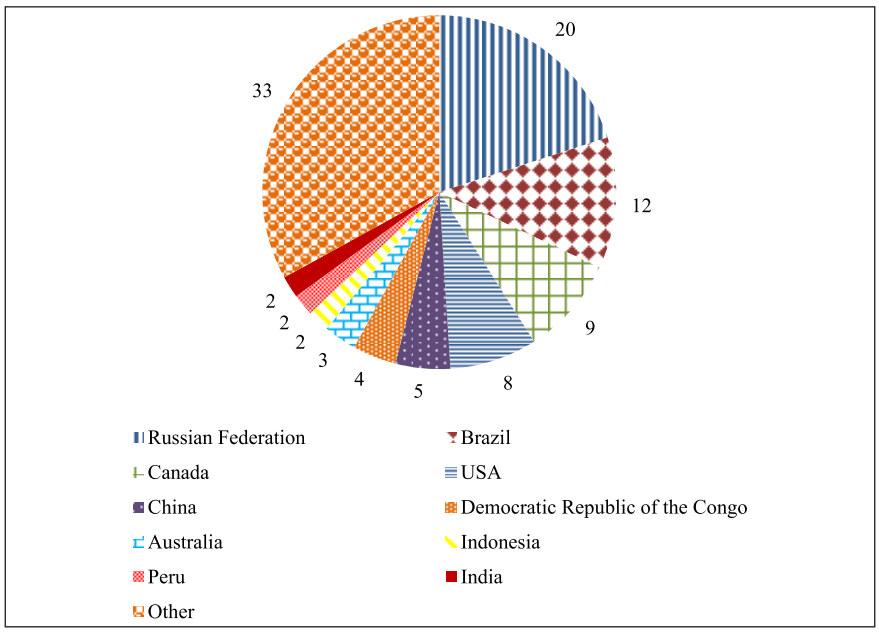
6.27 India is one of the 17 mega diverse countries in the world. This is evident in the Shannon-Weiner Index for Diversity which is used for measuring species richness and abundance. The index also compares diversity of species among various habitats. India State of the Forest Report 2019 assessed Shannon-Weiner Index for 16 bio-diverse areas. The index for six bio-diverse areas such as Tropical wet evergreen forest, Tropical semi-evergreen forest, Tropical moist deciduous forest, Littoral and Swamp forest, Tropical dry deciduous forest and Tropical Thorn forests are given in Figure 13. The Index shows that Tropical Evergreen forest is high in Karnataka followed by Kerala. Tropical moist deciduous forests cover is high in Arunachal Pradesh, Karnataka and Maharashtra. Tropical dry deciduous forest is high in Arunachal Pradesh and semi-evergreen forest are high in Karnataka. Tropical Littoral and swamp forests are high in UP and tropical thorn forests are seen widely in Andhra Pradesh.

Figure 13: Shannon-Weiner Index for Trees



Source: India State of Forest Report 2019.

Figure 14: Forest area for top ten countries (per cent)

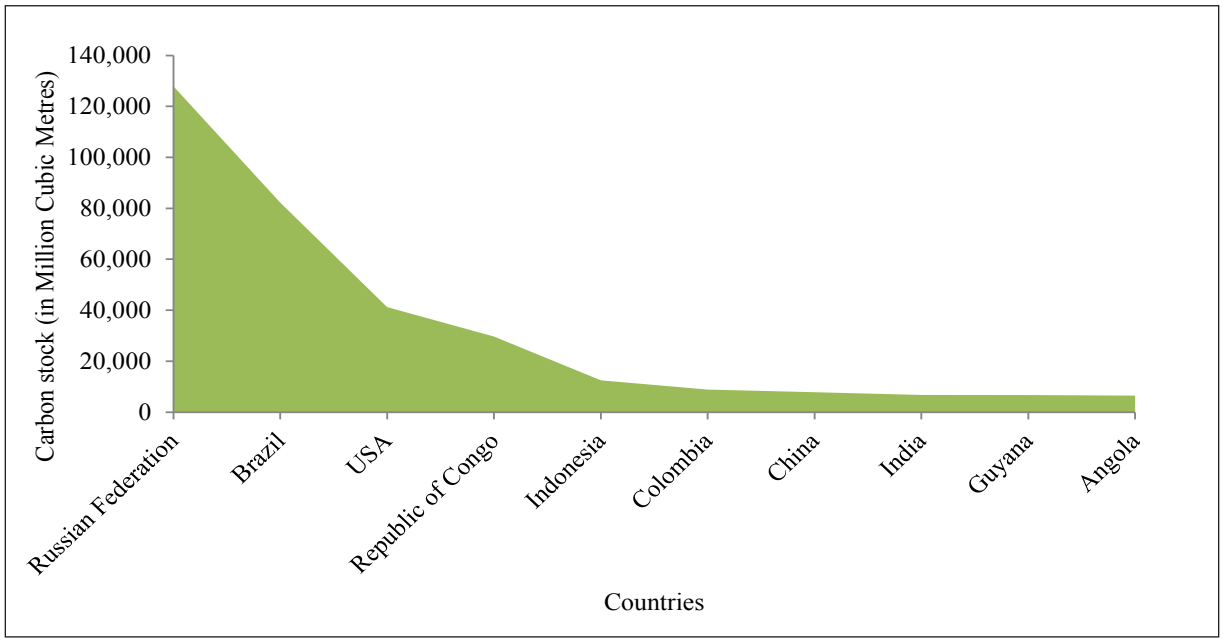


Source: India State of Forest Report 2019.

India accounts for 2 per cent of the total global forest area in 2015 (Figure 14) as per the Global Forest Resource Assessment (FRA) by FAO.

6.28 Forest plays a crucial role in adaptation and mitigation to climate change. Forests help to store more carbon than any other terrestrial ecosystem (India State of Forest Report, 2019). In the Forest Report, 2019, the total carbon stock in forest is estimated as 7,124.6 million tons. There is an increase of 42.6 million tons in the carbon stock of the country as compared to the last assessment 2017. The carbon stock of the top 10 countries is given at Figure 15.

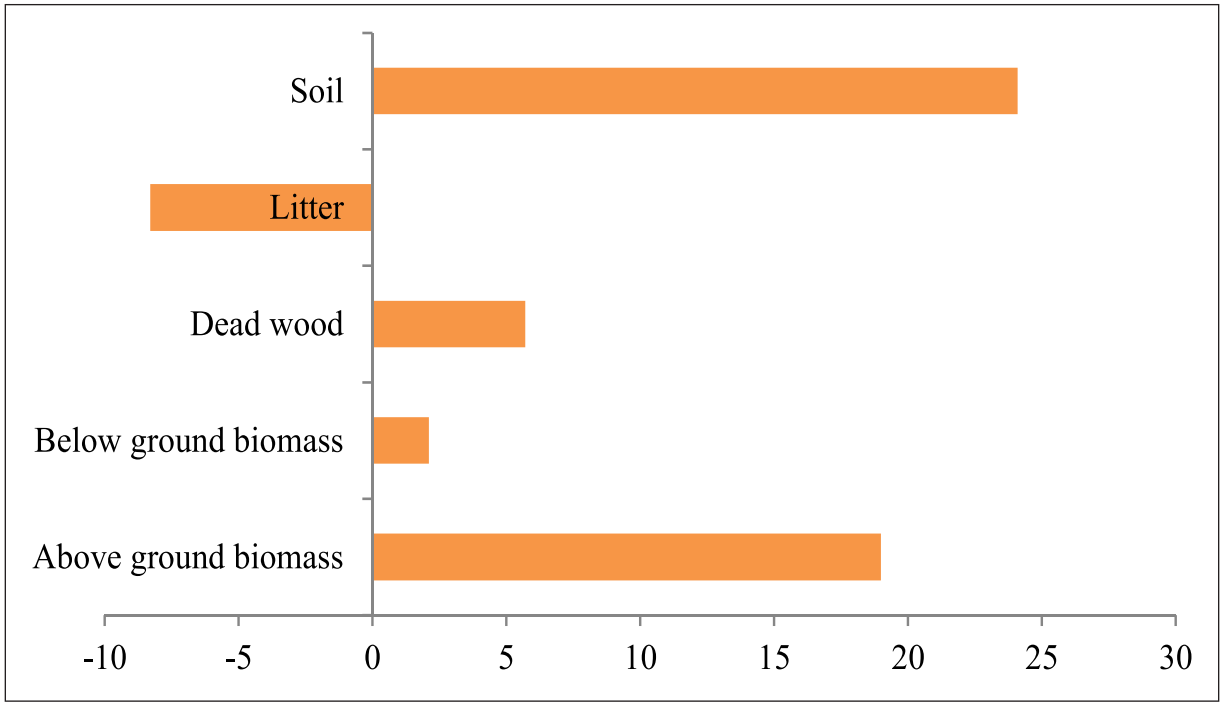
Figure 15: Carbon Stock (Million Cubic Metres)



Source: India State of Forest Report 2019.

6.29 Net change in carbon stock in India shows that net change is highest in soil organic carbon followed by Above Ground Biomass (AGB) and Dead wood. Litter carbon registered negative growth rate as compared to 2017 assessment. (Figure 16)

Figure 16: Net Change in Carbon Stock in forest in 2019 as compared to 2017 assessment (in per cent)



Source: India State of Forest Report 2019.

AGRICULTURAL RESIDUE BURNING – A MAJOR CONCERN

6.30 Burning of agricultural wastes in the fields is a practice that results in a number of environmental problems. India, being the second largest agro-based economy with year-round crop cultivation, generates a large amount of agricultural waste, including crop residues. Open burning of crop residues in the agricultural fields has become an environmental concern in India, particularly during paddy harvesting season. Varieties of surplus crop residues are burnt especially in northern States of Punjab, Haryana, UP, and Rajasthan depending on the agro-climatic region; however, about 50 per cent of all crop residue burnt in the country are residues of rice crop (TIFAC, 2018). Use of combine harvesters leaves the crop residues in field, and in order to clear the fields for the next crop in easiest way, farmers' burn the residues. About 178 million tonnes of surplus crop residues are available in the country (TIFAC, 2018). Burning of these residues leads to rise in pollutant levels and deterioration of air quality.

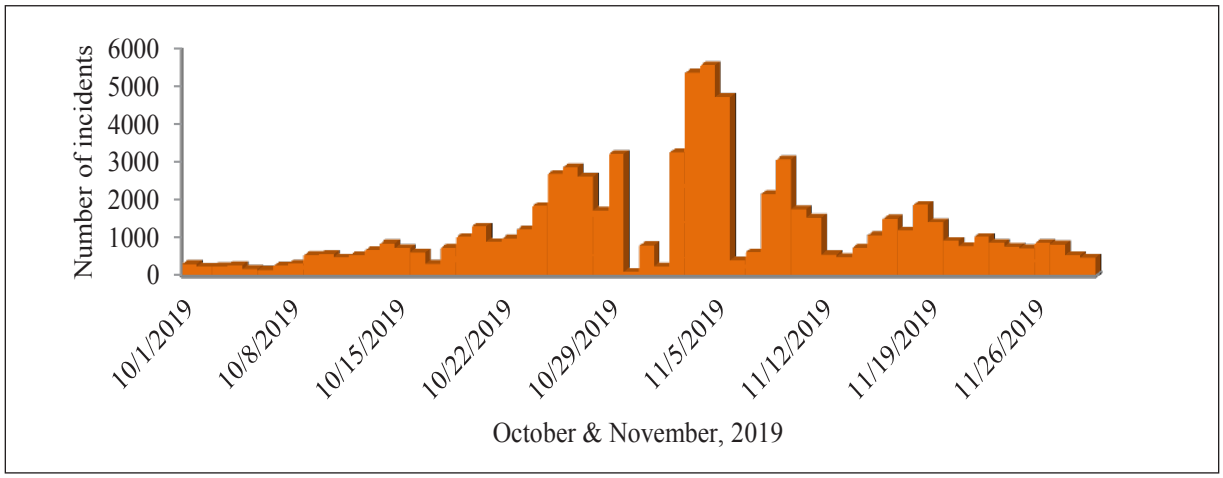
6.31 Various source apportionment studies at city scales have shown that agricultural burning contributes significantly in PM2.5 (particulate matter, diameter measurements of 2.5 micrometers or less) concentrations. Because huge volumes of residues are burnt in a very short duration (of few weeks), it leads to significant contributions in pollutant levels like PM2.5 (TERI, 2018, SAFAR 2019). The effect of stagnant atmospheric condition over Delhi during the harvest season of kharif crop has aggravated the deterioration of the ambient air quality in the region (Kanawade et al., 2019). Emission pollutants released due to burning depends on the type of crop residue e.g. PM2.5 emission (g/Kg) from the burning of different crop residues followed this order; Sugarcane (12.0), Maize (11.2), Cotton (9.8), Rice (9.3), wheat (8.5) (TERI, 2019). There are studies which have reported that open burning of crop residues has ill effects on soil organic carbon and soil fertility (Hesammi et al. 2014).

6.32 The stubble burning incidents in the month of October and November, 2019 are given in Figure 17 which shows the fire hot spot detected by NASA NPP-VIIRS satellite over North India during October-November, 2019. This satellite overpass India sometime around 1:30 local solar time (afternoon). As the figure shows, number of fire events are high from the mid of October till the first week of November, 2019. This has led to an increase in PM 2.5 and PM10 in Delhi in the month of October and November as compared to that of September, 2019 (Figure 18). In the month of September, the highest level of PM10 and PM2.5 was 134 and 80.34 respectively. In the month of October, the highest level of PM10 was 384 which is more than double as compared to the maximum PM10 of September, 2019. Similarly, the highest level of PM2.5 in the month of October was 306 which is higher than the September assessment. In the month of November, PM10 crossed 550 and PM2.5 crossed 510. PM10 and PM2.5 started falling in December, 2019 and the lowest level of PM10 and PM2.5 was 188 and 153 respectively.

6.33 Various studies suggest ways to address this issue, which include:

- Promote the practice of conservation of agriculture with low lignocellulosic crop residues like rice, wheat, maize etc. Agricultural machineries can help farmers to sow the seeds of the next crop without any problem associated

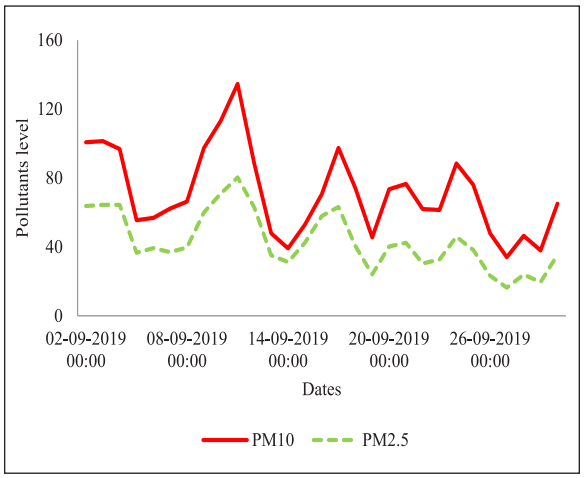
Figure 17: Stubble burning incidents during October- November, 2019



Source: NASA.

Figure 18: Ambient Air Quality of Delhi (ITO) in the month of September, October, November and December, 2019.

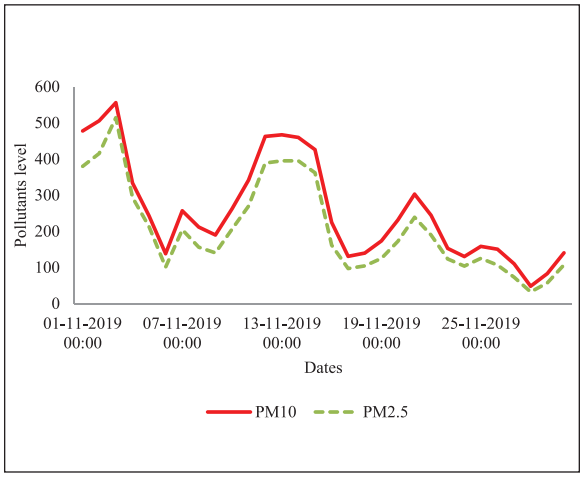
September, 2019



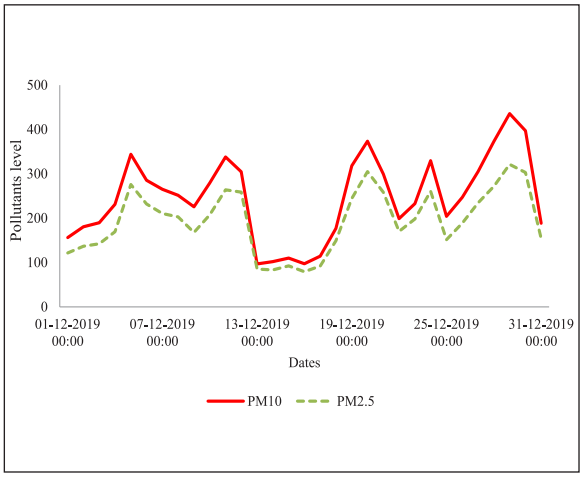
October, 2019



November, 2019



December, 2019



Source: Central Pollution Control Board.

with residues of the previous crops and also without affecting the crop productivity. This can improve or sustain the productivity of the crop land in the long term, as in-situ management. Apart from this, there are other options to utilize the crop residues ex situ from the crop land and some efforts have already been made for ex situ utilization of the crop residues.

- Create markets for crop residue-based briquettes and mandate nearby thermal power plants to undertake co-firing of crop residues with coal. It is also important to create infrastructure for setting up biomass depots for storage of bailed crop residues in areas that have shown high fire incidents or high production of a particular crop.
- Create special credit line for financing farm equipment and working capital for private sector participation.
- Promote use of crop residue-based biochar briquettes in local industries, brick kiln and hotel/dhaba as an alternate fuel.
- Pollution control as a parameter for deciding incentives and allocation to States/UTs.

6.34 National Green Tribunal in the order passed on 10.12.2015, directed and prohibited agricultural residue burning in any part of the NCT of Delhi, State of Rajasthan, State of Punjab, State of Uttar Pradesh and State of Haryana. Any person or body that is found violating the directions of National Green Tribunal is liable to pay Environmental Compensation which is collected by the concerned State Governments. In 2014, the Union government had released the National Policy for Management of Crop Residue, which NGT directed the States to implement. Burning crop residue is a crime under Section 188 of the IPC and under the Air and Pollution Control Act of 1981.

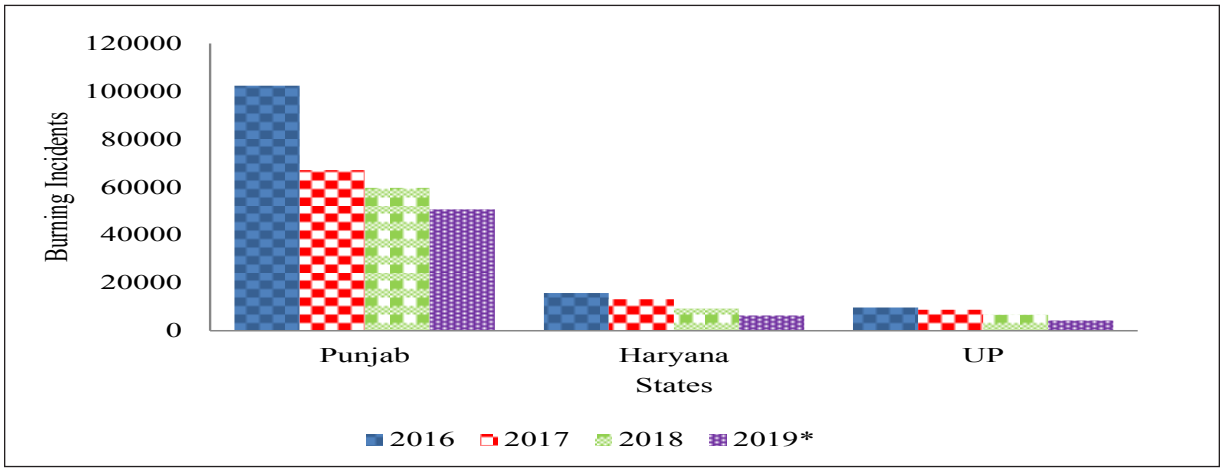
6.35 A new Central Sector Scheme on 'Promotion of Agricultural Mechanization for In-Situ Management of Crop Residue in the States of Punjab, Haryana, Uttar Pradesh and NCT of Delhi' for the period from 2018-19 to 2019-20 is being implemented with the total outgo from the Central funds of ₹ 1151.80 crore (₹ 591.65 crore in 2018-19 and ₹ 560.15 crore in 2019-20). Under this Scheme, the agricultural machines and equipment for in-situ crop residue management such as Super Straw Management System for Combine Harvesters, Happy Seeders, Hydraulically Reversible MB Plough, Paddy Straw Chopper, Mulcher, Rotary Slasher, Zero Till Seed Drill and Rotavators are provided with 50 per cent subsidy to the individual farmers and 80 per cent subsidy for establishment of Custom Hiring Centres.

6.36 With various efforts, overall, the total number of burning events recorded significant reduction (Figure 19). However, continuation of this practice by farmers is reported every year starting winter and the serious concerns about its impact on air quality are raised.

Construction and Demolition (C&D) Waste: Its Impact

6.37 Unscientific disposal of C&D waste is one of the key contributors to the air and water pollution. Annual consumption of

Figure 19: Stubble burning incidents (in numbers)



Source: Report of the Committee on 'Promotion of Agricultural Mechanization for in-situ management of crop residue in the States of Punjab, Haryana, Uttar Pradesh and NCT of Delhi', 2019, * Source: Consortium for Research on Agroecosystem Monitoring and Modelling from Space (CREAMS), ICAR.

construction materials (sand, soil & stone) in India is estimated to be 3,100 million tonnes. As per a study conducted by IIT Kanpur in 2015, C&D is a key contributor towards particulate matter emissions in Delhi. Therefore, investing in a circular economy driven approach in C&D waste management shall have large payoff in terms of avoiding health and environmental damage (Box 3).

Box 3: Public Private Partnership experience in C&D waste management: The Circular Economy approach in Delhi

In 2009, the Municipal Corporation of Delhi and IL&FS Environmental Infrastructure and Services Ltd. (IEISL) pioneered setting up a project to recycle 500 Tonnes Per Day (TPD) of C&D waste at Burari, Delhi (first of its kind facility in the country) to address the waste generated during Commonwealth Games preparations. Since then, the Burari facility along with two other C&D recycling facilities (under East Delhi Municipal Corporation and Delhi Metro Rail Corporation respectively) in Delhi are together recycling over 2,650 TPD C&D waste. The pioneering facility of Burari also helped in paving the way forward in formulating the C&D Waste Management Rules, 2016. All three Delhi plants have together processed over 5 million tonnes C&D waste.

Application of recycled C&D products: Standards for utilization of manufactured Coarse and Fine Aggregates have been prescribed by Bureau of Indian Standards (BIS). The recycled products have been included in the Delhi Schedule of Rates issued by CPWD. The civic bodies of Delhi and other Government Departments such as CPWD, DDA, DMRC, NBCC, PWD, Delhi State Industrial and Infrastructure Development Corporation Ltd., Irrigation & Flood Control (I&FC) are actively using the recycled C&D materials & products for ongoing civil works. Among the landmark projects where it has been used are the Supreme Court Annex building and MP flats, where over 2.3 million bricks were used. The material has also been used in the construction of a 100m wide road connecting NH-1 and Bakkarwala, Delhi.

Source: IL&FS Environment.

WAY FORWARD

6.38 India very well understands that action towards sustainability is an undeniable concern for humanity. India's National agenda mirrors the SDGs and its policies ensuring the balance among three pillars of development- economic, social and environmental. SDGs can be achieved through high standards of governance, monitoring and implementation at all levels. In the spirit of cooperative federalism, the States and Central Government are walking together to bring a change that India needs.

6.39 India has reduced emissions intensity of GDP by 21 per cent during 2005-2014 and is on track to achieve the goals announced. India had announced 175 GW targets for renewables by 2022. Further, Hon'ble Prime Minister in his address at the UN Climate Action Summit in September 2019 has stated that "India's renewable energy capacity would be increased to much beyond 175 GW and later till 450 GW". India has also taken up a voluntary target for restoration of 26 million of degraded land by 2030 during the 14th COP of UNCCD in Delhi. This is one of the largest programs in the world to ensure carbon sink in land resources. Internationally, CDRI which is a partnership to support countries through knowledge exchange and provide technical support on developing disaster and climate resilient infrastructure was launched.

6.40 India is among a few countries in the world where, despite ongoing developmental efforts, forest and tree cover is increasing considerably. The forest and tree cover have reached 80.73 million hectare which is 24.56 per cent of the geographical area of the country. In 2019, total carbon stock in forest is estimated as 7,124.6 million tons, There is an increase of 42.6 million tons in the carbon stock of the country as compared to 2017.

6.41 Agriculture crop residue burning and construction and demolition waste continues to be major concerns. Many countries are already using recycled C&D products in construction. In India, the Delhi PPP model in C&D waste management can be a beacon for the other States/ cities to replicate, enabling the Swachch Bharat Mission and supporting the SDGs.

6.42 Despite the continuous and definitive efforts of stakeholders from various walks of life, scarce financial resources continue to be the biggest constraint. Developed countries should honor their financial obligations and promises under the multilateral environmental agreements. The world that benefited from carbon emissions that made them developed, must repay. Technology development and transfer at affordable costs is also crucial for developing countries. Hence, adequate provision of finance, technology transfer, and capacity building to developing countries to facilitate the effective implementation of the SDGs and Paris Agreement on climate change are critical. India has and will continue to do its fair share of responsibilities while strongly calling for developed countries to take the lead.

CHAPTER AT A GLANCE

- India is moving forward on the path of SDG implementation through well-designed initiatives for inclusive development which is enshrined in its policies. India's achievement in the composite SDG index is commendable as the score has improved from 57 in 2018 to 60 in 2019.
- As per the SDG Index, Kerala, Himachal Pradesh, Tamil Nadu, Andhra Pradesh, Telangana, Karnataka, Goa, Sikkim, Chandigarh and Puducherry are the front runners.
- India is the second largest Emerging Green Bond Market after China.
- GCF's first replenishment (2020-2023) witnessed 28 countries pledging resources to replenish the Fund for an amount of US$ 9.7 billion, which is even quantitatively lower than the IRM period.
- At COP 25 of UNFCCC at Madrid, India reiterated its commitment to implement Paris Agreement in accordance with the principles of equity and common but differentiated responsibilities. COP 25 decision provides for balanced and integrated view of ambition that includes efforts for climate change mitigation, adaptation and means of implementation from developed country parties to developing country parties.
- ISA has taken up the role of an 'enabler' by institutionalizing 30 Fellowships from the Member countries; of a 'facilitator' by getting the lines of credit worth US$ 2 Billion from EXIM Bank of India and US$ 1.5 Billion from AfD, France; of an 'incubator' by nurturing initiatives like the Solar Risk Mitigation Initiative and of an 'accelerator' by developing tools to aggregate demand for 1000 MW solar and 270,000 solar water pumps.
- India launched the CDRI, focus on developing resilience in ecological, social and economic infrastructure.
- Government of India hosted COP 14 to UNCCD from 2-13 September, 2019. COP 14 adopted the Delhi Declaration: Investing in Land and Unlocking Opportunities.
- India is among a few countries in the world where, despite ongoing developmental efforts, forest and tree cover is increasing considerably. The forest and tree cover have reached 80.73 million hectare which is 24.56 per cent of the geographical area of the country.
- Burning of agricultural residues, leading to rise in pollutant levels and deterioration of air quality, is still a major concern though the total number of burning events recorded reduced due to various efforts taken.

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Agriculture and Food Management

07
CHAPTER

Agriculture and its allied sectors still remain an important sector because of its continued role in employment, income and most importantly in national food security. Its contribution to national income has gradually declined from 18.2 per cent in 2014-15 to 16.5 in 2019-20, reflecting the development process and the structural transformation taking place in the economy. The realisation of the objective of doubling farmer's income requires that the challenges of the sector such as access to credit, insurance coverage, irrigation facilities, etc. are addressed. There is also a need to address the issue of lower farm mechanisation in India which is only about 40 per cent as compared to about 60 per cent in China and around 75 per cent in Brazil. Given the fact that the livestock sector has grown at a compound annual growth rate of nearly 8 per cent over the last five years, it assumes an important role in income, employment and nutritional security. Though, the food processing sector is growing at an average annual growth rate of more than 5 per cent over the last six years ending 2017-18, more focussed attention to the sector is required due to its significant role in reducing post-harvest losses and creation of additional market for farm outputs. With the implementation of the National Food Security Act from July 2013, the food subsidy bill has increased from ₹ 113171.2 crore in 2014-15 to ₹ 171127.5 crore in 2018-19. India's food management should focus on rationalisation of food subsidy while addressing the challenges of food security, especially of the most vulnerable sections.

INTRODUCTION

7.1 Economic transformation of a developing country like India crucially depends on the performance of its agriculture and allied sector. This sector plays a significant role in rural livelihood, employment and national food security. It happens to be the largest source of livelihoods in India. Proportion of Indian population depending directly or indirectly on agriculture for employment opportunities is more than that of any other sector in India. As high as 70 percent of its rural households still depend primarily on agriculture for their livelihood, with 82 percent of farmers being small and marginal[1]. The objective of inclusiveness in development has to be realised through a focus on rural development where agriculture can deliver significantly. For Government's focus on doubling farmers' income, a number of measures are being undertaken ranging from income support schemes, crop insurance, water conservation, waste management techniques to agriculture marketing reforms.

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OVERVIEW OF AGRICULTURE

Share in Gross Value Added in Agriculture

7.2 The share of agriculture and allied sectors in the Gross Value Added (GVA) of the country at current prices has declined from 18.2 per cent in 2014-15 to 16.5 per cent in 2019-20 (Table 1). The share of agriculture and allied sectors in the total GVA of the country has been declining on account of relatively higher growth performance of non-agricultural sectors. This is a natural outcome of development process that leads to faster growth of non-agricultural sectors owing to structural changes taking place in the economy.

Table 1: Share of Agriculture and Allied Sectors in total GVA of the Country at Current Prices

Items	Year					
	2014-15	2015-16*	2016-17#	2017-18@	2018-19**	2019-20$
GVA of agriculture and allied sectors (₹ in Crore)	2093612	2227533	2496358	2670147	2775852	3,047,187
Share of GVA of agriculture & allied sectors in GVA of total economy (per cent)	18.2	17.7	17.9	17.2	16.1	16.5
Share of crops	11.2	10.6	10.6	10.0	-	-
Share of livestock	4.4	4.6	4.8	4.9	-	-
Share of forestry & logging	1.5	1.5	1.4	1.2	-	-
Share of fishing	1.0	1.1	1.1	1.1	-	-

Source: Central Statistics Office (CSO), Ministry of Statistics and Programme Implementation (MoSPI)
Note: **As per the press note on Provisional Estimates of Annual National Income 2018-19 and Quarterly Estimates of Gross Domestic Product for the Fourth Quarter (Q4) of 2018-19 released by CSO on 31st May 2019.
@ As per the First Revised Estimates of National Income, Consumption Expenditure, Saving and Capital Formation for 2017-18 released on 31st January, 2019. # Second Revised Estimate. * Third Revised Estimate
$ First Advance Estimate 2019-20.

Growth in Agriculture & Allied Sectors

7.3 The growth of GVA of agriculture and allied sectors has witnessed a fluctuating trend. GVA at constant (2011-12) prices for 2019-20 from 'Agriculture, Forestry and Fishing' sector is estimated to grow by 2.8 per cent as compared to growth of 2.9 per cent in 2018-19 (Table 2).

Table 2: Agriculture sector – Key indicators of Growth at constant (2011-12) prices (in per cent)

Year	Growth of GVA of total economy	Growth of GVA of agriculture & allied sectors
2013-14	6.1	5.6
2014-15	7.2	-0.2
2015-16*	8.0	0.6
2016-17#	7.9	6.3
2017-18@	6.9	5.0

2018-19**	6.6	2.9
2019-20$	4.9	2.8

Source: CSO, MoSPI

Note: **As per the press note on Provisional Estimates of Annual National Income 2018-19 and Quarterly Estimates of GDP for Q4 of 2018-19 released by CSO on 31st May 2019.
@ As per the First Revised Estimates of National Income, Consumption Expenditure, Saving and Capital Formation for 2017-18 released on 31st January, 2019. # Second Revised Estimate. * Third Revised Estimate.
$ First Advance Estimate 2019-20.

Gross Capital Formation (GCF) in Agriculture

7.4 The GCF in agriculture and allied sectors relative to GVA in this sector has been showing a fluctuating trend from 16.5 per cent in 2012-13 to 15.2 per cent in 2017-18 (Table 3).

Table 3: Gross Capital Formation (GCF) in Agriculture and Allied Sectors relative to Gross Value Added (GVA) at constant (2011-12) prices

Year	GCF of agriculture & allied sector (₹ in Crore)	GVA of agriculture & allied sector (₹ in Crore)	GCF of agriculture & allied sector as percentage of GVA (in percentage)
2012-13	2,51,094	15,24,288	16.5
2013-14	2,84,424	16,09,198	17.7
2014-15	2,72,663	16,05,715	17.0
2015-16*	2,37,648	16,16,146	14.7
2016-17#	2,67,836	17,17,467	15.6
2017-18@	2,73,755	18,03,039	15.2

Source: CSO, MoSPI
Note: @As per the First Revised Estimates of National Income, Consumption Expenditure, Saving and Capital Formation for 2017-18 released on 31st January, 2019.
Second Revised Estimate * Third Revised Estimate

MINIMUM SUPPORT PRICES

7.5 With a view to encourage higher investment and production, the Government announces Minimum Support Prices (MSPs) for twenty-two mandated crops; and Fair and Remunerative Price for Sugarcane. The Union Budget, 2018-19 had announced pre-determined principle to keep MSPs at levels of one and half times of the cost of production. Accordingly, Government had increased MSPs for all mandated kharif, rabi and other commercial crops with a return of 1.5 times over all India weighted average cost of production for the season 2018-19. Government has recently increased the MSPs for all mandated kharif and rabi crops for 2019-20 season in line with this principle. Further, direct income/investment support schemes have been introduced (Box 1).

Box 1: Income/Investment Support Schemes

Pradhan Mantri Kisan Samman Nidhi (PM-KISAN)
PM-KISAN is a Central Sector scheme with 100 per cent funding from Government of India. The Scheme is effective from 1.12.2018 and covers all the farmers (subject to certain exclusion

criteria). Under the Scheme an income support of ₹ 6000 per year is provided to all farmer families across the country in three equal installments of ₹ 2000 at an interval of every four months.

Krushak Assistance for Livelihood and Income Augmentation (KALIA) Scheme of Odisha
This scheme was launched by Government of Odisha in 2018-19 Rabi season onwards, to accelerate agricultural prosperity and elimination of poverty in the State. Benefits provisioned under different components are: financial support of ₹ 25,000 per farm family over five seasons will be provided to small and marginal farmers so that farmers can purchase inputs like seeds, fertilizers, pesticides, labour & other investments. For landless agriculture households, financial assistance of ₹ 12500 will be provided to each landless agricultural household for agricultural allied activities such as small goat rearing unit, mini-layer unit, duckery units, fishery kits for fisherman, mushroom cultivation and bee-keeping, etc. Vulnerable cultivators/landless agricultural labourers will get financial assistance of ₹10,000 per family per year to enable them to take care of their sustenance. The scheme also has life and accident insurance covers for the farmers at very nominal premiums.

Mukhya Mantri Krishi Ashirwad Yojana of Jharkhand
Under the scheme, all the small and marginal farmers of the State, who have arable land up to a maximum of 5 acres, will be given a grant-in-aid at the rate of ₹ 5000 / - per acre per year, which will help them reduce their dependence on loans. This amount would be given in two installments through Direct Benefit Transfer to the beneficiary's bank account. This is in addition to PM Kisan Nidhi Yojana under which each small & marginal farmer's family having combined landholding/ ownership of up to two hectares is paid ₹ 6,000 per year.

Rythu Bandhu of Telangana
Government of Telangana has come up with a new concept of providing Investment Support at the rate of ₹ 4,000 per acre per season to all the farmers (Pattadars) in the State towards purchase of various inputs like seeds, fertilizers etc., as initial investment before the crop season. The scheme is being implemented from Kharif 2018 onwards. A financial outlay of ₹ 12,000 crore has been allocated during 2018-19. During Kharif 2018-19, 51.50 lakh farmers were benefitted to the tune of ₹ 5,260.94 crore and it was disbursed by way of cheques. During Rabi 2018-19, the Government has taken a decision to transfer the amount through treasury e-Kuber to deposit money into the accounts of the farmers. An amount of ₹ 5,244.26 crore was transferred into the accounts of 49.03 Lakh farmers. During 2019-20, Government of Telangana has enhanced the amount under Investment Support Scheme from ₹ 4,000 to ₹ 5,000 per acre per season.

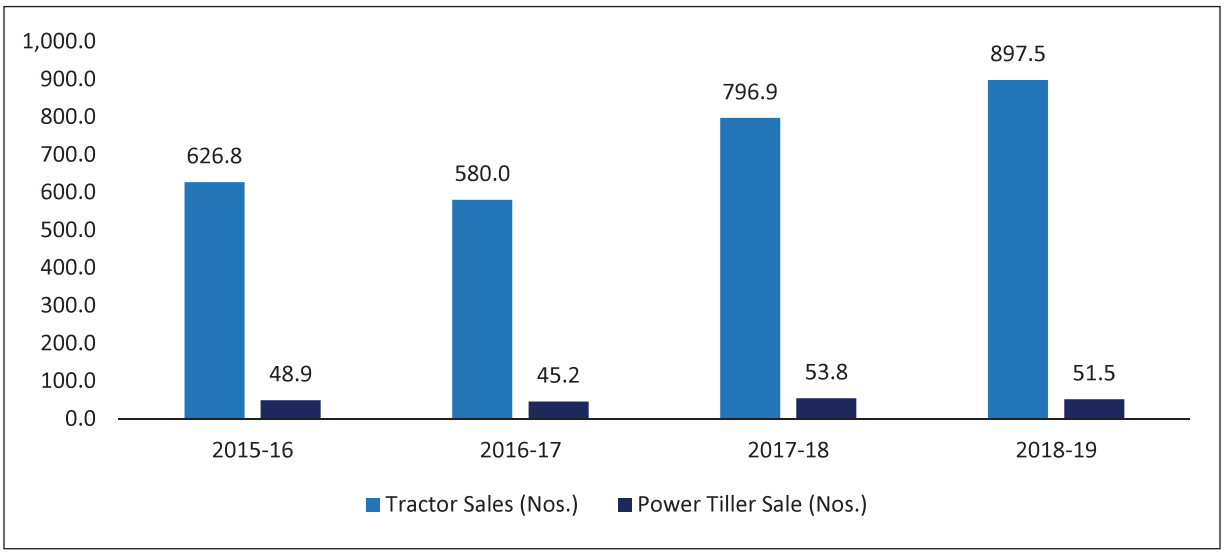
MECHANIZATION IN AGRICULTURE

7.6 Agriculture mechanization is an essential input to modern agriculture to increase the productivity by making judicious use of other inputs and natural resources etc., besides reducing the human drudgery and cost of cultivation. With the shrinking land and water resources and labour force, the onus rests on mechanization of production and post harvesting operations. There is a linear relationship between availability of farm power and farm yield and Government has decided to enhance farm power availability from 2.02 kW per ha (2016-17) to 4.0 kW per ha by the end of 2030 to cope up with increasing demand for food grains.

7.7 Indian tractor industry is the largest in the world, accounting for one-third of the total global production. During the past

four decades, the tractor industry grew at a compounded annual growth rate (CAGR) of 10 per cent. Farm mechanization market in India has been growing at a CAGR of 7.53 per cent during 2016-2018 due to thrust given by various government policies (Figure 1).

Figure 1: Year Wise Sale of Tractors and Power Tillers (in '000).



Source: Department of Agriculture, Cooperation & Farmers Welfare (DAC & FW).

7.8 Recognizing the need for inclusive growth of farm mechanization sector in the country, a Sub Mission on Agricultural Mechanization was launched in 2014-15. Under the scheme, assistance is provided to State governments to impart training and demonstration of agricultural machinery, provides assistance to farmers for procurement of various agricultural machineries and equipment and for setting up of Custom Hiring Centre. Under the scheme, total funds allocated during 2014-15 to 2018-19 was ₹ 3377.07 crore and during 2018-19 it was ₹ 1027.46 crore. During the last four years, Government has given massive thrust to promoting latest agricultural machineries, like laser leveller, happy seeder technology, combine harvesters and small equipment like power weeders. Under new Central Sector Scheme on 'Promotion of Agricultural Mechanization for In-Situ Management of Crop Residue in the States of Punjab, Haryana, Uttar Pradesh and NCT of Delhi' (2018-19 to 2019-20), the agricultural machines and equipment for in-situ crop residue management are provided with 50 per cent subsidy to the individual farmers and 80 per cent subsidy for establishment of Custom Hiring Centres.

Crop-wise Mechanisation Level in Agriculture

7.9 Effective use of agricultural machinery helps to increase productivity and production of farm output along with timely farm operations for quick rotation of crops on the same land. By raising a second crop or multi-crops from the same land, there is improvement in the cropping intensity and making agricultural land commercially more viable (NABARD, 2018). However, overall farm mechanization in India has rather been lower (40-45 per cent) compared to other countries such as USA (95 per cent), Brazil (75 per cent) and China (57 per cent). A significant share of India's tractor production is also exported. India, on average, exports 79,000 tractors annually; the primary markets being the African countries

and ASEAN countries, having similar soil and agro climatic conditions. There are disparities visible in intra-national levels of mechanization as well where northern India has higher levels of mechanization compared to other regions. A study by NABARD in 2018 on farm mechanization has identified that economies of operation due to small holdings, access to power, credit cost and procedures, uninsured markets and low awareness being some of the important reasons for lower rate of agricultural mechanization in India. The mechanization levels for major crops in India in 2018-19 is presented in Table 4.

MICRO IRRIGATION

7.10 Focus on water use efficiency at farm level through precision or micro Irrigation (drip and sprinkler irrigation) has become a farm imperative to ensure a sustainable agricultural practice. Considering this, the Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) was launched on 1st July, 2015 with the motto of 'Har Khet Ko Paani' for providing end-to end solutions in irrigation supply chain, viz. water sources, distribution network and farm level applications. Per Drop More Crop component of PMKSY (PMKSY-PDMC) is operational from 2015-16 in the country focussing on water use efficiency at farm level. Performance of micro irrigation component in terms of area is presented in Figure 2.

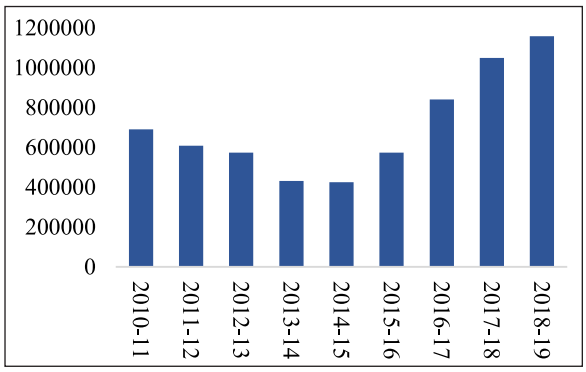
Table 4: Mechanization Levels for Major Crops in India in 2018-19

Major crops	Mechanization Levels for Field Operations (in per cent)			
	Seed bed preparation	Sowing/ planting/ transplanting	Weeding and interculture and plant protection	Harvesting and threshing
Rice	70	20	30	60
Wheat	70	60	50	70
Maize	60	40	30	30
Sorghum and millets	50	30	15	10
Pulses	50	40	20	25
Oilseed	50	40	20	25
Cotton	50	30	25	0
Sugarcane	55	10	20	10

Source: Department of Agricultural Research & Education (DARE).

7.11 Micro Irrigation, which includes drip and sprinkler irrigation, is a proven technology which has gained immense popularity amongst the farmers. Strengths of this technology include - efficient deployment of inputs such as water, electricity, fertilizers, labour, increase in crop productivity, better quality of produce leading to higher realization of sale price resulting in increased income of farmer. With this technology, additional area can be irrigated with the same amount

Figure 2: Year-wise Area Covered under Micro Irrigation through Centrally Sponsored Scheme (in Ha)



Source: DAC&FW

of water compared to conventional method of irrigation. In addition, water deficient, cultivable waste land and undulating land areas can be brought under cultivation due to ease of irrigation. There is also good scope for using this technology in closely spaced crops like rice, wheat, onion, potato etc. In a nutshell, following benefits have accrued to the farmers:

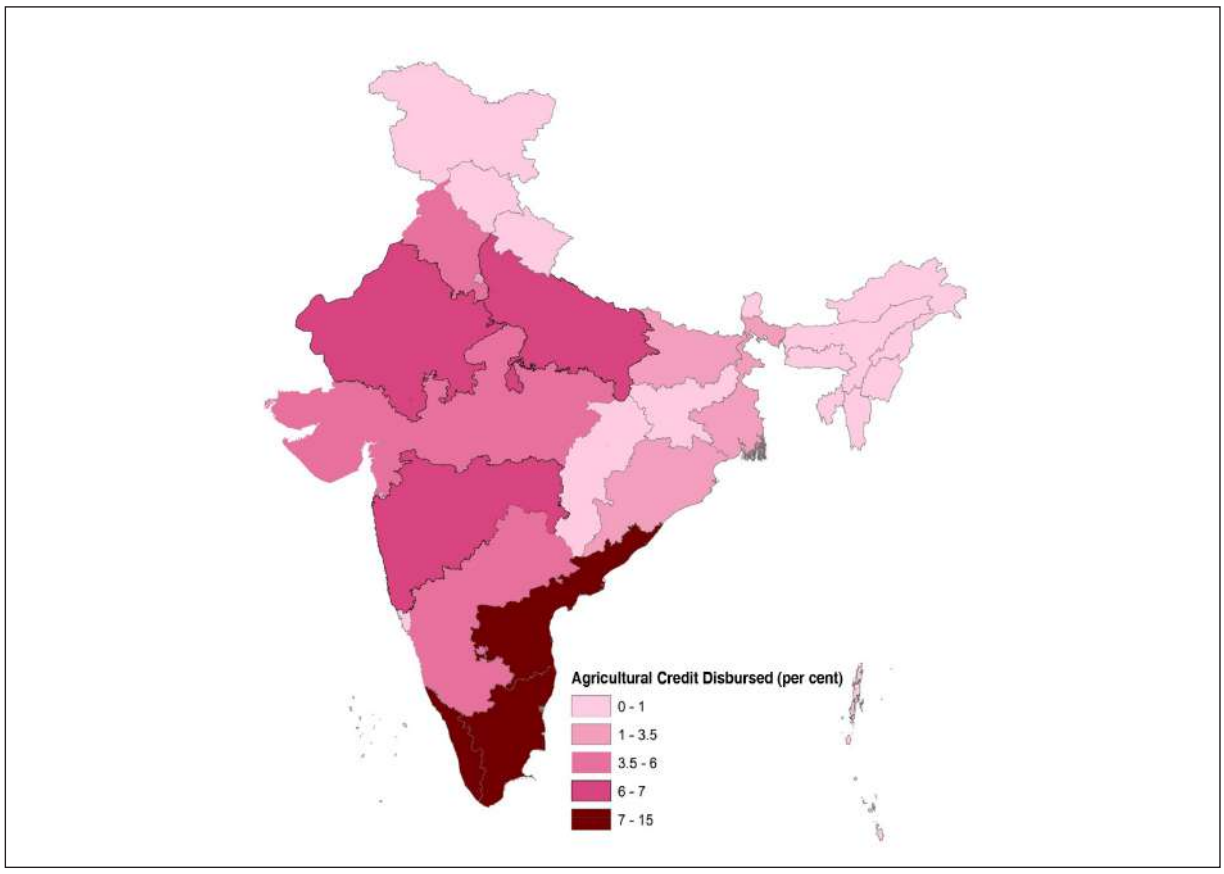
- Saving of irrigation water from 20 to 48 per cent;
- Energy saving from 10 to 17 per cent;
- Saving of labour cost from 30 to 40 per cent;
- Saving of fertilizers from 11 to 19 per cent;
- Increase in crop production from 20 to 38 per cent;
- Increase in net annual income of the farmer beneficiaries.

