सत्यमेव जयते

Economic Survey 2022-23

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Preface

The Economic Survey 2022-23 comes when global uncertainties are rife. Barely had the pandemic receded, and the war in Ukraine broke out in February 2022. Prices of food, fuel and fertiliser rose sharply. As inflation rates accelerated, central banks of advanced countries scrambled to respond with monetary policy tightening. Many developing countries, particularly in the South Asian region, faced severe economic stress as the combination of weaker currencies, higher import prices, the rising cost of living and a stronger dollar, making debt servicing more expensive, proved too much to handle.

In the second half of 2022, there was a respite for governments and households. Commodity prices peaked and then declined. In the near term, the acute pressure was relieved, although prices of some commodities (e.g., crude oil) remain well above their pre-pandemic levels. For countries dependent on imports, priced and payable in dollars, a global slowdown led by the United States (US) offers a triple relief. Commodity prices decline, and US interest rates peak, as does the US dollar. Capital and current account imbalances abate.

As 2023 rolled in, China opened up rather swiftly, reversing its Zero-Covid policy. An unexpectedly warm winter that has spared households from a debilitating increase in fuel prices that would have dented their disposable income significantly has stirred hopes that the Eurozone economies would narrowly avoid a recession. As the headline inflation rate declines in the US, policy rates are set to rise more slowly. In anticipation, bond yields have come down, and there are faint hopes of the US avoiding a recession altogether, barring any unexpected financial system stress.

Lower chances of a downturn in advanced economies and resumption of economic activity bring with them hopes for some developing economies that are export-dependent and concerns for those who are heavily import-dependent for essential commodities. In anticipation of higher-than-earlier forecasted demand, crude oil prices have begun to climb, as have the prices of industrial metals. Wage negotiations are leading to upward revisions on either side of the Atlantic. Meaningful interest rate reductions in the US and the Eurozone may not materialise as quickly as one would have hoped. The year promises to be far from predictable and may hold surprises for countries and households.

For India, 2022 was special. It marked the 75th year of India's Independence. India became the world's fifth-largest economy, measured in current dollars. Come March, the nominal GDP of India will be around US$ 3.5 trillion. In real terms, the economy is expected to grow at 7 per cent for the year ending March 2023. This follows an 8.7 per cent growth in the previous financial year. The rise in consumer prices has slowed considerably. The annual rate of inflation is below 6 per cent. Wholesale prices are rising at a rate below 5 per cent. The export of goods and services in the first nine months of the financial year (April – December) is up 16 per cent compared to the same period in 2021-22. Although the high oil price this year compared to last inflated India's import bill and caused the merchandise trade deficit to balloon, concerns over the current account deficit and its financing have ebbed as the year rolled on. Foreign exchange reserve levels are comfortable and external debt is low.

India had a good monsoon, and reservoir levels are higher than last year and the 10-year average. The fundamentals of the Indian economy are sound as it enters its *Amrit Kaal*, the 25-year journey towards its centenary as a modern, independent nation. Policies pursued carefully and consciously have ensured that the recovery is robust and sustainable. This is the context in which the Economic Survey undertakes an assessment of the economy in the present, in the light of the recent past and examines its prospects in the coming years. Before I give you an overview of what awaits inside the pages of the Economic Survey of 2022-23, it is worth reiterating that the year is still ongoing, and the survey is based on nine months of data at best or eight mostly.

As per convention, the first chapter examines the state of the economy and how it has come through yet another year of twists and turns in the worlds of economics and politics. As the impact of the pandemic recedes – Japan is about to downgrade it into seasonal flu, and Denmark might have done so already - Chapter 2 analyses India's medium-term economic outlook and concludes that it looks bright. It is an analysis of the financial cycles and the role it plays in influencing economic growth over the medium term. India's financial cycle endured a downturn last decade because credit expansion in the millennium's first decade ultimately proved unsustainable. The financial history of the world suggests that the outcome was unsurprising. The rapid expansion of credit, fuelled by copious capital flow, has invariably foretold a financial crisis. India was no exception. The chapter tells the story of how the government navigated the economy through a period of financial stress wherein corporate, banking and non-banking balance sheets were repaired and restored to health. Not letting the crisis go waste (i.e., fashioning an effective policy response to the crisis and beyond), the government ramped up public investment in infrastructure to prepare the ground for the private sector to invest, hire and prosper. It records the wide-ranging structural reforms and governance improvements that the government has undertaken since 2014.

While reforms before 2014 addressed product and capital markets, reforms since then have emphasised enhancing the ease of living and doing business to improve economic efficiency. The key principles on which these policies have been anchored are creating public goods, adopting trust-based governance, partnering with the private sector for development and improving agricultural productivity. With cleaner, leaner and stronger balance sheets and payoffs flowing from reforms, India's potential growth stands elevated, and the ability of the economy to grow at its potential is enhanced. Without making extravagant claims, the chapter concludes with optimism about India's medium-term outlook.

Chapter 3 focuses on India's fiscal policy trajectory and examines the evolution of the Goods and Services Tax as a source of durable and dependable revenue for states and the centre. Given India's demographic advantage and annual nominal GDP growth potential to be around 10 per cent to 12 per cent on average in the coming years, fiscal parameters will continue to improve. It is said that growth drives the fiscal balance in India, and it is true. At the same time, it is possible to imagine fiscal discipline turning into fiscal stimulus in future, as it would bring down the government's cost of borrowing, lowering the present high share of interest payments in public expenditure and making more money available for economic development and social welfare.

Money, Banking and Capital Markets are the subjects of Chapter 4. During the year, the Reserve Bank of India (RBI) raised interest rates swiftly to prevent the second-round effects of the inflation shock from commodities from affecting economic activity. That played a big part in the relative stability of the Indian rupee against the US dollar in a year of dollar strength. That India's import cover and external debt ratios are not matters of concern is largely due to India's long-standing conservative external borrowing policies and RBI's deft management of foreign exchange reserves. India's capital markets have been a historical success story. International benchmark indices of Indian stocks have outperformed their emerging market and global peers over the long haul. In short, Indian stocks have rewarded investors well over the years. Foreign portfolio investors have significantly benefited from that. The last two years have also seen a rise in the participation of Indian domestic retail investors in big numbers in Indian stocks. Not only did their investments cushion the impact of portfolio outflows that occur from time to time, but they also added to their wealth stock, given the performance of Indian stocks in 2021 and 2022.

The following chapter on prices is a story of the convergence of India's wholesale and retail prices throughout the year. India's wholesale price inflation leapt to 16.6 per cent in May 2022, and the gap between wholesale price inflation and consumer price inflation widened. When the wholesale price inflation is high, there is always a risk that it will pass through to retail prices. The gap or the wedge between the two closed by the end of the year as global commodity prices retreated and the government took proactive measures to rein in their domestic prices.

In a departure from the past, we introduce the chapter on India's social sector (Chapter 6) next, followed by the chapter on climate change and environment (Chapter 7) and not without reason. Social welfare is not an afterthought for the government but its *leitmotif*. The comprehensive and 'leave no one behind' approach that the government has adopted for social welfare gets full treatment in this chapter. The chapter highlights how the use of technology has enhanced the quality of life for citizens to ensure the reach of social sector schemes to intended beneficiaries, especially during the pandemic. The transformations in the lives of the citizens happening through the Aspirational Districts Programme, Direct Benefit Transfers, use of Aadhaar and various initiatives in the education, health and basic infrastructure availability are highlights of the chapter. The thirteen boxes that the chapter features – an unusually large number - are an acknowledgement of the myriad innovations in social welfare schemes and in their delivery that the government has embraced and implemented.

Climate change and the environment are not only hot-button issues globally but are critical to India realising its aspirations. Hence, India currently spearheads one of the most robust climate actions through its Nationally Determined Contributions (NDC), which includes an ambitious programme for transitions to clean energy in the world. Despite the adverse impacts of Covid-19 on the economy, the country has enhanced its climate ambition manifold.

The health of the farm sector is critical for the economic and social well-being of the country. India has achieved domestic food security and has become a net exporter of farm output to the world. The potential is larger. Chapter 8 documents India's transition from food security to nutritional security and the importance that the government accords agricultural productivity.

Chapters 9 to 12 are bread-and-butter features of the Economic Survey. They deal with Industry, Services, the External Sector and Infrastructure in that order. Indian industry, as mentioned earlier, is on the cusp of a growth revival facilitated by public investment and policies that have eased business conditions and improved viability. Bank credit to industry has picked up momentum, particularly for micro, small and medium enterprises. Among other things, the pandemic had caused a shift in the attitude towards supply chains from efficiency to security and from 'just in time' to 'just in case'. Supply chains are being reconfigured. The government senses a big opportunity here, and its investment into and commitment towards Production-Linked-Incentive Scheme demonstrates its determination to plug India into global supply chains. It is an industrial policy with a global vision. India now has the physical and digital infrastructure to raise the share of the manufacturing sector in the economy and make a realistic bid to be an important player in global supply chains. In the last eight years, the government has created just the platform for this ambition to be fulfilled. The prognosis, I dare say, is bright.

India's services sector is a source of strength and is poised to gain more. India is large enough to accommodate and nurture vibrant manufacturing and services sectors. From low to high value-added activities with export potential, the sector has enough scope to generate employment and foreign exchange and contribute to India's external stability.

As a country with a large merchandise trade deficit because of its dependence on imported fuel, the external sector is always watched closely, especially during rising oil prices. This financial year is one such year. Various arms of the government ensured that, in a year of extreme supply uncertainty and price volatility, India's energy security was not compromised. A slowdown in global growth has led to slower export growth, but the combined value of goods and services exports in current dollars for April – December 2022 is 16 per cent higher than in April –December 2021. India's foreign direct investment has been steady, and investors' interest in including India in their supply chain diversification is now noticeably higher. PM *Gati Shakti* and the National Logistics Policy are expected to play big roles in improving India's cost and export competitiveness in the years ahead.

That brings us to the twelfth and last chapter of the survey. It is on infrastructure. 'Last but not least' is clichéd, but in this case, it is a truthful cliché. We have kept one of India's best success stories of recent years for the last. In 2019, the Government of India adopted a forward-looking programmatic approach towards infrastructure. The National Infrastructure Pipeline was born with a projected investment of around ₹111 lakh crore for FY20-25 for developing a comprehensive view of infrastructure development in the country. Roads, railways, and waterways have seen unprecedented expansion in the last eight years, and ports & airports have been substantially upgraded. Extending infrastructural facilities is only part of the story; modernisation is the other important objective that has been pursued with verve and achieved with commendable speed.

Finally, the growth and evolution of India's public digital infrastructure is a story not just of numbers and milestones but also of thoughtful regulatory and innovation architecture that have enabled it to retain its public good character with enough incentives for the private sector to innovate and invest. The untapped potential is huge, and the country needs to continue to innovate. With digital technology and infrastructure, one has to keep running to hold onto one's place.

The international political and economic order that emerged at the end of World War II has developed faultlines lately, as they inevitably do if history were any guide. Consequently, envisaged as platforms for building global consensus, multilateral forums across the board face existential challenges today and need help to deliver on their mandates. India, with its peaceful and democratic emergence, can influence the course of events and, in the process, fulfil its aspiration to be a global power of relevance. It is befitting that during India's *Amrit Kaal*, it assumed the Presidency of G-20 nations in December 2022. Global problems need global solutions, and global solutions require collaboration and cooperation. Based on the theme of "Vasudhaiva Kutumbakam: One Earth, One Family, One Future", India's G20 Presidency aims to achieve co-ordinated solutions to key issues of global concern. These issues include strengthening multilateral development banks for addressing shared global challenges of the 21st century, mobilising timely and adequate climate finance, enhancing financing for pandemic preparedness, managing global macroeconomic vulnerabilities such as debt, global food & energy insecurity and financing urban infrastructure. The Presidency is a platform for India to share its success stories with the global community, especially the manner in which Digital Public Infrastructure has supported an inclusive people-centric growth paradigm. In short, the G20 Presidency is an opportunity for India to bind an otherwise fragmented global order.

Putting the Economic Survey in the public domain is a learning experience. It is an exercise in cogent thinking, formulation of ideas and their effective articulation. It is, forever, a work in progress, just like the economy. While the Survey is an annual exercise, the set of officers who put this document together is never constant, and this enriches the publication every year. While old hands bring with them experience and expertise, newer entrants to the division, such as Yours Truly, bring different perspectives. I am thankful to each of them for bringing their insights, subject expertise and experience into this year's Survey. I also thank the officers of various ministries, departments, regulators and subject experts, who provided timely inputs and enhanced this publication. I would like to thank the editorial team for their sincere efforts in preparing the draft.

Placing all economic activities of the country under one umbrella and refining it from the economists' lens to a generalist's perspective is a daunting, if worthwhile, exercise. This has been a fulfilling and worthwhile experience because it has reinforced my hope and optimism for the country and its people. I hope that the data and analysis of the Survey will help economists, academicians, policymakers and practitioners in their pursuits.

Above all, I hope it inspires the readers to partake in shaping the future of this great nation, which promises to be every bit as glorious as its past, if not better.

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ABBREVIATIONS

AA	Account Aggregator
AAI	Airports Authority of India
AAY	Antyodaya Anna Yojana
AB PM-JAY	Ayushman Bharat Pradhan Mantri – Jan Arogya Yojana
ABDM	Ayushman Bharat Digital Mission
ABP	Aspirational Blocks Programme
AB-PMJAY	Ayushman Bharat -Pradhan Mantri Jan Arogya Yojana
ABRY	Aatmanirbhar Bharat Rojgar Yojana
ADB	Asian Development Bank
ADGM	Abu Dhabi Global Market
ADP	Aspirational Districts Programme
ADs	Aspirational Districts
AE	Advanced Estimates
AePS/AEPS	Aadhaar Enabled Payment System
AEs	Advanced Economies
AfCFTA	African Continental Free Trade Area
AFSA	Albanian Financial Supervisory Authority
AGEY	Aajeevika Grameen Express Yojana
AHF	Affordable Housing Fund
AHIDF	Animal Husbandry Infrastructure Development Fund
AI	Artificial Intelligence
AIDC	Agriculture Infrastructure and Development Cess
AIF	Agriculture Infrastructure Fund
AIM	Atal Innovation Mission
AISHE	All India Survey on Higher Education
AKAM	Azadi ka Amrit Mahotsav
AMF	Autorite Des Marches Financiers of France
ANB	Aatmanirbhar Bharat
APB	Aadhaar Payment Bridge
APEDA	Agricultural & Processed Food Products Export Development Authority
API	Application Programming Interfaces
APY	Atal Pension Yojana
AQR	Asset Quality Review
ARR	Average Revenue Rate
ASEAN	Association of Southeast Asian Nations
ASEEM	Aatmanirbhar Skilled Employees Employer Mapping
ASI	Annual Survey of Industries
ATMP	Assembly, Testing, Marking, and Packaging
AuM	Assets Under Management
BCD	Basic Customs Duty
BE	Budget Estimates

BEI	Business Expectations Index
BFT	Bare Foot Technicians
BIFR	Board for Industrial and Financial Reconstruction
BIS	Bank for International Settlements
BMI	Body Mass Index
BoE	Bank of England
BoP	Balance of payments
BOT	Build-Operate-Transfer
BPKP	Bhartiya Prakratik Krishi Paddhati
BPO	Business Process Outsourcing
Bps	Basis Points
BRAP	Business Reform Action Plan
BRSR	Business Responsibility and Sustainability Report
BSCCL	Bangladesh Submarine Cable Company Limited
BSE	Bombay Stock Exchange
BSNL	Bharat Sanchar Nigam Limited
CA	Cooperation Agreement
CAB	Current account balance
CAD	Current Account Deficit
CAG	Comptroller and Auditor General of India
CAGR	Compound Annual Growth Rate
CAMPA	Compensatory Afforestation Fund Management and Planning Authority
CANI	Submarine OFC connectivity from Chennai to Andaman & Nicobar Islands
Capex	Capital Expenditure
CB&T	Capacity Building & Training
CBD	Convention on Biological Diversity
CBDC	Central Bank Digital Currency
CBDR-RC	Common but Differentiated Responsibility and Respective Capabilities
CBDT	Central Board of Direct Taxation
CBIC	Central Board of Indirect Taxes and Customs
CBN	Central Bank of Nigeria
CBOE	Chicago Board Options Exchange
CCB	Capital Conservation Buffer
CCEs	Crop Cutting Experiments
CCP	Central Counter Parties
CD	Corporate Debtor
CDP	Cluster Development Programme
CDRI	Coalition for Disaster Resilient Infrastructure
CEA	Central Electricity Authority
CECA	Comprehensive Economic Cooperation Agreements
CEPA	Comprehensive Economic Partnership Agreement
CFPI	Consumer Food Price Index
CGA	Controller General of Accounts
CGC	Credit Guarantee Corporation
CGSS	Credit Guarantee Scheme for Start-ups

CGST	Central Goods and Services Tax
CHC	Custom Hiring Centres
CHE	Current Health Expenditure
CHIPS and Science Act, 2022	Creating Helpful Incentives to Produce Semiconductors and Science Act, 2022
CIBIL	Credit Information Bureau (India) Limited
CiC	Currency in Circulation
CIDR	Central Identities Data Repository
CIL	Coal India Limited
CIRP	Corporate Insolvency Resolution Process
CIRP	Corporate Insolvency Resolution Process
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CLAP	Comprehensive Logistics Action Plan
CLSS	Credit Linked Subsidy Scheme
CM	Critical Minerals
CMIE	Centre for Monitoring Indian Economy
CMSS	Central Medical Services Society
CoD	Commercial Operation Date
COP	Conference of Parties
COVID 19	Coronavirus disease
CoWIN	Covid Vaccine Intelligence Work
CPCB	Central Pollution Control Board
CPI	Consumer Price Index
CPI-AL	Consumer Price Index-Agricultural Labourers
CPI-C	Consumer Price Index-Combined
CPI-IW	Consumer Price Index-Industrial Workers
CPI-RL	Consumer Price Index-Rural Labourers
CPSE	Central Public Sector Enterprises
CRAR	Capital-to-Risk Weighted Assets Ratio
CRAR	Central Recordkeeping Agency
CRPs	Community Resource Persons
CRR	Cash Reserve Ratio
CRS	Community Radio Stations
CRZ	Coastal Regulation Zone
CSCs	Common Service Centres
CSD	Central Securities Depositories
CSI	Current Situation Index
CSIS	Central Scheme on Interest Subsidy
CSR	Corporate Social Responsibility
CSS	Centrally Sponsored Scheme
CTDP	Comprehensive Telecom Development Plan
CTS	Craftsmen Training Scheme
CWS	Current weekly status
CWSN	Children With Special Needs
CYKC	Central Know Your Customer

DAY-NRLM	Deendayal Antyodaya Yojana – National Rural Livelihoods Mission
DAY-NULM	Deen Dayal Antyodaya Yojana- National Urban Livelihood Mission
DBFOT	Design-Build-Finance-Operate-Transfer
DBT	Direct Benefit Transfer
DBU	Digital Banking Units
DCIL	Dredging Corporation of India Limited
DDE	Digital Document Execution
DDUGJY	Deendayal Upadhyaya Gram Jyoti Yojana
DDU-GKY	Deen Dayal Upadhyaya Grameen Kaushalya Yojna
DEA	Department of Economic Affairs
DFC	Dedicated Freight Corridor
DFI	Dedicated Financing Institution
DFIs	Development Financial Institutions
DFSA	Dubai Financial Services Authority
DGCI&S	Directorate General of Commercial Intelligence and Statistics
DGFT	Directorate General of Foreign Trade
DGRC	District Level Grievance Redressal Committee
DII	Domestic Institutional Investment
DISER	Department of Industry, Science, Energy and Resources
DLC	Digital Life Certificate
DLI	Design-Linked Incentive
DLT	Distributed Ledger Technology
DNB	Diplomate of National Board
DoCA	Department of Consumer Affairs
DoP	Department of Posts
DPCO	Drugs Prices Control Order
DPI	Digital Public Infrastructure
DPIIT	Department for Promotion of Industry and Internal Trade
DPR/DPRs	Detailed Project Report(s)
DrAAS	Drone-as-a-Service
DRDO	Defence Research and Development Organisation
DRT	Debt Recovery Tribunal
DSCs	District Skill Committees
e PPO	Electronic Pension Payment Order
e-BG	Electronic Bank Guarantee
e-BL	Electronic Bill of Lading
EBR	Extra-Budgetary Resources
ECB	European Central Bank
ECBs	External Commercial Borrowings
ECIB	Export Credit Insurance to Banks
ECL	Electronic Cash Ledger
ECLGS	Emergency Credit Linked Guarantee Scheme
ECRP	Emergency Covid Response Package
ECTA	Economic Cooperation and Trade Agreement
ECTS	Electronic Cargo Tracking System

EDI	Electronic Data Interchange
EDLI	Employees Deposit Linked Insurance
e-DO	Electronic Delivery Order
EED	End-to-End Digitized
EEE	Electrical and Electronic Equipment
e-FMS	Electronic Fund Management System
Ekyc	Electronic Know Your Customer
EMDEs	Emerging Market and Developing Economies
EMEs	Emerging Market Economies
e-NAM	National Agriculture Market
EPFO	Employees Provident Fund Organisation
EPI	Export Preparedness Index
e-PoS	Electronic Point of Sale
EPR	Extended Producers Responsibility
e-PRAN	electronic-Pension Retirement Account Number
EPTA	Early Progress Trade Agreement
ER&D	Engineering Research and Development
ERs	Elected Representatives
ESG	Environmental, Social, and Governance
ESIC	Employees State Insurance Corporation
ESOPs	Employee Stock Options
ETF	Exchange Traded Fund
EU	European Union
EV	Electric Vehicles
eVIN	Electronic Vaccine Intelligence Network
EVs	Electric Vehicles
EWS	Economically Weaker Sections
EXIM	Export-Import
FAG	Faceless Assessment Group
FAO	Food and Agriculture Organisation
FBs	Foreign Banks
FCCB	Foreign Currency Convertible Bonds
FDI	Foreign Direct Investment
FDIC	Federal Deposit Insurance Corporation
FEDAI	Foreign Exchange Dealers Association of India
FEI	Future Expectations Index
FER	Foreign Exchange Reserves
FFC	Fifteenth Finance Commission
FFS	Fund of Funds for Start-ups
FIC	Full Immunization Coverage
FIDF	Infrastructure Development Fund
FIFP	Foreign Investment Facilitation Portal
FinTech	Financial Technology
FIPB	Foreign Investment Promotion Board
FIPs	Financial Information Providers

FIUs	Financial Information Users
FLFPR	Female labour force participation rate
FMI	Financial Market Infrastructure
FMSA	Financial Market Supervisory Authority
FoF	Fund of Funds
FPI	Foreign Portfolio Investments
FPO	Follow on Public Offer
FPO	Foreign Post Office
FPOs	Farmer Producer Organisations
FPS	Fair Price Shop
FRBM	Fiscal Responsibility and Budget Management
FRL	Fiscal Responsibility Legislation
FSDC	Financial Stability and Development Council
FSI	Forest Survey of India
FSRA	Financial Services Regulatory Authority
FTA	Foreign Tourist Arrivals
FTAs	Free Trade Agreements
FTP	Foreign Trade Policy
FTTH	Fiber to The Home
FY	Fiscal Year
GC	Gauge Conversion
GCC	Global Competency Centres
GCC	The Gulf Cooperation Council
GCES	General Crop Estimation Survey
GCF	Green Climate Fund
GCT	GatiShakti Multi-Modal Cargo Terminal
GDP	Gross Domestic Product
GeM	Government E-Marketplace
GER	Gross Enrolment Ratio
GFCF	Gross Fixed Capital Formation
GFD	Gross Fiscal Deficit
GHE	Government Health Expenditure
GHG	Green House Gas
GIFT	Gujarat International Finance Tech-city
GII	Global Innovation Index
GIM	Green India Mission
GIS	Geographic Information System
GMV	Gross Merchandise Value
GNI	Gross National Income
GNPAs	Gross Non-Performing Assets
GoI	Government of India
GPS	Global Positioning System
GSDP	Gross State Domestic Product
G-sec	Government Securities
GST	Goods and Services Tax

GSTN	Goods and Services Tax Network
GTR	Gross Tax Revenue
GVA	Gross Value Added
GW	Giga Watt
GWh	Giga Watt hours
HAM	Hybrid Annuity Model
HDI	Human Development Index
HEI	Higher Education Institutions
HFC	Housing Finance Sector
HFC	Housing Finance Companies
HFI	High Frequency Indicators
HPCL	Hindustan Petroleum Corporation Limited
HPI	Housing Price Index
HPO	Hydropower Purchase Obligation
HSCC	Hospital Services Consultancy Corporation
HUF	Hindu Undivided Family
HWCs	Health and Wellness Centres
IAIS	International Association of Insurance Supervisors
IBBI	Insolvency and Bankruptcy Board of India
IBC	Insolvency and Bankruptcy Code
IBC	Insolvency and Bankruptcy Code
IBC	Insolvency and Bankruptcy Code
ICAR	Indian Council of Agriculture Research
ICD	Inland Container Depot
ICEGATE	Indian Customs Electronic Data Interchange Gateway
ICFRE	Indian Council of Forestry Research and Education
ICMA	International Capital Market Association
ICT	Information and Communication Technology
ICT	International Courier Terminal
ID	Identity Document
IFPRI	International Food Policy Research Institute
IFSC	International Financial Services Centre
IFSCA	International Financial Services Centres Authority
IGCRS	Import of Goods at Concessional Rate of Duty or for Specified End Use
IGNDPS	Indira Gandhi National Disability Pension Scheme
IGNOAPS	Indira Gandhi National Old Age Pension Scheme
IGNWPS	Indira Gandhi National Widow Pension Scheme
IGST	Integrated Goods and Services Tax
IIFT	Indian Institute of Foreign Trade
IIG	Invest India Grid
IIM	Indian Institute of Management
IIMA	Indian Institute of Management Ahmedabad
IIP	International Investment Position
IIP	Index of Industrial Production
IIPDF	India Infrastructure Project Development Fund Scheme

IISER	Indian Institute of Science Education and Research
IIT	Indian Institute of Technology
IL&FS	Infrastructure Leasing and Financial Services
ILDS	Issue and Listing of Debt Securities
ILMDS	Issue and Listing of Municipal Debt Securities
IMB	Inter-Ministerial Board
IMF	International Monetary Fund
IMPS	Immediate Payment Service
IMR	Infant Mortality Rate
InvIT	Infrastructure Investment Trust
IOSCO	International Organization of Securities Commissions
IoT	Internet of Things
IP	Intellectual Property
IPCC	Inter-Governmental Panel on Climate Change
IPO	Initial Public Offering
IPR	Intellectual Property Rights
IR	Indian Railways
IRDAI	Insurance Regulatory Development Authority of India
ISA	International Solar Alliance
ISFR	Indian State of Forest Report
ISS	Interest Subvention Scheme
IT	Information Technology
IT-BPM	Information Technology-Business Process Management
ITC	Input Tax Credit
ITIs	Industrial Training Institutes
ITR	Income tax Returns
IWAI	Inland Waterways Authority of India
IYM	International Year of Millets
J&K	Jammu and Kashmir
JAM	Jan Dhan-Aadhaar-Mobile
JC	Job Cards
JJM	Jal Jeevan Mission
JPC	Joint Plant Committee
JRS	Job Retention Scheme
JSS	Jan Shikshan Sansthan
KCC	Kisan Credit Cards
KLI	Submarine OFC connectivity from Kochi to Lakshadweep Islands
KMS	Kharif Marketing Season
KPI	Key Performance Indicators
KRCL	Konkan Railway Corporation Limited
KYC	Know Your Customer
LAF	Liquidity Adjustment Facility
LC	Letter of Credit
LCOH	Levelised Cost of Hydrogen
LDCs	Least Developed Countries

LeadIT	Leadership Group for Industry Transition
LEADS	Logistics Ease Across Different States
LFPR	Labour Force Participation Rate
LGSCATSS	Loan Guarantee Scheme for Covid Affected Tourism Service Sector
LH&DC	Livestock Health and Disease Control
LIC	Life Insurance Corporation
LLP	Limited Liability Partnership
LMT	Lakh metric tons
LPG	Liquified Petroleum Gas
LPI	Logistics Performance Index
LSA	Licensed Service Areas
LSBs	Long Span Bridges
LSDGs	Localisation of Sustainable Development Goals
LT-LEDS	Long Term Low Emissions Development Strategy
LWE	Left Wing Extremism
M&A	Mergers and Acquisitions
MAHSR	Mumbai-Ahmedabad High Speed Rail
MAS	Monetary Authority of Singapore
MBBS	Bachelor of Medicine and Bachelor of Surgery
MCAs	Model Concession Agreements
MCLR	Marginal Cost of Funds-Based Lending Rate
MDB	Multilateral Development Banks
MeitY	Ministry of Electronics and Information Technology
MFI	Micro Finance Institutions
MFN	Most Favoured Nation
MGNREGS	Mahatma Gandhi National Rural Employment Guarantee Scheme
MI	Mission Indradhanush
MiCA	Markets in Crypto Assets
MICE	Meetings, Incentives, Conference, Exhibitions
MIDH	Mission for Integrated Development of Horticulture
MIS	Management Information System
MISS	Modified Interest Subvention Scheme
MM	Money Multiplier
MMF	Man-Made Fibre
MMR	Maternal Mortality Ratio
MMT	Million Metric Tonne
MoHFW	Ministry of Health and Family Welfare
MoLE	Ministry of Labour and Employment
MoSPI	Ministry of Statistics and Programme Implementation
MoU	Memorandum of Understanding
MOVCDNER	Mission Organic Value Chain Development for North Eastern Region
MPC	Monetary Policy Committee
MPI	Multidimensional Poverty Index
MSDE	Ministry of Skill Development and Entrepreneurship
MSF	Marginal Standing Facility

MSH	MeitY Start-up Hub
MSME	Ministry of Micro, Small & Medium Enterprises
MSMED Act	Micro, Small and Medium Enterprises Development Act
MSP	Minimum Support Price
MT	Metric Tonnes
MTOE	Million Tonnes of Oil Equivalent
MTPA	Million Tonnes Per Annum
MUDRA	Micro Units Development & Refinance Agency
MVT	Medical Value Tourism
MW	Mega Watt
NABARD	National Bank for Agriculture and Rural Development
NaBFID	National Bank for Financing Infrastructure and Development
NADCP	National Animal Disease Control Programme
NAFCC	National Adaptation Fund for Climate Change
NAIS	National Agency for Information Society
NAP	National Afforestation Programme
NAPCC	National Action Plan on Climate Change
NAPS	National Apprenticeship Promotion Scheme
NASDAQ	National Association of Securities Dealers Automated Quotations
NASSCOM	National Association of Software and Services Companies
NBC	Net borrowing Ceiling
NBFC	Non Banking Financial Companies
NCAER	National Council of Applied and Economic Research
NCF	National Curriculum Framework
NCGTC	National Credit Guarantee Trustee Company
NCGTC	National Credit Guarantee Trustee Corporation
NCQG	New Collective Quantified Goal
NCrF	National Credit Framework
NCS	National Career Service
NCS	Non-Convertible Securities
NDC	Nationally Determined Contribution
NEEPCO	North Eastern Electric Power Corporation Limited
NEER	Nominal effective exchange rate
Ne-FMS	National Electronic Fund Management System
NEFT	National Electronic Funds Transfer
NEP	National Education Policy
NeSL	National e-Governance Services Limited
NFAP	National Frequency Allocation Plan
NFHS	National Family Health Survey
NFSA	National Food Security Act
NFSM	National Food Security Mission
NGO	Non-Government Organisation
NHA	National Health Account
NHAI	National Highways Authority of India
NHB	National Housing Bank

NHEQF	National Higher Education Qualification Framework
NHM	National Health Mission
NHP	National Health Policy
NHs	National Highways
NIDHI	National Integrated Database of Hospitality Industry
NIDHI	National Initiative for Developing and Harnessing Innovations
NII	Net Interest Income
NINL	Neelachal Ispat Nigam Limited
NIP	National Infrastructure Pipeline
NIT	National Institute of Technology
NITI	National Institution for Transforming India
NL	New lines
NLEM	National List of Essential Medicines
NLM	National Livestock Mission
NLP	National Logistics Policy
NLP-Marine	National Logistics Portal-Marine
NMC	National Medical Commission
NMMS	National Mobile Monitoring Software
NMP	National Monetisation Pipeline
NMR	Neonatal Mortality Rate
NNPA	Net Non-Performing Asstes
NOC	No Objection Certificate
Non-SED	Non- Sovereign External Debt
NPA	Non-Performing Asset
NPCC	National Projects Construction Corporation Limited
NPCI	National Payment Corporation of India
NPCIL	National Payments Corporation of India International
NPISHs	Households and non-profit
NPPA	National Pharmaceuticals Pricing Authority
NPPP	National Pharmaceuticals Pricing Policy
NPS	National Pension Scheme
NRCP	National River Conservation Plan
NRI	Non-Resident Indians
NRLM	National Rural Livelihood Mission
NSAP	National Social Assistance Programme
NSE	National Stock Exchange
NSO	National Statistical Office
NSP	National Scholarship Portal
NSQF	National Skills Qualification Framework
NSS	National Sample Survey
NSS-EUS	NSS Employment Unemployment Survey
NSWS	National Single Window System
NTBs	Non-tariff barriers
NTCA	National Tiger Conservation Authority
NWs	National Waterways

OCB	Overseas Corporate body
OCC	Office of the Comptroller of the Currency
OCEN	Open Credit Enablement Network
OC-MIS	OxyCare Management Information System
ODF	Open Defecation Free
ODL	Open and Distance Learning
ODOP	One District One Product
OD-OP	One District – One Product
OECD	Organisation of Economic Cooperation and Development
OEM	Original Equipment Manufacturers
ONDC	Open Network for Digital Commerce
ONGC	Oil and Natural Gas Corporation
ONORC	One Nation One Ration Card
OOPE	Out-of-Pocket Expenditure
OPEC	Organisation of the Petroleum Exporting Countries
Opex	Operating Expenditure
OSAT	Outsourced Semiconductor Assembly and Test
PA	Provisional Actual
PACS	Primary Agriculture Credit Societies
PAT	Profit After Tax
PAT	Perform, Achieve and Trade
PBE	Postal Bill of Export
PCA	Prompt Corrective Action
PCR	Provisioning Coverage Ratio
PCS	Port Community System
PDCs	Project Development Cells
PDMC	Public Debt Management Cell
PDS	Public Distribution System
PE	Private Equity
PE	Provisional Estimates
PFC	Power Finance Corporation
PFCE	Private Final Consumption Expenditure
PFRDA	Pension Fund Regulatory Development Authority
PFRDA	Pension Fund Regulatory and Development Authority
PHC	Primary Health Center
PIB	Press Information Bureau
PIBOs	Producers, Importers, and Brand Owners
PKVY	Paramparagat Krishi Vikas Yojana
PLFS	Periodic Labour Force Survey
PLI	Production Linked Incentive
PLISFPI	Production Linked Incentive Scheme for Food Processing Industry
PM CARES	Prime Minister's Citizen Assistance and Relief in Emergency Situations
PM MITRA	Prime Minister Mega Integrated Textile Region and Apparel
PM SHRI	Pradhan Mantri Schools for Rising India
PM SVANidhi	Pradhan Mantri Street Vendor's Aatmanirbhar Nidhi Scheme

PMAY-G	Pradhan Mantri Awaas Yojana –Gramin
PMAY-U	Pradhan Mantri Awas Yojana-Urban
PMBJKs	Pradhan Mantri Bhartiya Janaushadhi Kendras
PMBJP	Pradhan Mantri Bhartiya Janaushadhi Pariyojana
PMEAC	Prime Minister's Economic Advisory Council
PMFBY	Pradhan Mantri Fasal Bima Yojana
PMFME	Prime Minister's Formalisation of Micro Food Processing Enterprises
PMG	Project Monitoring Group
PMGKAY	Pradhan Mantri Garib Kalyan Anna Yojana
PMGKY	Pradhan Mantri Garib Kalyan Yojana
PMGSY	Pradhan Mantri Gram Sadak Yojana
PMI	Purchasing Managers Index
PMJBY	Pradhan Mantri Jeevan Jyoti Bima Yojana
PMJDY	Pradhan Mantri Jan Dhan Yojana
PMJJBY	Pradhan Mantri Jeevan Jyoti Bima Yojana
PM-KISAN	Pradhan Mantri Kisan Samman Nidhi
PMKK	Pradhan Mantri Kaushal Kendra
PMKSY	Pradhan Mantri Kisan SAMPADA Yojana
PM-KUSUM	Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan
PMKVY	Pradhan Mantri Kaushal Vikas Yojana
PMMSY	Pradhan Mantri Matsya Sampada Yojana
PMMVY	Pradhan Mantri Matru Vandana Yojana
PMP	Phased Manufacturing Plan
PM-SAUBHAGYA	Pradhan Mantri Sahaj Bijli Har Ghar Yojana
PMSBY	Pradhan Mantri Suraksha Bima Yojana
PMSSY	Pradhan Mantri Swasthya Suraksha Yojana
PM-SYM	Pradhan Mantri Shram Yogi Maan-Dhan
PMUY	Pradhan Mantri Ujjwala Yojana
PMVVY	Pradhan Mantri Vaya Vandana Yojana
POL	Petroleum, oil and lubricants
POSHAN	Prime Minister's Overarching Scheme for Holistic Nutrition
PPAC	Petroleum Planning and Analysis Cell
PPP	Public Private Partnership
PPP	Purchasing Power Parity
PPPAC	Public Private Partnership Appraisal Committee
PRASHAST	Pre Assessment Holistic Screening Tool
PRIs	Panchayati Raj Institutions
PSA	Pressure swing adsorption
PSBs	Public Sector Banks
PSE	Public Sector Enterprises
PSL	Priority Sector Lending
PSU	Public Sector Undertaking
PV	Photovoltaic
PVBs	Private Sector Banks

PWPs	Plastic Waste Processors
QE	Quarter Ending
QES	Quarterly Employment Survey
QFSA	Qatar Financial Services Authority
QIP	Qualified Institutional Placement
R&D	Research and Development
RAFTAAR	Remunerative Approaches for Agriculture and Allied Sectors Rejuvenation
RAMP Scheme	Raising and Accelerating MSME Performance Scheme
RBI	Reserve Bank of India
RCB	Reducing the Compliance Burden
RCEP	Regional Comprehensive Economic Partnership Agreement
RCS	Regional Connectivity Scheme
RDC	Research & Development Cell
RE	Revised Estimates
REC	Rural Electrification Corporation
REE	Rare Earth Elements
REER	Real Effective Exchange Rate
REIT	Real Estate Investment Trusts
REITs	Real Estate Investment Trusts
RERA	Real Estate Regulation Act
RERA	Real Estate (Regulation and Development) Act
RevPAR	Revenue per Avaiable Room
RFID	Radio Frequency Identification Device
RFP	Request for Proposal
RFQ	Request for Qualification
RGSA	Rashtriya Gram Swaraj Abhiyan
RHS	Right hand Side
RIC	Road and Infrastructure Cess
RKM	Route Kilometres
RKVY	Rashtriya Krishi Vikas Yojana
RMNCAH+N	Reproductive, Maternal, New-born, Child , Adolescent Health Plus Nutrition
RMS	Rabi Marketing Season
RNFC	Route Navigation Facility Charges
ROA	Return on Assets
RoDTEP	Remission of Duties and Taxes on Exported Products
ROE	Return on Equity
RoSCTL	Rebate of State and Central Taxes and Levies
ROT	Rehabilitate-Operate-Transfer
RoW	Right of Way
RPL	Recognition of Prior Learning
RPO	Renewable Purchase Obligation
RSETI	Rural Self Employment Training Institutes
RTAs	Regional Trading Arrangements
RTE	Right to Education
RTGS	Real-Time Gross Settlement

RWAs	Risk Weighted Assets
S&P	Standard and Poor
SAATHI	System for Assessment, Awareness, and Training for Hospitality Industry
SAMARTH	Smart Advanced Manufacturing and Rapid Transformation Hubs
SARFAESI	Securitization and Reconstruction of Financial Assets and Enforcement of Securities Interest
SBI	State Bank of India
SBI	Subsidiary Body for Implementation
SBM(G)	Swachh Bharat Mission – Grameen
SBSTA	Subsidiary Body for Scientific and Technological Advice
SCBs	Scheduled Commercial Banks
SCCL	Singareni Collieries Company Limited
SCs	Sub centres
SDF	Standing Deposit Facility
SDGs	Sustainable Development Goals
SDLs	State Development Loans
SDRs	Special Drawing Rights
SEBI	Securities and Exchange Board of India
SECC	Socio Economic and Caste Census
SED	Sovereign External Debt
SGrBs	Sovereign Green Bonds
SGRC	State Level Grievance Redressal Committee
SGST	State Goods and Services Tax
SHCs	Sub Health Centres
SHG	Self-Help Groups
SHG-BLP	SHG Bank Linkage Project
SHGs	Self-help groups
SIAM	Society of Indian Automobile Manufacturers
SIDS	Small Island Developing States
SIP-EIT	Support for International Patent Protection in E&IT
SMAF	Sub-Mission on Agro-forestry
SMAM	Sub Mission on Agricultural Mechanisation
SMEs	Small and Medium Enterprises
SoP	Standard Operating Procedures
SPECS	Scheme for Promotion of Manufacturing of Electronic Components and Semiconductors
SPI	Strengthening the Pharmaceutical Industry
SPSE	State Public Sector Enterprises
SRF	Special Refinance Facility
SRS	Sample Registration System
SSBs	Standard-Setting Bodies
SSS	Securities Settlement System
ST	Scheduled Tribe
STARS	Strengthening Teaching-Learning and Results for States
STT	Short Term Training
SVAMITVA	Survey of Villages and Mapping with Improvised Technology in Village Areas
SVEP	Start-Up Village Entrepreneurship Programme

SWIFT	Single Window Interface for Trade
TAT	Turn Around Time
T-Bills	Treasury Bills
TDGVA	Tourism Direct Gross Value Added
TDS	Tax Deducted at Source
TEDs	Technical Expert Dialogues
THDC	Tehri Hydro Development Corporation Limited
THE	Total Health Expenditure
TIDE	Technology Incubation and Development of Entrepreneurs
TKM	Track Kilometres
TNLC	Terminal Navigational Landing Charges
TOT	Toll-Operate-Transfer
TR	Trade Repositories
TRAI	Telecom Regulatory Authority of India
TReDS	Trade Receivables Discounting System
TRIFED	Tribal Cooperative Marketing Development Federation of India Limited
TTS	Travel and Tourism Stakeholders
U5MR	Under Five Mortality Rate
UAE	United Arab Emirates
UDAN	Ude Desh ka Aam Nagrik
UDISE	Unified District Information System for Education
UGC	University Grants Commission
UIDAI	Unique Identification Authority of India
UIP	Universal Immunisation Programme
UK	United Kingdom
UMANG	Unified Mobile Application for New Age Governance
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nation Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNICEF	United Nations International Children's Emergency Fund
UNWTO	United Nations World Tourism Organisation
UPI	Unified Payment Interface
UR	Unemployment rate
US Fed	US Federal Reserve
USA	United States of America
USOF	Universal Service Obligation Fund
UTs	Union Territories
VA	Virtual Asset
VASP	Virtual Asset Service Provider
VAT	Value Added Tax
VC	Venture Capital
VDA	Virtual Digital Assets
VGF	Viability Gap Funding
VIP	Ventilated Improved Pit
VIX	Volatility Index

VOs	Village Organisations
VRR	Variable Repo Rate
WACR	Weighted Average Call Rate
WADTDR	Weighted Average Domestic Term Deposit Rate
WALR	Weighted Average Lending Rate
WEO	World Economic Outlook
WHO	World Health Organisation
WPI	Wholesale Price Index
WPR	Worker population ratio
WTO	World Trade Organisation
YoY	Year-on-Year
ZBNF	Zero-Budget Natural Farming

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STATE OF THE ECONOMY 2022-23: RECOVERY COMPLETE

01

CHAPTER

In general, global economic shocks in the past were severe but spaced out in time. This changed in the third decade of this millennium. At least three shocks have hit the global economy since 2020. It all started with the pandemic-induced contraction of the global output, followed by the Russian-Ukraine conflict leading to a worldwide surge in inflation. Then, the central banks across economies led by the Federal Reserve responded with synchronised policy rate hikes to curb inflation. The rate hike by the US Fed drove capital into the US markets causing the US Dollar to appreciate against most currencies. This led to the widening of the Current Account Deficits (CAD) and increased inflationary pressures in net importing economies. The rate hike and persistent inflation also led to a lowering of the global growth forecasts for 2022 and 2023 by the IMF in its October 2022 update of the World Economic Outlook. The frailties of the Chinese economy further contributed to weakening the growth forecasts. Slowing global growth apart from monetary tightening may also lead to a financial contagion emanating from the advanced economies where the debt of the non-financial sector has risen the most since the global financial crisis. With inflation persisting in the advanced economies and the central banks hinting at further rate hikes, downside risks to the global economic outlook appear elevated.

The Indian economy, however, appears to have moved on after its encounter with the pandemic, staging a full recovery in FY22 ahead of many nations and positioning itself to ascend to the pre-pandemic growth path in FY23. Yet in the current year, India has also faced the challenge of reining in inflation that the European strife accentuated. Measures taken by the government and RBI, along with the easing of global commodity prices, have finally managed to bring retail inflation below the RBI upper tolerance target in November 2022. However, the challenge of the depreciating rupee, although better performing than most other currencies, persists with the likelihood of further increases in policy rates by the US Fed. The widening of the CAD may also continue as global commodity prices remain elevated and the growth momentum of the Indian economy remains strong. The loss of export stimulus is further possible as the slowing world growth and trade shrinks the global market size in the second half of the current year.

Despite these, agencies worldwide continue to project India as the fastest-growing major economy at 6.5-7.0 per cent in FY23. These optimistic growth forecasts stem in part from the resilience of the Indian economy seen in the rebound of private consumption seamlessly replacing the export stimuli as the leading driver of growth. The uptick in private consumption has also given a boost to production activity resulting in an increase in capacity utilisation across sectors. The rebound in consumption was engineered by the near-universal vaccination coverage overseen by the government that brought people *back to the streets to spend on contact-based services, such as restaurants, hotels, shopping malls, and cinemas, among others. The world's second-largest vaccination drive involving more than 2 billion doses also served to lift consumer sentiments that may prolong the rebound in consumption. Vaccinations have facilitated the return of migrant workers to cities to work in construction sites as the rebound in consumption spilled over into the housing market. This is evident in the housing market witnessing a significant decline in inventory overhang to 33 months in Q3 of FY23 from 42 months last year.*

The Capital Expenditure (Capex) of the central government, which increased by 63.4 per cent in the first eight months of FY23, was another growth driver of the Indian economy in the current year, crowding in the private Capex since the January-March quarter of 2022. On current trend, it appears that the full year's capital expenditure budget will be met. A sustained increase in private Capex is also imminent with the strengthening of the balance sheets of the Corporates and the consequent increase in credit financing it has been able to generate. A much-improved financial health of well-capitalised public sector banks has positioned them better to increase the credit supply. Consequently, the credit growth to the Micro, Small, and Medium Enterprises (MSME) sector has been remarkably high, over 30.6 per cent, on average during Jan-Nov 2022, supported by the extended Emergency Credit Linked Guarantee Scheme (ECLGS) of the Union government. The increase in the overall bank credit has also been influenced by the shift in borrower's funding choices from volatile bond markets, where yields have increased, and external commercial borrowings, where interest and hedging costs have increased, towards banks. If inflation declines in FY24 and if real cost of credit does not rise, then credit growth is likely to be brisk in FY24.

India's economic growth in FY23 has been principally led by private consumption and capital formation. It has helped generate employment as seen in the declining urban unemployment rate and in the faster net registration in Employee Provident Fund. Still, private capex soon needs to take up the leadership role to put job creation on a fast track. Recovery of MSMEs is proceeding apace, as is evident in the amounts of Goods and Services Tax (GST) they pay, while the Emergency Credit Linked Guarantee Scheme (ECGLS) is easing their debt servicing concerns. The Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) has been directly providing jobs in rural areas and indirectly creating opportunities for rural households to diversify their sources of income generation. Schemes like PM-Kisan and PM Garib Kalyan Yojana have helped in ensuring food security in the country, and their impact was also endorsed by the United Nations Development Programme (UNDP)[1]. The results of the National Family Health Survey (NFHS) also show improvement in rural welfare indicators from FY16 to FY20, covering aspects like gender, fertility rate, household amenities, and women empowerment.

Global growth has been projected to decline in 2023 and is expected to remain generally subdued in the following years as well. The slowing demand will likely push down global commodity prices and improve India's CAD in FY24. However, a downside risk to the Current Account Balance stems from a swift recovery driven mainly by domestic demand

1 https://www.undp.org/publications/addressing-cost-living-crisis-developing-countries-poverty-and-vulnerability-projections-and-policy-responses

and, to a lesser extent, by exports. The CAD needs to be closely monitored as the growth momentum of the current year spills over into the next. Growth is expected to be brisk in FY24 as a vigorous credit disbursal, and capital investment cycle is expected to unfold in India with the strengthening of the balance sheets of the corporate and banking sectors. Further support to economic growth will come from the expansion of public digital platforms and path-breaking measures such as PM GatiShakti, the National Logistics Policy, and the Production-Linked Incentive schemes to boost manufacturing output.

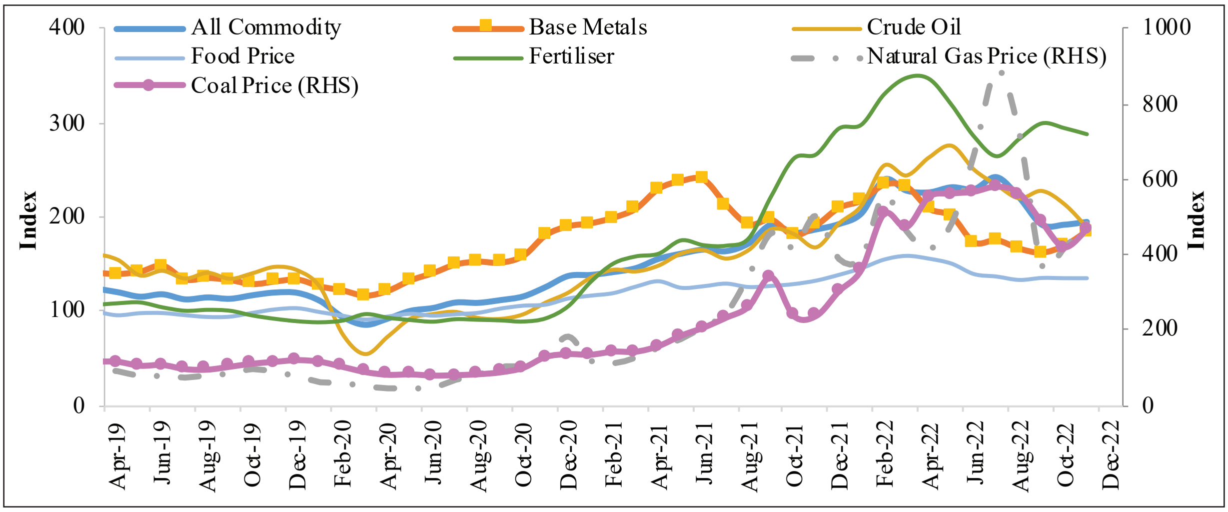
The global economy battles through a unique set of challenges

1.1 In the last century, several events can be recollected that have had an adverse impact on the global economy. The two world wars are still vivid in public memory, along with the Spanish flu and the great depression. Regional conflicts have been several, as also intermittent oil shocks. The previous millennium closed with the East Asian crisis, and the new millennium in its first decade opened with the technology bust, followed several years later by the global financial crisis. The second decade, apart from minor episodes of the taper tantrum and growing trade tensions between the super-powers, had gone relatively incident-free globally, although Europe had its moments of stress during the decade. Before the third decade of the new millennium commenced, incidents of global economic turbulence were generally spaced out, allowing economies breathing time to recover before preparing for the next challenge.

1.2 The Covid-19 pandemic ('pandemic' hereinafter) notified by the WHO in January 2020 was the first challenge of the third decade that hit global growth. Two years later, as the global economy was recovering from the pandemic-induced output contraction, the Russia-Ukraine conflict broke out in February 2022, triggering a swing in commodity prices and, thus, accelerating existing inflationary pressures. This posed the second challenge. Soon after, the third challenge emerged when nations undertook monetary tightening to rein in inflation causing growth to weaken. Monetary tightening also drove capital flows to safe-haven US markets, contributed to rising sovereign bond yields, and depreciation of most currencies against the US dollar. The consequent increase in borrowing costs also stressed high levels of public and private debt, threatening the financial system. Faced with the prospects of global stagflation, nations, feeling compelled to protect their respective economic space, slowed cross-border trade, which posed the fourth challenge to growth. All along, the fifth challenge was festering as China experienced a considerable slowdown induced by its policies. The sixth medium-term challenge to growth was seen in the scarring from the pandemic brought in by the loss of education and income-earning opportunities. A simultaneous occurrence of several challenges to growth is perhaps unprecedented. Like the rest of the world, India, too, faced this extraordinary set of challenges but withstood them better than most economies.

1.3 Global economic recovery was well on track until the Russia-Ukraine conflict broke out in February 2022. The conflict has now continued for almost a year, disrupting the restoration of the supply chains disrupted earlier by lockdowns and limited trade traffic. In the last eleven months, the world economy has faced almost as many disruptions as caused by the pandemic in two years. The conflict caused the prices of critical commodities such as crude oil, natural gas, fertilisers, and wheat to soar. This strengthened the inflationary pressures that the global economic recovery had triggered, backed by massive fiscal stimuli and ultra-accommodative monetary policies undertaken to limit the output contraction in 2020. Inflation in Advanced Economies (AEs), which accounted for most of the global fiscal expansion and monetary easing, breached historical highs. Rising commodity prices also led to higher inflation in the Emerging Market Economies (EMEs), which otherwise were in the lower inflation zone by virtue of their governments undertaking a calibrated fiscal stimulus to address output contraction in 2020.

Figure I.1: Sharp rise in commodity prices due to the Russia-Ukraine conflict; prices yet to reach pre-conflict levels



Source: IMF

Inflation stays high, driven by high food and energy prices

Figure I.2a: Advanced Economies

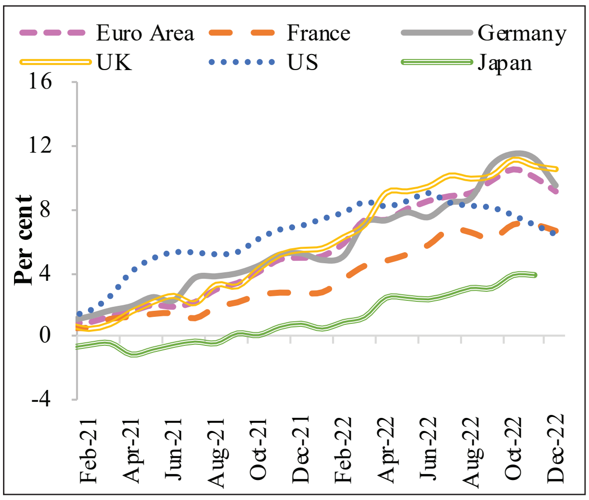
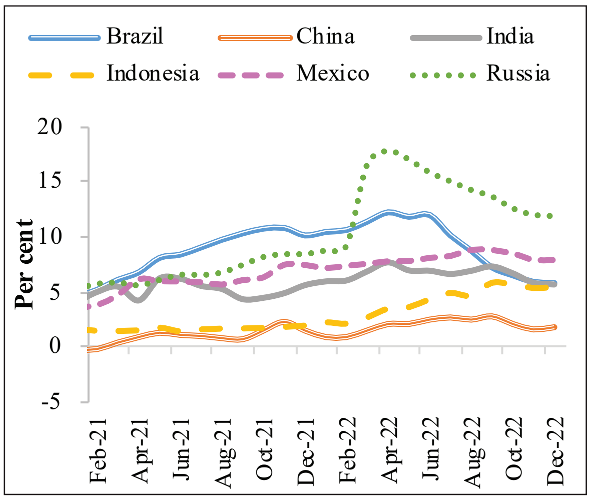


Figure I.2b: Emerging Market Economies



Source: Bloomberg

1.4 Central banks, which were slow to react to price pressures building up during the nascent recovery from the pandemic, regarded them as transient only to realise, belatedly, the necessity and the inevitability of a strong monetary policy response. Led by the US Federal Reserve, central banks have been hiking policy rates and rolling back liquidity to rein in inflation synchronously. The pace of this tightening cycle has been rapid – the Federal Reserve's pace of rate hikes is the quickest since the inflationary episode of the 1970s, with the central bank having raised interest rates by 425 basis points since March 2022. As the impact of monetary policy actions is felt with a lag, inflation rates remained stubbornly high during the early phase of the rate hike cycle but have begun to decline lately. At the same time, synchronised rate hikes by the central banks have not tightened financial conditions sufficiently enough for central banks to end their tightening campaign.

Financial Conditions tighten

Figure I.3a: Advanced Economies

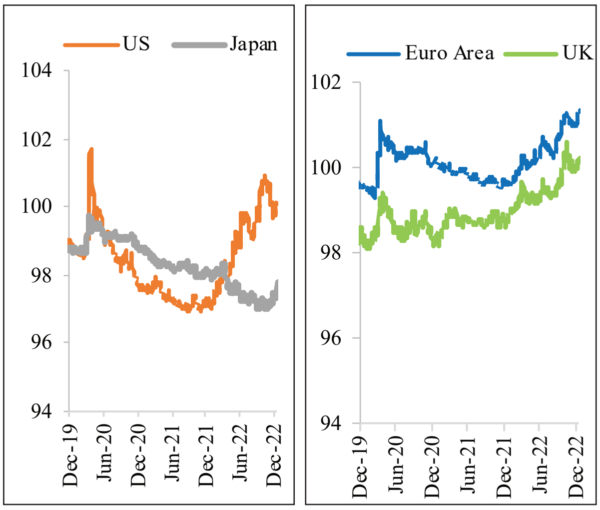
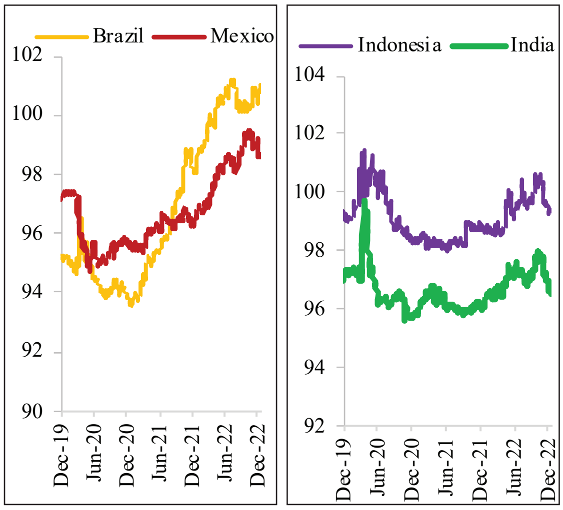


Figure I.3b: Emerging Market Economies



Source: Goldman Sachs, Bloomberg
Note: All Y-axes are indices; Data is retrieved from Goldman Sachs financial condition index

1.5 Inflation and monetary tightening led to a hardening of bond yields across economies and resulted in an outflow of equity capital from most of the economies around the world into the traditionally safe-haven market of the US. Unlike the past when the capital flight was more out of the EMEs given their relatively greater vulnerabilities, or the perception thereof, this time around, capital has also flown out from the advanced economies. The capital flight subsequently led to the strengthening of the US Dollar against other currencies – the US Dollar index strengthened by 16.1 per cent between January and September 2022. The consequent depreciation of other currencies has been widening the CAD and increasing inflationary pressures in the net importing economies.

Hardening of bond yields across economies

Figure I.4a: 10-year Bond Yield in AEs

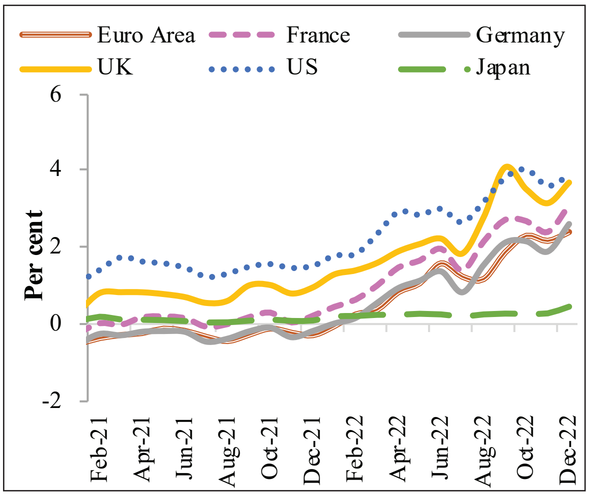
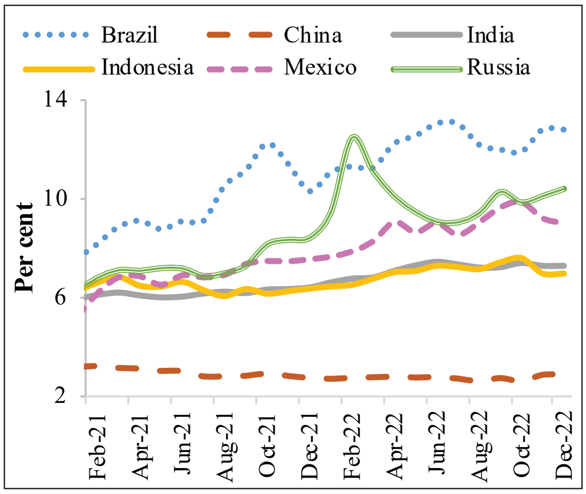
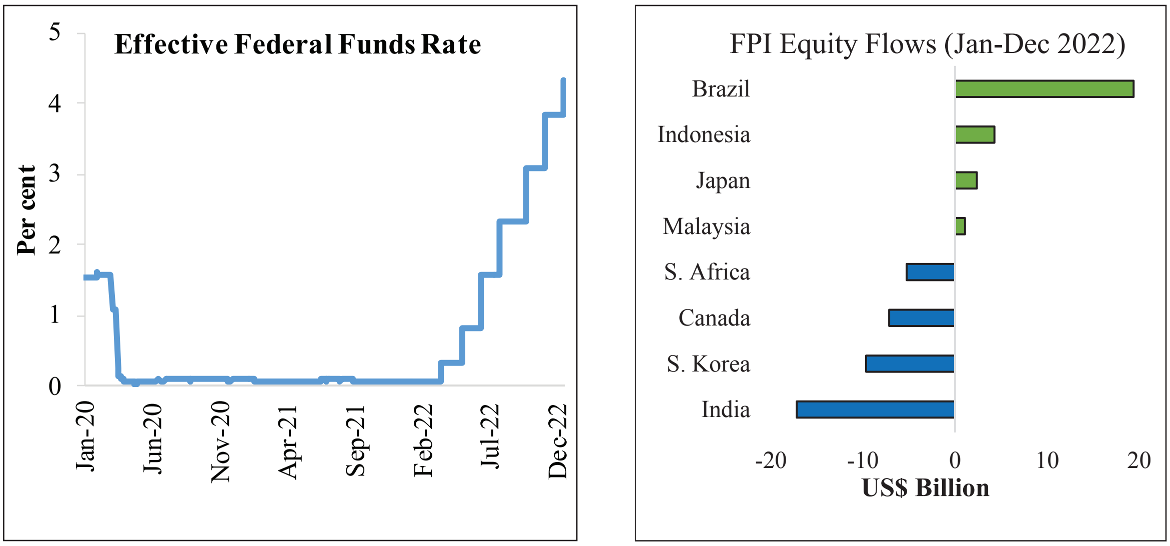


Figure I.4b: 10-year Bond Yield in EMEs



Source: Bloomberg

Figure I.5: The Federal Funds Rate was raised by a cumulative 425 basis points since Jan 2022 leading to capital flight from EMEs and AEs



Source: Federal Reserve

Source: Bloomberg

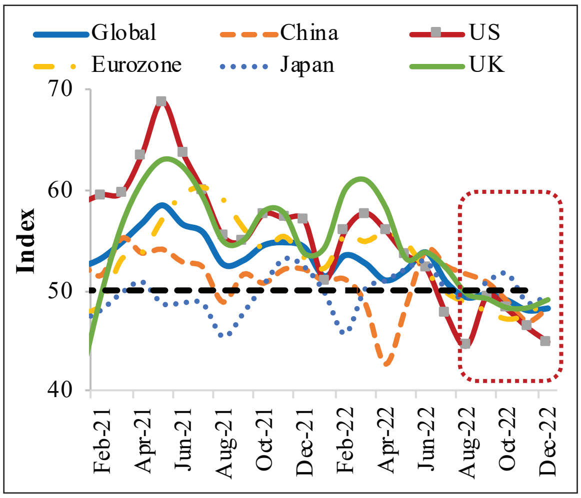
1.6 Rising inflation and monetary tightening led to a slowdown in global output beginning in the second half of 2022. The global PMI composite index has been in the contractionary zone since August 2022, while the yearly growth rates of global trade, retail sales, and industrial production have significantly declined in the second half of 2022. The consequent dampening of the global economic outlook, also compounded by expectations of a further increase in borrowing costs, was reflected in the lowering of growth forecasts by the IMF in its October 2022 update of the World Economic Outlook (WEO).

Table I.1: Global economic challenges led to a downward revision in growth forecast across countries

	Growth Projections (per cent)		Change from WEO Update (July 2022) (per cent)	
	2022	2023	2022	2023
World	3.2	2.7	0	–0.2
Advanced Economies	2.4	1.1	–0.1	–0.3
United States	1.6	1	–0.7	0
Euro Area	3.1	0.5	0.5	–0.7
UK	3.6	0.3	0.4	–0.2
Japan	1.7	1.6	0	–0.1
Emerging Market Economies	3.7	3.7	0.1	–0.2
China	3.2	4.4	–0.1	–0.2
India*	**6.8**	**6.1**	**–0.6**	**0**

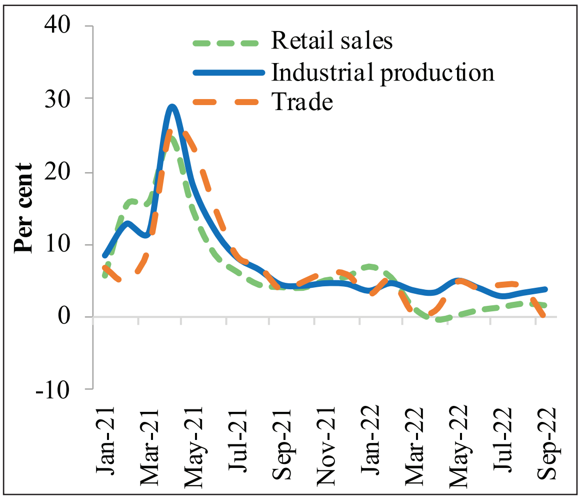
Source: IMF
Note: *Projection for India is for its fiscal year (Apr-Mar), while for the other economies, it is from Jan-Dec.

Figure I.6: Global Composite PMI in the contractionary zone since August 2022



Source: IHS Markit

Figure I.7: YoY growth in retail sales, industrial production and trade falling



Source: OECD, November 2022

1.7 Compounding the bleak global growth outlook have been the slowdown in economic activity in China caused by the government's zero Covid policy, a contracting real estate sector, and a tepid fiscal expansion. However, China has ended or relaxed most of its restrictive policies relating to Covid. It is possible that economic activity picks up in China sooner than expected. But it is too soon to tell.

Figure I.8a: China's Industrial Production Growth (YoY) declining

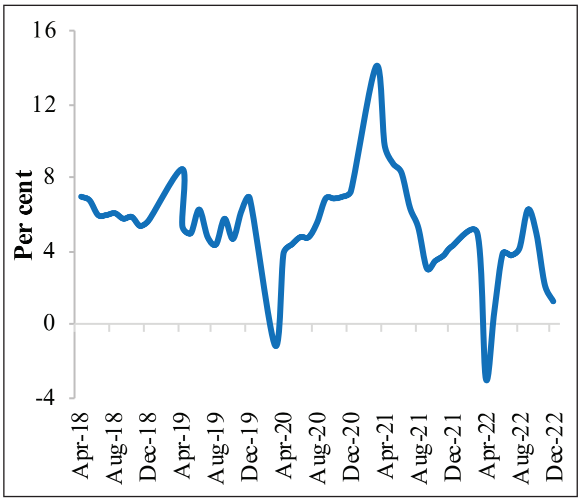
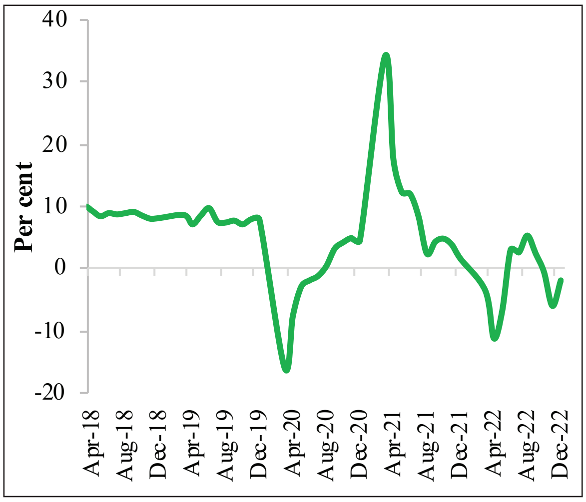


Figure I.8b: China's Retail Sales Growth (YoY) moderating



Source: Bloomberg, National Bureau of Statistics of China

1.8 Further tightening of monetary policy may aggravate fragilities built up in the financial system over the years, such as private and government debt structures, the effects of which could trigger financial contagion. Non-financial sector debt of most economies has increased considerably as a percentage of GDP since Q1 of 2008 when the global financial crisis struck. India is, however, one of the few countries whose debt burden has declined over this period, mainly because of the country's banking sector balance sheet clean-up and the corporate sector's deleveraging exercise undertaken during the last decade. Yet, an increase in the general government debt burden in India has attracted much attention, even as systemic risks of a financial breakdown are concentrated in other parts of the world.

Table I.2: Core Debt of most major economies except India is higher as compared to 2008

	Core debt of the non-financial sector (Q2 2022, % of GDP)				Change since Q2 2008			
Debt/GDP (Avg %)	**Household**	**Pvt Non-Financial**	**Government**	**Total**	**Household**	**Pvt Non-Financial**	**Government**	**Total**
Global Avg	62	160	88	**248**	-4	15	27	**38**
Australia	117	181	52	**232**	7	-9	42	**33**
Brazil	35	88	91	**179**	17	-36	28	**66**
Mainland China	62	220	74	**295**	43	107	47	**155**
France	67	231	114	**345**	19	71	47	**118**
Germany	56	128	67	**195**	-4	0.4	2	**3**
India	36	88	82	**170**	-7	**-17**	16	**-7**
Italy	43	113	151	**264**	4	-4	47	**43**
Japan	69	187	238	**426**	9	29	94	**122**
South Korea	106	222	45	**268**	35	61	23	**84**
Mexico	16	40	41	**81**	3	12	20	**33**
South Africa	35	67	71	**138**	-9	-13	45	**32**

Spain	57	155	118	**273**	-26	-56	82	**26**
UK	84	150	107	**257**	-11	-28	62	**34**
US	76	155	108	**264**	-22	-15	48	**33**

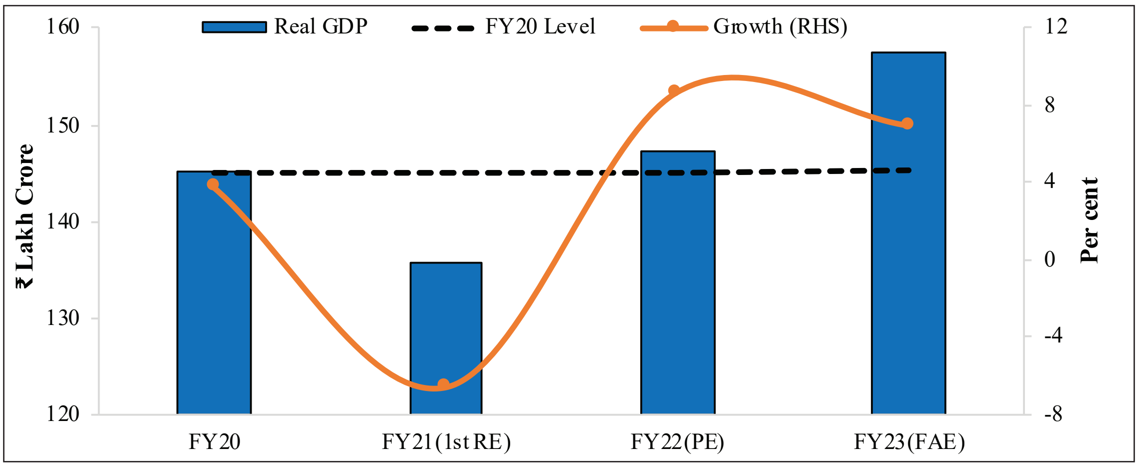
Source: BIS (based on information from their 5th December 2022 update of 'Credit to the non-financial sector')

1.9 In the developed world, inflationary pressures are abating but they are still on the higher side historically and relative to the inflation targets that many countries have adopted. Major central banks have reduced the pace of interest rate hikes in their latest rounds of monetary policy reviews to assess the impact thus far. Still, they have reiterated that terminal policy rates will be significantly higher than market expectations. Strong employment data and sharply lower headline inflation for December have raised hopes of the US economy achieving a softer landing. Similarly, in Europe, warmer winter weather has neutralised the risk of a near-term energy crisis. Lately, however, banks have reported much weaker earnings growth, and technology companies have begun to announce layoffs in America. Therefore, on balance, downside risk to the global economic outlook dominates.

Macroeconomic and Growth Challenges in the Indian Economy

1.10 The impact of the pandemic on India was seen in a significant GDP contraction in FY21. The following year, FY22, the Indian economy started to recover despite the Omicron wave of January 2022. This third wave did not affect economic activity in India as much as the previous waves of the pandemic did since its outbreak in January 2020. Mobility enabled by localised lockdowns, rapid vaccination coverage, mild symptoms and quick recovery from the virus contributed to minimising the loss of economic output in the January-March quarter of 2022. Consequently, output in FY22 went past its pre-pandemic level in FY20, with the Indian economy staging a full recovery ahead of many nations. The experience with the Omicron variant engendered a cautious optimism that it was possible to stay physically mobile and engage in economic activities despite the pandemic. FY23 thus opened with a firm belief that the pandemic was rapidly on the wane and that India was poised to grow at a fast pace and quickly ascend to the pre-pandemic growth path.

Figure I.9: Economic growth remains resilient



Source: NSO, MoSPI
Note: AE stands for Advanced Estimates, PE stands for Provisional Estimates, RE stands for Revised Estimates

Broad-based growth driven by Demand and Investment

Figure I.10a: YoY growth of Real GVA components

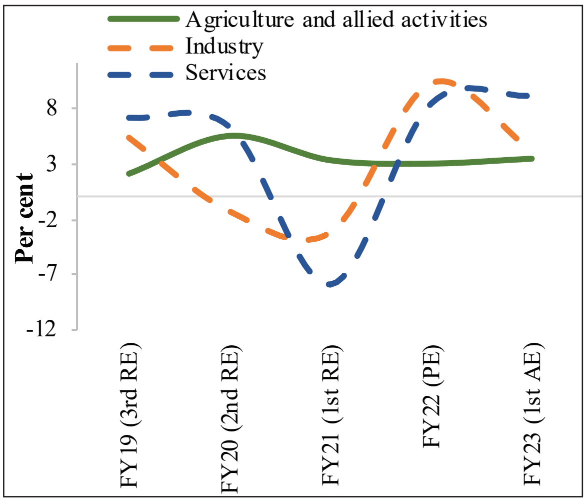
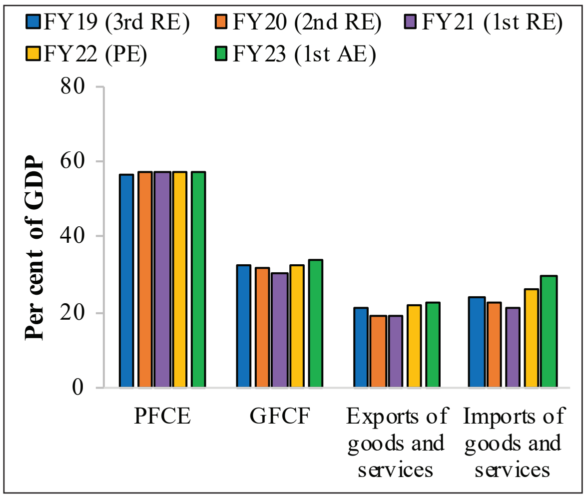


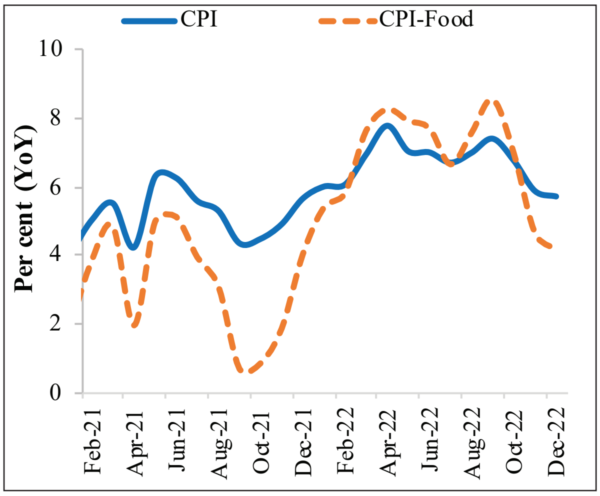
Figure I.10b: Share of Real GDP components



Source: NSO, MoSPI

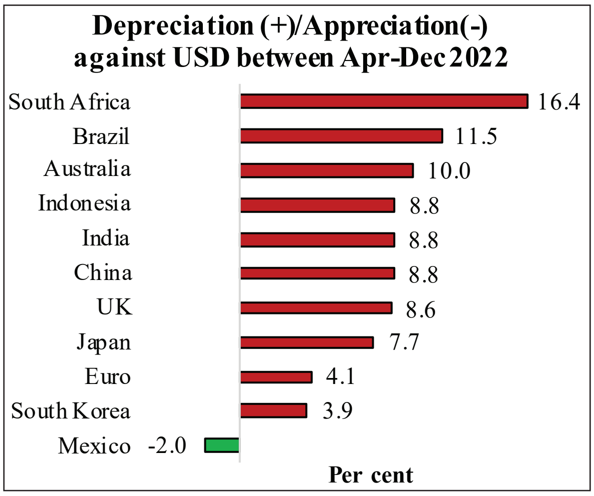
Note: AE stands for Advanced Estimates, PE stands for Provisional Estimates, RE stands for Revised Estimates

Figure I.11: CPI Inflation eased back to RBI's target range



Source: MoSPI

Figure I.12: Indian Rupee performed well compared to other EMEs

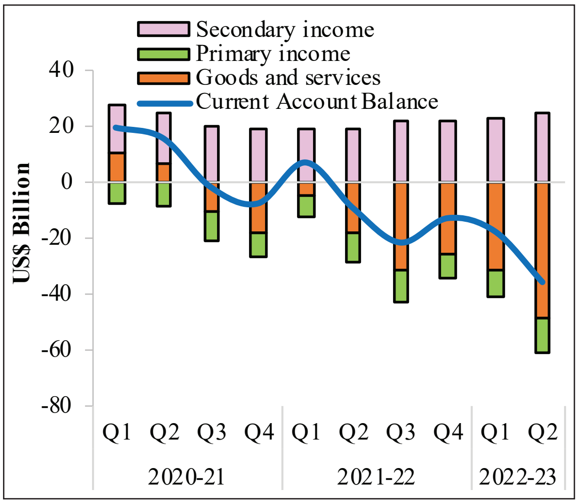


Source: Bloomberg, RBI (Exchange rates for December as on 31st Dec 2022)

1.11 However, the conflict in Europe necessitated a revision in expectations for economic growth and inflation in FY23. The country's retail inflation had crept above the RBI's tolerance range in January 2022. It remained above the target range for ten months before returning to below the upper end of the target range of 6 per cent in November 2022. During those ten months, rising international commodity prices contributed to India's retail inflation as also local weather conditions like excessive heat and unseasonal rains, which kept food prices high. The government cut excise and customs duties and restricted exports to restrain inflation while the RBI, like other central banks, raised the repo rates and rolled back excess liquidity.

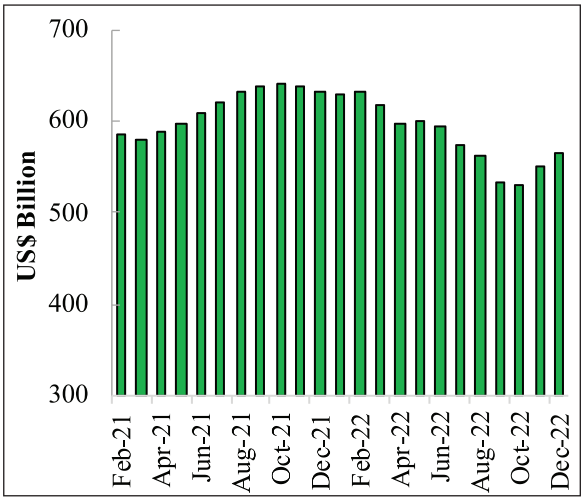
1.12 With monetary tightening, the US dollar has appreciated against several currencies, including the rupee. However, the rupee has been one of the better-performing currencies worldwide, but the modest depreciation it underwent may have added to the domestic inflationary pressures besides widening the CAD. Global commodity prices may have eased but are still higher compared to pre-conflict levels. They have further widened the CAD, already enlarged by India's growth momentum. For FY23, India has sufficient forex reserves to finance the CAD and intervene in the forex market to manage volatility in the Indian rupee.

Figure I.13: Widened Current Account Deficit



Source: RBI

Figure I.14: Adequate foreign exchange reserves to finance CAD



Source: RBI

1.13 For many countries around the world, including India, 2021 was a period of recovery for health and economies from the impact of the pandemic. For the advanced economies, in particular, the enormous fiscal stimulus earlier injected by their governments supported a strong demand revival. Growth in world trade subsequently followed, of which India was also a beneficiary. India's exports surged in FY22, and the momentum lasted up to the first half of FY23. Export growth was strong enough to increase India's share in the world market of merchandise exports. However, due to aggressive and synchronised monetary tightening, global economic growth has started to slow, and so has world trade. As per United Nations Conference on Trade and Development (UNCTAD) latest global trade update, global trade growth turned negative during the H2:2022, and geopolitical frictions, persisting inflationary pressures, and subdued demand are expected to suppress global trade further in 2023. This is likely to affect many countries, including India, with the prospects of sluggish exports continuing into FY24, compared to the promise shown at the beginning of the current year.

Figure I.15: Declining shipping freight cost as trade slows

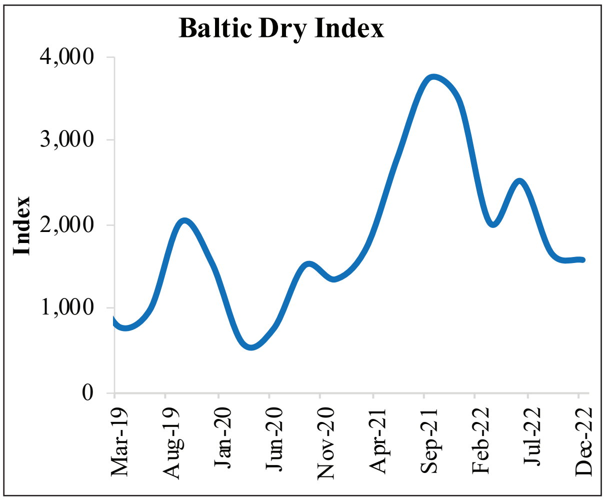
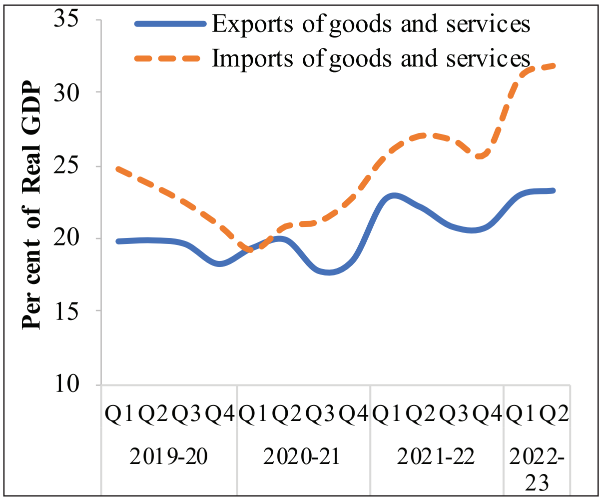


Figure I.16: Share of export in GDP expands, despite global slowdown

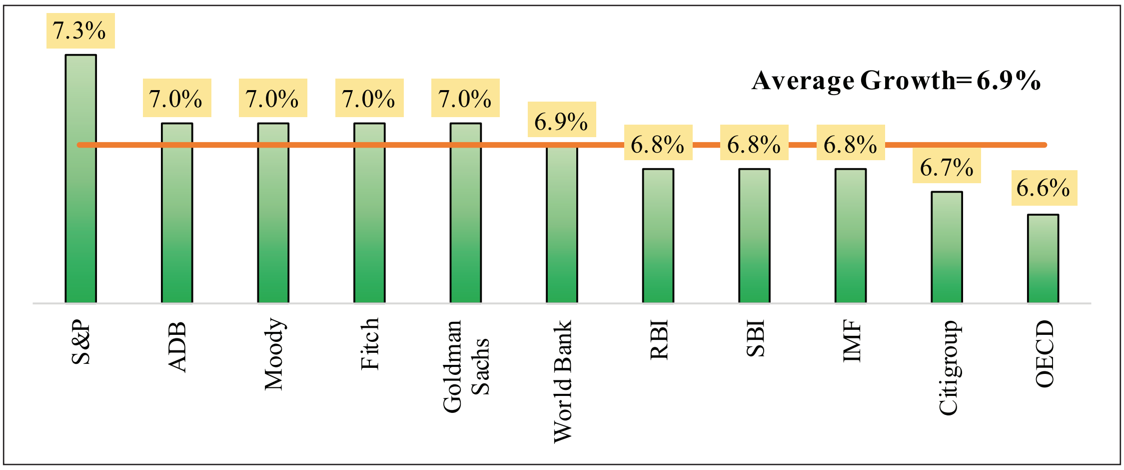


Source: The Great Eastern Shipping Co. Ltd.Source: NSO, MoSPI

India's Economic Resilience and Growth Drivers

1.14 Monetary tightening by the RBI, the widening of the CAD, and the plateauing growth of exports have essentially been the outcome of geopolitical strife in Europe. As these developments posed downside risks to the growth of the Indian economy in FY23, many agencies worldwide have been revising their growth forecast of the Indian economy downwards. These forecasts, including the advance estimates released by the NSO, now broadly lie in the range of 6.5-7.0 per cent. Despite the downward revision, the growth estimate for FY23 is higher than for almost all major economies and even slightly above the average growth of the Indian economy in the decade leading up to the pandemic. IMF estimates India to be one of the top two fast-growing significant economies in 2022. Despite strong global headwinds and tighter domestic monetary policy, if India is still expected to grow between 6.5 and 7.0 per cent, and that too without the advantage of a base effect, it is a reflection of India's underlying economic resilience; of its ability to recoup, renew and re-energise the growth drivers of the economy.

Figure I.17: India growth projections by various agencies for FY23



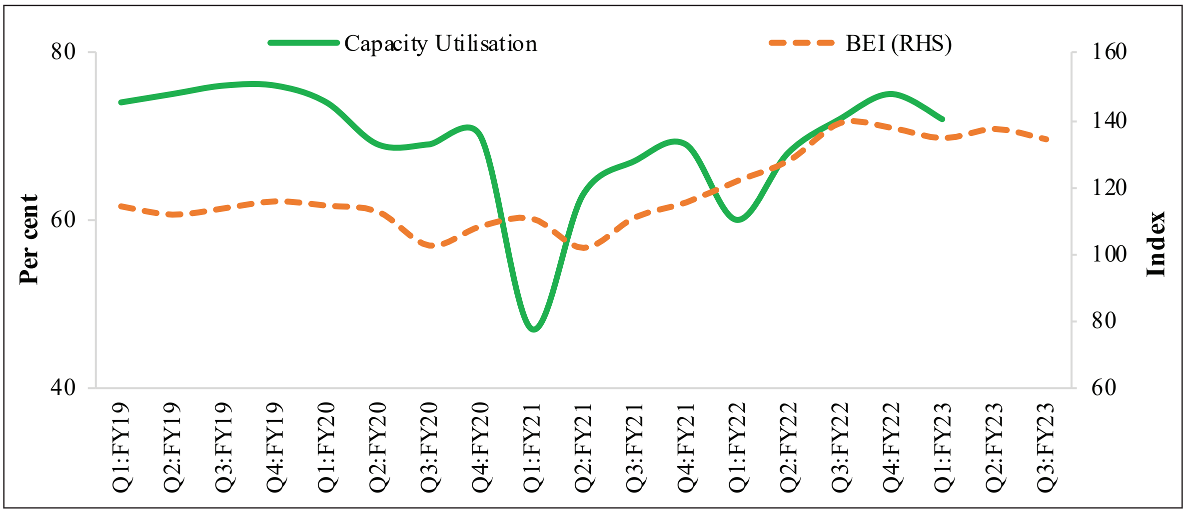
Source: Various Agencies

Note: ADB stands for Asian Development Bank, IMF is International Monetary Fund

1.15 India's economic resilience can be seen in the domestic stimulus to growth seamlessly replacing the external stimuli. The growth of exports may have moderated in the second half of FY23. However, their surge in FY22 and the first half of FY23 induced a shift in the gears of the production processes from mild acceleration to cruise mode. Manufacturing and investment activities consequently gained traction. By the time the growth of exports moderated, the rebound in domestic consumption had sufficiently matured to take forward the growth of India's economy. Private Consumption as a percentage of GDP stood at 58.4 per cent in Q2 of FY23, the highest among the second quarters of all the years since 2013-14, supported by a rebound in contact-intensive services such as trade, hotel and transport, which registered sequential growth of 16 per cent in real terms in Q2 of FY23 compared to the previous quarter.

1.16 Although domestic consumption rebounded in many economies, the rebound in India was impressive for its scale. It contributed to a rise in domestic capacity utilisation. Domestic private consumption remains buoyant in November 2022, as indicated by Motilal Oswal's Economic Activity Index. The index estimates that private consumption grew at a five-month high pace of 5.6 per cent YoY, driven by auto sales and broad-based expansion of services.[2]

Figure I.18: Enhanced capacity utilisation and business sentiments

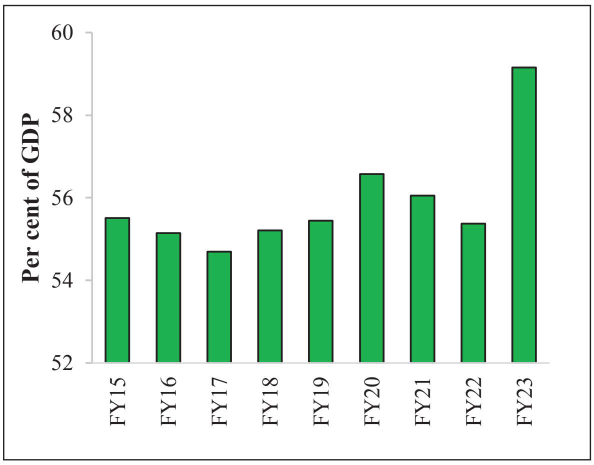


Source: RBI
Note: BEI – Business Expectations Index

1.17 The near-universal coverage of vaccination in India overseen by the government was the single most important reason that brought people out to the streets to re-experience the "bazaar" as the marketplace was rapidly populated with service providers returning to resume business. The contact-based service providers like restaurants, hotels, shopping malls, cinemas, and tourist destinations, among others, soon ran up a thriving business and have significantly contributed to keeping up the consumer sentiments, as captured in repeated surveys. If, on the one hand, the universal vaccination coverage saved lives, on the other, it served as a health stimulant to raise consumer sentiments and thus the recovery and growth of the economy.

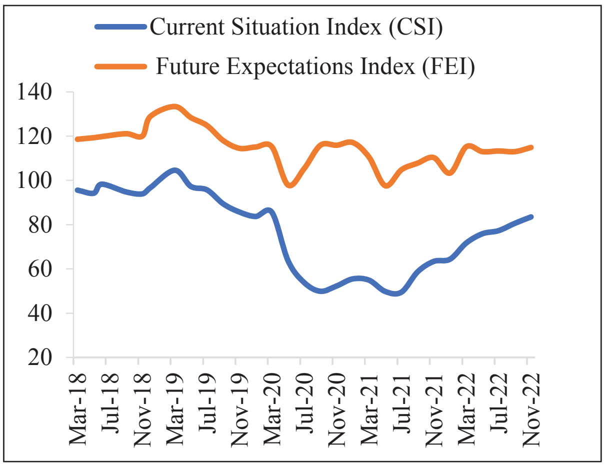
2 https://www.motilaloswal.com/site/rreports/HTML/638084191269979180/index.htm

Figure I.19A: Private consumption highest since FY15 across H1



Source: NSO, MoSPI

Figure I.19B: Improving consumer confidence

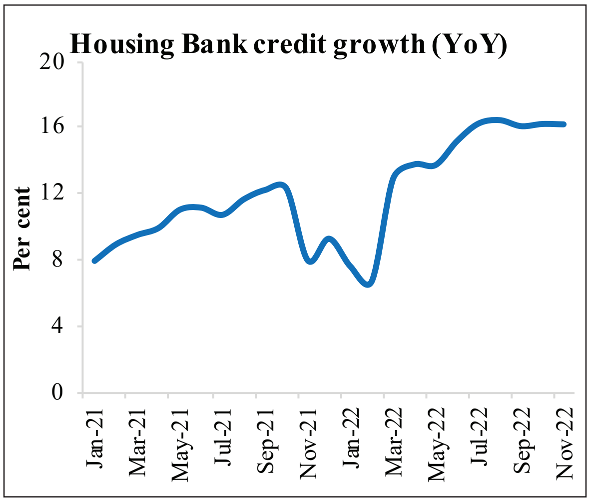


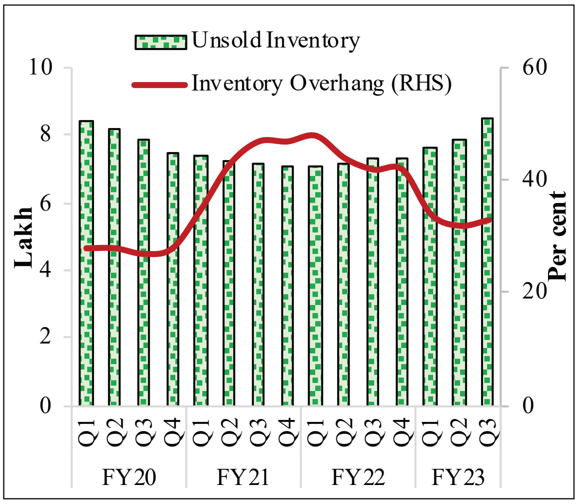
Source: RBI

1.18 The rebound in consumption has also been supported by the release of "pent-up" demand, a phenomenon not again unique to India but nonetheless exhibiting a local phenomenon influenced by a rise in the share of consumption in disposable income. Since the share of consumption in disposable income is high in India, a pandemic-induced suppression of consumption built up that much greater recoil force. Hence, the consumption rebound may have lasting power. Accelerating growth in personal loans in India testifies to an enduring release of "pent-up" demand for consumption. RBI's most recent survey[3] of consumer confidence released in December 2022 pointed to improving sentiment with respect to current and prospective employment and income conditions.

1.19 The "release of pent-up demand" was reflected in the housing market too. Demand for housing loans picked up. Consequently, housing inventories have declined, prices are firming up, and construction of new dwellings is picking up pace. This has stimulated innumerable backward and forward linkages that the construction sector is known to carry. The universalisation of vaccination coverage also has a significant role in lifting the housing market as, in its absence, the migrant workforce could not have returned to construct new dwellings.

Figure I.20: Growth in bank credit to housing complimenting falling household inventory



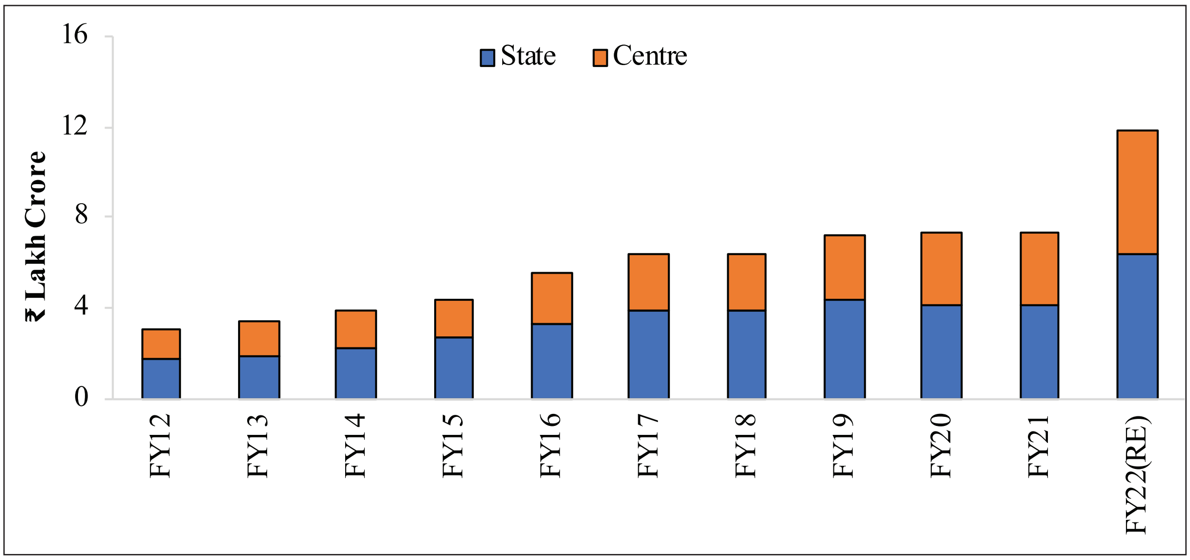


Source: RBI, PropTiger

3 See https://rbi.org.in/Scripts/PublicationsView.aspx?id=21569

1.20 Apart from housing, construction activity, in general, has significantly risen in FY23 as the much-enlarged capital budget (Capex) of the central government and its public sector enterprises is rapidly being deployed. Going by the Capex multiplier estimated for the country, the economic output of the country is set to increase by at least four times the amount of Capex.[4,5] States, in aggregate, are also performing well with their Capex plans. Like the central government, states also have a larger capital budget supported by the centre's grant-in-aid for capital works and an interest-free loan repayable over 50 years.

Figure I.21: Total capital expenditure grew at an average rate of 13.0% during FY12 and FY22

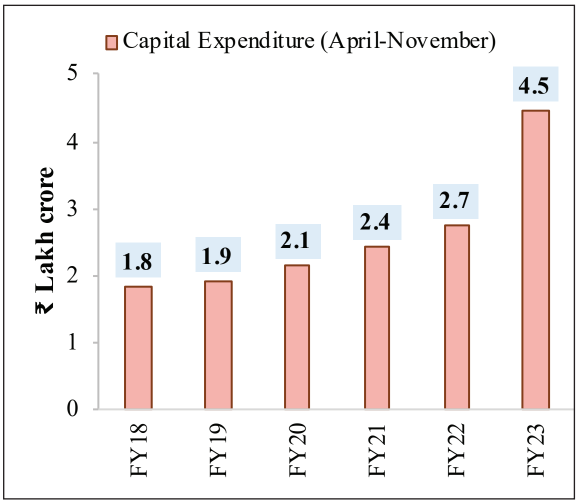


Source: Union Budget, States Budgets, RBI

1.21 A capex thrust in the last two budgets of the Government of India was not an isolated initiative meant only to address the infrastructure gaps in the country. It was part of a strategic package aimed at crowding-in private investment into an economic landscape broadened by the vacation of non-strategic PSEs (disinvestment) and idling public sector assets. Three developments support this[6]. First, the significant increase in the Capex budget in FY23, as well as its high rate of spending. Second, direct tax revenue collections have been highly buoyant, and so have GST collections, which should ensure the full expending of the Capex budget within the budgeted fiscal deficit. The growth in revenue expenditure has also been limited to pave the way for higher growth in Capex. Third, the pick-up in private sector investment since the January-March quarter of 2022. Evidence shows an increasing trend in announced projects and capex spending by the private players. Surveys of leading industry CEOs also reveal their plans and commitment to increasing Capex.