7.12 A dedicated Micro Irrigation Fund (MIF) created with NABARD has been approved with an initial corpus of ₹ 5000 crore facilitating the States in mobilizing the resources for expanding coverage of Micro Irrigation envisaged under PMKSY-PDMC and also in bringing additional coverage through special and innovative initiatives by State Governments.

AGRICULTURAL CREDIT

7.13 The agricultural credit flow target for 2019-20 has been fixed at ₹ 13,50,000 crore, and till 30th November, 2019, a sum of ₹ 9,07,843.37 crore has been disbursed. The regional distribution of agricultural credit in India is highly skewed (Figure 3). It is observed that credit is low in North Eastern, Hilly and Eastern States. The share of North Eastern States has been less than one percent in total agricultural credit disbursement.

Figure 3: Distribution of Agricultural Credit in India in 2018-19



Source: Based on the data from DAC&FW

MITIGATING RISKS IN AGRICULTURE: CROP INSURANCE

7.14 Pradhan Mantri Fasal Bima Yojana (PMFBY) has been under implementation since kharif 2016 season in the country. It provides comprehensive coverage of risks from pre-sowing to post harvest against natural non-preventable risks. The insurance premium is paid to insurance companies on actuarial/on bidding basis, with very low share contributed by the farmers across the country (2 per cent and 1.5 per cent of the sum insured for food and oilseed crops for kharif and rabi seasons, respectively) and 5 per cent for commercial/horticultural crops and balance premium to be paid upfront and shared equally between Central and State Governments. It also provides better protection for the farmers in terms of sum insured which has been made equal to the scale of finance.

7.15 PMFBY envisages increase in coverage from the existing 23 per cent to 50 per cent of Gross Cropped Area (GCA) in the country. Target for 2016-17 was 30 per cent of GCA. The targets could not be covered due to the announcement of Debt Waiver Scheme in two big States namely, Maharashtra and Uttar Pradesh during 2017-18 and in Madhya Pradesh and Rajasthan in 2018-19. Direct Benefit Transfer (DBT) was introduced by the Government in April 2017 to help farmers receive claims directly in their bank accounts, which made registration through Aadhar number mandatory. This was a deliberate step by the Government to weed out ghost/duplicate beneficiaries and help genuine farmers through Aadhar based verification. Substantial progress with more ground coverage compared to erstwhile crop insurance schemes has been made under PMFBY. The Government has also created a National Crop Insurance Portal that provides interface among all stakeholders (Box 2).

Box 2: National Crop Insurance Portal (NCIP)

National Crop Insurance Portal:(https://pmfby.gov.in) is a web-based integrated IT platform that provides interface among all stakeholders to access/enter data relating to insured farmers under PMFBY and Restructured Weather Based Crop Insurance Scheme (RWBCIS). For this purpose, all stakeholders, viz., States, banks, insurance companies (ICs), farmers (for direct online enrollment) and the Common Service Centre (CSC) involved in the enrolment process have been provided an interface on the NCIP through which the enrolment process is executed. In this manner the data on enrolment for non-loanee farmers through different sources is completely available on the NCIP.

Crop insurance portal envisages creation of demand for Government share of premium subsidy from the portal itself, on the basis of which funds would be released to concerned ICs and as a next step the portal would facilitate that the admissible claims could be settled directly to farmers bank accounts by respective ICs through portal to avoid delay in credit of claim amount to farmers account and for proper monitoring.

7.16 During 2018-19 season, 564.50 lakh farmer applications (tentatively) covering an area of 517.70 lakh ha have been insured for a sum of about ₹ 2,35,642 crore. By October 2019, under PMFBY, total claims of ₹ 17,756 crore have been approved and ₹ 16,763 crore have been paid. Loanee and non-loanee coverage stood at 354 lakh and 210.40 lakh respectively. Substantial progress with more ground coverage compared to erstwhile crop insurance schemes has been made under PMFBY. Though the scheme is voluntary for the States, 26 States/UTs implemented the scheme in 2017-18. In 2018-19, 23 States/UTs implemented the scheme.

7.17 On the basis of the experience of implementation of PMFBY and with a view to ensuring better transparency, accountability and timely payment of claims to the farmers, Government has comprehensively revised the operational guidelines of the scheme which have become effective from 01.10.2018 and, inter-alia, include the following:

i) Provision of 12 per cent interest rate per annum to be paid by the Insurance Company to farmers for delay in settlement of claims beyond 10 days of prescribed cut-off date for payment of claims;

ii) State Governments have to pay 12 per cent interest rate for delay in release of State share of subsidy beyond three months of prescribed cut-off date/ submission of requisition by Insurance Companies;

iii) Increased time for change of crop name for insurance - upto 2 working days prior to cut-off date for enrolment instead of earlier provision of one month before cut-off date;

iv) Time for intimation of loss due to localized calamities and post-harvest losses has been increased from 48 hours to 72 hours;

v) Detailed Standard Operating Procedures (SOPs) for settlement of claims under localized calamities, post-harvest losses, mid-season adversity and prevented sowing and redressal of disputes regarding yield data including add on features;

vi) Inclusion of perennial crops and add on coverage for damage by wild animals on pilot basis.

AGRICULTURAL TRADE

7.18 India occupies a leading position in global trade of agricultural products. However, its total agricultural export basket accounts for a little over 2.15 per cent of the world agricultural trade. The major export destinations are USA, Saudi Arabia, Iran, Nepal and Bangladesh. What is noteworthy is that since the economic reforms began in 1991, India has remained consistently a net exporter of agri-products, touching ₹ 2.7 lakh crore exports and imports at ₹ 1.37 lakh crore in 2018-19. The export of major agri-allied items for the last 3 years are given in Table 5.

Table 5: India's Export of Principal Agri and allied Commodities (Value in ₹ '000' Crore & Quantity in Lakh Metric Tonnes)

Commodities	2016-17		2017-18		2018-19	
	Value	Qty	Value	Qty	Value	Qty
Rice -Basmati	21.51	39.85	26.87	40.57	32.80	44.15
Spices	19.11	10.14	20.08	10.96	23.22	10.92
Rice (Other than Basmati)	16.93	67.71	23.44	88.19	21.19	76.00
Cotton Raw Including Waste	10.91	9.96	12.20	11.01	14.63	11.43
Oil Meals	5.41	26.32	7.04	35.71	10.58	44.86
Sugar	8.66	25.44	5.23	17.58	9.52	39.88
Castor Oil	4.52	5.99	6.73	6.97	6.17	6.19
Tea	4.91	2.43	5.40	2.73	5.83	2.70
Coffee	5.65	2.89	6.25	3.18	5.72	2.83
Fresh Vegetables	5.79	34.04	5.30	24.48	5.67	29.33
Total Agri and allied exports	227.6		251.56		274.57	

Source: DAC&FW

7.19 A number of trade policy measures have been undertaken by the Government over the past few years to protect the domestic farmers in the country, which include:

i) Import duty has been raised from 0 to 10 per cent on tur, 0 per cent to 50 per cent on peas, 0 per cent to 60 per cent on gram (chana) and 0 per cent to 30 per cent on lentils.

ii) Quantitative restrictions of 4 lakh tonnes per year has also been imposed on import of tur and 1.5 lakh tonnes on import of peas, urad & moong per year.

iii) Export of all varieties of pulses have been allowed with effect from 22.11.2017 to ensure the greater choice in marketing as well as the better remuneration for farmers' produces.

iv) Restriction on export of all types of edible oils (except mustard oil) has been lifted on 06.04.2018 to encourage export of indigenous edible oils and their industries.

v) Government has imposed Minimum Import Price (MIP) on pepper and arecanut. MIP of ₹ 500/kg was fixed on pepper imports on 6th Dec, 2017 and MIP of ₹ 251/kg was fixed on arecanut on 17th Jan, 2017 to protect the domestic growers and their livelihood from cheap import of the commodity as well as to save the domestic industries of pepper and arecanut.

vi) Under Foreign Trade Policy 2015-20, rates of reward under merchandise exports from India (MEIS) were enhanced on export of various agriculture items on 1st November, 2017 to offset high transit cost.

vii) Government has recently initiated a comprehensive "Agriculture Export Policy" aimed at doubling the agricultural exports and integrating Indian farmers and agricultural products with the global value chains.

viii) Created agri cells in many Indian embassies abroad to take care of agricultural trade related issues.

AGRICULTURAL RESEARCH AND EDUCATION

7.20 The Department of Agricultural Research & Education (DARE) provides the necessary government linkages for the Indian Council of Agricultural Research (ICAR), the premier research organisation for co-ordinating, guiding and managing research and education in agriculture, including horticulture, fisheries and animal sciences.

High Yielding Varieties and Breeder Seeds

7.21 The hallmark of ICAR is new crop varieties having specific traits that improve yield and nutritional quality along with tolerance/resistance to various biotic and abiotic stresses besides matching crop production and protection technologies for target agro-ecologies. A total of 220 new varieties/hybrids of field crops and 93 horticultural crops were notified/released during 2019-20. These are tolerant to various biotic and abiotic stresses with enhanced quality and quantity. The Council developed 18 biofortified varieties of crops that are rich in iron, zinc, protein and glucoisnolates and Kunitz Trypsin Inhibitor (KTI) free to ensure nutritional security through the natural food system. During 2018-19, a total of 117772 quintals of breeder seeds of various field crops were produced. Besides, 239 lakh planting material and 1.9 lakh tissue culture plantlets were also produced for vegetative propagated field crops, fruits, vegetables and plantation crops. During 2018-19, six varieties of tolerant to biotic and abiotic stresses and of improved quality have been developed through marker assisted selection.

Research & Education in Livestock and Fisheries Development

7.22 The ICAR also works for the integrated development of all the subsectors as all these are integrated at the farmers' farm. The first gazette notification of 184 registered indigenous breeds was done in 2019. This will provide legal support for Intellectual Property Rights (IPRs) of the registered breed/new varieties released and conservation of threatened breed and indigenous breeds. It will enable placing the genetic information with legal tag in the public domain and help in protection of these bioresources from bio-piracy and other IPR issues. During 2018-19, to increase higher availability of animal and fish products, 15 new indigenous populations of livestock and poultry as breeds were registered. The country possesses 535.78 million livestock population, which includes 192.49 million cattle, 109.85 million buffalo, 74.26 million sheep, 148.88 million goat and 9.06 million pig; and 851.81 million poultry population (Livestock Census, 2019). This vast and varied population of animals is mainly indigenous, while a sizeable population is crossbreds between exotic germplasm and native stock. A very few animals belonging to exotic breeds are maintained mostly in organized farms. In order to make the country animal disease free, the diagnostic kits against Japanese Encephalitis (JE) and Bluetongue (BT) diseases and Subviral Particle based Infectious Bursal Disease Vaccine were developed.

Transferring Technologies from Lab to Farmer's Field

7.23 The 716 Krishi Vigyan Kendras (KVKs) of the country have been linked with 3.37 lakh common service centers to enhance the reach of the KVKs amongst the farmers and provide the demand driven services and information. To take the technologies of the labs to farmers' fields, KVKs conducted 42361 on-farm trials and 2.71 lakh Frontline Demonstrations. These outreach programmes were further strengthened with the production of 1.77 lakh quintals quality seeds of field crops, 365.53 lakh planting materials of horticultural crops and 154.91 lakh livestock strains and finger lings which were made available to farmers on a nominal cost. About 139.67 lakh farmers participated in various extension activities and 15.91 lakh farmers and 1.21 lakh extension personnel were trained to work as peers for further propagation the promising technologies. To harness the benefits of digital development a digital platform has been created (Box 3).

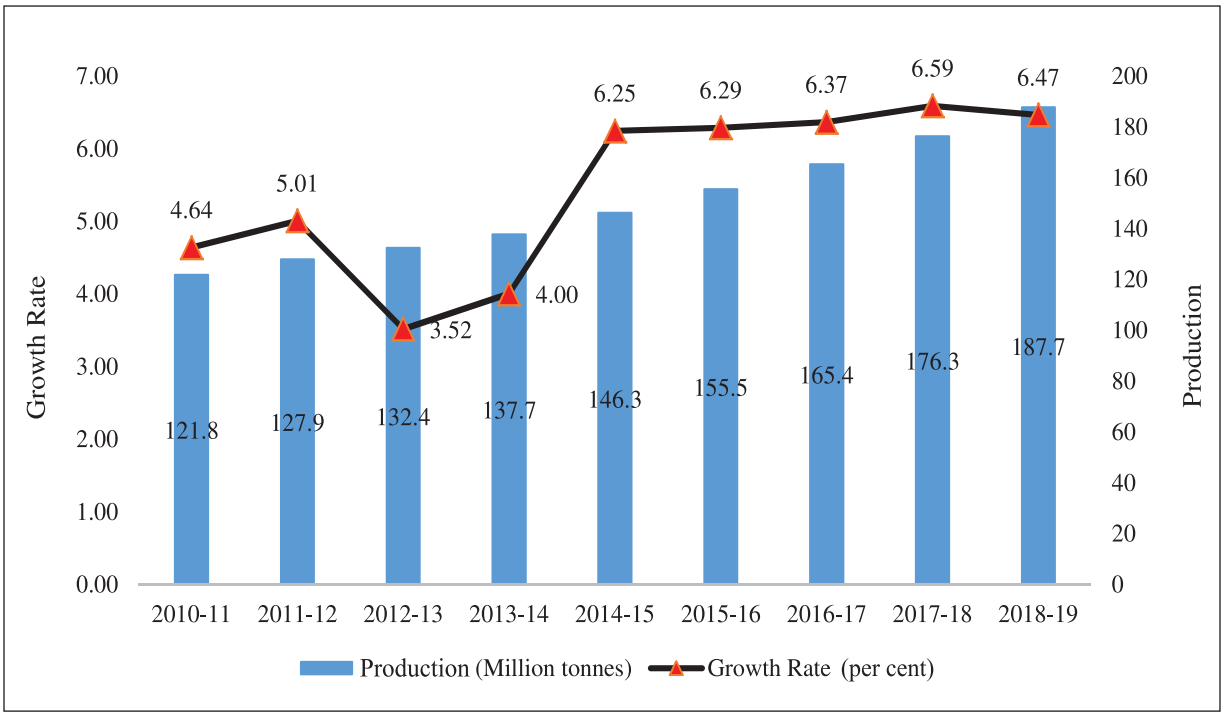
Box 3: Digital Platform in Agriculture

The ICAR with its 113 research institutes and 716 KVKs is geared up to enhance the competitiveness of Indian farming to make farming a viable, self-sustaining and internationally competitive enterprise through digital agricultural platform- Cyber Agro-Physical Systems (CAPS). The CAPS while integrating the use of sensors with computers, satellite imagery, supercomputing facility for research will also help reducing uncertainty and risk in agriculture operations through Artificial Intelligence enabled farmers' advisories for critical agricultural operations and climatic events. Also, New Digital Apps have been developed for making Indian agriculture in line with Digital India theme. The DARE launched the Agricultural Education Portal EKTA (Ekikrit Krishi Shiksha Takniki Ayaam) for integrated online management information system, developed 9 mobile apps such as mango cultivation, e-kalpa, oil palm (English, Hindi and Telugu); pomegranate, onion and garlic, black pepper, mushrooms and 02 mobile Apps for farming community (Kisan Suvidha and Pusa Krishi). KVKs through mKisan portal provided SMS service to 612.95 lakh farmers on improved package of practices of various crops and allied enterprises, weather-based advisories and information on various Government schemes.

ALLIED SECTORS: ANIMAL HUSBANDRY, DAIRYING AND FISHERIES

7.24 Animal Husbandry, Dairying and Fisheries activities, along with agriculture, continue to be an integral part of human life. These activities have contributed to the food basket and draught animal power and maintain ecological balance along with generating gainful employment, particularly among the landless, small and marginal farmers and women, besides providing nutritious food to millions of people. Livestock income has become an important secondary source of income for millions of rural families and has assumed an important role in achieving the goal of doubling farmers' income. Livestock sector has grown at a compound annual growth rate of 7.9 per cent during last five years. Government has launched a new Central Sector Scheme "National Animal Disease Control Programme (NADCP) for control of Foot & Mouth Disease (FMD) and Brucellosis" with a financial outlay of ₹13,343 Crore for five years from 2019 to 2024. This scheme envisages complete control of FMD by 2025 with vaccination and its eventual eradication by 2030. This will result in increased domestic production and increased exports of milk and livestock products.

Figure 4: Milk Production and its Growth Rate



Source: Department of Animal Husbandry & Dairying (DAHD)

7.25 India continues to be the largest producer of milk in the world. Milk production in the country was 187.7 million tonnes in 2018-19 and registered a growth rate of 6.5 per cent over the previous year (Figure 4). The per capita availability of milk has reached a level of 394 grams per day during 2018-19. Egg production in the country, which was 95217 million numbers in 2017-18, increased to 103318 million numbers in 2018-19. Production of major livestock products is given in Table 6.

Table 6: Production of Major Livestock Products

Year	Milk (Million tonnes)	Per Capita availability of Milk(gram/day)	Eggs (Millions Nos.)	Per Capita availability of Egg (number/annum)
2008-09	112.2	266	55562	48
2009-10	116.4	273	60267	51
2010-11	121.8	281	63024	53
2011-12	127.9	290	66450	55
2012-13	132.4	299	69731	58
2013-14	137.7	307	74752	61
2014-15	146.3	322	78484	63
2015-16	155.5	337	82929	66
2016-17	165.4	355	88137	69
2017-18	176.3	375	95217	74
2018-19	187.7	394	103318	79

Source: DAHD

7.26 According to NSSO 66th Round Survey (July 2009-June 2010) on Employment and Unemployment, 15.60 million workers as per usual status (Principal status plus subsidiaries status) were engaged in farming of animals, mixed farming and fishing. As per estimate of 68th Round (July 2011-June 2012), 16.44 million workers were engaged in the activities of farming of animals, mixed farming, fishing and aquaculture.

Fisheries Sector

7.27 Fisheries remain an important source of food, nutrition, employment and income in India. The sector provides livelihood to about 16 million fishers and fish farmers at the primary level and almost twice the number along the value chain. Recognising the importance of the sector, an independent Department of Fisheries has been created in 2019 to provide sustained and focused attention towards the development of fisheries sector.

7.28 The sector has been showing a steady growth in the total GVA and accounts for 6.58 per cent of GDP from agriculture, forestry and fishing. The fish production in India has registered an average annual growth rate of more than 7 per cent in the recent years. The sector has been one of the major contributors of foreign exchange earnings with India being one of the leading seafood exporting nations in the world. During 2018-19, export of marine products stood at 13, 92,559 metric tonnes and valued at ₹ 46,589 crore. USA and South East Asia are the major export markets for Indian seafood with a share of 34.81 per cent and 22.67 per cent respectively. India has rich and diverse fisheries resources. The marine fisheries resources are spread along the country's vast coastline and 2.02 million square km Exclusive Economic Zone (EEZ) and 0.53 million sq.km continental shelf area. The inland resources are in the form of rivers and canals (1.95 lakh km), floodplain lakes (8.12 lakh hectares), ponds and tanks (24.1 lakh hectares), reservoirs (31.5 lakh hectares), brackish water (12.4 lakh hectares), saline/alkaline affected areas (12 lakh hectares) etc.

7.29 The total fish production in the country stood at 13.42 million metric tonnes (provisional) during 2018-19. Of this, the marine fisheries contributed 3.71 million metric tonnes and the inland fisheries

Table 7: State Wise Inland & Marine Fish Production in 2017-18 (in '000 Tonnes)

States	Inland	Marine	Total
Andhra Pradesh	2844.61	604.95	3449.56
Arunachal Pradesh	4.25	0.00	4.25
Assam	327.26	0.00	327.26
Bihar	587.85	0.00	587.85
Chhattisgarh	457.17	0.00	457.17
Goa	5.54	118.47	124.01
Gujarat	133.79	700.74	834.53
Haryana	190.00	0.00	190.00
Himachal Pradesh	12.77	0.00	12.77
Jammu & Kashmir	20.70	0.00	20.70
Jharkhand	190.00	0.00	190.00
Karnataka	188.17	414.35	602.52
Kerala	148.28	414.34	562.62
Madhya Pradesh	143.42	0.00	143.42
Maharashtra	131.02	474.99	606.01
Manipur	33.00	0.00	33.00
Meghalaya	11.96	0.00	11.96
Mizoram	7.64	0.00	7.64
Nagaland	8.99	0.00	8.99
Odisha	534.12	150.84	684.96
Punjab	136.64	0.00	136.64
Rajasthan	54.04	0.00	54.04
Sikkim	0.38	0.00	0.38
Tamil Nadu	185.05	496.89	681.94
Telengana	270.04	0.00	270.04
Tripura	76.80	0.00	76.80
Uttarakhand	4.58	0.00	4.58
Uttar Pradesh	628.75	0.00	628.75
West Bengal	1556.61	185.48	1742.09
India	**8902.42**	**3687.86**	**12590.28**

Source: Department of Fisheries (DoF)

contributed 9.71 million metric tonnes. During 2018-19, 71 per cent of marine fisheries potential and 58 per cent of the inland fisheries potential have been harnessed. State-wise fish production for 2017-18 is presented in Table 7. A trend in total fish production over the last five years for major producing states may be seen in Figure 5.

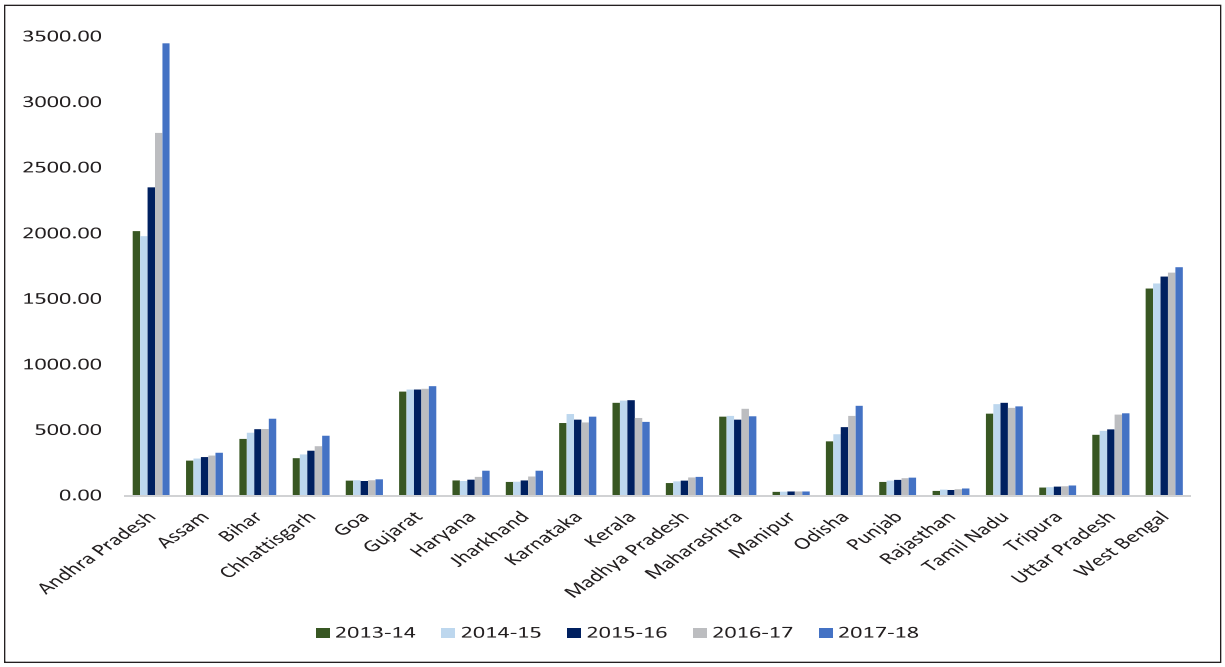
Fisheries and Aquaculture Infrastructure Development Fund

7.30 To address the gaps in fisheries infrastructure, the government has created the Fisheries and Aquaculture Infrastructure Development Fund (FIDF) during 2018-19 with a total fund size of ₹ 7,522.48 crore. The FIDF provides concessional finance/ loan to the Eligible Entities (EEs), including State Governments/Union Territories (UTs) and State entities for development of identified fisheries infrastructure facilities. The concessional finance under the FIDF is provided by the Nodal Loaning Entities (NLEs) namely (i) NABARD, (ii) National Cooperatives Development Corporation (NCDC) and (iii) All scheduled Banks. Till date, proposals to the tune of ₹ 2751.33 crore have been received from the various States and other Eligible Entities. Out of which proposals to the tune of ₹ 1715.04 crores have been recommended and rest are under process.

FOOD PROCESSING SECTOR

7.31 A well-developed food processing sector with higher level of processing helps in the reduction of wastage, improves value addition, promotes crop diversification, ensures better return to the farmers, promotes employment as well as increases export earnings. Growth in the food processing sector is also expected to open up opportunities for players having strong linkages in the agri-value chain. During the last 6 years ending 2017-18, Food Processing Industries sector has been growing at an average annual growth rate of around 5.06 per cent. The sector constituted

Figure 5: Fish Production over the last five years for Major Producing States (in '000 Tonnes)



Source: DoF

as much as 8.83 per cent and 10.66 per cent of GVA in Manufacturing and Agriculture sector respectively in 2017-18 at 2011-12 prices.

7.32 According to the Annual Survey of Industries for 2016-17, the total number of persons engaged in registered food processing sector was 18.54 lakhs.

7.33 Unregistered food processing sector supports employment to 51.11 lakh workers as per the NSSO 73rd Round, 2015-16 and constitutes 14.18 per cent of employment in the unregistered manufacturing sector. The value of processed food exports during 2018-19 was of the order of US $ 35.30 billion accounting for about 10.70 per cent of India's total exports (total exports US $ 330.08 billion). The value of import of processed food during 2018-19 was US $ 19.32 billion which is 3.76 per cent of India's total imports.

Pradhan Mantri Kisan Sampada Yojana

7.34 Government has restructured its schemes under a new central sector scheme of Pradhan Mantri Kisan Sampada Yojana (PMKSY). With a financial allocation of ₹ 6,000/- crore for the period 2016-20, PMKSY provides subsidy-based support to create robust modern infrastructure for agriculture and agro-based industries along the entire value/supply chain. It is expected to reduce wastage of agriculture produce, increase the processing level, enhance the export of the processed foods, enable availability of hygienic and nutritious food to consumers at affordable prices. The scheme components are: Mega Food Parks, Integrated Cold Chain and Value Addition Infrastructure, Creation/Expansion of Food Processing & Preservation Capacities, Infrastructure for Agro-processing Clusters, Creation of Backward and Forward Linkages, Food Safety and Quality Assurance Infrastructure, Human Resources and Institutions, and Operation Greens. The PMKSY envisages to leverage investment of ₹ 31,400 crore, handling of 334 Lakh Metric Tonnes (LMT) agro-produce, valuing ₹ 1,04,125 crore, which will benefit 20 lakh farmers and generate 5,30,500 direct/ indirect employment in the country on completion of sanctioned projects. So far, 701 projects have been sanctioned under different component schemes, which are expected to leverage investment of about ₹12,455 crores, handle about 259 LMT agro-produce valuing about ₹ 67,054 crores, benefit about 46.37 lakh farmers and generate about 5.6 lakh direct/ indirect employment in the country on completion of the projects.

FERTILIZERS

7.35 The New Urea Policy-2015 (NUP-2015) had been notified by Department of Fertilizers on 25th May, 2015 with the objectives of maximizing indigenous urea production; promoting energy efficiency in urea production; and rationalizing subsidy burden on the government. The production of urea during the year 2015-16 was 244.75 LMT, which happens to be the highest ever urea production in the country (Table 8). The imports of fertilizers show fluctuating trend (Figure 6).

Direct Benefit Transfer (DBT) System in Fertilizers

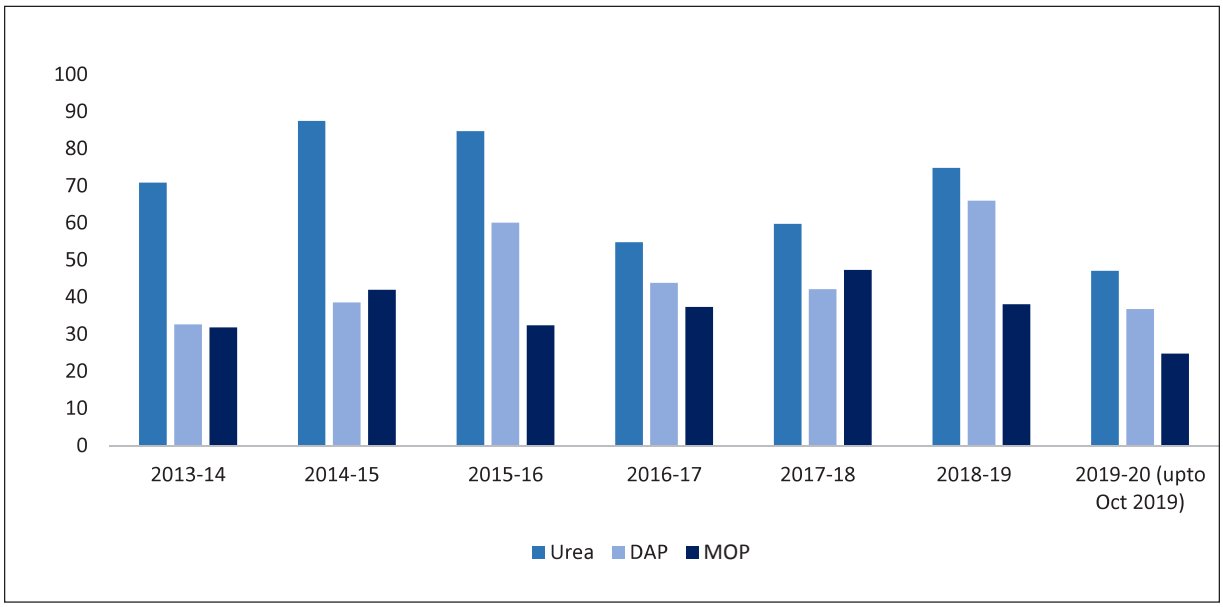
7.36 The Government of India has introduced Direct Benefit Transfer (DBT) system in Fertilizers w.e.f. October, 2016. Under the fertilizer DBT system, 100 per cent subsidy on various fertilizer grades is released to the fertilizer companies on the basis of actual sales made by the retailers to the beneficiaries. Sale of all subsidized fertilizers to farmers/buyers is being made through Point of Sale (PoS) devices installed at each retailer shop and the beneficiaries will be identified through Aadhaar Card, KCC,

Table 8: Production of Urea, DAP and Complex Fertilizers (in LMT)

Year	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20*
Urea	227.15	225.85	244.75	242.01	240.23	240.00	138.28
DAP	36.11	34.44	37.87	43.65	46.50	38.99	25.52
Complex Fertilizers	69.13	78.32	83.01	79.66	82.57	89.98	51.42

Source: Department of Fertilizers
*Upto October, 2019

Figure 6: Import of Urea, DAP and Muriate of Potash (MOP) (in LMT)



Source: Department of Fertilizers

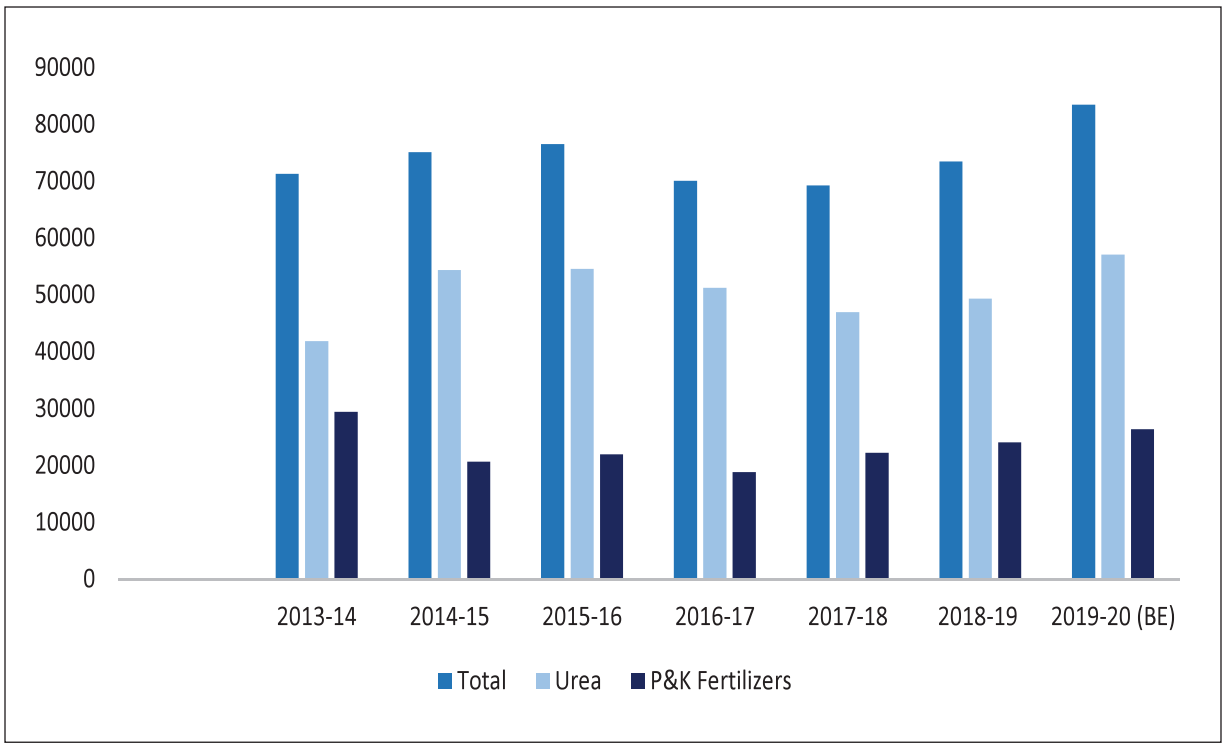
Voter Identity card etc. Trend in fertilizer subsidy may be seen in Figure 7.

FOOD MANAGEMENT

7.37 The main objectives of food management are procurement of foodgrains from farmers at remunerative prices, distribution of foodgrains to consumers, particularly the vulnerable sections of society at affordable prices and maintenance of food buffers for food security and price stability. The nodal agency which undertakes procurement and storage of foodgrain is the Food Corporation of India (FCI). The distribution of foodgrains is primarily under the National Food Security Act, 2013 (NFSA) and other welfare schemes of the Government and is governed by the scale of allocation and its offtake by the beneficiaries.

7.38 The NFSA which came into force in July, 2013, provides for coverage of upto 75 per cent of the rural population and upto 50 per cent of the urban population for receiving foodgrains under Targeted Public Distribution System (TPDS), thus covering about two-thirds of the population of the country for receiving foodgrains at the rate of ₹ 1/2/3 per kg for nutri-cereals/wheat/rice respectively. Identification of beneficiaries under the Act is under two categories- households covered under Antyodaya Anna Yojana (AAY) and Priority Households, within the coverage determined for the State/UT.

Figure 7: Fertilizer Subsidy during 2013-14 to 2019-20 (₹ crores)



Source: Department of Fertilizers.

Priority Households are entitled to receive 5 kg per person per month, AAY households, which constitute the poorest of the poor, continue to receive 35 Kg of foodgrains per household per month. At present, the Act is being implemented in all the States/UTs covering about 80 crore persons to get highly subsidized foodgrains.

7.39 To ensure adequate availability of wheat and rice in central pool, to keep a check on the open market prices and to ensure food security, the Central Government has undertaken a number of measures, which include: -

(a) State Governments, particularly those undertaking Decentralized Procurement (DCP), are encouraged to maximize procurement of wheat and rice.

(b) Strategic reserves of 5 million tonnes of food grains over the operational stocks are maintained to be used in extreme situations.

(c) Sale of wheat and rice is undertaken through Open Market Sale Scheme (OMSS) (Domestic) so as to check inflationary trend in prices of foodgrains.

(d) There are good examples of PDS reforms such as One Nation - One Ration Card, Aadhaar authenticated distribution through e-POS machines (Box 4).

Foodgrains Stocking Norms for the Central Pool

7.40 The Government of India has revised the Buffer Norms w.e.f. January, 2015 and the nomenclature of Buffer Norms has been changed to Foodgrain Stocking Norms to meet the prescribed minimum stocking norms for food security, to ensure monthly releases of foodgrains for supply through the TPDS/ Other Welfare Schemes, to meet emergency situations arising out of unexpected crop failure, natural disasters etc. and to use the foodgrain stock in the Central Pool for

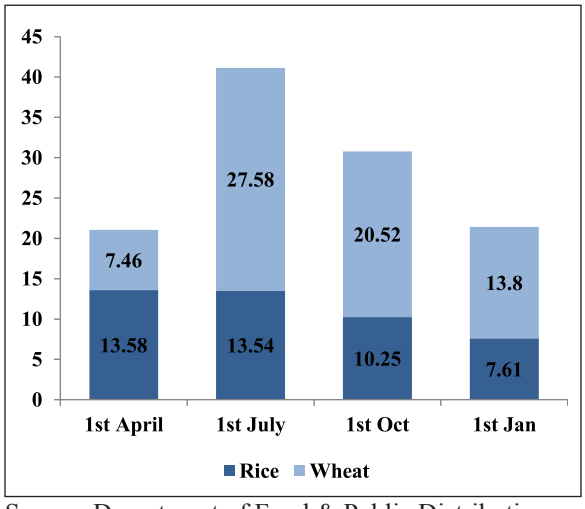
Box 4: One Nation - One Ration Card

The Department of Food & Public Distribution in collaboration with all States/UTs is implementing a Scheme namely "Integrated Management of Public Distribution System (IM-PDS)" during 2018-19 and 2019-20. The main objective of the scheme is to introduce nation-wide portability of ration card holders under NFSA through 'One Nation One Ration Card' System, to lift their entitled foodgrains from any Fair Price Shop (FPS) in the country without the need to obtain a new ration card. This system would largely benefit numerous migratory beneficiaries who frequently change their place of dwelling in search of work/employment or for other reasons across the country and eventually get deprived of their quota of subsidised foodgrains under NFSA due to migration from their native place. Through this system migatory beneficiaries shall be able to access their food security entitlements from any FPS of their choice/convenience by using their same/existing ration cards after biometric/ Aadhaar authentication on electronic Point of Sale (ePoS) devices at the FPS in another State/UT.

At present the facility of inter-State portability is enabled in 8 States i.e. in four clusters of 2-adjoining States of Andhra Pradesh & Telangana, Gujarat & Maharashtra, Haryana & Rajasthan, and Karnataka & Kerala. It is further envisaged that all four clusters, as above, and a few other States having already implemented intra-State portability shall be integrated together into single national platform. Thereafter, rollout of National Portability in other States/UTs shall be done as and when the national de-duplication of all ration cards,beneficiaries under NFSA is completed and biometric/Aadhaar authentication based distribution is enabled in the State/UT.

market intervention to augment supply so as to help moderate the open market prices. The stocking norms of foodgrains in the central Pool, with effect from January, 2015, are given in Figure 8 which also include the strategic reserve of 50 LMT.

Figure 8: Stocking norms of foodgrains in the central pool with effect from January, 2015 (million tonnes)



Source: Department of Food & Public Distribution.

Allocation of Foodgrains Under NFSA/ Targeted Public Distribution System (TPDS)

7.41 NFSA has been implemented in all States/UTs. In Chandigarh, Puducherry and urban areas of Dadra & Nagar Haveli, the NFSA is being implemented in cash transfer mode, under which food subsidy is being transferred into the bank accounts of beneficiaries who then have a choice to buy foodgrains from open market. During the year 2019-20, Government of India has allocated 603.88 lakh tonnes of foodgrains to States/ UTs under NFSA and other Welfare Schemes as on 31st December 2019 (Table 9).

7.42 Government of India also provides assistance to States/UTs to meet the expenditure incurred on intra-State movement of foodgrains and fair price shop dealers' margins. During 2019-20 (up to 31.12.2019), ₹ 1433.25 crore has been released to State Governments/UTs for this purpose.

(i) During Kharif Marketing Season (KMS) 2018-19, 443.99 LMT of paddy in terms of

Table 9: Allocation of Foodgrains to States/UTs under NFSA and Other Welfare Schemes

Category	Quantity (in lakh tonnes)
NFSA (including ICDS & MDM)	596.63
Festival, Natural calamity etc.	2.14
Other Welfare schemes	5.11
Total	603.88

Source: DFPD

rice was procured against an estimated target of 448.00 LMT. In the ongoing KMS 2019-20, a total of 256.10 LMT of paddy in terms of rice has been procured as on 31/12/2019.

(ii) During Rabi Marketing Season (RMS) 2019-2020, 341.33 LMT wheat was procured against 357.95 LMT procured during RMS 2018-19.

(iii) During the KMS 2019-20, procurement of 3,49,250 Metric Tonnes (MT) of coarse grains was approved.

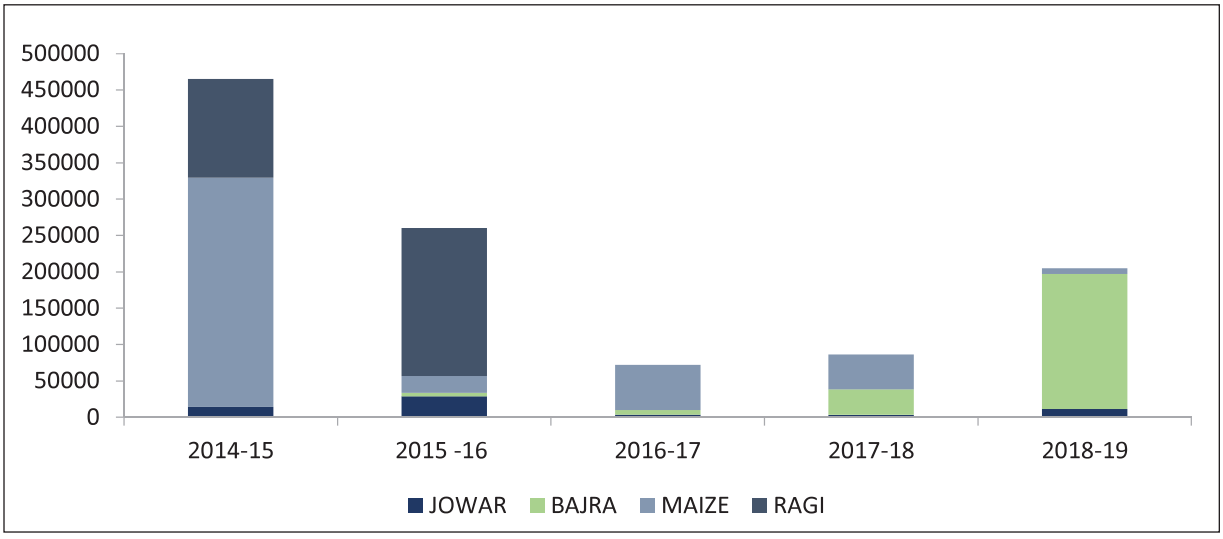
7.43 Procurement of coarse grains during last five years is given in Figure 9. Foodgrains Production, Procurement, Offtake and Stocks is presented in Table 10.

Economic Cost of Food Grains to FCI

7.44 The Economic Cost of foodgrains consists of three components, namely, pooled cost of grains, procurement incidentals and the cost of distribution. The pooled cost of food grains is the weighted MSP of the stock of foodgrains available with FCI at the time of calculating the economic cost. The economic cost for both wheat and rice witnessed significant increase during the last few years due to increase in MSPs and proportionate increase in the incidentals (Figure 10).