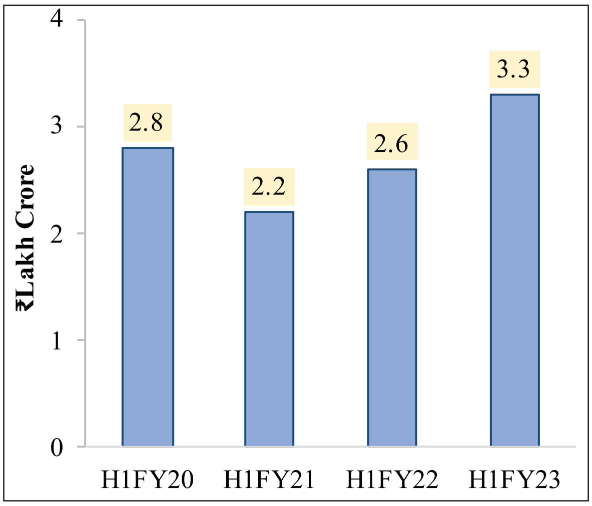
4 https://rbi.org.in/scripts/PublicationsView.aspx?Id=15369
5 https://www.nipfp.org.in/media/medialibrary/2014/02/WP_2013_125.pdf
6 https://www.imf.org/en/Publications/WP/Issues/2016/12/31/Crowding-Out-or-Crowding-In-Public-and-Private-Investment-in-India-43470

Figure I.22: Capex doubled in the past five years



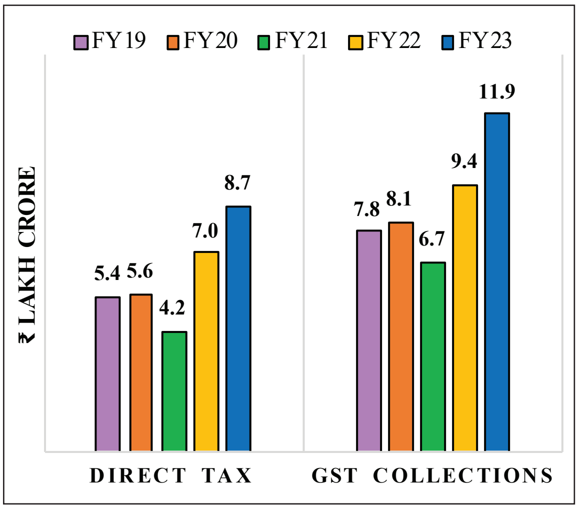
Source: CGA

Figure I.23: Private Investment remains upbeat



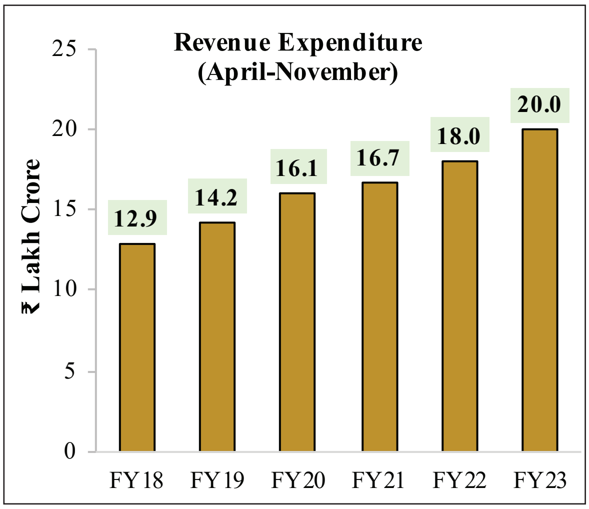
Source: Capitaline, Axis Bank Research

Figure I.24: Buoyant tax collections (April-November)



Source: CGA

Figure I.25: Limited growth in revenue expenditure

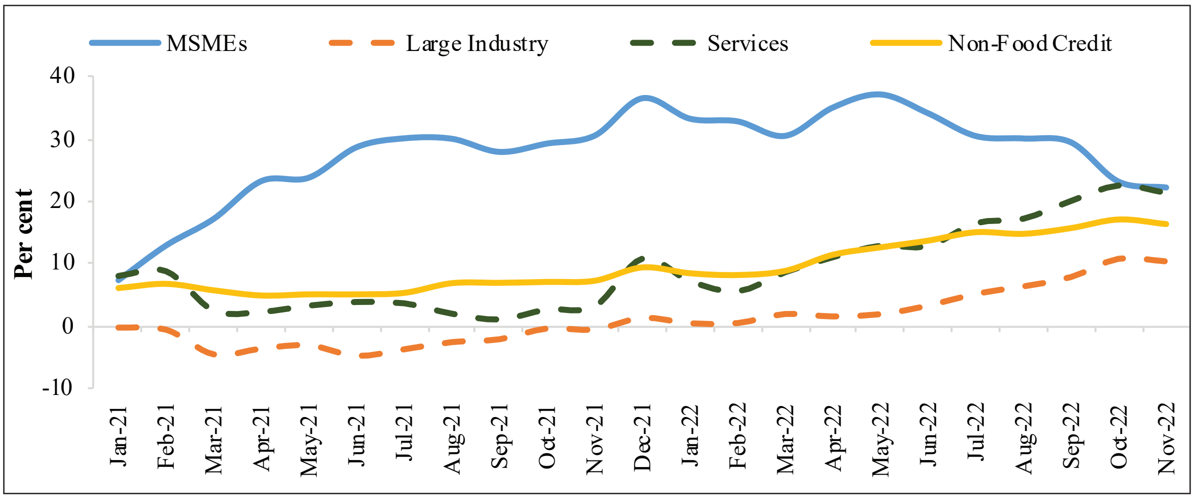


Source: CGA

1.22 While an increase in export demand, rebound in consumption, and public capex have contributed to a recovery in the investment/manufacturing activities of the corporates, their stronger balance sheets have also played a big part equal measure to realising their spending plans. As per the data on non-financial debt from the Bank for International Settlements, in the course of the last decade, Indian non-financial private sector debt and non-financial corporate debt as a share of GDP declined by nearly thirty percentage points. This limited the increase in interest costs, which, together with possible savings on overheads during lockdowns, contributed to the recent fortification of corporate balance sheets by higher profits. In FY22, the surge in exports also contributed to increasing profits in the corporate world. After-tax profits were also boosted by the lower taxes announced in 2019. Better profitability helped corporates pay down debt. Consequently, not only do corporates have more scope to borrow now, but their improved financial health has also reassured their prospective lenders to expand their credit portfolios. As per Axis Bank Business and Economic Research, Capex by the Corporate sector increased to ₹3.3 lakh crore in H1 of FY23, driven by heavy investments in electricity, steel, chemicals, auto and pharmaceuticals sectors.

1.23 The banking sector in India has responded in equal measure to the demand for credit. The Year-on-Year growth in credit since the January-March quarter of 2022 has moved into double-digits and is rising across most sectors. The credit growth to the MSME sector has been remarkably high, over 30.5 per cent, on average, during Jan-Nov 2022, supported by the extended ECLGS of the central government. The aggressive supply of credit by the banking sector has as much been triggered by their improved financial health as that of the corporates. The finances of the public sector banks have seen a significant turnaround, with profits being booked at regular intervals and their Non-Performing Assets (NPAs) being fast-tracked for quicker resolution/liquidation by the Insolvency and Bankruptcy Board of India (IBBI). At the same time, the government has been providing adequate budgetary support for keeping the PSBs well-capitalized, ensuring that their Capital Risk-Weighted Adjusted Ratio (CRAR) remains comfortably above the threshold levels of adequacy. The successful macro stress tests performed on the banking sector further testify to its financial strength. It does help that the banking sector has negligible cross-border claims in times when currency risk is high. Nonetheless, financial strength has helped banks make up for lower debt financing provided by corporate bonds and External Commercial Borrowings (ECBs) so far in FY23. Rising yields on corporate bonds and higher interest/hedging costs on ECBs have made these instruments less attractive than the previous year.

Figure I.26: Double-digit growth in Bank Credit to MSMEs



Source: RBI

Figure I.27: Declining SCB's GNPA Ratio

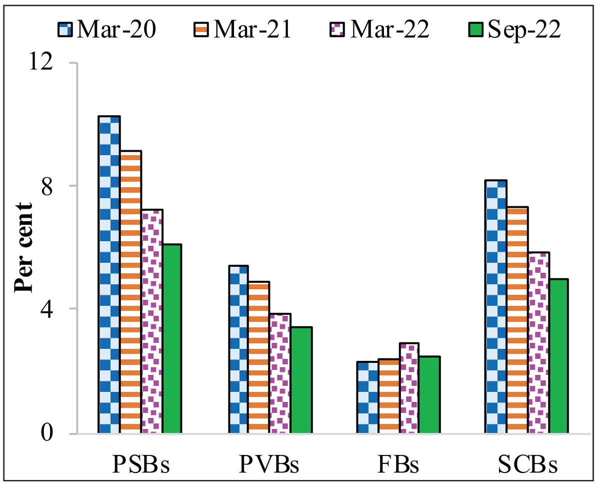
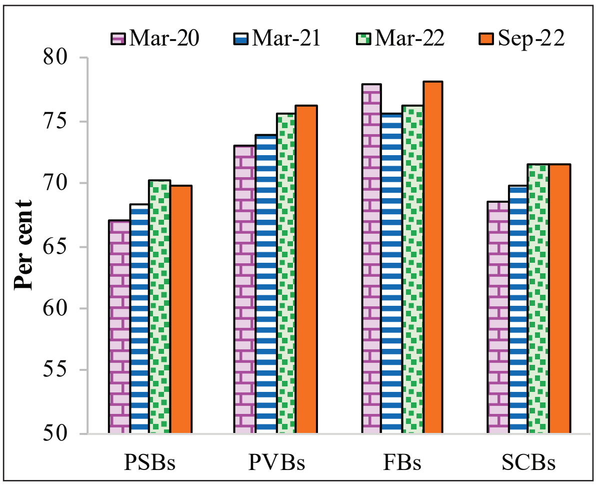


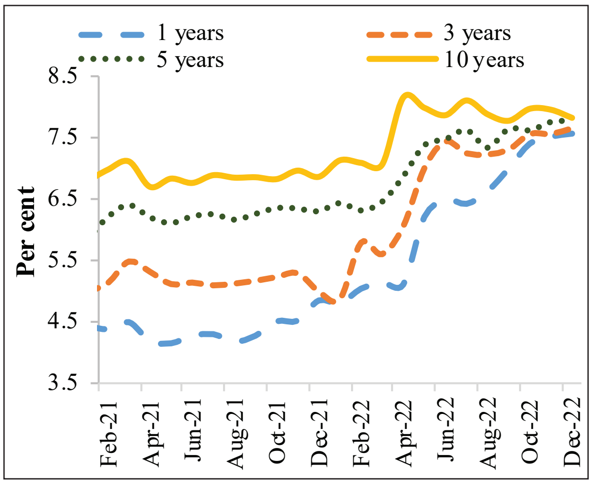
Figure I.28: Provisioning Coverage Ratio



Source: RBI

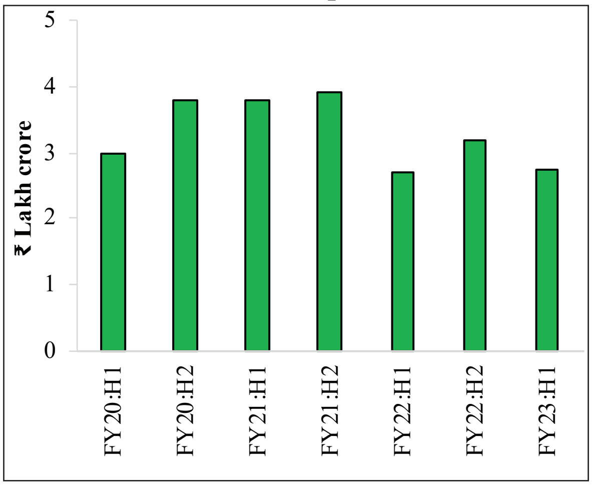
Note: SCBs stand for Scheduled Commercial Banks, PSBs stand for Public Sector Banks, PVBs stand for Private Sector Banks, FBs stands for Foreign Banks, GNPA stands for Gross Non-Performing Assets

Figure I.29: Rising Corporate Bond yields



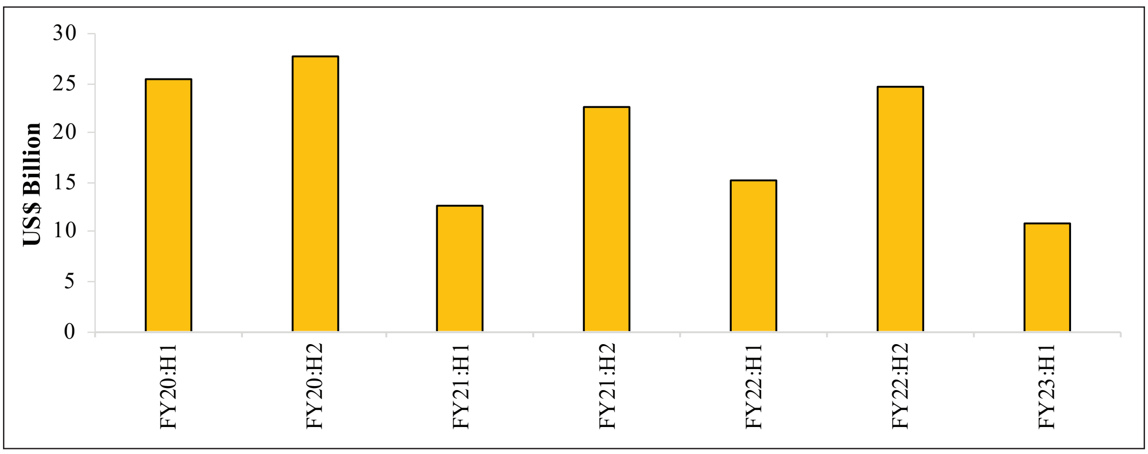
Source: Bloomberg

Figure I.30: Moderation in Private Placements of Corporate Bonds



Source: SEBI

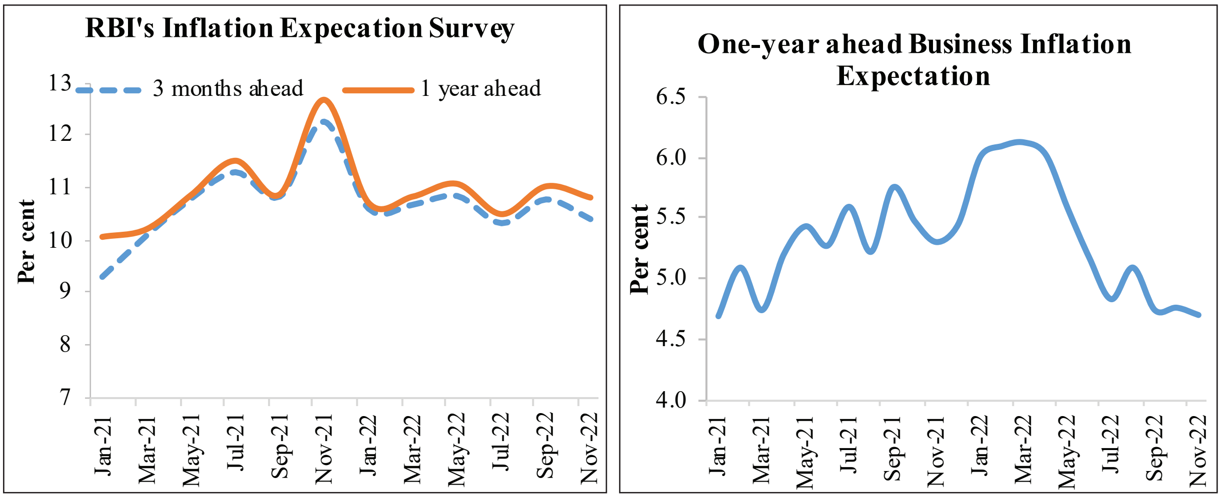
Figure I.31: Higher interest/hedging costs made ECBs and FCCBs less attractive source of funds



Source: RBI

1.24 RBI has projected headline inflation at 6.8 per cent in FY23, which is outside its target range. At the same time, it is not high enough to deter private consumption and also not so low as to weaken the inducement to invest. Moderately high inflation has further ensured the anchoring of inflationary expectations preventing prices from weakening demand and growth in India. Additionally, with inflation on the declining path, the interest cost of domestic credit will likely decline, inducing a further increase in demand for credit by corporates and retail borrowers.

Figure I.32: Inflation Expectations Anchoring



Source: RBI

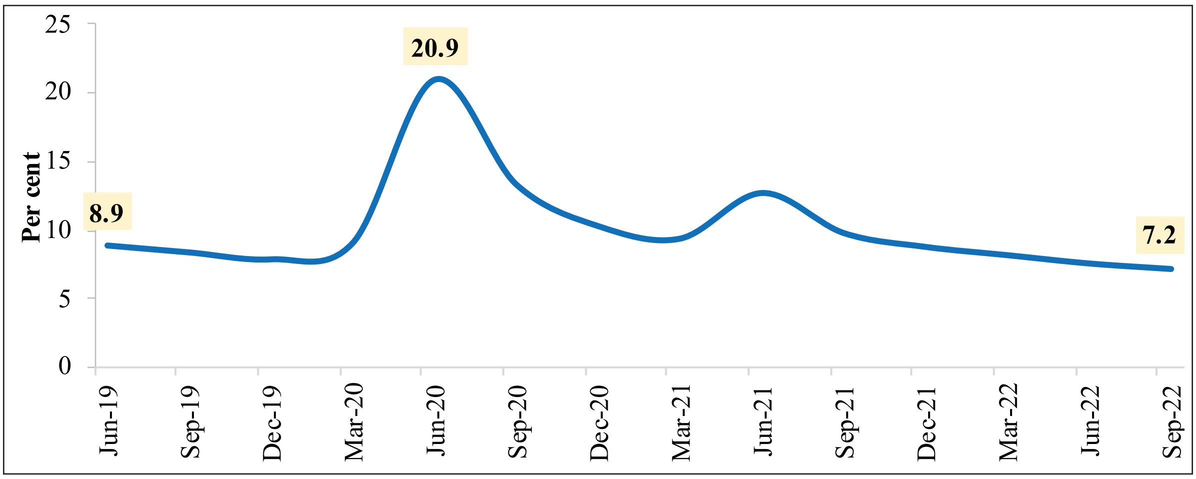
Source: IIMA

India's Inclusive Growth

1.25 Growth is inclusive when it creates jobs. Both official and unofficial sources confirm that employment levels have risen in the current financial year. The Periodic Labour Force Survey (PLFS) shows that the urban unemployment rate for people aged 15 years and above declined from 9.8 per cent in the quarter ending September 2021 to 7.2 per cent one year later (quarter ending September 2022). This is accompanied by an improvement in the labour force participation rate (LFPR) as well, confirming the emergence of the economy out of the pandemic-induced slowdown early in FY23. Job creation appears to have moved into a higher orbit with the initial surge in exports, a strong release of the "pent-up" demand, and a swift rollout of the capex. Since export growth is plateauing and the "pent-up" release of demand will have a finite life, it is essential that capex continues to grow to facilitate employment in the economy, at least until such time the global economy rebounds and, through the export channel, provides an additional window to India for job creation. Thankfully, the private sector has all the necessary pre-conditions lined up to step up to the plate and do the capex heavy lifting. Their internal resource generation is good, capacity utilisation is high, and the demand outlook continues to improve. Capital markets are willing to finance new investments, as are financial institutions.

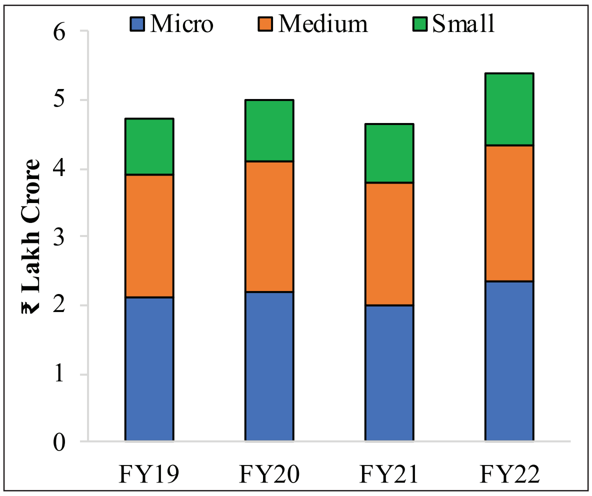
1.26 In FY21, the Government announced the Emergency Credit Line Guarantee Scheme. The scheme has succeeded in shielding micro, small and medium enterprises from financial distress. A recent CIBIL report (ECLGS Insights, August 2022) showed that the scheme has supported MSMEs in facing the covid shock, with 83 per cent of the borrowers that availed of the ECLGS being micro-enterprises. Among these micro units, more than half had an overall exposure of less than ₹10 lakh. Furthermore, CIBIL data also shows that ECLGS borrowers had lower non-performing asset rates than enterprises that were eligible for ECLGS but did not avail of it. Further, the GST paid by MSMEs after declining in FY21 has been rising since and now has crossed the pre-pandemic level of FY20, reflecting the financial resilience of small businesses and the effectiveness of the pre-emptive government intervention targeted towards MSMEs.

Figure I.33: Urban Unemployment Rate at four-year low



Source: NSO, MoSPI

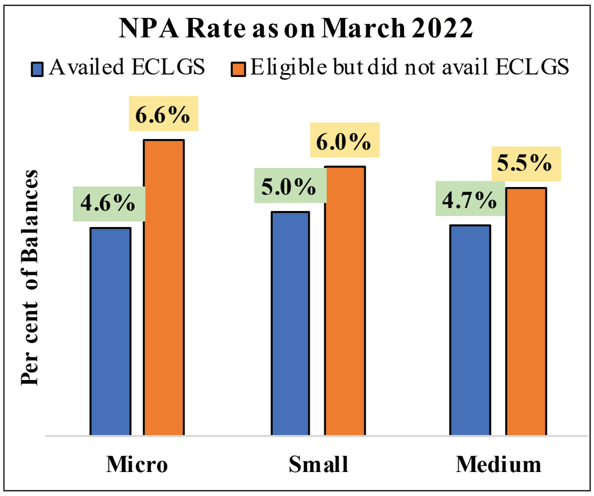
Figure I.34: GST paid by MSMEs in FY22 crossed the pre-pandemic level



Source: Ministry of Finance

Note: Includes firms with turnover up to ₹1000 crore. Micro -- <= 25cr; Small <= 25 to 100 Cr.; Medium 100 to 1000 Cr.

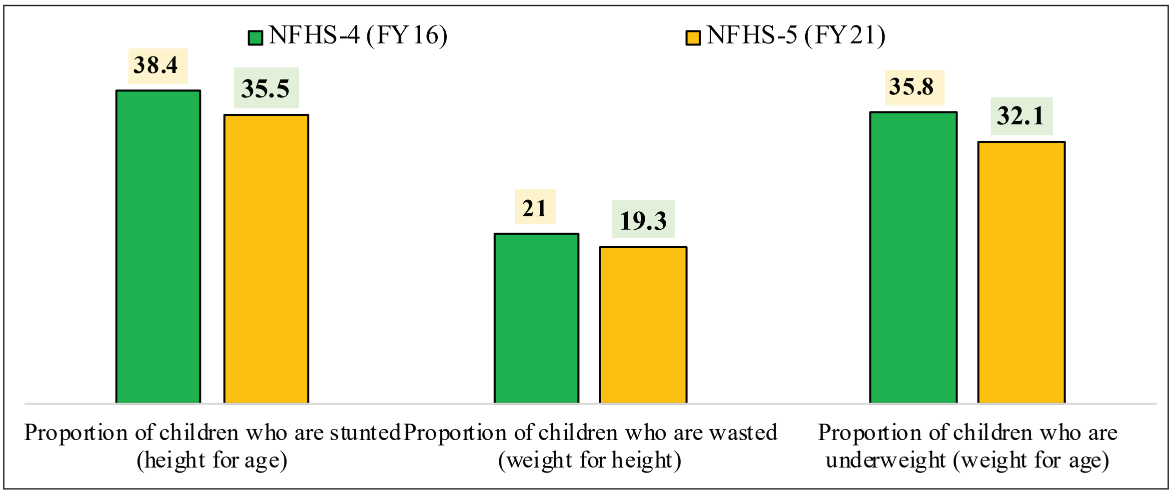
Figure I.35: ECLGS aided MSMEs in improving their asset quality



Source: ECLGS Insights Report', TransUnion CIBIL, August 2022

1.27 The scheme implemented by the government under the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) has been rapidly creating more assets in respect of "Works on individual's land" than in any other category. The share of this category rose to about 60 per cent in FY22, indicating that MGNREGA, besides generating daily wage employment, has also been creating assets for individual households to diversify their sources of income and lift their supplementary incomes. Details on asset creation under MGNREGA are further discussed in Chapters 6 "Social Infrastructure and Employment: Big Tent". In addition, schemes like PM-KISAN, which benefits households covering half the rural population, and PM Garib Kalyan Anna Yojana have significantly contributed to lessening impoverishment in the country. The UNDP Report of July 2022 stated that the recent inflationary episode in India would have a low poverty impact due to well-targeted support. In addition, the National Family Health Survey (NFHS) in India shows improved rural welfare indicators from FY16 to FY20, covering aspects like gender, fertility rate, household amenities, and women empowerment.

Figure I.36: Improvement in Rural Welfare Indicators



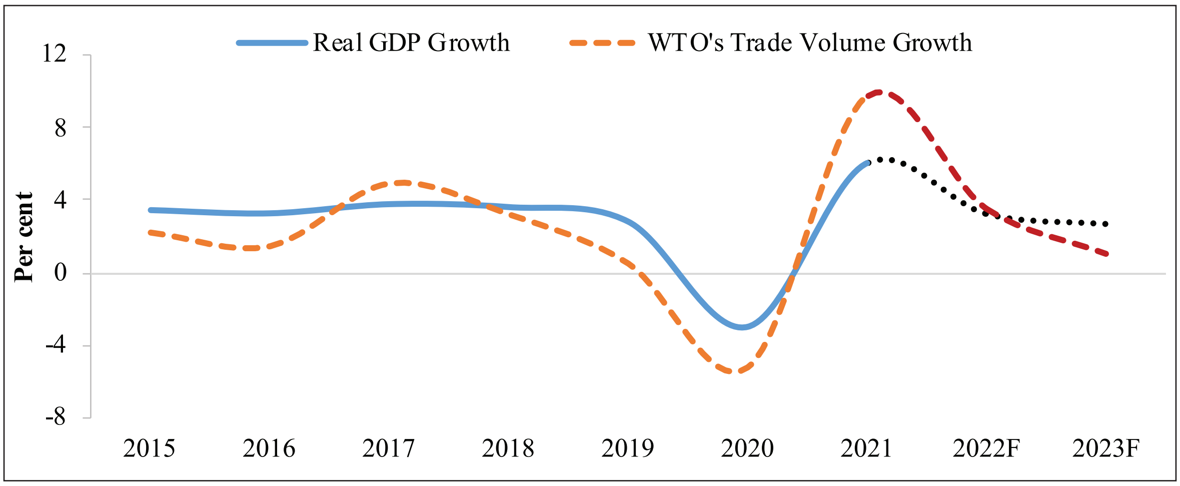
Source: NFHS-4 and NFHS-5

1.28 The year FY23 so far for India has reinforced the country's belief in its economic resilience. The economy has withstood the challenge of mitigating external imbalances caused by the Russian-Ukraine conflict without losing growth momentum in the process. India's stock markets had a positive return in CY22, unfazed by withdrawals by foreign portfolio investors. India's inflation rate did not creep too far above its tolerance range compared to several advanced nations and regions. A relatively higher growth forecast among major economies, projected retail inflation only slightly higher than the tolerance limit, and an estimated current account deficit financeable with normal capital inflows and forex reserves large enough to finance close to a year's imports are clear evidence of economic resilience amidst a global polycrisis. Strong consumption rebound, robust revenue collections, sustained capex in both the public and the private sector, growing employment levels in the urban as well as the rural areas, and targeted social security measures further underpin the prospects for economic and social stability and sustained growth. India is the third-largest economy in the world in PPP terms and the fifth-largest in market exchange rates. As expected of a nation of this size, the Indian economy in FY23 has nearly "recouped" what was lost, "renewed" what had paused, and "re-energised" what had slowed during the pandemic and since the conflict in Europe.

Outlook: 2023-24

1.29 India's recovery from the pandemic was relatively quick, and growth in the upcoming year will be supported by solid domestic demand and a pickup in capital investment. The current growth trajectory will be supported by multiple structural changes that have been implemented over the past few years. The private sector – financial and non-financial – was repairing balance sheets, which led to a slowdown in capital formation in the previous decade. The financial system stress experienced in the second decade of the millennium, evidenced by rising non-performing assets, low credit growth and declining growth rates of capital formation, caused by excessive lending witnessed in the first decade-plus, is now behind us. Aided by healthy financials, incipient signs of a new private sector capital formation cycle are visible. More importantly, compensating for the private sector's caution in capital expenditure, the government raised capital expenditure substantially. Budgeted capital expenditure rose 2.7X in the last seven years, from FY16 to FY23, re-invigorating the Capex cycle. Structural reforms such as the introduction of the Goods and Services Tax and the Insolvency and Bankruptcy Code enhanced the efficiency and transparency of the economy and ensured financial discipline and better compliance.

Figure I.37: Slowdown in global economic growth and trade



Source: IMF, WTO
Note: F stands for Forcast

1.30 Even as India's outlook remains bright, global economic prospects for the next year have been weighed down by the combination of a unique set of challenges expected to impart a few downside risks. Multi-decadal high inflation numbers have compelled central banks across the globe to tighten financial conditions. The impact of monetary tightening is beginning to show in slowing economic activity, especially in Advanced Economies. Besides this, adverse spillovers from the prolonged strains in supply chains and heightened uncertainty due to geo-political conflict have further deteriorated the global outlook. Hence, global growth is forecasted to slow from 3.2 per cent in 2022 to 2.7 per cent in 2023 as per IMF's World Economic Outlook, October 2022. A slower growth in economic output coupled with increased uncertainty will dampen trade growth. This is seen in the lower forecast for growth in global trade by the World Trade Organisation, from 3.5 per cent in 2022 to 1.0 per cent in 2023.

1.31 On the external front, risks to the current account balance stem from multiple sources. While commodity prices have retreated from record highs, they are still above pre-conflict levels. Strong domestic demand amidst high commodity prices will raise India's total import bill and contribute to unfavourable developments in the current account balance. These may be exacerbated by plateauing export growth on account of slackening global demand. Should the current account deficit widen further, the currency may come under depreciation pressure.

1.32 Another risk to the outlook originates from the ongoing monetary tightening exercise. While the pace of rate hikes has slowed, major central banks have reaffirmed their hawkish stance on inflation. Entrenched inflation may prolong the tightening cycle, and therefore, borrowing costs may stay 'higher for longer'. In such a scenario, global economy may be characterised by low growth in FY24. However, the scenario of subdued global growth presents two silver linings – oil prices will stay low, and India's CAD will be better than currently projected. The overall external situation will remain manageable.

1.33 The upside to India's growth outlook arises from (i) limited health and economic fallout for the rest of the world from the current surge in Covid-19 infections in China and, therefore, continued normalisation of supply chains; (ii) inflationary impulses from the reopening of China's economy turning out to be neither significant nor persistent; (iii) recessionary tendencies in major AEs triggering a cessation of monetary tightening and a return of capital flows to India amidst a stable domestic inflation rate below 6 per cent; and (iv) this leading to an improvement in animal spirits and providing further impetus to private sector investment.

1.34 Against this backdrop, the survey projects a baseline GDP growth of 6.5 per cent in real terms in FY24. The projection is broadly comparable to the estimates provided by multilateral agencies such as the World Bank, the IMF, and the ADB and by RBI, domestically. The actual outcome for real GDP growth will probably lie in the range of 6.0 per cent to 6.8 per cent, depending on the trajectory of economic and political developments globally.

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INDIA'S MEDIUM-TERM GROWTH OUTLOOK: WITH OPTIMISM AND HOPE

02
CHAPTER

2014-2022 is an important period in the economic history of India. The economy underwent a gamut of wide-ranging structural and governance reforms that strengthened the economy's fundamentals by enhancing its overall efficiency. With an underlying emphasis on improving the ease of living and doing business, the reforms were based on the broad principles of creating public goods, adopting trust-based governance, co-partnering with the private sector for development, and improving agricultural productivity. Under normal circumstances, reforms of such scale and relevance would have accelerated economic growth. However, largely due to the balance sheet stress caused by the credit boom in the previous years and secondarily due to the one-off global shocks that followed, key macroeconomic variables such as credit growth, capital formation, and hence economic growth were adversely impacted during this period. Further, some reforms deliver results with lagged effects as their diffusion in the economy takes time.

This situation is analogous to the period 1998-2002 when transformative reforms undertaken by the government had lagged growth returns due to temporary shocks in the economy. Once these shocks faded, the structural reforms paid growth dividends from 2003. Similarly, in the present decade, the presence of strong medium-term growth magnets gives us optimism and hope that once these global shocks of the pandemic and the spike in commodity prices in 2022 fade away, the Indian economy is well placed to grow faster in the coming decade. With improved and healthier balance sheets of the banking, non-banking and corporate sectors, a fresh credit cycle has already begun, evident from the double-digit growth in bank credit over the past months. Additionally, the economy has started benefiting from the efficiency gains resulting from greater formalisation, higher financial inclusion, and economic opportunities created by digital technology-based economic reforms. Thus, India's growth outlook seems better than in the pre-pandemic years, and the Indian economy is prepared to grow at its potential in the medium term.

Introduction

2.1 Indian economy has undergone a transformative process of New Age reforms in the last eight years. These diverse policies converge towards improving the economy's overall efficiency and lifting its potential growth. To achieve the broader policy goal of unleashing the productive potential of the economy and its people, the reforms aimed at enhancing the ease of living and doing business at the fundamental level. The use of technology, in particular digital technology, undergirds the reforms. The economic energy and positive mindset that the reforms unleashed would have led to a sharp acceleration in growth but for the balance sheet repair of the over-leveraged domestic financial sector (banking & non-banking) and the corporate sector and secondarily to the one-off global shocks that followed.

2.2 With the impetus of the persistent structural and governance reforms introduced in the country and strong macroeconomic stability, it is essential to get a handle on the medium-term growth outlook for India. Will the economy achieve and sustain a steady growth rate once the one-off shocks recede? This chapter attempts to answer this question and concludes that the chances of India growing at its potential and for the potential growth itself to be lifted are higher than it has been in the last two decades. The chapter starts with a brief discussion of the history of India's product and capital market reforms over the previous three decades. It further delves into the overarching philosophy behind the landmark reforms undertaken from 2014 to 2022 and elaborates on the shocks faced by the Indian economy during this period. It concludes with a discussion on the medium-term growth magnets for India.

Product and Capital Market Reforms

Initiation of the reforms- 1991

2.3 The macroeconomic imbalances of the late 1980s and early 1990s pushed the government towards introducing the structural reforms of 1991. The high combined deficit of the central and state governments, elevated inflationary pressures, and large and unsustainable current account deficit (CAD) led to a balance of payments crisis in the Indian economy.[1] In response to the situation, trade and investments were liberalised in 1991. Import licensing on almost all intermediate inputs and capital goods was done away with, and the entry restrictions for firms were simplified. The new policy encouraged the entry of private sector firms by ending the public sector monopoly in many sectors and initiating the automatic approval policy for FDI up to 51 per cent. The exchange rate was made flexible and allowed to depreciate as necessary to maintain competitiveness. The rupee was made fully convertible on the current account and partially on the capital account. These reforms had a positive effect on the economy. The real growth went up from an average of 5.5 per cent during the 1980s to 6.3 per cent from FY93 to FY2000. Trade liberalisation had a visible effect on external trade as the total goods and services trade to GDP rose from 17.2 per cent in 1990 to 30.6 per cent in 2000.[2]

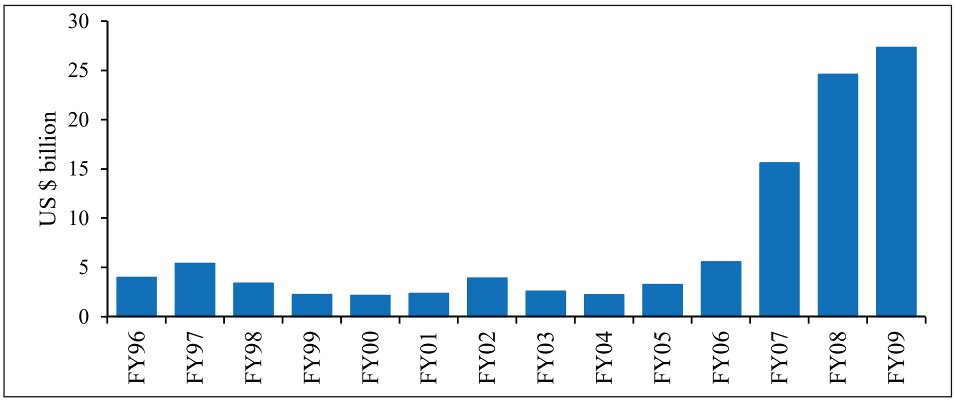
Continuity in Reforms with a Renewed Impetus

2.4 The product and capital market reforms continued slowly over the decade of the 1990s. They got a renewed impetus from the government closer to the decade's end. Investments were liberalised further to encourage Foreign Direct Investment as a main source of non-debt-creating capital inflows (Figure II.1). The telecom sector was entirely reformed by the New Telecom Policy 1999. It was opened for private sector participation with a strengthened regulatory regime (TRAI). The reforms separated the licensing and policy functions of the government from that of an operator (BSNL). These reforms were a cornerstone for the IT sector boom in India and had widespread spillover benefits to other sectors of the economy. The policy on disinvestment and privatisation also gathered steam during this period. The government set up a dedicated Ministry to take this agenda forward. It sold equity stakes in some CPSEs and privatised companies such as Maruti Udyog, Hindustan Zinc, Bharat Aluminum, and Videsh Sanchar Nigam Limited.

1 History of Reserve bank of India-Volume IV (https://www.rbi.org.in/scripts/RHvol-4.aspx)

2 Arvind Panagariya, 2004. "India in the 1980's and 1990's: A Triumph of Reforms,"IMF Working Papers2004/043, International Monetary Fund. (https://www.imf.org/external/pubs/ft/wp/2004/wp0443.pdf)

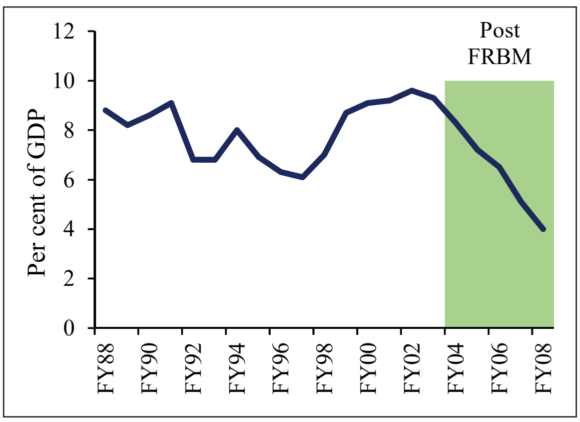
Figure II.1: Foreign Direct Investment to India- Increased after the impetus to investment liberalisation in 2000-2003



Source: RBI

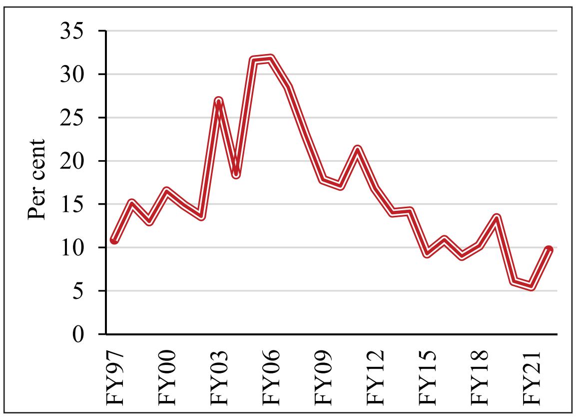
2.5 This period also marked the launch of the then largest infrastructure project of independent India, the 'Golden Quadrilateral'. The project brought significant economic benefits to the country through enhanced connectivity, improved industrial activity, trade, and economic growth.[3] Alongside this, structural policies were formulated to address the macroeconomic imbalances. The Fiscal Responsibility and Budget Management (FRBM) Act was passed to address the historic highs of the combined Gross fiscal deficit of the Government (Figure II.2). The banking system, which had accumulated bad debts during the period of economic resurgence after the 1991 reforms, was supported through the deregulation of interest rates and the enactment of the SARFAESI Act 2002. Interest rates were deregulated to promote competition amongst banks, provide more banking options to depositors, and strengthen monetary policy transmission.[4] The SARFAESI Act allowed banks and financial institutions to recover their dues by proceeding against the secured assets of the borrower/guarantor without the intervention of the court/ tribunals.[5] Both these reforms improved the credit situation in the economy (Figure II.3).

Figure II.2: Gross Fiscal Deficit (centre and states combined) (% of GDP)



Source: RBI

Figure II.3: Growth in Non-Food Credit by Scheduled Commercial Banks



Source: RBI

3 Ghani, Ejaz & Grover, Arti & Kerr, William. (2012). Highway to Success: The Impact of the Golden Quadrilateral Project for the Location and Performance of Indian Manufacturing. The Economic Journal. (https://onlinelibrary.wiley.com/doi/full/10.1111/ecoj.12207)

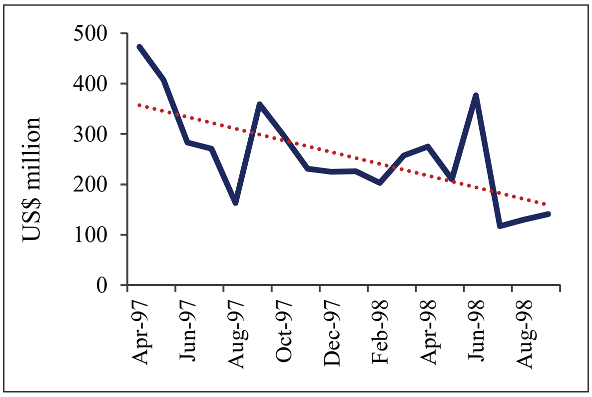
4 Reserve Bank of India RBI, 2011. "Deregulation of Savings Bank Deposit Interest Rate: A Discussion Paper,"Working Papersid:3959, eSocialSciences. (https://rbidocs.rbi.org.in/rdocs/Content/PDFs/DPS270411F.pdf)

5 Vinod Kumar, & Rajiv Khosla. (2017). IMPLEMENTATION AND IMPACT OF SARFAESI ACT 2002.International Education and Research Journal (IERJ),3(5). (http://ierj.in/journal/index.php/ierj/article/view/863/869); https://pib.gov.in/PressReleasePage.aspx?PRID=1578808

One-Off Shocks Overshadowed The Reforms of 1998-2002

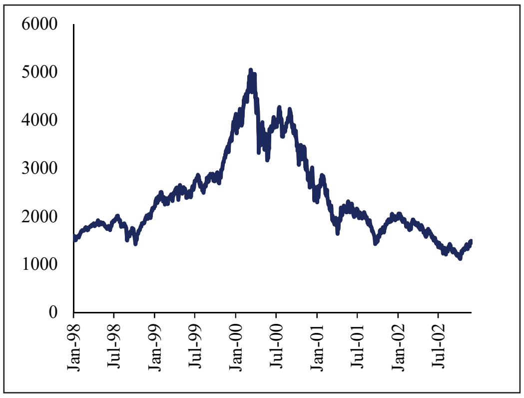
2.6 The period of these reforms also witnessed a series of domestic and global shocks, which subdued investor confidence. The sanctions imposed by the US on India after India's nuclear test led to a sharp decline in capital flows to India during the months following the nuclear tests (Figure II.4)[6]. The period between 2000 and 2002 also witnessed two successive droughts (Table II.1). These domestic shocks were accompanied by heightened global uncertainties resulting from the end of a tech boom and the 9/11 attacks (Figure II.5). Moreover, the balance sheets of the Indian financial system and corporate sector were under-repair during the period. Though all these factors overshadowed the immediate impact of reforms undertaken by the government then, they laid the groundwork and prepared the Indian economy structurally to participate in the Global boom which followed soon after.

Figure II.4: Monthly Foreign Direct Investment came down (1998)



Source: RBI

Figure II.5: Trends in the NASDAQ Composite index (Dot-Com Bubble crisis)



Source: FRED

Table II.1: Occurrence, number of people affected and damages of droughts in India between 2000 and 2002

Date	Location	Numbers
Apr 2000	Gujarat, Rajasthan, Madhya Pradesh, Andhra Pradesh, Orissa, Maharashtra	Affected- 9 crore; Damage-US$588,000,000
Nov 2000	Mahasamund, Raipur, Kawardha, Rajnandgaon, Durg districts (Chhattisgarh region)	
May 2001	New Delhi, Rajasthan, Gujarat, Orissa	20 deaths
Jul 2002	Uttar Pradesh, Madhya Pradesh, Rajasthan, Punjab, Haryana, Delhi, Karnataka, Kerala, Nagaland, Orissa, Chhattisgarh, Himachal Pradesh, Gujarat, Maharashtra, Andhra Pradesh, Tamil Nadu	Affected-30 crore; Damage- US$910,721,000

Source: Samra, J. S., 2004. "Review and analysis of drought monitoring, declaration and management in India,"IWMI Working PapersH035617, International Water Management Institute. (https://www.preventionweb.net/files/1868_VL102135.pdf)

6 Daniel Morrow & Michael Carriere (1999) The economic impacts of the 1998 sanctions on India and Pakistan, The Nonproliferation Review, 6:4,1-16. (https://www.nonproliferation.org/wp-content/uploads/npr/morrow64.pdf)

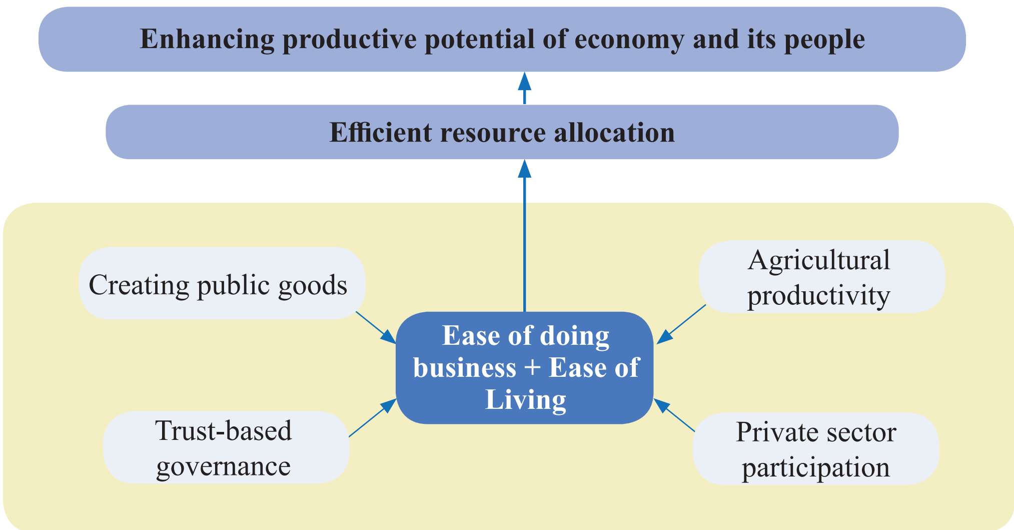
India's Participation in The Global Boom of 2003-08

2.7 The growth dividends from the reforms of 1998-2002 were realised once these one-off shocks dissipated. The years of structural reforms had prepared the Indian economy to contribute to global growth and also benefit from it. While the global growth averaged 4.8 per cent during 2003-2008, the Indian economy grew at more than 8 per cent on average. The economic growth during the period was supported by strong capital inflows (Figure II.1), which indicated favourable domestic and external factors. Some of these included sustained momentum in domestic economic activity, better corporate performance, a conducive investment climate, positive sentiments for India as a preferred investment destination, and encouraging global liquidity conditions/ interest rates.[7] This combination of structural economic reforms with their lagged effect on economic growth has parallels to what is unfolding in the Indian economy presently.

Reforms for New India-Sabka Saath Sabka Vikaas

2.8 The reforms undertaken before 2014 primarily catered to product and capital market space. They were necessary and continued post-2014 as well. The government, however, imparted a new dimension to these reforms in the last eight years. With an underlying emphasis on enhancing the ease of living and doing business and improving economic efficiency, the reforms are well placed to lift the economy's potential growth. The broad principles behind the reforms were creating public goods, adopting trust-based governance, co-partnering with the private sector for development, and improving agricultural productivity (Figure II.6). This approach reflects a paradigm shift in the growth and development strategy of the government, with the emphasis shifted towards building partnerships amongst various stakeholders in the development process, where each contributes to and reaps the development benefits (*Sabka Saath, Sabka Vikaas*).

Figure II.6: Underlying framework for Reforms for a new India



2.9 While the reforms undertaken in the post-2014 period have multiple socioeconomic benefits for the economy, this chapter focuses on the growth-centric aspects of these reforms.

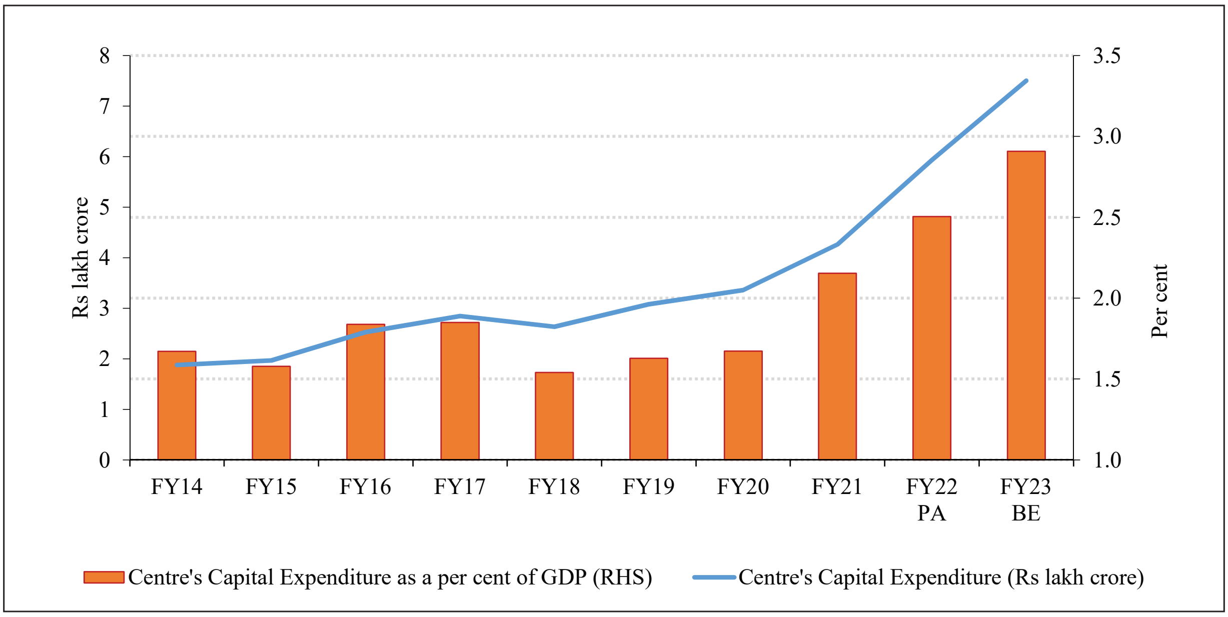
7 Mohan, Rakesh, (2008), Capital flows to India, p. 235-263 in Settlements, Bank for International eds., Financial globalisation and emerging market capital flows, vol. 44, Bank for International Settlements, (https://www.bis.org/publ/bppdf/bispap44m.pdf)

The forthcoming section discusses how each of the principles that anchor the new reform framework contributes to enhancing the productive potential of the economy and its people. These have more profound positive implications for India's medium-term growth outlook.

I. Creating public goods to enhance opportunities, efficiencies and ease of living

2.10 The launch of the Golden Quadrilateral project in the 2000s was the beginning of infrastructure-intensive policymaking in India, which continued sedately for another decade. A quantum leap in policy commitment and outlay for infrastructure is now visible in the last few years (Figure II.7), cushioning economic growth when the non-financial corporate sector was unable to invest due to balance sheet troubles. In doing so, the government has laid a good platform for crowding in private investments and growth in the coming decade. [8]

Figure: II.7: Union government's capital expenditure as a per cent of GDP on the rise



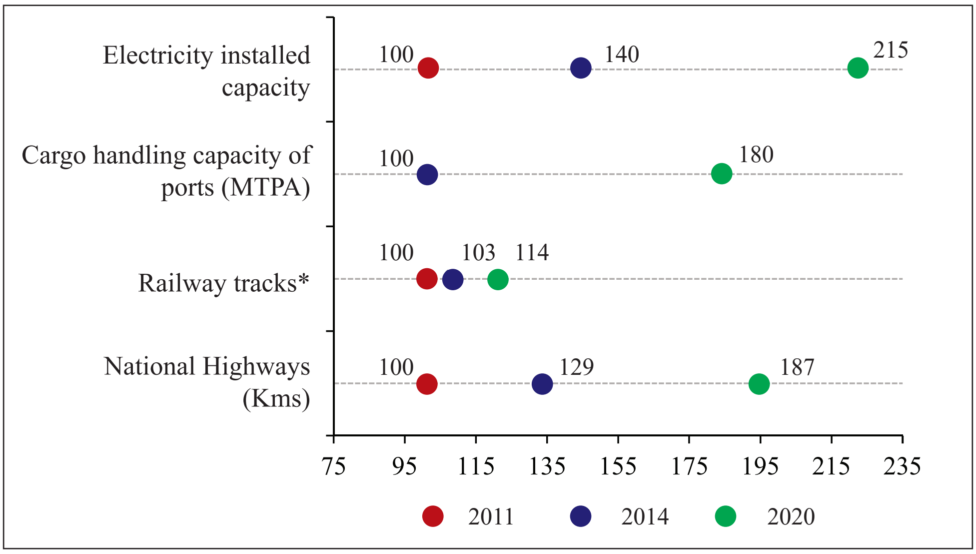
Source: RBI, MoSPI, O/o CGA

2.11 The dedicated programs for road connectivity (Bharatmala), port infrastructure (Sagarmala), electrification, railways upgradation, and operationalising new airports/ air routes (UDAN) have significantly improved the physical infrastructure in the last few years (Figure II.8). The details on the upgradation of physical infrastructure may be seen in Chapter 12. With the National Infrastructure Pipeline (NIP) in 2019 and the National Monetization Pipeline in 2021, a strong baseline for infrastructure creation and development has been put in place, providing a multitude of opportunities for foreign investment and engagement. The NIP was launched with 6,835 infrastructure projects with a projected infrastructure investment of ₹111 lakh crore. This has expanded to over 9,000 projects across 35 sub-sectors and covers economic and social infrastructure projects jointly funded by the Central Government, State Governments, and the private sector. With its strong forward and backward linkages, physical infrastructure will enhance the economy's productivity in the medium term.

8 'Crowding-Out or Crowding-In? Public and Private Investment in India', IMF Working Paper (WP/15/264), December 2015 (https://www.imf.org/en/Publications/WP/Issues/2016/12/31/Crowding-Out-or-Crowding-In-Public-and-Private-Investment-in-India-43470)

Figure II.8: Developments in critical Infrastructure Capacity

(Values are as an index with the first available value as 100)



Source: RBI Report on Currency and Finance 2022

Note: (a) Railway tracks denote Running Track Kilometres

(b): The data for national highways for 2019 is the latest available data and is shown against 2020

2.12 Besides the push to physical infrastructure, the government's emphasis on developing public digital infrastructure during the last few years has been a game changer in enhancing the economic potential of individuals and businesses. A recently published article[9] in the RBI's Monthly Bulletin estimates that India's core digital economy has grown at 2.4 times the overall economic growth between 2014 and 2019. With its strong forward linkages to the non-digital sectors, digitalisation strengthens potential economic growth through various channels. Some of these, such as higher financial inclusion, greater formalisation, increased efficiencies and enhanced opportunities, are discussed below.

2.13 Based on the pillars of a digital identity Aadhar, linking bank accounts with PM-Jan Dhan Yojana, and the penetration of mobile phones (JAM Trinity), the country has witnessed significant progress in financial inclusion in recent years. The population covered with bank accounts increased from 53 per cent in 2015-16 to 78 per cent in 2019-21 (as per NFHS). International evidence shows that countries at the same level of development have taken almost half a century to achieve the extent of India's massive expansion in access to bank accounts (D'Silva et al. 2019)[10]. Numerous digital public goods such as digital verification (e-KYC), digital signature, digital repositories (Digilocker), and digital payments (UPI) have supported financial inclusion by improving access to formal financial services and reducing transaction costs. [11] Greater financial inclusion and access to credit incentivise higher consumption and investment, leading to higher economic growth. Some of the recently introduced digital initiatives, such as the Open Network for Digital Commerce (ONDC) and Account Aggregator framework, will open up further avenues for e-commerce market access and credit availability for smaller businesses and strengthen the expected economic growth in the medium term.

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9 Dhirendra Gajbhiye et al. (2022), 'Measuring India's Digital Economy', RBI Monthly Bulletin December 2022 (https://rbidocs.rbi.org.in/rdocs/Bulletin/PDFs/05ART201220221265B8E871824B98970F03E87228C0FE.PDF)

10 D'Silva, Derryl and Filková, Zuzana and Packer, Frank and Tiwari, Siddharth, The Design of Digital Financial Infrastructure: Lessons from India (December 15, 2019). BIS Paper No. 106 (https://www.bis.org/publ/bppdf/bispap106.pdf)

11 Swallow,Haksar, And Patnam (2021), Stacking Up Financial Inclusion Gains In India, IMF Finance & development (https://www.imf.org/external/pubs/ft/fandd/2021/07/india-stack-financial-access-and-digital-inclusion.htm)

2.14 Another vital contribution of digital infrastructure has been the greater formalisation of the economy. A report in The Economist (January 2023) attributes the trends of formalisation of the workforce in India to the transformed digital financial architecture, the digitalised GST system and growth in the usage of UPI.[12] The creation of digital identities such as Aadhar, registration of unorganised workers on the eshram portal, street vendors on SVANidhi, taxpaying firms on GSTN, and MSMEs on the Udayam portal, has played a significant role in the inclusion of these groups under the formal economic net. As an illustration, we can now track that out of the 1.27 crore enterprises registered on the Udyam Portal, more than 93,000 micro-enterprises have grown to become small enterprises, and 10,000 small enterprises have become medium enterprises over the last two years. [13] Creating an identity has also simplified and enabled access to formal credit for many of these groups. More than 32.7 lakh street vendors have availed of a first loan of ₹10,000 under the PM SVANidhi Scheme, and of these, more than 6.9 lakh have availed a second loan of ₹20,000. Moreover, digital systems such as the Goods and Services Tax Network (GSTN) and e-Way Bill system have enabled the formalisation of business transactions. The increasing number of GST taxpayers, from 70 lakh in 2017[14] to more than 1.4 crore in 2022, indicates the expansion in formal businesses. Formalisation of transactions, for even the smallest of amounts, has been possible with the wide usage of the digital payment system of UPI. The greater formalisation will enhance the productivity of individuals and businesses in the economy through improved access to credit and efficiency gains in their operations.

2.15 Gains from economic and structural reforms tend to be more significant when the binding constraints of governance have been addressed.[15] Unified digital interfaces that connect various initiatives/portals have simplified governance resulting in a more efficient resource allocation in the economy. The *National Single Window System* for business approvals, the *JanSamarth portal* for credit-linked Central Government scheme, and the *UMANG app* for access to Central and state government services are essential steps towards enhancing the ease of doing business through the integration of existing systems. *Eshram portal*, with more than 28.5 crore registered workers, has been integrated with various other digital portals for easy accessibility. *PM Gatishakti, the* GIS-based platform that brings together multiple ministries for integrated planning and coordinated implementation of multimodal infrastructure connectivity projects, aims to reduce logistics costs. Thus, digitaltechnologies being at the forefront of the reforms provide a unique opportunity to accelerate India's economic growth. More details on the strides in digital infrastructure may be seen in chapter 12.

II. Trust-based Governance

2.16 Building trust between the government and the citizens/businesses unleashes efficiency gains through improved investor sentiment, better ease of doing business, and more effective governance. Consistent reforms have been made in this direction during the last eight years. Simplification of regulatory frameworks through reforms such as the Insolvency and Bankruptcy Code (IBC) and the Real Estate(Regulation and Development) Act (RERA) have enhanced the ease of doing business. The IBC has imbibed some of the best international practices of an asset

12 'Imagine an India without hawkers', The Economist January 2023. (https://www.economist.com/finance-and-economics/2023/01/05/imagine-an-india-without-hawkers)
13 https://pqars.nic.in/annex/257/AU904.pdf
14 PMEAC Report- 'GST-Connecting the remaining dots', June 2022
15 IMF World Economic Outlook 2019

resolution mechanism. It provides an honourable exit mechanism for honest business failures and enables the release of credit locked into the stressed assets for better resource allocation. This market-driven, transparent resolution mechanism instils confidence in the financial system and attracts many new investors to invest in Indian businesses.[16] A significant achievement of the IBC has been the change brought in the debtor-creditor relationship. Debtors are resolving stress early to avoid being pushed into insolvency. Until 30 September 2022, 23,417 applications for initiating the corporate insolvency resolution process (CIRP) of corporate debtors having underlying defaults of ₹7.3 lakh crore were disposed of before their admission into CIRP. [17]

2.17 The other regulatory reform, Real Estate (Regulation and Development) Act (RERA), is creating a culture of transparent transactions in the real estate sector.[18] The Act has transformed the real estate sector by registering real estate brokers and agents with the regulator, establishing mechanisms for the speedy redressal of disputes and enabling a single window clearance for timely approvals to the developers. The Real Estate Regulatory Authorities across the country have disposed off more than 1.06 lakh complaints. With 99262 projects and 71514 agents already registered under RERA, the Act incentivises more investments into the sector.

2.18 Another significant reform to enhance doing business has been the decriminalisation of minor economic offences under the Companies Act of 2013 (Table II.2). By introducing civil liabilities for dealing with simple defaults that do not involve fraud or where the nature of the lapse is purely procedural, the government has demonstrated its intent to promote ease of doing business for domestic and global investors. Furthermore, a trust-based approach towards compliance builds entrepreneurs' faith in corporate institutions and motivates them to adopt fairer and more transparent business practices. After the reform, more than 1400 default cases have been decided without resorting to the court. Also, more than 4,00,000 companies have willingly rectified past defaults to avoid penalties under the Companies Act.[19]

Table II.2: Snapshot on decriminalisation of offences under the Companies Act, 2013

	Pre-decriminalisation	Post-decriminalisation [in two phases]
Total penal provisions	134	124
Compoundable offences [mostly fines are imposed]	81	31
Non-compoundable offences [serious offences where imprisonment is ordered upon conviction]	35	35
Defaults subject to civil liability (through In House Adjudication Mechanism)	18	58

2.19 The removal of policy uncertainties has favourable implications for strengthening the trust between the government and its citizens. Simplifying processes by doing away with 25000

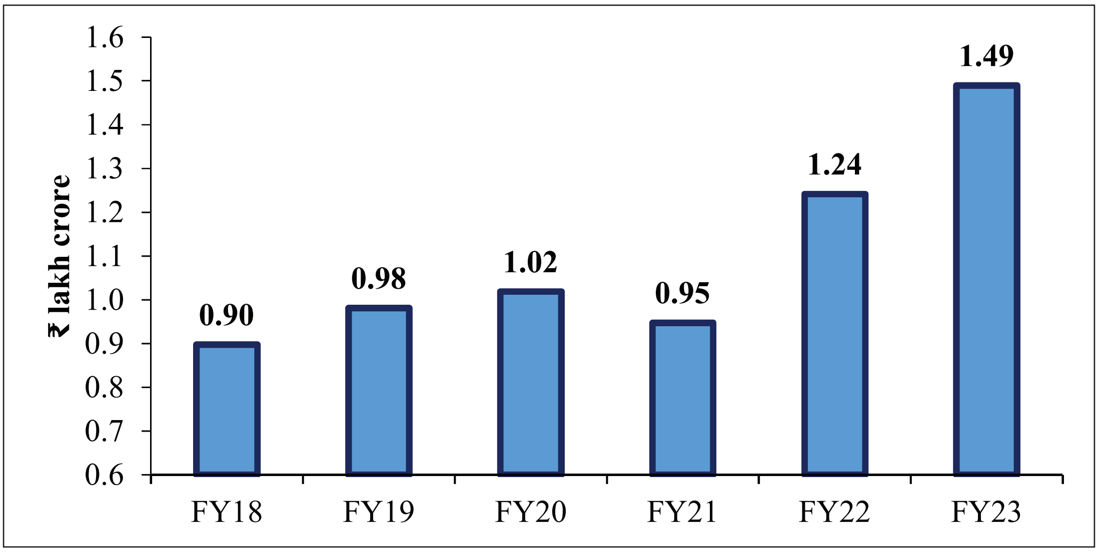
16 Sahoo, M. S., & Guru, A. (2020). Indian Insolvency Law.Vikalpa,45(2), 69–78 (https://www.ies.gov.in/pdfs/Indian-Insolvency-Law-Dr-MS-Sahoo-and-Dr-Anuradha-Guru.pdf)
17 IBBI Quarterly newsletter (Jul-Sep 2022)
18 Speech by RBI Deputy Governor, R. Gandhi on 'Improving investor interest – Recent Legislative and Regulatory Measures' (2017) (https://rbidocs.rbi.org.in/rdocs/Bulletin/PDFs/3IMITERST460080CE62954FB5960719A4B855C20C.PDF)
19 Using the Companies Fresh Start Scheme

unnecessary compliances, repealing more than 1400 archaic laws, abolishing the Angel tax and removing retrospective taxation on offshore indirect transfer of assets located in India, signal the government's resolve to ensure a non-adversarial policy environment. These efforts have improved investor sentiments and strengthened the growth potential.

2.20 In particular, the taxation ecosystem in the country has undergone substantial reforms in the post-2014 period. Tax policy reforms such as adopting a unified GST, reducing corporate tax rates, exemption of sovereign wealth funds and pension funds from taxes, and removing the Dividend Distribution tax have reduced the tax burden on individuals and businesses; and have removed the distortionary incentives from the economy. GST, for instance, has helped businesses by reducing compliances, ensuring a free flow of goods across states, doing away with the need for businesses to have a separate warehouse for every state, and hence improving the ease of doing business. The earlier indirect tax regime was origin based, and it distorted the location choices of the businesses.

2.21 Despite tax rationalisation, a positive trend of higher tax buoyancy is visible in the economy. The notable economist Indira Rajaraman termed GST 'a revenue success' in 2019[20]; thereafter, the positive GST revenue collection trends have strengthened further despite the pandemic. The average monthly gross GST collection has increased from ₹0.90 lakh crore in FY18 to ₹1.49 lakh crore in FY23 (Figure II.9). Evidence suggests that the buoyancy of the indirect tax system replaced by GST has improved in the post-GST regime (Box III.1, Chapter 3). Since other tax reforms, such as the corporate tax cut, were followed by the pandemic-led uncertainty and disruptions, their impact on collections is gradually becoming visible in higher tax collections. The Corporate tax collections for April to November 2022 have increased by 21.1 per cent on a YoY basis compared to a longer-term average YoY growth of 10.3 per cent during the corresponding period from FY13 to FY19.

Figure II.9: Rising average monthly gross GST collection



Source: Department of Revenue

20 Monograph titled 'The evolving GST' delivered by Indira Rajaraman as the Chelliah Memorial Lecture at the Madras School of Economics in 2019. (https://www.mse.ac.in/wp-content/uploads/2021/05/Monograph-43.pdf)

2.22 One prominent reason behind the higher revenue buoyancy is the introduction of technology-backed tax governance reforms for simplifying tax processes, enhancing compliance, and improving fraud detection systems. The faceless assessment and appeal systems no longer require a physical interface between taxpayers and the Income Tax department. Moreover, multiple consistency checks possible with integrated digital systems reduce tax evasion. As an illustration, the GST return filing mechanism results in better income reporting, leading to higher direct tax collections. In this regard, the decision to share data and information between CBDT and CBIC on an automatic and regular basis is a promising reform, and it would result in efficiency gains in the tax system. These reforms augur well for future economic growth and future resource mobilisation in the economy.

III. Promoting the private sector as a co-partner in the development

2.23 A fundamental principle behind the government's policy in the post- 2014 period has been the engagement with the private sector as a partner in the development process. The government's disinvestment policy has been revived in the last eight years with stake sales and the successful listing of PSEs on the stock market. During FY15 to FY23 (as of 18 January 2023), an amount of about ₹4.07 lakh crore has been realised as proceeds from disinvestment through 154 transactions using various modes/instruments. The privatisation of Air India was particularly significant for re-igniting the privatisation drive. Evidence shows that privatisation has improved labour productivity and the overall efficiency of the PSUs disinvested during 1990-2015.[21] The New Public Sector Enterprise Policy for Aatmanirbhar Bharat has thus been introduced to realise higher efficiency gains by minimising the presence of the government in the PSEs to only a few strategic sectors.

2.24 Significant initiatives have been introduced under Aatmanirbhar Bharat and Make in India programmes to enhance India's manufacturing capabilities and exports across the industries. Sector-specific Production Linked incentives (PLI) have been introduced in the aftermath of the pandemic to incentivise domestic and foreign investments and to develop global Champions in the manufacturing industry. The PLI scheme will significantly boost production, exports and employment in the medium term; however, its impact will be visible only with time. Early estimates of the impact of PLI show encouraging trends in some sectors. The PLI scheme for large-scale electronics manufacturing has attracted an investment of ₹4,784 crore and contributed to a total production of ₹2.04 lakh crore, including exports of ₹80,769 crore (as of September 2022)[22]. The need for a dedicated government policy to support domestic industrialisation amidst foreign competition can be better appreciated from the industrialisation experiences of East Asian countries such as South Korea and Taiwan in 1960-1990. These countries supported their domestic industries during their high growth phase, while also ensuring healthy competition required for the industries to grow.[23]

2.25 Production incentives under Aatmanirbhar Bharat also incentivise foreign investments for domestic production. The last eight years have seen further liberalisation of the policy towards foreign investors, with most sectors now open for 100% Foreign Direct Investment (FDI) under the automatic route. This has resulted in a visible structural shift in the gross FDI flows to India

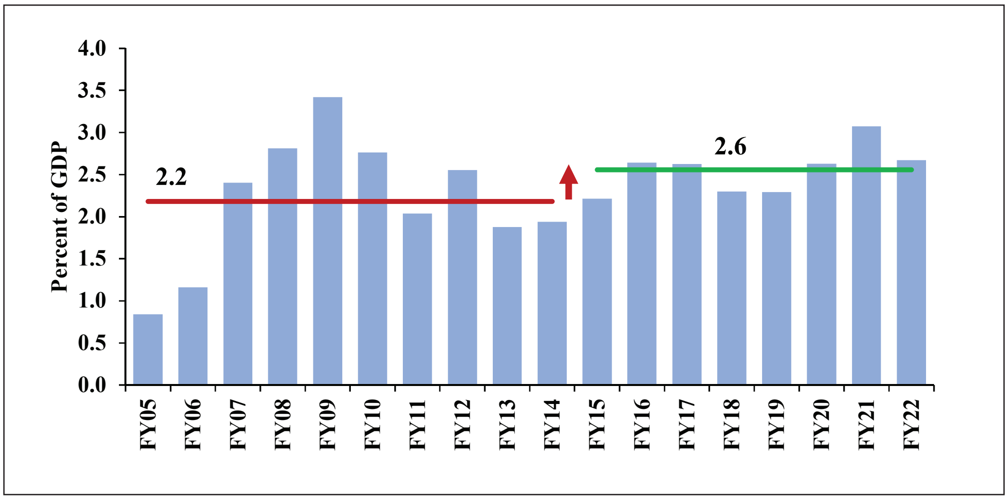
21 Chhibber, Ajay & Gupta, Swati, 2017. "Bolder Disinvestment or Better Performance Contracts? Which Way Forward for India's State-Owned Enterprises,"Working Papers17/205, National Institute of Public Finance and Policy.

22 https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1885189

23 Jostein Hauge, 2020. "Industrial policy in the era of global value chains: Towards a developmentalist framework drawing on the industrialisation experiences of South Korea and Taiwan," The World Economy, Wiley Blackwell, vol. 43(8), pages 2070-2092, August.

during the last decade. India's gross FDI has increased from an average of 2.2 per cent of GDP during FY05-FY14 to 2.6 per cent in FY15-FY22 (Figure II.10). The highest-ever annual gross FDI inflow of USD 84.8 billion was recorded in FY22. These trends are an endorsement of India's status as a preferred investment destination amongst global investors.

Figure II.10: Structural shift in the Gross FDI/GDP during 2014-15



Source: RBI Handbook of Statistics on the Indian Economy (FDI data); International Monetary Fund World Economic Outlook database (Oct.2020) for US dollar GDP at current prices

2.26 The government is developing enabling infrastructure for making India a cost-effective production hub. The National Logistics Policy (2022)[24] has been launched to create an overarching logistics ecosystem for lowering the cost of logistics and bringing it to par with other developed countries. This would boost economic growth, provide employment opportunities, and make Indian products more competitive in the global market. Moreover, opening the strategic sectors, such as defence, mining and space, for the private sector has enhanced the business opportunities in the economy. Investment incentives and easing business compliances have created an ecosystem for the start-ups to nurture. The number of recognised Start-ups has increased from 452 in 2016 to 84,012 in 2022. More details on reforms for industries may be seen in Chapter 9.

2.27 Reforms to address the structural challenges faced by MSMEs have been a vital part of the industrial policy in recent years. Support measures for MSMEs during the pandemic in the form of the Emergency Credit Line Guarantee Scheme (ECLGS) and revision in the definition of MSMEs under the ambit of Aatmanirbhar Bharat helped them face the crisis shock. The ECLGS, in particular, has in the last two years benefited 1.14 crore MSMEs, which have availed collateral-free loans amounting to ₹2.38 lakh crore. Further measures, such as the introduction of TReDS to address the delayed payments for MSMEs, the inclusion of Retail and Wholesale trades as MSMEs, and the extension of non-tax benefits for three years in case of an upward change in the status of MSMEs, have created a resilient support system for the MSME sector to grow. The MSMEs have also benefitted from access to digital platforms for their marketing needs and easy payments. With the Open Network for Digital Commerce creating opportunities for MSMEs to access e-commerce technology and diversify their target markets, this trend will likely strengthen further. Moreover, onboarding GSTN as a Financial information provider

24 Details in Chapter 12

on the Account aggregator platform will open up avenues for access to credit for MSMEs. Enhancing opportunities and productivity of the MSME sector have large-scale implications for a resilient production ecosystem, thus strengthening the growth prospects of the industry and the economy as a whole. These reforms, therefore, must continue.

IV. Enhancing productivity in agriculture

2.28 The agriculture sector in India has grown at an average annual growth rate of 4.6 per cent during the last six years. This growth is partly attributable to good monsoon years and partly to the various reforms undertaken by the government to enhance agricultural productivity. Policies such as Soil Health Cards, the Micro irrigation Fund, and organic and natural farming have helped the farmers optimise resource use and reduce the cultivation cost. The promotion of Farmer Producer Organisations (FPOs) and the National Agriculture Market (e-NAM) extension Platform have empowered farmers, enhanced their resources, and enabled them to get good returns. Agri Infrastructure Fund (AIF) has supported the creation of various agriculture infrastructures. Kisan Rail exclusively caters to the movement of perishable Agri Horti commodities. Cluster Development Programme (CDP) has promoted integrated and market-led development for horticulture clusters. Support for creating a Start-up ecosystem in agriculture and allied sectors is also being provided to the farmers. All these measures are directed towards supporting the growth in agricultural productivity and sustaining its contribution to overall economic growth in the medium term.

Returns to the Economic and Structural Reforms after 2014

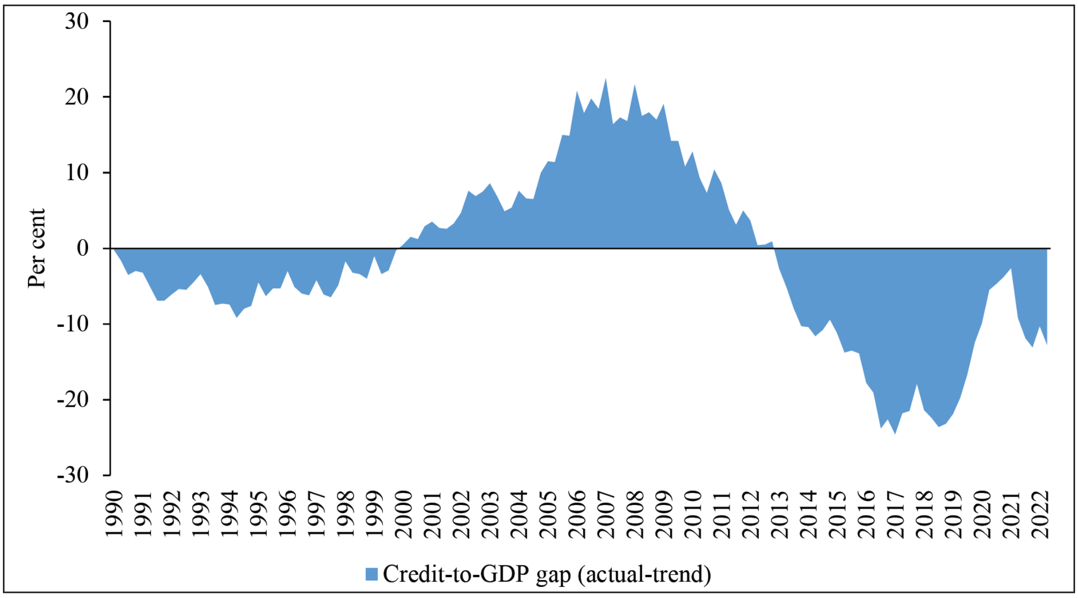
Shocks that the economy faced during 2014-22

2.29 Under normal circumstances, comprehensive and wide-ranging reforms undertaken in the economy during the last eight years (as covered in the previous section) would have accelerated India's growth. But that was not to be. The 'culprit' is India's balance sheet stress caused by the credit boom in previous years. As per data from the Bank for International Settlements, India's non-financial private sector debt to GDP ratio went up from 72.9 per cent in March 2004 to 113.6 per cent by December 2010. That is an increase of 40.7 percentage points in just over six years. In rupee terms, the amount of debt accumulated by the non-financial sector went up from nearly 44 lakh crore to almost 133 lakh crore. It trebled in six years. Despite limited economic reforms, global capital flows and optimism about BRICS (Brazil, Russia, India, China and South Africa) triggered a domestic credit and investment boom that eventually proved unsustainable, as the twin deficit – fiscal and external - crisis of 2013 revealed. Thereafter the non-financial private sector debt to GDP ratio began to come down meaningfully only from 2015 onwards, dropping to a low of 83.8 per cent by December 2018. That is nearly a 30 percentage point reduction from 113.6 per cent in December 2010 over eight years.

2.30 Unsurprisingly, the credit to the private non-financial sector as a per cent of GDP was consistently below its trend value for most of the second decade of the millennium, implying a negative credit gap to GDP ratio (Figure II.11). The gap worsened to an unprecedented level of 25 per cent in 2017. A statistically significant negative correlation (-0.5) between the Gross NPAs and credit growth shows that the banks' credit supply was severely constrained due to stress in their balance sheet during the second decade.[25] That explains the large negative deviation of the credit-to-GDP ratio from its trend.

25 Muduli, S. and Behera, H., 2021. Bank capital and monetary policy transmission in India. Macroeconomics and Finance in Emerging Market Economies, pp.1-25. (https://bit.ly/3J9xvNG)

Figure II.11: Quarterly Credit to GDP Gap remained negative for most of the 2010s



Source: BIS

2.31 As investments made by companies went sour, it impaired their ability to repay bank loans. Hence, banks' non-performing assets began to rise. That set in motion a long period of repair of the financial and non-financial sector balance sheets in the second half of the last decade. The government and the RBI took several policy initiatives to help the financial sector recoup the balance sheet stress during the 2010s. Some of these such as the amendment to the SARFAESI Act 2002, implementation of the Insolvency and Bankruptcy Code (IBC), launch of 'Asset Quality Review' (AQR), introduction of prompt corrective action (PCA) framework, recapitalisation of Public Sector Banks (PSB), and merger of PSBs among others, helped in cleaning up the balance sheets of banks/corporates.

2.32 Even as the balance sheets of banks and companies began to mend and improve, came the collapse of the Infrastructure Finance and Leasing Services (IL&FS) in September 2018. It was a big non-banking financial company (NBFC) with a huge asset base. Its collapse also had a huge ripple effect on other non-banking financial entities. Few housing finance companies went under as well. Hence, housing loan disbursements were disrupted. Usually, non-banking finance companies lend to more borrowers and riskier borrowers than banks. They are refinanced by banks. Their re-financings came down in the wake of the collapse of IL&FS, a big NBFC, followed by the collapse of some housing finance companies. Therefore, bank credit growth came down to single digits towards the end of 2019, continuing into 2020. Low credit growth and hence weaker capital formation impacted economic growth.

2.33 The government responded with several measures to stem the fallout of the collapse of IL&FS and housing finance companies, including a corporate tax cut in September 2019. Soon thereafter, the pandemic struck, and the government had to address the emerging health, social and economic consequences of unprecedented nature. These have been discussed in detail in the previous two economic surveys of 2020-21 and 2021-22. These back-to-back shocks have delayed the impact of such momentous reforms on the economic growth.

The Period 2014-2022 is Analogous to the Period 1998-2002

2.34 India's recent economic history provides a similar parallel to this situation. During 1998-2002, transformative reforms were launched but yielded lagged growth dividends (Table II.3). This phenomenon was attributed to a series of one-off shocks resulting from external factors and the domestic financial sector clean-up, which overshadowed the growth returns from 1998 to 2002[26]. By 2003, when the shocks dissipated, India participated in the global boom and grew at a higher rate. Similarly, in the present context, as the global shocks of the pandemic and the spike in commodity prices in 2022 fade away, the Indian economy is well placed to grow at its potential in the coming decade.

Table II.3: A parallel between the periods: 1998-2002 and 2014-2022

1998-2002	2014-2022
Shocks to the economy	
◆ Nuclear device testing 1998; sanctions followed	◆ Period of Banking, Non-Banking and Non-Financial Corporate Sector Balance-sheet stress
◆ Banking and Corporate Sector deleveraging and repairing balance-sheets ◆ Two successive droughts ◆ Technology bust; US recession and 09/11	◆ Unprecedented pandemic shock followed by inflation global commodity price shock followed by tightening of financial conditions
Structural reforms in the economy	
◆ Interest rate deregulation ◆ Privatisation ◆ Asset Recovery for banks ◆ Infrastructure (Golden quadrilateral) ◆ FRBM Act	◆ Unique Identity ◆ Financial Inclusion ◆ GST leading to formalisation ◆ Insolvency & Bankruptcy Code ◆ Privatisation ◆ Tax rates rationalisation and tax administration reforms ◆ Decriminalisation of offences ◆ Vaccines roll-out ◆ Expenditure Management Reforms ◆ AatmaNirbhar Bharat ◆ Public Digital Infrastructure
Growth returns	
◆ One-off shocks delayed the growth returns	◆ Balance sheets strengthened in the financial sector; the corporate sector deleveraged by about 30 percentage points (Non-financial private sector debt to GDP ratio)
◆ Once shocks faded away, structural reforms paid growth dividends from 2003 onwards	• Emphasis on macro-economic stability while dealing with global shocks

26 Refer Paragraph 6 of this chapter for details

Growth Magnets in this Decade (2023-2030)

India is prepared to grow at its potential once the one-off shocks recede

2.35 After a long period of balance sheet repair in the financial and corporate sector, the financial cycle is poised to turn upward. As the health and economic shocks of the pandemic and the spike in commodity prices in 2022 wear off, the Indian economy is thus well placed to grow at its potential in the coming decade, similar to the growth experience of the economy after 2003. **This is the primary reason for expecting India's growth outlook to be better than it was in the pre-pandemic years**. The sound and healthy financial system developed over the last few years will ensure efficient credit provisioning, contributing to higher growth in the coming years through higher investments and consumption. Thanks to India's digital revolution and formalisation, banks have far more information about their customer's credit risks than before, thus being able to make credit and pricing decisions better than before. That should make for a healthier and longer credit cycle than before. Bank credit growth has been well into double-digits for quite some time now. A recent IMF Working paper[27] analyses the trends in the Credit-to-GDP ratio gap[28], bank balance sheets and the GDP growth in India since 2012; and shows that better-capitalised banks result in higher credit growth, which further translates into higher GDP growth.

2.36 The digitalisation reforms and the resulting efficiency gains in terms of greater formalisation, higher financial inclusion, and more economic opportunities will be the second most important driver of India's economic growth in the medium term. In its recent Article IV report for India, IMF highlighted that India's successful implementation of the wide-ranging reforms and more than expected dividends from digitalisation could increase India's medium-term growth potential. [29] These productivity-enhancing reforms along with the Government's Skilling initiatives, will also help unleash the benefits of the demographic dividend in the coming years. In sum, various initiatives undertaken in the last eight years have bolstered India's growth potential, and it will be reflected in actual GDP growth as the effects of one-off the shocks recede.

2.37 The evolving geo-political situation also presents an opportunity for India to benefit from the diversification of global supply chains. The last few years have exposed multinational firms to unprecedented risks due to global trade tensions, pandemic-induced supply chain disruptions, and the conflict in Europe. Firms were exposed to the risk of concentrating their production in a single country. Therefore, given the global policy uncertainty, multinational firms are gradually exploring strategies to diversify their production bases and supply chains. UNCTAD, in one of its reports, shows that 'reshoring, diversification, and regionalisation will drive the restructuring of global value chains in the coming years'.[30] With enabling policy frameworks, India presents itself as a credible destination for capital diversifying out of other countries.[31] [32]

27 IMF Working paper (WP/22/137)- Financial Sector and Economic Growth in India by Margaux MacDonald;TengTeng Xu (July 2022) – (https://www.imf.org/en/Publications/WP/Issues/2022/07/08/Financial-Sector-and-Economic-Growth-in-India-520580)

28 Difference between actual ratio and its trend value

29 https://www.imf.org/en/Publications/CR/Issues/2022/12/21/India-2022-Article-IV-Consultation-Press-Release-Staff-Report-and-Statement-by-the-527283

30 UNCTAD World Investment report 2020 (https://unctad.org/news/covid-19-will-likely-transform-global-production-says-un-report; https://unctad.org/system/files/official-document/wir2020_en.pdf)

31 'Helped by PLI scheme, Apple's India exports set to hit Rs 20,000 crore', Business Standard, December 2022 (https://www.business-standard.com/article/companies/helped-by-pli-scheme-apple-s-iphone-exports-from-india-hit-record-122121200940_1.html)

32 'India to get more Apple suppliers as iPhone production picks up: Experts', Business Standard, December 2022 (https://www.business-standard.com/article/technology/india-to-get-more-apple-suppliers-as-iphone-production-picks-up-experts-122121900505_1.html)

The recently published Chief Economists Outlook 2023 (World Economic Forum) highlights India's opportunity to gain from these global trends of supply chain diversification.[33]

2.38 While the new age reforms undertaken over the last eight years form the foundation of a resilient, partnership-based governance ecosystem and restore the ability of the economy to grow healthily, further reforms are needed to ensure that economic growth can both accelerate and be sustained at higher levels, to deliver a better quality of life. The deregulation and simplification of compliances should continue to dismantle the licensing, inspection and compliance regime entirely. State governments have to address power sector issues, and the financial viability concerns of the Discoms have to be addressed. Impetus must be given to education and skilling to match the requirements of modern industry and technologies, deal with twenty-first-century challenges such as climate change and energy transition, and make the most of India's demographic dividend. Initiatives to sensitise the population towards a healthy lifestyle should be continued. Strategies to arrest and reverse the rising obesity levels should be adopted.[34] Long-range plans need to be formulated to secure the necessary metals and minerals required for energy transition and diversification. Determined efforts should be taken to make the public sector asset monetisation scheme successful in realising wide-ranging efficiency gains from the programme. If asset monetisation revenues are used to reduce public sector debt, the sovereign credit rating will improve, leading to a lower cost of capital. That will be the biggest fiscal stimulus to the economy. Reforms to reduce the compliance burden on MSMEs, enhance their access to finance and working capital and equip them with skills, knowledge and attitude to grow their businesses responsibly must continue. State governments should make conclusive progress on the various factor market reforms in different stages of completion.

2.39 In this chapter, we have shown that the Indian economy had not lost its vigour, nor have government reform measures their effectiveness. The Indian economy could have grown faster in the absence of the financial and corporate sector balance sheet stress. Even as we were looking forward to the economy being able to reap the benefits of improved and healthier balance sheets in the new decade, it was buffeted by the global pandemic followed by a sharp rise in the prices of food, fuel and fertiliser. Negative shocks will and do fade, as they did in the early years of the new millennium. Now, financial and corporate sector balance sheets are in good shape, and there is a willingness to borrow and lend. Hence, it is inevitable that the effects of these reforms will now shine through. A restored credit cycle will rejuvenate the Indian private sector capex cycle. That alone is adequate to enable India to grow at least 6 per cent per annum in real terms. On top of that, the higher economic efficiency resulting from the public digital infrastructure created over the last 6-7 years will also add 30- 50 basis points to the potential GDP growth. The growth effects of the maturation of India's public digital infrastructure are insufficiently understood. Formalisation and financial inclusion that it has enabled are too evident to be ignored. It is a matter of time before its growth effects become persistent in the data. That is why we are optimistic that India will achieve an average of 6.5 per cent real GDP growth in the medium term. In addition, if the other reforms explained in the previous paragraph are pursued in the coming years, India's potential GDP growth can rise to 7-8 per cent per annum in the medium term.

33 Chief Economists Outlook 2023 (World economic Forum)- https://www.weforum.org/reports/chief-economists-outlook-jan-2023

34 As per National Family Health Survey 5, Obesity is rising for both men and women across all states .

03

CHAPTER

FISCAL DEVELOPMENTS: REVENUE RELISH

The Union Budget for FY23 was presented in an uncertain macroeconomic environment. Soon after its presentation, the geopolitical conflict aggravated global supply disruptions and adversely impacted the prices of fuel, food, and other essential commodities. The Government of India's fiscal policy response to the crisis comprised of a judicious mix of increasing food and fertiliser subsidies on the one hand and a reduction in taxes on fuel and certain imported products on the other. Despite these additional fiscal pressures during the year, the Union Government is on track to achieve the budget estimate for the fiscal deficit in FY23. The resilience in the fiscal performance of the Union Government has been facilitated by the recovery in economic activity, buoyancy in revenues from direct taxes and GST, and realistic assumptions in the Budget. The Gross Tax Revenue registered a YoY growth of 15.5 per cent from April to November 2022, driven by robust growth in the direct taxes and Goods and Services Tax (GST). The growth in direct taxes during the first eight months of the year was much higher than their corresponding longer-term averages. The GST has stabilised as a vital revenue source for central and state governments, with the gross GST collections increasing at 24.8 per cent on YoY basis during April - December 2022.

On the expenditure side, the Union Government's emphasis on capital expenditure (Capex) has continued despite higher revenue expenditure requirements during the year. The Centre's Capex has steadily increased from a long-term average of 1.7 per cent of GDP (FY09 to FY20) to 2.5 per cent of GDP in FY22 PA. The Centre has also incentivised the State Governments through interest-free loans and enhanced borrowing ceilings to prioritise their spending on Capex. With an emphasis on infrastructure-intensive sectors like roads and highways, railways, and housing and urban affairs, the increase in Capex has large-scale positive implications for medium-term growth. This Capex-led growth strategy will enable India to keep the growth-interest rate differential positive, leading to a sustainable government debt to GDP in the medium run.

Introduction

3.1 With the continuing global risks and uncertainties, the availability of fiscal space with governments has become paramount. It is especially true following the recent incidence of the pandemic when the fiscal policy became an effective macroeconomic stabilisation tool globally. In India, particularly when all economic activities had reached a standstill, fiscal policy was instrumental in providing a safety net to the vulnerable, reviving the economy by boosting demand, and addressing certain domestic supply-side constraints through public investments and sustained structural reforms.

3.2 The large, frontloaded packages across the countries led to over-stimulation of demand, leading to its much faster recovery. In combination with the still-existing supply disruptions and constraints, the overheating of the economy led to inflationary pressures. The conflict in Europe and the related geopolitical developments aggravated the crisis. The slowing global growth, rising interest rates, persistently high inflation rates and uncertain global environment have thus posed certain pertinent questions for fiscal-policy experts to motivate the overarching fiscal policy strategy. How to evaluate the trade-off between maintaining fiscal support to manage the continuing crisis versus withdrawing fiscal stimulus from the economy to control inflation and regain the lost fiscal space? When to do so and at what pace? While a sudden withdrawal may have costs for medium-term growth, a slow withdrawal may be inflationary and hence put upward pressure on yields, making the debt costly. Moreover, the financial markets may have less tolerance for fiscal unorthodoxy in an era of rising interest rates[1].

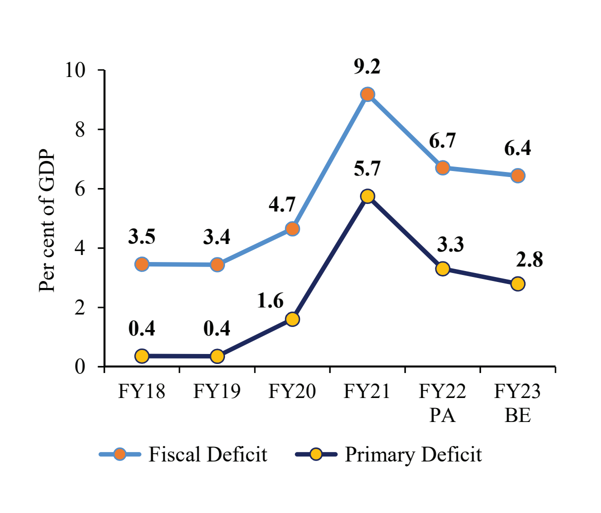
3.3 Against this backdrop, the Government of India adopted a calibrated fiscal response to the pandemic and planned to withdraw the fiscal stimulus gradually as it moves along the glide path outlined in the Budget FY22. This chapter discusses the government's fiscal strategy amidst uncertain geopolitical developments. The chapter starts with a discussion of the performance of the Union Government's finances, followed by an overview of the State finances. It concludes with a commentary on India's debt profile.

Developments in Union Government finances

3.4 While India entered the pandemic with a stretched fiscal position, the government's prudent and calibrated fiscal response enabled stable public finances even amidst the present uncertainties. The fiscal deficit of the Union Government, which reached 9.2 per cent of GDP during the pandemic year FY21, has moderated to 6.7 per cent of GDP in FY22 PA and is further budgeted to reach 6.4 per cent of GDP in FY23 (Figure III.1). This gradual decline in the Union government's fiscal deficit as a per cent of GDP, in line with the fiscal glide path envisioned by the government, is a result of careful fiscal management supported by buoyant revenue collection over the last two years.

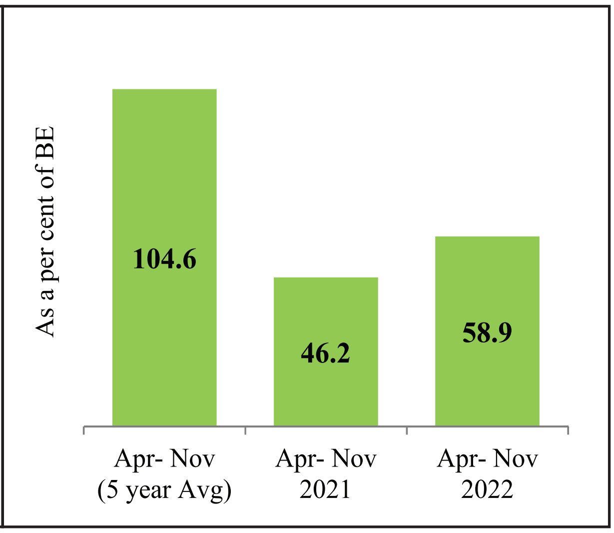
[1]'Ruchir Sharma's investor guide to 2023: from peak dollar to better TV', Financial Times, 6th January 2023 (https://www.ft.com/content/3e040c2c-f7e4-4121-9dfe-7ba5732707f7)

Figure III.1: Trends in Union government deficits over the years- On the way to fiscal consolidation



Source: Union Budget documents, O/o CGA

Figure III.2: Government on track to achieve the Fiscal deficit target for FY23



Source: O/o CGA

Union Government on track to achieve the Fiscal deficit target for FY23

3.5 The Union Budget for FY23 was presented in a recovering yet uncertain macroeconomic environment, not anticipating the geopolitical developments that unfolded during the year. As the conflict in Europe broke out early in the year, it aggravated supply disruptions and had an adverse impact on the prices of fuel, food, and other essential commodities. The government's fiscal policy response necessitated additional spending on food and fertiliser subsidies, accompanied by specific duty cuts to control the pass-through of the high imported prices to the consumers/ users. Despite additional fiscal resource pressures during the year, the Union Government is well on track to achieve the budget estimate for the fiscal deficit in FY23. The fiscal deficit of the Union Government at the end of November 2022 stood at 58.9 per cent of the BE, lower than the five-year moving average of 104.6 per cent of BE during the same period (Figure III.2).

Conservative budget assumptions provide a buffer during global uncertainties.

3.6 This resilience in the fiscal performance of the Centre has resulted due to a recovery in economic activity, buoyancy in revenues observed during the year, and conservative assumptions of macroeconomic variables in the Budget. The prudent assumptions in Budget FY23 provided a buffer to the government during global uncertainties. As an illustration, the Gross Tax Revenue (GTR) to the Centre was envisaged to grow at 9.6 per cent in FY23 BE relative to FY22 RE. However, given the higher 'Provisional Actual' figures recorded for the GTR relative to the Revised estimates in FY22, the growth in GTR of FY23 BE turns out to be a mere 1.8 per cent over FY22 PA. Against this implicit (budgeted) growth, the data of the first eight months of the year show that GTR has grown at a much higher rate (Table III.1). The annual estimate of GTR for FY23 is thus expected to overshoot the budget estimates.

Table: III.1: Stable performance of the Union Government fiscal indicators from April to November 2022

	₹ lakh crore			As a per cent of BE		YoY growth (per cent)		
	BE FY23	Apr-Nov 2021	Apr-Nov 2022	Apr-Nov 2021	Apr-Nov 2022	5 yr Avg Apr-Nov	Apr-Nov 2021	Apr-Nov 2022
Revenue Receipts	22.04	13.58	14.23	75.9	64.6	12.3	67.1	4.8
Gross tax revenue	27.58	15.42	17.81	69.5	64.6	13.9	50.3	15.5
Assignment to States	8.17	4.03	5.51	60.5	67.5	16.6	20.4	36.8
Tax Revenue (net to Centre)	19.35	11.35	12.25	73.5	63.3	12.9	64.9	7.9
Non-Tax Revenue	2.70	2.23	1.98	91.8	73.5	13.3	79.5	-11.1
Non-Debt Capital Receipts	0.79	0.21	0.41	11.0	52.3	30.6	14.1	100.4
Non-Debt receipts	22.84	13.79	14.65	69.8	64.1	12.2	66.0	6.2
Total Expenditure	39.45	20.75	24.43	59.6	61.9	11.4	8.8	17.7
Revenue Expenditure	31.95	18.01	19.96	61.5	62.5	11.4	8.2	10.8
Capital Expenditure	7.50	2.74	4.47	49.4	59.6	12.9	13.5	63.4
Revenue Deficit	9.90	4.43	5.73	38.8	57.8	11.4	-48.1	29.3
Fiscal Deficit	16.61	6.96	9.78	46.2	58.9	11.5	-35.3	40.6
Primary Deficit	7.21	2.34	4.33	33.5	60.1	13.1	-66.2	85.1

Source: Union Budget documents, O/o CGA

Performance of Union Government Non-debt Receipts

3.7 The Union government's non-debt receipts comprise revenue receipts (tax and non-tax) and non-debt capital receipts. The shortfall in the non-debt receipts to meet the expenditure requirement is met by borrowings of the government (called fiscal deficit). This section evaluates the performance of the Receipts side of the Union Government's finances.

Sustained revenue buoyancy over the last two years

3.8 After plummeting during the pandemic-affected year FY21, revenue receipts registered robust growth in FY22 PA, both on a YoY basis and to the pre-pandemic year FY20 (Annexe 1: Table 3). This revenue revival was attributed to a rebound in the collection of all major direct and indirect taxes (except excise duties) in FY22. Last year's revenue buoyancy momentum is continuing into the current year. The Gross Tax Revenue registered a YoY growth of 15.5 per cent from April to November 2022, and the Net Tax Revenue to the Centre after the assignment to states grew by 7.9 per cent on a YoY basis (Table III.1, III.2).

Table: III.2: Buoyant Union Government taxes from April to November 2022

	In ₹ lakh crore			As a per cent of BE		YoY growth (per cent)	
	BE FY23	Apr-Nov 2021	Apr-Nov 2022	Apr-Nov 2021	Apr-Nov 2022	Apr-Nov 2021	Apr-Nov 2022
Gross Tax Revenue, of which	27.58	15.42	17.81	69.5	64.6	50.3	15.5
Direct taxes	14.20	7.00	8.67	63.1	61.0	66.3	23.9
a. Corporation Tax	7.20	3.54	4.28	64.6	59.5	90.4	21.1
b. Taxes on income other than Corporation tax	7.00	3.46	4.39	61.7	62.7	47.2	26.7
Indirect taxes	13.30	8.21	8.91	74.5	67.0	38.6	8.5
c. Custom	2.13	1.26	1.41	92.5	66.4	99.5	12.4
d. Union Excise Duties	3.35	2.42	1.91	72.2	57.1	23.2	-20.9
e. Service Tax	0.02	0.01	0.00	50.2	20.4	-52.6	-18.7
f. GST	7.80	4.53	5.57	71.9	71.5	36.5	23.1

Source: Union Budget documents, O/o CGA

3.9 The resilience exhibited by economic growth underpins the sustained revenue buoyancy observed over the years. However, that revenues have grown at a pace much higher than the growth in GDP is a testimony to the effectiveness of efforts taken by the government to expand the tax base and enhance tax compliance. Structural reforms like the introduction of GST and the digitalisation of economic transactions have led to the greater formalisation of the economy and hence expanded the tax net. Other tax administration/policy measures, such as the Faceless Assessment and Appeal, simplification of return filing, assistance to taxpayers in getting familiar with the systems, generation of e-way bills under the GST system, and information sharing between government departments among others, have nudged higher tax compliance through technology and artificial intelligence. Details may be seen in Annexe 2 and 3.