7.45 An examination of the determinants of the real economic cost of wheat suggests that MSP,

Figure 9: Procurement of coarse grains (grain-wise) during last five years (metric tonnes)



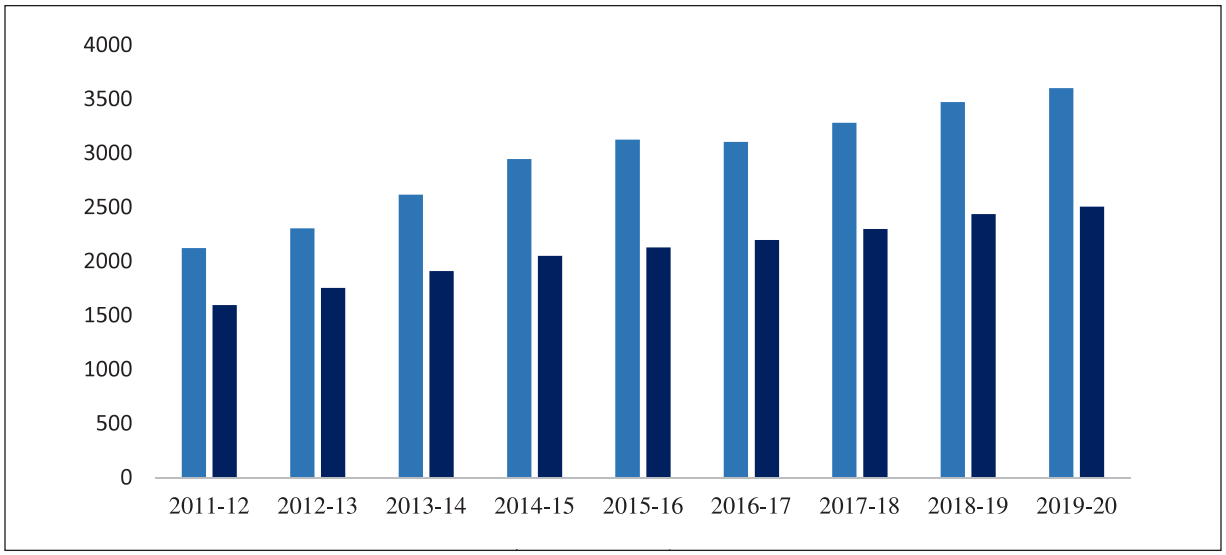
Source: DFPD

Table 10: Foodgrains Production, Procurement, Offtake and Stocks (in million tonnes)

Year	Production of foodgrains minus pulses	Foodgrain Procurement	Procurement as percentage of production	Offtake (TPDS/ NFSA + Welfare schemes)	Stocks as of 1st July
2015-16	235.22	64.91	27.6	53.73	54.72
2016-17	251.98	61.14	24.3	56.58	49.85
2017-18	259.60	69.10	26.6	57.85	53.48
2018-19	261.55*	80.40	30.7	56.40	65.14
2019-20	132.35**	60.06@	45.38@	42.82#	74.40

Source: Directorate of Economics & Statistics, Ministry of Agriculture and Farmers Welfare. Foodgrain bulletin, DFPD.
*As per 4th Advance estimates. ** As per 1st Advance estimates Kharif only.
@ as on 31st December, 2019. # offtake upto December, 2019

Figure 10: Economic Cost of Food Grains to FCI (₹ /quintals)@



Source: FCI Annual Plan, 2019-20.
* Weighted average of common and Grade-A Rice taken together. @ Data from 2014-15 to 2017-18 indicates cost under National Food Security Act (NFSA).

stocks handling charges and average stock of the grain are the significant factors. Increase of one unit in real MSP leads to 0.48 unit increase in real economic cost and the impact is significant.

Food Subsidy

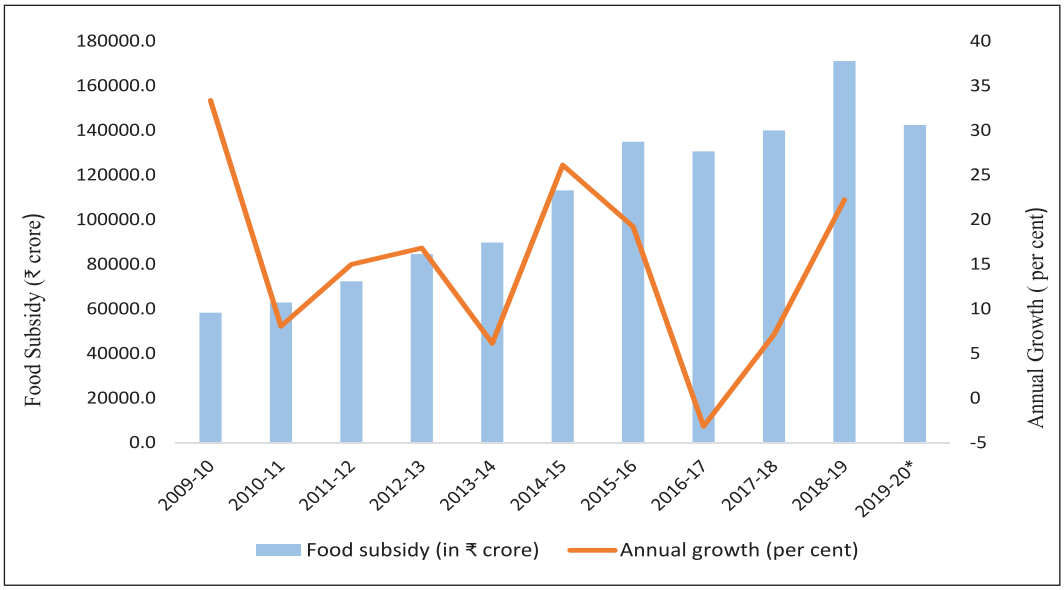
7.46 Food subsidy comprises of (i) subsidy provided to FCI for procurement and distribution of wheat and rice under NFSA and other welfare schemes and for maintaining the strategic reserve of foodgrains and (ii) subsidy provided to States for undertaking decentralized procurement. The acquisition and distribution costs of foodgrains for the central pool together constitute the economic cost. The difference between the per quintal economic cost and the per quintal Central Issue Price (CIP) gives the quantum of food subsidy. While the economic cost has increased, the CIP for NFSA beneficiaries has not been revised from ₹ 200/quintal in case of wheat and ₹ 300/quintal in case of rice. These rates were fixed under the Act initially for a period of three years from the

date of commencement of the Act (July 13, 2013) and thereafter were to be fixed by the Central Government from time to time, while not exceeding the minimum support price. However, it has not been revised since 2013. This has resulted in widening of the gap between the economic cost and CIP and the food subsidy incurred by the Government has risen substantially over the years (Figure 11).

7.47 The reasons for widenning of the food subsidy have been many. The NFSA while on one hand providing a wider coverage than the erstwhile TPDS, also made the Antyodaya CIPs uniformly applicable to all NFSA beneficiaries. Further, APL/BPL categorization were done away with under NFSA. Coverage under the Act was also delinked from the poverty estimates as it was substantially high to ensure that all the vulnerable and needy sections of the society get its benefit. While retaining the AAY category, the Act covers the rest of the beneficiaries as Priority Households. Moreover, build up of the foodgrain stocks much higher than their norms, increase in economic cost and real MSP and decline in sale realization due to decline in average Central Issue Price for APL households have contributed to the rise in food subsidy.

7.48 While the interests of the vulnerable sections of the population need to be safeguarded, the economic rationale of increasing the CIPs under NFSA also cannot be undermined. For sustainability of food security operations, the issue of burgeoning food subsidy bill needs to be addressed.

Figure 11: Food Subsidy Released and its Annual Growth



Source: Department of Food & Public Distribution
* as on 31.12.2019
Note-I: In Financial Year 2016-17, the total food subsidy released was ₹ 130672.96 crore which included NSSF loan of ₹ 25000 crore to FCI.
Note-II: In Financial Year 2017-18, the total food subsidy released was ₹ 139981.69 crore which included NSSF loan of ₹ 40000 crore to FCI.
Note-III: In Financial Year 2018-19, the total food subsidy released was ₹ 171127.49 crore which included NSSF loan of ₹ 70000 crore to FCI.

Storage

7.49 The storage capacity available with the FCI, a part of warehousing capacity available with the Central Warehousing Corporation (CWC) and State Warehousing Corporations (SWCs) and capacity hired from private sector are used for storage of foodgrains procured for central pool. The total capacity available with FCI and State Agencies for storage of foodgrains as on 30.11.2019 was 750.00 LMT, comprising covered godowns of 617.60 LMT and Cover and Plinth (CAP) facilities of 132.40 LMT. Out of the total available storage capacity of 750.00 LMT the capacity of 401.87 LMT was with FCI and 348.13 LMT with State Agencies. The stock of rice and wheat in the Central Pool on 01.12.2019 was 564.54 LMT.

7.50 Private Entrepreneurs Guarantee Scheme (PEG): To augment the existing storage capacity, construction of godowns has been undertaken in PPP mode in 22 States under Private Entrepreneurs Guarantee (PEG) Scheme through private sector as well as CWC and SWCs. As on 30.11.2019, a capacity of 143.53 LMT has been created under this scheme.

7.51 Central Sector Scheme (erstwhile Plan Scheme): This scheme is implemented in the North Eastern States along with a few other States. Funds from annual budgetary allocation are released by the Government of India to FCI and also to the State Governments for construction of godowns. A total capacity of 1,84,175 MT has been completed by FCI and State Governments during the 12th Five Year Plan (2012-17). This scheme has been extended from 01.04.2017 to 31.03.2022. A capacity of 49,425 MT has been created by FCI & State Governments from 01.04.2017 to 30.11.2019.

7.52 Construction of Steel Silos: Government of India has also approved an action plan for construction of steel silos in the country for a capacity of 100 LMT in Public Private Partnership (PPP) mode for modernizing storage infrastructure and improving shelf life of stored foodgrains. Against this, as on 31.12.2019, a total capacity of 7.25 LMT of silos has been completed.

7.53 Online Depot Management System (ODMS): FCI is implementing an Online Depot Management System (ODMS), also known as Depot Online System (DOS), to automate the entire process of depot operations including receipt of foodgrains at the depot, storage, maintenance activities and issue of foodgrains. It has inbuilt modules for inventory management, quality control, weighbridge integration, storage and transit losses management, gunny inventory etc. This helps in optimizing costs and improving functional efficiency of FCI at the depot level and preventing/ easily detecting any malpractices/lapses. As on 31.12.2019, Depot Online System (DOS) is operational at 533 depots of FCI. While in case of Central Warehousing Corporation (CWC), DOS was installed in 156 depots hired by FCI but 12 depots have since been de-hired. Presently, DOS is installed in all 144 depots of CWC hired by FCI. CWC has also completed roll out of its own Warehouse Management System (WMS) at all 380 warehouses which is proposed to be integrated with DOS.

WAY FORWARD

7.54 The realisation of the objective of doubling farmers' income necessitate addressal of some of the basic challenges of agriculture and allied sector. The issues such as investment in agriculture, water conservation, improved yields through better farming practices, access to market, availability of institutional credit, increasing

the linkages between agricultural and non-agricultural sectors, etc. need urgent attention. Allied sectors such as animal husbandry, dairying and fisheries sectors need to be given a boost to provide an assured secondary source of employment and income especially for the small and marginal farmers. Coverage of food processing sector needs to be scaled up to create an additional source of market for agricultural commodities.

7.55 As the proportion of small and marginal holdings is significantly large, land reform measures like freeing up land markets can help farmers in improving their income. Small holdings of India can be better harnessed through appropriate use of farm mechanisation as the degree of farm mechanisation is low as compared to the other major developing countries like Brazil and China. The coverage of irrigation facilities needs to be extended while ensuring an effective water conservation mechanism. An inclusive approach to provision for agricultural credit has to be undertaken to address the issue of skewness in its regional distribution.

7.56 While Government measures are in operation aimed at improving productivity and its marketing, efforts of farmers need to be supplemented with better coverage of direct income/investment support. There is a need to give increased focus on exploring global markets for agricultural commodities to give an additional source of market for the surplus of agricultural produce India currently has.

7.57 There is also a need to reallocate labour resources to other sectors. Though, the structural transformations involved a falling share of agriculture sector and rising share of services sector jobs, more needs to be done to create manufacturing jobs to absorb the large pool of workers.

7.58 Often, FCI stocks are way above buffer norms, which needs to be addressed in time. With a large share of poor people, maintaining food security is still a challenge. The rates fixed under the NFSA initially for a period of three years have not been revised since 2013, resulting in burgeoning food subsidy. The rates under NFSA and the coverage need to be revisited.

CHAPTER AT A GLANCE

- Proportion of Indian population depending directly or indirectly on agriculture for employment opportunities is more than that of any other sectors in India.
- The share of agriculture and allied sectors in the total GVA of the country has been continuously declining on account of relatively higher growth performance of non-agricultural sectors, a natural outcome of development process.
- GVA at constant (2011-12) prices for 2019-20 from 'Agriculture, Forestry and Fishing' sector is estimated to grow by 2.8 per cent.
- Agriculture Mechanization helps the Indian farming transform into commercial from the subsistence farming. The overall farm mechanization in India is about 40 per cent, which is lower compared to China (59.5 per cent) and Brazil (75 per cent).
- The regional distribution of agricultural credit in India shows a highly skewed pattern. It is seen that credit is low in North Eastern, Hilly and Eastern States. The share of North Eastern States has been less than one percent in total agricultural credit disbursement.
- Livestock income has become an important secondary source of income for millions of rural families and has assumed an important role in achieving the goal of doubling farmers' income. Livestock sector has been growing at a CAGR of 7.9 per cent during last five years.
- During the last 6 years ending 2017-18, Food Processing Industries sector has been growing at an Average Annual Growth Rate (AAGR) of around 5.06 per cent. The sector constituted as much as 8.83 per cent and 10.66 per cent of GVA in Manufacturing and Agriculture sector respectively in 2017-18 at 2011-12 prices.
- With the implementation of the National Food Security Act from July 2013, the food subsidy bill has increased from ₹ 113171.2 crore in 2014-15 to ₹ 171127.5 crore in 2018-19. While the interests of the vulnerable sections of the population need to be safeguarded, for sustainability of food security operations, the issue of burgeoning food subsidy bill needs to be addressed

08 CHAPTER

Industry and Infrastructure

The industrial sector based on Index of Industrial Production (IIP) registered a growth of 0.6 per cent for 2019-20 (April-November) as compared to 5.0 per cent during 2018-19 (April-November). Growth of manufacturing sector was 0.9 per cent during 2019-20 (April-November) as compared to 4.9 per cent during 2018-19 (April-November). Growth of refinery products sector stood at (-)1.1 per cent during 2019-20 (April-November) as compared to 5.3 per cent during 2018-19 (April-November). Steel sector achieved a growth of 5.2 per cent during 2019-20 (April-November) as compared to 3.6 per cent during 2018-19 (April-November). Government has initiated several policies in various infrastructure sectors to enhance their capacity and output. Report of the Task Force on National Infrastructure Pipeline released on 31.12.2019 has projected total infrastructure investment of ₹ 102 lakh crore during the period FY 2020 to 2025 in India.

INTRODUCTION

8.1 Industrial sector performance is critical to achieving the ambitious goal of making India a five-trillion economy. The sector plays a decisive role in determining the overall growth of national output and employment through its backward and forward linkages with the other two sectors of the economy. It contributes close to 30 per cent of total gross value added (GVA). The sector is, however, vulnerable to several internal and external economic challenges which affect its overall performance.

TRENDS IN INDUSTRIAL SECTOR

8.2 Industrial sector performance in terms of its contribution in GVA improved in 2018-19 over 2017-18. However, as per the estimates of Gross Domestic Product by National Statistical Office (NSO), the real GVA of industrial sector grew by 1.6 per cent in first half (H1) (April-September) of 2019-20, as compared to 8.2 per cent in H1 of 2018-19. The low growth in industrial sector is primarily due to manufacturing sector which registered a negative growth of 0.2 per cent in 2019-20 H1. Growth of real GVA at basic prices for industrial sector is given in Table 1.

Index of Industrial Production (IIP)

8.3 The IIP is a measure of industrial performance. It assigns a weight of 77.6 per cent to manufacturing followed by 14.4 per cent to mining and 8.0 per cent to electricity. Overall, IIP growth has moderated to 3.8 per cent in 2018-19 compared to 4.4 per cent in 2017-18. During the current year 2019-20 (April-November), it grew at 0.6 per cent as compared to 5.0 per cent in the corresponding period of previous year (Table 2). The moderation in growth is mainly arising from subdued manufacturing

activities due to slower credit flow to medium and small industries, reduced lending by NBFCs owing to liquidity crunch, tapering of domestic demand for key sectors such as automotive sector, pharmaceuticals, and machinery and equipment, volatility in international crude oil prices, prevailing trade related uncertainties, etc. Exports of key labour intensive sectors, such as gems & jewellery, basic metals, leather products and textile products under-performed during the current financial year.

Table 1: Growth rate of Gross Value Added (GVA) in Industry at Constant Prices (in per cent)

	Share in GVA*	2017-18	2018-19 (PE)	2019-20		2019-20 (1st AE)
				Q1	Q2	
Mining & Quarrying	2.4	5.1	1.3	2.7	0.1	1.5
Manufacturing	16.4	5.9	6.9	0.6	-1.0	2.0
Electricity, Gas, Water Supply & other Utility Services	2.8	8.6	7.0	8.6	3.6	5.4
Construction	8.0	5.6	8.7	5.7	3.3	3.2
Industry	**29.6**	**5.9**	**6.9**	**2.7**	**0.5**	**2.5**

Source: NSO
Note: * - Share in GVA is at current prices (2018-19), AE - Advance Estimate, PE- Provisional Estimate.

Table 2: Index of Industrial Production (IIP) Growth Rates (in per cent)

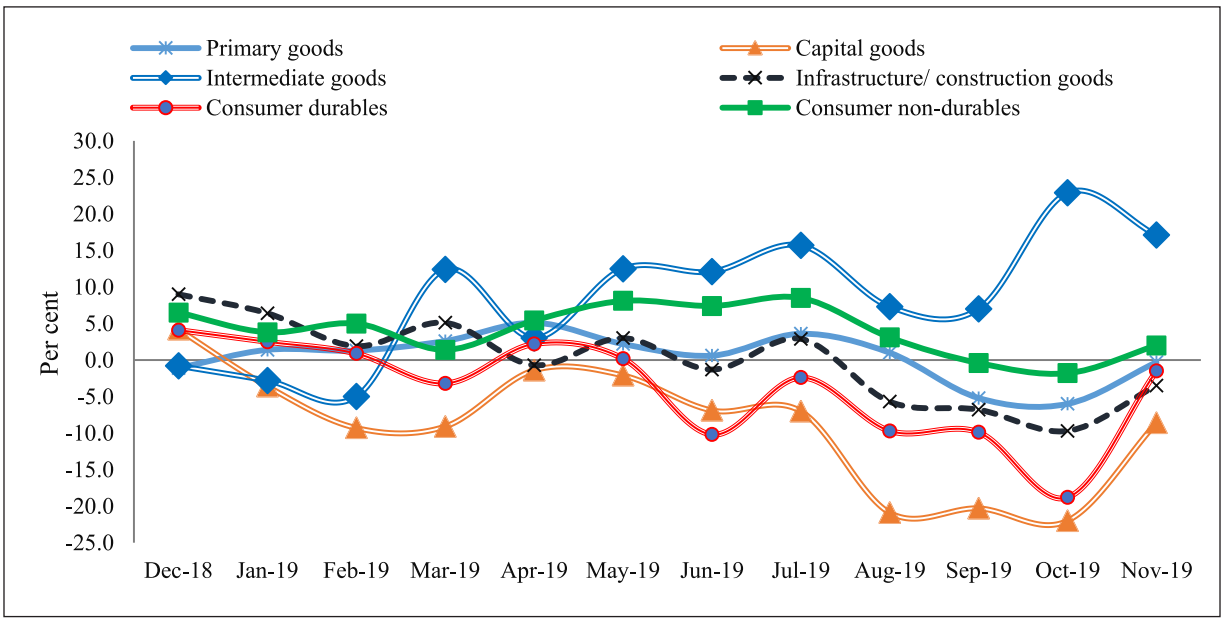
	Weight	2015-16	2016-17	2017-18	2018-19	2018-19 (April-November)	2019-20 (April-November)
General Index	100.0	3.3	4.6	4.4	3.8	5.0	0.6
Sectoral Classification							
Mining	14.4	4.3	5.3	2.3	2.9	3.7	-0.1
Manufacturing	77.6	2.8	4.4	4.6	3.9	4.9	0.9
Electricity	8.0	5.7	5.8	5.4	5.2	6.6	0.8
Use Based Classification							
Primary goods	34.0	5.0	4.9	3.7	3.5	4.8	0.1
Capital goods	8.2	3.0	3.2	4.0	2.7	7.2	-11.6
Intermediate goods	17.2	1.5	3.3	2.3	0.9	0.7	12.2
Infrastructure/ construction goods	12.3	2.8	3.9	5.6	7.3	8.3	-2.7
Consumer durables	12.8	3.4	2.9	0.8	5.5	7.8	-6.5
Consumer non-durables	15.3	2.6	7.9	10.6	4.0	4.0	3.9

Source: NSO.

8.4 As per the use-based classification of IIP, the growth of capital goods and consumer durables declined by 11.6 per cent and 6.5 per cent respectively during the current financial year 2019-20 (April-November). Consumer durables segment was hit mainly due to lack of demand from the household sector especially in Automobile industry.

The growth of infrastructure/ construction goods declined by 2.7 per cent in the current financial year 2019-20 (April-November). However, intermediate goods, consumer non-durable and primary goods registered a growth of 12.2 per cent, 3.9 per cent and 0.1 per cent, respectively, during 2019-20 (April-November) (Table 2). Figure 1 shows the monthly growth of IIP by use-based classification. Intermediate goods and consumer non-durable registered positive growth in November 2019, however, primary goods, capital goods, infrastructure/ construction goods and consumer durables reported negative growth in November 2019.

Figure 1: Monthly growth (in per cent) of IIP (Use based classification)



Source: NSO.

Eight Core Industries

8.5 The Index of Eight Core Industries measures the performance of eight core industries i.e., Coal, Crude Oil, Natural Gas, Refinery Products, Fertilizers, Steel, Cement and Electricity. The industries included in the Index of Eight Core Industries comprise 40.27 per cent weight in the Index of Industrial Production (IIP).

8.6 Growth of Eight Core Industries stood flat during the current financial year (April-November, 2019). During the corresponding period of the previous year, these industries grew at 5.1 per cent. While fertilizers, steel and electricity have seen expansion in their production, procuction of coal, crude oil, natural gas and refinery products have contracted during the current financial year (Table 3). Excessive rainfall during monsoon, law and order problem prevailing in mining areas and strike during September 2019 impacted the coal sector. Crude oil industry continued to show contractionary trend with a growth rate of (-) 5.9 per cent in 2019-20 (April-November) owing to operational issues like power shutdowns, electrical faults due to rains/winds/ thunderstorms, etc. Growth rate of 3 Months Moving Average Month-on-Month (M-o-M) of IIP, Eight Core Industries and Manufacturing sector from 2017-18 to 2019-20 shows that the three indicators move in tandem with some occasional deviation (Figure 2).

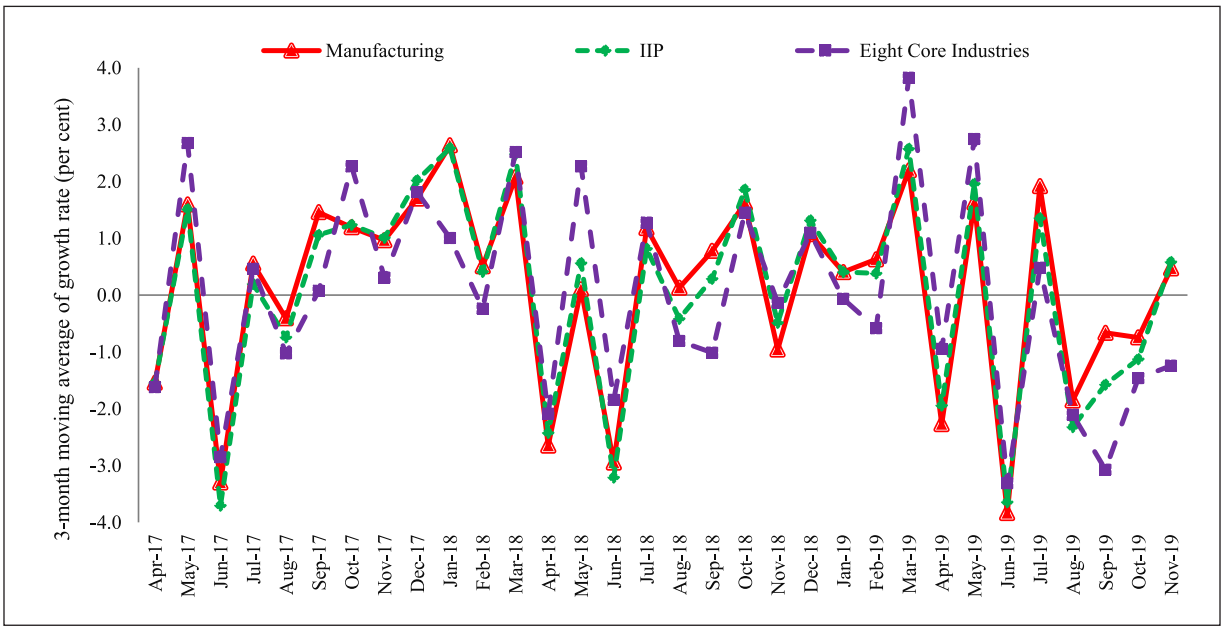
Table 3: Growth in the production of Eight Core Industries (in per cent)

Sector	Weight	2016-17	2017-18	2018-19	2018-19 (April-November)	2019-20 (April-November)
Coal	10.3	3.2	2.6	7.4	9.0	-5.3
Crude Oil	9.0	-2.5	-0.9	-4.1	-3.6	-5.9
Natural Gas	6.9	-1.0	2.9	0.8	-0.7	-3.1
Refinery Products	28.0	4.9	4.6	3.1	5.3	-1.1
Fertilizers	2.6	0.2	0.0	0.3	-1.3	4.0
Steel	17.9	10.7	5.6	5.1	3.6	5.2
Cement	5.4	-1.2	6.3	13.3	14.2	0.0
Electricity	19.9	5.8	5.3	5.2	6.6	0.7
Overall Index	**100**	**4.8**	**4.3**	**4.4**	**5.1**	**0.0**

Source: Office of the Economic Adviser, DPIIT

Note: The industry-wise weights indicated above are individual industry weight derived from IIP and blown up on pro-rata basis to a combined weight of Index of Eight Core Industries equal to 100.

Figure 2: Growth rate of 3 Months Moving Average Month-on-Month (M-o-M) of IIP, Eight Core Industries and Manufacturing sector from 2017-18 to 2019-20 (in per cent)



Source: Survey Calculation using Office of the Economic Adviser, DPIIT and NSO data.

Performance of Central Public Sector Enterprises (CPSEs)

8.7 As per the Department of Public Enterprises, there are 348 CPSEs as on 31.03.2019, of this, 249 are in operation, 86 CPSEs are yet to start commercial operations and 13 CPSEs are under closure/liquidation. Out of 249 operating CPSEs, as many as 178

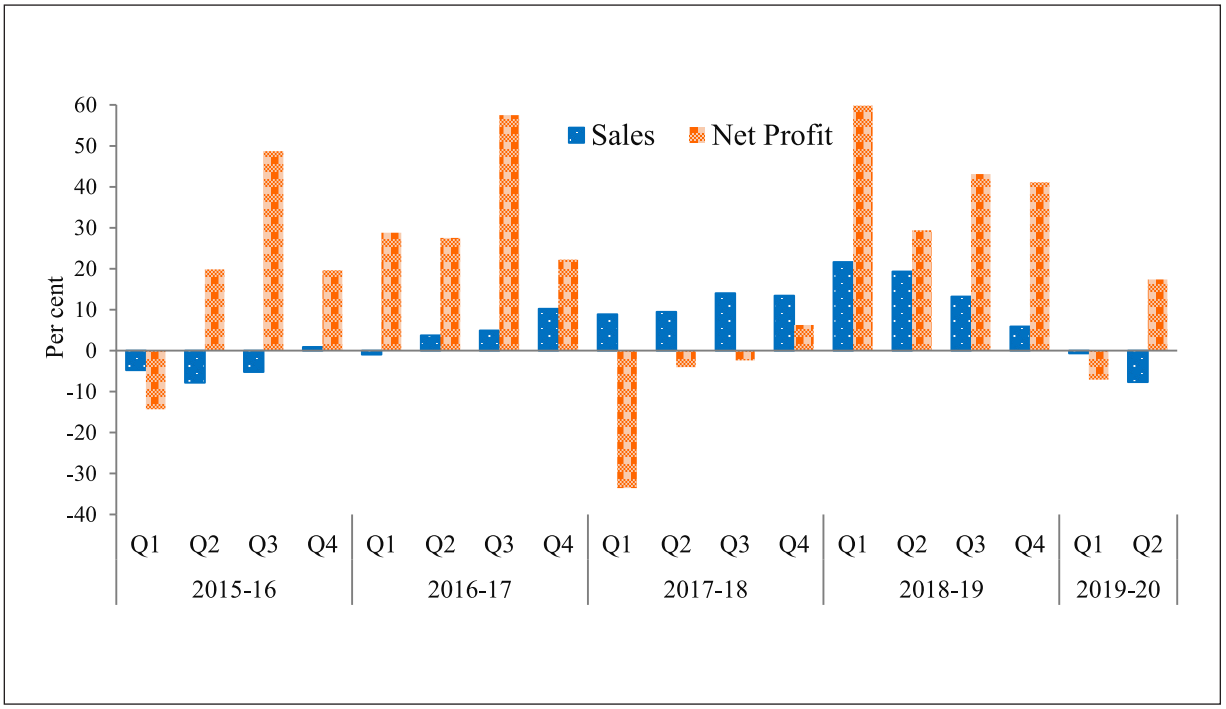
CPSEs showed profit during 2018-19, 70 CPSEs incurred losses during the year and 1 CPSE has shown neither profit nor loss. The total profit of profit making CPSEs (178) was ₹ 1.75 lakh crores in 2018-19. The total loss of loss making enterprises (70) stood at ₹ 31,635 crore during the year. The overall net profit of the 249 operating CPSEs went up by 15.52 per cent to ₹ 1.43 lakh crores in 2018-19 from ₹ 1.24 lakh crores in 2017-18. The contribution of CPSEs to the Central Exchequer increased by 4.67 per cent to ₹ 3.69 lakh crores in 2018-19 as against previous year of ₹ 3.52 lakh crores.

8.8 The cumulative investment (paid up capital plus long terms loans), which was ₹ 29 crores in 5 enterprises as on March 31, 1951, has gone up to ₹ 16.41 lakh crores in 335 CPSEs as on March 31, 2019. The increase in investment in all the CPSEs was 14.65 per cent in 2018-19 over 2017-18, and capital employed went up by 11.71 per cent over the same period.

Corporate Sector Performance

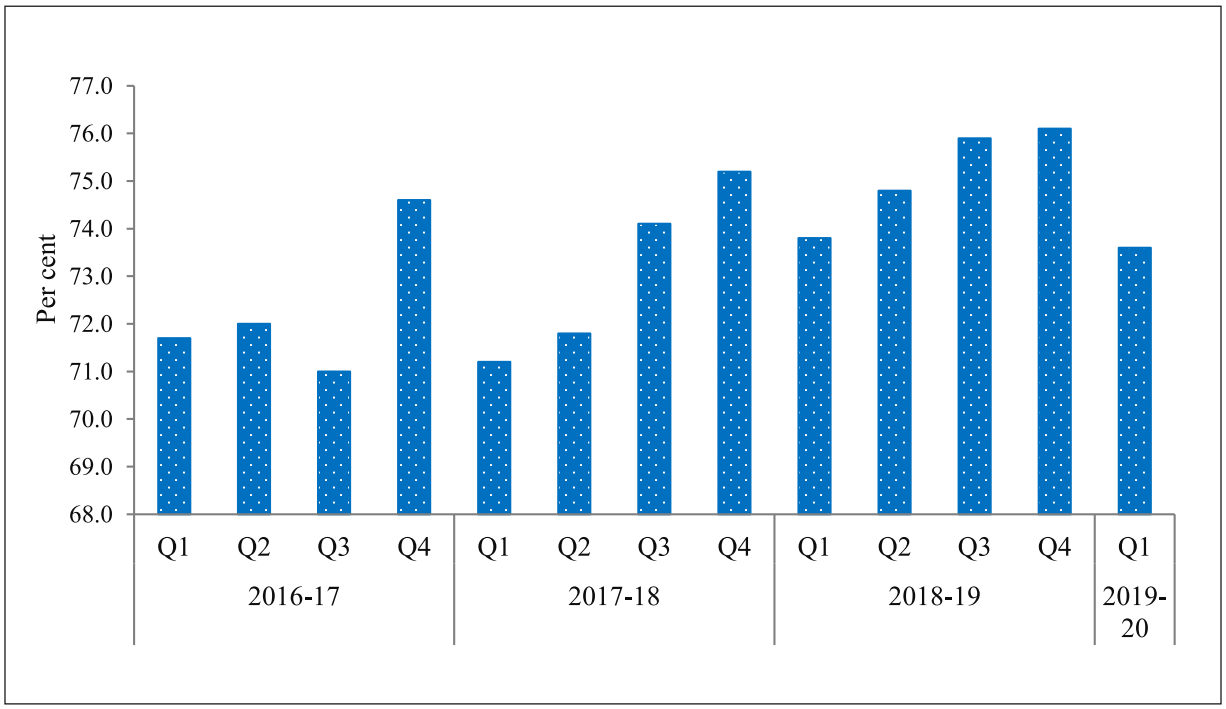
8.9 As per Reserve Bank of India (RBI) Studies on Corporate Performance, demand conditions for the manufacturing sector weakened in Q2 of 2019-20, with a contraction (y-o-y) in nominal sales. Petroleum products, iron and steel, motor vehicles and other transport equipment companies were the major contributors to slowdown. Sales growth (y-o-y) of over 1,700 listed private manufacturing companies contracted by 7.7 per cent in Q2 of 2019-20, after remaining in expansionary zone since Q2 of 2016-17. Net profit for the manufacturing sector contracted in Q1 of 2019-20, mainly due to a production slowdown. Net profit of corporate sector recovered in Q2 of 2019-20 and was 17.4 per cent (Figure 3). The capacity utilisation of India's manufacturing sector remains stable at 73.6 per cent in Q1 of 2019-20 as compared to 73.8 per cent in Q1 of 2018-19 (Figure 4).

Figure 3: Growth in sales and net profit of listed Manufacturing Companies in the Private Corporate Sector (in per cent)



Source: RBI.

Figure 4: Capacity utilisation of India's manufacturing sector (in per cent)



Source: RBI.

Gross Capital Formation in Industrial Sector

8.10 As per the data on national income, consumption expenditure, saving and capital formation released by NSO on January 31, 2019, the rate of growth of Gross Capital Formation (GCF) in industry has registered a sharp rise from (-) 0.7 per cent in 2016-17 to 7.6 per cent in 2017-18, showing upward momentum of investment in industry. Mining & Quarrying, Manufacturing, Electricity, Gas, Water Supply & Other Utility Services and Construction had registered a growth rate of 7.1 per cent, 8.0 per cent, 6.1 per cent and 8.4 per cent respectively in 2017-18 (Table 4).

Table 4: Growth rate of GCF by Industry (at 2011-12 constant prices) (in Per cent)

	2015-16*	2016-17#	2017-18@
Industry	11.1	-0.7	7.6
Mining & Quarrying	-19.6	16.4	7.1
Manufacturing	11.4	1.3	8.0
Electricity, Gas, Water Supply & Other Utility Services	22.4	-12.9	6.1
Construction	2.6	10.1	8.4

Source: NSO.

Note:* - Third Revised Estimates, # - Second Revised Estimates, @ - First Revised Estimates.

Credit Flow to the Industrial sector

8.11 Growth in gross bank credit flow to the industrial sector, on a year-on-year (y-o-y) basis, rose to 2.7 per cent in September 2019 as compared to 2.3 per cent in September 2018. Credit flow to industries like wood & wood products, all engineering, cement & cement

products, construction and infrastructure increased in September 2019 as compared to September 2018, while credit flow to mining & quarrying, textiles, petroleum, coal products & nuclear fuel, glass & glassware and basic metal & metal products contracted in the same period. Credit flow to industries like food processing, chemicals & chemical products, vehicles, vehicles parts & transport equipment registered lower growth in September 2019 as compared to September 2018 (Table 5).

Table 5: Growth of Industry-wise deployment of Gross Bank Credit (in Per cent) (Year-on-Year)

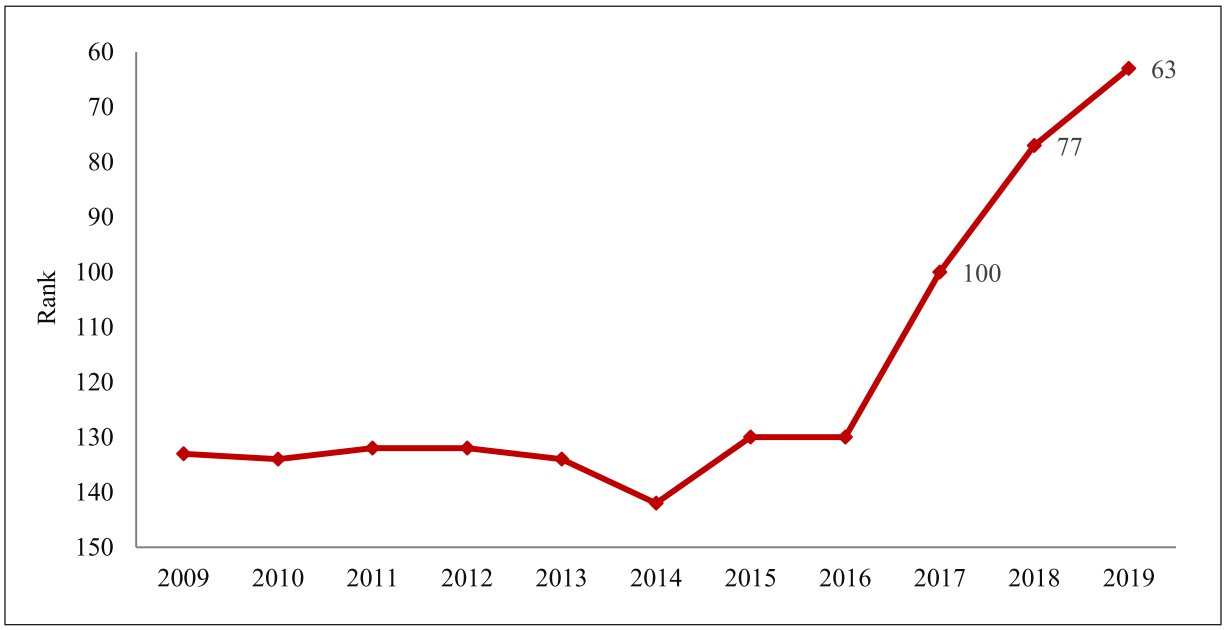
	March 2018	September 2018	March 2019	September 2019
Industry	0.7	2.3	6.9	2.7
Mining & Quarrying (incl. Coal)	19.7	29.8	1.1	-3.0
Food Processing	6.8	2.2	1.1	0.6
Textiles	6.9	1.3	-3.0	-5.7
Petroleum, Coal Products & Nuclear Fuels	9.4	18.5	-3.1	-4.2
Wood & Wood Products	3.3	6.4	10.2	7.1
Chemicals & Chemical Products	-5.5	11.7	17.5	2.6
Glass & Glassware	6.5	30.3	17.0	-8.0
All Engineering	3.8	3.8	8.6	4.4
Cement & Cement Products	-3.1	-10.4	5.9	17.5
Basic Metal & Metal Product	-1.2	-7.9	-10.7	-7.9
Vehicles, Vehicle Parts & Transport Equipment	7.0	9.1	1.4	6.9
Construction	9.5	8.7	10.4	10.5
Infrastructure	-1.7	4.7	18.5	7.2
Other Industries	**4.2**	**-1.8**	**6.8**	**7.4**

Source: RBI.

Ease of Doing Business

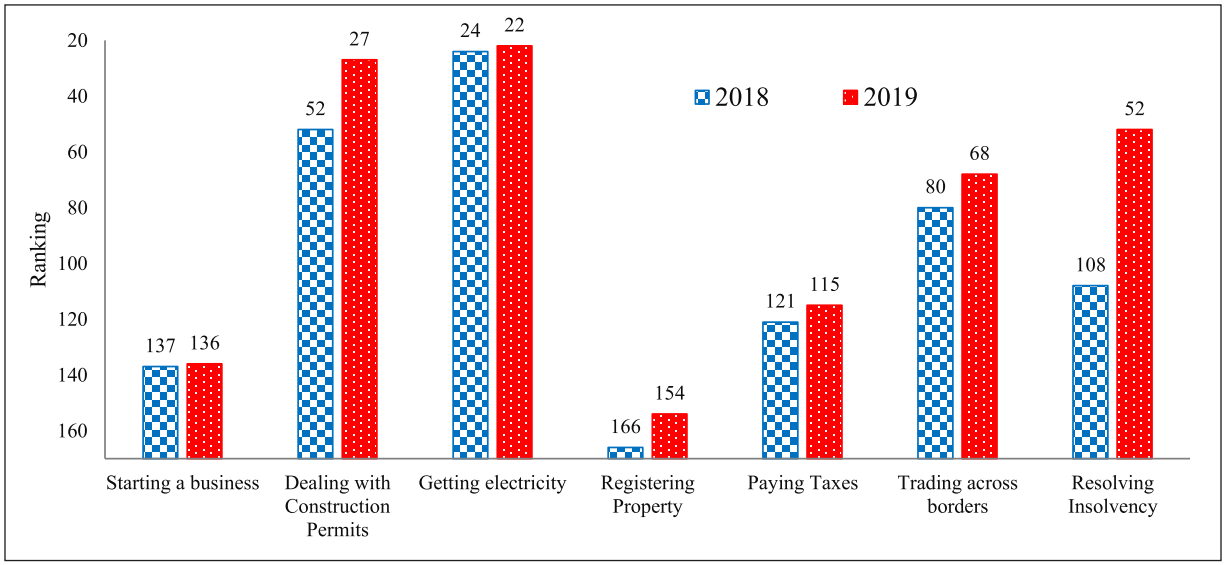
8.12 Government of India has taken several industry specific reform initiatives since 2014 that have significantly improved the overall business environment. In order to improve ease of doing business, the emphasis has been on simplification and rationalization of the existing rules and introduction of information technology to make governance more efficient and effective. The improvement in the business environment as a result of these reforms is reflected in India's considerably improved ranking to 63rd position among the 190 countries in the World Bank's Doing Business 2020 Report. This is a jump of 14 ranks over its previous rank of 77 (Figure 5). The ranking is based on 10 indicators which span the life-cycle of a business. India has improved its rank in 7 out of 10 indicators and has moved closer to international best practices (Figure 6).

Figure 5: India's ranking in World Bank Ease of Doing Business Reports



Source: World Bank.

Figure 6: India's Progress in Ease of Doing Business Reports Rankings



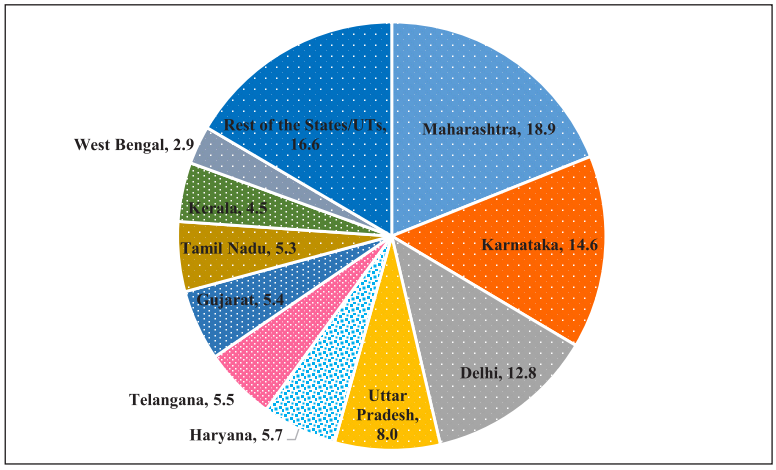
Source: World Bank.

Start-up India

8.13 Startups drive economic growth, create employment and foster a culture of innovation. In order to promote innovation and entrepreneurship among enterprising youth, the Hon'ble Prime Minister of India had announced the "Startup India, Stand-up India" initiative on August 15, 2015. The initiative aims to create an ecosystem that is conductive for the growth of startups. A plan comprising 19 action points was unveiled on January 16, 2016. As on January 8, 2020, 27,084 startups were recognized across 551 districts, 55 per cent of which are from Tier I cities , 45 per cent from Tier II and Tier III cities. 43 per cent of recognized startups have at least one woman director. Steps have

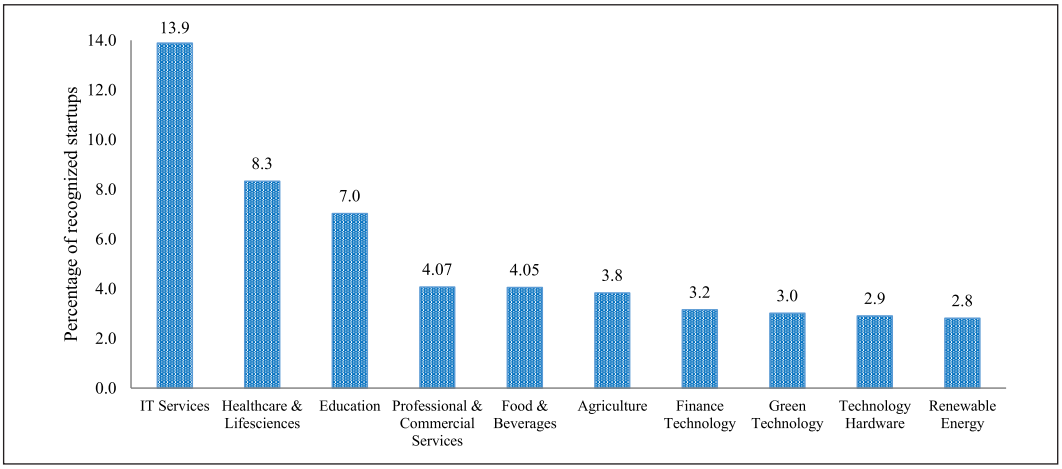
been taken for easing regulations such as exemptions from Income tax on investments raised by startups; implementation of 32 regulatory reforms to improve Ease of Doing Business for startups; self-certification regime for six labour laws and three environmental laws; and Startup India Hub as 'One Stop Shop' for the startup ecosystem in which 3,67,773 users have availed free Startup India learning Program to build business plans, etc. Maharashtra, Karnataka and Delhi are the top three performers in terms of State-wise distribution of recognized startups in India (Figure 7). As per industry-wise distribution of recognized startups, IT Services accounted for 13.9 per cent followed by Healthcare and Life Sciences (8.3 per cent) and education (7.0 per cent) (Figure 8).