Direct taxes propelling the growth in Gross tax revenue

3.10 Direct taxes, which broadly constitute half of the Gross Tax Revenue (Figure III.3), have registered a YoY growth of 26 per cent from April to November 2022, enabled by corporate and personal income tax growth. The growth rates observed in the major direct taxes during the first eight months of FY23 were much higher than their corresponding longer-term averages (Figure III.4).

Figure III.3: Composition of tax profile of Union Government (FY23 BE)

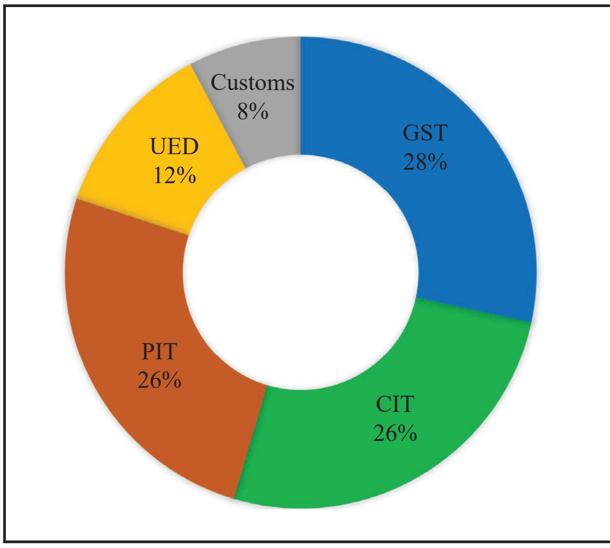
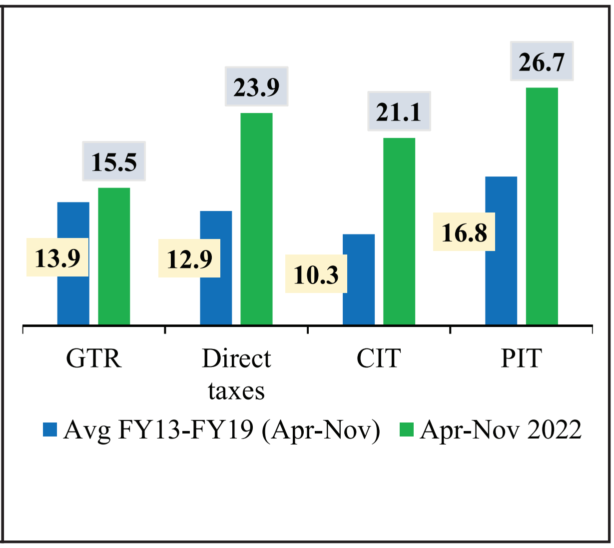


Figure III.4: Growth in Centre's direct taxes are higher than their corresponding longer-term averages during the period April to November



Source: Union Budget FY23, O/o CGA
Note: GTR - Gross Tax Revenue, GST - Goods and Services Tax, CIT - Corporation Income Tax, PIT - Taxes on Income other than Corporation Income Tax.m UED - Union Excise Duties

Customs and Excise duties act as Flexi-fiscal policy tools

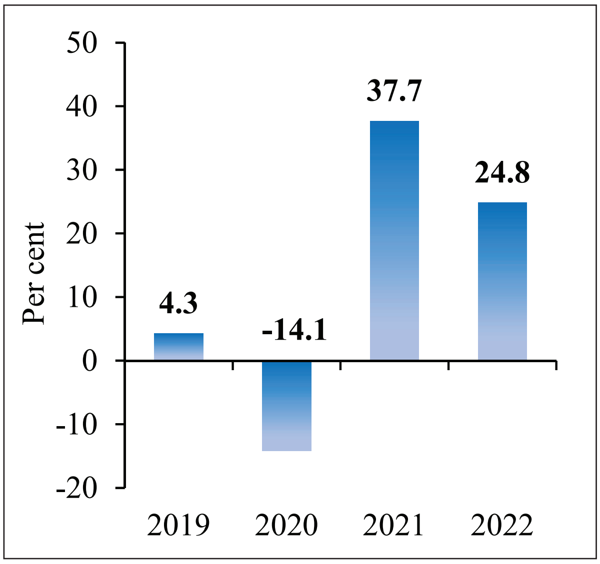
3.11 While direct taxes have safeguarded the revenue buoyancy, indirect taxes such as customs and excise duties have acted as flexible policy tools during the fiscal response to the pandemic. When the collection of direct and indirect taxes was adversely impacted during the pandemic year FY21, and low global oil prices created some elbow room for raising taxes on petroleum, the government raised the excise duty on petrol and diesel to augment the revenue pool. Subsequently, when other taxes recovered and inflationary pressures built up in the economy, the government reduced the excise duty in November 2021 and May 2022 to control the pass-through of the rising global oil prices on the consumers. The budget estimate had factored in negative growth of 15 per cent on excise collections for FY23. In line with the expectation, the excise duty collection has declined by 20.9 per cent from April to November 2022 on a YoY basis.

3.12 Given the rise in prices of essential imported products during FY23, customs duties were brought down on several items to control the inflation impact on edible oils, pulses, cotton, steel, etc. However, high imports during the current year have led to a 12.4 per cent YoY growth in the customs collection from April to November 2022 (Table III.2), which is higher than the average growth during the corresponding period from FY13 to FY19.

Stabilising Goods and Services Tax yielding returns

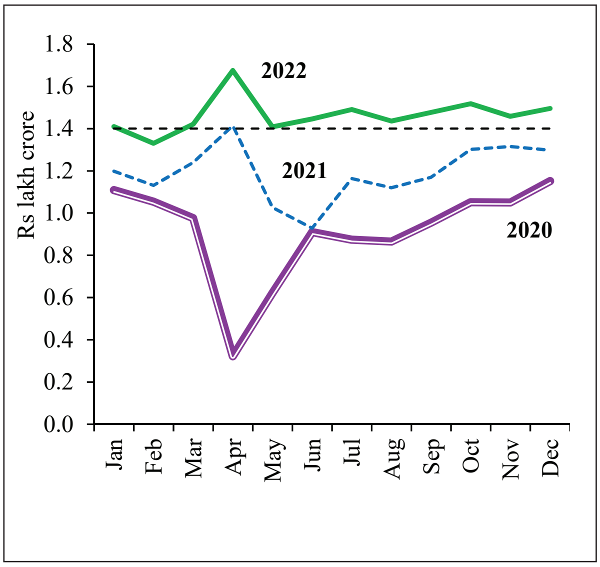
3.13 The Goods and Services Tax (GST) has evolved and stabilised as a vital revenue source for central and state governments (may refer Box III.1). Their gross GST collections, taken together, were ₹13.40 lakh crore from April to December 2022. Thus, implying a YoY growth of 24.8 per cent (Figure III.5). The pick-up in GST collections was consistently spread across all the months during the current fiscal year, with an average monthly collection of ₹1.5 lakh crore (Figure III.6). The improvement in GST collections has been due to the combined effect of the rapid economic recovery post-pandemic, the nationwide drive against GST evaders and fake bills along with many systemic changes introduced recently, and various rate rationalisation measures undertaken by the GST Council to correct inverted duty structure. Consistent efforts have resulted in a doubling of the GST net, with the number of GST taxpayers increasing from nearly 70 lakh in 2017[2] to more than 1.4 crore in 2022. Apart from directly supporting government revenues, GST has led to better reporting of income, which in turn has positive externalities for income tax collection and economic activity.

Figure III.5: High YoY growth in cumulative Gross GST collections from April to December



Source: Department of Revenue

Figure III.6: Continued momentum in monthly Gross GST collections over the years



Source: Department of Revenue

Box III.1: Maturing system of indirect tax collections

Has the shift to GST improved or worsened the buoyancy of India's indirect tax system? This box attempts an analysis to shed light on this question.

The aggregate State and Central taxes subsumed in the GST exhibited a CAGR of 11.53 per cent in the pre-GST period (FY13 to FY17). The nominal GDP grew at a CAGR of 11.54 per cent during this period (see items 1 to 7 of Table 1A). Since the growth of the subsumed taxes was marginally less than the growth of GDP, the buoyancy was just below one and could be taken as one for practical purposes.

The post-GST period experienced many headwinds, most notably the exogenous shock of the Covid pandemic. The nominal GDP grew at a slower CAGR of 9.6 per cent in the post-GST years (FY19 to FY23). However, GST collections have grown at a CAGR of 10.9 per cent (see items 8 to 10 of Table 1B), implying aggregate GST collections buoyancy of around 1.1. This has occurred even though the effective GST rate has fallen from inception (from 14.4 per cent in 2017 to 11.6 per cent in 2019, according to RBI).

[2]PMEAC Report- 'GST-Connecting the remaining dots', June 2022

Improved tax collection efficiency was one of the main arguments in favour of GST. The evidence so far suggests that GST is indeed showing a higher buoyancy than the pre-GST system. This augurs well for future resource mobilisation in the economy.

Comparing the performance of All taxes subsumed in GST (Pre vs post-GST period)

Table 1A: Pre GST period

	FY13	FY14	FY15	FY16	FY17	CAGR (FY17 over FY13)
				₹ lakh crore		
State taxes subsumed in GST						
1. Subsumed total state tax collection on GST portal	2.86	3.09	3.32	3.97	3.92	
2. Augmented total states taxes subsumed in GST(a)	3.22	3.48	3.73	4.41	4.41	
Central taxes subsumed in GST						
3. Union Excise duties from non-petroleum products	0.33	0.35	0.34	0.37	0.60	
4. Service tax	1.33	1.55	1.68	2.11	2.54	
5. Total of Central taxes subsumed in GST ((3)+(4))	1.66	1.90	2.02	2.48	3.14	
6. Total taxes subsumed in GST (Centre + States) ((2)+(5))	4.88	5.37	5.75	6.90	7.55	11.53%
7. Nominal GDP	99.44	112.34	124.68	137.72	153.92	11.54%
Buoyancy of total subsumed taxes in GST						**0.9988**

Table 1B: Post GST period

	FY19	FY20	FY21	FY22	FY23*	CAGR (FY23 over FY19)
				₹ lakh crore		
8. Total GST collections (domestic supplies)	8.77	9.44	8.66	10.98	12.94	10.2%
9. Total GST collections (including GST on imports)	11.77	12.22	11.37	14.90	17.80	10.9%
10. India Nominal GDP	189.00	200.75	198.01	236.65	273.09	9.6%
Buoyancy of GST collections (domestic supplies)						**1.0603**
Buoyancy of GST collections (including GST on imports)						**1.1299**

Note: (a) State taxes subsumed in the GST are taken from the GST portal. Since the data presented in the portal does not include the subsumed state taxes for Gujarat, Haryana, and Arunachal Pradesh, the data is augmented to arrive at an all-inclusive collections figure (Row B).
*(b) * The collection for FY23 have been extrapolated based on the average collections from May to Dec 2022.*
Sources: Department of Revenue, Union budgets, MoSPI, PIB releases.

Centre on track to meet Non-Tax Revenue targets

3.14 The non-tax revenue to the Centre mainly includes interest receipts on loans to States and Union Territories, dividends and profits from Public Sector Enterprises and the Reserve Bank of India, and external grants and receipts for services the Union Government provides. Budget FY23 envisaged a lower collection of non-tax revenue receipts during the current year relative to FY22 (around 22.5 per cent lower than FY22 PA) (Table III.3). Of the budgeted amount, 73.5 per cent has been collected up to November 2022.

Table III.3: Trends in Non-tax Revenue of Union Government

	FY18	FY19	FY20	FY21	FY22 PA	FY23 BE	Apr-Nov 2022
							₹ lakh crore
Interest receipts	0.14	0.12	0.12	0.17	0.22	0.18	0.17
Dividends & Profits	0.91	1.13	1.86	0.97	1.61	1.14	0.68
External Grants	0.04	0.01	0.00	0.02	0.01	0.01	0.01
Others	0.84	1.07	1.27	0.90	1.64	1.34	1.12
Non-tax Revenue	1.93	2.36	3.27	2.08	3.48	2.70	1.98

Source: Union Budget documents, O/o CGA

Committed towards disinvestment but dependent on external factors

3.15 Apart from the tax and non-tax revenue of the Union Government, non-debt capital receipts, which comprise recovery of loans and advances, and disinvestment receipts, have evolved as an important component of the non-debt receipts for the Union Government. During FY15 to FY23 (as of 18 January 2023), an amount of about ₹4.07 lakh crore has been realised as proceeds from disinvestment through 154 transactions using various modes/instruments. This includes ₹3.02 lakh crore realised from minority stake sale and ₹69,412 crore[3] realised from strategic disinvestment transactions (in 10 CPSEs - HPCL, REC, DCIL, HSCC, NPCC. NEEPCO, THDC, Kamrajar Port, Air India and NINL).

3.16 The pandemic-induced uncertainty, the geopolitical conflict, and the associated risks have posed challenges before the plans and prospects of the government's disinvestment transactions over the last three years. Nevertheless, the government has reaffirmed its commitment towards privatisation and strategic disinvestment of Public Sector Enterprises by implementing the New Public Sector Enterprise Policy and Asset Monetisation Strategy. Out of the budgeted amount of ₹65,000 crore for FY23, 48 per cent has been collected as of 18 January 2023.

Performance of Union Government Expenditure

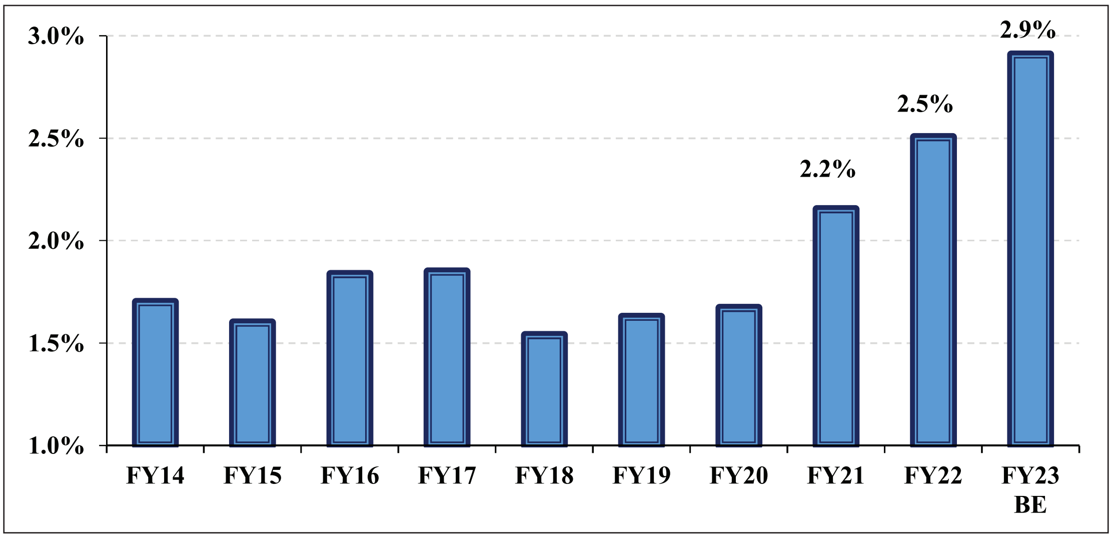
Pragmatic expenditure policy of re-prioritisation

3.17 Last few years have underlined the importance of countercyclical fiscal policy measures to support the economy during a crisis. The pandemic mandated additional expenditure requirements during FY21. The total expenditure of the Union Government in FY21 rose to

[3]This amount does not include Rs. 12,100 cr received as Enterprise Value for NINL transaction as Government of India didn't have any direct equity in this Joint Venture of Central and State PSEs.

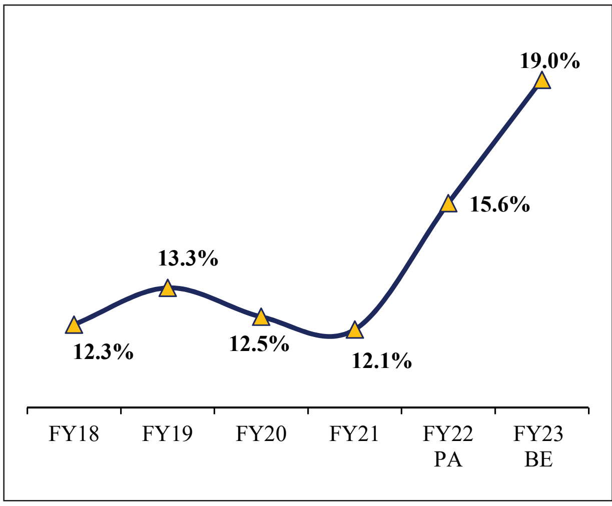
17.7 per cent of GDP, higher than the previous 5-year average of 12.8 per cent of GDP (Annexe 1: Table 2). The government adopted a pragmatic approach of increasing its expenditure in a calibrated way. Upon ensuring the basic safety nets for the vulnerable, the emphasis of the Government expenditure shifted to productive domestic capital expenditure. In the subsequent year, FY22, the total Union Government expenditure was brought down to 16 per cent of GDP (PA), and a more significant proportion of this accrued to capital expenditure (Figure III.8). The capital expenditure by the Centre has steadily increased from a long-term average of 1.7 per cent of GDP (FY09 to FY20) to 2.5 per cent of GDP in FY22 PA. It is further budgeted to increase to 2.9 per cent of GDP in FY23. (Figure III.7). This highlights an improvement in the quality of Government expenditure over the years.

Figure III.7: Increasing Union Government capital expenditure to GDP ratio



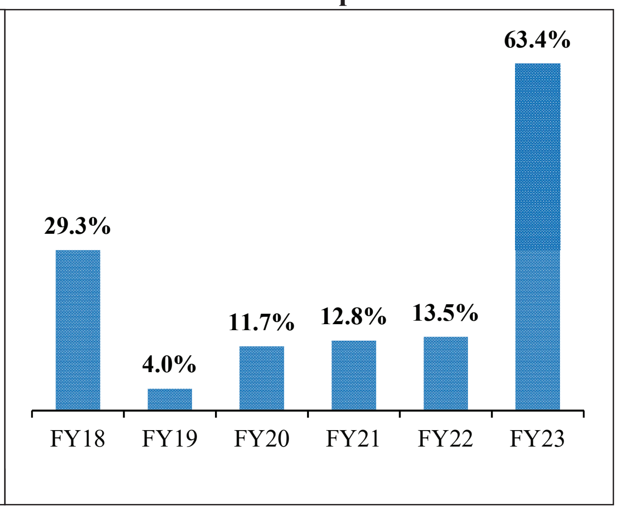
Source: Previous Economic Surveys, Union Budget documents, O/o CGA

Figure III.8: Rising share of Capital Expenditure in Total Expenditure of the Union Government



Source: Union Budget documents, O/o CGA

Figure III.9: High growth in capital expenditure of the Union Government during the April-November period



Source: O/o CGA

Capex-led growth to bring back animal spirits and manage debt levels

3.18 In absolute terms, the Government of India had budgeted an unprecedented ₹7.5 lakh crore of Capital Expenditure for FY23, of which more than 59.6 per cent has been spent from April to November 2022. During this period, capital expenditure registered a YoY growth of over 60 per cent, much higher than the long-term average growth of 13.5 per cent recorded in the corresponding period from FY16 to FY20 (Figure III.9).

3.19 The Government's thrust on Capital expenditure, particularly in the infrastructure-intensive sectors like roads and highways, railways, and housing and urban affairs, has longer-term implications for growth (Table III.4). While on the one hand, capital expenditure strengthens aggregate demand and crowds-in private spending in times of risk aversion; it also enhances the longer-term supply-side productive capacity. With early signs of a rebound in private sector investments in recent months, capital expenditure has played its role (details in chapter 1). To push for enhancing Capex from all directions, the Centre announced several incentives to boost states' capital expenditure in the form of long-term interest-free loans and capex-linked additional borrowing provisions.

Table III.4: Centre's Capital expenditure focussed on infra-related sectors

	BE FY23	April-Nov 2022	April-Nov 2021	YoY growth
			₹ lakh crore	(Per cent)
Road Transport and Highways	1.88	1.49*	0.74	102.10
Railways	1.37	1.15	0.65	76.65
Defence Services (capital outlay)	1.52	0.73	0.73	0.88
Transfer to States	1.12	0.43	0.08	438.54
Telecommunications	0.54	0.25	0.03	692.43
Housing and Urban Affairs	0.27	0.11	0.17	-32.47
Atomic Energy	0.14	0.09	0.06	47.50
Defence (Civil)	0.08	0.05	0.04	22.13
Police	0.11	0.05	0.03	53.22
Space	0.07	0.02	0.04	-48.74
Health and Family Welfare	0.06	0.01	0.02	-16.33

Note: * of which ₹1.44 lakh crore is on account of Inter Account Transfer to Reserve Funds from the Capital Section.
Source: Union Budget documents, O/o CGA

Geopolitical developments stretched the Revenue Expenditure requirements

3.20 The significant components of the Centre's revenue expenditure include Interest payments, major subsidies, salaries of Government employees, pensions, defence revenue expenditure, and transfers to States (Table III.5). A substantial portion of the Centre's revenue expenditure is committed and allows limited flexibility in creating additional fiscal headroom if required. However, re-prioritising expenditure and rationalising subsidies are essential tools to stimulate aggregate demand and fulfil redistributive imperatives.

Table III.5: Major Items of Revenue Expenditure by Union Government

Items	FY18	FY19	FY20	FY21	FY22 PA*	FY23 BE
						(in ₹ Lakh crore)
Revenue Expenditure of which	18.79	20.07	23.51	30.84	32.01	31.95
a. Salaries (pay & allowances)	1.94	2.11	2.28	3.34	3.67	4.10
b. Pensions	1.46	1.6	1.84	2.08	1.99	2.07
c. Interest payment	5.29	5.83	6.12	6.80	8.05	9.41
d. Major subsidies	1.91	1.97	2.28	7.08	4.46	3.18
e. Defence Services	1.86	1.96	2.08	2.06	2.29	2.33

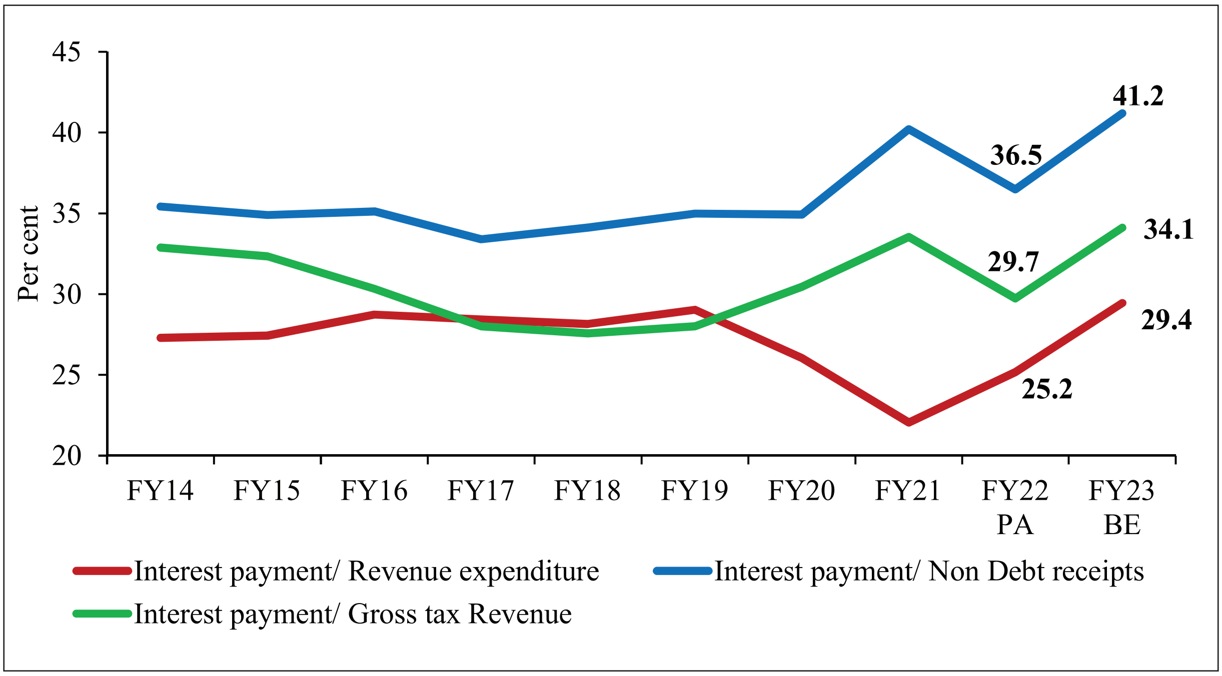
Note: Salaries for FY22 are Revised estimates
Source: Union Budget documents, O/o CGA

3.21 With the winding up of the pandemic-related support, the revenue expenditure of the Union government was brought down from 15.6 per cent of GDP in the pandemic year FY21 to 13.5 per cent of GDP in FY22 PA (Annexe 1: Table 2). This contraction was led by a reduction of the subsidy expenditure as the economy recovered from the pandemic. The subsidy expenditure was brought down from 3.6 per cent of GDP in FY21 to 1.9 per cent of GDP in FY22 PA. It was further budgeted to reduce to 1.2 per cent of GDP in FY23.

3.22 Due to the sudden outbreak of geopolitical conflict resulting in higher international prices for food, fertiliser and fuel, there was a higher food and fertiliser subsidy requirement for supporting the people and ensuring macroeconomic stability. Around 94.7 per cent of the budgeted expenditure on subsidies has been utilised from April to November 2022. In the first batch of Supplementary Demands for Grants for FY23, the Union Government has sought an additional ₹80,000 crore for the expenditure towards food subsidy and additional allocation under Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY) and ₹1.09 lakh crore for fertiliser subsidy required during the year. As a result, the revenue expenditure from April to November 2022 has grown by over 10 per cent on a YoY basis, higher than the growth noted in the corresponding period last year (Table III.1).

3.23 Another major component of revenue expenditure, interest payments, had maintained a stable ratio of non-debt receipts and revenue expenditure during the pre-pandemic years (Figure III.10). Higher resource requirements and lower revenue collections during the pandemic resulted in higher borrowings by the Union Government. Interest payments as a proportion of receipts went up after the pandemic outbreak. However, in the medium term, as we move along the fiscal glide path, buoyancy in revenues, aggressive asset monetisation, efficiency gains, and privatisation would help pay down the public debt, thus bringing down interest payments and releasing more monies for other priorities.

Figure III.10: High-interest payments as a per cent of receipts to be brought down through varied initiatives for resource mobilisation



Source: Union Budget documents, O/o CGA

3.24 It is evident from this overview of the Union Government finances that the additional expenditure needs of the Centre arising during the current year are expected to be fulfilled by the more-than-anticipated revenue collections. Thus, it is expected that reaching the budget estimate for the fiscal deficit during FY23 will not be a concern for the Union Government. With resilient economic growth, continued revenue buoyancy, and careful expenditure management over the medium run, the Union Government will be on track with the fiscal path outlined by the Medium-Term Fiscal Policy Statement. Moreover, the budgetary reforms introduced by the Union Government in the last few years will support attaining the fiscal policy targets (Box III.2).

Box III.2: Major reforms in the Union budget over the last few years

A transparent, comprehensive and realistic budgetary process enables better fiscal management.[4] This section discusses some of the major governance reforms introduced in the Union Budget over the last few years that have resulted in greater efficiency in public spending.

1. Improved fiscal transparency and realistic revenue assumptions in the Budget

The Union Government has accorded the highest priority to improving transparency in its financial statements and accounts by bringing below-the-line expenditures above the line. The Extra-Budgetary borrowings of the Union Government were brought down from ₹1.48 lakh crore in FY20 and ₹1.21 lakh crore in FY21 to ₹750 crore in FY22 (RE). No Extra Budgetary Resources were estimated for FY23 in the Budget.

[4]Section 3- Budget preparation - Guidelines for Public Expenditure Management (IMF, 1999)- https://www.imf.org/external/pubs/ft/expend/guide3.htm

In addition to cleaner fiscal accounting, Budget 2022 based its revenue projections on realistic assumptions, thus providing a buffer to the government in an uncertain global environment. These measures credibly demonstrate the government's commitment to sound fiscal management and provide an adequate buffer to deal with global challenges.

2. Discontinuation of Plan-Non plan classification[5]

The Budget FY18 discontinued having Plan and Non-Plan classifications of Government expenditure. The reform gave a greater emphasis to the Revenue and Capital classification of Government expenditure. Over the years, a broad understanding had been that Plan expenditures were good and Non-Plan expenditures were bad, resulting in skewed allocations in the Budget. The reform enabled effective planning and allocation of resources in the Budget.

3. Merger of railway Budget with the Main Budget[6]

The railway budget was merged with the Union Budget from FY18. The reform gave a holistic picture of the government's financial position. The initiative envisaged facilitating multimodal transport planning between highways, railways and inland waterways, which has been strengthened in the subsequent years through Gatishakti.

The reform has helped to enhance the efficiency of resources for both Railways and the Union Government. While the merger has exempted Railways from paying dividends to the Government Revenues, it allows the Ministry of Finance to have a greater elbow room at the mid-year review for better allocation of resources. It has also enabled the Ministry of Finance to ensure a coherent emphasis on capital expenditure across sectors in recent years.

4. Shifting the date of the Budget to 1 February

The date of the Budget was advanced to 1 February from the Budget FY18. The advancement of Budget presentation by a month has paved the way for early completion of the Budget cycle. It has also enabled the Ministries to ensure better planning and execution of schemes from the beginning of the financial year.

Overview of State Government Finances

Performance of State finances

3.25 State Governments improved their finances in FY22 after being adversely impacted by the pandemic in FY21. The combined Gross Fiscal Deficit (GFD) of the States, which increased to 4.1 per cent of GDP in the pandemic-affected year, was brought down to 2.8 per cent in FY22 PA. Given the geopolitical uncertainties, the consolidated GFD-GDP ratio for States has been budgeted 3.4 per cent in FY23 (Figure III.11). However, the States' monthly fiscal Accounts data released by O/o CAG shows that from April- November 2022, the combined borrowings of the 27 major states have just reached 33.5 per cent of their total budgeted borrowings for the year. (Figure III.12)

[5]https://pib.gov.in/newsite/PrintRelease.aspx?relid=136996
[6]https://pib.gov.in/newsite/PrintRelease.aspx?relid=153672

Figure III.11: Consolidation of States' Deficits as per cent of GDP

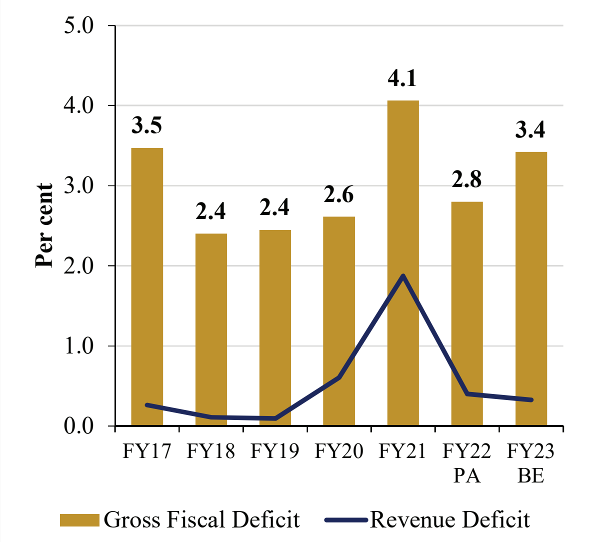
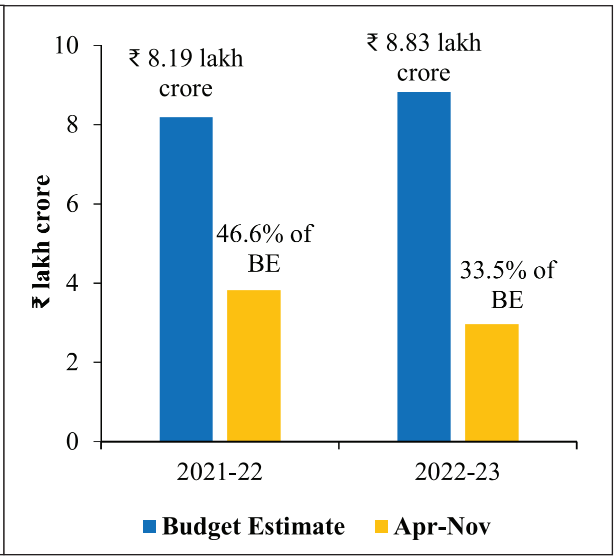


Figure III.12: Lower States' Combined Fiscal deficit during April-November



Source: RBI Study of State Budgets Jan 2023, O/o CAG
Note: Figure 12 includes data for 27 states

3.26 It is pertinent to note that states had unutilised borrowing limits during the last three years. Given the resource constraints of state governments, the Centre enhanced the net borrowing ceilings (NBC) for States to 5 per cent of GSDP in FY21, 4 per cent of GSDP in FY22, and 3.5 per cent of GSDP in FY23.

3.27 As per FY23 Budget Estimates of the State Governments, the States' combined own Tax revenue and own Non-Tax revenue were anticipated to grow at 17.5 per cent and 25.6 per cent, respectively, over FY22 RE. This growth is a continuation of the buoyancy momentum observed in the FY22 RE. On the expenditure side, revenue and capital expenditures in FY22 BE were envisaged to grow at 10.4 per cent and 16 per cent, respectively, over FY22 RE. The RBI Study on State Finances highlights that the Capital outlay, a part of the capital expenditure, has recorded a higher growth in Provisional Actuals than that estimated in the Revised estimates. The capital outlay of States grew by 31.7 per cent in FY22 PA. This increase is attributable to strong revenue buoyancy and the support provided by the Centre in terms of advance releases of payments to the states, GST compensation payments, and interest-free loans. The Centre's initiatives to support State finances are discussed in the forthcoming sections.

Cooperative fiscal federalism drives a well-targeted fiscal policy

Transfer from Centre to States

3.28 Transfer of funds to the States comprises the share of States in Union taxes devolved to the States, Finance Commission Grants, Centrally Sponsored Schemes (CSS), and other transfers. Total transfers to States have risen between FY19 and FY23 BE (refer to Table III.6).

Table III.6: Details of transfers from Centre to States (other than devolution to States)

	FY19	FY20	FY21	FY22 RE	FY23 BE
					(in ₹ lakh crore)
Centrally Sponsored Schemes	3.0	3.1	3.8	4.2	4.4
Finance Commission Grants	0.9	1.2	1.8	2.1	1.9
Other Grants/Loans/Transfers	0.9	2.0	1.9	2.3	3.0

Source: Union budget documents

3.29 The Finance Commission had recommended allocation of an amounting to ₹1.92 lakh crore for FY23 in respect of post-devolution revenue deficit grants, grants to local bodies, health sector grants, and disaster management grants under Article 275 of the Constitution. The details of the grants released during the current year may be seen in Table III.7 below.

Table III.7: Allocation of grants to the State Governments as recommended by the 15th FC

S/No.	Components	Allocation FY23	Amount released (as on 22 November 2022)
			(in ₹ crore)
1	Post Devolution Revenue Deficit Grant	86,201	57,467
2	Disaster Management Grand (Union Share)	23,294	10,976
3	Local Bodies Grants	69,421	28,609
4.	Health Sector Grants	13,192	275
	Grand Total	**1,92,108**	**1,61,230**

Source: Department of Expenditure

Supporting the GST compensation payments during crisis

3.30 Recognising the importance of a well-targeted fiscal policy by national and sub-national governments, the Union Government has taken consistent steps to support the state finances and incentivise States to move forward on the reforms agenda. To meet the shortfall in GST compensation for States, the Government, in addition to the release of regular GST compensation from the Fund, borrowed ₹ 2.69 lakh crore during FY21 and FY22 and passed it on to States on a back-to-back basis. Moreover, the cess payments and tax devolution instalments to the States were frontloaded to give them early access to funds. During FY23, the Government of India released ₹1.16 lakh crore towards the total GST compensation payable to States up to 30 June 2022 (as of 25 November 2022). Even though the total Cess collection until November 2022 was insufficient to make this entire payment to the States, the Centre released the balance from its resources. Box III.3 discusses the impact of GST on the flow of resources to the states.

Box III.3: GST and the flow of resources to states

The last five years of experience with GST have seen several rounds of policy debates around rate rationalisation, simplification of return filing, compensation cess levies on products, compensation payments to states etc. One pertinent question that has not been carefully studied is the impact of GST on the flow of resources to the states. While comparing the total fiscal resources accruing to States in the pre and post-GST regimes, it is essential to measure the relative performance of taxes vis-à-vis the performance of the economy. In the pre-GST regime, when the economy grew at 11.5 per cent nominally, the total fiscal resources accruing to States from the Central and state taxes subsumed in GST (including devolution) grew at 11.1 per cent. It implied a buoyancy of 0.97 (See table 3A).

Table 3A- Pre-GST period - Total fiscal resources to States from taxes subsumed in GST (including devolution)

	FY13	FY14	FY15	FY16	FY17	CAGR (FY17 over FY13)
					₹ lakh crore	
State taxes subsumed in GST						
States taxes subsumed in GST	3.22	3.48	3.73	4.41	4.41	
Central taxes subsumed in GST	1.66	1.90	2.02	2.48	3.14	
Devolution factor	0.32	0.32	0.32	0.42	0.42	
Total fiscal resources to States from taxes subsumed in GST	3.75	4.08	4.38	5.46	5.73	11.1%
Nominal GDP	99.44	112.34	124.68	137.72	153.92	11.5%
Pre-GST buoyancy of revenue from taxes subsumed in GST accruing to states						0.97

In the post-GST period, total fiscal resources accruing to the states from the GST (including devolution from the Centre's GST) exhibited a buoyancy greater than that in the pre-GST period (Table 3B). This performance is especially noteworthy, considering the reduction of the effective weighted average GST rate from 14.4 per cent at the time of inception to 11.6 per cent in 2019 (RBI).

Table 3B- Post-GST period - Total fiscal resources to states from the GST system (including devolution)

	FY19	FY20	FY21	FY22	FY23*	CAGR (FY23 over FY19)
					₹ lakh crore	
CGST collections	2.02	2.27	2.10	2.69	3.14	
SGST collections	2.79	3.09	2.73	3.44	3.98	
IGST collections	5.99	5.87	5.66	7.62	9.40	
GST compensation paid for the year	0.85	1.66	1.68	0.69	0.35	
Back-to-back loans			1.10	1.59		

	FY19	FY20	FY21	FY22	FY23*	CAGR (FY23 over FY19)
Total fiscal resources to states from the GST system*						
(1) SGST + IGST for states + Devolution from Centre's GST	7.89	8.21	7.61	9.96	11.95	10.9%
(2) SGST + IGST for states + Devolution from Centre's GST + Compensation	8.74	9.87	9.29	10.65	12.30	8.9%
(3) SGST + IGST for states + Devolution from Centre's GST + Compensation + loans	8.74	9.87	10.39	12.24	12.30	**8.9%**
India Nominal GDP	189.00	200.75	198.01	236.65	273.09	9.6%
Post-GST buoyancy of GST revenues accruing to states (excluding compensation/ loans)						1.13

Note: (a) The devolution factor is taken as 0.32 from FY13 to FY15; 0.42 from FY16 to FY20; and 0.41 from FY21 onwards, as per the recommendation of the respective Finance Commission.
(b) IGST for States is taken as 50% of total IGST collection. State's share in Centre's GST is arrived by multiplying the devolution factor with CGST and Centre's IGST share.
(c) The collection for FY23 have been extrapolated based on the average collections from May to Dec 2022.
(d) The GST collections used are gross collections, including domestic supplies and import. However, with only the GST collections through domestic supplies, the post GST buoyancy is still greater than 1 (=1.05).

In addition to the regular stream of revenues from GST, a compensation was also provided to the states in the post-GST period. Since GST was a new tax regime, the compensation scheme was designed to safeguard the states for any difference in the new versus the old tax regime by ensuring steady revenue growth of 14 per cent per annum for five years. The compensation arrangement was also meant to help states ride out the differences in the inter-state distribution of GST. It is pertinent to note here that the compensation system was not envisaged as a buffer to the state's revenues in the eventuality of a fall in tax revenues resulting from a collapse in economic growth.

Nevertheless, the incidence of the pandemic has highlighted the relevance of GST Compensation as a buffer to the States' revenues. During FY21, revenues for Centre and states were adversely affected due to the economic contraction. The compensation requirement by the states increased substantially amidst a decline in the CGST and the compensation cess collections. Despite having limited fiscal resources in the middle of a crisis, the Centre borrowed funds and passed them on to States on a back-to-back loan basis, in addition to the release of regular GST compensation. These loans will be repaid from future inflows into the GST Compensation Cess Fund and hence are not a burden on the states.

Table 3C: Compensation scheme supported the SGST revenues from FY19 to FY23

	FY19	FY20	FY21	FY22	FY23*
					₹ lakh crore, unless specified
(1) SGST+ States' share in IGST	5.78	6.03	5.56	7.25	8.69
YoY growth		4.2%	-7.8%	30.5%	19.8%
(2) SGST + States' share in IGST + Compensation	6.63	7.68	7.24	7.94	9.04
YoY growth		15.9%	-5.7%	9.7%	13.5%
(3) SGST + States' share in IGST + Compensation + Loans	6.63	7.68	8.34	9.53	9.04
YoY growth		15.9%	8.6%	14.3%	-5.2%

*Note: (a) * The collection for FY23 have been extrapolated based on the average collections from May to Dec 2022; (b) The YoY growth in all-inclusive SGST, compensation, and loans (Item 3 in Table above) is negative for FY23 since the compensation payments were applicable only till June 2022. Thus, comparing the growth in aggregate SGST (item 1 in the table) is a better measure to gauge the performance of SGST revenues of the States.*
(c) The above analysis includes SGST and IGST collections from both domestic supplies and imports. However, if we take the collections on domestic supplies, growth in item 1 of the table is 26.5 per cent in FY22 and 17.3 per cent in FY23.

We see from the above analysis that the GST regime and its implementation mechanism have not only safeguarded the States' revenues from the initial teething troubles of a new tax system but also protected the States' finances amidst unprecedented external shocks during the last five years. In the absence of GST, Indian states would have had no recourse to compensation, nor could they have contemplated augmenting their revenues through fresh and/or higher levies during a pandemic.

Sources: Department of Revenue, RBI, Union budgets, MoSPI, PIB releases

Enhanced limit of borrowing for the States and incentives for reforms

3.31 Since the pandemic outbreak, the Centre has kept the Net borrowing Ceiling of the State Governments above the Fiscal Responsibility Legislation (FRL) threshold. It was fixed at 5 per cent of GSDP in FY21, 4 per cent of GSDP in FY22 and 3.5 per cent of GSDP in FY23. A part of this additional borrowing was linked to reforms encouraging the States to undertake them. For instance, in FY21, a part of the additional borrowing ceiling was conditional on implementing the 'One Nation One Ration Card' System, ease of doing business reform, urban Local body/utility reforms, and power sector reforms. As a result, 17 States implemented the One Nation One Ration Card System, 20 States completed the stipulated reforms in the Ease of Doing Business, 11 States had done local body reforms and 17 States carried out fully/partly Power Sector Reforms. Similarly, a part of the additional borrowing was earmarked for incremental capital expenditure to be incurred by States during FY22. Sixteen states accessed the additional borrowings upon meeting the Capex target.

3.32 In addition to the net borrowing ceilings fixed for the States, Fifteenth Finance Commission had recommended performance-based additional borrowing space of 0.50 per cent of Gross State Domestic Product (GSDP) to the States in the power sector. This special dispensation has been recommended for each year for four years, from FY22 to 2024-25. For the financial year FY22, additional borrowing permission of ₹39,175 crore was allowed to 12 States for meeting the stipulated reform criteria.

Centre's support towards States' capital expenditure

3.33 The Union government has provided 50-year interest-free loans to state governments under the 'Scheme for Special Assistance to States for Capital Investment' for the last three years. Amounts of ₹11,830 crore and ₹14,186 crore were provided to states in FY21 and FY22. A part of the allocation for FY22 was earmarked for providing incentives to the States for privatisation/disinvestment of the State Public Sector Enterprises (SPSEs) and monetisation/recycling of assets. During the year FY23, the allocation under the Scheme has been raised to ₹1.05 lakh crore to give further impetus to State Capex plans. This amount includes an unconditional component and smaller components linked to specific reforms/initiatives (Table III.8). Notably, if state governments were allowed this ₹1 lakh crore as an additional borrowing limit, they would bear an interest rate higher than the rate at which the Union government borrows. Further, they may use it for revenue expenditure. This interest-free loan in the present arrangement is dedicated only to capital expenditure.

Table III.8: Details of Scheme for Special Assistance to States for Capital Investment' for FY23

Component	Basis	Allocated	Approved	Released
				(₹ crore)
1	Allocation proportional to the share of tax devolution for FY23	80000	68,592	31,571
II	PM Gati Shakti-related expenditure	5,000	1,458	1,458
III	PMGSY	4,000	1,616	1,616
IV	Incentive for digitisation	2,000		
V	Optical fiber cable		2,215	2,011
VI	Urban reforms	6,000		
VII	Disinvestment and monetisation	5,000		

Source: Department of Expenditure

Box III.4: Initiatives by the State Governments to improve their own resources

The pandemic has stretched state finances by expanding the expenditure needs and adversely hitting the revenues. While the Union Government has supported state governments through the above initiatives, state governments have also taken steps to enhance their resource pool.

In its recent report on municipal finances, RBI pointed out that India's property tax collection was much lower than the OECD countries. There is a wide disparity in taxes across the States, thus creating scope for a large-scale reform of property taxation practices in India. States like Tamil Nadu, Telangana and Kerala have revised the property taxes in their States during the year to support their revenues.[7,8]

Some states like Tamil Nadu, Andhra Pradesh, Telangana, Karnataka, Madhya Pradesh, Haryana, Kerala, Assam, and UT of Puducherry have considered revising their power tariffs during FY23. On the other hand, Uttar Pradesh has announced a new liquor policy whereby it increased the license fee, renewal fees, processing fee, and registration fee across various categories of liquor/ distilleries.

In addition, many States have also made efforts towards privatising SPSEs and Monetising assets in FY21 & FY22 to receive additional incentives from the Union Government. These reforms will lead to unlocking the money trapped in unproductive assets and freeing it up for productive use.

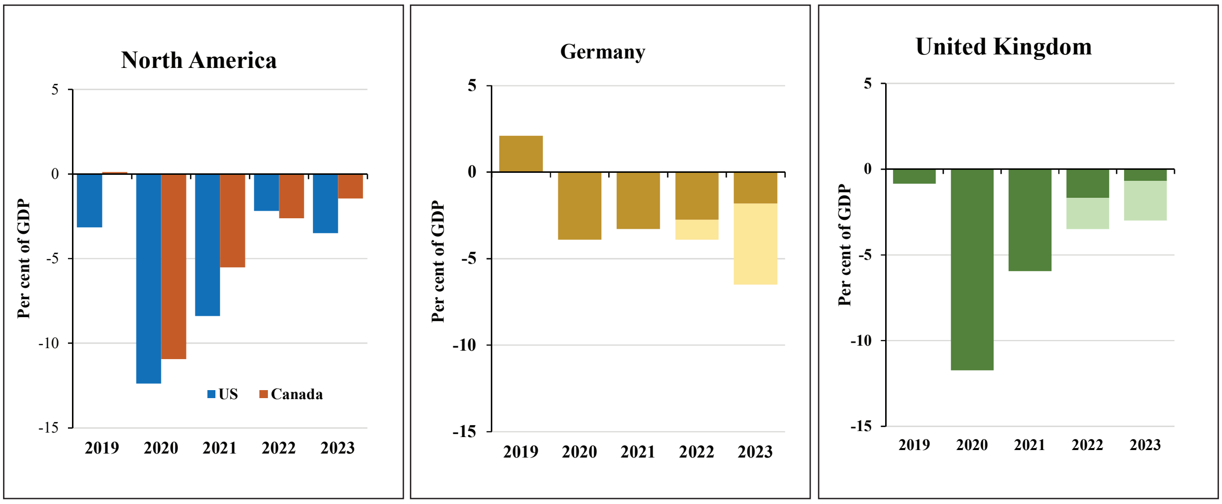
Some other revenue generating measures adopted by the States include Assam's liquidation scheme for payment of arrears, Haryana's one-time scheme for settlement of old VAT dues, and Assam and Kerala's Green tax to discourage old vehicles.

Sources: Newspaper reports, RBI

Debt Profile of the Government

3.34 Given the unprecedented fiscal expansion in 2020, rising government liabilities have emerged as a significant concern across the globe. IMF projects[9] the global government debt at 91 per cent of GDP in 2022, about 7.5 percentage points above the pre-pandemic levels. While countries worldwide had started winding up the fiscal support provided during the pandemic, challenging global financial conditions amidst global uncertainties tightened budget constraints.[10] Some European economies are expanding their budgets to provide relief to households and small businesses from mounting energy bills (Figure III.13). All these factors, together with rising interest rates and the fear of slower growth, make the sustainability of sovereign debts a concern worldwide.

Figure III.13: Increase in primary balance as a per cent of GDP by some countries



Source: IMF, Reserve bank of Australia

Note: Primary Balance as a per cent of GDP has been taken from IMF; The lighter bars denote the additional fiscal spending announced by the countries in recent months (excluding the revenue generated from windfall profit taxes).

Moderating Union Government Debt after the spike during the pandemic year

[7]https://rbidocs.rbi.org.in/rdocs/Publications/PDFs/RMF101120223A34C4F7023A4A9E99CB7F7FEF6881D0.PDF

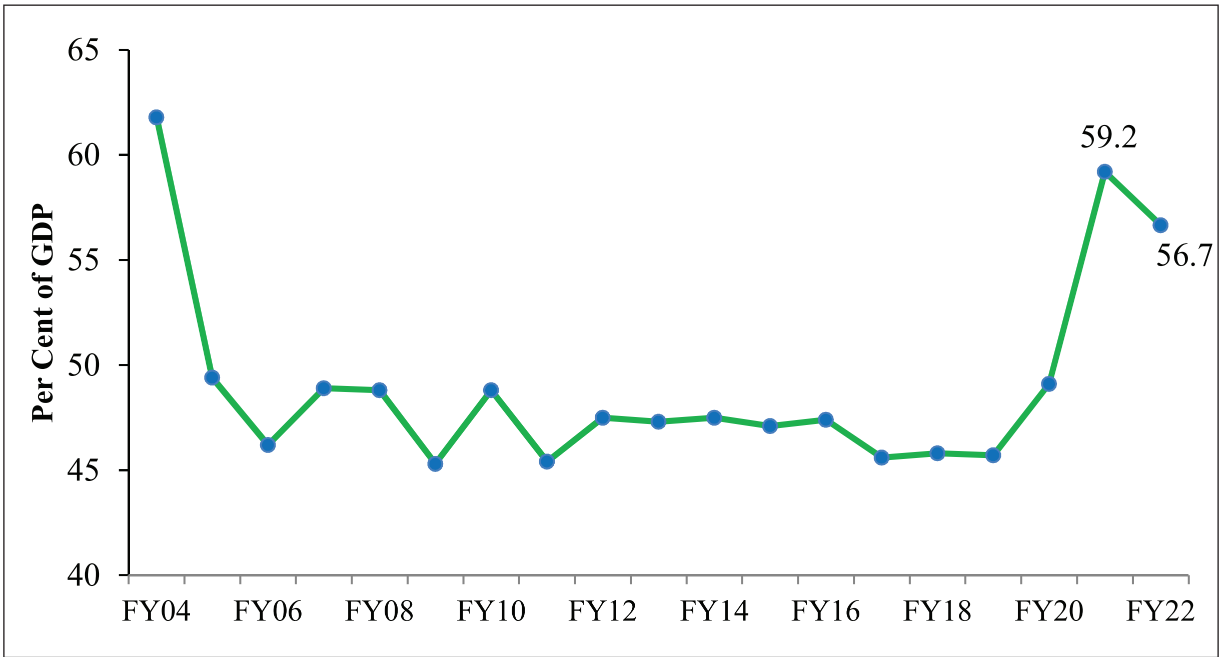
[8]https://www.panchayat.gov.in/documents/448457/0/Assess+the+Availability+of+Resources+for+Creating+the+Assets+and+Initiatives+taken+for+Generating+Various+OSR+%281%29.pdf/b4a01029-d4f5-ab38-becb-b650b269f338?t=1669965866134

[9]IMF fiscal Monitor (Oct 2022)

[10]Global Financial Stability Report (Oct 2022)

3.35 It is crucial to analyse India's government debt profile against this global backdrop. For India, the total liabilities of the Union Government, which were relatively stable as a percentage of GDP over the past decade, witnessed a sharp spike in the pandemic year FY21. This spike in debt resulted from the pandemic-induced higher Government borrowings to finance the additional expenditure needs, given the strained revenues and sharp contraction in the GDP. Total liabilities of the Union Government moderated from 59.2 per cent of GDP in FY21 to 56.7 per cent in FY22 (P) (Figure III.14). A brief description of the major components of the total liabilities of the Union Government is given in Table III.9.

Figure III.14: Moderating Union Government's Debt-GDP ratio after the pandemic induced-spike



Source: Various Issues of Status Paper on Government Debt
Note: The Figures for FY22 are Provisional

Table III.9: Debt Position of Union Government (in ₹ lakh crore)

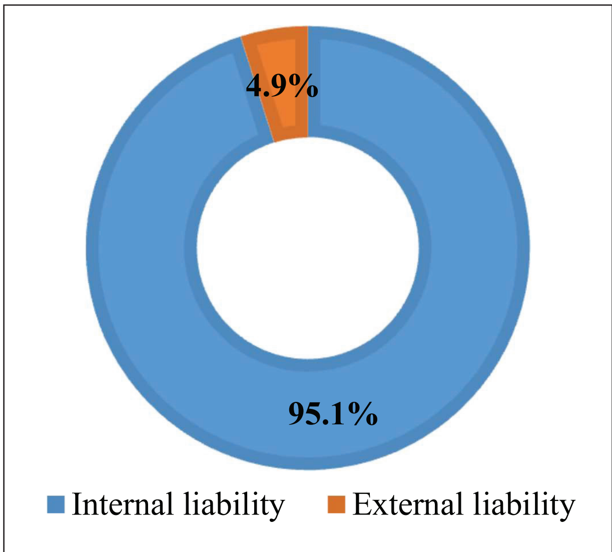
Components	FY16	FY17	FY18	FY19	FY20	FY21	FY22 PA
	1	2	3	4	5	6	7
A. Public Debt (A1+A2)	57.11	61.50	68.45	75.49	85.65	105.23	121.21
A1. Internal Debt (a+b)	53.05	57.42	64.01	70.75	80.20	99.08	114.62
a. Marketable Securities	47.28	50.49	55.10	59.69	65.60	78.59	88.17
b. Non-marketable Securities	5.77	6.93	8.91	11.06	14.60	20.49	26.45
A2. External Debt	4.07	4.08	4.45	4.74	5.44	6.15	6.59

B. Public Account - Other Liabilities	8.16	8.57	9.15	9.96	13.70	12.74	11.88
C. Extra-Budgetary Resources (EBRs)		0.09	0.24	0.99	1.12	1.39	1.39
D. Total Liabilities (A+B+C)	65.27	70.16	77.85	86.35	99.91	116.98	134.08

Source: Union Budget and Finance Accounts (Various Issues); Provisional Accounts, CGA.
Note: Total Liabilities are net adjusted liabilities (Exclude NSSF investment in special securities of states and other public agencies, GoI Cash Balance and Pakistan pre-partition debt w.e.f. FY FY20)
Stable debt profile with relatively low currency and interest rate risk

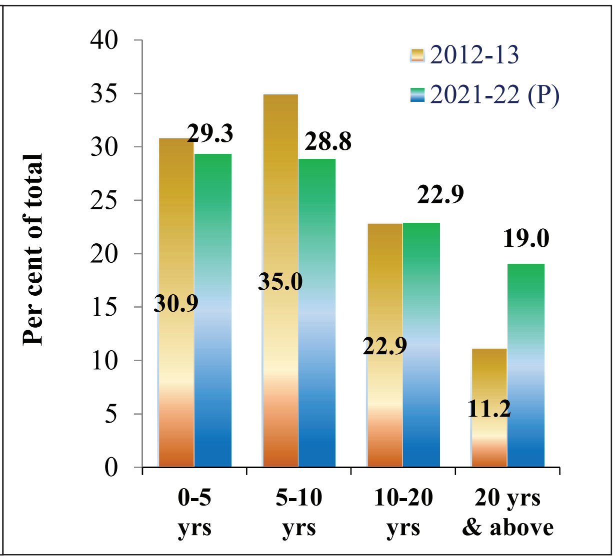
3.36 India's public debt profile is relatively stable and is characterised by low currency and interest rate risks. During his speech at the South Centre in Geneva (April 2018), former RBI Governor Dr YV Reddy said, 'since most of India's public debt is held by the residents and denominated in domestic currency. I would, therefore, be less dogmatic on the fiscal deficit and public debt numbers and more emphatic about the context.' Of the Union Government's total net liabilities in end-March 2021, 95.1 per cent were denominated in domestic currency, while sovereign external debt constituted 4.9 per cent, implying low currency risk (Figure III.15). Further, sovereign external debt is entirely from official sources, which insulates it from volatility in the international capital markets.

Figure III.15: Proportion of external liability in public debt (FY22)



Source: PDMC, DEA

Figure III.16: Elongation of the maturity profile of Outstanding Dated Union Government Securities



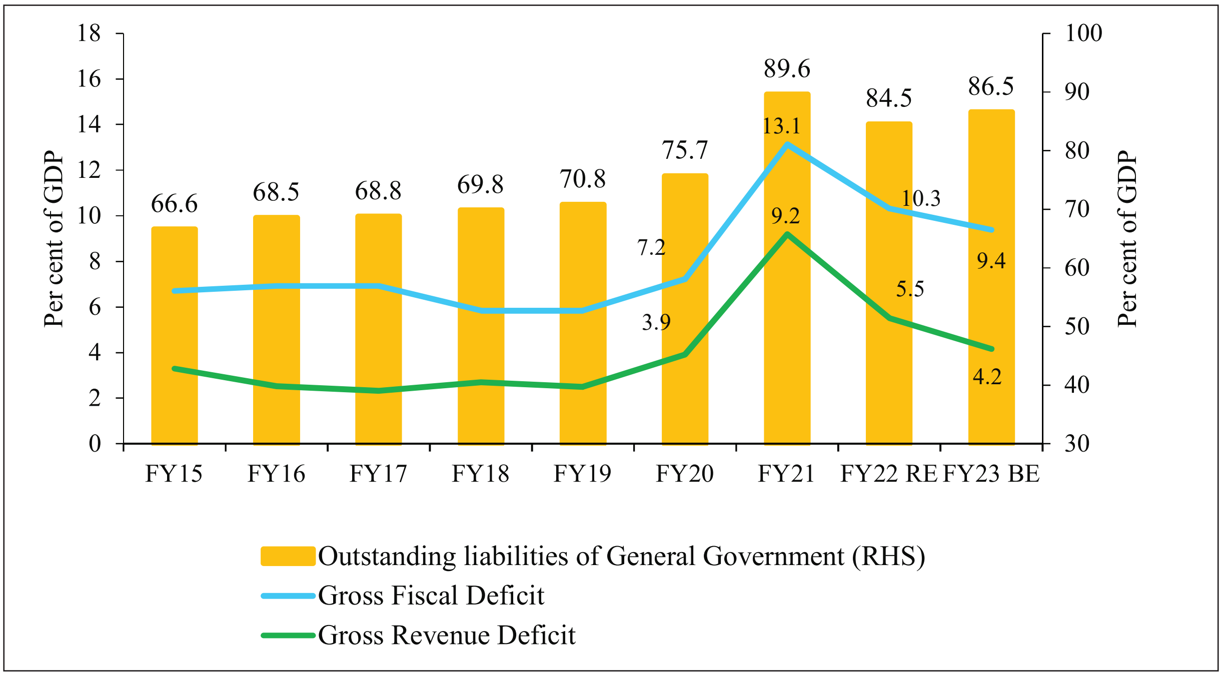
Source: Various Issues of Status Paper on Government Debt
Note: The Figures for FY22 are Provisional

3.37. Public debt in India is primarily contracted at fixed interest rates, with floating internal debt constituting only 1.7 per cent of GDP in end-March 2021. The debt portfolio is, therefore, insulated from interest rate volatility, which also provides stability to interest payments. The weighted average maturity of the outstanding stock of dated securities of the government has increased from 9.7 years in end-March 2010 to 11.71 years in end-March 2022, thus reducing the rollover risk in the medium-term (Figure III.16). Over the last few years, the proportion of dated securities maturing in less than five years has declined, whereas long-term securities have shown an increasing trend.

Consolidating General government finances

3.38. The General Government finances give an overview of fiscal position of the Government sector as a whole. Figure III.17 shows the trends in General Government debt and deficits over the past few years. The General Government liabilities as a proportion of GDP increased steeply during FY21 on account of the additional borrowings made by Centre and States on account of the pandemic. However, the ratio has come off its peak in FY22 (RE). The General Government deficits as a per cent of GDP have also consolidated after their peak in F21. The General Government is expected to follow the path of fiscal consolidation in the medium term.

Figure III.17: General Government liabilities to GDP ratio come off their peak attained in FY21

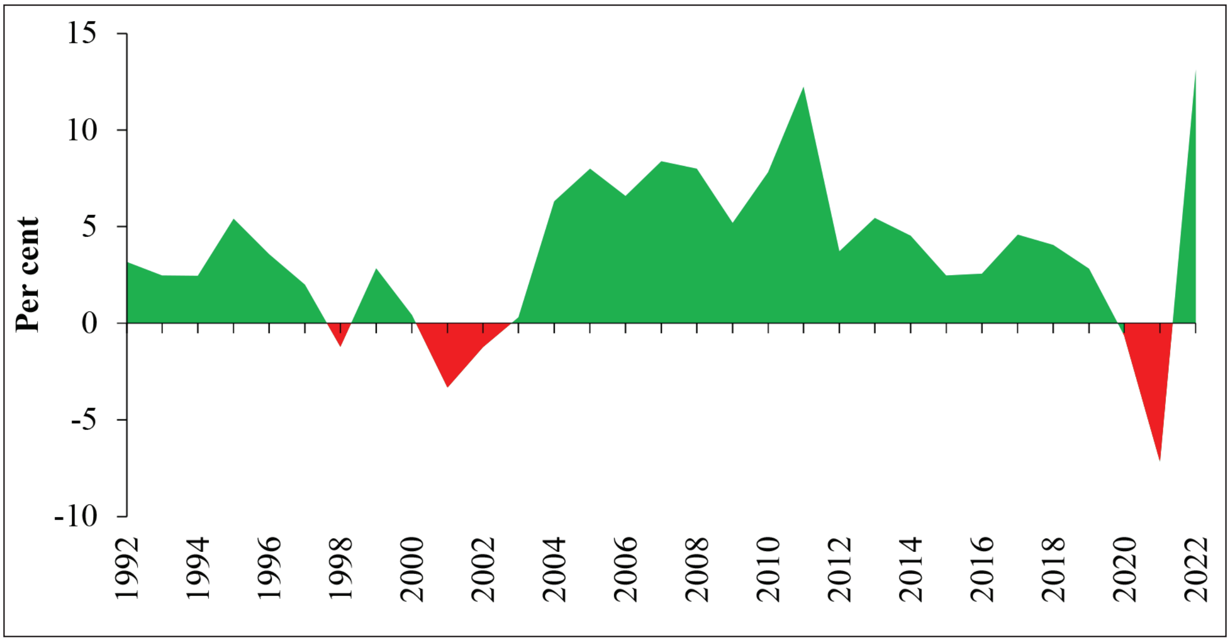


Source: RBI

A positive growth-interest rate differential keeps the Government Debt sustainable

3.39. The emphasis on capex in recent years is expected to boost GDP growth directly, and indirectly through multiplier effects on private consumption expenditure and private investment. Higher GDP growth would thereby facilitate buoyant revenue collection in the medium term, and thereby enable a sustainable fiscal path. The General Government Debt to GDP ratio increased from 75.7 per cent of end-March 2020 to 89.6 per cent at the end of the pandemic year FY21. It is estimated to decline to 84.5 per cent of GDP by end-March 2022. The emphasis on capex-led growth will enable India to keep the growth-interest rate differential positive. As shown in Figure III.18 below, this differential has historically been positive for India. A positive growth-interest rate differential keeps the debt levels sustainable. Box III.5 shows that steady economic growth will accelerate fiscal consolidation in the economy.

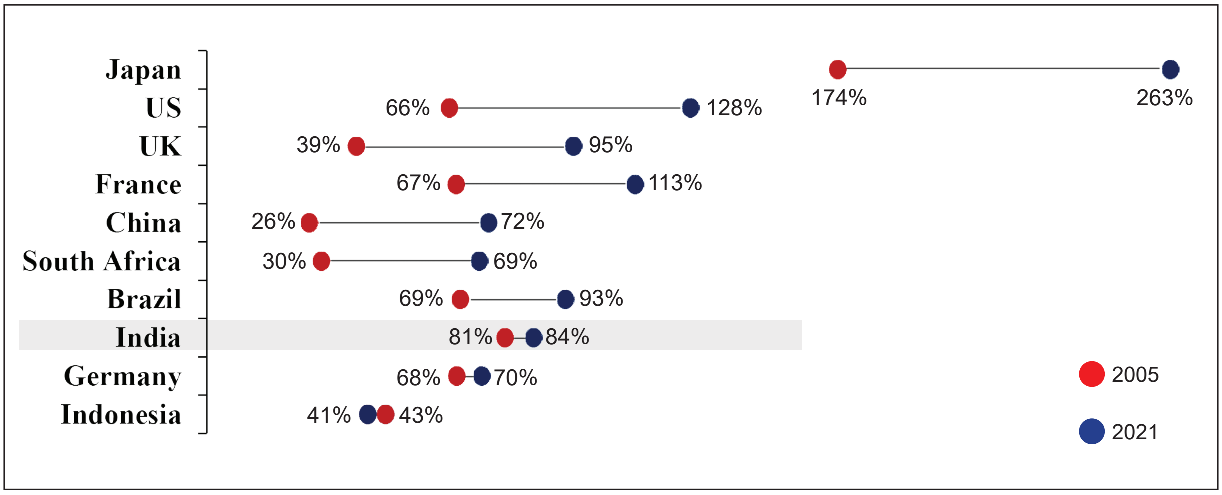
Figure III.18: Growth-interest rate differential for India



Source: RBI, IMF

3.40. A comparison of the change in General Government debt to GDP ratio from 2005 to 2021 across the countries highlights a substantial increase for most countries. For India, this increase is modest, from 81 per cent of GDP in 2005 to around 84 per cent of GDP in 2021 (Figure III.19). It has been possible on the back of resilient economic growth during the last 15 years leading to a positive growth-interest rate differential, which, in turn, has resulted in sustainable Government debt to GDP levels.

Figure III.19: Comparing General Government debt to GDP ratio in 2005 with 2021 across the countries



Source: World Economic Outlook, October 2022.

Box III.5: Sustained growth as the path to fiscal consolidation

The high fiscal deficit to GDP ratio witnessed in the aftermath of the pandemic is a concern for countries worldwide. A solution to the increased fiscal deficit and debt-to-GDP ratios lies in persistently high growth for a few years. A simple counterfactual experiment shows that sustained growth of 10 per cent per annum would have resulted in much lower Union Government deficit and debt ratios for India in the post-pandemic years, despite keeping the expenditure levels the same.

Under Scenario 1, the impact of a higher nominal GDP growth is evaluated on fiscal deficit and debt ratios, keeping the revenues and expenditures the same as actual. A counterfactual nominal GDP is estimated, assuming a growth rate of 10 per cent each year from FY20 to FY22. The actual Central Government fiscal deficit as a per cent of the counterfactual GDP is estimated as 4.5 per cent in FY20, 8 per cent in FY21, and 6.3 per cent in FY22, lower than the actual ratios observed (see rows (A) and (E) of Table 5A). Similarly, the ratio of Central Government debt to the estimated GDP is also lower than the actual debt-GDP ratio (see rows (B) and (F) of Table 5A).

Table 5A: Counterfactual Experiment to show sustained growth results in lower deficit and debt ratios

	FY19	FY20	FY21	FY22	Row
Actual GDP (₹ lakh crore)	189.0	200.7	198.0	236.6	
Growth in actual GDP (%)		6.2	-1.4	19.5	
Assumed growth in GDP (%)		10.0	10.0	10.0	
Estimated GDP (₹ lakh crore)		207.9	228.7	251.6	
Scenario 1					
Actual Fiscal Deficit/Estimated GDP (%)		**4.5**	**8.0**	**6.3**	**(A)**
Actual Central Govt Debt/Estimated GDP (%)		**50.9**	**54.8**	**55.5**	**(B)**
Scenario 2					
Assumed revenue buoyancy		0.8	1.6	1.6	
Estimated revenue collection (₹ lakh crore)		18.1	21.0	24.3	
Estimated fiscal deficit (₹ lakh crore)		8.8	14.1	13.7	
Estimated fiscal deficit/ Estimated GDP		**4.2**	**6.2**	**5.4**	**(C)**
Scenario 3					
Assumed revenue buoyancy		0.8	0.9	1.6	
Estimated revenue collection (₹ lakh crore)		18.1	19.6	22.7	
Estimated fiscal deficit (₹ lakh crore)		8.8	15.5	15.2	
Estimated fiscal deficit/ Estimated GDP		**4.2**	**6.8**	**6.1**	**(D)**

Memo items					
Actual Expenditure (₹ lakh crore)	23.2	26.9	35.1	37.9	
Actual Revenues (₹ lakh crore)	16.7	17.5	16.9	22.1	
Actual Fiscal deficit (₹ lakh crore)	6.5	9.3	18.2	15.9	
Actual Fiscal Deficit/Actual GDP (%)		**4.7**	**9.2**	**6.7**	**(E)**
Actual Central Govt Debt/Actual GDP (%)		**52.7**	**63.3**	**59.0**	**(F)**

Sources: Newspaper reports, RBI

However, higher GDP growth rate also impacts the fiscal deficit through higher revenues. Scenario 2 of the analysis incorporates the impact of higher GDP growth on the fiscal deficit to GDP ratio through the revenue channel. The expenditure levels were retained as actuals in the analysis. The actual revenue buoyancies for FY20 and FY22 and the budgeted revenue buoyancy for FY21 were considered to quantify the impact of higher GDP growth on revenues. The budgeted revenue buoyancy was taken for FY21 because the actual buoyancy ratio could not be interpreted in the year of nominal GDP contraction. The fiscal deficit was calculated using the estimated revenues and actual expenditures for respective years. The estimated fiscal deficit as a proportion of GDP came out to be 4.2 for FY20, 6.2 for FY21, and 5.4 for FY22, much lower than the actual observed (see rows (C) and (E) of Table 5A).

Further, we see in scenario 3 that by taking the previous 5-year average revenue buoyancy for FY21 instead of the budgeted buoyancy and retaining actual revenue buoyancies for FY20 and FY22, the fiscal deficit to GDP ratio is still lower than the actual observed (see rows (D) and (E) of Table 5A).

The messages from this counterfactual exercise are simple: even moderate growth, if sustained, will support fiscal consolidation in the medium run and result in sustainable public finances. Two, India's public debt and deficit ratios went up sharply in recent years, not just on account of higher spending and lower tax revenues due to the pandemic but also due to the denominator undershooting trends resulting from financial system stress, followed by the pandemic. With both out of the way, nominal growth should return to its trend path, and hence, fiscal parameters would begin to show improvement. There is a need for continued vigilance and adherence to the path of fiscal prudence, but an undue alarm is unwarranted.

Conclusion

3.41. The Government of India has adopted a holistic policy towards fiscal stability in the last few years. Using the crisis as an opportunity to bring about reforms, the government undertook a series of policy measures in the previous few years. These policies range from bringing in budget transparency and using prudent assumptions in the Budget to transforming the tax ecosystem by implementing technology, rationalising GST, reducing tax rates, simplifying tax compliances, and ending the uncertainty around retrospective taxation. All these measures have led to a greater formalisation of the economy, enhanced compliances and better reporting of the income by the public and imparted credibility to the government's commitment to fiscal management.

3.42. The spike in India's debt and deficit ratios has not only been due to higher spending necessitated by the pandemic-induced cessation of economic activity but also due to the contraction or slower growth in the denominator (nominal GDP). In FY20, India's GDP growth slowed down due to the ongoing stress in the financial system. While the banking sector was undergoing repair and was recapitalising, the non-banking financial sector crisis renewed the uncertainties for the banking system. This kept credit growth muted, leading to slower GDP growth.[11] The pandemic aggravated the situation in FY21, which caused the nominal GDP to contract, a rare occurrence in India. A detailed discussion may be seen in Chapter 2.

3.43. As India's economic recovery advances, amidst the continuing global uncertainties and risks, the fiscal glide path illuminates the path for fiscal policy. That will ensure more significant fiscal space for policy action in uncertain times. Further, in reality, fiscal discipline translates into a fiscal stimulus for all sections of the economy through lower interest rates. As governments make their fiscal situations sustainable and stick to that path, the risk premium embedded in their interest rates comes down, thus lowering the cost of capital for all sections of society - on their educational loans, housing loans, car loans and business loans – and putting more money in their hands. For EMDE, the stimulus effect of fiscal deficit, via diminishing risk-premium, is likely greater than it is for advanced economies. That is the reality, as financial markets do not treat advanced and emerging economies similarly on fiscal deficits. Therefore, it stands to reason that they reap greater rewards for fiscal prudence. As stated earlier, this is particularly relevant in an era of rising interest rates.

3.44. The Centre should continue incentivising the States for reforms and higher capital spending to ensure a stronger General government. The capex-led growth strategy will ensure sustainable debt levels in the medium term.

[11]IMF Working paper (WP/22/137)- Financial Sector and Economic Growth in India by Margaux MacDonald ; TengTeng Xu (July 2022) – (https://www.imf.org/en/Publications/WP/Issues/2022/07/08/Financial-Sector-and-Economic-Growth-in-India-520580)

ANNEXE

Annexe 1: Data on longer-term trends in Union government finances

Table 1: Union Government's Fiscal Parameters

	FY18	FY19	FY20	FY21	FY22 PA	FY23 BE
						In ₹ lakh crore
Revenue Receipts	14.35	15.53	16.84	16.34	21.68	22.04
Gross Tax Revenue	19.19	20.80	20.10	20.27	27.08	27.58
Net tax revenue	12.42	13.17	13.57	14.26	18.20	19.35
Non-tax revenue	1.93	2.36	3.27	2.08	3.48	2.70
Non-debt capital receipts	1.16	1.13	0.69	0.58	0.39	0.79
Non-debt receipts	15.51	16.66	17.53	16.92	22.08	22.84
Total Expenditure	21.42	23.15	26.86	35.10	37.94	39.45
Revenue Expenditure	18.79	20.07	23.51	30.84	32.01	31.95
Capital Expenditure	2.63	3.08	3.36	4.26	5.93	7.50
Fiscal Deficit	5.91	6.49	9.34	18.18	15.87	16.61
Revenue Deficit	4.44	4.54	6.67	14.50	10.33	9.90
Primary Deficit	0.62	0.67	3.22	11.38	7.81	7.21
Memo Item						
GDP at Market Price	170.90	188.87	200.75	198.01	236.65	258.00

Source: Union Budget documents, O/o CGA

Table2: Union Government's Fiscal Parameters (Per cent of GDP)

	FY18	FY19	FY20	FY21	FY22 PA	FY23 BE
Revenue Receipts	8.4	8.2	8.4	8.3	9.2	8.5
Gross Tax Revenue	11.2	11.0	10.0	10.2	11.4	10.7
Net tax revenue	7.3	7.0	6.8	7.2	7.7	7.5
Non-tax revenue	1.1	1.2	1.6	1.0	1.5	1.0
Non-debt capital receipts	0.7	0.6	0.3	0.3	0.2	0.3
Non-debt receipts	9.1	8.8	8.7	8.5	9.3	8.9
Total Expenditure	12.5	12.3	13.4	17.7	16.0	15.3
Revenue Expenditure	11.0	10.6	11.7	15.6	13.5	12.4
Capital Expenditure	1.5	1.6	1.7	2.2	2.5	2.9
Fiscal Deficit	3.5	3.4	4.7	9.2	6.7	6.4
Revenue Deficit	2.6	2.4	3.3	7.3	4.4	3.8
Primary Deficit	0.4	0.4	1.6	5.7	3.3	2.8

Source: Union Budget documents, O/o CGA

Table 3: Growth rate of Union Government's Fiscal Indicators (in per cent)

	FY18	FY19	FY20	FY21	FY22 PA	FY23 BE(1)	FY23 BE(2)
Revenue Receipts	4.4	8.2	8.4	-3.0	32.7	6.0	1.7
Gross Tax Revenue	11.8	8.4	-3.4	0.8	33.6	9.6	1.8
Net tax revenue	12.8	6.0	3.0	5.1	27.6	9.6	6.3
Non-tax revenue	-29.4	22.3	38.8	-36.5	67.6	-14.1	-22.5
Non-debt capital receipts	77.0	-2.5	-39.2	-16.0	-32.0	-20.7	102.2
Non-debt receipts	7.7	7.4	5.2	-3.5	30.5	4.8	3.4
Total Expenditure	8.4	8.1	16.0	30.7	8.1	4.6	4.0
Revenue Expenditure	11.1	6.8	17.1	31.2	3.8	0.9	-0.2
Capital Expenditure	-7.5	16.9	9.1	27.0	39.1	24.5	26.6
Fiscal Deficit	10.4	9.9	43.8	94.8	-12.7	4.4	4.7
Revenue Deficit	40.2	2.5	46.7	117.5	-28.7	-9.0	-4.1
Primary Deficit	13.1	7.5	381.6	254.0	-31.4	-7.3	-7.8

Source: Union Budget documents, O/o CGA

Note: (1) Growth in FY23 BE over FY22 RE (2) Growth in FY23 BE over FY22 PA

Annexe 2: Indirect tax measures by CBIC during 2021-22

The reforms initiated by the government in recent years have ensured the development of a trust-based tax system. Progress has been made to move to an efficient and effective tax administration, which honours honest taxpayers and provides better taxpayer facilitation while advancing the government's policy of facilitating Ease of Doing Business.

Ease of Compliance for Taxpayers

- A new scheme of updated return has been introduced in the Income-tax Act of 1961, which facilitates the taxpayer to voluntarily update his return anytime within two years from the end of the relevant assessment year by paying an additional tax. This scheme encourages voluntary compliance and reduces litigation.
- The scope of information in the pre-filled Income tax Returns (ITR) has been further expanded by including information such as house property income, capital gains from securities, bank interest, and dividends to make tax compliance more convenient.
- A new provision to effect business reorganisation has been made under the Income-tax Act, 1961, requiring the successor entity to file a modified return within six months of the order of the reorganisation being passed by the Competent Authority.
- The procedures for assessment, appeal and levy of penalty under the Income-tax Act have been made faceless by eliminating the human interface between the Assessing Officer and the assessee, optimising the use of resources through functional specialisation and streamlining the procedures to enable efficient implementation.

Reduction in Litigation

- A Dispute Resolution Committee is constituted to reduce litigation and give an impetus to dispute resolution for small taxpayers. A taxpayer having taxable income up to ₹50 lakh and disputed income up to ₹10 lakh shall be eligible to approach the Committee. The procedure of the Committee will be conducted electronically to ensure efficiency, transparency and accountability.
- Taking forward the policy of litigation management and to avoid repetitive appeals, a new provision has been made under the Income-tax Act, 1961, wherein if a question of law in the case of an assessee is identical to a question of law pending in appeal before the jurisdictional High Court or the Supreme Court in his case or any other case, the filing of further appeal to the Appellate Tribunal or the jurisdictional High Court in the case of the assessee shall be deferred till such question of law is decided by the relevant Court subject to certain conditions.

Measures undertaken to curb tax evasion & facilitate the widening of the tax base

- A formal mechanism of sharing information through the Annual Information Statement (AIS) and e-Verification scheme has recently been enabled. These measures further the aim of widening and deepening the tax base by ensuring authorities possess all relevant financial information of an assessee, thus allowing access to such information to a taxpayer for accurate filing of his return of income.
- The Finance Act 2022 has also introduced specific provisions for the taxation of virtual digital assets (VDA), where the transfer of VDA is to be taxed at the rate of 30% with no deduction in respect of expenditure (other than the cost of acquisition) to be allowed. Moreover, loss from the transfer of virtual digital assets cannot be set off from any other income and cannot be carried forward to subsequent years. Further, the transfer of VDA is subject to TDS of 1% of the transaction value (whether in cash/ kind/ both). The gift of VDA would also be taxed in the hands of the recipient.
- Deduction of tax at source on benefit or perquisite in respect of business or profession has also been introduced in Finance Act 2022 to widen and deepen the tax base. A person providing any benefit or perquisite to a resident would deduct TDS of 10% of the value or aggregate of the value of such benefit or perquisite (whether in cash/kind/ both).
- Finance Act 2022 has provided that no set off of any loss shall be allowed against undisclosed income detected during search and survey operations to bring certainty and increase deterrence among tax evaders.
- Vide Finance Act 2022, provisions applicable to bonus stripping have also been made applicable to securities. It has also been provided that the provisions on bonus stripping and dividend stripping shall also apply to units of an Infrastructure Investment Trust or a Real Estate Investment Trust, or units of Alternative Investment Funds.

Tax incentives

- Finance Act 2022 has provided income tax relief to the amount received by a taxpayer for medical treatment from an employer or from any person for treatment of Covid-19 during FY 2019-2020 and subsequent years. Income-tax relief has also been provided to ex-gratia payment received from the employer/ other person by family members of a person who has died on account of Covid-19 during FY 2019-2020 and subsequent years.

- Tax relief has also been widened to the persons with disability. The payment of annuity and lump sum amount from insurance scheme is to be allowed to differently abled dependent during the lifetime of parents/guardians, i.e., on parents/ guardian attaining the age of 60 years or more and where such contribution to the scheme has been discontinued.
- To bring parity between employees of State and Central government, the tax deduction limit on employer contribution has been increased from existing 10% to 14% of salary in NPS Tier-I Account for State Government employees as well. This would also help in enhancing social security benefits.
- To promote start-ups, the Income Tax Act of 1961 allows for a deduction of 100% of the profit and gains of eligible start-ups for three consecutive years out of ten years. However, due to Covid-19, there have been delays in setting up such eligible businesses. To lend a supporting hand to these start-ups, the period of incorporation of the eligible start-up has been extended to 31.03.2023 vide Finance Act 2022.
- To provide a level playing field between cooperative societies and companies, the alternate minimum tax rate paid by cooperatives has been reduced from 18.5% to 15%. Further, surcharge on cooperative societies has been reduced from 12% to 7% for those having total income of more than ₹1 crore and up to ₹10 crore.
- For concessional tax regime to establish a globally competitive environment, the date of commencement of manufacturing or production of an article or thing for a newly established manufacturing entity for availing 15% concessional tax rate under section 115BAB of the Income-tax Act, 1961 has been extended from 31st March 2023 to 31st March 2024.
- Over the past few years, several tax concessions have been provided to units located in International Financial Services Centre (IFSC) under the Income-tax Act, 1961, to make it a global hub of the financial services sector. To further incentivise operations from IFSC, the following have been made exempt from tax subject to specified conditions vide Finance Act, 2022:

  i. Income of a non-resident from offshore derivative instruments

  ii. Income from over-the-counter derivatives issued by an offshore banking unit

  iii. Income from royalty and interest on account of the lease of a ship

  iv. Income received from portfolio management services in IFSC

Annexe 3: Measures by CBIC undertaken during FY23

Reform Measures as regards Customs:

- The Customs duty rate structure has been guided by a conscious policy of the government to incentivise domestic value addition under Make in India and Aatmanirbhar Bharat initiative, which inter alia envisages imposition of lower duty on raw materials and providing reasonable tariff support to goods being manufactured in India. The customs duty structure has been calibrated to incentivise investment in key areas like petroleum exploration, electronic manufacturing, etc. In accordance with this policy, the MFN rates of BCD have been increased in recent years on such items which are being manufactured in India or which domestic industry aspires to manufacture. Accordingly, during the last 6 years, about 4000 tariff lines (approximately 1/3rd of total tariff lines) have seen upward calibration of BCD. Such items include, metals, metal products, auto parts, footwear, fabrics, garments, specified chemicals, toys, certain machinery, medical equipment, a number of MSME items like bells, gongs, ceramic wares, table ware, utensils, hardware etc, consumer electronics and home appliances including mobile, TV, refrigerators, washing machine, AC, fans, heaters, hair dryers, shavers, toasters, ovens etc. At the same time, duties of inputs and raw materials have been rationalised.

- Phased Manufacturing Plan (PMP) in respect of significant products like mobile phones, other electronic goods like TVs, electric vehicles, batteries, solar panel etc- The BCD rates in respect of different stages of the value chain of these products are calibrated in a manner that encourages gradual deepening of domestic value addition. For example, in respect of mobile phones, initially the parts were placed under nil BCD while duty was imposed on mobiles. Gradually, duty has been raised on parts in phased manner as their production began in India.

- India stands fully compliant with all the commitments under WTO's Trade Facilitation Agreement. Compliance has been achieved well within the stipulated timeline of February 2022 and the same stands duly notified and acknowledged by the World Trade Organisation. The heartening results achieved can be evidenced from the significant improvements in the standings in the United Nation's Global Survey on Digital and Sustainable Trade Facilitation, wherein, India has witnessed a sustained improvement in the Trade Facilitation score to 90.32% in 2021 from 78.49% in 2019. India is the best performing country when compared with South and South West Asia (63.12%) region.

- With the objective to enhance the uniformity in the physical examination process of EXIM cargo and reduce the time and cost involved in the process, CBIC has introduced Risk Management based uniform cargo examination orders at all Customs locations across the country, vide Circular No. 16/2022-Customs dated 29th of August, 2022.

- Continuing with the trend to implement measures to facilitate taxpayers, CBIC has notified the Customs (Electronic Cash Ledger), Regulations, 2022 dated 30.03.2022 to enable the importer, exporter or any person liable to pay Customs duty, fees etc., to deposit an advance with the government instead of making transaction wise payment as was being done earlier. Such deposit can be utilised for payment of duties and other sums relating to Customs by seamlessly debiting the requisite amount from the ECL. Additionally, CBIC has launched an Anonymised Escalation Mechanism for handling the grievances related to delay in clearances. In the above mechanism, CBIC's ICEGATE registered users can submit their grievance for delayed clearances under faceless assessment and escalate it anonymously to the concerned assessing as well as the higher officers at relevant FAG Port (Faceless Assessment Group). The Anonymized Escalation facility also enables users to track the status of the grievances submitted by them till the final resolution.

- With an objective to utilise technology to optimise internal processes, CBIC has launched a pilot project for implementation of Electronic Cargo Tracking System (ECTS) on 14.10.2021, based on blockchain technology for tracking movement of goods from the port to a warehouse at ICD Tughlakabad ensuring secured documentation & GPS based tracking of containers.

- Indian Customs has notified IGCRS Rules, 2022 vide Notification 74/2022 dated 9th September, 2022 superseding the existing Customs (Import of Goods at Concessional Rate of Duty) Rules, 2017. These rules have come into effect from 10th September 2022. These rules have introduced significant changes for simplifying and automating the procedures for import of goods at concessional Rate of Duty in accordance with the larger goals of "Ease of doing business" by accommodating long standing demands from the trade such as inclusion of job work, clearance of capital goods at depreciated value, making the entire process simple and online and doing away with any need for physical interface with officers.

Changes in Customs Law and Procedure:

- As a trade facilitation measure, the validity of e-scrips issued under the Electronic Duty Credit Ledger Regulations, 2021, has been increased from one year to two years from the date of their generation. Further, the recovery provisions from the transferee holder of the e-scrips (issued under RoDTEP and RoSCTL schemes) and suspension of its credit account have also been omitted.

- In order to leverage the vast network of post offices across the country and enable MSME's (Micro Small and Medium Enterprises) to export to global markets using e-commerce or other regular channels, the CBIC in collaboration with the Department of Posts (Dop) has notified the Postal Exports (Electronic Declaration and processing) Regulations, 2022. Under the new system, an exporter need not visit a Foreign post Office (FPO) to file the Postal Bill of Export (PBE) and present export parcel. Rather, he is enabled to file the PBE online from his home/office and handover the export parcel to postal authorities at a nearby booking post office. Postal authorities shall arrange secure transport of export parcel from booking post office to an FPO, where customs clearance shall take place.

- Circular No.8/2022-Customs dated 17.5.2022 has been issued to enable exports from Bangladesh to India by rail in closed containers, with clearance at hinterland ICDs. A transshipment module has also been developed in the Indian Customs EDI system to digitise the procedure. This would decongest the border trade points and facilitate Bangladesh's exports.

- Vide Circular No. 17/2022-Customs dated 9.9.2022, CBIC has enabled export of containerised cargo from any inland Container Depot (ICD) to Bangladesh using a combination of rail/road route and riverine route. For instance, the containerised cargo after customs clearance at an ICD shall be transported to Kolkata/Haldia port by rail or road, from where it shall be loaded on a barge for export to Bangladesh using riverine route. Customs clearance shall take place at the ICD and only preventive checks are conducted at Kolkata/Haldia. This facility is expected to help reduce congestion of export cargo at land Customs Stations.

- With a view to leveraging the potential of inland Waterways for enhancing trade and transit, CBIC has allowed movement of containerised export goods of Bangladesh through India using a combination of riverine and rail routes. This facility, allowed Vide Circular No. 19/2022-Customs dated 14.9.2022, involves entry of containerised cargo on a barge/vessel from Bangladesh into India up to the sea port of Kolkata or Haldia using the riverine route. From the sea port of Kolkata or Haldia, the goods will travel by rail to the sea port of Nhava Sheva or Mundra for final export to third countries by sea route. The Circular lays down detailed procedure and documentation and provides for track and trace facility using ECTS (Electronics Cargo Tracking System). This arrangement is expected to save time and cost for the traders by providing an alternate and more efficient trade route.

- Vide Circular No. 09/2022-Customs dated 30.6.2022, CBIC has put in place a simplified regulatory framework for e-commerce exports of jewellery via international Courier Terminals (ICTs). To accommodate the e-commerce business need, it incorporates a re-import process for return of jewellery. For this purpose, the Courier import and export (Electronic Declaration and Processing) Regulations, 2010 have been amended vide Notification No. 57/2022-Customs (N.T) dated 30.6.2022. The simplified framework is applicable on e-commerce export of jewellery made of precious metals (whether or not studded or set with precious or semi-precious stones). This reform is aimed at supporting the Make-in-India brand in the international markets and enhancing the competitiveness of Indian jewellery exports leveraging the rapidly evolving global e-Market space.

Changes in Excise Duty:

- Retail selling prices of petrol and diesel in the country are linked to crude prices. The crude prices have been varying for the past few months. Indian basket is moving upwards and reached beyond $110 per barrel in May, 2022. The Dollar exchange rate was also on the upward trend and is hovering around ₹77 per USD, impacting the prices of Petrol and Diesel. The Retail selling price of petrol and diesel have risen from ₹95.41 per litre and ₹86.67 per litre respectively in March 2022 to ₹105.41 per litre and ₹96.67 per litre respectively on 21 May, 2022. This has necessitated a reduction in Excise Duty on petrol and diesel. Extensive deliberations were held at various stakeholders including Ministry of Petroleum and Natural Gas and it was decided to rationalise Central Excise duty rates on Petrol and Diesel by ₹8 per litre on Petrol and ₹6 per litre on Diesel. The proposed reductions has been given effect to by reducing the Road and Infrastructure Cess (RIC).

Changes in GST (Rates):

- In 2022, the following changes were made to GST rates on goods and services:

- In the 47th GST Council meeting, it was decided to increase the GST rates on items such as Printing, writing or drawing ink, Power driven pumps primarily designed for handling water such as centrifugal pumps, Pawan Chakki, Drawing and marking out instruments, Solar Water Heater and system etc to correct inverted duty structure in these items. Similarly, GST rates on certain services such as Services supplied by foreman to chit fund, Job work in relation to processing of hides, skins and leather, Job work in relation to manufacture of leather goods and footwear etc were also calibrated to correct inverted duty structure.

- Hitherto, GST was exempted on specified food items, grains etc when not branded, or right on the brand has been foregone. In the 47th GST Council Meeting, it has been decided to revise the scope of exemption to exclude from it prepackaged and pre-labelled retail pack in terms of Legal Metrology Act, including pre-packed, pre-labelled curd, lassi and butter milk.
- With an objective to rationalise GST exemptions, the 47th GST Council Meeting recommended to withdraw GST exemption on items such as Cheques, lose or in book form, Maps and hydrographic or similar charts of all kinds, including atlases, wall maps, topographical plans and globes, printed. On similar lines, exemption in form of a concessional rate of GST is being rationalised on items such as Petroleum/ Coal bed methane, Scientific and technical instruments supplied to public funded research institutes, E-waste.

Changes in GST Law and Procedure:

- The following measures were undertaken for trade facilitation and ease of doing business under GST in 2022-23:

Measures intended to facilitate trade:

- Retrospective amendment made in section 50 of CGST Act with effect from 01.7.2017 to provide the interest is required to be paid on the wrongly availed ITC only when the same has been availed as well as utilised. Also, rate of interest on wrongly availed and utilised ITC reduced to 18% from 24% with retrospective effect from 01.7.2017.
- Vide Notification No. 14/2022-Central Tax dated 5.7.2022, UPI & IMPS have been provided as an additional mode for payment of GST to facilitate taxpayers and to further encourage digital payment by amending Rule 87(3) of CGST Rules. This will provide them flexibility and case in making their GST payment.
- Transfer of CGST/IGST cash ledger balance has been allowed between 'distinct persons' (entities having same PAN but registered in different states). Facility has been provided for withdrawal of refund applications made under GST by the taxpayers.
- Facility has been provided for withdrawal of refund applications made under GST by the taxpayers.
- In GST, a mechanism has been prescribed for refund of accumulated ITC on export of electricity.
- Procedure of sanction of IGST Refund in case of export of goods, where the exporters have been identified as risky, has been streamlined, to expedite verification and processing of such claims.

Measures intended to improve ease of doing business:

- Threshold for mandatory issuance of e-invoice has been reduced to ₹10 crore from 01.10.2022.
- To facilitate small taxpayers in making supply of goods through e-commerce operators

(ECO), and to provide parity in intra-state offline and online supply of goods, in-principle decision has been taken for waiver of requirement of mandatory registration under GST for intra-state supply of goods through ECO's Composition taxpayers would also be allowed to make intra-State supply through ECOs subject to certain conditions. This will open the huge e-commerce market for the small taxpayers to sell their goods without getting mandatory registration which will boost small business. These changes would be notified in due course of time, as it would require amendment in GST provision, as per recommendations of GST Council, and technical change on portal and also by ECOs.

MONETARY MANAGEMENT AND FINANCIAL INTER MEDIATION: A GOOD YEAR

04

CHAPTER

The year 2022 marked the return of high inflation, especially in advanced economies, after nearly four decades. Inflation did not spare emerging economies either. These developments led to an unprecedented, synchronous, and sharp cycle of monetary tightening across countries. Major central banks have implemented sharp increases in policy rates, with the Federal Reserve's rate hikes being the steepest since the 1970s. While the Federal Reserve has raised policy rates by 425 basis points (bps), the European Central Bank (ECB) and the Bank of England (BoE) have implemented 300 bps and 250 bps rate increases, respectively. The RBI initiated its monetary tightening cycle in April 2022 and has since implemented a policy repo rate hike of 225 bps. Consequently, domestic financial conditions began to tighten, which was reflected in the lower growth of monetary aggregates.

The change in RBI's policy stance in FY23 led to a moderation of surplus liquidity conditions that prevailed during the pandemic years. Monetary policy transmission is well underway as lending and deposit rates increased following the hike in policy rates. In the government securities (G-sec) market, bond yields were on an upward trajectory until June 2022 on concerns of high inflation and policy rate hikes. These yields moderated in November and December 2022, aided by lower crude oil prices, a slower pace of rate hikes, and general moderation in global sovereign bond yields.

While the global tightening cycle has contributed to a dampened global outlook, the domestic appetite for credit has been on an upswing. Non-food credit offtake by scheduled Commercial Banks (SCBs) has been growing in double digits since April 2022, with the increase being broad-based. Credit disbursed by Non-Banking Financial Companies (NBFCs) has also been on the rise. The balance sheet clean-up exercise has been vital in enhancing the lending ability of financial institutions. The Gross Non-Performing Assets (GNPA) ratio of SCBs has fallen to a seven-year low of 5.0, while the Capital-to-Risk Weighted Assets Ratio (CRAR) remains healthy at 16.0 and well above the regulatory requirement of 11.5. The health of NBFCs has continued to improve as well. The recovery rate for the SCBs through Insolvency and Bankruptcy Code (IBC) was highest in FY22 compared to other channels.

Political and economic developments in 2022 – the breakout of a conflict in Europe, high inflation and raising interest rates - meant that capital markets around the world were characterised by increased volatility. However, domestic capital markets displayed some encouraging trends. The primary equity markets witnessed participation from all segments, especially with increased Small and Medium Enterprises (SMEs) contributions *while primary private debt markets saw a growth in placements and resource mobilisation. While secondary capital market indices of the Nifty 50 and the S&P BSE Sensex were not immune to the volatility in Foreign Portfolio Investment (FPI) flows, they performed better than their peers between April and December 2022. Furthermore, net FPI flows turned positive in the quarter ending December 2022. The indices have displayed a decreasing trend in volatility as measured by the India Volatility Index (VIX) over this period. Both developments underscore India's strong macroeconomic fundamentals and relatively buoyant demand outlook.*

The increasing outreach of the banking sector and capital markets is reflected in the insurance and pension sectors. Insurance penetration in India has been steadily increasing, with life insurance penetration being above the emerging markets and global averages. Important government interventions and a conducive regulatory environment have supported the growth of the insurance market, which has seen increasing partnerships, product innovations, and vibrant distribution channels. India is poised to emerge as one of the fastest-growing insurance markets in the coming decade. The pension sector too has been taking rapid strides since the introduction of the National Pension Scheme (NPS), more recently, the Atal Pension Yojana (APY). The sector has witnessed a robust increase in the number of subscribers and assets under management (AuM). The expansion of the sector has been aided by government measures such as relaxation in CCS (Pension) Rules, integration of electronic Pension Payment Order (e-PPO) with DigiLocker, and relaxation in the timeline for submitting Digital Life Certificate.

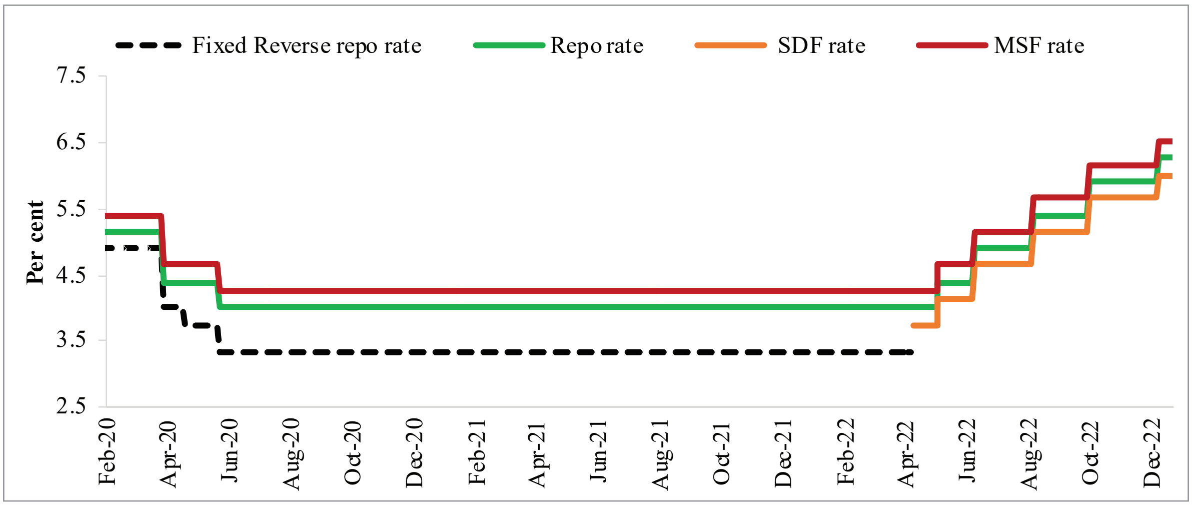
As global central banks reaffirm their hawkish stances and telegraph 'higher-for-longer' policy rates in their battle against inflation, monetary conditions are expected to remain tight worldwide. Domestically, however, RBI's support to growth will ensure adequate liquidity in financial markets. The growth in credit offtake is expected to sustain, and combined with a pick-up in private Capex, will usher in a virtuous investment cycle. The credit upcycle will also be aided by constant monitoring of the risks in the financial system by the regulators and their efforts to contain them. Strong macroeconomic fundamentals will underpin the return of global capital flows to India once the fog of uncertainty lifts. The financial system will play a key role in realising the objectives of Amrit Kaal.

Monetary developments

4.1 Inflationary pressures dominated the global economic landscape in FY23. The build-up of price pressures occurring in tandem with the economic recovery in FY22 from the pandemic was long viewed as transient. It was expected to abate as supply chains normalised. The debate on said transience was put to rest by the conflict that erupted in Europe in February 2022. It resulted in commodity prices soaring and added significantly to the prevailing inflationary pressures. This development has triggered the current sharp and synchronous monetary tightening cycle. Setting the context, this chapter will review India's monetary developments and the performance of the financial system in the current financial year. It includes reviewing the monetary policy actions and their impact on system liquidity and evaluating the performance of the banking system, sectoral credit developments and various insolvency frameworks. Further, it looks into the capital market, insurance and pension sector developments.