Figure 7: Major State-wise distribution of recognized startups in India (in per cent)



Source: DPIIT.

Figure 8: Major Industry-wise distribution of recognized startups in India (in per cent)



Source: DPIIT.

Foreign Direct Investment (FDI)

8.14 FDI is a major driver of economic growth as it enhances productivity by bringing capital, skills and technology to the host country. The Government is playing a proactive role in investment promotion through a liberal FDI policy. During 2019-20 (up to September, 2019), total FDI Equity inflows were US$26.10 billion as compared to US$22.66 billion during 2018-19 (up to September, 2019). Out of FDI Equity inflows

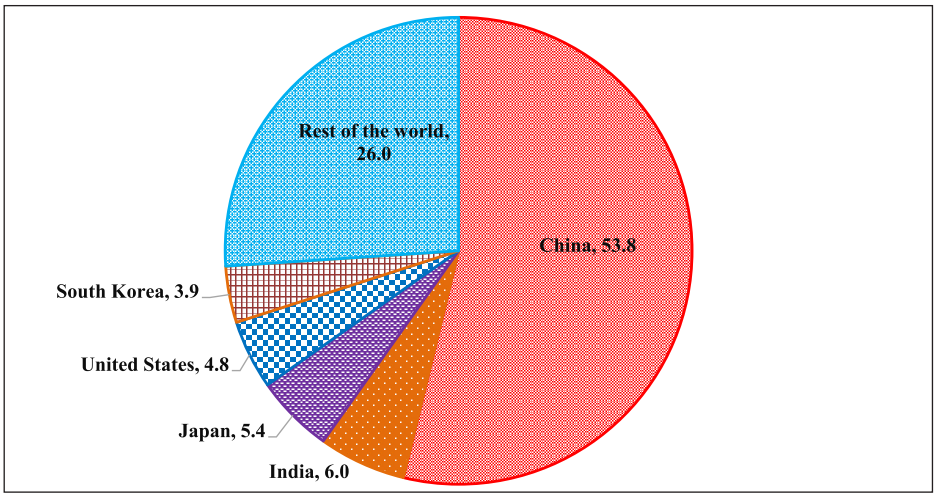
of US$26.10 billion during 2019-20 (up to September, 2019), nearly 80 per cent have come mainly from Singapore, Mauritius, Netherlands, USA and Japan.

SECTOR WISE ISSUES AND INITIATIVES

Steel

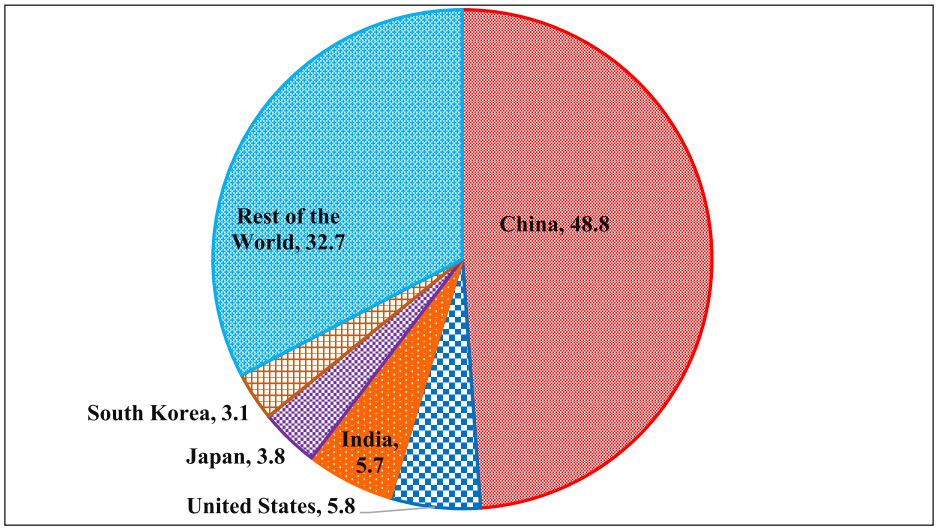
8.15 India stood at second position in the production of crude steel (Figure 9). It is also the third largest consumer of the finished steel after China and USA (Figure 10). However, its per capita consumption was only 74.1 kg during 2018-19 (Figure 11). During 2018-19, India produced 109.2 MT of crude steel and in the current financial year (FY) till October 2019, crude steel production was 64.3 MT, displaying a growth of 1.5 per cent over corresponding period of last year with utilisation capacity of 77.4 per cent. Similarly production of finished steel was 137.2 MT in 2018-19 and 59.73 MT during April-October 2019 (Figure 12).

Figure 9: Country wise share of Crude steel production for 2019 (January-November) (in per cent)



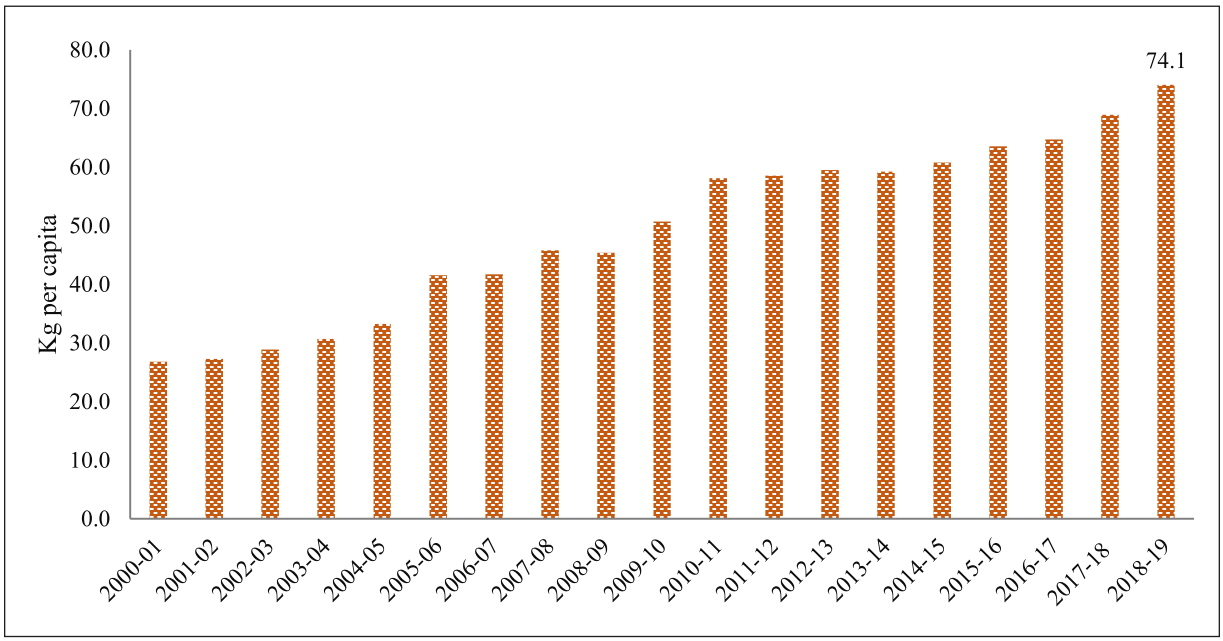
Source: World Steel Association.

Figure 10: Consumption of finished steel (in per cent) for 2018



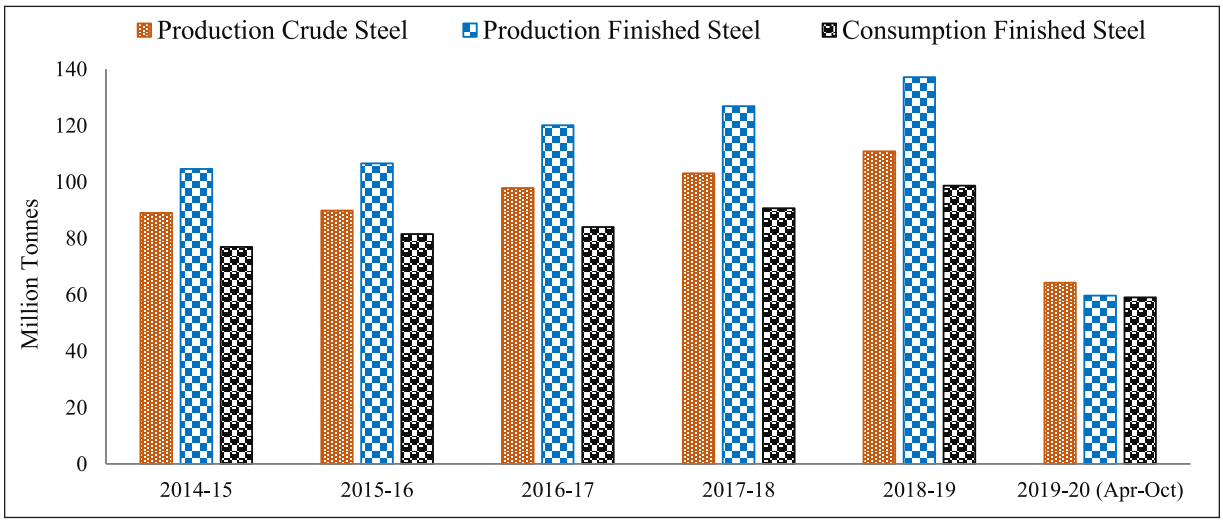
Source: World Steel Association.

Figure 11: Per capita consumption of total finished steel (Kg) for India



Source: Joint Plant Committee.

Figure 12: Production & Consumption of finished steel (Million Tonnes)

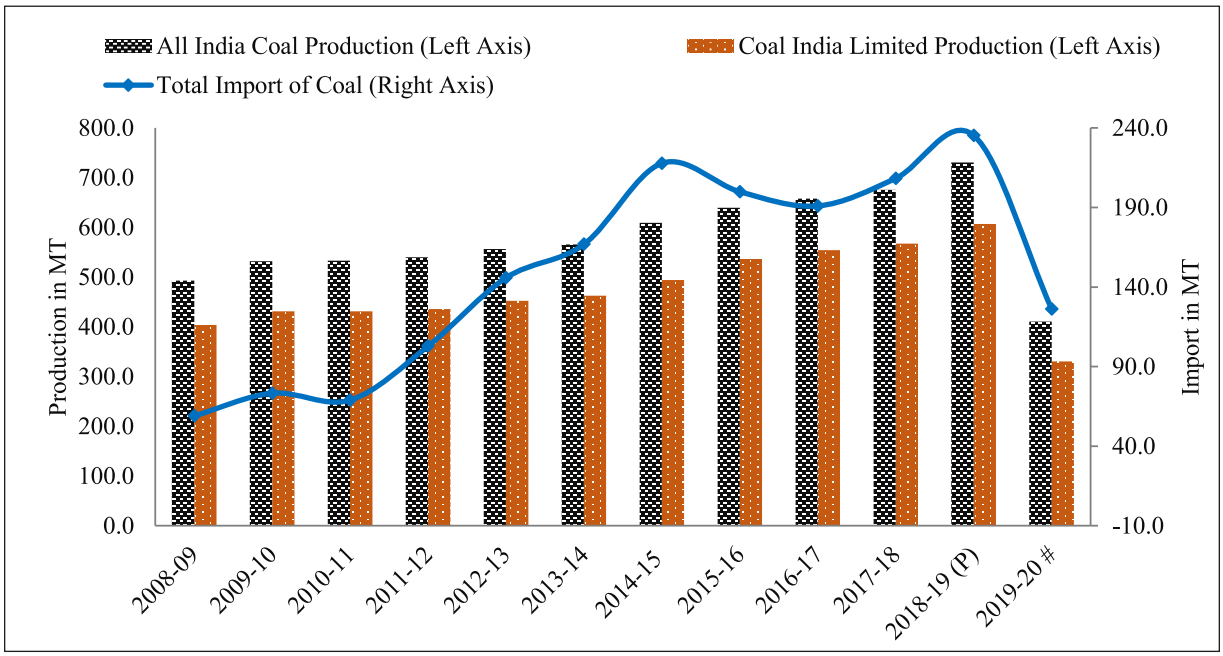


Source: Ministry of Steel.

Coal

8.16 Overall production of raw coal in India during the year 2018-19 was 730.4 million tonnes (MT) displaying a growth of 8.1 per cent. In the current year 2019-20 (April-November), all India coal production was 410.5 MT with a growth rate of (-) 5.3 per cent which is attributable to heavy and unseasonal rains. It is notable that during the first quarter coal production registered a positive growth and then took a dip when the rains set in. The gap between demand and supply of coal in the country is currently being met through coal imports by consuming sectors. As per available data (from Directorate General of Commercial Intelligence and Statistics), 126.20 MT of coal was imported during April 2019 to September 2019 (Figure 13).

Figure 13: Production and import of Coal in India (in million tonnes)



Source: Ministry of Coal.

Note: (P)- Provisional; #-Production figures upto November 2019 and import figures upto September 2019.

Micro, Small & Medium Enterprises (MSME)

8.17 Micro, Small & Medium Enterprises (MSMEs) contribute significantly in the economic and social development of the country by fostering entrepreneurship and generating largest employment opportunities at comparatively lower capital cost, next only to agriculture. Government is committed to supporting this critically important sector for better credit flow, technology upgradation, ease of doing business and market access. On 2nd November 2018, Hon'ble Prime Minister made 12 key announcements for faster growth of this sector and for promoting ease of doing business. These initiatives alongwith their status are given in Table 6.

Table 6: Status of key initiatives for faster growth of MSMEs and promoting ease of doing business.

S.N.	Initiative	Status
1	In-principle approval for loans up to ₹ 1 crore within 59 minutes through online portal.	1,59,422 number of loans, involving ₹ 49,330 crore have been sanctioned and 1,38,646 number of loans, involving ₹ 37,106 crore have been disbursed (up to October 2019).
2	Interest subvention of 2 per cent for all GST registered MSMEs on incremental credit up to ₹ 1 crore.	SIDBI has received and settled the claims of ₹ 18 crore from 43 Banks/NBFCs for the period (02.11.2018 – 31.03.2019).
3	All companies with a turnover of more than ₹ 500 crore to be mandatorily on TReDS platform to enable entrepreneurs to access credit from banks, based on their upcoming receivables.	There were 1881 non-compliant Companies, out of these 1881 non-compliant Companies identified by Ministry of Corporate Affairs for taking action, so far 329 companies have registered themselves on the TReDS portal.

4	All CPSUs to compulsorily procure at least 25 per cent from MSEs instead of 20 per cent of their total purchases.	During 2019-20 (up to October 2019), CPSUs have procured goods and services worth ₹ 15,936.39 crore from 59,903 MSEs and that is 28.26 per cent of the total procurement by CPSUs during the same period.
5	Out of the 25 per cent procurement mandated from MSEs, 3 per cent reserved for women entrepreneurs.	During 2019-20 (up to October 2019) procurement from 1471 women MSEs is of ₹ 242.12 crore and that is 0.43 per cent of the total procurement.
6	All CPSUs to compulsorily procure through GeM portal.	258 CPSUs/CPSBs have been on boarded/ registered on GeM portal post 02.11.2018. Total 57,351 MSE Sellers & Service providers registered on GeM portal and 50.30 per cent of orders value on GeM portal is from MSEs.
7	20 Technology Centers (TCs) and 100 Extension Centers (ECs) to be established at the cost of ₹ 6,000 crore.	Till date, six locations have been identified for TCs, RFP issued for PMC for 20 TCs, DPRs of 20 ECs approved and ₹ 99.30 crore are released. 10 more ECs planned in FY 2019-20.
8	Government of India to bear 70 per cent of the cost for establishing Pharma clusters.	Four districts viz. Solan (Baddi), Indore, Aurangabad and Pune were selected for assisting pharma clusters for developing common facilities. In principle approval was granted for the proposal from Pune on 31.01.2019.
9	Returns under 8 labour laws and 10 Union regulations to be filed once in a year.	All regional Heads were advised to vigorously reach out to the employers in their region to make them aware about the facility of filing Online Unified Annual Return on Shram Suvidha Portal under 8 Labour Laws and 10 Central Rules.
10	Establishments to be visited by an Inspector will be decided through a computerized random allotment.	Total 3080 inspections have been conducted which were assigned through computerized random allotment system and all inspection reports have been uploaded on Shram Suvidha Portal.
11	Single consent under air and water pollution laws. Returns will be accepted through self-certification and only 10 percent MSME units to be inspected.	All the operations were stayed by Hon'ble High court of Delhi. As of now the matter is sub-judice.
12	For minor violations under the Companies Act, entrepreneurs no longer have to approach court but can correct them through simple procedures.	So far action has been taken against two companies which fall in the category of MSME by imposition of penalty instead of filing case in the court as per Ordinance/Amendment Act.

Source: Ministry of Micro, Small and Medium Enterprises

Textile and Apparels

8.18 Textiles contributed 18.0 per cent of manufacturing and 2.0 per cent of GDP in 2017-18. The share of textiles and clothing in India's total exports was 12 per cent in 2018-19. The sector is the biggest employer after agriculture and it employs 4.5 crore people directly and 6 crore people in allied sectors. Estimated man-made fibre and filament yarn production increased by 4 per cent and 8 per cent, respectively, during April-August

2019. Estimated cloth production by mill sector declined by about 4 per cent during April-August 2019 (Table 7). Exports of textile and clothing products including handicrafts from India have increased to US$40.4 billion in 2018-19 from US$ 39.2 billion in 2017-18 registering a growth of 3 per cent (Table 8).

Table 7: Estimated Production of man-made fibre, filament yarn, spun yarn and cloth

Period	Man-made fibre	Man-made filament yarn	Cotton yarn	Blended & 100% Non-cotton yarn	Total Spun Yarn	Cloth		
						Mill sector *	Decen-tralized sector**	Grand Total (Excluding Khadi, Wool & Silk)
	Kg	Kg	Kg	Kg	Kg	Sq. mtr	Sq. mtr	Sq. mtr
2015-16	1347	1164	4138	1527	5665	2315	62269	64584
2016-17	1364	1159	4055	1604	5659	2264	61216	63480
2017-18	1319	1187	4064	1616	5680	2157	64688	66845
2018-19	1443	1159	4182	1680	5862	2012	68034	70046
2018-19#	603	476	1758	695	2453	873	27938	28811
2019-20 (P)#	629	512	1677	710	2387	837	28209	29046
Variation 2019-20 Over 2018-19 (per cent)#	4.3	7.6	-4.6	2.2	-2.7	-4.1	1.0	0.8

Source: Ministry of Textiles.
Note: (P) - Provisional, *- Based on statistical data received from units, ** - Based on set of conversion ratio of yarn to fabric, #- (April-August).

Table 8: Exports of textile and clothing products including handicrafts from India (Million US$)

	2015-16	2016-17	2017-18	2018-19
Textile & Apparel	35,995	35,372	35,666	36,627
Handicrafts	3,293	3,639	3,573	3,804
Total textile & clothing including Handicrafts	39,288	39,011	39,239	40,431
India's overall exports	2,62,290	2,75,852	3,03,376	3,29,536
Share of textile & clothing exports in overall exports (in per cent)	15	14	13	12

Source: Ministry of Textiles.

INFRASTRUCTURE

8.19 It is well-accepted that investment in infrastructure is necessary for growth. Power shortages lead to dependence on expensive captive power, which in turn impels high costs and lack of competitiveness for the economy. Inadequate transport infrastructure leads to bottlenecks both in the supply of raw materials as well as movement of finished goods to the marketplace. The price that farmers get for their produce is depressed if there is no connectivity through good quality rural roads, which in turn keeps rural incomes depressed negating the fruits of high overall growth performance. For all these reasons, provision of adequate infrastructure is essential for growth and for making growth inclusive. India recently launched the National Infrastructure Pipeline for the period FY 2020-2025 (Box 1).

Box 1: National Infrastructure Pipeline 2020-2025

Investment in Infrastructure is necessary for growth. To achieve the GDP of $5 trillion by 2024-25, India needs to spend about $1.4 trillion (₹ 100 lakh crore) over these years on infrastructure. The challenge is to step-up annual infrastructure investment so that lack of infrastructure does not become a binding constraint to the growth of the Indian economy. To implement an infrastructure program of this scale, it is important that projects are adequately prepared and launched.

To draw up the National Infrastructure Pipeline (NIP) for each of the years from FY 2019-20 to FY 2024-25, an inter-ministerial Task Force was set up in September 2019 under the chairmanship of Secretary (DEA), Ministry of Finance.

NIP is expected to enable well-prepared infrastructure projects which will create jobs, improve ease of living, and provide equitable access to infrastructure for all, thereby making growth more inclusive. NIP also intends to facilitate supply side interventions in infrastructure development to boost short-term as well as the potential GDP growth. Improved infrastructure capacities will also drive competitiveness of the Indian economy.

The Finance Minister released the Report of the Task Force on National Infrastructure Pipeline (abridged version) on 31.12.2019. The NIP has projected total infrastructure investment of ₹ 102 lakh crore during the period FY 2020 to 2025 in India. Energy (24 per cent), Roads (19 per cent), Urban (16 per cent), and Railways (13 per cent) amount to over 70 per cent of the projected capital expenditure during the said period.

As per the NIP, Central Government (39 per cent) and State Government (39 per cent) are expected to have equal share in funding of the projects followed by the Private Sector (22 per cent). It is expected that private sector share may increase to 30 per cent by 2025. Out of the total expected capital expenditure of ₹ 102 lakh crore, projects worth ₹ 42.7 lakh crore (42 per cent) are under implementation, projects worth ₹ 32.7 lakh crore (32 per cent) are in conceptualization stage and rest are under development. Hence about two-thirds of the pipeline is already firmed up. It is also expected that projects of certain states would be added to the pipeline in due course. The sector wise break-up of NIP projects is as follows:

Ministry/ Department	FY 20-25 (Amount in ₹ Crore)
Power	11,75,995
Renewable Energy	9,29,500
Atomic Energy	1,54,088

Petroleum and Natural Gas	1,94,666
Total Energy	**2,454,249**
Roads	19,63,943
Railways	13,68,523
Ports	1,00,923
Airports	1,43,398
Urban (AMRUT, SMART Cities, MRTS, Affordable Housing, Jal Jeevan Mission)	16,29,012
Telecommunication	3,20,498
Irrigation	7,72,678
Rural Infrastructure	
Rural Infrastructure	4,10,955
Water and Sanitation	3,61,810
Total Rural Infrastructure	**7,72,765**
Agriculture Infrastructure	54,298
Food Processing Industries	1,255
Food and Public Distribution	5,000
Total Agriculture & Food Processing Infrastructure	**60,553**
Higher Education	1,18,348
School Education	37,791
Health and Family Welfare	1,68,622
Sports	7618
Tourism	24,321
Total Social Infrastructure	**3,56,701**
Industries and Internal Trade	2,99,237
Steel	8,2-25
Total Industrial Infrastructure	**3,07,462**
Total (₹ crore)	**102,50,704#**

Note: #- As on 31.12.2019. Subject to change as more data becomes available.

The Task Force has given its recommendations on required changes to several key sectoral policies and other reform initiatives by the Central and State Governments such as developing a robust bond market for infrastructure companies, speedy resolution of infrastructure disputes, optimal risk sharing through better and balanced PPP contracts, and sanctity and enforceability of contracts.

The NIP captures the infrastructure vision of the country for the period FY20-25. This is the first-ever exercise undertaken in the country. However, it is recognized that financing of the National Infrastructure Pipeline would be a challenge. It is hoped that a bouquet of well-prepared projects would attract investment from Central and State Governments, Urban Local Bodies, Banks and Financial Institution, PE funds, and private investors, both local and foreign.

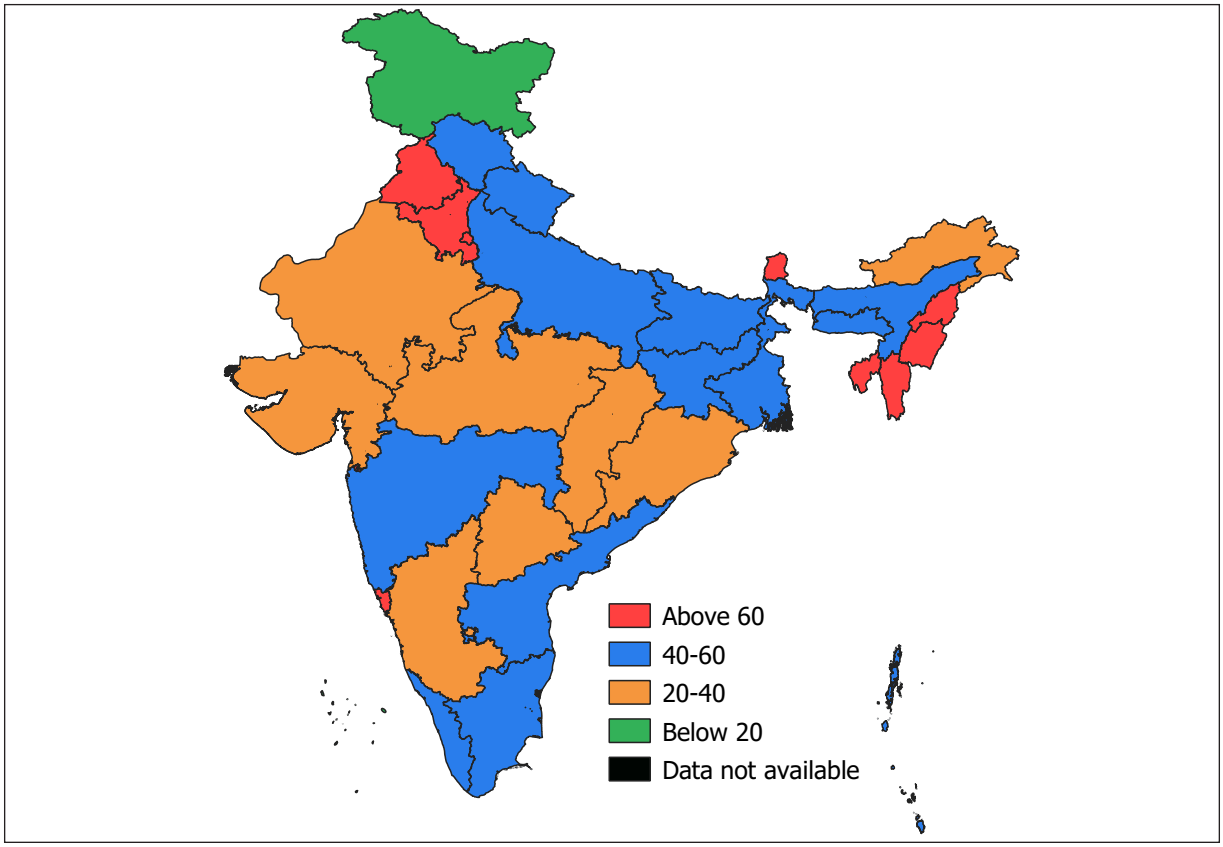
SECTORAL DEVELOPMENTS

Road Sector

8.20 Road transport is the dominant mode of transportation in terms of its contribution to Gross Value Added (GVA) and traffic share. The share of transport sector in the GVA for 2017-18 was about 4.77 per cent of which the share of road transport is the largest at 3.06 per cent, followed by the share of the Railways (0.75 per cent), air transport (0.15 per cent) and water transport (0.06 per cent). Similarly, as per the National Transport Development Policy Committee Report, as of 2011-12, road transport is estimated to handle 69 per cent and 90 per cent of the countrywide freight and passenger traffic, respectively. The Ministry of Road Transport & Highways (MoRTH) is mandated with the development and maintenance of road networks especially the National Highways as well as the implementation of the Motor Vehicle Act under which it formulates broad policies relating to road transport.

8.21 Road Network in the Country: A good road network is an essential requirement for the rapid growth of the economy. Roads provide connectivity to remote areas, open up backward regions and facilitate access to markets, trade and investment. Roads should not be looked at in isolation, but as part of an integrated multi-modal transport system, which provides crucial links with airports, railway stations, ports and other logistical hubs. As on 31.3.2018, India had a road network of about 59.64 lakh km. The total length of National Highways was 1.32 lakh km as on March 1, 2019. Its State-wise density is given in Map 1. The pace at which roads

Map 1: State/ UT-wise density of National Highways (NH) as on 01.03.2019 (in Kms per 1,000 SQ Km of Area)



Source: NHAI website.

have been constructed has grown significantly from 17 kms per day in 2015-16 to 29.7 kms per day in 2018-19. However, the pace seems to have moderated in 2019-20 (Table 9).

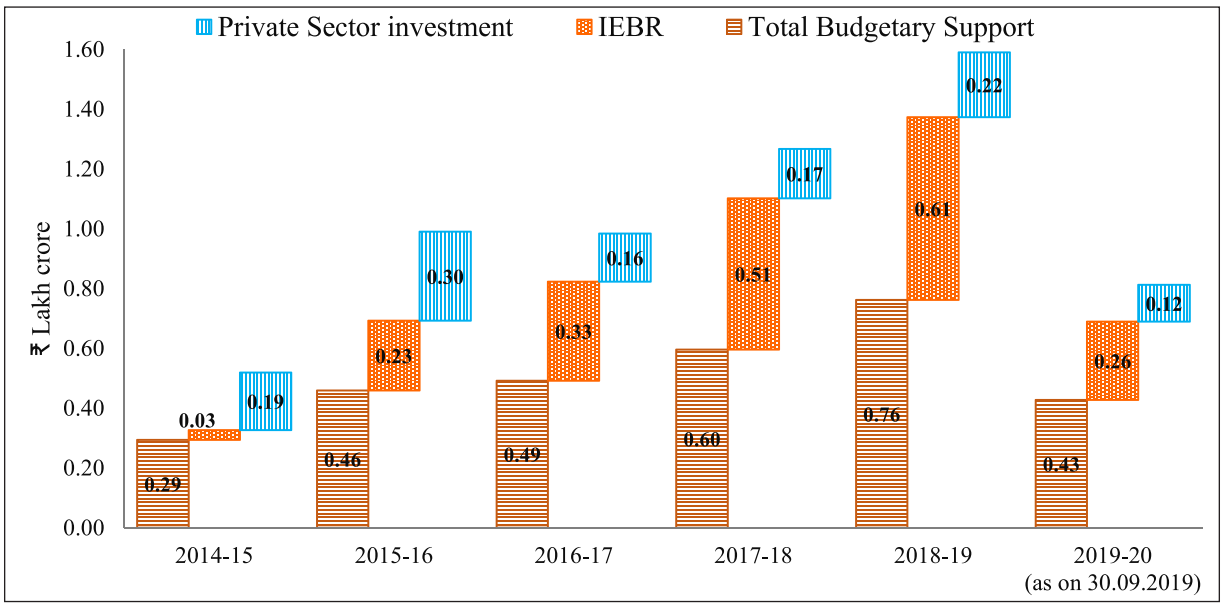
8.22 Total investment in the Roads and Highway sector has gone up more than three times in five year period of 2014-15 to 2018-19 (Figure 14).

Table 9: Road Length Awarded & Constructed (Length in km)

	2015-16	2016-17	2017-18	2018-19	2019-20 #
Award of NHs/Road projects	10,098	15,948	17,054	5,494	2,103
Construction of NHs/Roads	6,061	8,231	9,829	10,855	4,622
Road construction per day	17	23	27	29.65	12.7

Source: MoRTH.
Note: # - As on 30.09.2019.

Figure 14: Investment in Road Sector (in ₹ Lakh crore)



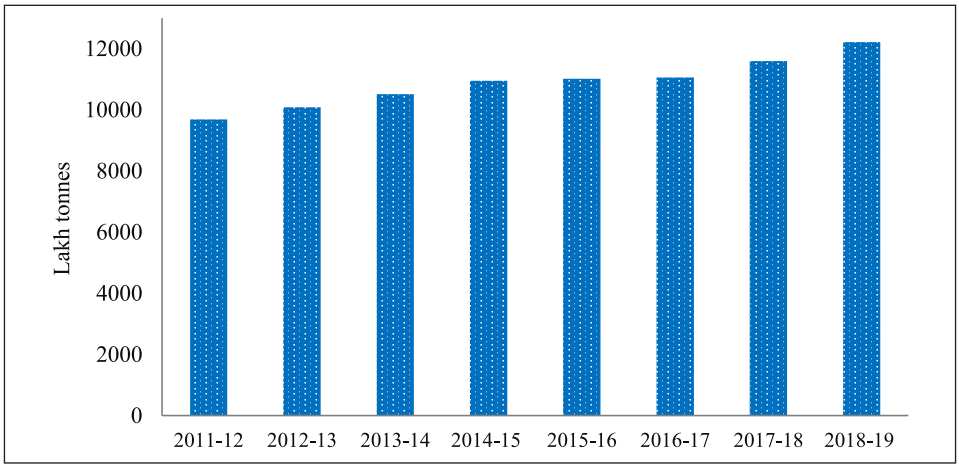
Source: MoRTH, Note: IEBR - Internal and Extra Budgetary Resources.

Railways

8.23 Indian Railways (IR) with over 68,000 route kms is the third largest network in the world under single management. During the year 2018-19, Indian Railways carried 120 crore tonnes of freight and 840 crore passengers making it the world's largest passenger carrier and 4th largest freight carrier. Revenue Earning Freight loading by IR during 2018-19 was 12,215 lakh tonnes as against 11,596 lakh tonnes during 2017-18, registering an increase of 5.34 per cent (Figure 15). Passengers originating was 84,390 lakh in 2018-19 as compared to 82,858 lakh in 2017-18, registering an increase of 1.85 per cent in 2018-19 over the previous year (Figure 16).

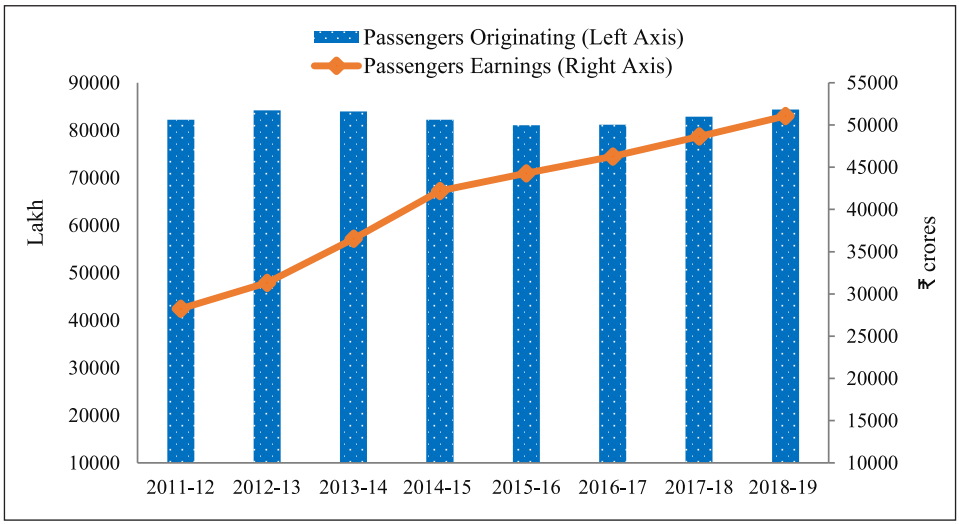
8.24 Rail Safety: Safety is accorded the highest priority by Indian Railways and steps are being undertaken on a continuous basis to prevent accidents and to enhance safety of the passengers. During 2018-19, consequential train accidents decreased from 73 to 59 in comparison to the corresponding period of the previous year. In the year 2019-20 (April - October 2019), 41 consequential train accidents have occurred (Table 10).

Figure 15: Revenue Earning Freight loading Originating traffic (lakh tonnes) (excluding loading by Konkan Railways)



Source: Ministry of Railways.

Figure 16: Passengers originating (in lakh) and Passengers Earnings ₹ Crores) (includes Metro Railway/ Kolkata)



Source: Ministry of Railways.

Table 10: Rate of occurrence of rail accidents

Type of Accident	2016-17	2017-18	2018-19	2019-20 (April to October)
Collision	5	3	0	3
Derailments	78	54	46	29
Manned Level Crossing Accidents	0	3	3	1
Unmanned Level Crossing Accidents	20	10	3	0
Fire in Trains	1	3	6	7
Miscellaneous	0	0	1	1
Total	104	73	59	41

Source: Ministry of Railways.

8.25 Cleanliness and environmental Initiatives by Indian Railway: Indian Railways cover over 8,700 stations and carry around 230 lakh passengers daily with clientele of varied socio-economic backgrounds. Cleanliness is a continuous process and every endeavour is made to keep the stations and coaches in properly maintained and clean condition. Special Cleanliness Campaigns under Swachh Bharat Abhiyan were launched by Indian Railways on October 2, 2014. Regular intensive campaigns/drives have been organized since then by the Indian Railways with the sole objective to achieve significant and sustainable improvements in cleanliness standards. Progress made under Swachh Rail, Swachh Bharat is given in Table 11.

Table 11: Progress of Swachh Rail, Swachh Bharat

Activity	Status as on 31.03.2015	Status as on 31.03.2019	Status as on 31.10.2019
Bio-toilets in passenger Coaches (Numbers)	19,746	1,95,917	2,26,000
Mechanized cleaning contracts at Stations	584 stations	890 stations	940 stations
Plastic bottle crushing machines	Nil	128 stations	215 stations
Rag picking contracts	877 stations	1,280 stations	1,300 stations
Dustbins	Provided at some stations only	Provided at all major stations	Provided (separate for dry/wet waste) at all major stations
EMS(Environment Management System) (ISO: 14001) certification of Railway Stations	Nil	8 stations	75 stations
Funds allocated for station sanitation (₹ crore.)	294	643	643

Source: Ministry of Railways.

8.26 Modernization of stations: Modernization/upgradation of Railway stations in Indian Railways is a continuous and on-going process. 1,253 stations have been identified for development under Adarsh Station Scheme and are planned to be developed by 2019-20. A dedicated SPV, Indian Railway Station Development Corporation (IRSDC) Limited has been set up to carry out modernization of railway stations. IRSDC is working on modernization of many stations on PPP mode.

Civil Aviation

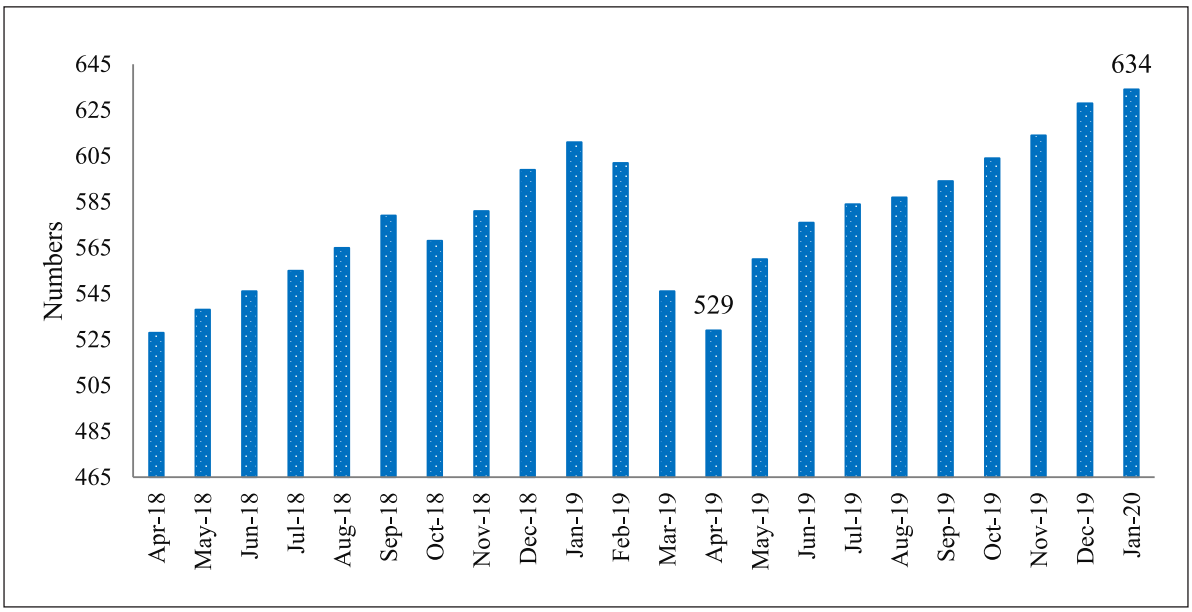
8.27 India is the third largest domestic market for civil aviation in the world. India has 136 commercially-managed airports by Airports Authority of India (AAI) and 6 under Public-Private Partnerships (PPP) for Operation, Maintenance and Development of airports. The airline operators in India have scaled up their aircraft seat capacity from an estimated 0.07 annual seats per capita in 2013 to 0.12 in 2018. The comparable estimates for China, the second largest domestic market in the world, over this period were 0.33 in 2013 and 0.49 in 2018, while those of the United States of America, the largest domestic market, were 2.59 in 2013 and 2.95 in 2018.

8.28 Indian aviation re-established its resilience in the year 2019-20. Despite a large

airline suspending operations on April 17, 2019, the sector swiftly sprung back to fill the void created in passenger and air cargo capacity (Figure 17). The trends in total passenger (domestic and international) and air cargo handled at airports are depicted in Figure 18 and 19, respectively. Capacity utilization is also being augmented by way of automation at airports. Overall objective is to meet the growing demand and set global best practices and performance quality standards. A total of 43 airports have been operationalized since the scheme for operationalizing unserved airports (Udan) was taken up, of which 4 were done in FY 2019-20. On airport connectivity, India stood first along with 7 others (USA, China, Japan, UK, etc.) in the Global Competitiveness Report 2019 of World Economic Forum.

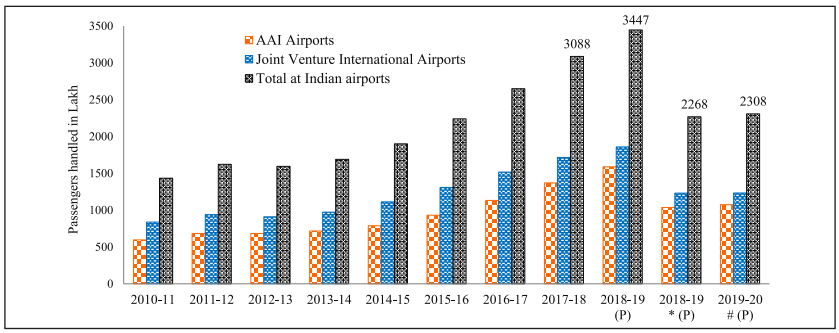
8.29 To ease the strain on existing airport capacities, 100 more airports are to be made operational by FY 2023-24 (Figure 20). Besides using 46 idle airstrips, 16 private greenfield airports, 15 AAI airports, 31 heliports, and 12 waterdromes would be developed. To bring in efficiency and resources, six airports (Ahmedabad, Guwahati, Jaipur, Lucknow, Mangalore, and Thiruvananthapuram) have been taken up for development under PPP mode. Five new greenfield airports [Durgapur (West Bengal), Shirdi (Maharashtra), Pakyong (Sikkim), and Kannur (Kerala) and Kalaburagi/ Gulbarga (Karnataka)] were successfully operationalized this year. To continue with the high growth trajectory, the Government has been providing a congenial environment so that the Indian carriers double their fleet from about 680 aircraft (number of aircrafts endorsed on Scheduled Airlines) at the close of November 2019 to over 1,200 by FY 2023-24. This would be achieved by easing leasing and financing from Indian shores in conformance with the provisions of the Cape Town Convention and Protocol on Aircraft Equipment, efficient use of air traffic rights, encouraging domestic and international passenger and goods transfers, and rationalizing the tax regime.

Figure 17: India's Scheduled Operational Commercial Fleet (in Numbers)



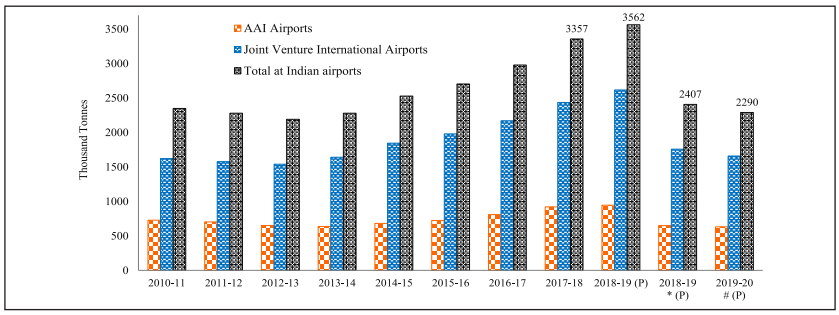
Source: Ministry of Civil Aviation.

Figure 18: Passengers handled by Indian Airports (in lakh)



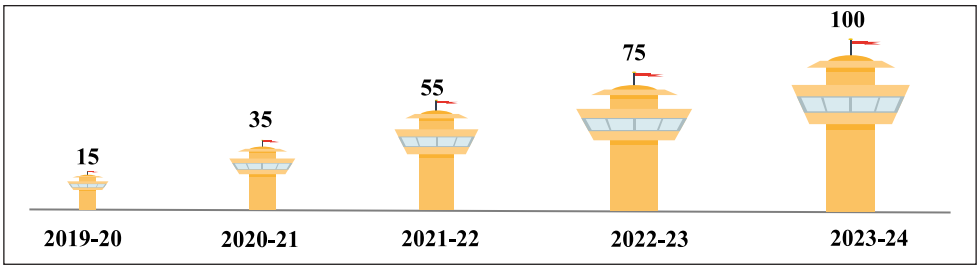
Source: Ministry of Civil Aviation.
Note: (P) - Provisional, * - (April to November 2018), # - (April to November 2019)

Figure 19: Cargo handled by Indian Airports (in thousand tonnes)



Source: Ministry of Civil Aviation.
Note: (P) - Provisional, * - (April to November 2018), # - (April to November 2019)

Figure 20: Additional Airport Capacity to be Developed (cumulative number of airports)



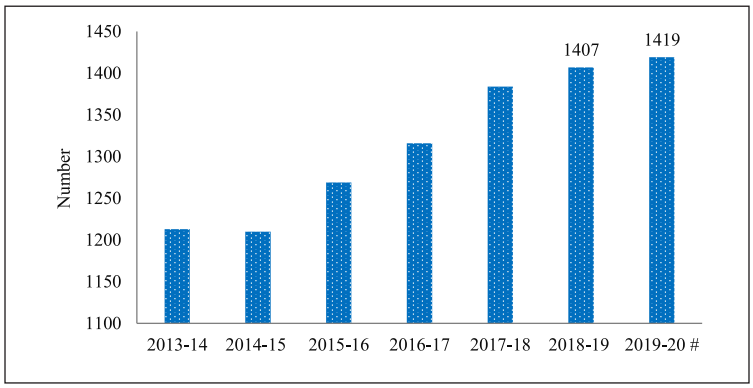
Source: Ministry of Civil Aviation.