4.2 The Monetary Policy Committee (MPC) maintained a status quo on the policy repo rate between May 2020 and February 2022 after implementing a 115 basis points (bps) reduction between March 2020 and May 2020. Retail inflation has crossed the upper limit of RBI's tolerance band since January 2022. Sensing a serious risk to price stability, RBI initiated the monetary tightening cycle. In its April 2022 meeting, the committee introduced the Standing Deposit Facility (SDF), which allowed for the deposit of excess funds by banks with the RBI without the necessity of collateral in the form of government securities, thereby allowing effective liquidity management in a collateral-free manner. Here, it is worth mentioning that while the SDF window is available for overnight deposits, the Reserve Bank retains the flexibility to absorb surplus liquidity of longer tenors under the window, if necessary, with appropriate pricing. The SDF, introduced at a rate of 3.75 per cent, replaced the reverse repo rate as the new floor of the Liquidity Adjustment Facility (LAF) corridor. The MPC also indicated a change in stance from 'Accommodative' to 'Accommodative and focused on the withdrawal of accommodation, while supporting growth' in this meeting, signalling the start of the monetary tightening cycle.

Figure IV.1: Policy Rates



Source: RBI

4.3 Recognising the sizeable upside risk imparted by adverse global developments, such as the generalised hardening of commodity prices and an increased likelihood of prolonged supply chain disruptions, the MPC convened an off-cycle meeting in May 2022. Members unanimously voted for an increase of 40 bps each in the policy repo rate, the SDF and the Marginal Standing Facility (MSF), and a 50 bps increase in the Cash Reserve Ratio (CRR). Between May 2022 and December 2022 and over five meetings, the MPC implemented a cumulative hike of 225 bps each in the policy repo rate, the SDF, the MSF and the bank rate. In the initial phases of the tightening cycle, the committee noted that commodity price-driven inflationary pressures, increased volatility and initial signs of a slowdown in output characterised the global outlook. In its latest meeting of December 5-7 2022, the MPC hiked the policy repo rate by 35 bps, and reiterated its focus on withdrawal of accommodation to ensure that inflation remains within the target going forward, while supporting growth.

4.4 Reserve money (M0) increased by 10.3 per cent year-on-year (YoY) as on 30th December 2022 compared to 13 per cent last year. However, reserve money adjusted for the first-round impact of changes in the Cash Reserve Ratio (CRR) recorded a YoY growth of 7.8 per cent compared to 9.1 per cent a year ago. On the component side, growth in Currency in Circulation (CIC) broadly remained stable at levels seen after Covid-19, barring a marginal increase in the immediate aftermath of the outbreak of the Russia-Ukraine conflict, which can be attributed to a rise in precautionary holdings. So far, expansion in M0 during FY23 was mainly driven by bankers' deposits with the RBI, with an increase in the CRR.

Table IV.1: YoY Growth in monetary aggregates (in per cent)

Item	FY17^	FY18	FY19	FY20	FY21	FY22	FY23*
1. Reserve Money (M0)	**-12.9**	**27.3**	**14.5**	**9.4**	**18.8**	**13.0**	**10.3**
1.a. Currency in Circulation (CiC)	-19.7	37.0	16.8	14.5	16.6	9.8	8.2
1.b. Bankers' Deposits with the RBI	8.4	3.9	6.4	-9.6	28.5	25.4	17.6
2. Narrow Money (M1)	**-3.9**	**21.8**	**13.6**	**11.2**	**16.2**	**10.7**	**7.6**
3. Broad Money (M3)	**6.9**	**9.2**	**10.5**	**8.9**	**12.2**	**8.8**	**8.7**
3.a. Currency with the Public	-20.8	39.2	16.6	14.5	17.1	10.3	8.4
3.b. Aggregate Deposits	6.9	5.8	9.6	8.0	11.3	8.4	9.2
Demand Deposits	18.4	6.2	9.6	6.8	14.8	10.9	6.2
Time Deposits	10.2	5.8	9.6	8.1	10.9	8.1	9.1

Source: RBI.
Note: ^: March 31, 2017 over April 1, 2016, barring M0, CiC and Bankers' Deposits with the RBI.
*: Data for FY23 is as on December 30, 2022

Monetary developments reflect the tightening financial conditions

Figure IV.2a: Declining YoY growth of broad money

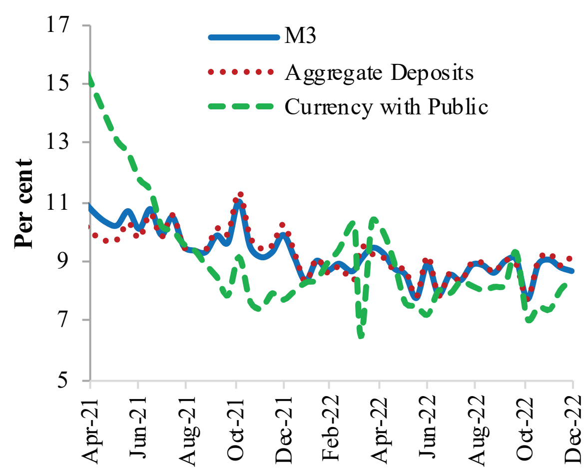
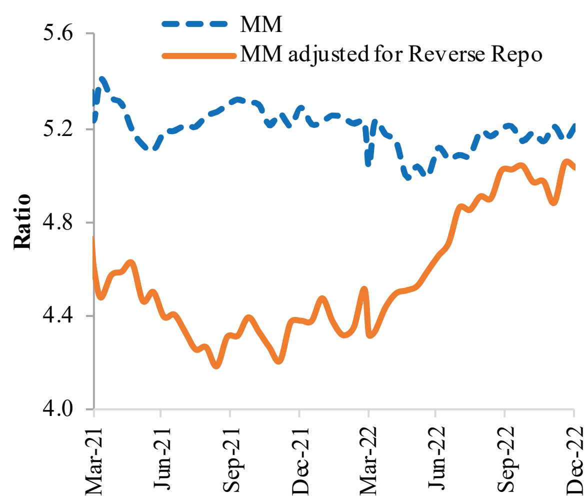


Figure IV.2b: Converging Money Multiplier (MM) measures



Source: RBI

4.5 As on 30th December 2022, broad money stock (M3) increased by 8.7 per cent YoY. From the component side, aggregate deposits have been the largest component and contributed most to the expansion of M3 during the year so far. Amongst sources, bank credit to the commercial sector drove the expansion of broad money, and net bank credit to the government supplemented this expansion. Of significance is the increase in the share of bank credit to the commercial sector in M3 to 64.3 per cent as on 30th December 2022 from 61.1 per cent in the corresponding period of the previous year, reflecting the upswing in the credit disbursal by commercial banks.

4.6 The money multiplier – the ratio of M3 and M0 – has broadly remained stable at an average of 5.1 over April – December 2022 period compared to 5.2 in the corresponding period of the previous year. However, M0 adjusted for reverse repo, which is analytically akin to banks' deposits with the RBI, was much higher until April 2022. Hence, the adjusted money multiplier was lower at 4.3 at the beginning of FY23. M0 adjusted for the reverse repo is now much closer to M0; hence, as on 30 December 2022, the money multiplier and adjusted money multiplier stood at 5.21 and 5.03, respectively.

Liquidity Conditions

4.7 Surplus liquidity conditions that prevailed post-Covid-19 in response to the Reserve Bank's conventional and unconventional monetary measures moderated during FY23 in consonance with the changed monetary policy stance that focused on the withdrawal of accommodation. With the MSF rate retained at 25 bps above the policy repo rate, the LAF corridor became symmetric around the policy repo rate - the corridor width was thus restored to 50 bps, the position that prevailed before the pandemic. The RBI's move to hike the CRR by 50 bps resulted in a withdrawal of primary liquidity to the tune of ₹87,000 crore from the banking system.

Liquidity conditions moderating

Figure IV.3a: Gradual withdrawal of surplus liquidity

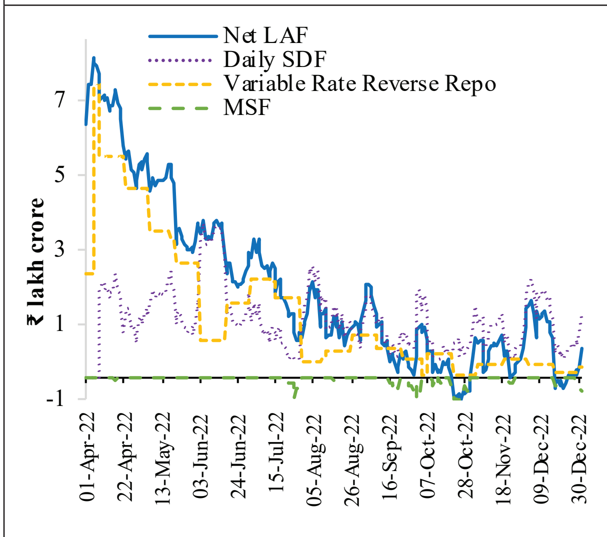
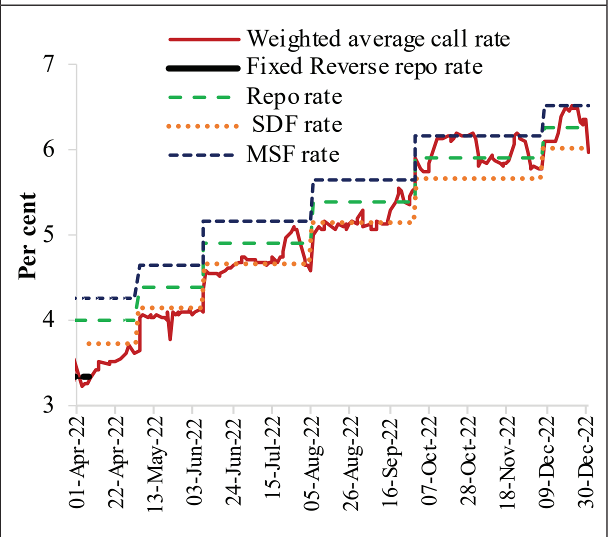


Figure IV.3b: Overnight call money rates now trending well inside LAF corridor



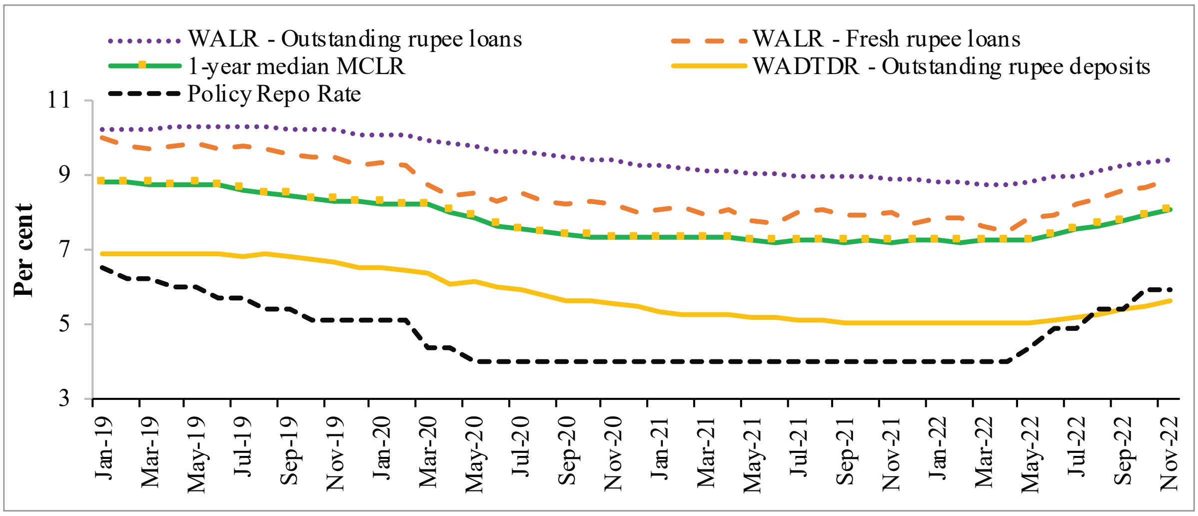
Source: RBI

4.8 The daily net liquidity absorption averaged ₹2.5 lakh crore during FY23 (up to 21 December 2022) as compared with ₹6.7 lakh crore in FY22. The Reserve Bank remained nimble and agile in liquidity management by conducting two-way operations. It injected liquidity to assuage transient liquidity tightness through two variable rate repo (VRR) auctions of ₹50,000 crore each of 3 days and overnight maturity on 26th July and 22nd September 2022, respectively. The gradual withdrawal of surplus liquidity pushed the weighted average call rate (WACR) – the operating target of monetary policy – closer to the policy repo rate, on an average basis. The WACR traded 6 bps above the policy repo rate, on an average, during H2 (up to 21 December 2022) compared to 28 bps below it during H1. Interest rates on various money market rates - 91-day Treasury Bills (T-Bills), 3-month certificates of deposit and commercial papers - gradually firmed up in line with the increase in the repo rate.

Monetary Policy Transmission

4.9 Lending and deposit rates of banks increased during FY23 in consonance with the policy repo rate changes. During FY23 (up to December 2022), external benchmark-based lending rate and 1-year median marginal cost of funds-based lending rate (MCLR) increased by 225 bps and 115 bps, respectively. Overall, the weighted average lending rate (WALR) on fresh and outstanding rupee loans rose by 135 bps and 71 bps, respectively, in FY23 (up to November 2022). On the deposit side, the weighted average domestic term deposit rate (WADTDR) on outstanding deposits increased by 59 bps in FY23 (up to November 2022).

Figure IV.4: Transmission to domestic lending and deposit rates picking up



Source: RBI

4.10 An analysis of transmission across bank groups during FY23 (up to November 2022) indicates that the increase in the WALRs on fresh loans was higher in the case of public sector banks, while that of the WADTDR on outstanding deposits and WALR on outstanding loans was higher for private banks.

Table IV.2: Transmission to lending and deposit rates across bank groups

Variation in bps	February 2019 - March 2022			April to November 2022		
	WALR - Outstanding Rupee Loans	WALR - Fresh Rupee Loans	WADTDR - Outstanding Deposits	WALR - Outstanding Rupee Loans	WALR - Fresh Rupee Loans	WADTDR - Outstanding Deposits
PSBs	-153	-252	-169	59	149	51
PVBs	-141	-188	-211	82	101	59
SCBs#	-150	-232	-188	71	135	59

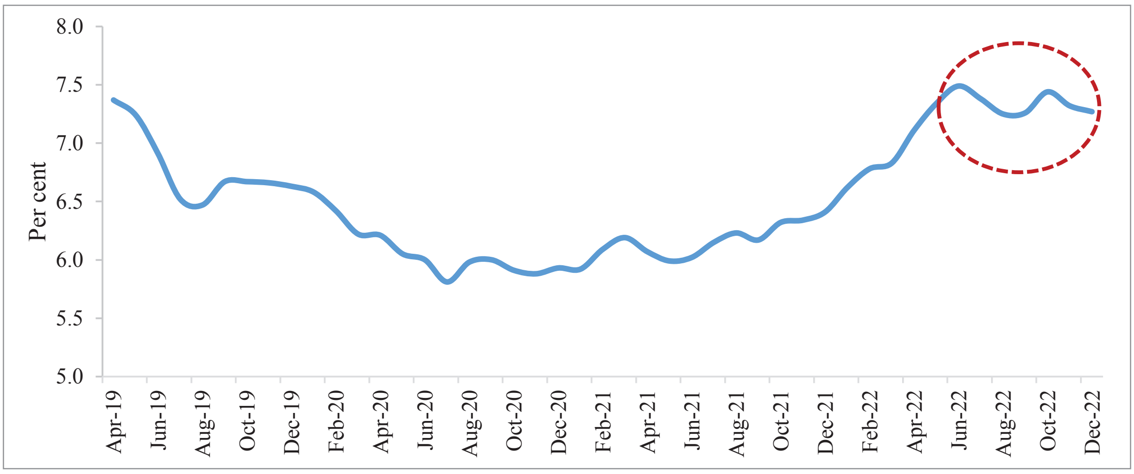
^: March 31, 2017 over April 1, 2016, barring M0, CiC and Bankers' Deposits with the RBI.
*: Data for FY23 is as on December 30, 2022

Source: RBI
Note: WALR: Weighted Average Lending Rate; WADTDR: Weighted Average Domestic Term Deposit Rate.
MCLR: Marginal Cost of funds-based Lending Rate;
SCBs include public, private and foreign banks.
PSBs: Public Sector Banks
PVBs: Private Banks

Developments in the G-sec Market

4.11 After remaining steady through 2020 and 2021, the yield on the 10-year government bond rose in 2022. The weighted average yield spike reflects the domestic bond market volatility stemming from uncertainty in crude prices, a hawkish stance of major central banks, a hardening of global bond yield and the pressure on the rupee. The monthly average yield on the 10-year government bond stood at 7.3 per cent in December 2022 after having peaked at 7.5 per cent in June 2022. Yields moderated in November and December 2022 following smaller rate hikes by major central banks and declining inflation. With the softening of yields, volatility also declined in the second half of 2022.

Figure IV.5: G-sec yields easing since July, with decline in oil prices and global bonds yields



Source: FBIL

4.12 The trading volume in G-Secs (including T-Bills and SDLs) reached a two-year high of ₹27.7 lakh crore during Q2 FY23, registering a YoY growth of 6.3 per cent. The higher trading volume reflects the growing interest of market players/ traders in the government security market.

4.13 Private Sector Banks emerged as the dominant trading segment in the secondary market during the quarter under review, with a share of 25.0 per cent in "Buy" deals and 24.8 per cent in "Sell" deals in the total outright trading activity, followed by foreign banks, public sector banks, primary dealers and mutual fund. On a net basis, foreign banks and primary dealers were net sellers. In contrast, public sector banks, cooperative banks, financial institutions, insurance companies, mutual funds, private sector banks and 'others' were net buyers in the secondary market.

Table IV.3: Category-wise Share (Per cent) of Total Outright Trading Activity in G-Secs*

Category	July – Sept 2021		Apr-Jun 2022		July-Sept 2022	
	Buy	Sell	Buy	Sell	Buy	Sell
Private Sector Banks	25.6	28.4	24.3	23.8	25	24.9
Foreign Banks	18.6	19.3	20.5	22.7	21.7	22.1
Public Sector Banks	16.6	15.6	17.3	16.4	15.7	14
Primary Dealers	12.3	17.7	13.9	20.3	13.9	19.5
Mutual Funds	14.8	10.1	12.7	8.5	11.2	8.9
Others	5.1	3.6	4.1	3.3	5.3	5
Co-operative Banks	2.9	2.9	3.1	2.8	3.5	3.3
Insurance Companies	3.2	2.1	3.4	2.2	3.1	2.4
Financial Institutions	1	0.4	0.6	0	0.5	0
Total	100	100	100	100	100	100

Source: Dept. of Economic Affairs, Ministry of Finance
Note: *: Includes T-Bills and SDLs.

Banking Sector

Resilient and well-capitalised Banking System

4.14 Since the middle of the previous decade, RBI and the government have made dedicated efforts in terms of calibrated policy measures like strengthening the regulatory and supervisory framework, implementation of 4R's approach of Recognition, Resolution, Recapitalisation and Reforms to clean and strengthen the balance sheet of the banking system. These continuous efforts over the years have culminated in the enhancement of risk absorption capacity and a healthier banking system balance sheet both in terms of asset quantity and quality over the years.

Banking System: Improvement in Asset quality and strengthening of balance sheet

Figure IV.6a: Declining SCB's GNPA Ratio

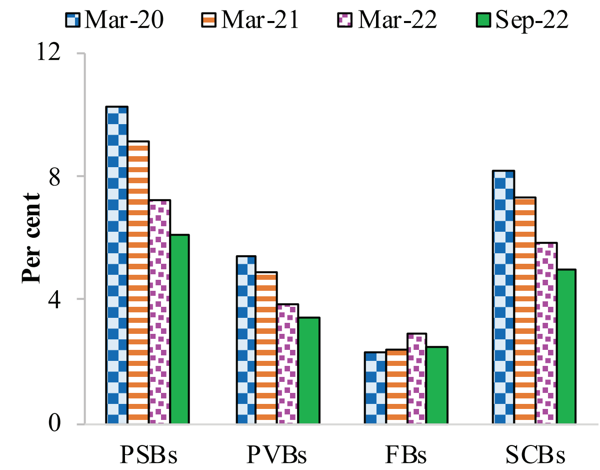
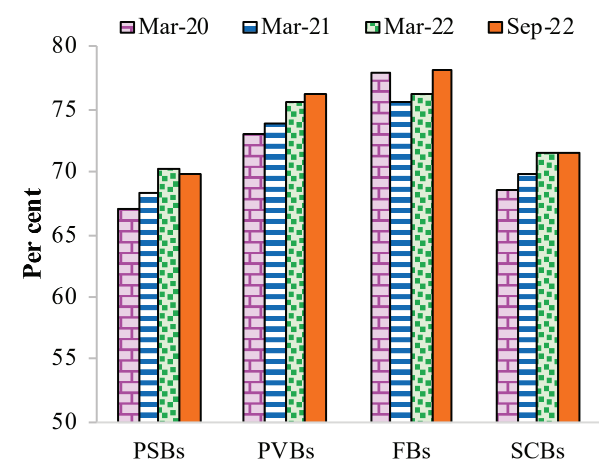


Figure IV.6b: Provisioning Coverage Ratio

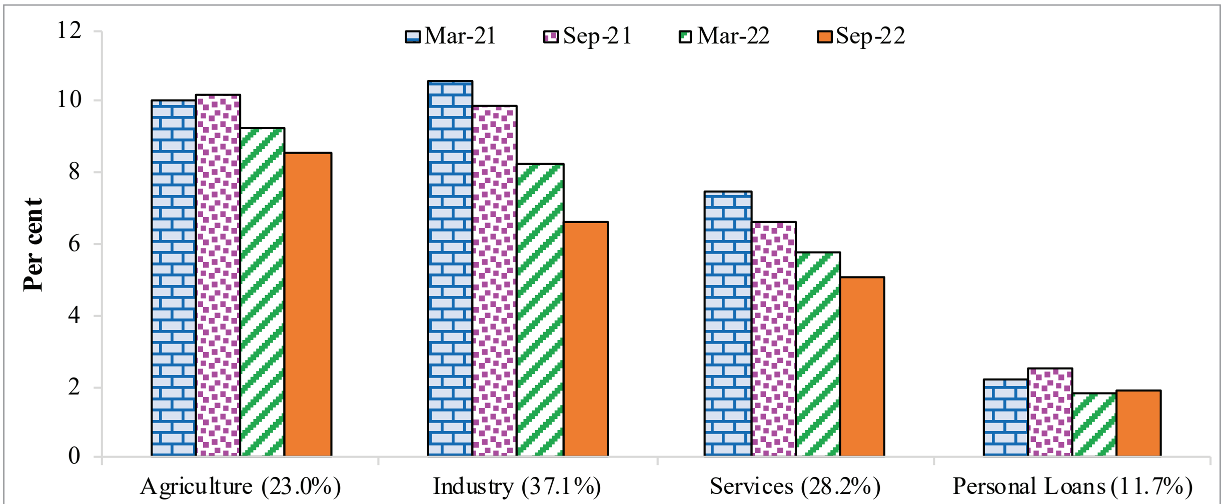


Source: RBI

Note: SCBs stand for Scheduled Commercial Banks, PSBs stand for Public Sector Banks, PVBs stand for Private Sector Banks, FBs stands for Foreign Banks

4.15 Consequently, the asset quality of SCBs has been improving steadily over the years across all major sectors. The GNPA ratio has decreased from 8.2 per cent in March 2020 to a seven-year low of 5.0 per cent in September 2022, while Net Non-Performing Assets (NNPA) have dropped to a ten-year low of 1.3 per cent of total assets. Lower slippages and the reduction in outstanding GNPAs through recoveries, upgrades and write-offs led to this decrease. Lower GNPAs, combined with high provisions accumulated in recent years, contributed to a decline in NNPA. There was a broad-based improvement in the GNPA ratio in the industrial sector, though it remained elevated for gems and jewellery and construction sub-sectors. Going ahead, as per the baseline scenario of the RBI's stress testing framework, the declining tendency in the GNPA ratio is likely to continue and is projected to drop further to 4.9 per cent in March 2023.

Figure IV.7: Broad-based improvement in the GNPA ratio

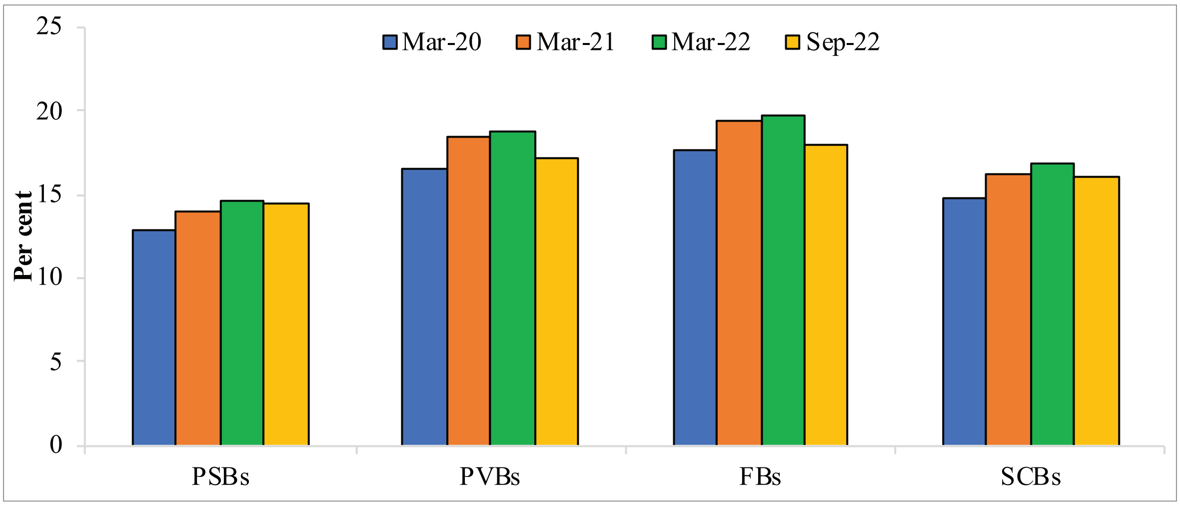


Source: RBI

Note: Numbers in brackets with the legend represents share of the respective sector's GNPA in total GNPA of SCBs as of Sept 2022.

4.16 Moreover, with shrinking GNPAs, the Provisioning Coverage Ratio (PCR) has been increasing steadily since March 2021 and reached 71.6 per cent in September 2022. The CRAR of SCBs has been rising sequentially in the post-asset quality review period. With a pick-up in lending activity during H1:FY23, CRAR moderated in September 2022 because of an increase in risk-weighted assets (RWAs). However, it remains well above the minimum capital requirement, including Capital Conservation Buffer (CCB) requirements of 11.5 per cent.

Figure IV.8: Capital Adequacy Ratio well above the requirement norms



Source: RBI

4.17 During the first half of FY23, the profitability of SCBs, measured in terms of Return on Equity (ROE) and Return on Assets (ROA), improved to levels last observed in FY15. At the system level, Profit After Tax (PAT) witnessed a double-digit growth of 40.7 per cent in the quarter ending September 2022, led by strong growth in Net Interest Income (NII) and a significant lowering of provisions. Macro-stress tests conducted by RBI for credit risk reveal that SCBs are well-capitalised and that all banks would be able to comply with the minimum capital requirements even under adverse stress scenarios.

Consistent Improvement in Performance indicators

Figure IV.9a: ROE- Annualised

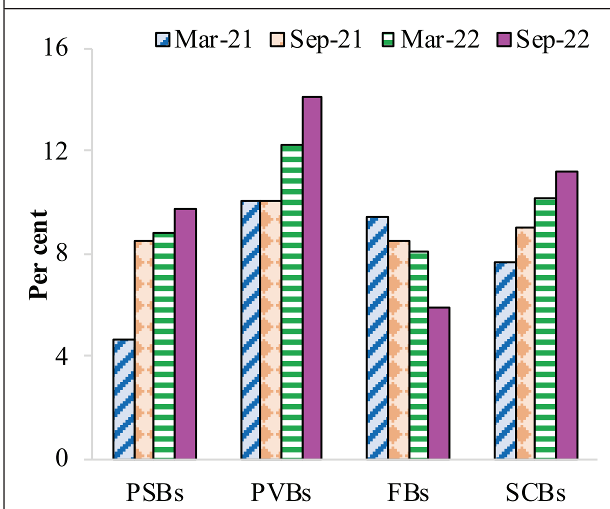
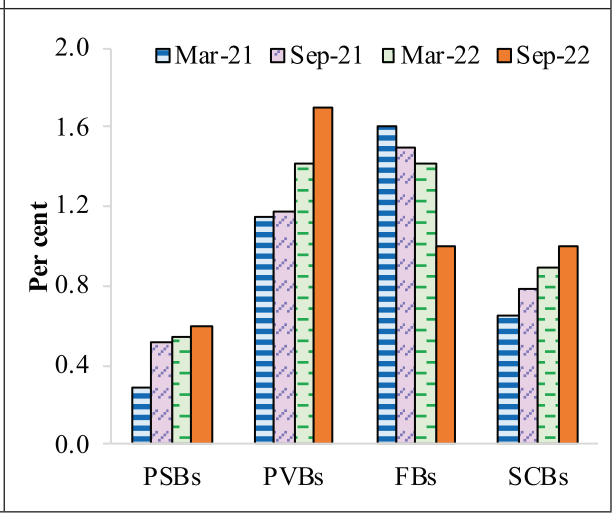


Figure IV.9b: ROA-Annualised

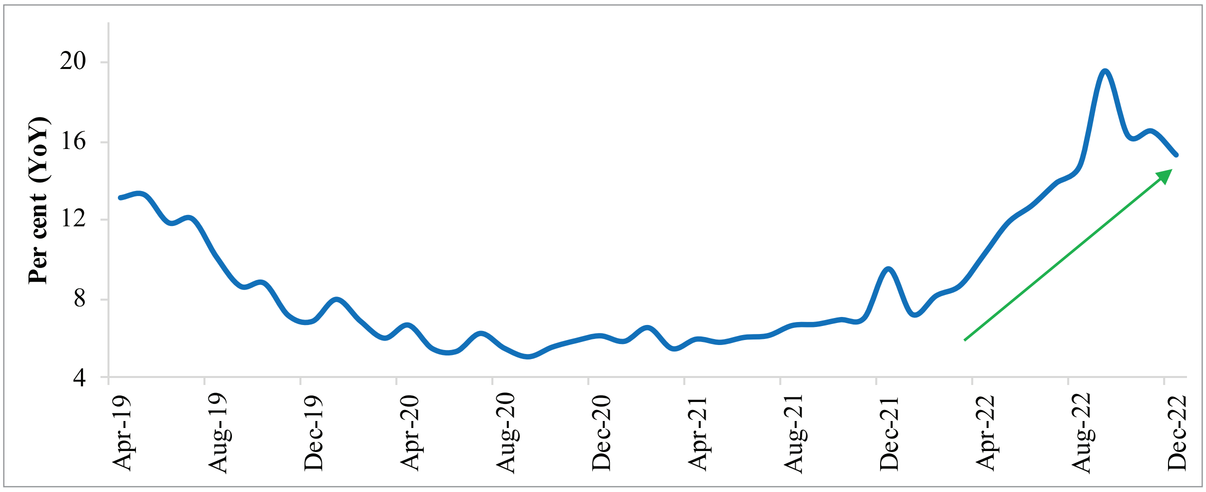


Source: RBI

Credit Growth Aided by a Sound Banking System and Deleveraged Corporate Sector

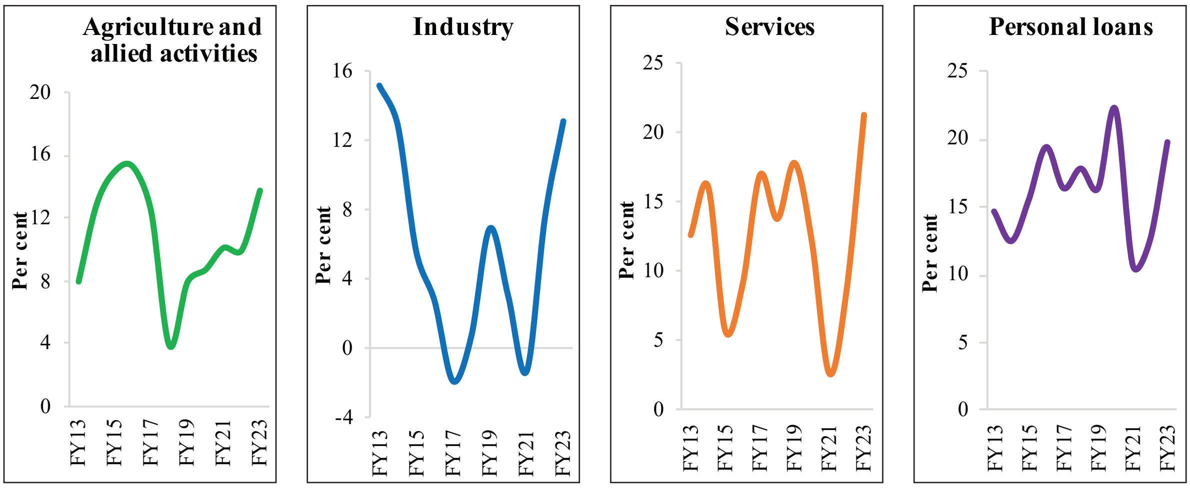
4.18 The recovery in economic activity in FY22, along with the enhanced financial soundness of banks and corporates, has bolstered the expansion of non-food bank credit since June 2021. The YoY growth in non-food bank credit accelerated to 15.3 per cent in December 2022. This not only shows an acceleration in the growth of current economic activities but also an anticipation of continued momentum in economic activity in future.

Figure IV.10: Non-Food Bank credit growth in double digit since April 2022



Source: RBI

Figure IV.11: Broad-based growth in sectoral non-food Bank credit



Source: RBI
Note: Data for FY23 as on November 2022

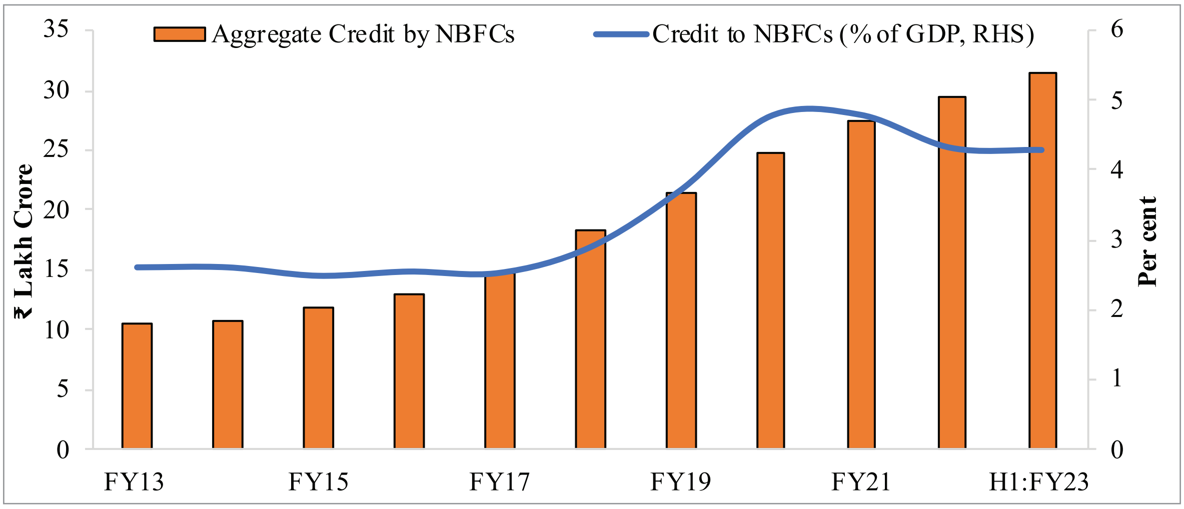
4.19 Credit growth has been broad-based across sectors, with retail credit driving the growth primarily owing to rising demand for home loans. An increase in demand for housing induces greater investment which, in turn, sets off a virtuous cycle of growth and investment. Credit to agriculture and allied activities gained momentum supported by the Government's concessional institutional credit and higher agricultural credit target. Industrial credit growth has been buoyed by a pick-up in credit to MSMEs, assisted by the benefits accrued from the effective implementation of the Emergency Credit Line Guarantee Scheme (ECLGS) and the support provided by the government's production-linked incentive scheme and improvement in capacity utilisation. Credit growth in services was driven by a recovery in credit to NBFCs, commercial real estate and trade sectors.

4.20 With moderation in overseas issuances and lower investments by Private Equity (PE)/ Venture Capital (VC), the financing needs of the corporate sector are being met through domestic resources. As funds raised from the primary segment of domestic equity markets declined during FY23, reliance on bank credit for funding regular operations and capacity expansion increased. Also, the Incremental Credit-Deposit ratio rose sharply both on an annual (122.0 per cent, YoY) and half-yearly basis (172.5 per cent; September 2022 over March 2022). The accumulation of deposits in the past few years has enabled banks to fund the growing credit demand. Here, the well-capitalised banking system with a low NPA ratio and more robust corporate sector fundamentals will continue to enhance the flow of bank credit into productive investment opportunities, notwithstanding the rising interest rates.

Non-Banking Financial Companies (NBFCs) Continue to Recover

4.21 The growing importance of the NBFC sector in the Indian financial system is reflected in the consistent rise of NBFCs' credit as a proportion to GDP as well as in relation to credit extended by SCBs. Supported by various policy initiatives, NBFCs could absorb the shocks of the pandemic. They built up financial soundness during FY22, marked by balance sheet consolidation, improvement in asset quality, augmented capital buffers and profitability.

Figure IV.12: Increasing credit disbursed to and by NBFCs

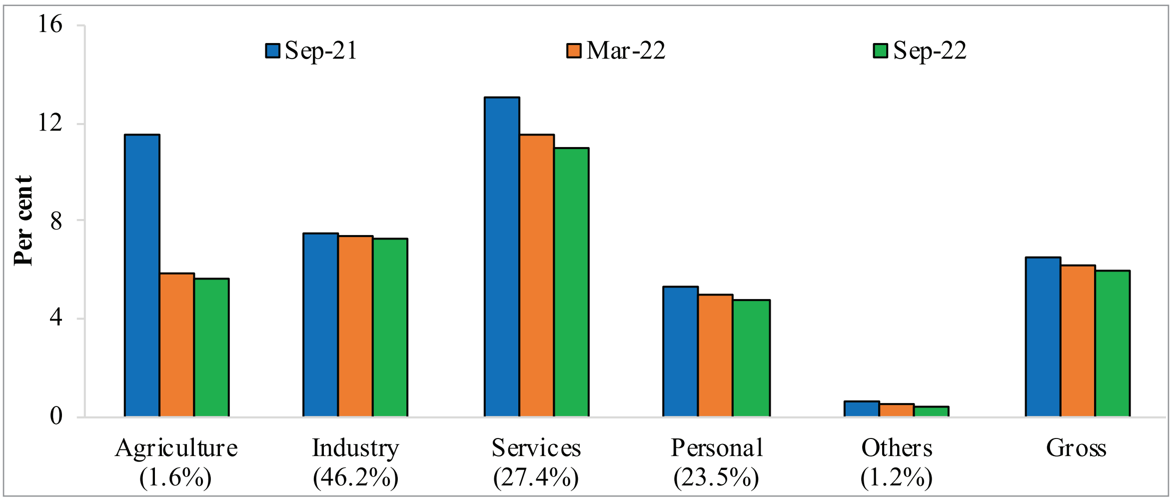


Source: RBI

Note: Credit to NBFCs (per cent of GDP) for FY23 (H1) is estimated based on NSO's 1st AE for FY23 and credit by NBFCs as of September 2022.

4.22 The continuous improvement in asset quality is seen in the declining GNPA ratio of NBFCs from the peak of 7.2 per cent recorded during the second wave of the pandemic (June 2021) to 5.9 per cent in September 2022, reaching close to the pre-pandemic level. Although this softening was observed across sectors, the GNPA ratio of the services sector remains in double digits.

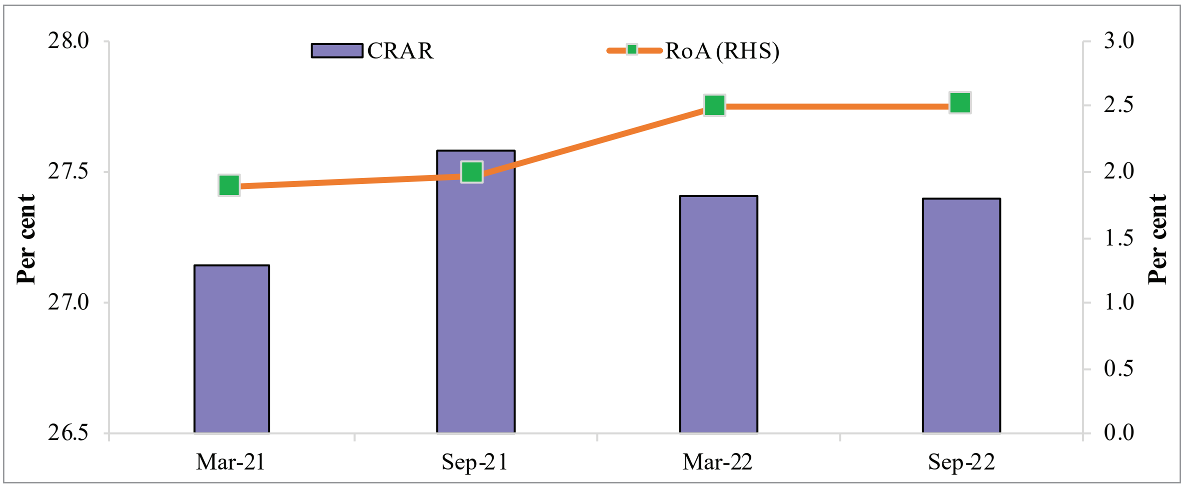
Figure IV.13: Declining GNPA ratio: Improvement in Asset quality of NBFCs across sectors



Source: RBI

Note: Numbers in bracket represents sectoral shares in GNPA in Sep-22.

Figure IV.14: NBFCs Performance: Recouping RoA with robust capital position

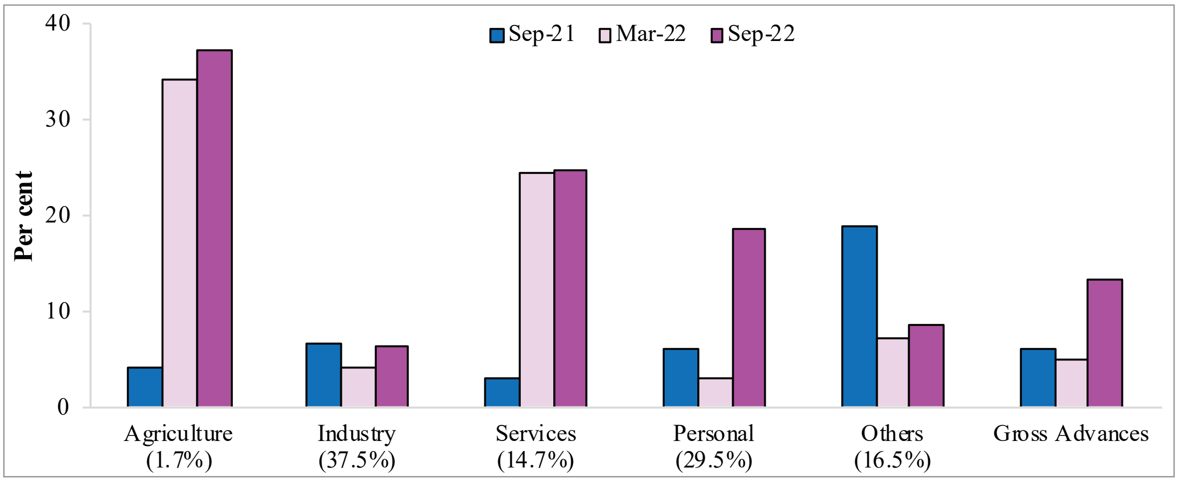


Source: RBI

4.23 With the decline in GNPAs, the capital position of NBFCs also remains robust, with a CRAR of 27.4 per cent in end-September 2022, slightly lower than 27.6 per cent in March 2022. However, it remains well above the regulatory requirement. The decline of 20 bps was mainly because of an increase in RWA as lending picked up. The RoA has recouped over successive half-years. RBI's stress test to assess the resilience of the NBFC sector to credit risk shocks for a sample of 152 NBFCs reveals that the number of NBFCs that would fail to meet the minimum regulatory capital requirement of 15 per cent stood at 8 per cent under the baseline scenario. It increases to 10 per cent and 13 per cent under medium and severe stress scenarios, respectively.

4.24 Credit extended by NBFCs is picking up momentum, with the aggregate outstanding amount at ₹31.5 lakh crore as of September 2022. NBFCs continued to deploy the largest quantum of credit from their balance sheets to the industrial sector, followed by retail, services, and agriculture. Loans to the services sector (share in outstanding credit being 14.7 per cent) and personal loans (share of 29.5 per cent) registered a robust double-digit growth.

Figure IV.15: Robust growth in credit disbursement by NBFCs across sectors with a slight moderation in Industry



Source: RBI

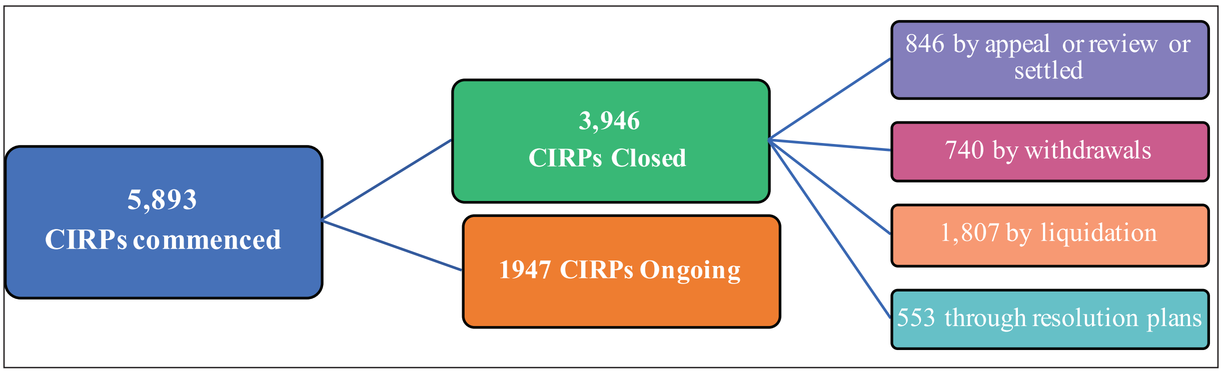
Note: Numbers in the bracket corresponds to sectoral shares in outstanding loans in Sep-22

Progress made under the Insolvency and Bankruptcy Code

Ease of doing business: Facilitating the process of 'exit'

4.25 The Insolvency and Bankruptcy Code (IBC) has facilitated the exit of distressed firms, thereby allocating scarce economic resources towards more productive use. Since the inception of the IBC in December 2016, 5,893 Corporate Insolvency Resolution Processes (CIRPs) had commenced by end-September 2022, of which 67 per cent have been closed. Of these, around 21 per cent were closed on appeal or review or settled, 19 per cent were withdrawn, 46 per cent ended in orders for liquidation, and 14 per cent culminated in the approval of resolution plans. The Code also provides for a Corporate Debtor (CD) to voluntarily liquidate itself subject to the fulfilment of certain conditions as prescribed under the Code. 1,351 corporate persons initiated voluntary liquidation under the Code as of end-September 2022.

Figure IV.16: CIRPs status since inception (as on September 2022)



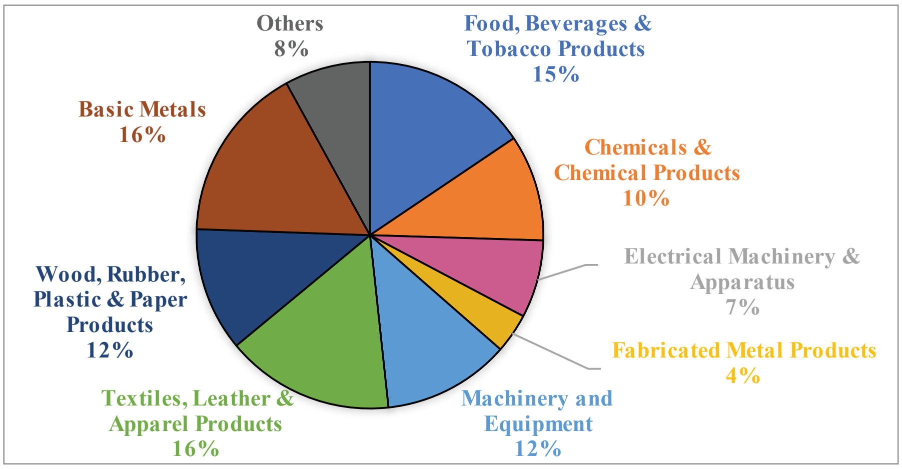
Source: IBBI (Insolvency and Bankruptcy Board of India)

4.26 Sectoral analysis reveals that 52 per cent of the ongoing CIRPs belong to industry, followed by 37 per cent in the services sector by September 2022. Further, within the industry, 74 per cent of the initiated CIRPs was from the manufacturing sector. Of these, the textile, basic metals and food sectors accounted for 48 per cent of the ongoing CIRPs. While in the services sector, 60 per cent of the ongoing CIRPs belongs to real estate, renting and business activities.

Figure IV.17: Sector-wise status of CIRPs (as on September 2022)

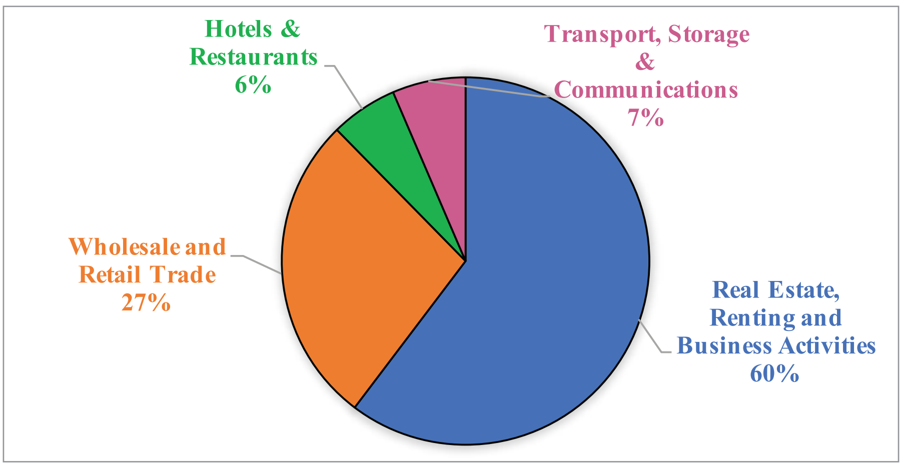
Source: IBBI

Figure IV.18: Sectoral break up of ongoing CIRPs in Manufacturing Sector



Source: IBBI

Figure IV.19: Sectoral break up of ongoing CIRPs in Services Sector



Source: IBBI

Behavioural change: Recoding Business Relationships

4.27 One of the far-reaching spill-over effects of the Code has been the behavioural change effectuated by it among debtors. The fear of losing control over the CD upon initiation of CIRP has nudged thousands of debtors to settle their dues even before the initiation of insolvency proceedings. Until September 30 2022, 23,417 applications for initiation of CIRPs of CDs having underlying default of ₹7.3 lakh crore were disposed of before their admission into CIRP.