Shipping

8.30 Shipping is essential to both commodity and services trade of any country. Around 95 per cent of India's trade by volume and 68 per cent in terms of value is transported by sea. The performance of the global shipping industry is generally mirrored by Indian shipping. India's shipping tonnage was only 1.92 lakh Gross Tonnage (GT) on the eve of independence. It increased gradually thereafter, but was practically stagnant at around 70 lakh GT till the beginning of 2004-05. However, the tonnage tax regime introduced by the Government of India in that year boosted the growth of the Indian fleet as well as its tonnage. However, it is an undeniable fact that the after-effects of the global economic downturn are still having negative effect on the global shipping industry in general and Indian Shipping industry in particular.

8.31 As on 30th September, 2019, India had a fleet strength of 1,419 ships (Figure 21). Despite one of the largest merchant shipping fleet among developing countries, India's share in total world dead weight tonnage (DWT) is only 0.9 per cent as on January 1, 2019 according to Institute of Shipping Economics and Logistics. The existing Indian fleet is also aging, with the average age increasing from 15 years in 1999 to 19.71 years as on October 1, 2019 (42.06 per cent of the fleet is 21 years and above and 12.49 per cent is in the 16 to 20 year age group).

Figure 21: Fleet strength of ships (in number)



Source: Ministry of Shipping.
Note: # - As on 30 September 2019

8.32 Ports Sector: The Major Ports in the country have an installed capacity of 1,514.09 MTPA as in March, 2019 and handled traffic of 699.09 MT during 2018-19. While increasing the capacity of major ports, Ministry of Shipping has been striving to improve the operational efficiencies through mechanization, digitization and process simplification. As a result key efficiency parameters have improved considerably. The Average Turnaround Time in 2018-19 improved to 59.51 Hrs as against 64.43 Hrs in 2017-18. The Average Output Per Ship Berthday has increased from 15,333 Tonnes in 2017-18 to 16541 Tonnes in 2018-19 (Table 12).

Table 12: Performance Indicators of Major Ports in India

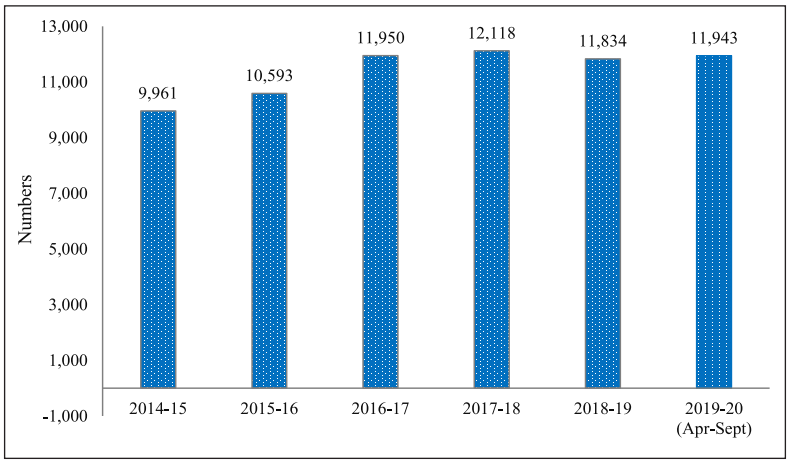
Indicators	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20 (upto September, 2019)
Traffic Handled (in MMT)	545.79	555.49	581.34	606.47	648.4	679.37	699.09	348.45
Average Turn Around Time (in Hrs)	101.76	93.6	96	87.36	82.32	64.32	59.51	64.69
Average Output per-ship per berth day (in tonnes)	11800	12468	12458	13156	14576	15333	16541	16014
Operating surplus ₹ Crore)	1807.43	2518.9	3599.4	4296.56	4979.58	5856.33	6424.36	Not Available

Source: Ministry of Shipping.

Telecom Sector

8.33 Total telephone connections in India grew by 18.8 per cent from 9,961 lakh in 2014-2015 to 11,834 lakh in 2018-19. As on 30 September 2019, the total subscription stood at 11,943 lakh (Figure 22) of which 5,147 lakh connections were in the rural areas and 6,796 lakh in the urban areas. Landline telephone connections were at 206 lakh while the number of wireless telephone connections stood at 11,736 lakh at the end of September 2019. The wireless telephony now constitutes 98.27 per cent of all subscriptions whereas share of landline telephones now stands at only 1.73 per cent. The overall tele-density in India stands at 90.45 per cent, the rural tele-density being 57.35 per cent and urban teledensity being 160.71 per cent at the end of September 2019. The private sector dominates with a share of 88.81 per cent (10,606 lakh connections) at the end of September, 2019 while the share of public sector was 11.19 per cent (1,336 lakh connections).

Figure 22: Total telephone connections from 2014-15 to 2019-20 (April-September) (in lakh)



Source: Department of Telecommunication.

8.34 Internet and broadband penetration in India has kept a rapid pace. The number of internet subscribers (both broadband and narrowband put together) stood at 6,653 lakh at the end of June 2019 as compared to 2,516 lakh in 2014. The number of mobile internet subscribers was 6,436 lakh at the end of June 2019 while the number of wireline internet subscribers was 217 lakh. Total broadband connections increased by about ten times, from 610 lakh in 2014 to 5,946 lakh in June 2019. This has accelerated the growth in internet traffic, with data usage touching the highest ever level of 462 lakh terabytes in the year 2018. India is now the global leader in monthly data consumption, with average consumption per subscriber per month increasing 157 times from 62 MB in 2014 to 9.8 GB in June 2019. The cost of data has also reduced substantially, enabling affordable internet access for millions of citizens.

8.35 Challenges: There are 4 major players in the sector - 3 in the private sector and BSNL & MTNL in the public sector, operating in mutually exclusive zones. Since 2016, the sector has witnessed substantial competition and price cutting by the Telecom Service Providers (TSPs) creating financial stress in the sector. As a result, the sector is experiencing consolidation. While some operators have filed for bankruptcy, others have merged, in their quest to improve viability. The price of data in the country is among the lowest in the world. For the quarter ending June

2019, the price of data was ₹ 7.7 per GB as compared to ₹ 200 per GB in June 2016. The Average Revenue Per User (ARPU) for GSM based mobile services has also gone down substantially from ₹ 126 in June 2016 to ₹ 74.30 in June 2019.

8.36 BSNL and MTNL are also affected by the tariff war that has impacted their cash flow resulting in mounting losses. The Government has drawn up a plan to revive these PSUs. The revival plan consists of several measures including reduction of staff cost through Voluntary Retirement Scheme, allotment of spectrum for 4G services, monetization of land/building, tower and fiber assets of BSNL/MTNL, debt restructuring through sovereign guarantee bonds and 'in-principle' approval for merger of BSNL and MTNL.

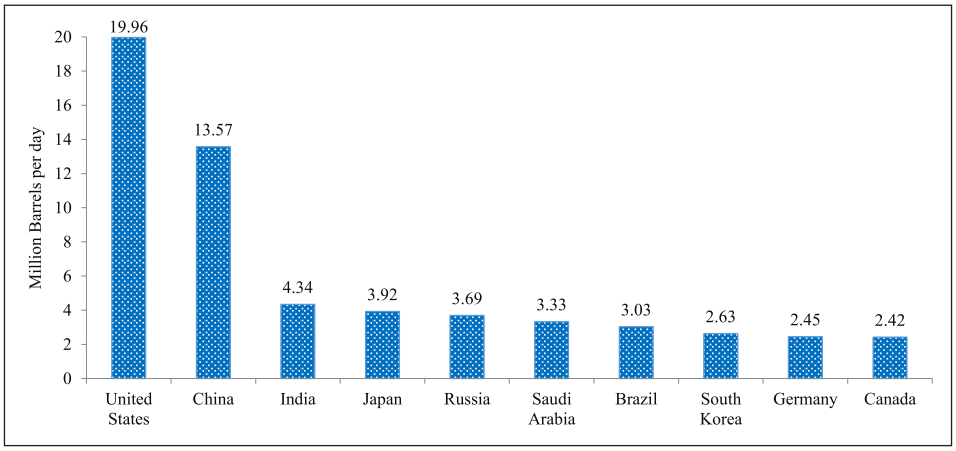
Telecom Infrastructure and Connectivity

8.37 (i) BharatNet: For achieving the goal of developing broadband highways as part of the Digital India campaign, the Government is implementing the flagship BharatNet Programme in a phased manner for providing broadband connectivity to all the 2.5 lakh Gram Panchayats (GPs) in the country. The project envisages an optimal mix of optical fibre, radio and satellite media. The broadband infrastructures created under the project would be available to all categories of service providers on non-discriminatory basis. (ii) Public Wi-Fi Access: Public Wi-Fi hotspots ensure last-mile delivery of broadband to users and are much easier to scale than adding new mobile towers. (iii) Towers and BTS: The number of Mobile Base Transceiver Stations (BTS) has seen a rise from 7.9 lakh in 2014 to 21.8 lakh (in July 2019) while Optical Fibre Cable has increased from 7 lakh km to around 14 lakh km during the period. (iv) Project for Left Wing Extremism (LWE) Areas and North East Region: The Department of Telecom executed a project for providing Mobile Services in 2,335 locations in Andhra Pradesh, Bihar, Chhattisgarh, Jharkhand, Maharashtra, Madhya Pradesh, Odisha, Telangana, Uttar Pradesh and West Bengal, which are affected by Left Wing Extremism (LWE) with an outlay of ₹ 4,781 crores.

Petroleum and Natural Gas

8.38 India is the third largest energy consumer in the world after USA and China (Figure 23). With a share of 5.8 per cent of the world's primary energy consumption, India's energy requirement is fulfilled primarily by Coal,

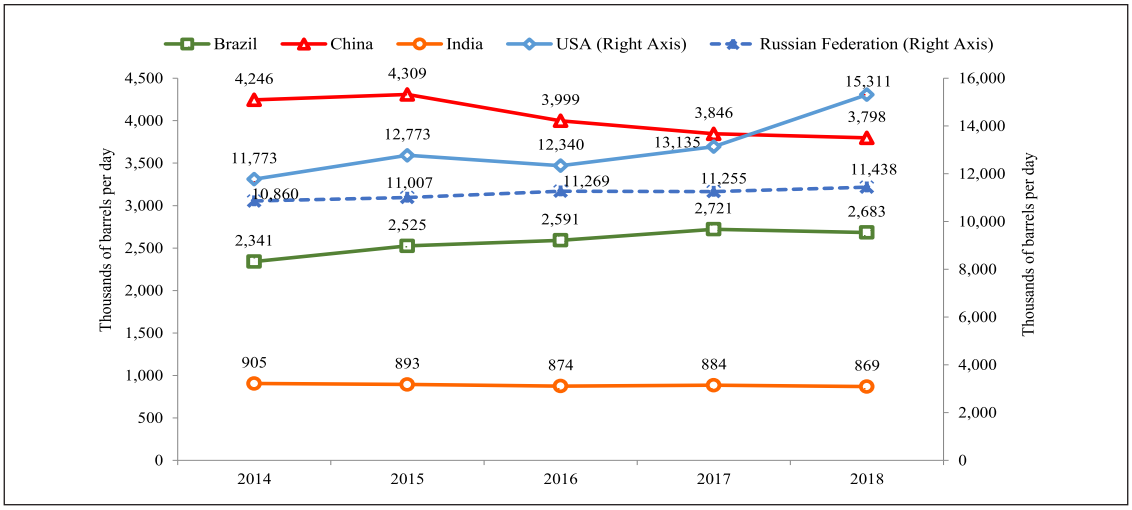
Figure 23: Top 10 Oil consumers of World in 2017



Source: US Energy Information Administration.

Note: Oil includes crude oil, all other petroleum liquids, and biofuels.

Figure 24: Trends of Oil Production of Major Economies



Source: BP Statistical Review of World Energy 2019.

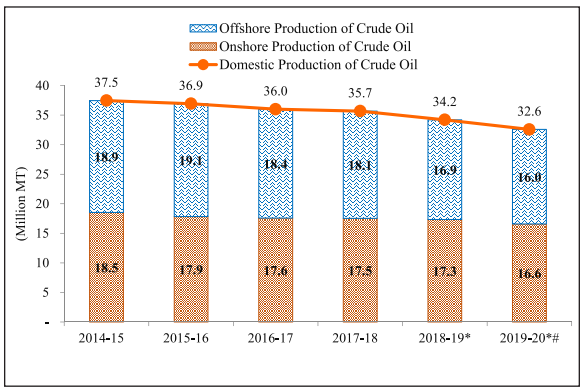
Note: Oil Production Includes crude oil, shale oil, oil sands, condensates and Natural Gas Liquids (NGLs).

Crude Oil, Renewable Energy and Natural Gas. However, India's oil production is one of the lowest among the major economies of the world and has been declining over a period of time (Figure 24).

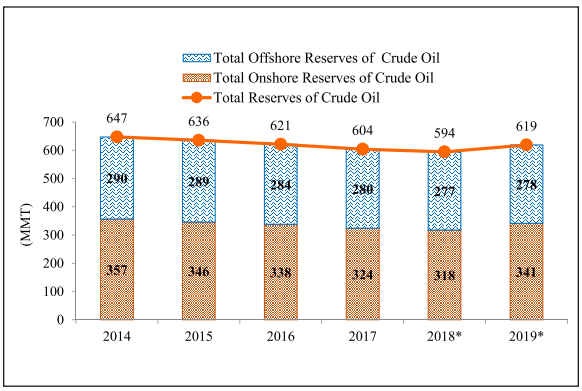
8.39 During 2019-20, the domestic crude oil production is estimated to be 32.6 MMT (Economic Survey calculations). Figure 25(a) shows the trends in crude oil production that has witnessed a secular decline since 2014-15 with corresponding fall in onshore as well as offshore crude oil production. The reduction in crude oil production may be attributed to natural decline in ageing and matured fields and no major discoveries. It is worthwhile to note that the proven reserves of crude oil have decreased concurrently since 2014, with the steeper fall in onshore reserves (Figure 25(b)). However, the decline in reserves till 2018 has seen a reversal in 2019, with reserves rising from 594 MMT in 2018 to 619 MMT in 2019.

Figure 25: Onshore and Offshore Production and Reserves$ of Crude Oil

(a) Production of Crude Oil



(b) Reserves of Crude Oil



Source: Ministry of Petroleum and Natural Gas and Economic Survey calculations.

Note: *- Provisional.

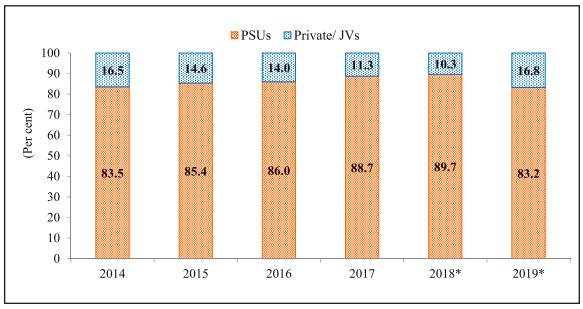
#- The crude oil production for 2019-20 is estimated on the basis of figures available for 2019-20 (April-November).

$- The reserves are as on 1st April of the year.

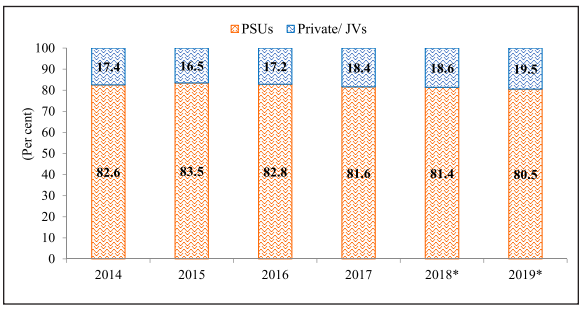
8.40 The surge in reserves of crude oil in 2019 is accompanied by corresponding increase in onshore and offshore reserves, with onshore reserves rising at a steeper rate. This may be the result of the major reforms undertaken by Ministry of Petroleum and Natural Gas in exploration and licensing policy to enhance exploration activities, attract domestic and foreign investment and accelerate domestic production of oil and gas from existing fields. It can be seen from Figure 26(a) that the share of private/ joint ventures in onshore crude oil reserves were falling till 2018, but has seen an uptick in 2019. In case of offshore reserves of crude oil, the participation of private sector is steadily rising, with the share of private/ JVs reaching to 19.5 per cent in 2019 (Figure 26(b)).

Figure 26: Share of PSUs and Private/ Joint Ventures (JVs) in Reserves$ of Crude Oil

(a): Onshore reserves



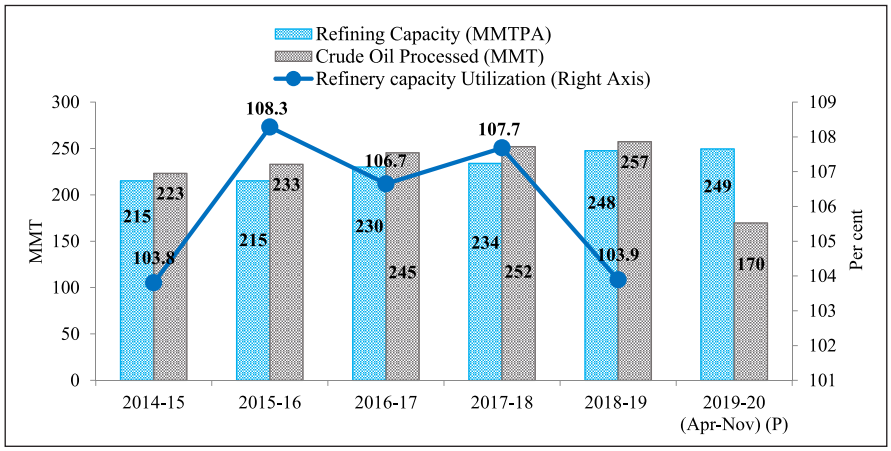
(b): Offshore reserves



Source: Ministry of Petroleum and Natural Gas.
Note: *- Provisional.
$- The reserves are as on 1st April of the year.

8.41 India with a refining capacity of 249.4 MMTPA is the fourth largest in the world after the United States, China and Russia. Refinery capacity increased from 234.0 MMT in 2017-18 to 247.6 MMT in 2018-19, while Crude Oil processed rose to 257.2 MMT in 2018-19 as against 251.9 MMT in 2017-18. However, refinery capacity utilisation fell to 103.9 per cent in 2018-19, compared to 107.7 per cent in 2017-18 (Figure 27). There is a need to augment refining capacity to meet growing demand for petroleum fuels and petrochemicals.

Figure 27: Refinery capacity and Crude Oil Processed (Quantity in Million Metric Tonnes) and Refinery Capacity Utilization (Per cent)

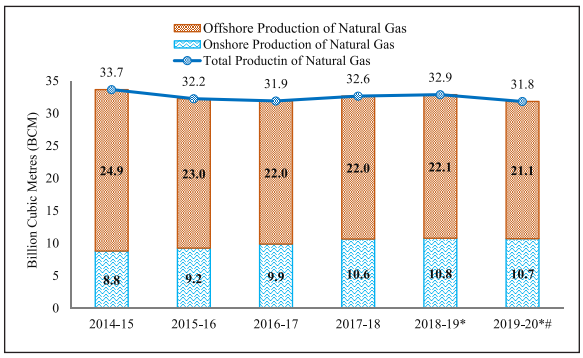


Source: Ministry of Petroleum & Natural Gas.
Note: P- Provisional.

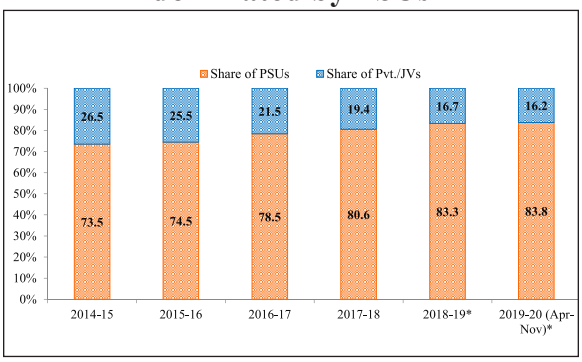
8.42 During 2019-20, the domestic production of natural gas is estimated to be 31.8 billion cubic metres (BCM) (Economic Survey calculations). Figure 28(a) shows that the declining trend in domestic production of natural gas till 2016-17 was arrested in 2017-18 and it rose further in 2018-19. The similar trend can be observed for offshore production of natural gas, while onshore production increased continuously since 2014-15. Figure 28(b) depicts that the production of natural gas is dominated by PSUs, with its share increasing over the period.

Figure 28: Total domestic Production of Natural Gas- Onshore and Offshore wise and PSUs and Private/ Joint Ventures-wise

(a): Production of Natural Gas



(b): Production of Natural Gas dominated by PSUs

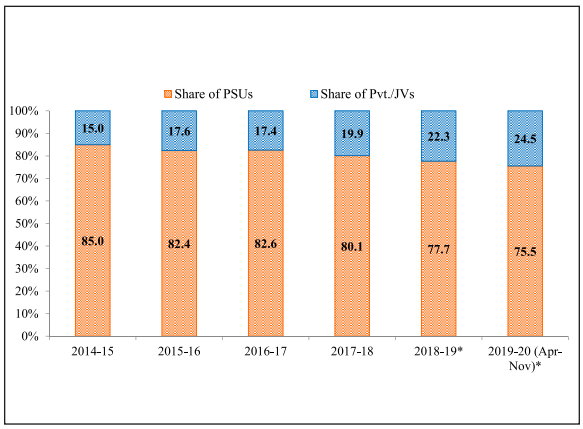


Source: Ministry of Petroleum and Natural Gas and Economic Survey calculations.
Note: *- Provisional.
#- The natural gas production for 2019-20 is estimated on the basis of figures available for 2019-20 (April-November).

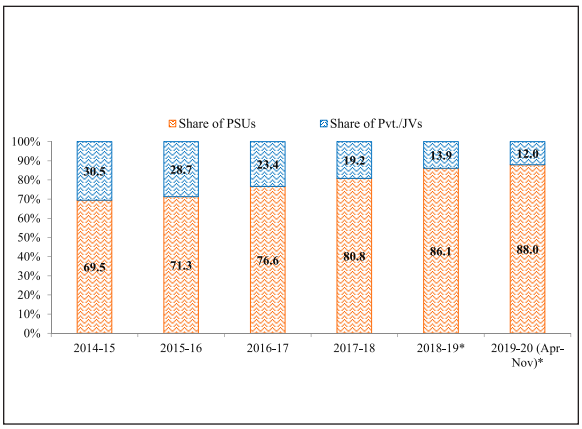
8.43 Further, Figure 29 clearly brings out that the presence of Private/ Joint Ventures has increased in onshore natural gas production over time (Figure 29(a)), while the opposite is true for offshore natural gas production, with the share of PSUs rising steadily (Figure 29(b)).

Figure 29: Share of PSUs and Private/ Joint Ventures (JVs) in Onshore and Offshore Natural Gas Production

(a): Share of PSUs falling for Onshore Natural Gas Production



(b): Share of PSUs rising for Offshore Natural Gas Production



Source: Ministry of Petroleum and Natural Gas.
Note: * - Provisional.

8.44 In order to encourage the participation of private entities in oil and natural gas sector, Government has undertaken several reform measures which, *inter-alia*, include simplified fiscal and contractual terms, bidding of exploration blocks under Category II and III sedimentary basins without any production or revenue sharing to Government, early monetization of discoveries by extending fiscal incentives, incentivizing gas production including marketing and pricing freedom, induction of latest technology and capital, more functional freedom to National Oil Companies for collaboration and private sector participation for production enhancement methods in nomination fields, etc.

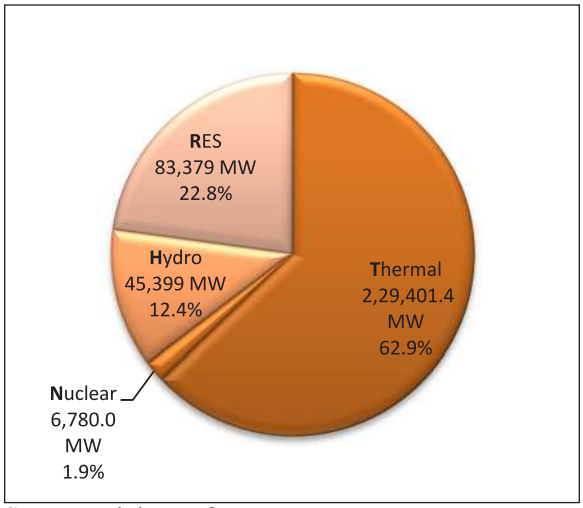
Power

8.45 Power sector in India has witnessed a paradigm shift over the years due to the constant efforts of Government to foster investment in the sector. As a result, lndia has improved its ranking to 76th position in the Energy Transition Index published by the World Economic Forum (WEF). Fostering Effective Energy Transition, 2019 Report of WEF states, "India, Indonesia and Bangladesh have made fast progress towards universal electrification due to strong political commitment, a stable policy regime, use of grid expansion, and decentralized generation sources, and a supportive environment for investment in infrastructure."

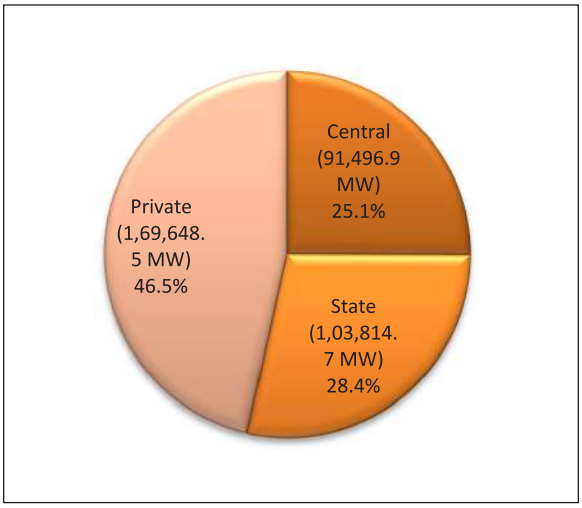
8.46 Along with universal electrification, commendable progress has been made in generation and transmission of electricity. The installed capacity has increased from 3,56,100 MW in March 2019 to 3,64,960 MW as on 31.10.2019. The fuel-wise and sector-wise distribution shows that thermal power accounts for about 63 per cent of total installed capacity (Figure 30(a)) and roughly half of the generation capacity is in the private sector (Figure 30(b)). Total generation of energy (including imports and renewable sources of energy) was 659 BU (as on 30.09.2019). In addition, the peak deficit i.e. the percentage shortfall in peak power supply vis-a-vis peak hour demand has declined from around 9 per cent in 2012-13 to 0.7 per cent during 2019-20 (October 2019).

Figure 30: Total Power Generation Capacity as on October 2019 (Fuel-wise and Sector-wise)

(a) Fuel-wise



(b) Sector-wise

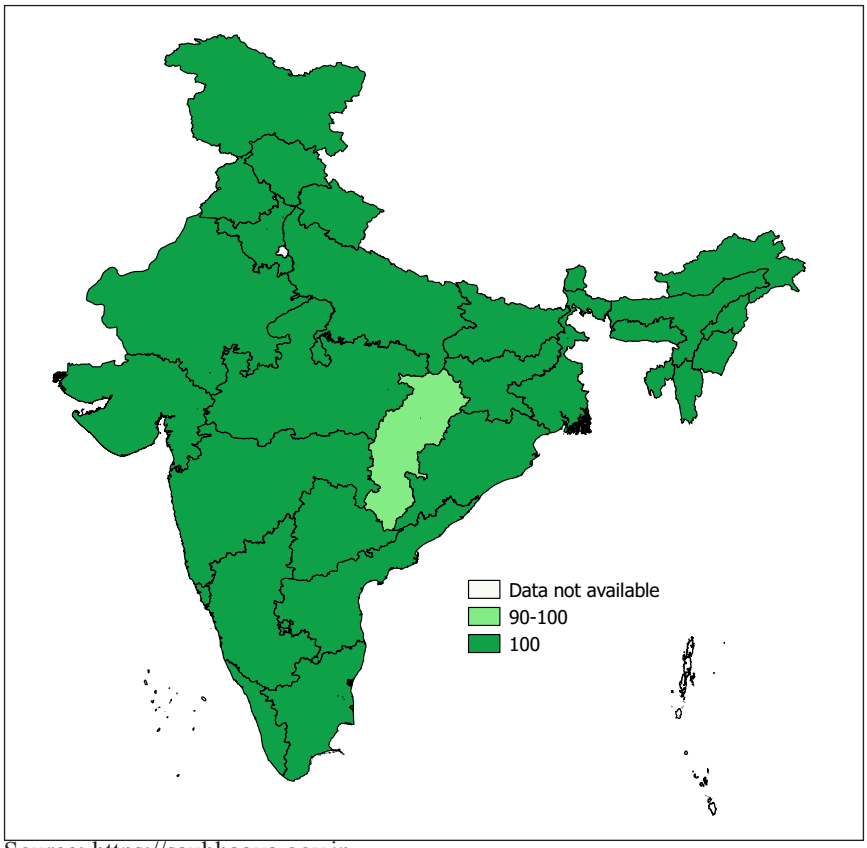


Source: Ministry of Power.
Note: RES- Renewable Energy Sources.

8.47 Access to electricity is necessary for making growth inclusive and for promoting ease of living. Pradhan Mantri Sahaj Bijli Har Ghar Yojana (Saubhagya) was launched on September 25, 2017 with an outlay of ₹ 16,320 crores to achieve universal household electrification by providing last mile connectivity by 31.03.2019. All the States have reported electrification of all households on Saubhagya portal, as on 31.03.2019, except few households in LWE affected Bastar region of Chhattisgarh (Map 2).

8.48 Supply of electricity to the rural domestic consumers is a good indicator of inclusive growth. As a result of various initiatives taken by Government of India along with the State governments, 18 States have reported supply of more than 20 hours of electricity supply while remaining states have reported about 15 or more hours. This is a major achievement compared to yester years when there were regular power cuts.

Map 2: Electrification Status



Source: https://saubhagya.gov.in

Mining Sector

8.49 As per available information, India produces as many as 95 minerals which include 4 hydrocarbon energy minerals (coal, lignite, petroleum & natural gas), 5 atomic minerals (ilmenite, rutile, zircon, uranium, and monazite), 10 metallic, 21 non-metallic and 55 minor minerals. It provides basic raw materials to many important industries. Mining and quarrying sector contribution (at current price) to GVA accounted for about 2.38 per cent during 2018-19 as per provisional estimates of Annual National Income 2018-19 published by NSO. Based on the overall trend, the Index of Mineral

Production (base 2011-12 = 100) for the year 2018-19 is estimated to be 107.9 as compared to 104.9 of previous year.

8.50 There has been a notable turnaround in mineral production because of policy reforms. The production of major minerals during the year 2018-19 has recorded a growth of 25 per cent when compared to last year in terms of value (Table 13).

Table 13: Production of Major Minerals specified under MCDR Act for the years 2016-17 to 2018-19 (Value in ₹ '000)

Minerals	Unit	2016-17		2017-18 (P)		2018-19 (P)	
		Quantity	Value	Quantity	Value	Quantity	Value
Bauxite	T	24745487	14865504	22312681	15020673	23687679	17168251
Chromite	T	3727780	31937475	3480928	32109182	3970688	35836112
Copper Concentrate	T	134787	6506133	141863	7742763	155435	9395244
Gold	Kg	1595	4362410	1648	4763056	1664	5241705
Iron Ore	'000t	194584	252291800	200955	342628915	206446	451854804
Lead Conc.	T	268047	9669267	306399	11429378	358371	16316814
Zinc Conc.	T	1484244	43385599	1539655	49799283	1457171	56083774
Manganese Ore	T	2395134	16248429	2589271	19717530	2820227	22702512
Silver	Kg	460811	18320758	557691	21179042	679376	25824746
Tin Conc.	Kg	12121	8736	16758	10139	21211	13839
Phosphorite	T	1124440	2996711	1534269	3771584	1284580	3547584
Diamond	Crt	36491	639562	39699	410737	38437	581058
Garnet (abrasive)	T	85413	787302	158154	1636667	123404	1568237
Graphite (r.o.m.)	T	122438	94158	33558	25656	39370	37712
Kyanite	T	3253	13458	7818	23002	4889	15228
Sillimanite	T	68131	535949	81638	669340	69033	559792
Limestone	'000t	314669	73878426	338552	74407420	379049	84841855
Limeshell	T	12344	34774	10893	39593	7534	27786
Magnesite	T	299149	749297	195033	503919	146581	396564
Marl	T	2203700	317886	1822514	285095	1890309	325122
Moulding Sand	T	27685	6623	7097	1793	14423	3889
Siliceous Earth	T	77270	55340	58875	57457	77739	51897
Selenite	T	4328	8656	469	939	2906	5812
Sulphur	T	560825	-	825173	-	890400	-
Vermiculite	T	9042	8162	6055	7078	3161	3807
Wollastonite	T	166186	158823	153049	126700	184063	173972

Source: MCDR Returns, IBM.
Note: (P)- Provisional, t- Tonne, Kg- Kilogram, '000t- Thousand Tonnes, crt- Carats.

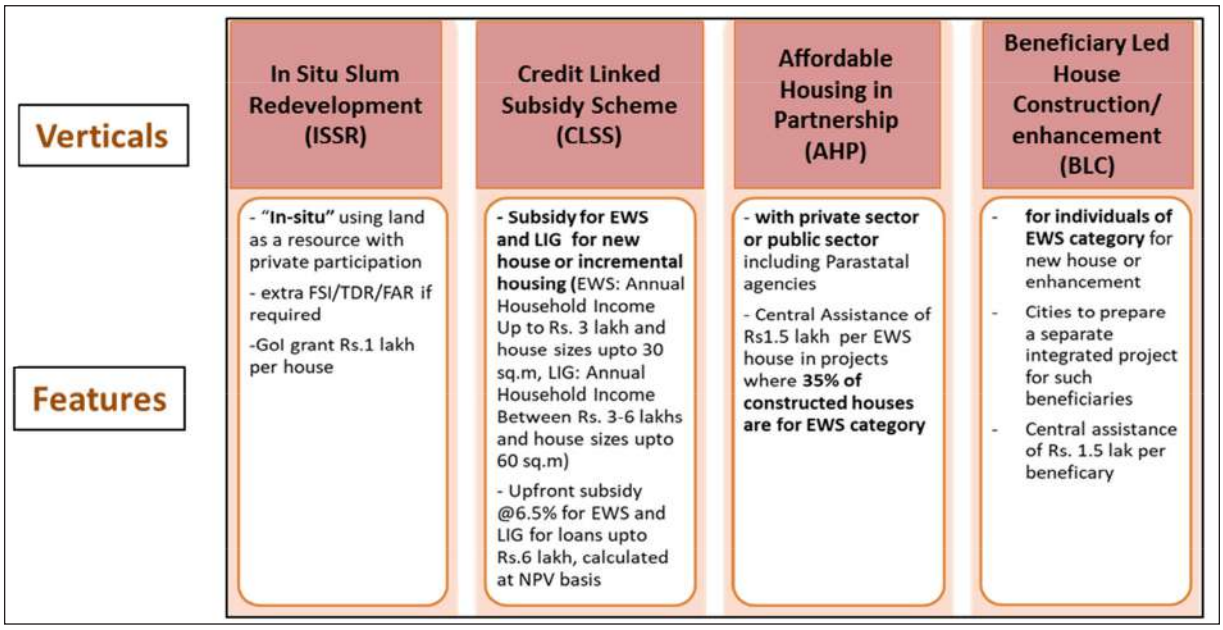
Housing and Urban Infrastructure

8.51 India is one of the fastest growing countries in the world with rapid urbanization. There were about 37.7 crore people residing in the urban habitats of India (Census 2011), comprising about 31 per cent of the total population which is expected to reach 60.6 crore by 2030 (2015:UN).

8.52 The Pradhan Mantri Awas Yojana-Urban (PMAY-U) was launched in June, 2015 to provide pucca house with basic amenities to all eligible urban poor. The States/UTs were mandated to conduct demand survey to estimate the housing demand in their respective cities/towns. So far, a validated demand of 1.12 crore houses has been registered. Urban habitats and cities are the epicentres of economic growth which has contributed significantly to the Indian economy. Over 60 per cent of India's current GDP comes from the cities and towns. The construction sector accounts for 8.2 per cent of GDP which includes housing and employs about 12 per cent of the workforce[1]. Therefore, the investment made under PMAY (U) not only provides pucca houses to the eligible families to achieve the goal of 'Housing for All' but also triggers multiplier effect on the overall economy. PMAY-U is one of the largest housing schemes of the world covering complete urban India. PMAY (U) is being implemented through four verticals (Figure 31).

8.53 The scheme of PMAY (U) is rapidly moving towards achieving the vision for providing a pucca house to every household by 2022. Out of 1.03 crore houses approved, 60 lakhs have been grounded for construction, of which 32 lakh houses have been completed and delivered (Figure 32).

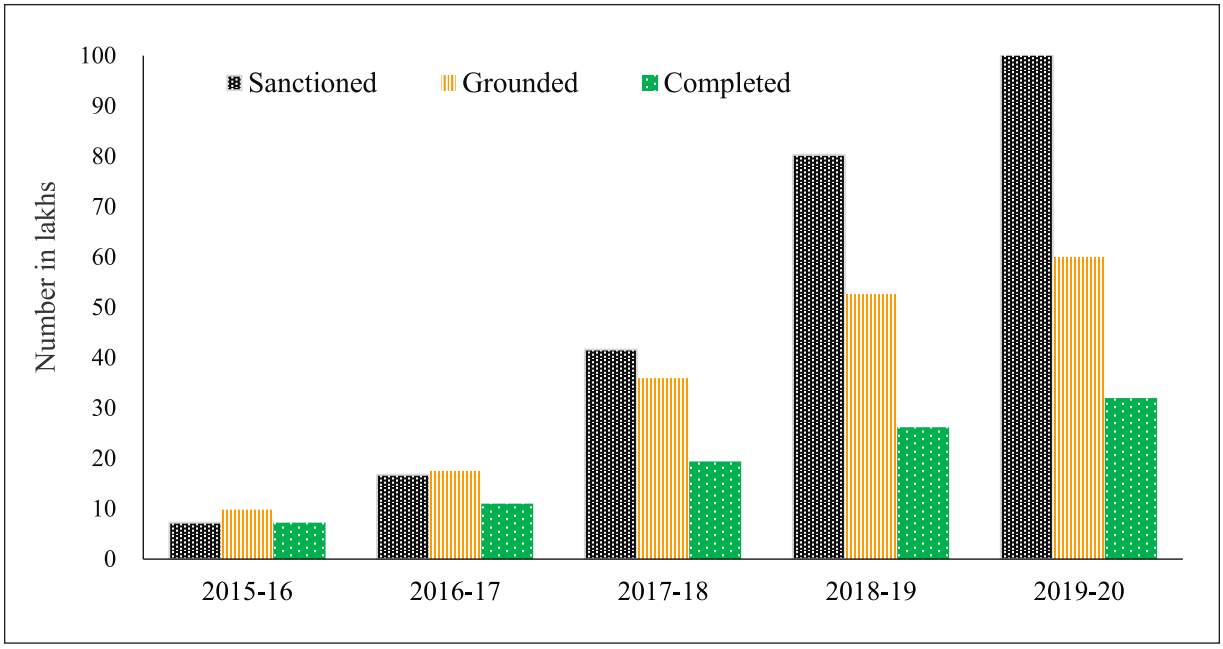
Figure 31: Different verticals of PMAY(U)



Source: Ministry of Housing and Urban Affairs.

1. Source: Study Report on "Impact of Investments in the Housing Sector on GDP and Employment of Indian Economy" (2014), by National Council of Applied Economic Research (NCAER).

Figure 32: Physical progress of PMAY (U) (Number of Houses in lakhs) (As on 01.01.2020)



Source: Ministry of Housing and Urban Affairs.

8.54 The significant progress of PMAY (U) with regard to earlier schemes is an outcome of comprehensive strategy of inclusion, scheme architecture, use of digital/space technology, funding mechanism etc. As a principle, the scheme adopts demand driven approach carrying forward the ethos of cooperative federalism. Unlike the earlier schemes, the States/UTs have been authorised to prepare and approve the projects based on city wise demand survey to meet the requirement of their housing demand. A State Level Appraisal Committee (SLAC) for Technical Appraisal of the Projects and a State Level Sanctioning and Monitoring Committee (SLSMC) under the chairmanship of Chief Secretary of the States/UTs for approval of the projects have been constituted in each State/UT. As land and colonisation is the State subject, the function of beneficiary identification based on eligibility criteria has also been entrusted to States/UTs. Such flexibility has resulted in greater participation of the States/UTs and the citizens. The scheme has mandated ownership of the house in the name of female of household or in the joint name along with male member of the household to enable women's empowerment.

8.55 Given the large number of houses sanctioned under the Mission, arrangement for regular funding for project is vital for grounding and completion of projects. Over and above the year-on-year budgetary provisions, a separate mechanism through creation of National Urban Housing Funds (NUHF) has been approved by Union Cabinet to mobilise resources through Extra Budgetary Resources (EBR) to the tune of ₹ 60,000 crore for funding PMAY(U). Such arrangement has enabled the Ministry to provide Central assistance in a time bound manner for uninterrupted progress of projects with States/UTs and Central Nodal Agencies (CNAs). Government has also created an Affordable Housing Fund (AHF) in the National Housing Bank (NHB) with an initial corpus of ₹ 10,000 crore using priority sector lending shortfall of banks/financial institutions. The fund is used for micro

financing of the HFCs and NBFCs which provide loans at reduced interest rate to the individual borrowers for promoting home ownership.

8.56 Current Implementation Status of Smart Cities Mission (SCM): All 100 cities under Smart City Mission have incorporated Special Purpose Vehicles (SPVs), City Level Advisory Forums (CLAFs) and appointed Project Management Consultants (PMCs). Since the launch of the mission, 5,151 projects worth more than ₹ 2 lakh crores are at various stages of implementation in the 100 cities. As on November 14, 2019, 4,154 SCM projects worth ₹ 1.49 lakh crores (72 per cent of the total proposals) have been tendered, of which 3,359 projects worth ₹ 1.05 lakh crores (51 per cent of total proposals) have been issued work orders. 1,290 projects worth ₹ 22,569 crores have been completed and are operational. Major achievements of Smart Cities Mission are given in Figure 33.

Figure 33: Smart Cities Mission: Major achievements (As on 14.11.2019)



Source: Ministry of Housing and Urban Affairs.

WAY FORWARD

8.57 In a fast moving world to maintain growth momentum, India has to develop its industry and infrastructure. As an emerging economy, the scope for Industry 4.0 and Next generation infrastructure are enormous. To experience the potential of the perfect blend of Industry 4.0 and next generation infrastructure, it is necessary to clear the decks which are obstructing the way forward. Industry 4.0 encompasses automation in industrial sectors whereas next generation infrastructure brings physical infrastructure and technology like internet of things, automation together to maximize the efficiency of physical infrastructure. For a smooth and fast development, India needs adequate and timely investment in quality infrastructure.

8.58 To achieve the GDP of $5 trillion by 2024-25, India needs to spend about $1.4 trillion on infrastructure. The challenge is to step-up annual infrastructure investment so that lack of infrastructure does not become a binding constraint on the growth of the Indian economy. The National Infrastructure Pipeline (NIP) captures the infrastructure vision of the country for the period FY20-25. Report of the Task Force on NIP released on 31.12.2019 has projected total infrastructure investment of ₹ 102 lakh crore during the period FY 2020 to 2025 in India.

CHAPTER AT A GLANCE

- The industrial sector as per Index of Industrial Production (IIP) registered a growth of 0.6 per cent in 2019-20 (April-November) as compared to 5.0 per cent during 2018-19 (April-November).
- Fertilizer sector achieved a growth of 4.0 per cent during 2019-20 (April-November) as compared to (-)1.3 per cent during 2018-19 (April-November).
- India has considerably improved its ranking in Ease of Doing Business to 63rd position in 2019 compared to 77th position in 2018.
- Crude steel production witnessed growth of 1.5 per cent during 2019-20 (April-October).
- The installed capacity of power generation has increased to 3,64,960 MW as on 31 October 2019.
- Report of the Task Force on National Infrastructure Pipeline released on 31.12.2019 has projected total infrastructure investment of ₹ 102 lakh crore during the period FY 2020 to 2025 in India.

09 CHAPTER

Services Sector

The services sector's significance in the Indian economy has continued to increase, with the sector now accounting for around 55 per cent of total size of the economy and GVA growth, two-thirds of total FDI inflows into India and about 38 per cent of total exports. The share of services sector now exceeds 50 per cent of Gross State Value Added in 15 out of the 33 states and UTs, with this share more than 80 per cent in Delhi and Chandigarh. However, data on GVA growth, high-frequency indicators and sectoral trends suggest a moderation in services sector activity during 2019-20. Bank credit to services sector, air passenger traffic and rail freight traffic have witnessed a deceleration, while foreign tourist arrivals and port traffic have continued to ease during 2019-20. On the bright side, the very latest readings on most of these indicators suggest a recovery. Moreover, gross FDI equity inflows into services sector have registered a strong recovery and services exports have maintained their momentum during April-September 2019. Services exports have outperformed goods exports in the recent years, due to which India's share in world's commercial services exports has risen steadily over the past decade to reach 3.5 per cent in 2018, twice the share in world's merchandise exports at 1.7 per cent. India's education services imports have increased markedly in the recent years, up from about US$ 2.3 billion in 2013-14 to US$ 5.0 billion in 2018-19. The shipping turnaround time at ports has almost halved from 4.67 days in 2010-11 to 2.48 days in 2018-19. India has launched around 5-7 satellites per year in the recent years with no failures, barring one in 2017.

SERVICES SECTOR PERFORMANCE: AN OVERVIEW

Gross Value Added in Services Sector

9.1 As per the First Advance Estimates for Gross Value Added (GVA) from the Ministry of Statistics and Planning Implementation, services sector growth (YoY) continued to moderate during 2019-20, reaching 6.9 per cent from 7.5 per cent in 2018-19 (Table 1). By sub-sector, growth (YoY) in 'financial services, real estate & professional services' decelerated to 6.4 per cent during 2019-20 and that in 'trade, hotels, transport, communication & broadcasting services' remained on a downward trend, reaching 5.9 per cent in 2019-20. However, 'public administration, defence & other services' witnessed an acceleration in activity during 2019-20, with a growth (YoY) of 9.1 per cent. Notwithstanding the recent underperformance, the services sector continues to outperform agriculture and industry sector growth, contributing around 55 per cent to total GVA as well as to total GVA growth.

Table 1: Services Sector Performance in GVA

Sector	Share in GVA (per cent)	Growth (per cent YoY)				
	2019-20 (1st AE)	2017-18 (RE)	2018-19 (PE)	2019-20 (1st AE)	2019-20 Q1	2019-20 Q2
Total Services	**55.3**	**8.1**	**7.5**	**6.9**	**6.9**	**6.8**
Trade, hotels, transport, communication & services related to broadcasting	18.3	7.8	6.9	5.9	7.1	4.8
Financial, real estate & professional services	21.3	6.2	7.4	6.4	5.9	5.8
Public administration, defence & other services	15.6	11.9	8.6	9.1	8.5	11.6

Source: Ministry of Statistics and Programme Implementation (MoSPI).
Note: Shares are in current prices and growth in constant 2011-12 prices; RE: Revised Estimates. PE: Provisional Estimates, 1st AE: 1st Advance Estimates.

9.2 The moderation in services sector growth during 2019-20 is also reflected in the high-frequency indicators, though some recent data suggests that service sector activity might be bottoming out (Figure 1(a) to (d)). The services Purchasing Managers' Index (PMI) has stabilized in the recent months above the threshold of 50 (above 50 indicates service sector activity is expanding) after having softened during Q4 of 2018-19 and Q1 of 2019-20. Growth in air passenger traffic has begun to show some signs of recovery after having witnessed a slowdown since mid-2018-19. Even the growth in rail freight, which was contracting in the past few months, has picked up in November 2019. In contrast, bank credit to the services sector has continued to decelerate. The growth in bank credit to services sector was 4.8 per cent as on November 2019 as compared to 28.1 per cent a year ago (Table 2).

Figure 1(a): Services PMI Index

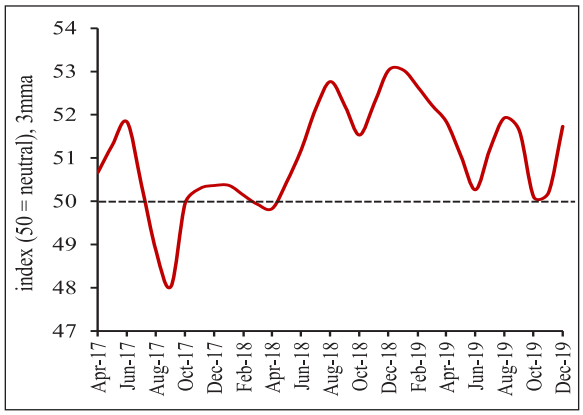
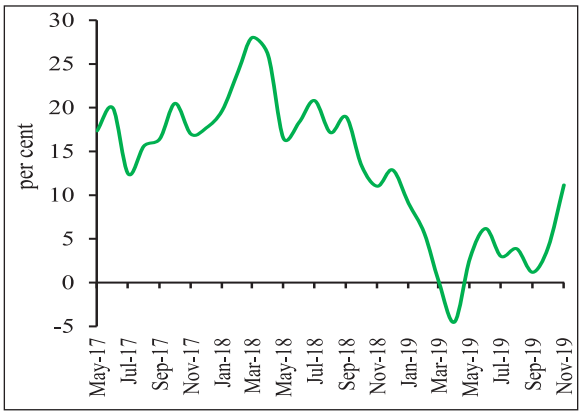


Figure 1(b): Growth (Year on Year (YoY)) in Air Passenger Traffic



Source: IHS Markit Economics, Directorate General of Civil Aviation.

Figure 1(c): Growth (YoY) in Rail Freight Traffic

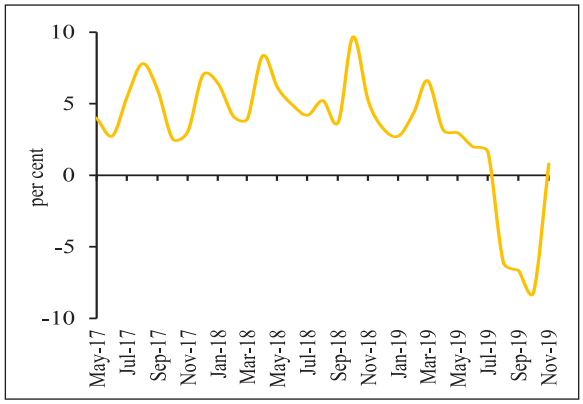
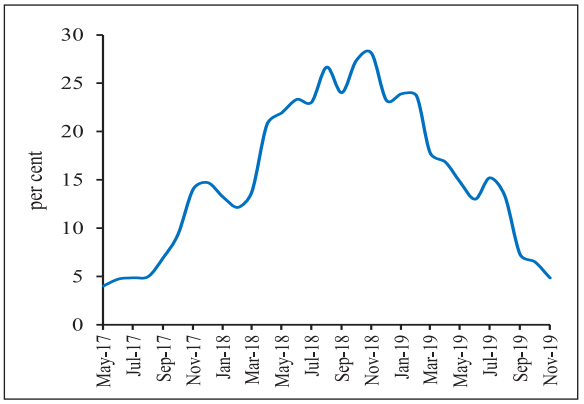


Figure 1(d): Growth (YoY) in Bank Credit to Services Sector



Source: RBI, Indian Railways.

Table 2: Growth (YoY) in Bank Credit to Services Sub-Sectors

Services Sub-Sectors	Fiscal Year-to-Date Apr-Nov 2019 (per cent)	Fiscal Year-to-Date Apr-Nov 2018 (per cent)
Services	**-2.2**	**9.9**
Transport Operators	0.9	6.6
Computer Software	2.8	2.8
Tourism, Hotels & Restaurants	11.4	5.3
Shipping	-13.5	1.1
Professional Services	-0.5	8.4
Commercial Real Estate	9.1	1.0
Bank credit to NBFCs	14.0	14.1
Retail Trade	2.3	2.3
Wholesale Trade*	-13.2	3.1
Other Services	-20.7	16.9

Source: RBI.
Note: *Other than food procurement.

9.3 RBI's data on the allocation of bank credit for services sub-sectors shows that the deceleration in credit growth during April-November 2019 has been driven by 'Professional Services', 'Shipping', 'Transport Operators' and 'Wholesale Trade' (Table 2). Bank credit to 'Tourism, Hotels & Restaurants', 'Commercial Real Estate'and 'Non-Banking Financial Corporations (NBFCs)' remained high as compared to the other sub-sectors during April-November 2019.

9.4 Services sector performance at the state and UT level shows that the services sector now accounts for more than 50 per cent of the Gross State Value Added (GSVA) in 15 out of the 33 states and UTs (Table 3). In 8 states, services sector account for more than 60 per cent of GSVA. Chandigarh and Delhi stand out with a particularly high share of services in GSVA of more than 80 per cent while Sikkim's share remains the lowest at 26.8 per cent. Even states with relatively lower share of services in GSVA, such as Jharkhand, Odisha, Andhra Pradesh, Uttarakhand, Gujarat, Arunachal Pradesh and Goa, have witnessed strong services sector growth in the recent years.

Table 3: Services Sector Performance at the State and UT Level

State	Services Sector Share in GSVA in 2018-19 (per cent)*	Services Sector 5-year Average Growth (per cent YoY)**
Chandigarh*	86.7	7.3
Delhi	84.1	8.8
Andaman and Nicobar Islands*	68.1	8.6
Karnataka	65.4	10.5
Manipur*	65.1	6.3
Telangana	64.7	11.2
Kerala*	62.7	6.4
Bihar	61.1	9.0
Jammu & Kashmir*	58.3	5.5
Meghalaya*	59.0	7.5
Maharashtra*	57.6	8.1
West Bengal	57.5	9.2
Tamil Nadu	54.2	6.9
Nagaland*	54.1	4.9
Haryana	50.8	9.2
Uttar Pradesh	48.8	7.7
Puducherry	48.5	6.0
Assam*	47.8	6.9
Mizoram*	46.8	7.8
Punjab	46.5	7.2
Rajasthan	45.0	7.3
Jharkhand	44.8	8.7
Andhra Pradesh	43.0	9.8
Himachal Pradesh	42.8	7.6
Arunachal Pradesh*	42.5	9.0
Odisha	41.8	8.4
Uttarakhand	40.5	9.5
Tripura*	39.7	3.0
Goa	38.0	8.4
Chhattisgarh	37.1	5.9
Madhya Pradesh	35.9	6.7
Gujarat*	35.7	8.6
Sikkim	26.8	4.4

Source: MoSPI.
Note: *2017-18 data; **Average from 2014-15 to 2018-19, or average from 2013-14 to 2017-18 where the data for 2018-19 is unavailable.

FDI Inflows into Services Sector

9.5 FDI data from the Department for Promotion of Industry and Internal Trade shows that gross FDI equity inflows (excluding re-invested earnings) into the services sector[1] witnessed a strong recovery during April-September 2019 following a decline in 2018-19. Gross FDI equity inflows jumped by 33 per cent YoY during April-September 2019 to reach US$ 17.58 billion, accounting for about two-thirds of the total gross FDI equity inflows into India during this period (Table 4). The jump in FDI equity inflows was driven by strong inflows into sub-sectors such as 'Information & Broadcasting', 'Air Transport', 'Telecommunications', 'Consultancy Services' and 'Hotel & Tourism'.

Table 4: Gross FDI Equity Inflows* into Services Sector

Services Sub-Sectors	Share in FDI Equity Inflows into Services Sector in 2018-19 (per cent)	Gross FDI Equity Inflows (US$ million)			
		2017-18	2018-19	Apr-Sep 2018	Apr-Sep 2019
Financial, Business, Outsourcing, R&D, Courier, Tech Testing & Analysis	20.6	6,709	9,158	4,915	4,455
Computer Software & Hardware	14.5	6,153	6,415	2,541	4,025
Trading	10.1	4,348	4,462	2,143	2,143
Telecommunications	6.0	6,212	2,668	2,178	4,280
Information & Broadcasting	2.8	639	1,252	58	196
Hotel & Tourism	2.4	1,132	1,076	344	859
Hospitals & Diagnostic Centers	2.4	708	1,045	345	376
Education	1.8	286	777	167	216
Retail Trading	1.0	224	443	256	243
Consultancy Services	0.9	760	411	88	473
Sea Transport	0.6	1,051	279	117	173
Air Transport	0.4	629	191	30	114
Agriculture Services	0.2	110	88	29	23
Gross FDI Equity Inflows into Services Sector (US$ million)		**28,960**	**28,264**	**13,209**	**17,577**
Change from Previous Period (per cent YoY)		**15.0**	**-2.4**	**-20.5**	**33.1**
Gross FDI Equity Inflows into India (US$ million)		**44,857**	**44,366**	**22,664**	**26,096**
Share of Services Sector in Gross FDI Equity Inflows into India (per cent)		**64.6**	**63.7**	**58.3**	**67.4**

Source: Department for Promotion of Industry and Internal Trade (DPIIT).
Note: *Excludes re-invested earnings.

[1] Estimated as gross FDI equity inflows into financial services, business services, outsourcing, R&D, technology testing & analysis, courier, telecommunications, trading, computer hardware & software, hotels & tourism, hospital & diagnostic centres, consultancy services, sea transport, information & broadcasting, retail trading, agriculture services, education, and air transport.

Trade in Services Sector

9.6 RBI's Balance of Payments data suggests that services exports during April-September 2019 maintained their momentum from 2018-19, with a growth (YoY) of 6.4 per cent. The jump in export growth of travel, software, business and financial services offset the contraction in export growth of insurance and other services (including construction, etc.) (Table 5). The robust growth in business services exports was driven by higher receipts for R&D services, professional and management consultancy services, and technical and trade related services.

9.7 Trends in the composition of services exports over the past decade show that the shares of traditional services, such as transport, and value-added services, such as software, financial services and communications, have witnessed a decline. Meanwhile, the share of travel services has increased over the past decade and that of business services has risen slightly. The share of software services has declined by 4 percentage points over the past decade to reach 40 per cent of total services exports in 2018-19. Yet, India's services exports remain concentrated in software services, accounting for twice the share of the second-largest component, business services.

Table 5: Services Trade Performance by Sub-Sector

Commodity Group	Share (per cent)		Value (US$ billion)			Growth (per cent YoY)		
	2008-09	2018-19	2017-18	2018-19	Apr-Sep 2019-20 (P)	2017-18	2018-19	April-Sep 2019-20 (P)
Total Services Exports			**195.1**	**208.0**	**104.6**	**18.8**	**6.6**	**6.4**
Travel	10	14	28.4	28.4	14.6	22.0	0.3	8.2
Transportation	11	9	17.4	19.5	10.5	10.0	11.6	10.8
Insurance	1	1	2.5	2.7	1.2	13.6	6.2	-4.9
GNIE*	0.4	0.3	0.7	0.6	0.3	12.9	-8.1	3.5
Software Services	44	40	77.3	83.5	46.1	4.0	7.9	12.7
Business Services	18	19	37.3	39.1	22.4	13.4	4.7	18.6
Financial Services	4	2	5.2	4.9	2.5	1.3	-5.9	4.3
Communication	2	1	2.1	2.6	1.3	-11.7	22.1	18.3
Total Services Imports			**117.5**	**126.1**	**64.1**	**22.6**	**7.3**	**7.9**
Travel	18	17	19.5	21.7	12.2	18.6	11.2	4.3
Transportation	25	16	17.6	20.5	12.1	24.6	16.6	22.8
Insurance	2	1	1.7	1.8	0.8	13.7	5.3	-0.7
GNIE*	2	1	0.8	1.1	0.6	32.5	40.3	11.9
Software Services	5	5	5.1	5.8	4.0	43.3	13.1	33.7
Business Services	29	32	36.6	40.4	22.9	13.3	10.3	19.6
Financial Services	6	3	5.5	3.5	1.1	-5.4	-37.0	-40.7
Communication	2	1	1.0	1.1	0.6	4.8	18.4	25.1
Services Trade Balance			**77.6**	**81.9**	**40.5**			
Goods Trade Balance			**-160.0**	**-180.3**	**-84.3**			

Source: RBI.
Note: *GNIE = Government not included elsewhere; P: Preliminary.

This has made the software sector, and therefore overall services exports, susceptible to changes in exchange rate, global IT spending, stringent USA visa norms, and rising cost pressures due to increased local hiring in export destinations. Even though global IT spending, as projected by Gartner in October 2019, is expected to accelerate in 2020, rising production costs and uncertainty related to Brexit and USA's visa norms pose downward risks to India's software exports.

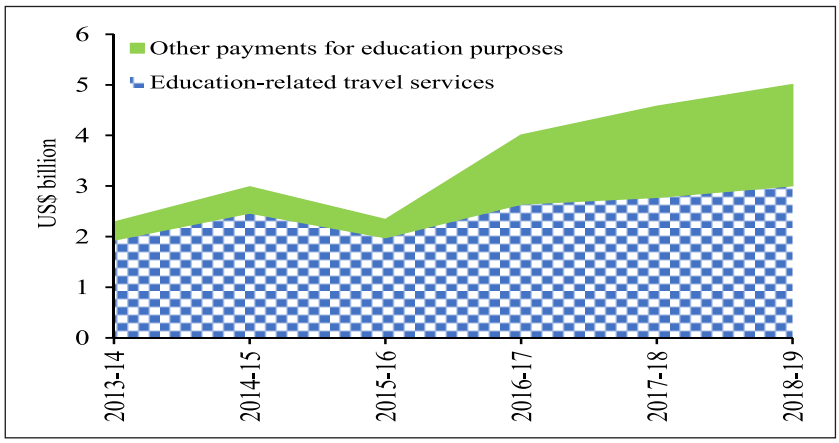
9.8 Services import growth (YoY) during April-September 2019 was 7.9 per cent. An increase in import growth for transport, software, communication and business services offset the contraction in imports of financial and insurance services and the slowdown in imports of travel services. Increased business services payments were primarily driven by professional, management and consultancy services, and technical and trade related services.

9.9 Net exports of services increased from US$ 38.9 billion during April-September 2018 to US$ 40.5 billion during April-September 2019, up 4.1 per cent YoY. The services trade surplus, largely driven by the surplus in software services, financed about 48 per cent of India's merchandise deficit during April-September 2019, partially offsetting the impact on the current account deficit.

9.10 Besides software services, India runs a small trade surplus in travel, insurance and financial services. However, within travel services, India persistently runs a trade deficit in education services with education imports, i.e., expenditure incurred by Indian students traveling abroad for education purposes on tuition, room and boarding, reaching about US$ 3 billion in 2018-19. Adding to this other payments for education purposes such as fees paid for correspondence courses abroad, which constitute as payments for receiving education services abroad, there has been a marked increase in India's education services imports in the recent years amounting to US$ 5.0 billion in 2018-19 (Figure 2).

9.11 From a long-run perspective, India's focus on boosting services exports during bilateral trade negotiations augurs well for mitigating bilateral trade deficits with trading partners. Looking ahead, world trade volume for goods and services are projected to recover in 2020 following a deceleration in 2019. Global uncertainty, protectionism and stricter migration rules would be key factors in shaping India's services trade ahead.

Figure 2: Import of Education Services



Source: RBI
Note: Education travel services includes expenditure incurred by Indian students abroad on tuition, room and boarding.

Box 1: India in World Commercial Services Exports

The increasing role of services in economic activity is also reflected in the growing importance of services in global trade and in India's trade. Looking at two time periods, 2005-11 and 2012-2018, it is evident that both commercial services[2] exports and goods exports have slowed in India and globally in the recent years (Table A). However, while merchandise exports were growing faster than commercial services exports during 2005-11, commercial services exports have outperformed goods exports lately. This has led to an increase in the share of commercial services exports in overall exports both in India and globally.

Table A: Performance of Services and Merchandise Exports in India and World

Country	Growth in merchandise exports (per cent)		Growth in commercial services exports (per cent)		Share of commercial services exports in total exports (per cent)	
	CAGR 2005-11	CAGR 2012-18	CAGR 2005-11	CAGR 2012-18	2005	2018
World	9.7	0.8	8.9	4.4	19.8	22.9
India	20.4	1.5	17.7	5.9	34.2	38.6

Source: WTO.
Note: Calculations are on calendar year basis.

According to WTO data, India's share in world's commercial services exports has risen steadily over the past decade to reach 3.5 per cent in 2018, twice the share in world's merchandise exports at 1.7 per cent. India now ranks 8th among the world's largest commercial services exporters and continues to register strong growth performance relative to the other major services-exporting countries as well as world services export growth (Table B).

Table B: Commercial Services Exports in Top 10 Exporting Countries

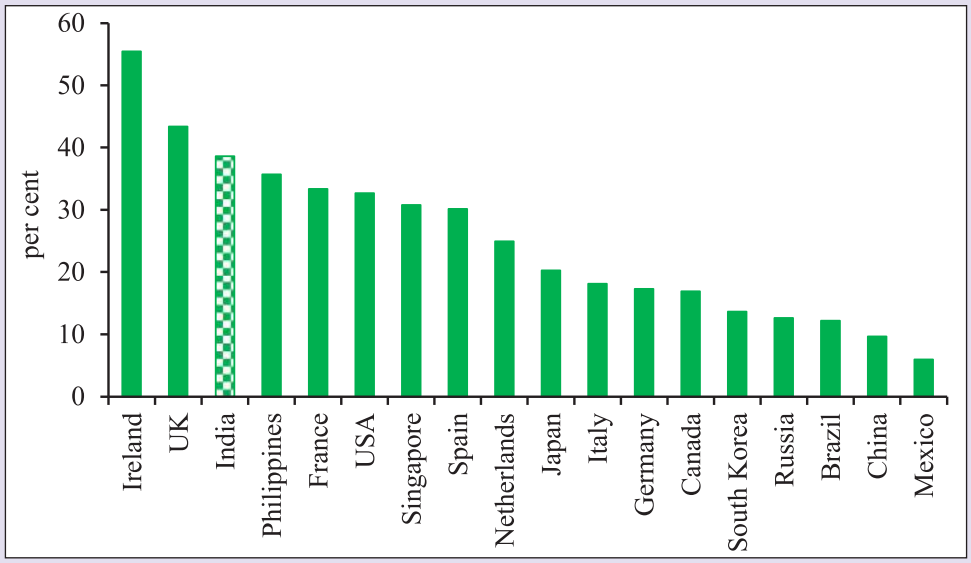
Country	Share in global commercial services exports in 2018	Global ranking in 2018	Growth in Commercial Services Exports (per cent YoY)		
			2017	2018	Jan-June 2019
World			**8.0**	**7.7**	**N.A.**
USA	14.0	1	5.2	3.8	0.7
UK	6.5	2	2.4	5.6	-3.0
Germany	5.6	3	8.0	7.3	-2.4
France	5.0	4	5.7	6.2	-7.0
China	4.6	5	8.7	17.1	4.2
Netherlands	4.2	6	14.3	11.4	3.4
Ireland	3.6	7	20.5	14.3	10.9
India	**3.5**	**8**	**14.5**	**10.7**	**7.1**
Japan	3.2	9	6.4	3.1	3.6
Singapore	3.2	10	10.0	6.6	-2.1

Source: WTO.
Note: Calculations are on calendar year basis; N.A.: not available.

[2] Commercial services exports refer to all services exports excluding government services.

Among the major services-exporting economies, India also has a relatively high share of services exports in overall exports (Figure A).

Figure A: Share of Commercial Services Exports in Total Exports for Major Economies in 2018



Source: Calculations based on WTO data.
Note: Calculations are on calendar year basis.

Box 2: Developing the Offshore Fund Management Industry to Boost Financial Services Exports

The financial services sector has been identified as one of the Champion Services Sectors by the government to enable on-shoring of the India-related financial services that are currently being rendered from global financial centers. This would provide an impetus to financial services exports and high-skilled employment. Despite India's strong performance in services exports (Box 1), India's financial services exports have remained stagnant, averaging about US$ 5 billion in the recent years. As a result, the share of financial services exports in overall services exports has almost halved from 4.2 per cent in 2011-12 to 2.3 per cent in 2018-19 (Figure B).

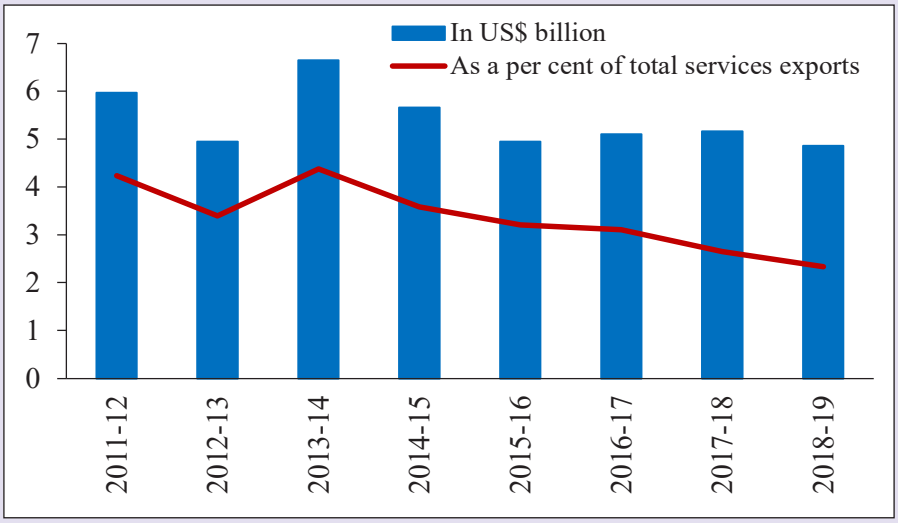
One type of financial services that is currently being rendered from global financial centers and could be potentially brought on-shore is the asset management activity of offshore funds. These offshore funds located in tax and regulatory friendly jurisdictions, such as Singapore, Luxembourg, Ireland, Hong Kong and London, pool investments from offshore investors and invest in India via the Foreign Portfolio Investment (FPI), Private Equity (PE) or Foreign Venture Capital Investment (FVCI) route. Such funds include the India-focused offshore funds which invest only in India, and the Regional/ Global diversified funds with partial investment allocation to India (Table C). As foreign investment into India continues to increase in the coming years, on-shoring the fund management activity of offshore funds to India would benefit the economy by:

- Contributing to the continued expansion of India's asset management industry which has been witnessing significant growth in the recent years (Table C). The Asset Managers Roundtable

of India (AMRI) estimates that fund management activity of almost 25 per cent of FPI, PE and FVCI funds' total Assets Under Management (AUM) could be potentially on-shored to India by 2020, and potentially a greater share of AUM in the coming years. Assuming total AUM of FPIs at US$ 542 billion and total AUM of PE & FVCIs at US$ 326 billion by 2020, this implies that nearly US$ 136 billion of FPI funds and US$ 82 billion of PE & FVCI funds, i.e., US$ 217 billion in total assets, could be potentially managed on-shore in India by 2020, according to AMRI estimates.

- Generating employment for high-skilled finance professionals, including fund managers and support service providers, such as custodians, fund specialists, fund accountants, fund administrators, risk managers, research analytics professionals and tax advisors. The management fee received by fund managers for managing the offshore funds would constitute as financial services exports. Based on a conservative assumption of 1 per cent management fee (compared to 2 per cent globally), the AMRI estimates that on-shore management of US$ 217 billion in assets of offshore funds could yield about US$ 2.2 billion in fund management fees and therefore financial services exports in 2020.

Figure B: India's Financial Services Exports



Source: RBI.

Table C: Size of India's Domestic Fund Management Industry and Offshore Funds

Domestic Funds (US$ billion)	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
AUM of Asset Management Companies	129	137	173	186	271	328	344
Assets Managed By Portfolio Managers*	12	14	19	21	29	38	41
AUM of Alternative Investment Funds	0.3	2	4	6	13	25	41

FPI Funds** (US$ billion)	2012	2013	2014	2015	2016	2017	2018
AUM of FPIs	243	237	356	351	346	514	451
AUM of India-Focused FPI Offshore Funds***	21	17	23	24	22	31	N.A.

Source: Asset Managers Roundtable of India (AMRI) estimates; calculations based on SEBI, NSDL, Morningstar, VCCEdge, Venture Intelligence data.
Note: *Includes non-EPFO/PFs discretionary assets and non-discretionary assets; **Data is on a calendar year basis; ***Estimates would be higher if AUM for regional/global diversified FPI offshore funds with partial investment allocation to India are included; N.A.: Not Available.

At present, the fund management activity of these offshore funds is being undertaken by fund managers, often of Indian origin, located in offshore jurisdictions since their presence in India would create tax implications for the offshore fund's profits. In April 2016, the government introduced 'safe harbour' provisions as Section 9A, *Income Tax Act (1961)* under which, on satisfying a set of eligibility conditions, the offshore fund would not be considered a 'resident' for tax purposes solely based on its fund manager being located in India. However, most offshore funds have been unable to utilize the 'safe harbour' provisions since they have to satisfy a total of 17 stringent eligibility conditions related to the fund's structure, investor composition, investment activity and fund manager's activity and remuneration. Some of these conditions are not in sync with the structure and investment pattern of offshore funds and nature of FPI inflows into India, and lead to dual compliance burden for offshore investors since they are also required to comply with RBI and SEBI regulations related to end-investors in FPIs and round- tripping.

In comparison, in key fund management jurisdictions such as USA, UK, Singapore and Hong Kong, the eligibility conditions under 'safe harbour' provisions for offshore funds are fewer and less stringent in many cases, with discretion available to tax authorities to evaluate the offshore fund's structure and investment pattern and allow for exceptions on a case-by-case basis.

In view of the above challenges, the Commerce Ministry's *High-Level Advisory Group (HLAG) Report* (September 2019) recommended simplifying the tax framework and removing tax residency risk for offshore funds wanting to on-shore their fund management activity given that the offshore fund and fund manager are registered with SEBI and compliant with SEBI regulations. Operationalizing the 'safe harbour' regime of Section 9A, *Income Tax Act (1961)* would enable on-shoring the fund management activity of India-focused offshore funds, and potentially, regional/global offshore funds with partial allocation to India. It would also enable greater delegation of fund management activity of FPIs to India as FPI inflows continue to rise in the coming years.

MAJOR SERVICES: SUB-SECTOR WISE PERFORMANCE AND RECENT POLICIES

9.12 Most of the sub-sectors of the services sector witnessed a moderation in growth during 2019-20 (Table 6). The growth in tourism sector decelerated in 2019-20 with weaker growth in foreign tourist arrivals and consequently in foreign exchange earnings from tourism. In the ports sector, growth in port traffic softened in 2019-20 from the previous year. The number of wireless phone subscriptions and wireless internet subscriptions increased in 2019-20. This section discusses developments in some key sub-sectors of the services sector in detail.

Table 6: Performance of India's Key Services Sub-Sectors

Sub-Sector	Indicator	Unit	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
IT –BPM*	IT-BPM service revenues:	US$ billion	118.6	129.4	139.9	151.4	161.8 (E)	-
	Exports	US$ billion	97.7	107.8	116.1	125.1	135.5 (E)	-
	Domestic	US$ billion	20.9	21.6	23.8	26.3	26.3 (E)	-
Aviation**	Airline passengers:	million	115.8	135.0	158.4	183.9	204.2	-
	Domestic	million	70.1	85.2	103.7	123.3	140.3	95.7#
	International	million	45.7	49.8	54.7	60.6	63.9	15.6@
Telecom	Wireless phone subscriptions	million	969.9	1033.6	1170.2	1183.4	1161.8	1154.6$
	Wireless internet subscriptions	million	283.3	322.2	400.6	472.7	615.0	665.4%
Tourism	Foreign tourist arrivals[b]	million	7.7	8.0	8.8	10.0	10.6	8.6##
	Foreign exchange earnings from tourism[b]	US$ billion	19.7	21.0	22.9	27.3	28.6	24.0##
Shipping	Port traffic	million tonnes	581.3	606.5	648.4	679.4	699.1	524.0^

Source: Ministry of Tourism, Indian Ports Association, Ministry of Shipping, Directorate General of Civil Aviation, Telecom Regulatory Authority of India, NASSCOM.
Note: *Excluding hardware & e-commerce; **Domestic passengers carried by Indian carriers and international passengers carried by Indian and foreign carriers; [b] On calendar year basis; #For Apr-Nov 2019 period; @For Apr-Jun 2019 period; $As of Nov 2019; ##For Jan-Oct 2019 period; %As of Sep 2019; ^For Apr-Dec 2019 period; E: Estimate.

Tourism Sector

9.13 The tourism sector is a major engine of growth, contributing to GDP, foreign exchange earnings and employment. In India, the tourism sector witnessed a strong performance from 2015 to 2017, with high growth in foreign tourist arrivals. However, foreign tourist arrivals growth (YoY) has decelerated since then to 5.2 per cent in 2018 and 2.7 per cent in January-October 2019 (Figure 3(a)). This trend, however, is not unique to India, as the growth (YoY) in international tourist arrivals globally also slowed from 7.1 per cent in 2017 to 5.4 per cent in 2018 (Table 7).

9.14 Correspondingly, growth in foreign exchange earnings from tourism sector have slowed in 2018 and 2019 after registering strong growth until 2017 (Figure 3(b)). Foreign exchange earnings totalled US$ 24 billion in January-October 2019, with a growth (YoY) of 2 per cent.

Table 7: Foreign and International Tourist Arrivals and Tourism Receipts in India and the World

Indicator	2014	2015	2016	2017	2018
Foreign Tourist Arrivals (FTA) in India (million)*	7.68	8.03	8.80	10.04	10.56
International Tourist Arrivals (ITAs) in India (million)**	13.11	13.76	15.03	16.81	17.42
International Tourist Arrivals (ITAs) around the World (million)	1137	1195	1241	1329	1401
India's Share in World's ITAs (per cent)	1.15	1.15	1.21	1.26	1.24
India's Rank in World's ITAs	24th	24th	26th	26th	22nd
India's Share in Asia Pacific's ITAs (per cent)	4.86	4.84	4.90	5.19	5.01
India's Rank in Asia Pacific's ITAs	8th	7th	8th	7th	7th
India's Share in World Tourism Receipts (per cent)	1.57	1.73	1.84	2.03	1.97#
India's Rank in World Tourism Receipts	15th	14th	13th	13th	13th#
India's Share in Asia Pacific's Tourism Receipt (per cent)	5.49	5.91	6.18	6.90	6.54#
India's Rank in Asia Pacific's Tourism Receipts	7th	7th	7th	7th	7th#

Source: Ministry of Tourism.
Note: *Based on data from the Bureau of Immigration on tourists entering the country on a foreign passport; **Tourists entering the country on a foreign passport plus non-resident citizens visiting the country; #Provisional. International Tourist Arrivals is the sum of Foreign Tourist Arrivals and NRI arrivals in the country.

Figure 3(a): Growth (YoY) in Foreign Tourist Arrivals to India

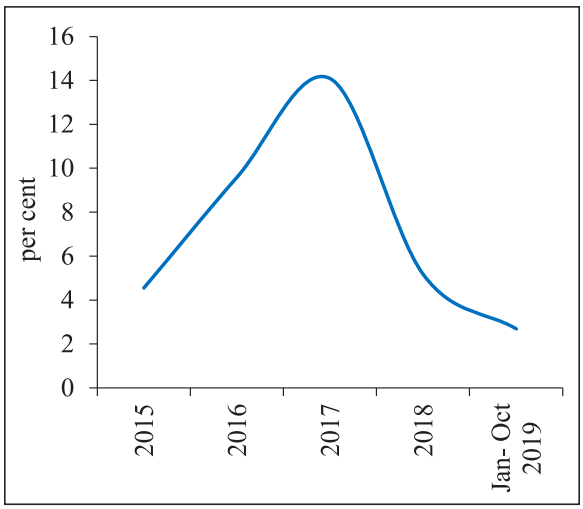
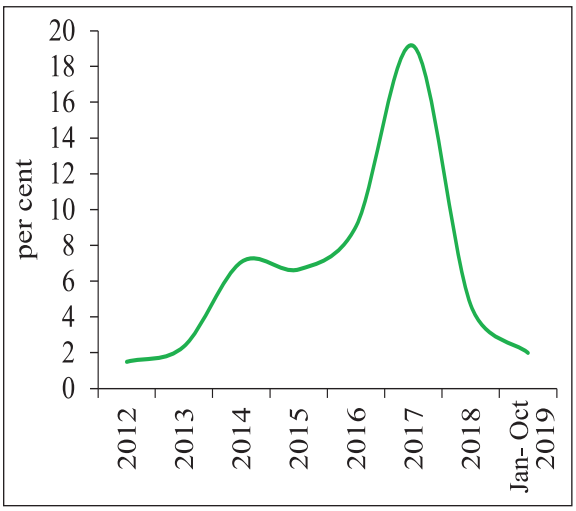


Figure 3(b): Growth (YoY) in Tourism Foreign Exchange Earnings



Source: Ministry of Tourism.
Note: Figures for 2019 are provisional.

9.15 India ranked 22nd in the world in terms of international tourist arrivals in 2018, improving from the 26th position in 2017. India now accounts for 1.24 per cent of world's international tourist arrivals and 5 per cent of Asia & Pacific's international tourist arrivals (Table 7). India ranks 13th in the world and 7th in Asia & Pacific in terms of tourism foreign exchange earnings, accounting for close to 2 per cent of the world's tourism foreign exchange earnings.

9.16 Foreign tourists from the top 10 countries visiting India - Bangladesh, USA, UK, Sri Lanka, Canada, Australia, Malaysia, China, Germany and Russia - accounted for 65 per cent of the total foreign tourist

arrivals in India in 2018. Among the foreign tourists, 62.4 per cent tourists visited for leisure, holiday and recreation, 16.3 per cent for business purposes, and 13.5 per cent was Indian diaspora.

9.17 Looking at tourism trends at the state level, the top five states attracting domestic tourists are Tamil Nadu, Uttar Pradesh, Karnataka, Andhra Pradesh and Maharashtra, accounting for nearly 65 per cent of the total domestic tourist visits in the country in 2018. The top five states attracting foreign tourists are Tamil Nadu, Maharashtra, Uttar Pradesh, Delhi and Rajasthan, accounting for about 67 per cent of the total foreign tourist visits in the country in 2018.

9.18 To facilitate international tourism, India introduced the e-Tourist Visa regime in September 2014 for 46 countries. Prior to the launch of the scheme, the e- Visa facility was available for only 12 countries. The government further liberalized the visa regime in 2016, renaming it to e-Visa scheme with five sub-categories i.e. 'e-Tourist Visa', 'e-Business Visa', 'e-Medical Visa', 'e-Conference Visa' and 'e-Medical Attendant Visa'. The e-Visa scheme is now available for 169 countries with valid entry through 28 designated airports and 5 designated seaports. With this, foreign tourist arrivals to India on e-visas have increased from 4.45 lakh in 2015 to 23.69 lakh in 2018 and stood at 21.75 lakh in January-October 2019, recording nearly 21 per cent year-on-year growth from the previous year.

BOX 3: Share of Tourism in GVA and Employment of States

The Ministry of Tourism along with the National Council of Applied Economic Research (NCAER) has prepared a Tourism Satellite Account (TSA) following the methodology recommended by the UN World Tourism Organization. The state-wise share of Tourism Direct Gross Value Added (TDGVA) in state GVA and share of tourism employment in total state employment have been estimated in the Ministry of Tourism and NCEAR's draft report (Table A).

Table A: Share of Tourism in State GVA and Employment

States	Share of TDGVA in State GVA in 2015-16		Share of Tourism Employment in State Employment in 2015-16	
	Direct (per cent)	Direct and Indirect (per cent)	Direct (per cent)	Direct and Indirect (per cent)
Andaman & Nicobar Islands	4.63	10.39	11.09	24.07
Andhra Pradesh	2.29	4.66	5.41	12.84
Arunachal Pradesh	1.21	2.39	2.20	4.76
Assam	2.19	4.32	4.41	8.75
Bihar	2.96	5.99	4.17	10.50
Chandigarh	3.87	9.17	6.70	12.37
Chhattisgarh	2.13	4.44	2.41	7.65

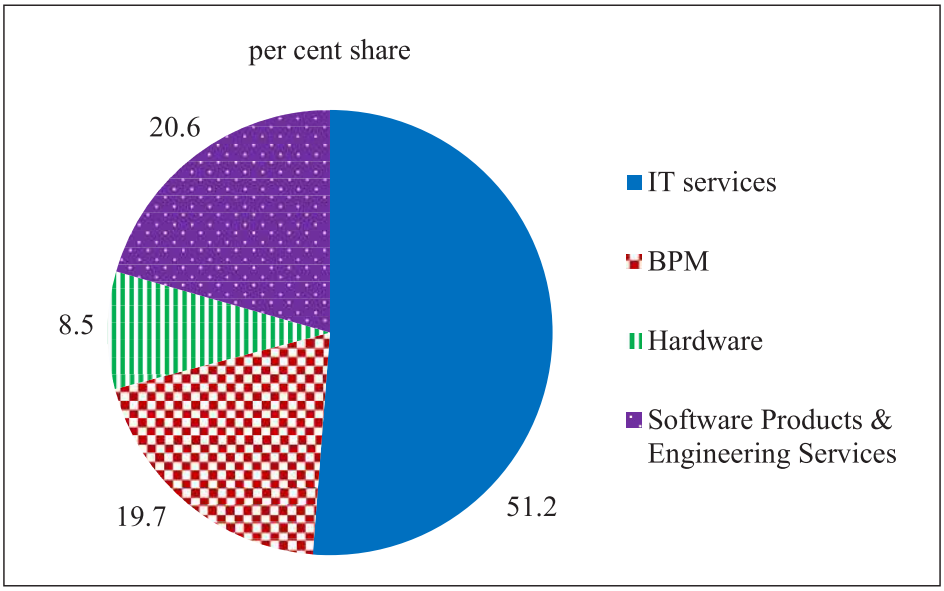
Dadra & Nagar Haveli	0.79	1.79	7.01	23.81
Daman & Diu	0.75	1.36	11.71	29.35
Delhi	4.32	7.78	12.40	21.05
Goa	5.50	11.55	19.38	40.92
Gujarat	1.78	3.96	5.85	15.39
Haryana	1.95	3.88	5.98	10.15
Himachal Pradesh	3.20	6.89	10.23	20.23
Jammu & Kashmir	3.68	7.48	6.74	16.45
Jharkhand	2.10	4.18	3.89	9.12
Karnataka	2.63	5.74	5.46	17.74
Kerala	4.34	8.72	11.20	25.87
Lakshadweep	4.30	9.02	21.95	49.71
Madhya Pradesh	2.39	4.90	3.34	8.45
Maharashtra	3.08	5.52	5.66	12.46
Manipur	2.38	5.50	6.25	12.05
Meghalaya	2.39	5.22	2.87	10.44
Mizoram	1.25	2.55	4.57	10.96
Nagaland	1.87	3.55	3.58	8.34
Odisha	2.43	5.00	5.27	12.11
Puducherry	1.73	4.08	14.25	56.24
Punjab	1.90	3.75	6.69	12.33
Rajasthan	2.73	5.63	5.18	11.26
Sikkim	2.12	4.40	6.84	13.07
Tamil Nadu	2.59	5.37	6.36	15.97
Telengana	2.29	5.07	5.13	17.83
Tripura	1.53	2.99	3.05	5.05
Uttar Pradesh	2.24	4.63	4.46	11.39
Uttarakhand	2.29	5.27	7.99	21.18
West Bengal	2.09	4.30	6.41	14.34

Source: Ministry of Tourism, NCAER.

Information Technology and Business Process Management (IT-BPM) Services

9.19 The Indian IT-BPM Industry has been the flag-bearer of India's exports for the past two decades, with industry size reaching about US$ 177 billion in March 2019. The sector contributes significantly to the economy via employment growth and value addition. IT services constituted 51 per cent of the IT-BPM sector in 2018-19, followed by Software & Engineering Services (20.6 per cent share) and BPM Services (19.7 per cent share) (Figure 4). Within the IT-BPM sector, IT services remained the dominant segment with about US$ 91 billion in revenues in 2018-19. Out of the IT services, digital revenues grew (YoY) more than 30 per cent to reach US$ 33 billion.

Figure 4: Sub-Sector Breakdown of IT-BPM Sector in 2018-19



Source: NASSCOM.

9.20 A significant part (about 83 per cent) of the IT-BPM industry (excluding hardware) continues to be export driven, with export revenues in excess of US$ 135 billion in 2018-19 (Table 8). During 2018-19, the revenue growth (YoY) for IT-BPM sector (excluding hardware) softened to 6.8 per cent from 8.2 per cent in 2017-18. This was driven by a contraction of 0.3 per cent in domestic revenue growth even as export revenue growth accelerated to 8.3 per cent.

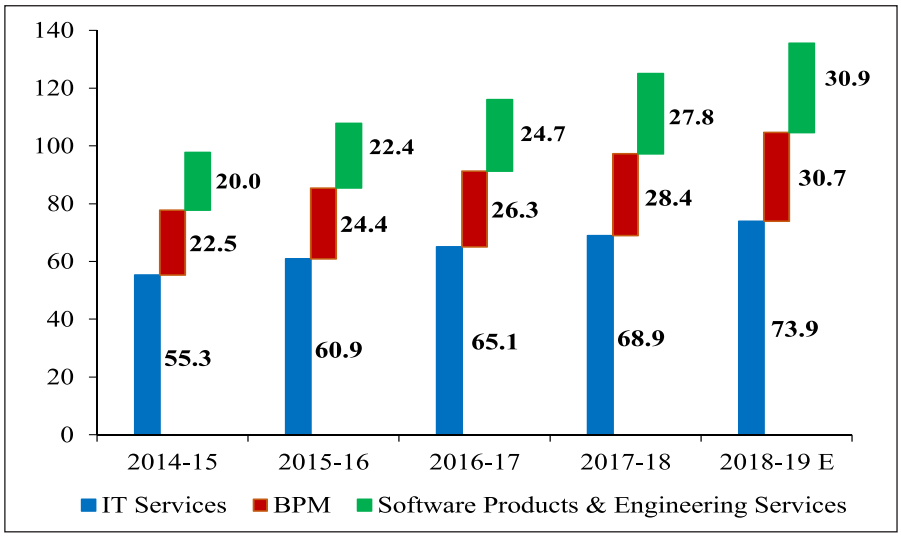
9.21 Out of the total US$ 135.5 billion in exports of the IT-BPM sector in 2018-19, IT services accounted for 55 per cent of the exports, and BPM and Software Products & Engineering services accounted for the remaining 45 per cent with each accounting for almost half of the share (Figure 5). All three sub-sectors witnessed a pickup in export revenues in 2018-19, with IT services growing (YoY) by 7.3 per cent, BPM services by 8.3 per cent and Software Products & Engineering Services by 11.2 per cent.

Table 8: Exports and Domestic Market Size of Indian IT-BPM Industry (Excluding Hardware & E-Commerce)

Year	US$ billion			Growth (per cent YoY)		
	Domestic	Exports	Total	Domestic	Exports	Total
2014-15	20.9	97.7	118.6			
2015-16	21.6	107.8	129.4	3.2	10.3	9.1
2016-17	23.8	116.1	139.9	10.4	7.6	8.1
2017-18	26.3	125.1	151.4	10.4	7.8	8.2
2018-19E	26.3	135.5	161.8	-0.3	8.3	6.8

Source: NASSCOM.
Note: E: Estimate.

Figure 5: Sub-Sector Breakdown of IT-BPM Exports (US $ billion) (Excluding hardware and e-commerce)

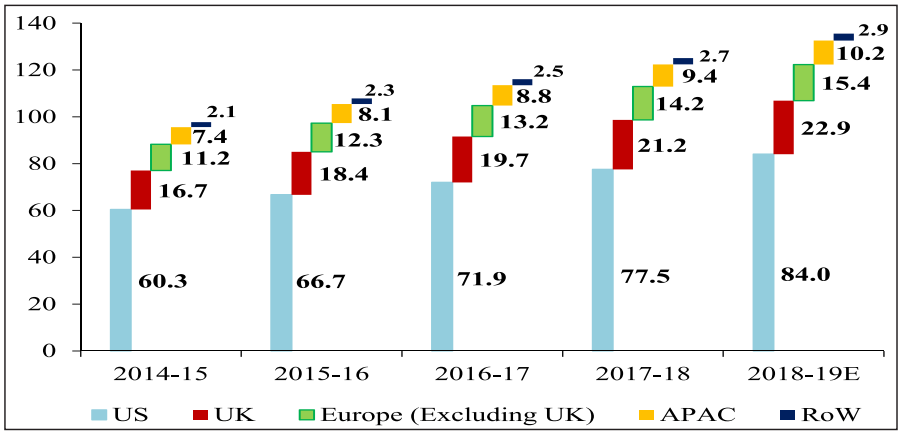


Source: NASSCOM.
Note: E: Estimate.

9.22 Looking at export revenues by destination, USA accounts for the bulk of exports, amounting to US$ 84 billion (Figure 6), which is 62 per cent of total IT-BPM exports (excluding hardware) in 2018-19. This is much larger than the share of exports going to UK, which is the second largest export market for IT-BPM services, with a share of around 17 per cent. Europe (excluding UK) and Asia-Pacific account for 11.4 per cent and 7.6 per cent of the export earnings, respectively.

9.23 Over the past 2-3 years, a number of policy initiatives have been undertaken to drive innovation and technology adoption in the IT-BPM sector, including Start-up India, National Software Product Policy, and removal of issues related to Angel Tax. The Indian start-up ecosystem has been progressing and is now the third largest in the world with 24 unicorns, though the gap with the largest (China: 206) and second largest (USA: 203) markets remains significant. Cities such as Bangalore, Delhi-NCR and Mumbai account for around 55 per cent of the total startups in India (Source: NASSCOM study).

Figure 6: Geographic Break-up of India's IT-BPM Exports (US $ billion) (Excluding hardware and e-commerce)



Source: NASSCOM. Note: E: Estimate.

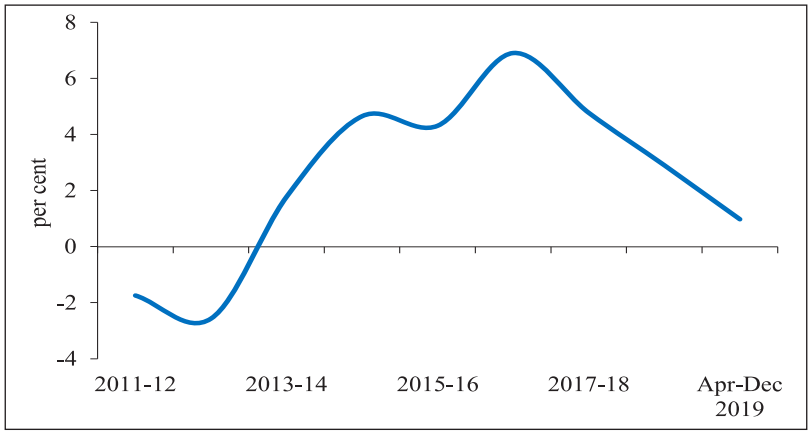
Port and Shipping Services

9.24 India has a 0.9 per cent share in world fleet as on January 2019. India has 13 major ports and about 200 non-major ports. The total cargo capacity of Indian ports stood at 1,452.64 Million Tonnes Per Annum (MTPA) at the end of March 2019, more than doubling from 628.03 MTPA at the end of March 2010. Ports such as Paradip, Chennai, Vishakhapatnam, Deendayal (Kandla) and JNPT had the highest cargo capacities as of March 2019. The total numbers of ships owned by Indian companies stood at 1,414 as of August 2019, up from 1,040 in 2010.

9.25 Growth in overall port traffic witnessed an acceleration between 2013-14 and 2016-17, but has decelerated since 2017-18 (Figure 7). Traffic handled at major ports grew (YoY) at close to 1 per cent in April-December 2019.

9.26 The turnaround time of ships, which is a key indicator of efficiency of the ports sector, has been on a continuous decline, almost halving between 2010-11 and 2018-19 to 2.48 days. The shipping turnaround time has declined across all major ports and is now the lowest at the Cochin, New Mangalore, V.O. Chidambararanar and Chennai ports, and the highest at the Kolkata port (Table 9). As per the latest UNCTAD data, the median ship turnaround time globally is 0.97 days, suggesting that India has room to further improve upon the efficiency at ports.

Figure 7: Growth (YoY) in Port Traffic



Source: Indian Ports Association.

Table 9: Average Ships' Turnaround Time at Major Indian Ports (in days)

Port Name	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Kolkata	5.37	4.95	4.49	4.22	4.18	3.98	4.73	4.11	3.84
Haldia	4.53	3.66	3.99	3.80	3.37	3.27	3.45	3.76	3.04
Paradip	7.73	6.33	4.39	4.62	7.01	4.50	4.99	3.31	2.51
Visakhapatnam	5.84	5.68	5.39	4.73	5.67	3.84	3.75	2.58	2.51
Kamarajar (Ennore)	2.78	2.17	2.95	4.24	4.32	6.53	2.70	2.20	1.97
Chennai	4.36	3.91	3.24	2.46	2.54	2.53	2.51	2.21	1.98
V.O.Chidambararanar	4.11	4.89	4.31	3.92	3.55	3.73	4.40	2.69	1.96
Cochin	2.20	1.82	1.58	1.76	1.69	2.18	1.99	1.54	1.47
New Mangalore	2.71	2.95	3.29	3.18	2.46	2.63	2.35	2.04	1.93
Momugao	6.15	4.80	3.93	4.34	4.15	3.65	4.51	2.63	2.63
Mumbai	4.96	5.22	5.58	5.31	5.28	4.61	3.27	3.72	2.52
JNPT	2.67	2.46	2.54	2.44	2.24	2.44	2.01	2.24	2.13
Deendayal (Kandla)	5.90	6.42	6.40	5.66	5.38	4.66	4.40	2.52	3.01
All Ports	**4.67**	**4.47**	**4.24**	**3.90**	**4.00**	**3.64**	**3.43**	**2.68**	**2.48**

Source: Indian Ports Association.

Space Sector

9.27 India's space programme has grown exponentially since its modest beginnings five decades ago, moving from providing simple mapping services in the 1960s to many more uses currently. This includes design and development of a series of launch vehicles and related technologies, satellites and related technologies for earth observation, telecommunication and broadband, navigation, meteorology and space science, R&D in space sciences, and most recently, planetary exploration.

9.28 India spent about US$ 1.5 billion on space programmes in 2018. However, India's government space expenditure still lags behind that of the major players in the space sector, such as USA, which spent about 13 times more than India in the space sector in 2018 (Table 10). China, which has become a key player in the space sector in the recent years, also spent about seven times more than India in 2018.

Table 10: Government Budget for Space Sector in 2018

Country	Expenditure (US$ billion)
USA (NASA)	19.5
China (CNSA)	11.0
Russia (Roskosmos)	3.3
India (ISRO)	**1.5**

Source: ISRO (which sourced from statista).

9.29 India has launched around 5-7 satellites per year in the recent years with no failures, barring one in 2017. On the other hand, Russia, USA and China dominate the satellite launching services with 20, 31 and 39 satellites respectively in 2018 (Table 11).

9.30 Among the key areas of focus in the space programme, the first area has been satellite communication, with INSAT/GSAT system as the backbone to address the needs for telecommunication, broadcasting and satellite-based broadband infrastructure in the country. The second area of focus has been earth observation and using space-based information for weather forecasting, disaster management, national resource mapping and governance. The third focus area has been satellite-aided navigation including GAGAN and NavIC. GAGAN, a joint project between ISRO and the Airports Authority of India (AAI), augments GPS coverage of the region to improve accuracy and integrity for civil aviation applications and better air traffic management over Indian airspace. NavIC, a regional Navigation system has also been established for providing Position, Navigation and Timing (PNT) Services.

Table 11: Number of Satellite Launches by Country

Country	2013	2014	2015	2016	2017	2018
USA	19(0)	23(1)	20(2)	22(0)	29(0)	31(0)
Russia	34(2)	37(3)	29(3)	19(1)	20(1)	20(1)
China	15(1)	16(0)	19(0)	22(2)	18(2)	39(1)
European Space Agency	6(0)	7(0)	9(0)	9(0)	9(0)	8(1)
India	**3(0)**	**4(0)**	**5(0)**	**7(0)**	**5(1)**	**7(0)**
Japan	3(0)	4(0)	4(0)	4(0)	7(1)	6(0)
Others	1(0)	1(0)	3(0)	2(0)	2(1)	3(0)
Total	**81(3)**	**92(4)**	**86(5)**	**85(3)**	**90(6)**	**114(3)**

Source: ISRO.
Note: The numbers in brackets show satellite launch failures.

9.31 Globally, space activity is undergoing tremendous changes in the recent years in terms of players and applications. This has been marked by a shift in engagement of space activities - from government agencies pursuing national needs and space exploration activities to non-governmental/ private sector agencies aggressively pursuing commercial needs. Space systems are also being actively used for national security purposes by most countries. The global space economy for 2018 tallied about US$ 360 billion, which includes space systems manufacturing and space-based services.

9.32 ISRO has been pursuing the policy of engaging Indian industries in delivering space related goods and services, especially in light of the growing number of satellite and launch vehicle missions and application programmes. In this direction, the following areas have been identified for attracting private investments in the space sector: (i) Production of Polar Satellite Launch Vehicle (PSLV); (ii) Satellite integration

and assembly; (iii) Production of composite materials; (iv) Production of solid, liquid, cryogenic and semi-cryogenic propellants; and (v) Production of electronic packages, Testing & Evaluation for avionics and satellite subsystems.

CHAPTER AT A GLANCE

- The services sector's significance in the Indian economy has continued to increase, with the sector now accounting for around 55 per cent of GVA and GVA growth, two-thirds of total FDI inflows into India and about 38 per cent of total exports.
- The services sector now accounts for more than 50 per cent of Gross State Value Added in 15 out of the 33 states and UTs.
- Gross Value Added growth of the services sector moderated in 2019-20.
- Various high-frequency indicators and sectoral data such as air passenger traffic, rail freight traffic, port traffic, bank credit to services sector and foreign tourist arrivals suggest a moderation in services sector activity during 2019-20.
- Gross FDI equity inflows into services sector have witnessed a strong recovery and services exports have maintained their momentum during April-September 2019.
- Services exports have outperformed goods exports in the recent years, due to which India's share in world's commercial services exports has risen steadily over the past decade to reach 3.5 per cent in 2018, twice the share in world's merchandise exports at 1.7 per cent.
- The shipping turnaround time at ports has almost halved from 4.67 days in 2010-11 to 2.48 days in 2018-19. However, this is still more than twice the global median.
- India has launched around 5-7 satellites per year in the recent years with no failures, barring one in 2017.

Social Infrastructure, Employment and Human Development

10 CHAPTER

Considering India's demographic advantage of a large young population in the productive age group, improvements in the social sectors like education, health care, water supply and sanitation leaves a profound impact on the quality of life of the people as well as to the productivity of the economy. Interventions made to reach out to all sections of the society includes fundamental changes in design of the policies/schemes, expanding the reach through people's participation, awareness generation, technology use, and direct benefit transfer. Expenditure on social services, as a proportion of GDP, has increased by 1.5 percentage points during the period 2014-15 to 2019-20. Access to education has improved the participation in education system at all levels both in rural and urban areas. Scaling up of the efforts to impart necessary skills through a wide network of ITIs focusing on women has pushed the skill development up. Total formal employment in the economy increased from 8 per cent in 2011-12 to 9.98 per cent in 2017-18. Access to health services, inter-alia, through Ayushman Bharat and Mission Indradhanush across the country has improved. About 76.7 per cent of the households in the rural and about 96 per cent in the urban areas had houses of pucca structure. Jal Shakti Abhiyan launched to accelerate progress on water conservation activities in water stressed districts of India.

INTRODUCTION

10.1 Investment in social infrastructure is a pre-requisite for inclusive growth and employment. In the interim Budget of 2019-20, the Government had laid down the vision for the decade which among other things emphasized upon building of social infrastructure; a healthy society-Ayushman Bharat, well-nourished women & children and safety of citizens. Some of the milestones to be achieved in this journey are access to electricity, a clean cooking facility, and housing for all by 2022. Imparting the required skills and creating enabling environment for employment generation are important priorities. Moreover, efforts are continuously being made to ensure piped water supply to all rural households by 2024, and solid waste management in every village. Emphasis has been laid on quality of higher education, promotion of women entrepreneurship, nutrition to the women and children and overall human development. The chapter highlights the important developments, takes stock of the outcomes and churn-out issues relevant for the policy in the social sector.

TRENDS IN SOCIAL SECTOR EXPENDITURE

10.2 The increase in expenditure on social services sector affirms the commitment of the government towards social well-being. The expenditure on social services (education,

health and others) by Centre and States as a proportion of Gross Domestic Product (GDP) increased by 1.5 percentage points from 6.2 to 7.7 per cent, during the period 2014-15 to 2019-20 (Budget Estimates-BE). An increase was witnessed across all social sectors during this period. For education, it increased from 2.8 per cent in 2014-15 to 3.1 per cent in 2019-20 and for health from 1.2 to 1.6 per cent. The share of expenditure on social services out of total budgetary expenditure increased to 26 per cent in 2019-20 (BE) from 23.4 per cent in 2014-15 (Table 1).

Table 1: Trends in Social Service Sector Expenditure by General Government (Combined Centre and States)

Item	2014-15	2015-16	2016-17	2017-18	2018-19 RE	2019-20 BE
			(₹ in Lakh crore)			
Total Budgetary Expenditure	32.85	37.61	42.66	45.16	55.17	60.72
Expenditure on Social Services	7.68	9.16	10.41	11.40	14.47	15.79
of which:						
i) Education	3.54	3.92	4.35	4.83	5.81	6.43
ii) Health	1.49	1.75	2.13	2.43	2.92	3.24
iii) Others	2.65	3.48	3.93	4.13	5.74	6.12
			As percentage to GDP			
Expenditure on Social Services	6.2	6.6	6.8	6.7	7.6	7.7
of which						
i) Education	2.8	2.8	2.8	2.8	3.1	3.1
ii) Health	1.2	1.3	1.4	1.4	1.5	1.6
iii) Others	2.1	2.5	2.6	2.4	3.0	3.0
			As percentage to total expenditure			
Expenditure on Social Services	23.4	24.3	24.4	25.2	26.2	26.0
of which						
i) Education	10.8	10.4	10.2	10.7	10.5	10.6
ii) Health	4.5	4.7	5.0	5.4	5.3	5.3
iii) Others	8.1	9.3	9.2	9.1	10.4	10.1
			As percentage to social services			
i) Education	46.1	42.8	41.8	42.4	40.1	40.7
ii) Health	19.4	19.1	20.5	21.4	20.2	20.5
iii) Others	34.6	38.0	37.7	36.2	39.7	38.8

Source: Budget Documents of Union and State Governments, Reserve Bank of India.

Note: 1. Social services include, education, sports, art and culture; medical and public health, family welfare; water supply and sanitation; housing; urban development; welfare of SCs, STs and OBCs, labour and labour welfare; social security and welfare, nutrition, relief on account of natural calamities etc.

2. Expenditure on 'Education' pertains to expenditure on 'Education, Sports, Arts and Culture'.
3. Expenditure on 'Health' includes expenditure on 'Medical and Public Health', 'Family Welfare' and 'Water Supply and Sanitation'.
4. The ratios to GDP at current market prices are based on 2011-12 base. GDP for 2019-20 is First Advance Estimates released by National Statistical Office (NSO) on January 07, 2020.

Table 2: India's Position in the Global Human Development Index 2018

Country	HDI 2018		HDI Rank 2017	GNI per capita 2018 $	Life expectancy at birth (years) 2018	Expected years of schooling (years) 2018 [a]	Mean years of school-ing (years) 2018[a]
	Value	Rank					
Norway	0.954	1	1	68059	82.3	18.1	12.6
United Kingdom	0.920	15	14	39507	81.2	17.4	13.0
United States	0.920	15	13	56140	78.9	16.3	13.4
Russian Federation	0.824	49	49	25036	72.4	15.5	12.0
Sri Lanka	0.780	71	76	11611	76.8	14.0	11.1
Brazil	0.761	79	79	14068	75.7	15.4	7.8
China	0.758	85	86	16127	76.7	13.9	7.9
Indonesia	0.707	111	116	11256	71.5	12.9	8.0
South Africa	0.705	113	113	11756	63.9	13.7	10.2
India	**0.647**	**129**	**130**	**6829**	**69.4**	**12.3**	**6.5**
Bangladesh	0.614	135	136	4057	72.3	11.2	6.1
Myanmar	0.584	145	148	5764	66.9	10.3	5.0
Pakistan	0.560	152	150	5190	67.1	8.5	5.2
World	**0.731**			**15745**	**72.6**	**12.7**	**8.4**

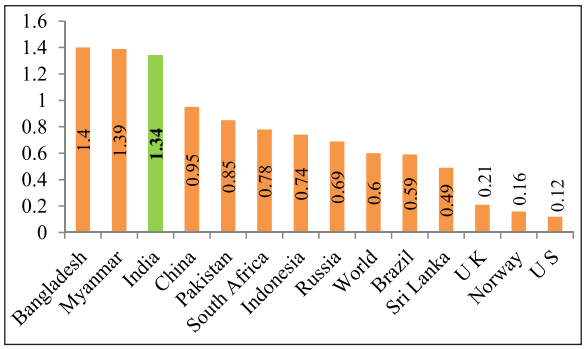
Source: Human Development Report (HDR), 2019
Note: a -Data refers to 2018 or the most recent year available, $-Gross National Income (GNI) is based on 2011 dollar purchasing power parity (PPP).

HUMAN DEVELOPMENT

10.3 India's rank in the Human Development Index (HDI)[1] improved to 129 in 2018 from 130 in 2017, out of a total of 189 countries. The value of HDI for India reached to 0.647 in 2018 (Table 2).

10.4 With 1.34 per cent average annual HDI growth, India is among the fastest improving countries, and ahead of China (0.95), South Africa (0.78), Russian Fedreation (0.69) and Brazil (0.59) (Figure 1). To sustain this momentum in human development and to further accelerate it, the role of public sector in delivery of social services such as education and health is critical.

Figure 1: Average annual HDI growth rate during 2010-2018 (per cent)



Source: HDR, 2019

EDUCATION FOR ALL

10.5 Sustainable Development Goal (SDG)-4 seeks 'to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all' by 2030.

1. The Human Development Report published by the United Nations Development Programme estimates the HDI in terms of three basic parameters: to live a long and healthy life, to be educated and knowledgeable, and to enjoy a decent economic standard of living.

In India, free and compulsory education starts at the age of 6 and ends at the age of 14 years under the ambit of the Right of Children to Free and Compulsory Education (RTE) Act, 2009 which stipulates norms and standards for a recognized school imparting elementary education. The RTE norms provide for an all-weather building in elementary schools. The school building should, *inter-alia*, consist of at least one classroom for every teacher and an office-cum-store-cum-Head teacher's room, barrier free access, separate toilets for boys and girls, safe and adequate drinking water facility to all children and playground.

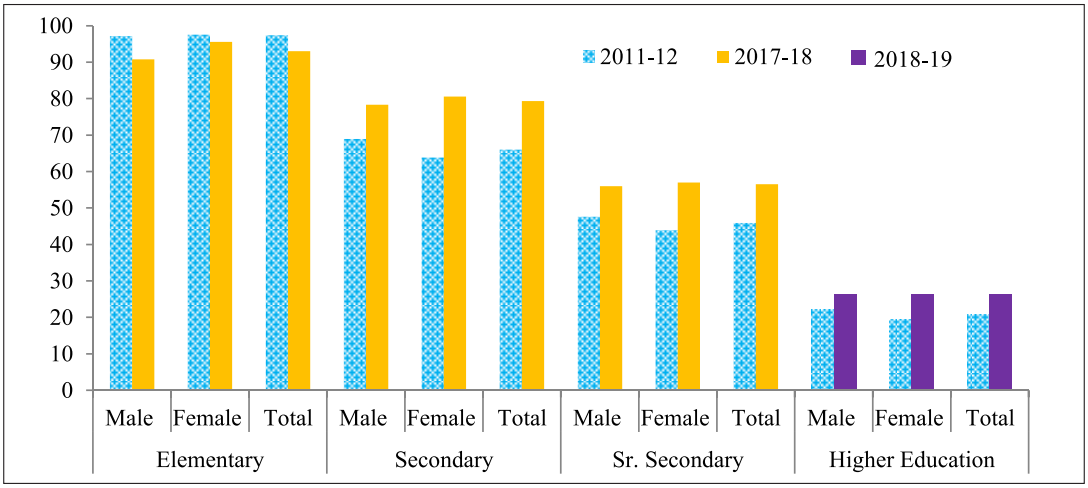
10.6 Unified District Information System for Education (U-DISE) collects data on various indicators on school education. As per U-DISE, 2017-18 (provisional), 98.38 per cent of Government elementary schools have girls' toilet, 96.23 per cent of Government elementary schools have boys' toilet, 97.13 per cent of Government elementary schools have provision of drinking water facility, 38.62 per cent of Government elementary schools have ramps, 58.88 per cent of Government elementary schools have boundary wall, 56.72 per cent of Government elementary schools have playground facility, 79.23 per cent of Government elementary schools have library and 61.75 per cent schools are having electricity connection. The progress in school and higher education infrastructure and gross enrolment at all levels as may be seen in Table 3 and Figure 2 respectively.

Table 3: Number of Schools, Colleges and Universities at all India level

Year	Primary & Upper Primary schools (in lakhs)	Sr. Secondary Schools (in lakhs)	Year	Colleges	Universities
2011-12	11.93	0.84	2011-12	34852	642
2017-18	14.85	1.24	2018-19	39931	993

Source: Educational Statistics at a Glance 2018, U-DISE, 2017-18 (Provisional) and All India Survey on Higher Education Report 2018-19, M/o Human Resource Development

Figure 2: Gross Enrolment Ratio (GER) at all India level (in per cent)



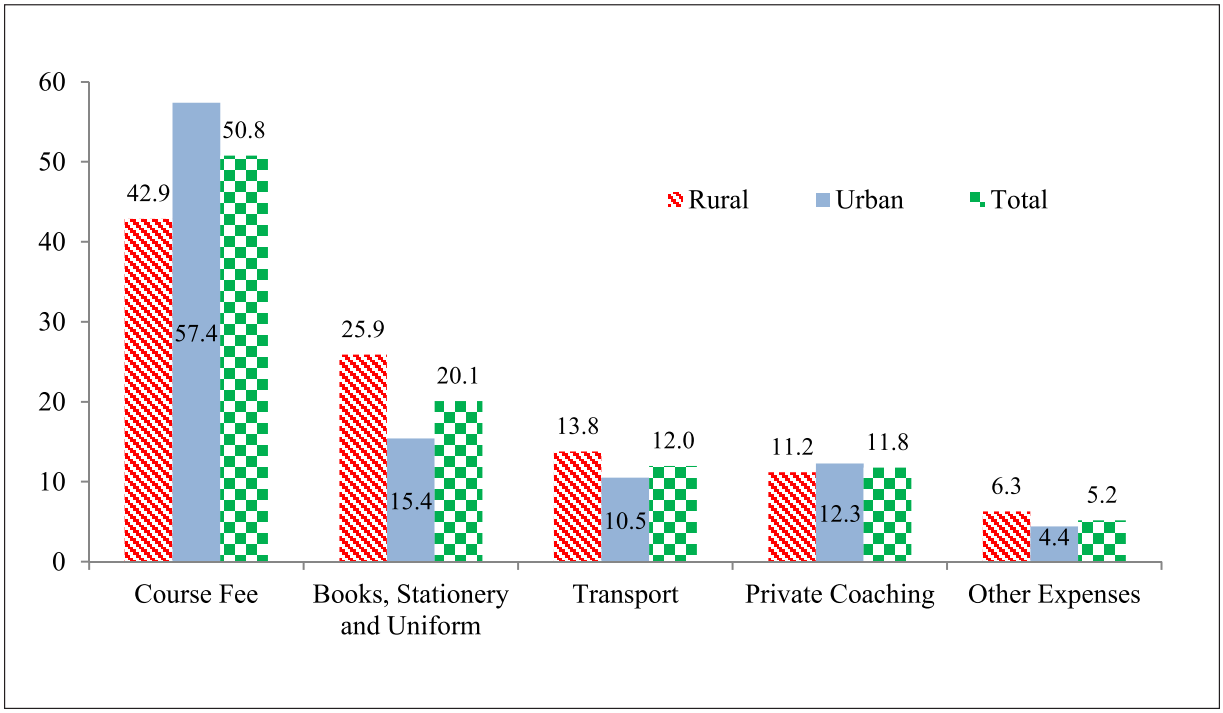
Source: Educational Statistics at a Glance 2018, U-DISE, 2017-18 (Provisional) and All India Survey on Higher Education Report 2018-19, M/o Human Resource Development
Note: GER of Higher Education is for 2018-19 and calculated for 18-23 age group.

10.7 The National Sample Survey (NSS) Report on 'Key Indicators of Household Social Consumption on Education in India 2017-18' also reflects the increased participation in education system across various indicators and highlights some challenges in terms of affordability, quality, distribution of educational infrastructure etc. In 2017-18, as reflected in NSS Survey, there were about 13.6 per cent persons of age 3 to 35 years who were never enrolled. The reasons they cite for not enrolling were 'not interested in education' and 'financial constraints.' Among those who were enrolled, drop-out rate was as high as 10 per cent at primary level, 17.5 per cent at upper primary/middle and 19.8 per cent at secondary level.

10.8 The poor and underprivileged section of people prefer to engage themselves in economic activities for their survival. In the absence of suitable financial support system and high burden of course fee especially in higher education pushes them out of the education system. The composition of various components of expenditure on education indicates that the course fees which is 50.8 per cent at all India level (including tuition, examination, developmental fees and other compulsory payments) among others contributes about half of the average expenditure of a basic course (Figure 3). The proportion of course fee is also high in rural and urban areas. The second largest component of average expenditure on education by student is books, stationary and uniform where an average student in the rural areas is surprisingly spending more than 10 percentage points as compared to urban areas.

10.9 The NSS Report also throws interesting findings on the challenges faced in affordability in higher education sector.

Figure 3: Distribution of average expenditure relating to basic course per student pursuing general course during the current academic year (2017-18) by item of expenditure (per cent)



Source: Key Indicators of Household Social Consumption on Education in India, NSS 75th Round (2017-18).

Students pursuing education in private aided institutions are spending significantly higher as compared to government institutions across rural-urban India (Table 4). Also, due to absence of competition in government schools/institutions, quality of education in government schools/institutions is low. As a result, more and more students prefer to enrol themselves in private institutions.

10.10 The initiatives taken to provide the quality education in government schools and institutions in affordable and competitive manner may be seen in Box-1.

Table 4: Average expenditure (₹) per student pursuing general education by level of current attendance and type of institution (2017-18)

Institution	Pre-primary	Primary	Secondary	Higher Secondary	Graduate	PG & above	All
Government institutions							
Rural	822	1092	3678	6144	9516	13117	2586
Urban	2126	2413	5978	10074	12448	15974	5954
Total	**1030**	**1253**	**4078**	**7001**	**10501**	**14656**	**3135**
Private aided institutions							
Rural	9589	9603	7361	10371	12820	17483	9723
Urban	16401	15800	20324	26905	22949	22594	19545
Total	**13223**	**12889**	**12487**	**16415**	**16769**	**19388**	**14155**

Source: Key Indicators of Household Social Consumption on Education in India, NSS 75th Round (2017-18).

Box 1: Programmes and Scheme for School Education

- Earlier, Sarva Shiksha Abhiyan (SSA) effective till 2017-18 was the designated Centrally Sponsored Scheme to meet the objectives of the RTE Act in elementary schools, provided assistance to State Governments and UTs for universalization of elementary education in the country. The Department of School Education and Literacy has launched an Integrated Scheme for School Education - Samagra Shiksha w.e.f. 2018-19, which subsumes three erstwhile Centrally Sponsored Schemes of Sarva Shiksha Abhiyan (SSA), Rashtriya Madhyamik Shiksha Abhiyan (RMSA) and Teacher Education (TE). The new integrated scheme envisages school education as a continuum from pre-school to senior secondary level and aims to ensure inclusive and equitable quality education. Under Samagra Shiksha, States and UTs are supported for strengthening of existing government schools, and for creation and augmentation of infrastructure facilities based on proposals received from respective States/UTs. The scheme also envisages an annual recurring composite school grant varying from ₹ 25,000/- to ₹ 1,00,000/- per annum depending upon the enrollment of students, for all government schools. Each school is required to spend at least 10 per cent of the composite school grant on activities related to Swachhata Action Plan. The scheme also provides for annual maintenance and repair of existing school building, toilets and other facilities to upkeep the infrastructure in good condition besides various interventions for improvement of quality of education such as induction and in-service training of teachers and school heads, learning enhancement programmes, use of ICT in education, assessment of learning outcomes, provision of libraries and supplementary graded material to schools etc.

- To further focus on quality education, the Central RTE Rules have been amended to include reference on class-wise and subject-wise Learning Outcomes. The Learning Outcomes for each class in Languages (Hindi, English and Urdu), Mathematics, Environmental Studies, Science and Social Science up to the elementary stage have, accordingly, been finalized and shared with all States/UTs. These would serve as a guidelines for States and UTs to ensure that all children acquire appropriate learning level. The RTE Act, 2009 was amended in 2017 to ensure that all teachers acquire the minimum qualifications prescribed under the Act by 31st March, 2019 to reinforce the Government's emphasis on improvement of quality of elementary education.
- The Navodaya Vidyalaya Scheme provides for opening of one Jawahar Navodaya Vidyalaya (JNV) in each district of the country to bring out the best of rural talent. Its significance lies in the selection of talented rural children as the target group and aims to provide them quality education comparable to the best in a residential school system.
- A National Mission called NISHTHA – National Initiative for School Heads' and Teachers' Holistic Advancement under the Centrally Sponsored Scheme of Samagra Shiksha in 2019-20 is being launched to improve learning outcomes at the elementary level. The Integrated Teacher Training Programme envisages to build the capacities of around 42 lakh teachers and head of schools, faculty members of SCERTs, DIETs, Block Resource Coordinators, and Cluster Resource Coordinators. The aim of this training is to motivate and equip teachers to encourage and foster critical thinking in students, handle diverse situations and act as first level counsellors.
- Promoting joyful learning through cultural activities including art, music, dance and theatre is playing a very critical role in a student's life and school activities. The National Curriculum Framework emphasized the importance of such activities and how they helped to enhance learning.
- Pradhan Mantri Innovative Learning Program (DHRUV) was launched to identify and encourage talented students to enrich their skills and knowledge.
- To broadbase technology aided teaching and learning, States and UTs are being actively involved to contribute and use the Digital Infrastructure for Knowledge Sharing (DIKSHA) platform. Steps are also being taken to improve the quality and diversify the nature of e-content on DIKSHA. Other e-content sites like e-pathsala, National Repository of Open Educational Resources (NROER) are also being integrated with DIKSHA to ensure easy access.

10.11 The Government has initiated the process of formulating a New Education Policy to meet the changing dynamics of the requirements of the population with regard to quality education, innovation and research, aiming to make India a knowledge superpower by equipping its students with the necessary skills and knowledge and to eliminate the shortage of manpower in science, technology, academics and industry.

10.12 The initiatives taken for improving the quality of learning and teaching in higher education including technical education are mentioned in Box 2.

Box 2: Programmes and Schemes in Higher Education

- The government launched Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNMTT) which aims at building a strong professional cadre of teachers by setting performance standards and creating top class institutional facilities for innovative teaching and professional development of teachers in higher education. Teachers of existing

Central, State Universities/Educational Institutions including private institutions can participate in capacity building programmes as well as induction training.

- Higher Education Financing Agency (HEFA) was established to provide sustainable financial model for higher education institutions, Kendriya Vidyalayas, Navodaya Vidyalayas, AIIMS and other educational institutions of the Ministry of Health with the objective to fund projects to the tune of ₹ 1 lakh crore by 2022. As on 11th December, 2019, projects worth ₹ 37,001.21 crore have been approved and the number of educational institutions that have availed funding through HEFA stands at 75.
- National Educational Alliance for Technology (NEAT) announced a PPP Scheme for using technology for better learning outcomes in Higher Education. The objective is to use Artificial Intelligence to make learning more personalised and customised as per the requirements of the learner. This requires development of technologies in Adaptive Learning to address the diversity of learners. EdTech companies would be responsible for developing solutions and manage registration of learners through the NEAT portal.
- The Department of Higher Education, in the Ministry of Human Resource Development has finalized and released a five-year vision plan named Education Quality Upgradation and Inclusion Programme (EQUIP). EQUIP is a vision plan aiming at ushering transformation in India's higher education system by implementing strategic interventions in the sector over the next five years (2019-2024).
- SWAYAM 2.0 was launched to offer online degree programmes with enhanced features and facilities by top ranking universities. 'Deeksharambh' a guide to student induction programme and 'PARAMARSH' scheme is to mentor institutions seeking National Assessment and Accreditation Council accreditation are some of the other major schemes of Department of Higher Education launched in 2019.

SKILL DEVELOPMENT

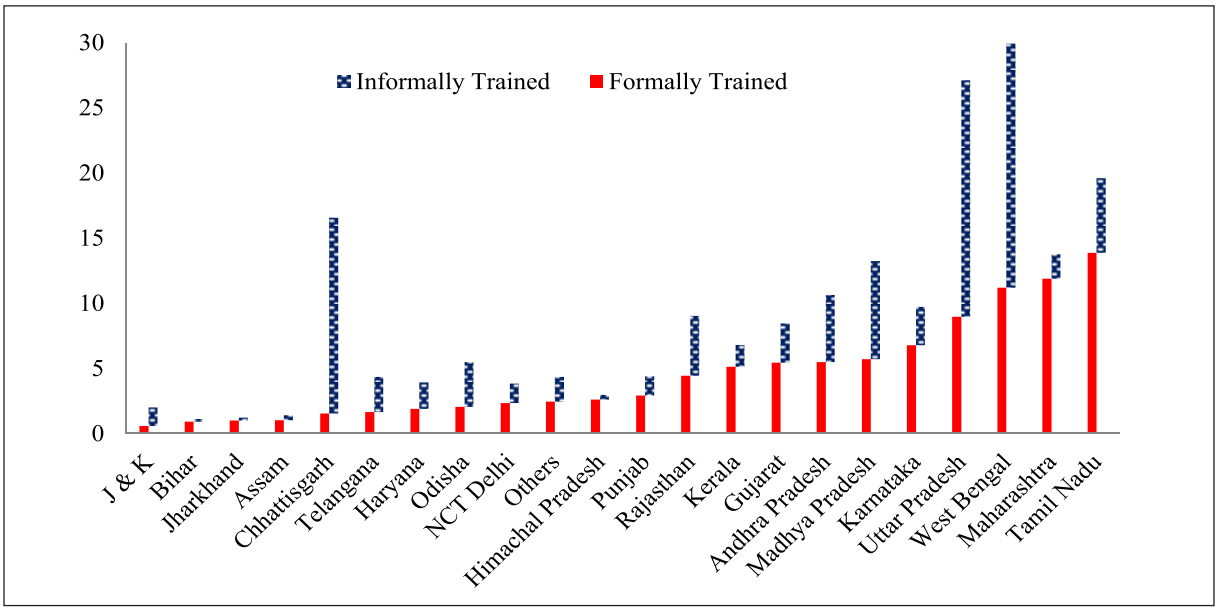
10.13 The future labour market situation of young persons is highly influenced by their initial experiences, including how quickly and how well they are able to access the labour market, and the skills and competencies acquired through education and training (ILO, 2019). General education improves knowledge of the people while skill training enhances their employability and equip them to tackle requirements of labour market.

10.14 According to the Periodic Labour Force Survey (PLFS) 2017-18 only 13.53 per cent of the workforce in the productive age-group of 15-59 years has received training (2.26 per cent formal vocational/technical training and 11.27 per cent informal training). A large section among informally trained workers, about 55.9 per cent received it either through self-learning (28.66 per cent) or hereditary (27.24 per cent) and about 38.51 per cent have received it on-the-job. State-wise percentage of trained workers may be seen in Figure 4.

10.15 Under the Skill India Mission, the Government implements the Pradhan Mantri Kaushal Vikas Yojana (PMKVY) 2016-20 which enables large number of prospective youth to take up Short Term Training (STT) and Recognition of Prior Learning (RPL) through empanelled training centers /training providers (TCs/TPs) throughout the country. Under PMKVY (2016-20), 69.03 lakh (appx.) (38.01 lakh STT + 31.02 lakh RPL) candidates have been trained throughout the country as on 11th November, 2019.

10.16 Under PMKVY 2016-20, TCs/TPs are required to have dedicated mentorship-cum-placement cells for industry linkage and placement of candidates. TPs are mandated

Figure 4: State-wise workforce (15-59 years) who received training through formal/ informal sources (per cent)



Source: Annual Report, PLFS (2017-18)

to organize Placement/Rozgar Melas every six months with support from the Sector Skill Councils (SSCs) and to ensure the participation of local industry. The reimbursement of last 20 per cent of training payout to TCs is linked with the placement (wage employment or self-employment) of the candidate. Additionally, post placement support of ₹ 1500 per month per trainee is applicable for special group and special areas for 2 or 3 months post training depending on placement within or outside the district of the domicile of the candidate. Under STT, as per data reported on Skill Development Management System (SDMS), 30.21 lakh candidates were certified out of which, 15.4 lakh candidates were reported to be placed in various sectors across the country.

10.17 A wide range of reforms has been introduced to the Apprenticeship Rules, 1992 for expansion and outreach of apprenticeship policy. The comprehensive reforms under Apprenticeship Rules 1992 are given in Box 3.

Box 3: Reforms under Apprenticeship Rules 1992

- Increasing upper limit for engaging apprentices from 10 to 15 per cent of total strength of establishment;
- Decreasing the size limit of an establishment with mandatory obligation to engage apprentices from 40 to 30;
- Payment of stipend for 1st year has been fixed rather than linking it to minimum wages;
- 10 to 15 per cent hike in stipend for 2nd and 3rd year of apprenticeship;
- Duration of apprenticeship training for optional trade can be from 6 months to 3 years.
- The minimum amount of stipend prescribed ranges from ₹ 5,000 per month - for school pass outs between Class 5th- 9th, to ₹ 9,000 per month to graduate or degree apprentices in any stream.

STATUS OF EMPLOYMENT IN INDIA

10.18 Employment generation coupled with improving employability has been the priority of the Government. Various steps are being taken for generating employment in the country like encouraging private sector of economy, fast-tracking various projects involving substantial investment and increasing public expenditure on schemes such as Prime Minister's Employment Generation Programme (PMEGP), Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), Pt. Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY) and Deendayal Antodaya Yojana-National Urban Livelihoods Mission (DAY-NULM). As a result of these policy interventions, the nature of employment has changed significantly.

10.19 As per PLFS estimates[2], the share of regular wage/salaried employees has increased by 5 percentage points from 18 per cent in 2011-12 to 23 per cent in 2017-18 as per usual status[3] (Figure 5). In absolute terms, there was a significant jump of around 2.62 crore new jobs in this category with 1.21 crore in rural areas and 1.39 crore in urban areas (Table 5)[4]. Remarkably, the proportion of women workers in regular wage/salaried employees category have increased by 8 percentage points (from 13 per cent in 2011-12 to 21 per cent in 2017-18) with addition of 0.71 crore new jobs for female workers in this category (Table 5 & Figure 5)

10.20 Among the self-employed category (consists of employers, own account workers and unpaid family labour), while the proportion of own account workers and employers increased, the proportion of unpaid family labour (helper) has declined, especially for females[5] between 2011-12 and 2017-18. The proportion of total self-employed workers however remained

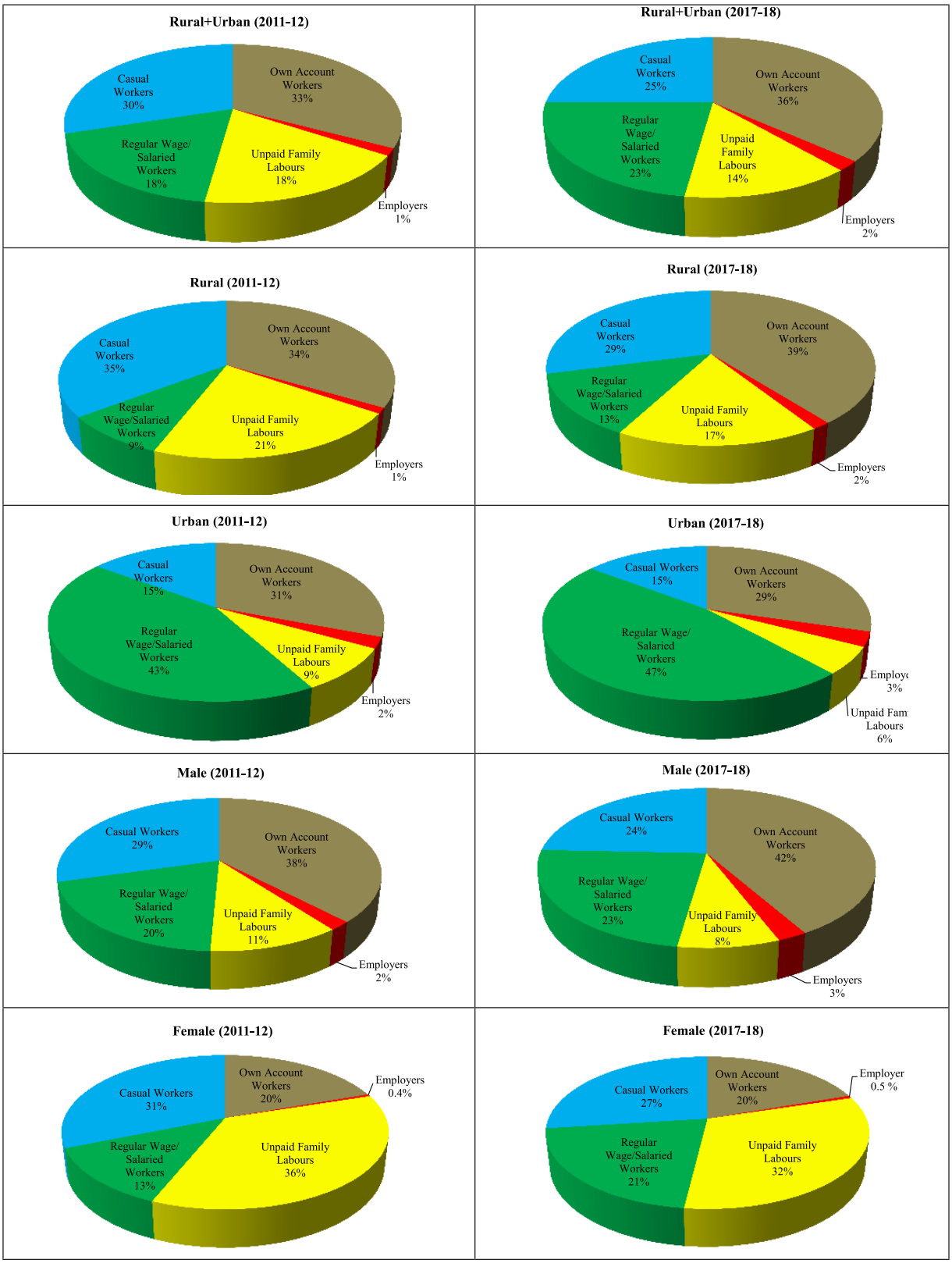
2 The Government launched a new regular employment-unemployment survey, namely, annual Periodic Labour Force Survey (PLFS), 2017-18 with certain changes in survey methodology, data collection mechanism and sampling design vis-à-vis the earlier quinquennial (once in every five years) Employment and Unemployment Surveys (EUS) of NSO. Under the PLFS, households are selected in both rural and urban areas by providing 75 per cent weightage to households where at least one member has secondary education (Class 10) or above. In the EUS, affluence level and earning from non agricultural activities in rural areas and Monthly Per Capita Consumption Expenditure (MPCE) of household in selected blocks in urban areas were used for stratification of households. Due to the changes in methodology and sampling design, labour market estimates based on PLFS are not strictly comparable with the results of earlier quinquennial surveys on Employment-Unemployment conducted by NSO. The results of the PLFS with earlier rounds of NSO-EUS need to be read along with explanatory notes on survey methodology and sampling design. PLFS estimates and previous round estimates are juxtaposed only for making analytical reasoning and is not a comparison in the strictest sense of the term.

3 Usual status (ps+ss) gives an idea about average working condition of an individual for entire reference year. It can further be subdivided in to two categories. One is principal status (ps) and other is subsidiary status (ss). Principal status (ps) measures the activity in which an individual has spent relatively longer time of a reference year (major time criterion) while subsidiary status (ss) measures the activity status of an individual who has spent majority of days out of work force but have worked for short period of time (more than 30 days) (Annual Report, PLFS 2017-18).

4 The NSO data classifies the workers on the basis of employment status into three categories *viz*., self-employed workers; regular wage/salaried employees; and casual labourers. The self-employed category includes those who work for themselves and do not sell their labour power to anyone else in return for wage. This category of workers includes all those workers who operated their enterprises or are engaged in a profession or trade, either on own account, individually or with partners, or as home-based workers (NCEUS; 2009). However, regular wage/salaried employees are those who receive predetermined wages/salary on regular basis. Moreover, casual worker includes those who are hired for very short time period on daily or monthly basis. Out of these three categories, regular wage/salaried employees are better in qualitative terms as they receive pre-determined wages/salary with or without other benefits like social/job security.

5. Own account workers include those who operated their enterprises on their own account or with one or a few partners and ran their enterprise without hiring any labour during the reference period while employers are those own account workers who ran their enterprise by hiring labourers. However, unpaid family labourers/helpers included those who were engaged in their household enterprises, working full or part time and did not receive any regular salary or wages in return for the work performed during the reference period. (Annual Report, PLFS 2017-18).

Figure-5: Distribution of Workers (principal status plus subsidiary status, all ages) by Sector, Sex and Employment Status in India



Source: Estimated from unit level data of NSO 68th Round Employment-Unemployment Survey (EUS) 2011-12 and Periodic Labour Force Survey (PLFS), 2017-18.
Note: The figures are to be read along with explanatory note for comparability.

Table 5: Number of Workers (principal status plus subsidiary status, all ages) by Sector, Sex and Employment Status in India (in crore)

Employment Status	Male		Female		Rural		Urban		Total	
	2011-12	2017- 18	2011-12	2017-18	2011-12	2017-18	2011-12	2017-18	2011-12	2017-18
Self Employed	17.33	18.68	7.20	5.54	18.81	18.26	5.73	5.95	24.54	24.21
Own Account Workers	*12.94*	*14.90*	*2.55*	*2.15*	*11.26*	*12.45*	*4.21*	*4.60*	*15.47*	*17.05*
Employers	*0.64*	*0.9*	*0.06*	*0.06*	*0.39*	*0.49*	*0.31*	*0.47*	*0.7*	*0.96*
Unpaid Family Labour	*3.75*	*2.88*	*4.6*	*3.33*	*7.16*	*5.32*	*1.21*	*0.88*	*8.37*	*6.20*
Regular Wage/ Salaried Employees	7.10	9.00	1.74	2.45	2.93	4.14	5.91	7.30	8.83	11.45
Casual labourer	9.95	8.61	3.97	2.86	11.91	9.18	2.02	2.28	13.92	11.46
Total	**34.38**	**36.29**	**12.91**	**10.85**	**33.64**	**31.59**	**13.65**	**15.53**	**47.29**	**47.12**

Source: Estimated from unit level data of NSO 68th Round EUS 2011-12 and NSO PLFS, 2017-18

Note: 1. Projected population as on 1st January, 2018 was 135.74 crore which has been derived using the NSO-EUS (2011-12) formula, $A = A1 * [1 + \frac{R}{100}]^{82/120}$, where A1 is the census population as on 1st March 2011, R is the percentage decadal change in population between census 2001 and 2011 and A is the projected population as on 1st January, 2018.

2. The figures are to be read along with explanatory note for comparability.

unchanged at 52 per cent during this period (Table 5 & Figure 5).

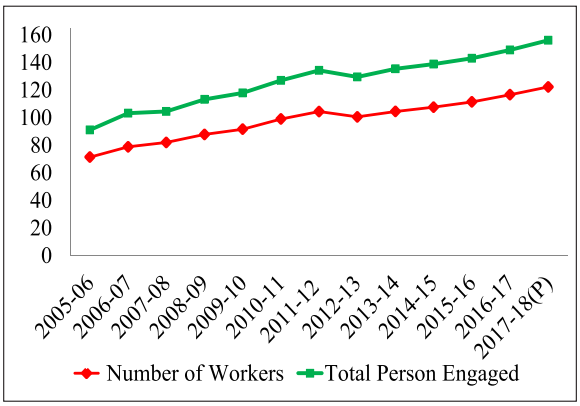
10.21 The distribution of workers in casual labour category decreased by 5 percentage points from 30 per cent in 2011-12 to 25 per cent in 2017-18 with the decline being in rural areas (Figure 5 & Table 5).

Formalization of Jobs

10.22 With introduction of GST, digitization of payments, direct benefit transfer of subsidies/ scholarships/wages & salaries to bank accounts, opening of Jan Dhan accounts, extending social security coverage to more workers, the government has been making efforts to formalize the economy (Box 4). As a result of these initiatives, an increase in formal employment is evident as is shown through multiple data sources.

10.23 According to the Annual Survey of Industries (ASI), there has been an increase in employment in the organized manufacturing sector. Between 2014-15 and 2017-18, the total number of workers engaged in the sector increased by 14.69 lakh while total persons engaged (inclusive of employees and employers) increased by 17.33 lakh (Figure 6).

Figure 6 : Employment in Organized Manufacturing in India (in lakh)



Source: Annual Survey of Industries various issuse (P: Provisional Estimates), MoSPI

10.24 To indicate the extent of formalization of workforce by extending coverage of organized social security, the Government since September, 2017 publishes the monthly

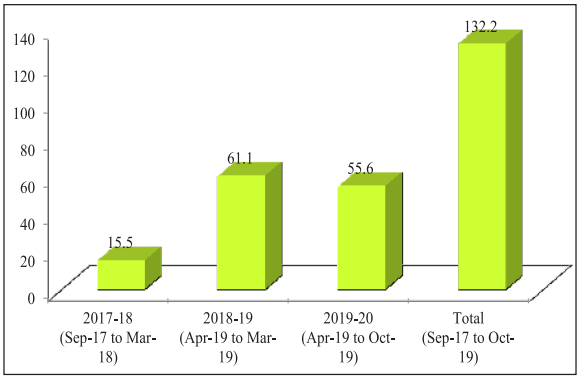
Box 4: Steps Taken Towards Formalisation of the Labour Market

- For portability of Provident Fund accounts, EPFO launched a "Universal Account Number" service for contributing members.
- Government is paying 12 per cent of employer contribution to EPFO in respect of the new employees drawing salary up to ₹15,000 per month for the first three years of their employment, under Pradhan Mantri Rozgar Protsahan Yojana (PMRPY). The scheme has ended on 31st March, 2019.
- Mandatory wage ceiling of subscription to EPS increased from ₹ 6,500 to ₹ 15,000 per month. The Code on Wages Act, 2019 to ensure minimum wages to all and timely payment of wages to all employees irrespective of the sector of employment without any wage ceiling, except MGNREGA.
- MUDRA and STAND-UP India for creating formal credit to businesses.
- Rate of ESI contribution reduced from 6.5 per cent to 4 per cent with effect from 1st July, 2019. Employer's share of contribution reduced from 4.75 per cent to 3.25 per cent and employees' share from 1.75 per cent to 0.75 per cent.
- National Career Service (NCS) Project launched in 2015, provides a host of career-related services such as dynamic job matching, career counselling, job notifications and information on skill development courses and rich career content on a digital platform (www.ncs.gov.in). NCS works towards bridging the gap between job-seekers and employers candidates seeking training and career guidance, agencies providing training and career counselling by transforming the National Employment Service.

payroll data indicating the number of new subscribers who have availed benefits under three major social security schemes, viz; the Employees' Provident Fund (EPFO), Employees' State Insurance Scheme (ESIC) and the National Pension Scheme (NPS). Of these, EPFO has more than 6 crore active members (with atleast one-month contribution during the year). EPFO manages social security funds of workers in the organized/semi-organized sector in India. The pay roll data of EPFO for 2019-20 as on 20th December 2019 shows a net increase of 55.6 lakhs as EPFO subscriber compared to 61.12 lakhs in 2018-19 (Figure 7). These estimates are net of the members newly enrolled, exited and rejoined during the year as per records of the EPFO.

10.25 The estimates of share of workers in informal sector in non-agricultures and AGEGC (Agricultural sector excluding only growing of crops, market gardning, horticulture and growing of crops combined with farming of animals) sectors obtained from the NSO-EUS and PLFS 2017-18, also show a decline from 77.5 per cent in 2004-05 to 68.4 per cent in 2017-18, with the decline being more pronounced among females (Table 6).

Figure 7: Net Employees' Provident Fund Subscriber (in lakh)



Source: EPFO

Note: Data is provisional as updation of employees' records is a continuous process and gets updated in subsequent month/s.

10.26 To get a holistic picture of the extent of formal-informal employment in the economy,

Table 6: Employment in Informal Sector Enterprises among usual status Workers engaged in Non-agriculture and AGEGC Sectors (in per cent)

Category of Workers	EUS 61st Round 2004-05	EUS 66th Round 2009-10	EUS 68th Round 2011-12	PLFS 2017-18
Male	76.7	71.5	73.4	71.1
Female	79.7	69.8	69.2	54.8
Person	77.5	71.1	72.4	68.4

Source: NSO (EUS) various rounds and PLFS (2017-18)
Note: The figures are to be read along with explanatory note for comparability.

the NCEUS (2007a)[6] definition was applied upon the workforce estimates of PLFS to identify the total number of formal and informal workers employed in the organized and unorganized sector. It was observed that the proportion of workers in organized sector increased from 17.3 per cent in 2011-12 to 19.2 per cent in 2017-18 (Table 7). In actual terms, the number of workers in the organized sector increased to about 9.05 crore workers in 2017-18, an increase of 0.87 crore over 2011-12. This was mainly due to the increase in formal employment, the share of which in organized sector increased from 45 per cent in 2011-12 to 49 per cent in 2017-18. Total formal employment increased from 8 per cent to 9.98 per cent during this period. In absolute terms, the number of workers with formal employment increased from 3.8 crore in 2011-12 to 4.7 crore in 2017-18 (Table 7).

Table 7: Formal-Informal Employment across Organized and Unorganized Sector

Employment	Organized (in per cent)	Unorganized (in per cent)	Total (in per cent)	Organized (in crore)	Unorganized (in crore)	Total (in crore)
2004-05						
Formal	53.42	0.36	7.46	3.34	0.14	3.41
Informal	46.58	99.64	92.38	2.91	39.35	42.26
Total	**13.68**	**86.32**	**100**	**6.25**	**39.49**	**45.67**
2011-12						
Formal	45.4	0.40	8.1	3.71	0.16	3.83
Informal	54.6	99.6	91.9	4.47	38.95	43.46
Total	**17.3**	**82.7**	**100**	**8.18**	**39.11**	**47.29**
2017-18						
Formal	48.91	0.74	9.98	4.43	0.28	4.70
Informal	51.09	99.26	90.02	4.62	37.79	42.43
Total	**19.2**	**80.8**	**100**	**9.05**	**38.07**	**47.13**

Source: Estimated from unit level data of NSO (EUS) various rounds and PLFS (2017-18)
Note: The figures are to be read along with explanatory note for comparability.

6. As per National Commission for Enterprises in Unorganized Sector (NCEUS) classification, "The unorganised sector consists of all unincorporated private enterprises owned by individuals or households engaged in the sale and production of goods and services operated on a proprietary or partnership basis and with less than ten total workers." However, "informal workers consist of those working in the unorganised enterprises or households, excluding regular workers with social security benefits, and the workers in the formal sector without any employment benefits /social security provided by the employers." (NCEUS, 2007a, p.3).

GENDER DIMENSION OF EMPLOYMENT

10.27 Gender equality in labour market is considered to be smart economics to achieve faster economic growth and wealth creation as it has the potential to impact upon poverty, inequality and economic well-being of a country through increase in income of the household, spending on health and education of children, improvement in saving, investment and consumption growth. In an era of globalization, no country can develop and achieve its full potential if half of its population is locked in non-remunerative, less productive and non-economic activities (World Bank, 2011).

Female Participation in Labour Market

10.28 According to NSO-EUS and PLFS estimates, female labour force participation rate (LFPR) for productive age-group (15-59 years) as per usual status (ps+ss) shows a declining trend. Female labour force participation declined by 7.8 percentage points from 33.1 per cent in 2011-12 to 25.3 per cent in 2017-18. Though female LFPR is higher in rural areas as compared to urban areas, the rate of decline was also sharper in rural areas compared to urban areas (Figure 8A). As a result of this, gender disparity in India's labour market has increased which is reflected from declining trend in ratio of female to male labour force participation rate except for urban females. In urban areas, female labour force participation more or less remained constant. Therefore, ratio of female to male labour force also remained constant between 2011-12 and 2017-18 (Figure 8B).

10.29 Female Worker Population Ratio (WPR) also shows a similar trend[7]. As per PLFS, female WPR for productive age group (15-59 ages) stood at 23.8 per cent (25.5 per

Figure 8 A: Female Labour Force Participation Rate (ps+ss, 15-59 ages) by Location (per cent)

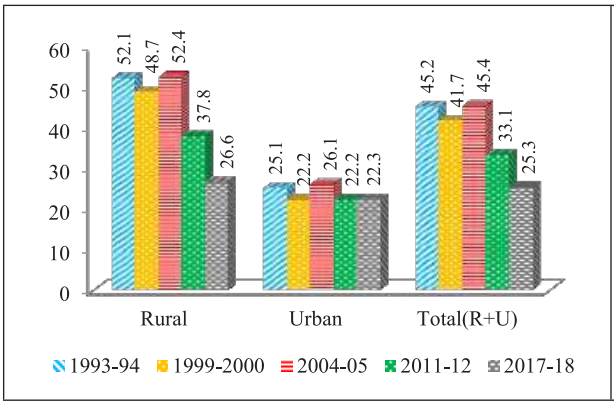
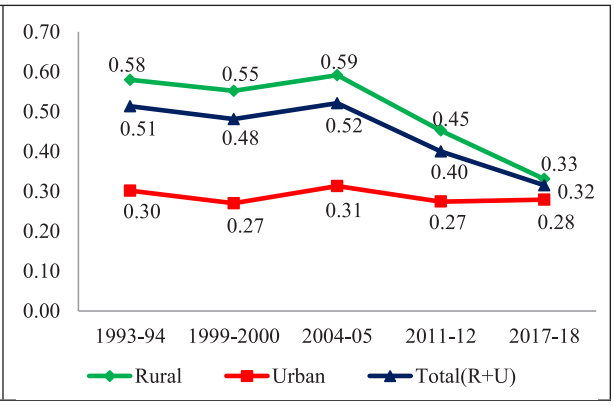


Figure 8 B: Ratio of Female to Male Labour Force Participation Rate (ps+ss, 15-59 ages)



Source: Estimated from unit level data of NSO (EUS) various rounds and PLFS (2017-18)
Note: The figures are to be read along with explanatory note for comparability.

7. Labour force refers to those who are either engaged in any economic activities or are willing to pursue an economic activity in a reference period. It includes both (1) those who are in workforce; and (ii) unemployed. Of these, workforce refers to the population who are actively engaged in any economic activities and producing goods and services in a reference period while unemployed refers to all those who are seeking and available for work but had not worked in a reference year due to lack of work. Hence, Labour force participation rate (LFPR) can be defined as the proportion of population in the labour force to the total population. Similarly, Worker population ratio (WPR) can be defined as the proportion of employed persons to the total population (Annual Report, PLFS 2017-18).

cent in rural areas and 19.8 per cent in urban areas) in 2017-18 as compared to 32.3 percent in 2011-12 (Figure 9A). As a result of this, ratio of female to male work participation rate has also shown consistent declining trend in India except for urban females (Figure 9 B).

10.30 Based on the activity status - principal (ps) and subsidiary (ss)- indicates that participation of females, especially in rural areas, who were engaged in subsidiary activities has drastically declined (from 25 per cent in 2004-05 to 5.7 per cent in 2017-18) (Figure 9 D) as compared to females engaged as per principal status (Figure 9 C). This clearly indicates that those female workers who had stable jobs continued while those who were not full time workers are dropping out of the labour market.

Factors Influencing Female Labour Force Participation

10.31 While women account for almost half of India's population, their participation in the labour market is almost one-third as well as declining over several Survey Rounds. To understand this declining trend, the activity status of females outside the workforce was examined separately for youth (15-29) as well as for the age groups (30-59 & 15-59). As seen in Table 8, in 2017-18, higher proportion of young males (10.5 per cent) were unemployed

Figure 9 A: Female Worker Population Ratio (ps+ss, 15-59 ages) by Location (per cent)

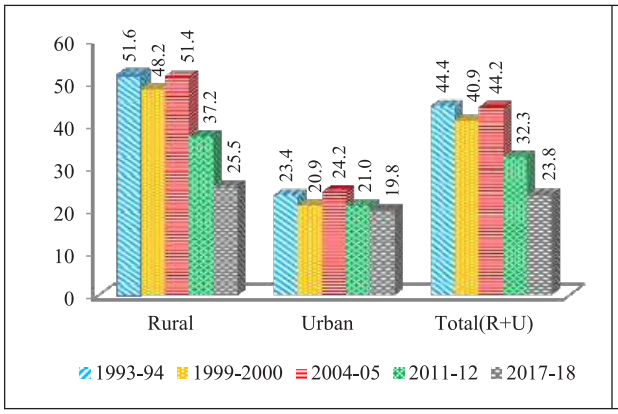


Figure 9 B: Ratio of Female to Male Work Participation Rate (ps+ss, 15-59 ages)

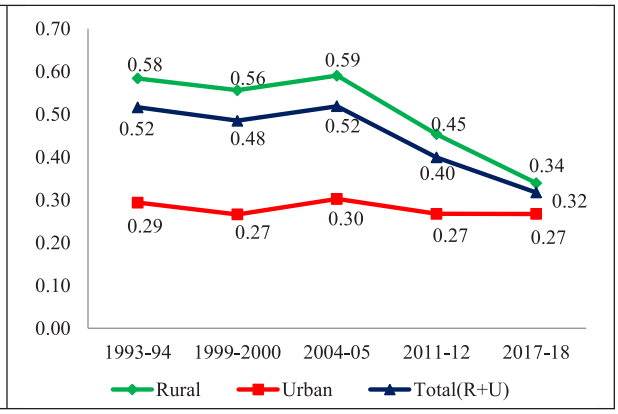


Figure 9 C: Female Worker Population Ratio (principal status, 15-59 ages) by Location (per cent)

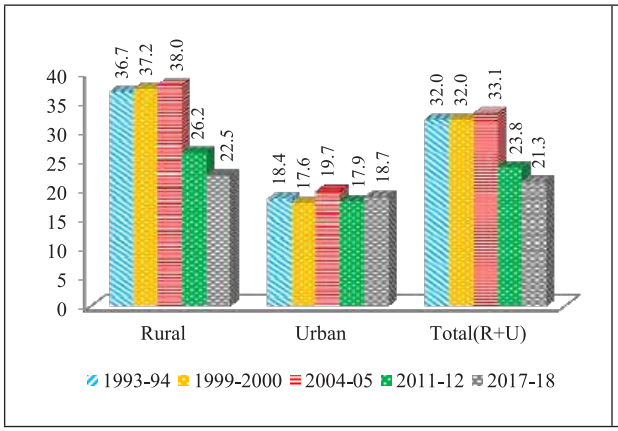
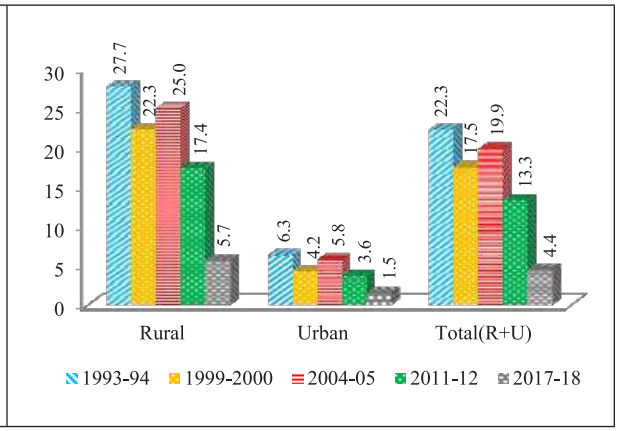


Figure 9 D: Female Worker Population Ratio (subsidiary status, 15-59 ages) by Location (per cent)



Source: Estimated from unit level data of NSO (EUS) various rounds and PLFS (2017-18)
Note: The figures are to be read along with explanatory note for comparability.

compared to young females (3 per cent). The proportion of youth attending educational institutions has increased at a faster rate from 23 per cent in 2004-05 to 38.5 per cent in 2017-18 for young males, while for young females the proportion almost doubled from 15.8 per cent in 2004-05 to 30.3 per cent in 2017-18. It may be considered a remarkable achievement that around one-third of youth were engaged in acquiring skills and delayed their entry into labour market. However, among young females around 52.3 per cent were engaged in domestic activities in 2017-18 and this proportion has increased over the last two decades. Similarly, in the productive age group 30-59, where females were out of education, the proportion of females attending domestic duties increased from 46 per cent in 2004-05 to 65.4 per cent in 2017-18 (Table 8). For the productive age group (15-59 years) as compared to less than 1 per cent of males, about 60 per cent of working age females were outside labour market attending to domestic duties only.

10.32 The educational attainment of out of workforce productive age group females

Table 8: Distribution of Out-of-Work Force (principal status + subsidiary status, 15-59 age) population into major activities by Sex (per cent)

Activities	2004-05		2011-12		2017-18	
	Male	Female	Male	Female	Male	Female
15-29 Age group						
Unemployed (A)	3.91	2.18	3.77	1.62	10.45	2.94
Out of labour force (B)						
Attending Education Institutes	23.19	15.88	34.33	25.44	38.47	30.30
Attending domestic Duties	0.47	45.92	0.51	49.25	1.03	52.29
Others	1.72	1.12	1.60	0.91	1.72	1.00
Total Out-of-Work Force (A + B)	**29.28**	**65.09**	**40.21**	**77.25**	**51.68**	**86.53**
30-59 Age group						
Unemployed (A)	0.43	0.49	0.36	0.24	1.29	0.48
Out of labour force (B)						
Attending Education Institutes	0.03	0.05	0.03	0.05	0.10	0.11
Attending domestic Duties	0.24	46.03	0.22	58.52	0.37	65.39
Others	2.26	1.89	1.96	1.84	2.69	2.84
Total Out-of-Work Force (A + B)	**2.96**	**48.47**	**2.57**	**60.63**	**4.45**	**68.82**
15-59 Age group						
Unemployed (A)	2.01	1.24	1.86	0.83	5.30	1.51
Out of labour force (B)						
Attending Education Institutes	10.50	7.07	15.11	10.89	16.90	12.75
Attending domestic Duties	0.34	45.98	0.35	54.57	0.66	59.90
Others	2.01	1.55	1.81	1.44	2.27	2.07
Total Out-of-Work Force (A + B)	**14.86**	**55.83**	**19.12**	**67.72**	**25.13**	**76.24**

Source: Estimated from unit level data of NSO (EUS) various rounds and PLFS (2017-18)

Note: The figures are to be read along with explanatory note for comparability; and 'Others' includes recipient of remittances, disabled and others.

shows interesting results. It was found that those with middle level and secondary level education were engaged in domestic duties compared to highly educated women for all age sub-groups. For the productive age group (15-59 years), only 5.3 per cent of highly educated women are engaged in full time domestic duties while remaining 54.6 per cent of women attending domestic duties are up to secondary level educated (Table 9). Thus, it is lack of attainment of appropriate education level /skill sets that are confining women to domestic duties.

Table 9: Distribution of female attending domestic duties (ps+ss) by Age Group and Level of Education in India, 2017-18 (per cent)

Level of Education	Age Groups		
	15-29	30-59	15-59
Illiterate	8.0	26.1	18.5
Up to Middle Level	23.9	24.7	24.4
Secondary	14.3	9.8	11.7
Graduate and above	6.0	4.7	5.3
Total	**52.3**	**65.4**	**59.9**

Source: Annual Report, PLFS 2017-18

Note: Graduate and above includes diploma/certificate courses

10.33 Considerable amount of research work has been done to identify the reasons behind low and declining female labour force participation rates for India. The arguments advanced in support of the declining and low female LFPR are from both supply and demand side. On the supply side, it was argued that as more women in rural areas are now pursuing higher education has delayed their entry into the labour market (Rangarajan *et. al.,* 2011). It could also be because the household incomes have risen in rural areas on account of higher wage levels which is dragging women out of the labour market (Himanshu, 2011). The female LFPR could be low also due to cultural factors, social constraints and patriarchal norms restricting mobility and freedom of women (Das, 2006, Banu, 2016). The relatively higher responsibilities of unpaid work and unpaid care work could also be constraining women participation in the labour market (World Economic Forum, 2018). On the demand side, absence of job opportunities and quality jobs and significant gender wage gap are restraining factors (World Bank, 2010; Chowdhury, 2011; Kapsos *et. al,* 2014). Sanghi *et. al.* (2015) using NSSO-EUS data concluded that besides income effect, education effect and the problem of underestimation, what is left unnoticed is the structural transformation of the economy and its resultant impact on the female labour market. Mehrotra and Sinha (2017) also pointed out that structural shift away from agricultural employment, and increased mechanization of agriculture were factors behind declining female employment trends in rural areas. In addition, it was also observed that the decline in animal husbandry, and in urban areas a fall in international demand for products of labour-intensive industries have led to lowering of female LFPR in India.

10.34 Low female wages in agriculture sector were driving out females engaged as unpaid labour. The structural transformation of the economy did not change the labour market commensurately. The fall in employment in agriculture has not shown concomitant increase in opportunities for women in the manufacturing sector where most women with middle to secondary levels of education and from middle income groups are likely to look for employment (Chandrasekhar and Ghosh, 2011). Withdrawal of men from agriculture and shift to the construction sector in urban areas, led to loss of jobs for rural women who were engaged as unpaid labour along with the men. The loss of jobs as casual

labour in agriculture also led to withdrawal of women from labour force (Kannan and Raveendran, 2012). Thus, the achievements in female education and the subsequent loss of female dominated jobs in agriculture and manufacturing sector could have contributed to the continued decline in female LFPR. Though substantial exploration has been undertaken to explain declining female work participation from demand as well as supply side but there is still no consensus among the scholars regarding the declining trend in female employment in recent decades.

Initiatives to Improve Female Work Participation

10.35 To encourage female participation in the economy, various programmes/ legislative reforms are in place. A number of protective provisions have been incorporated in various labour laws for creating congenial work environment for women workers such as child care centers, time-off for feeding children, enhancement in paid maternity leave from 12 weeks to 26 weeks, provisions for mandatory crèche facility in the establishments having 50 or more employees, permitting women workers in the night shifts with adequate safety measures, etc. The Equal Remuneration Act, 1976 provides for payment of equal remuneration to men and women workers for same work or work of similar nature without any discrimination. Under the provisions of the Minimum Wages Act, 1948, the wages fixed by the appropriate Government are equally applicable to both male and female workers without any gender discrimination. In order to enhance the employability of female workers, the Government is providing training to them through a network of women Industrial Training Institutes, National Vocational Training Institutes and Regional Vocational Training Institutes. Besides these, various initiatives have been implemented for empowerment of women across the country. The details of these major schemes are as under:

i. **Safety of Women at Workplace:** Safety and security of women in the country is of utmost priority for the Government. The Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013 covers all women, irrespective of their age or employment status and protects them against sexual harassment at all workplaces both in public and private sector, whether organized or unorganized. The Act mandates all the workplace having more than 10 workers to constitute Internal Complaint Committee (ICC) for receiving complaints of sexual harassment. Similarly, the appropriate Government is authorized to constitute Local Complaint Committee (LCC) in every district which will receive complaints from organizations having less than 10 workers or if the complaint is against the employer himself.

ii. **Mahila Shakti Kendra Scheme**: This scheme aims to empower rural women through community participation. The scheme envisages community engagement through College Student Volunteers to empower rural women in 115 aspirational districts as part of block level initiatives.

iii. **Provision of safe and affordable accommodation:** To provide safe and affordable accommodation to working women, Working Women Hostels have been established. These hostels have day care facility for the children of inmates too.

iv. **Women Helpline Scheme (WHL):** WHL implemented since 1st April,

2015 to provide 24 hours emergency and non-emergency response to women affected by violence through referral and information about women related government schemes/programmes across the country through a single uniform number (181).

v. **One Stop Centre (OSC):** This scheme facilitates access to an integrated range of services including police, medical, legal, psychological support and temporary shelter to women affected by violence. One Stop Centres are being set up in all districts of the country.

vi. **Female Entrepreneurship:** To promote female entrepreneurship, the Government has initiated schemes like: MUDRA, Stand Up India and Mahila e-Haat (online marketing platform to support women entrepreneurs/ SHGs/NGOs). Pradhan Mantri Mudra Yojana (PMMY) provides access to institutional finance to micro/small business units upto ₹ 10 lakh. Out of total beneficiaries, almost 75 per cent were women borrowers. To encourage further coverage of women borrowers, the Micro Units Development and Refinance Agency Ltd. (MUDRA) extends a rebate of 0.25 per cent on its refinance interest rate for PMMY loans given by Micro Finance Institutions to women borrowers. Stand-UP India, the Government provides bank loans between ₹ 10 lakh and ₹ 1 crore to at least one Scheduled Caste (SC)/ Scheduled Tribe (ST) borrower and at least one-woman borrower per bank branch for setting up greenfield enterprises in the manufacturing, services or the trading sector.

vii. **Rashtriya Mahila Kosh (RMK)** is an apex micro-finance organization that provides micro-credit at concessional terms to poor women for various livelihood and income generating activities. Among other things, RMK also promotes and supports expansion of entrepreneurship skills among women.

viii. **Prime Minister's Employment Generation Programme (PMEGP):** Under the scheme, women entrepreneurs are provided 25 per cent and 35 per cent subsidies for the project set up in urban and rural areas respectively. For women beneficiaries, own contribution is only 5 per cent of the project cost while for general category it is 10 per cent. All the entrepreneurs including women are eligible for 2 weeks Entrepreneurship Development Programme (EDP) after the sanction of their projects from banks for financial assistance to setup their unit and also imparting training under EDP.

ix. **Deendayal Antyodaya Yojana-National Rural Livelihoods Mission (DAY-NRLM)** - seeks to reach out to 8-9 crore rural poor households and organize one-woman member from each household into affinity-based women SHGs and federations at village and at higher levels. Support is provided to the women for employment and self-employment venture under the scheme to enhance their farm livelihoods and non-farm livelihood through various components of schemes such as organic farming, Krishi Sakhi, Pashu Sakhi, dairy value chain interventions, Aajeevika Grameen Express Yojana, Start-up Village Entrepreneurship Programme etc. DAY-NRLM provides Revolving Funds (RF) at the rate of ₹ 10,000-15,000 per SHG and Community Investment Support Fund

(CISF) to the extent of ₹ 2.5 lakh per SHG to support their income generating and livelihood activities.

HEALTH FOR ALL

10.36 The introduction of National Health Policy, 2017 for universal access to good quality health care services, and subsequent launch of Ayushman Bharat, with its two components: 1) Health & Wellness Centres to provide comprehensive primary health care, and 2) Pradhan Mantri Jan ArogyaYojana (PMJAY) to provide health cover to 10.74 crore poor & vulnerable families upto ₹ 5 lakh per family per year for secondary & tertiary hospitalization, speaks about Government's efforts for a healthy India. The focus of healthcare is on four important pillars - preventive healthcare, providing affordable healthcare, building medical infrastructure and mission mode interventions for maternal health, child health and to combat communicable and non-communicab-g the marked increase in burden of non-communicable diseases, the Government is now focused on addressing this epidemiological transition from communicable diseases (CDs) to non-communicable diseases (NCDs).

Preventive Health Care

10.37 To promote preventive healthcare, one and half lakh Ayushman Bharat-Health & Wellness Centres (AB-HWCs) are proposed to be set up by 2022. A total of 28,005 have already been set up (as on 14 Jan 2020) to deliver comprehensive Primary Health Care services with focus on universal high quality screening, prevention, control and management of common

Table 10: India- Select Health Indicators

Sl. No	Parameter	1991	2001	2011	Current level
1.	Crude Birth Rate (per 1000 population)	29.5	25.4	21.8	20.2 (2017)
2.	Crude Death Rate (per 1000 population)	9.8	8.4	7.1	6.3 (2017)
3.	Total Fertility Rate	3.6	3.1	2.4	2.2 (2017)
4.	Maternal Mortality Ratio (per 1,00,000 live births)	NA	301 (2001-03)	167 (2011-13)	122 (2015-17)
5.	Infant Mortality Rate (per 1000 live births)	80	66	44	33 (2017)
	Rural	87	72	48	37
	Urban	53	42	29	23
6.	Child (0-4 years) Mortality Rate (per 1000 children)	26.5	19.3	12.2	8.9 (2017)
7.	Life Expectancy at Birth	(1991-95)	(2001-05)	(2009-13)	(2013-17)
	Total	60.3	64.3	67.5	69.0
	Rural	58.9	63.0	66.3	67.7
	Urban	65.9	68.6	71.2	72.4

Sources: Sample Registration Survey (SRS) and SRS based Abridged Life Tables, Registrar General of India (RGI)

NCDs such as Hypertension, Diabetes, and the three common Cancers – Oral Cavity, Breast and Cervical Cancer, while continuing to provide services for Reproductive, Maternal, Adolescent and Child health (RMNCH+A) and for communicable diseases.

10.38 Under Mission Indradhanush, 3.39 crore children and 87.18 lakh pregnant women in 680 districts across the country (including Gram Swaraj Abhiyan [GSA] & extended GSA) have been vaccinated. New vaccines such as Measles-Rubella (MR), Pneumococcal Conjugate Vaccine (PCV), Rotavirus Vaccine (RVV) and Inactivated Polio Vaccine (IPV) have been introduced. As on 31st December 2019, 32.42 crore children have been vaccinated with MR. A total of 218.96 lakh doses of PCV have been administered (till November 2019), since introduction. RVV was introduced in 11 States and around 7.44 crore doses have been administered to children, till November 2019. Moreover, nearly 11.73 crore doses of IPV have been administered (as in November 2019) to children across the country since its introduction.

10.39 Apart from the above, recognizing the need for addressing the social determinants of health, the government has adopted a multi-sectoral approach and is increasingly synergizing its efforts with other Mission Mode initiatives of the Government such as Eat Right & Eat Safe, Fit India, Anaemia Mukt Bharat, Poshan Abhiyan and Swacch Bharat Abhiyaan etc.

10.40 Recognising the threat of nicotine addiction among youth and children through gateway products such as e-cigarettes, the government recently banned all commercial operations in e-cigarettes. Large pictorial warnings and quitline number on tobacco packs and the resulting increased call volumes from 20,000 to 2.50 lakh calls per month at the quitline services, indicate that government's efforts to reduce tobacco use are starting to bear fruit.

Health Care Affordability

10.41 Access to healthcare has improved over the years in India. As per the latest National Health Accounts (NHA) 2016-17, the out of pocket expenditure (OoPE) as a percentage of total health expenditure has declined from 64.2 per cent in 2013-14 to 58.7 per cent in 2016-17. Primary healthcare accounts for 52.1 per cent of India's current public expenditure on health as per the National Health Estimates, 2016-17. The National Health Policy, 2017 recommended to spend at least two third of Government's health expenditure on primary healthcare.

10.42 Ayushman Bharat- Pradhan Mantri Jan Arogya Yojana (PM-JAY), the world's largest health insurance scheme, is a major step towards providing affordable healthcare to the identified poor. The Scheme has been rolled out based on the deprivation and occupational criteria of the Socio-Economic Caste Census for rural and urban areas respectively. In addition, AB-HWCs will provide free essential medicines and diagnostic services closer to the community for their primary healthcare needs thereby aiming to reduce OoPE.

10.43 Under Free Drugs Service initiative, substantial funds have been given to States for provision of free drugs. All States/UTs have notified policy to provide essential drugs free in health facilities. Drugs procurement, quality system and distribution has been streamlined through IT based Drug Distribution Management Systems in 29 States.

10.44 Free Diagnostics Service initiative was launched to address the high OoPE on diagnostics and improve quality of healthcare services. The guidance document for implementation of Free Laboratory Services in States/ UTs was released in August 2019 to guide States/ UTs on planning and implementing Labs services in Hub and Spoke model, and the range of diagnostics tests have been expanded from earlier 7 tests to 14 tests at Sub Centre/ Health & Wellness Centre level, 19 tests to 63 tests at PHC level, 39 tests to 97 tests at CHC level and 56 tests to 134 tests at DH level. The tests encompass hematology, serology, bio-chemistry, clinical pathology, microbiology, radiology, and cardiology. As on 1st November 2019, FDI Laboratory services have been implemented in 33 States/UTs (PPP mode in 11 States/UTs and In-house mode in 22 States/UTs); FDI CT Scan services have been implemented in 23 States/UTs (PPP mode in 13 States/ UTs and In-house mode in 10 States/UTs) and FDI Teleradiology services have been implemented in 10 States in PPP mode.

10.45 In addition to the above, Pradhan Mantri Bharatiya Jan Aushadi Pariyojana (PMBJP) and Pradhan Mantri National Dialysis Programme (PMNDP) are some of the new initiatives that address the issue of high OoPE on account of drugs and hospital care.

Medical Infrastructure

10.46 The doctor-population ratio in India is 1:1456 (population estimated to be 1.35 billion) against the WHO recommendation of 1:1000. To address the shortage of doctors, the government has embarked on an ambitious programme for upgradation of district hospitals into medical colleges. In last 5 years, government has sanctioned 141 new medical colleges.

10.47 The norms for graduate and post graduate seats in medical colleges have also been revised. The maximum intake capacity at MBBS level has been increased from 150 to 250, the norms for setting up of Medical colleges in terms of requirement of land, faculty, staff bed strength etc have been rationalized. The Government operates Centrally Sponsored Scheme–establishment of New Medical Colleges attached with existing District/Referral Hospitals' with fund sharing between Centre and States. As a result, the number MBBS and PG seats have increased by 27,235 and 15,000 respectively. These efforts would go a long way in addressing the shortage of doctors.

10.48 The Pradhan Mantri Swasthya Suraksha Yojana (PMSSY) was launched to augment the tertiary healthcare capacity in clinical care, medical education and research in underserved areas of the country, under which AIIMS like institutions are built and Government Medical Colleges are upgraded by setting-up Super Speciality Blocks.

10.49 National Medical Commission Act, 2019 was promulgated to enable constitution of National Medical Commission. Reforms have also been brought about with the introduction of a common entrance test NEET-UG for admission to all MBBS courses including AIIMS and JIPMER.

10.50 With the continuous efforts by the Government in the area of health care system, the progress in development of health care infrastructure along with availability of human resources has remarkably grown over the years (Table 11).

10.51 Government of India supports States in Health Systems Strengthening under the umbrella programme of National Health Mission (NHM). This has resulted in striking improvements in health infrastructure of public health facilities in States also. Apart from setting up AB-HWCs, work of new

Table 11: Health Care Infrastructure

Facilities	2014	2018
SC/PHC/CHC	182709 (as on 31.3.2014)	189784 (as on 31.3.2018)
Government Hospital (rural & urban areas, including CHC)	20306	25778
AYUSH Hospital & Dispensaries	29733 (as on 1.4.2014)	31986 (as on 1.4.2018)
Medical Colleges	398 (2014-15)	539 (2019-20)
Nursing Personnel	2621981 (as on 31.12.2014)	2966375 (as on 31.12.2017)
Pharmacists	664176 (as on 27.6.2014)	1125222 (as on 27.3.2019)
Doctors (Modern System)*	747109 (upto 2014)	923749 (upto 31.12.2018)
AYUSH Doctors	736538 (as on 1.1.2014)	799879 (as on1.1.2018)

Source: National Health Profile 2015 and 2019.
Notes: 1: SC: Sub Centre; PHC: Primary Health Centre; CHC: Community Health Centre; AYUSH: Ayurveda, Yoga, Unani, Siddha and Homeopathy
2: *Assuming 80 per cent of registered doctors are available.

construction/renovation of sub-centres, Primary Health Centre, Community Health Centres, Sub-District Hospitals, and District Hospitals has been undertaken across the country (Table12).

10.52 The Government has also supported States to add nearly 2.51 lakh additional health human resources including 10,767 General Duty Medical Officers, 3062 Specialists, 61,660 Staff Nurses, 84,077 Auxiliary Nurse Midwifes (ANMs), 42,031 Paramedics, 414 Public Health Managers and 17,265 Programme Management staff on contractual basis. Significant progress has also been made in multi-skilling of doctors at strategically located facilities identified by the States where there is shortage of specialists e.g. MBBS doctors are trained in Emergency Obstetric Care, Life Saving Anesthesia Skills

Table 12: Public Health Infrastructure under National Health Mission

Facility	New Construction		Renovation/Upgradation	
	Sanctioned	Completed	Sanctioned	Completed
Sub Center	27573	21014	18707	15345
Primary Health Centre	2920	2264	13324	11462
Community Health Centre	604	473	6692	5771
Sub District Hospital	240	139	1150	963
District Hospital	172	129	3201	2325
Total	**31509**	**24019**	**43074**	**35866**

Source: Department of Health & FW (as on 30.6.2019)

and Laparoscopic Surgery. Similarly, due importance is given to capacity building of nursing staff and ANMs. The mission also supports co-location of AYUSH services in health facilities such as PHCs, CHCs and DHs. There are 10.42 lakh Accredited Social Health Workers (ASHAs) across the country in rural and urban areas under the NHM, who act as a link between the community and the public health system.

Mission Mode Interventions

10.53 In order to intensify efforts towards achievement of SDGs, the Government has launched ambitious programmes such as Ayushman Bharat, marking a paradigm shift in the way health care is delivered. Ayushman Bharat targets universal health coverage by focusing on preventive, promotive and palliative care apart from ambulatory care; and by providing protection against catastrophic health expenditure for secondary and tertiary hospital care. The new paradigm recognizes and addresses the emerging challenges of NCDs due to changing epidemiology and also targets to sustain the efforts for RMNCH+A and communicable diseases through initiatives such as as Surakshit Matritva Aashwasan (SUMAN), Social Awareness and Action to Neutralise Pneumonia Successfully (SAANS) and TB Harega Desh Jeetega.

10.54 The AB-HWCs would follow a well-defined referral and return linkages to ensure continuum of care. At all levels, tele-consultation would be used to improve referral advice and undertake virtual consultation including case management support by doctors and specialists. Several states have also initiated the use of digital platforms such as ECHO for continuous capacity building of the primary health team.

10.55 More than 7.78 crore people have visited these centres and individuals over 30 years of age have been screened for common NCDs. 2.94 crore individuals screened for hypertension and 2.51 crore screened for diabetes, conditions which cause majority of premature morbidity and mortality. The screening for NCDs is also being done for 3 common cancers, wherein as on 11.1.2020, individuals screened for oral cancer (1.52 crore), women for breast cancer (92 lakhs) and cervical cancer (62 lakhs).

HOUSING FOR ALL

10.56 As per recent NSO survey on Drinking Water, Sanitation, Hygiene and Housing Condition in India 2018, about 76.7 per cent of the households in the rural and about 96.0 per cent in the urban areas had the house of pucca structure. Pradhan Mantri Awaas Yojana-Gramin (PMAY-G) and Pradhan Mantri Awaas Yojana-Urban (PMAY-U) are two important schemes for achieving the target of housing for all by 2022.

10.57 More than four times increase in number of houses completed in a year under PMAY-G, from 11.95 lakh in 2014-15 to 47.33 lakh in 2018-19, signifies government's commitment of housing for all. Under its Phase-I from 2016-17 to 2018-19, the scheme has delivered 86.59 lakh completed houses against the target of 1 crore as on 17th January, 2020. Under Phase-II (2019-20 to 2021-22), against the cumulative target of 1.95 crore houses, a total of 5,27,878 houses have been delivered under PMAY-G (as on 17th January, 2020).

10.58 Under PMAY-U, against assessed demand of 1.12 crore, 1.03 crore houses were sanctioned, 61 lakh grounded for construction and 32 lakh have been delivered as on 1st January, 2020. Covering a range of

social groups, comprising senior citizens, construction workers, domestic workers, artisans, differently-abled (Divyang), transgender and leprosy patients, the scheme has promoted social inclusiveness, and improved upon women empowerment by giving them ownership of the house.

DRINKING WATER AND SANITATION

10.59 The Department of Drinking Water and Sanitation (DDWS), Ministry of Jal Shakti launched the 10 Year Rural Sanitation Strategy (2019-2029), which focus on sustaining the sanitation behaviour change that has been achieved under the Swachh Bharat Mission Grameen (SBM-G), ensuring that no one is left behind, and increasing access to solid and liquid waste management. Since the launch of the SBM-G in 2014, over 10 crore toilets have been built in rural areas; over 5.9 lakh villages, 699 districts, and 35 States/UTs have declared themselves Open Defecation Free (ODF). This strategy has been prepared by DDWS, in consultation with State Governments and other stakeholders, and it lays down a framework to guide local governments, policy makers, implementers and other relevant stakeholders in their planning for ODF Plus, where everyone uses a toilet, and every village has access to solid and liquid waste management.

10.60 Swachh Survekshan Grameen 2019 survey covered 17,450 villages in 698 districts across India and include 87,250 public places namely schools, anganwadi centers, public health centres, haat/bazaars/religious places, making it India's largest rural sanitation survey. Around 2.5 lakh citizens were interviewed for their feedback as part of the survey. Citizens will also be mobilised to provide feedback on sanitation related issues online using an application developed for the purpose.

10.61 Jal Shakti Abhiyan was launched to accelerate progress on water conservation activities in the most water stressed blocks and districts of India. Jal Shakti Abhiyan (JSA) has delivered over 3.5 lakh water conservation measures in 256 districts. Out of these, 1.54 lakh are of water conservation and rain water harvesting measures, 20,000 relate to the rejuvenation of traditional water bodies, over 65,000 are reuse and recharge structures and 1.23 lakh are watershed development projects. An estimated 2.64 crore people have already participated in the Abhiyan making it a Jan Andolan.

CONCLUSION

10.62 The efforts of the government with the motto of *Sabka Saath, Sabka Vikas and Sabka Vishwas* have improved the access to social services. Over the years, the participation in education at all levels has improved both in rural and urban areas. Scaling up of the skill training through a wide network of ITIs and significant rise in women trainees. Under Ayushman Bharat, free diagnostic services are being made available at HWCs, PHCs, CHCs, and DHs and free drug services are provided in health facilities. New Health facilities as well as renovation of existing health facilities being undertaken under NHM. Under Mission *Indradhanush,* 3.39 crore children and 87.18 lakh pregnant women in 680 districts across the country (including GSA & extended GSA) has been vaccinated. Total formal employment in the economy increased from 8 per cent in 2011-12 to 9.98 per cent in 2017-18. Access to health services, inter-alia, through Ayushman Bharat and Mission Indradhanush across the

country has improved. About 76.7 per cent of the households in the rural and about 96 per cent in the urban areas had houses of pucca structure. Jal Shakti Abhiyan launched to accelerate progress on water conservation activities in water stressed districts of India.

CHAPTER AT A GLANCE

- The expenditure on social services (health, education and others) by the Centre and States as a proportion of GDP increased from 6.2 per cent in 2014-15 to 7.7 per cent in 2019-20 (BE).
- India's ranking in Human Development Index improved to 129 in 2018 from 130 in 2017.
- Gross Enrolment Ratio at secondary, higher secondary and higher education level needs to be improved.
- Total formal employment in the economy increased from 8 per cent in 2011-12 to 9.98 per cent in 2017-18.
- Gender disparity in India's labour market widened due to decline in female labour force participation especially in rural areas and around 60 per cent of productive age (15-59) group are engaged in full time domestic duties.
- Mission Indradhanush has vaccinated 3.39 crore children and 87.18 lakh pregnant women of 681 districts across the country.
- Access to health services inter-alia through Ayushman Bharat and Mission Indradhanush across the country has improved. About 76.7 per cent of the households in the rural and about 96 per cent in the urban areas had houses of pucca structure.
- Jal Shakti Abhiyan launched to accelerate progress on water conservation activities in water stressed districts of India.

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