69 per cent of the distressed assets rescued, realisation value around 178 per cent of the liquidation value

4.28 Until September 30, 2022, 553 CIRPs have ended in resolution. Despite the very low value of the distressed firms to begin with, 69 per cent of distressed assets were rescued by the Code. Overall, in terms of value realisation for initiators of CIRPs (which includes Financial Creditors, Operational Creditors and Corporate Debtors), the resolution plans realised ₹2.4 lakh crore, which is 177.6 per cent of the liquidation value and 84[1] per cent of the fair value of the 553 CDs rescued. Moreover, realisation by financial creditors under resolution plans in comparison to liquidation value was 201 per cent, while the realisation by them was 33 per cent of their claims.

92 per cent of the value realised under the liquidation Process

4.29 1807 CDs ended up with orders for liquidation as of September 2022. These CDs assets were valued at less than 8 per cent of the aggregate claim amount on the ground. However, more than 76 per cent of the CIRPs ending in liquidation (1349 out of 1774 for which data are available) were earlier with the Board for Industrial and Financial Reconstruction (BIFR) and/or are defunct. The economic value of most of the corporate debtors that ended in liquidation had almost completely eroded even before they were admitted into CIRP. 429 CDs have been completely liquidated. The Code has facilitated the realisation of 92 per cent of the value through the liquidation of these companies.

Table IV.4: Rescue of distressed assets as on 30th September (Amount in ₹ crore)

Rescue of Distressed Assets	Companies Rescued by resolution	Companies Ordered for Liquidation	Total
No. of Companies	553	1807	2360
Aggregate Claims	7,90,626	8,28,180	16,18,806
Liquidation Value	1,37,119	60,143	1,97,261
Assets available as % of Aggregate Claims	17.3	7.3	12.19
Resolution Value	2,43,452	NA	2,43,452
Resolution Value as % of Liquidation Value	177.6	NA	NA
Resolution Value as % of Aggregate Claims	30.8	NA	NA
Average time taken	561 days	437 days	NA
Cost % of Resolution Value	0.6	NA	NA

Source: IBBI

1 Based on 456 cases where fair values have been estimated

NPAs: IBC recovers highest amount for Scheduled Commercial Banks

4.30 As per the RBI data, in FY 22, the total amount recovered by SCBs under IBC has been the highest compared to other channels such as Lok Adalat's, SARFAESI Act and DRTs in this period.

4.31 In a public auction-based resolution model[2] such as the IBC, the extent of the haircut represents the discount the market demands for acquiring the stressed entity as a going concern. Since significant value destruction may have already happened in these assets, a comparison of realised value with admitted claims may not be a reasonable indicator of the effectiveness of the resolution process. Further, the rate of recovery is contingent on several factors, including the overall macroeconomic environment, perceived growth prospects of the entity and its sector, and the extent of erosion in the intrinsic value of the entity. As a broad-based recovery gains traction, these factors are likely to turn favourable for financial resolution[3].

Table IV.5: Amount recovered by SCBs through various channels (Amount in ₹ crore)

Recovery Channel	Amount recovered during the year*				
	2017-18	2018-19	2019-20	2020-21	2021-22(P)
Lok Adalats	1,811	2,750	4,211	1,119	2,777
DRTs	7,235	10,552	9,986	8,113	12,114
SARFAESI Act	26,380	38,905	34,283	27,686	27,349
IBC	4,926	66,440	1,04,117	27,311	47,421
Total	**40,352**	**1,18,647**	**1,52,597**	**64,229**	**89,661**

Source: Off-site returns, RBI and IBBI
Note: P: Provisional, DRTs stand for Debt Recovery Tribunals
*: Refers to the amount recovered during the given year, which could be with reference to the cases referred during the given year as well as during the earlier years.

Development in Capital Markets

4.31 Global macroeconomic uncertainty, unprecedented inflation, monetary policy tightening, volatile markets, etc., resulted in hurting investor sentiments, leading to a downbeat performance of global capital markets in FY23. Though global macroeconomic and financial market developments exercised some influence on Indian capital markets, India's capital market had a good year, overall.

Primary Market

Equity: Large number of SMEs coming out with the public offer

4.32 From April to November 2022, the buoyant performance of the primary market has been observed despite turmoil in global financial markets. Compared to FY22, the number of firms opting to list on the bourses increased by 37 per cent, though the amount raised declined to almost half of what was raised in the last year.

2 Section 9.2.2 Mode of Sale https://ibbi.gov.in/uploads/publication/e42fddce80e99d28b683a7e21c81110e.pdf
3 Report on Trend and Progress of Banking in India for the year ended March 31, 2022

4.33 Although the year so far has been lacklustre in terms of fund mobilisation through IPOs, the number of SMEs coming out with public offer has been quite encouraging. Compared to FY22 (until November 2021), this year, not only did the number of SMEs coming with IPOs almost double, but the total funds raised by them were almost three times the funds raised by them in the same period last year.

4.34 Further, this year also witnessed the largest IPO ever in the history of India. In May 2022, the Central Government diluted its stake in the Life Insurance Corporation (LIC) of India and listed it on the stock exchanges, thereby making LIC's IPO the largest IPO ever in India and the sixth biggest IPO globally of 2022. Listing of LIC accounted for more than a third of resources mobilised in the primary equity market until November 2022.

Debt: Underactivity in public debt issuances more than compensated by private debt placements

4.35 In April-November 2022, the amount of resources mobilised by the issuance of debt securities in the primary market increased by 5 per cent, compared to the corresponding period last year. The total number of issues in the same period also increased by 11 per cent. From April to November 2022, public issues of debt increased by 10 per cent compared to the same period the year before, but the amount raised by public issues of debt in the same period decreased by 27 per cent. However, the underactivity in public debt issuances was more than compensated by private debt placements. The number of private debt placements increased by 11 per cent from 851 to 945, while resources mobilised increased by 6 per cent in April-November 2022, compared to the corresponding period in the year before.

Table IV.6: Resource Mobilisation from the Primary Market

Particulars	April - Nov 2021		April - Nov 2022	
	No. of Issues	Amount (₹ crore)	No. of Issues	Amount (₹ crore)
A. Equity	**350**	**1,81,532**	**448**	**1,14,361**
IPOs	76	89,166	104	48,095
FPOs	0	0	1	4,300
Rights Issues	18	22,659	37	3,436
QIPs	23	26,704	8	4,115
Preferential Allotments	233	43,004	298	54,414
B. Debt	**871**	**3,71,590**	**967**	**3,91,997**
Public	20	9,132	22	6,624
Private Placement	851	3,62,458	945	3,85,373
Total (A+B)	**1,221**	**5,53,122**	**1,415**	**5,06,358**

Source: SEBI

Secondary Market

Stock Market Performance: Indian stock market witnessing a resilient performance

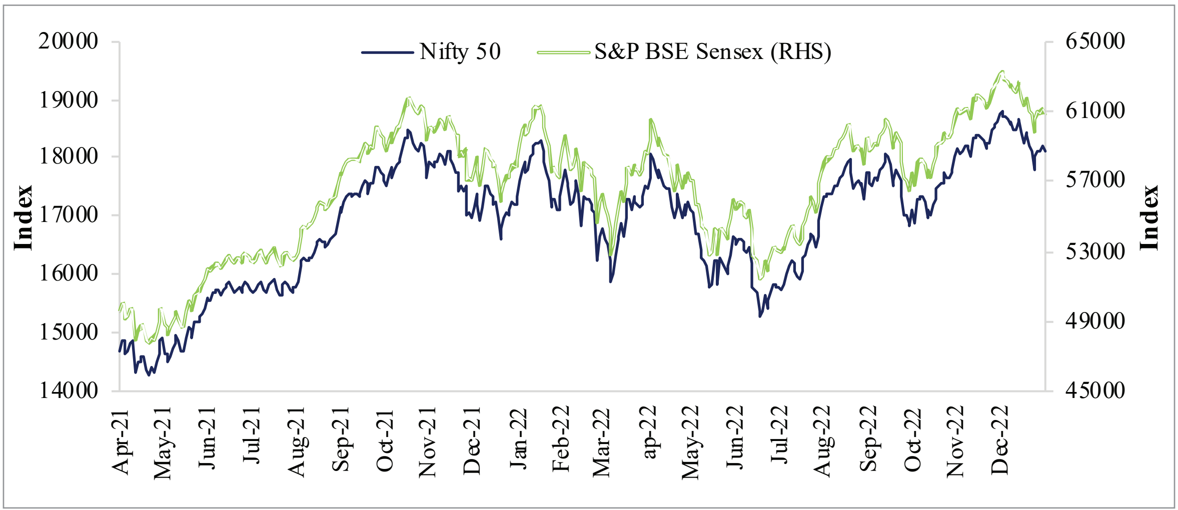
4.36 In April-December 2022, global stock markets declined because of geopolitical uncertainty. On the contrary, the Indian stock market saw a resilient performance, with the bluechip index Nifty 50 registering a return of 3.7 per cent during the same period. The Nifty 50 – US dollar adjusted return also stood at -4.7 per cent, adjusting for the depreciation of the Indian Rupee against the US Dollar. As regards the US, S&P 500 Average Index declined by 15.3 per cent, while Nasdaq Composite – heavily weighted (49 per cent) towards technology sector companies, declined sharply by 26.4 per cent. At the end of December 2022, Sensex closed 3.9 per cent higher from its closing level on March 31, 2022. Even among major emerging market economies, India outperformed its peers in April-December 2022.

Table IV.7: India outperformed its peers during FY23 (April-December)

Index	As on 31st March 2022	As on 30th December 2022	Per cent Change in FY22 (Apr-Dec)	Per cent Change in FY23 (Apr-Dec)
India				
Nifty 50	17,464.7	18,105.3	18.1	3.7
S&P BSE Sensex	58,568.5	60,840.7	17.7	3.9
Emerging Markets				
Shanghai Composite, China	3,252.2	3,089.3	5.8	-5.0
Ibovespa, Brazil	1,19,999.0	1,09,735.0	-10.1	-8.6
KOSPI, Korea	2,757.6	2,236.4	-2.7	-18.9
Developed Markets				
Nasdaq, USA	14,220.5	10,466.5	18.1	-26.4
Dow Jones, USA	34,678.3	33,147.3	10.2	-4.4
S&P 500, USA	4,530.4	3,839.5	20.0	-15.3
CAC, France	6,659.9	6,473.8	17.9	-2.8
DAX, Germany	14,414.8	13,923.6	5.8	-3.4
FTSE 100, UK	7,515.7	7,451.7	10.0	-0.9
Hang Seng, Hong Kong	21,997.8	19,781.0	-17.5	-10.1
Nikkei, Japan	27,821.4	26,094.5	-1.3	-6.2

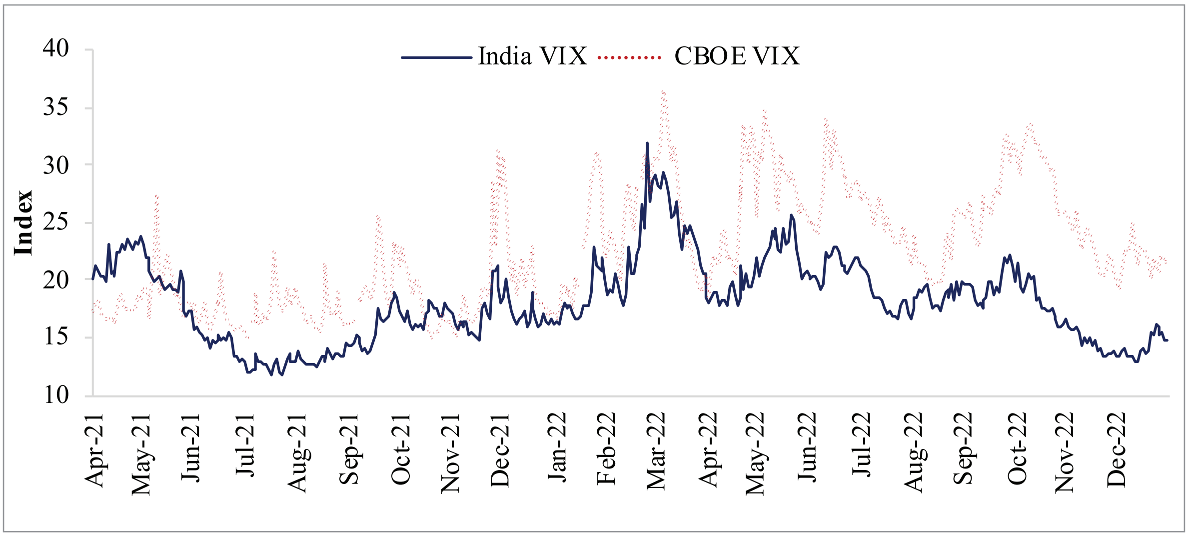
Source: Refinitiv, NSE, BSE

Figure IV.20: Indian Benchmark Indices witnessed swift recovery



Source: SEBI

Figure IV.21: India VIX witnessed declining trend

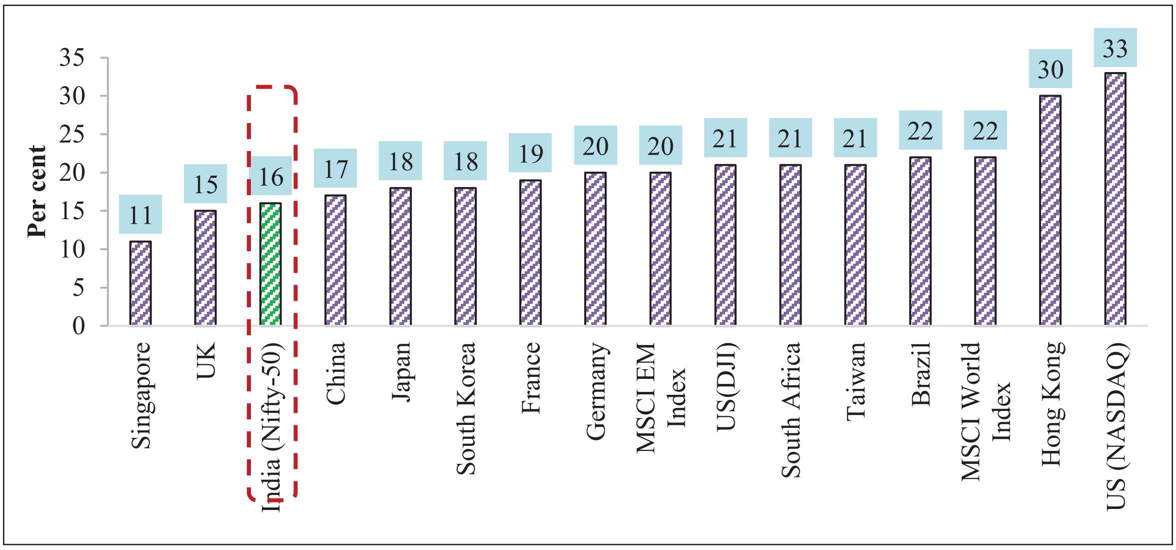


Source: SEBI, Bloomberg

Note: VIX stands for Volatility Index. CBOE stands for Chicago Board Options Exchange

4.37 Heightened geopolitical uncertainty and supply chain disruption post-Russia-Ukraine crisis led to increased volatility in the stock market. India VIX, which measures expected short-term volatility in the stock market, rose to a high of 32.0 on 24th February 2022 with the outbreak of the Russia-Ukraine conflict. Same trend was witnessed in the US equity market (measured by CBOE VIX). Following the outbreak of the conflict, the geopolitical crisis weakened market sentiments which got reflected in the downward movement of benchmark indices over a couple of weeks. Indian stock market also registered losses but recovered quickly to end on a positive note in March 2022. In April-November 2022, the India VIX witnessed a declining trend as the impact of the conflict started to wane as the year progressed.

Figure IV.22: Annualised Volatility in Indian Indices during FY23 (April-November) remained relatively low

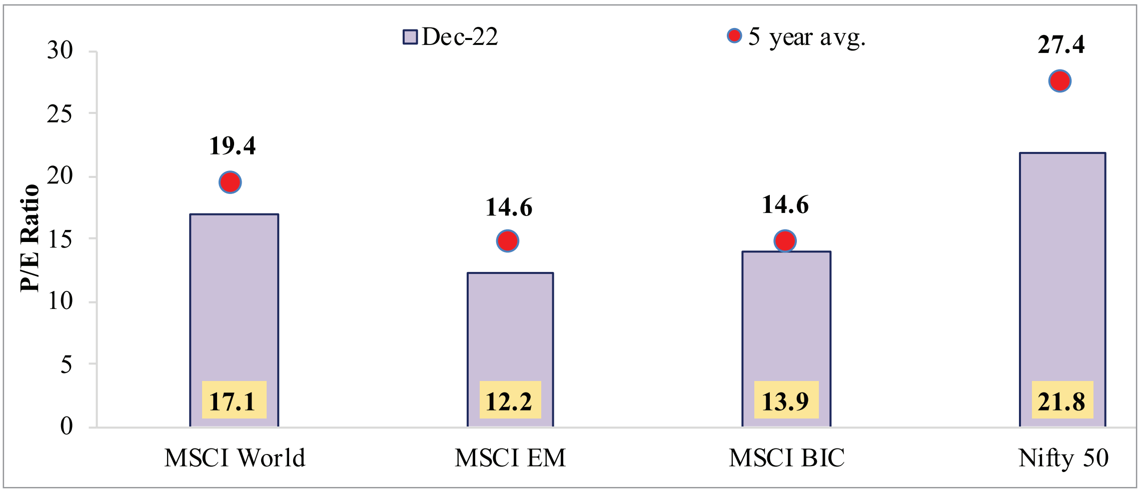


Source: SEBI

Valuations (P/E Ratio): Nifty 50 vis-à-vis the global markets

4.38 Nifty 50, with its valuation at 21.8 times the earnings of the constituent stocks (P/E ratio) on trailing basis at the end of December 2022, is expensive compared to global markets, though still lower as compared to its own last five-year average.

Figure IV.23: Nifty 50 stands expensive vis-à-vis the global markets, though, still lower as compared to its own 5-year average (2017-2021)



Source: SEBI

Notes: The MSCI World Index captures large and mid-cap representation across 23 Developed Markets (DM) countries. The MSCI Emerging Markets Index captures large and mid-cap representation across 24 Emerging Markets (EM) countries. MSCI BIC Index is a free float-adjusted market capitalisation weighted index that is designed to measure the equity market performance across the three Emerging Markets country indexes: Brazil, India and China.

Retail Participation in the Capital Market

4.40 The share of individual investors in the cash segment marginally declined during FY23 (April-November 2022) compared to the same period during FY22. However, the number of demat accounts rose sharply, 39 per cent higher by the end of November 2022 on YoY basis. However, the incremental additions of demat accounts have been on a declining trend during FY23 relative to FY22, probably because of the increased volatility in the secondary market and subdued primary market performance, amid prevailing global headwinds during the current financial year.

Table IV.8: Share of Individual Investors in Equity Cash Segment Turnover declined

Year	Share of Individual Investors (per cent)
FY22	41.1
FY22 (April to November)	42.2
FY23 (April to November)	37.5

Source: NSE, BSE
Note: Individual investors include individual domestic investors, NRIs, sole proprietorship firms and HUFs. Others: Partnership Firms/LLP, Trust / Society, Depository Receipts, Statutory Bodies, OCBs, FNs, etc.

Table IV.9: Demat Accounts witnessed a sharp increase in FY22

Year	Total No. of Demat Accounts (in lakh)	Accounts Added during the Period (in lakh)
FY22*	890.3	344.8
FY22@	766.1	220.7
FY23#	1,061.7	171.5

Source: SEBI; Note: * as at end of Mar-22, @ as at end of Nov-21, # as at end of Nov-22

Turnover Statistics: equity derivatives volumes witnessed a huge jump

4.41 The cash segment turnover declined between April and November 2022, compared to the same period last year, while equity derivatives volumes recorded a considerable jump, reflecting the drifting interests of individuals and proprietary traders away from the equity cash segment to the equity derivatives segment. Driven by the uncertainty prevailing across the globe, currency and commodity derivatives volumes too increased during the same period.

Table IV.10: Turnover in equity, commodity and currency derivatives increased

Year	FY22 (₹ lakh crore) (1)	FY22# (₹ lakh crore) (2)	FY23# (₹ lakh crore) (3)	per cent Change (3) over (2)
Cash Segment	179.0	124.3	98.2	-21
Equity Derivatives	17,613.1	9,860.8	20,979.6	113
Currency Derivatives	277.2	152.7	280.4	87
Commodity Derivatives	100.3	65.2	92.6	42
Interest Rate Derivatives	0.7	0.4	0.3	-17

Source: SEBI; Note: # Period – April to November

Commodity Derivatives Market: sharp correction on account of monetary tightening by the Fed

4.42 The Russia-Ukraine conflict triggered disruptions to the supply of commodities, especially energy, base metals and food commodities. As a result, a sudden jump in the prices of crude oil and some base metals like Nickel and Aluminium was witnessed. However, commodity prices have seen a sharp correction as the Federal Reserve started increasing interest rates in March 2022 to combat rising inflation. Compared to 31st March 2022, the price of MCX iCOMDEX Base Metal Index declined by 19.1 per cent by the end of November 2022, followed by the bullion index (-3.5 per cent) and Energy index (-1 per cent). The prices of Aluminium, Copper, Zinc and Nickel at MCX also declined as of November 2022, compared to March 2022.

Mutual Funds witnessed lower net inflows

4.43 During April-November 2022, Mutual Funds witnessed significantly lower net inflows than last year. However, during the same period, some schemes comprising growth/equity-oriented schemes and solution-oriented schemes observed significantly higher inflows than in the previous year.

4.44 On the other hand, income/debt-oriented schemes and hybrid schemes recorded outflows compared to inflows in the same period of the previous year. Outflows from liquid funds and hybrid schemes were mainly affected by increasing interest rate cycles, liquidity requirements and advance tax commitments by corporates. Despite that, the mutual fund industry's assets under management (AuM) increased by 8.1 per cent at the end of November 2022 on YoY basis, thanks to the market performance.

Table IV.11: AuM of the mutual funds industry increased

Period	No. of Folios (crore)	Gross Resource Mobilisation (₹ lakh crore)	Redemption (₹ lakh crore)	Net Resource Mobilisation (₹ lakh crore)	AUM (₹ lakh crore)
FY22	13.0	93.2	90.7	2.5	37.6
FY22	11.7	58.6	56.1	2.5	37.3
FY23	14.0	69.1	68.4	0.7	40.4

Source: SEBI
Note: As on November 30 of the respective financial year

Table IV.12: Equity-oriented schemes witnessed net inflows

Period	Income/ Debt-Oriented (₹ lakh crore)	Growth/ Equity Oriented (₹ lakh crore	Hybrid (₹ crore)	Solution Oriented (₹ crore)	Others (₹ lakh crore)	Total (₹ lakh crore)
FY22	2.0	-0.4	-2,936	1,577	0.6	2.1
FY22	0.2	0.7	88,854	650	0.8	2.5
FY23	-1.1	0.9	-13,649	1,091	1.0	0.7

Source: SEBI
Note: Other Schemes include Index Funds, Gold ETFs, Other ETFs and FoFs investing overseas.
As on November 30 of the respective financial year

Foreign Portfolio Investments

Strong macroeconomic fundamentals ensure India remains an attractive destination

4.45 Global economic factors, such as inflationary pressures, monetary tightening by central banks and recessionary fears in Advanced Economies, exerted pressure on FPIs to sell in Indian markets. Further, investors were also sitting on gains from Indian stocks that could be realised to offset losses elsewhere. However, on account of the strong macroeconomic fundamentals of the Indian economy and the improvement in market risk appetite from time to time, assets under custody (custodial holdings of FPIs reflecting the total market value of the holdings) witnessed an increase despite the outflows driven by global factors. The total assets under custody with FPIs increased by 3.4 per cent at the end of November 2022 compared to November 2021.

Table IV.13: Assets under Custody for FPIs increased

Period	Equity (₹ lakh crore)	Debt (₹ lakh crore)	Debt- VRR (₹ lakh crore)	Hybrid (₹ lakh crore)	Total (₹ lakh crore)
End November 2022	49.9	2.4	1.4	0.3	54.0
End November 2021	48.0	2.7	1.3	0.3	52.2

Source: SEBI

4.46 The overall net investments by Foreign Portfolio Investors during FY23 registered an outflow of ₹16,153 crore at the end of December 2022 from an outflow of ₹5,578 crore during FY22 at the end of December 2021, with both the equity segment and the debt segment witnessing net FPI outflows.

Table IV.14: Net investments by FPI registered outflows

Monthly FPI Net Investments (FY23)					
Month	₹ crore				
	Equity	Debt	Debt-VRR	Hybrid	Total
April	-17,144	-4,439	-1,175	69	-22,688
May	-39,993	-5,506	9,043	-62	-36,518
June	-50,203	-1,414	87	108	-51,422
July	4,989	-2,056	-785	-176	1,971
August	51,204	3,845	2,997	-1,525	56,521
September	-7,624	4,012	-1,455	1,112	-3,955
October	-8	-3,532	762	-301	-3,080
November	36,239	-1,637	-540	-214	33,847
December	11,119	-1,673	-272	-4	9,171
Total – FY23	**-11,421**	**-12,400**	**8,662**	**-993**	**-16,153**

Source: SEBI
Note: * The data presented above is compiled on the basis of reports submitted to SEBI/Depositories by Custodians and constitutes trades conducted by FPIs on and up to the previous trading day(s).
As of December 2022.

4.47 Large capital outflows from EMDEs such as India and China, which are importers of commodities, were matched by inflows into commodity export-oriented markets such as Indonesia, Malaysia and Brazil.

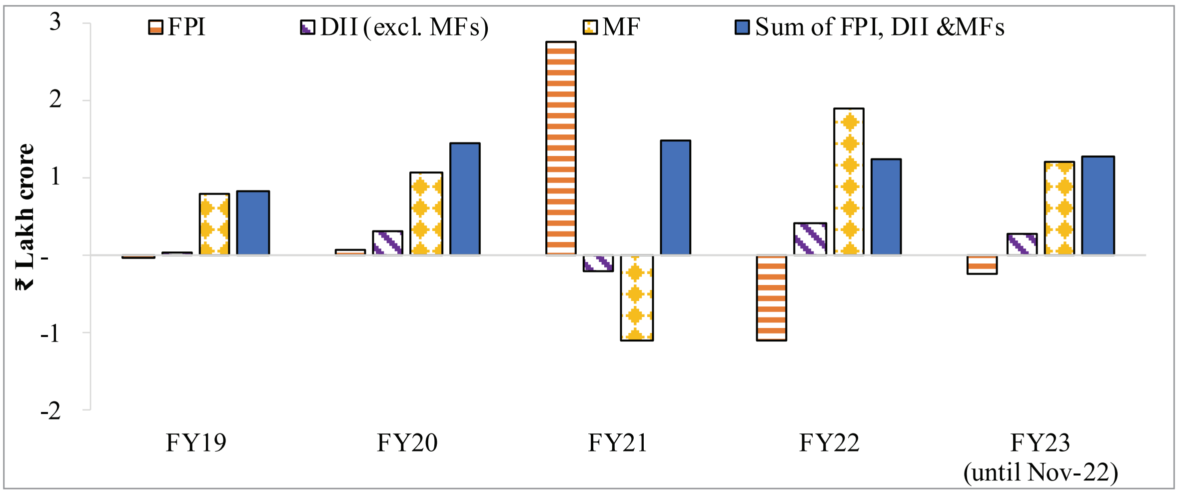
Table IV.15: Trends in Total Portfolio Flows to Select Markets (US$ billion)

	2019	2020	2021	2022 (up to November)
South Korea	46.7	42.2	83.2	43.6
China	196.1	408.3	230.3	-183.3
Brazil	-19.4	-6.4	14.6	3.1
Japan	88.9	-87.7	141.7	-39.0
India	17.7	9.5	2.2	-18.9
South Africa	-10.2	-9.7	-23.6	-20.7
Thailand	-2.0	-9.3	4.9	11.1
Taiwan	9.4	-15.3	-15.6	-41.5
Turkey	-2.7	-9.4	0.4	-3.1

Source: Bloomberg, based on latest available data as on December 12, 2022

4.48 Investments by Domestic Institutional Investors (DIIs) acted as a countervailing force against FPI outflows during recent years, rendering the Indian equity market relatively less susceptible to large scale corrections. Net DII inflows and net investment by mutual funds in equities were observed during FY23 (until November 2022).

Figure IV.24: DII investments acted as a countervailing force to FPI outflows during recent years



Source: SEBI

Other Developments

Necessity of a common approach to regulating the crypto ecosystem

4.49 The recent collapse of the crypto exchange FTX and the ensuing sell-off in the crypto markets have placed a spotlight on the vulnerabilities in the crypto ecosystem. Crypto assets are self-referential instruments and do not strictly pass the test of being a financial asset because it has no intrinsic cashflows attached to them. US regulators have disqualified Bitcoin, Ether and various other crypto assets as securities[4]. A rare joint statement[5] by the Federal Reserve, Federal Deposit Insurance Corporation (FDIC), and the Office of the Comptroller of the Currency (OCC) on 3rd January 2023 highlighted their concerns about crypto-asset risks to the banking system. The geographically pervasive nature of the crypto ecosystem necessitates a common approach to the regulation of these volatile instruments. In this context, the global response to cryptos is evolving, and Box 1 captures the current state of regulatory approaches to cryptos worldwide.

Box IV.1: Cross country analysis: Regulation of Cryptocurrency

Crypto assets are new forms of digital assets implemented using cryptographic techniques. The crypto asset market has been very volatile, with its total valuation swinging from almost US$ 3 trillion in November 2021 to less than US$ 1 trillion in Jan 2023. The volatility of the crypto asset ecosystem has brought to the forefront their fragile backing and governance problems, as well as the increasing complexity and non-transparency. With related financial stability risks rising, the issue of crypto asset regulation has recently moved up the policy agenda of many nations. International fora like OECD and G20 are discussing a globally coordinated approach to regulating crypto assets.

Crypto Market Capitalisation (US$ Billion)

Source: coinmarketcap.com

Monitoring and regulating cryptocurrencies have been tricky, and regulators across the globe find it challenging to keep track of the new and emerging issues in the fast-moving uncharted field. While crypto assets were apparently designed to disintermediate traditional financial services, this has created new unregulated intermediating entities. The promise of decentralisation haslso yet to be realised in practice. New centralised intermediaries, such as crypto asset exchanges, wallet providers, and crypto conglomerates, require users to trust centralised entities. The increasing importance of these entities could force regulators to consider them as systemic financial market infrastructures (FMIs)[6]. Still, the fact that they are yet largely unregulated is a cause for concern globally.

4 Source:https://www.washingtonpost.com/business/how-cryptos-meltdown-changed-the-regulatory debate/2023/01/07/4a469c9a-8e51-11ed-b86a-2e3a77336b8e_story.html

5 Joint Statement by Federal Reserve, FDIC, OCC https://www.federalreserve.gov/newsevents/pressreleases/files/bcreg20230103a1.pdf

6 As per Bank of International Settlements, Financial Market Infrastructure (FMI) is defined as a multilateral system among participating institutions, including the operator of the system, used for the purposes of clearing, settling, or recording payments, securities, derivatives, or other financial transactions. As per RBI, the term FMI

Interestingly, holdings of crypto assets are primarily concentrated in the hands of a few "whales". Estimates show that around 85 per cent of all circulating Bitcoins are held by 4.5 per cent of entities (Ben Mariem et al., 2020). The underlying protocols used to create crypto assets may also conflict with other public policy objectives, for instance, the massive energy intensity of "mining" crypto assets.

There are minimal global standards applicable to unbacked crypto assets, which do not currently mitigate all risks and vulnerabilities. Even as Standard-Setting Bodies (SSBs) have been making efforts to adjust and develop standards, these remain mainly focused on specific issues (financial integrity), sectors (payments, securities and banking), products (global stablecoins), or entities designated as systemic by domestic authorities. Thus, there are regulatory gaps at each stage when crypto assets are issued, transferred, exchanged, or stored by non-bank entities. Crypto's cross-sector and cross-border nature limits the effectiveness of uncoordinated national approaches. The terminology used to describe the different activities, products, and stakeholders is not globally harmonised. The term "crypto asset" itself refers to a broad spectrum of digital products that may need the attention of multiple domestic regulators based on their actual or intended use. There is a range of crypto actors, such as miners, validators, and protocol developers, that may not be easily covered by traditional financial regulation (Narain & Moretti, 2022).

A few case studies[7] of countries and jurisdictions attempting to regulate unbacked crypto assets are discussed below:

- **European Union:** The European Union's digital finance strategy comprises regulating Markets in Crypto Assets (MiCA). Even as the focus is on stablecoins, for other crypto assets and key entities delivering critical functions such as exchanges and wallet providers, MiCA proposes onshoring, notification and licensing regimes.
- **Japan:** The Japan Financial Services Agency introduced regulation of crypto asset service providers in April 2017, mandating clients' asset segregation, operational risk and cyber security management, Know-Your-Customer, internal audits, and minimum capital requirements. This was implemented by amending the Payment Service Act. Further amendments to the law were made in May 2019 and June 2020 to extend crypto regulation to other entities, such as wallet service providers, limit the leverage provided to retail customers by crypto asset exchanges, and introduce regulations for security tokens and stablecoins, respectively. The law for partial amendment to the Payment Services Act, etc. was enacted in June 2022 to establish a stable and efficient funds settlement system and to provide for the regulation of stablecoins.
- **Switzerland:** The Swiss Financial Market Supervisory Authority (FINMA) issued guidelines for initial coin offerings in February 2018. Three categories of tokens were introduced: payment tokens, utility tokens, and asset tokens (with a clarification that tradable tokens at pre-financing and presale stage could be treated as securities). Subsequently, the Financial Services Act harmonised prospectus requirements across all securities (including asset tokens) in June 2018. The distributed ledger technology (DLT) amended various civil and financial market laws in February 2021 to enable the introduction of ledger-based securities on blockchain and provide rules for the segregation of crypto assets in the event of bankruptcy of crypto custodians.

7 generally refers to systemically important payment systems, Central Securities Depositories (CSDs), Securities Settlement Systems (SSSs), Central Counter Parties (CCPs), and Trade Repositories (TRs) that facilitate the clearing, settlement, and recording of financial transactions. IMF Fintech Notes, 'Regulating the Crypto Ecosystem: The Case of Unbacked Crypto Assets'; https://www.imf.org/en/Publications/fintech-notes/Issues/2022/09/26/Regulating-the-Crypto-Ecosystem-The-Case-of-Unbacked-Crypto-Assets-523715

- **United Kingdom:** Financial Conduct Authority's "Final Guidance on Crypto assets" declared in June 2019 that while security tokens (crypto assets with rights and obligations similar to "specified investments") fell inside the regulatory purview, utility and "exchange tokens" (i.e., unbacked crypto assets) were outside of prudential and conduct regime. Following significant consumer research on the crypto asset market, the UK Treasury set out its roadmap for crypto asset regulation in April 2022, focusing on stablecoins and a proposal for a sandbox regime for blockchain-based FMIs. Regarding regulating crypto asset promotions, the UK Crypto Assets Taskforce[8] published a report in 2018 that found that misleading advertising (overstating benefits and rarely warning retail investors of volatility and risks) and lack of suitable information were vital consumer protection issues in crypto-asset markets. In January 2022, the UK Treasury proposed bringing crypto assets within its Financial Promotions Regime, subjecting crypto asset promotions to the same high standards as for other financial promotions such as stocks, shares, and insurance products. Similarly, the Monetary Authority of Singapore published guidelines to restrict the marketing of crypto assets in Singapore in January 2022, limiting crypto asset promotions to an entity's corporate website, official social media accounts, and mobile applications.
- **Albania:** Albania's law on "DLT-based Financial Markets" (also known as the "Fintoken Act") legalised crypto assets in Albania for investment purposes in May 2020. The regulation encompasses the issuance of digital tokens and virtual currencies and the licensing, monitoring, and supervision of entities engaged in distribution, trading, and custody. The Albanian Financial Supervisory Authority (AFSA) and the National Agency for Information Society (NAIS) are entrusted as competent authorities for unbacked crypto assets (and the Bank of Albania for stablecoins). It may be noted that licensing crypto asset service providers heavily relies on third-party agents, licensed as 'Digital Token Agents' when focusing on regulatory and financial compliance side by AFSA and as 'Innovative Service Providers' when dealing with technological compliance by NAIS.
- **Nigeria:** The Central Bank of Nigeria (CBN) declared in February 2018 that crypto assets are not legal tender in Nigeria. Further, in February 2021, the CBN wrote to regulated financial institutions that dealing in crypto assets and facilitating payments for crypto asset service providers was prohibited. More recently, the Securities and Exchange Commission published "New Rules on Issuance, Offering Platforms and Custody of Digital Assets," outlining "digital asset offerings" as within the purview of the SEC and imposing requirements on "digital asset offering platforms" and "digital asset offering custodians" in May 2022.

Despite some progress through the AML/CFT obligations for crypto asset providers stipulated by FATF, their implementation is still a work in progress (FATF 2021),[9] with significant delays in critical areas such as the "travel rule," leaving the virtual asset (VA) and virtual asset service providers (VASP) sector vulnerable to criminal and terrorist misuse[10]. As of March 2022, while 29 out of 98 responding jurisdictions reported having passed Travel Rule legislation, only 11 jurisdictions have started enforcement and supervisory measures.

Therefore, Global standards need to be comprehensive and consistent; regulatory responses must be based on standard taxonomies, reliable data to address contagion effects, and flexible enough to be adjusted in the future based on market developments and future international standards.

8 The 'UK Crypto Asset Taskforce' comprises HM Treasury, Bank of England, and Financial Conduct Authority (FCA)
9 FATF, "Second 12-month Review Virtual Assets and VASPs," FATF, (Paris, France 2021).
10 FATF, "Targeted Update on Implementation of the FATF Standards on Virtual Assets/VASPs," FATF, (Paris, France 2022).

IFSC – GIFT City

4.50 Over the last few years, various initiatives taken by the government have opened up new avenues and opportunities for capital market players. Setting up and operationalising India's maiden International Financial Services Centre (IFSC) in GIFT City is the most important one. The aim is to facilitate India to emerge as a significant economic power by accelerating the development of a strong base of International Financial Services in the country. Box 2 below discusses the key role that IFSC can play in facilitating India's emergence as a preferred jurisdiction for international financial services and encouraging easier access and greater participation from foreign investors to bring in capital to further promote India's growth.

Box IV.2: GIFT IFSC - Emerging as a Preferred Jurisdiction for International Financial Services

Globally, International Financial Centres (IFCs) have assumed prominence in the financial services ecosystem primarily because they have contributed enormously to the growth of international financial transactions. These centres have played a pivotal role in accelerating the pace of financial globalisation. In common parlance, an IFC is a jurisdiction with a high concentration of financial institutions such as Banks, Stock Markets & related entities, Insurance firms, Fund Managers, FinTech firms, etc., which offer specialised financial services to non-residents and residents, in an environment that promotes financial innovation and facilitates cross border transactions.

Given this backdrop, setting up and operationalising India's maiden IFSC in GIFT City has been a path-breaking financial reform underpinning India's increasingly liberal outlook towards capital account convertibility. GIFT-IFSC is housed in India's first fully operational Smart City with world-class commercial, social and physical infrastructure. To bolster the development of IFSC, the Government took a major policy decision to establish the first of its kind, unified and agile financial sector regulator for IFSCs viz International Financial Services Centres Authority (IFSCA) through an Act of Parliament in 2019. From 1st October 2020, IFSCA assumed the power of four domestic sector regulators, namely RBI, SEBI, IRDAI & Pension Fund Regulatory and Development Authority of India (PFRDAI), in so far as the development and regulation of IFSCs in India were concerned.

Over the last two years, GIFT-IFSC has witnessed tremendous growth and traction across the entire spectrum of financial services, including banking, capital markets, insurance, fund management, aircraft leasing, etc. With an internationally aligned regulatory regime, competitive tax structure and beneficial cost of operations, GIFT IFSC is now emerging as a preferred jurisdiction for international financial services. Recognising the growing significance of IFSC, the Global Financial Centres Index, London Report (March 2022) put IFSC in GIFT City at the top, among 15 centres globally, which is likely to become more significant over the next 2 to 3 years.

GIFT IFSC has more than 390 + entities registered across a full spectrum of financial services, including Banks, Capital Markets, Insurance, FinTech, Aircraft Leasing, Bullion Exchange, etc. The financial services market is rapidly growing with the healthy and increasing participation of international and domestic financial institutions.

Recent developments/milestones/innovations/collaborations with other countries

In pursuit of its vision to become an international financial centre of global stature, IFSCA has continuously engaged in deliberations with many globally prominent financial authorities and standard-setting bodies. To date, the Union Cabinet has approved the signing of 2 Multilateral MoUs

(MMoU) and 7 Bilateral MoUs (BMoUs) by IFSCA to deepen cooperation with foreign regulators and aid the mutual exchange of information for the development of financial products and services in GIFT-IFSC. The table below provides the latest status of MoUs approved by the Union Cabinet –

Multilateral Memorandum of Understanding (MMoU)

- International Organization of Securities Commissions (IOSCO)
- International Association of Insurance Supervisors (IAIS)

Bilateral Memorandum of Understanding (BMoU)

- Dubai Financial Services Authority (DFSA)
- Qatar Financial Services Authority (QFCA)
- Abu Dhabi Global Market (ADGM) Financial Services Regulatory Authority (FSRA)
- Autorite Des Marches Financiers of France (AMF)
- Commission De Surveillance Du Secteur Financier (CSSF) Luxembourg
- Finansinspektionen (FI) Sweden.
- Monetary Authority of Singapore (MAS)

Besides the above, IFSCA has also entered into agreements for technical cooperation and capacity building for the development of a world-class regulatory environment for financial products and financial services in IFSC. Some of the projects/agreements showcasing IFSCA's growing engagement with the global community are highlighted below:

FinTech bridge with the Monetary Authority of Singapore

Both India and Singapore have been pioneers in the FinTech sector. To fuel the next phase of FinTech growth, the Government of India is developing GIFT IFSC as the nerve centre of all FinTech activities. Monetary Authority of Singapore (MAS) and the International Financial Services Centres Authority (IFSCA) have signed a FinTech Co-operation Agreement (CA) to facilitate regulatory collaboration and partnership in FinTech to promote a Joint Regulatory Sandbox Collaboration that will leverage existing regulatory sandboxes in their respective jurisdictions to support experimentation of technology innovations. The Agreement will enable FinTech firms from one jurisdiction to gain market access in the other jurisdiction through a regulatory referral system.

NSE IFSC -SGX Connect

NSE IFSC-SGX Connect, inaugurated by the PM on July 29, 2022, is an essential milestone in the cross-border collaboration between India and Singapore in the area of capital markets. The Connect, likely to be fully operational by June 2023, will play a pivotal role in onshoring derivative trading in NIFTY Products from SGX, Singapore, to NSE-IFSC, GIFT City. The Connect is expected to consolidate volumes and deepen liquidity in derivative instruments at GIFT IFSC, bring in more international participants and positively impact other financial ecosystems in GIFT IFSC. It has been designed to harness the advantages of respective exchanges, SGX for ease of access to investors and NSE IFSC for trading and clearing derivative contracts, in a symbiotic manner to confer gains on all.

Visibility and Mindshare Among FinTechs globally

To promote the FinTech ecosystem at GIFT IFSC and create visibility amongst the Global FinTech community, IFSCA, with support from GoI, has instituted a flagship financial technology and global thought leadership event, "InFinity Forum" as an annual feature beginning in 2021. It unites the world's leading minds in policy, business, and technology to discuss and develop actionable insight into how the FinTech industry can leverage technology and innovation for inclusive growth. The first edition of the Forum held on the 3rd and 4th of December 2021, was inaugurated by the Prime Minister, with Indonesia, South Africa and the United Kingdom participating as partner countries. The event saw a total of 94,300 registrations, leaving behind a massive international footprint.

Cooperation agreement between India INX and Luxembourg Stock Exchange

India INX, an IFSC-based exchange, signed a cooperation agreement with Luxembourg Stock Exchange on June 01, 2022. The two exchanges will endeavour to enhance the visibility of listed Indian securities towards international investors by facilitating the admission of such securities listed on LuxSE. The Agreement builds on the Memorandum of Understanding signed between the two institutions in November 2020, which focuses on advancing green finance in India. The green corridor opportunity established with this dual listing cooperation agreement between India INX and LuxSE will go a long way in attracting more issuers from India and the region and provides access to green capital from international investors.

IFSCA Vision for FY24 and beyond

FY23 is a watershed year for IFSC. It marks a decade of India's maiden IFSC. The vision plan beyond 2022 revolves around elevating GIFT-IFSC to a virtuous self-sustaining trajectory towards becoming the nerve centre of new-age global financial services and activities. This aspirational pursuit of integrating our economy with the global financial ecosystem has been rich in learnings which are being systematically capitalised to design cutting-edge statutory and regulatory frameworks to lift the centre into a higher orbit of financial innovation and dynamism.

Within years of its establishment, GIFT-IFSC has become a prominent gateway for the flow of global capital into India. Significant gains have been made in kickstarting experimental and innovative financial services such as bullion trading, aircraft and ship leasing, global-in house centres, Fintech, sustainable financing and cross-border bill discounting and factoring. Sophisticated financial products such as Bullion Depository Receipts, unsponsored Depository Receipts, and financial and operational leases have been introduced, with many more in the pipeline. State-of-the-art infrastructure has been created for wholesome quality of life with essential projects including metro connectivity, integrated residential projects, Central Park, Riverfront and recreational centres on the anvil.

The foundation has been laid for creating a thriving knowledge economy by allowing foreign universities to set up operations in IFSC free of domestic regulations. Simultaneously, external assistance is mobilised to establish India's premier Fintech Institute and Innovation Centre in GIFT City. The Centre, with an estimated cost of ₹800 crore, will underpin India's growing stature and leadership in Fintech and attract the best of talent globally.

Significantly, the Government's vision for GIFT-IFSC transcends much beyond traditional finance and ventures into thought leadership. It is envisioned as the embodiment of Aatmanirbhar Bharat, a hub of ingenuity and innovation. As we advance, the vision entails a quantum leap in imagination and endeavours to transform GIFT City into a bustling financial hub, a vibrant city bearing a distinctively international character and pioneering solutions to complex problem statements involving finance.

Developments in the Insurance Market

Insurance markets globally have demonstrated remarkable flexibility and resilience in overcoming the impact of the pandemic

4.51 Insurance, an integral part of the financial sector, plays a significant role in economic development. Apart from protecting against mortality, property, and casualty risks and providing a safety net, the insurance sector encourages savings and provides long-term funds for infrastructure development. The development of the insurance sector is necessary to support its continued economic transformation.

4.52 Internationally, the potential and performance of the insurance sector are generally assessed based on two parameters, viz., 'insurance penetration', which refers to the ratio of total insurance premiums to Gross Domestic Product (GDP) in a year and 'insurance density', which refers to the ratio of insurance premium to population, i.e.; insurance premium per capita and is measured in US Dollar, as they reflect the level of development of the insurance sector in a country. In 2021, total global insurance premiums grew by 3.4 per cent in real terms, with the non-life insurance sector registering 2.6 per cent growth, driven by rate hardening in commercial lines in developed markets. However, in China, the largest emerging market, non-life premium volumes contracted by 0.7 per cent as the de-tariffication[11] of motor insurance sparked fierce competition and rate reductions.

Figure IV.25a: Per cent Change in volume of Life-Insurance premiums in 2021

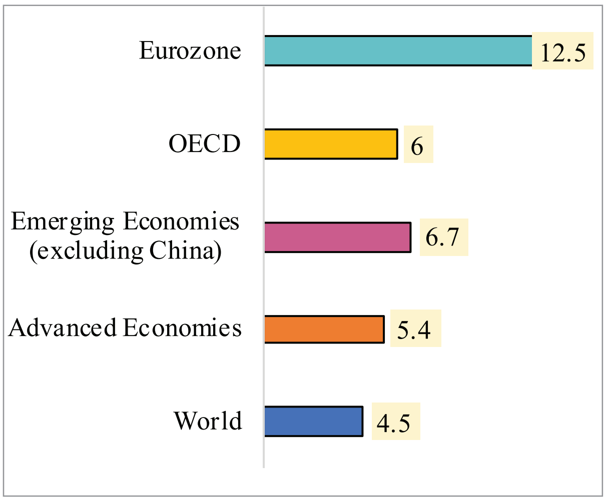
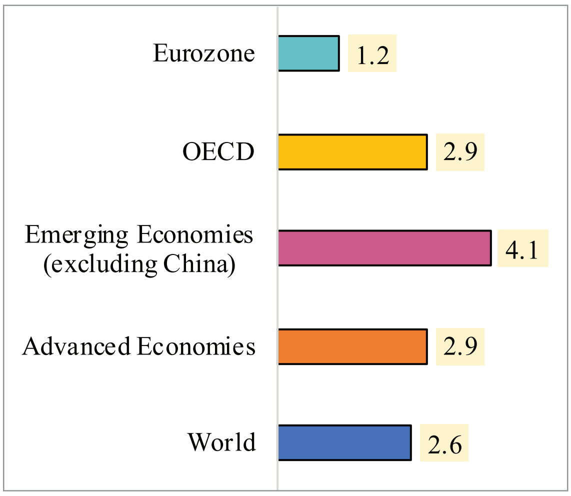


Figure IV.25b: Per cent Change in volume of Non-Life Insurance premiums in 2021



Source: Swiss Re, Sigma various issues

4.53 In the life insurance segment, global premium growth bounced back strongly, registering an increase of 4.5 per cent. The US remained the largest insurance market in the world, with total premiums (non-life and life) of US$ 2.8 trillion in 2021, followed by China and Japan. With the conflict in Ukraine weighing on economic growth in Europe in particular, it is expected that insurance industry growth in emerging markets will outpace that in the developed markets this year, with emerging Asia in the lead.

11 De-tariffication means removing the tariff structure. This allows insurance companies to charge premiums that matches the risk profiles of its consumers. Different insurance companies can charge at a different price to its consumers for the same risk behaviour based on their business risks models and strategies.

India poised to emerge as one of the fastest-growing insurance markets in the coming decade

4.54 Insurance penetration in India increased steadily from 2.7 per cent around the turn of the millennium to 4.2 per cent in 2020 and remained the same in 2021. Life insurance penetration in India was 3.2 per cent in 2021, almost twice more than the emerging markets and slightly above the global average. However, most life insurance products sold in India are savings-linked, with just a small protection component. Hence, households remain exposed to a significant financing gap in the event of the premature death of the primary breadwinner. Be that as it may, the insurance density in India has increased from US$ 11.1 in 2001 to US$ 91 in 2021 (density for Life insurance was US$ 69 and Non-Life insurance was US$ 22 in 2021) in keeping with the relatively faster expansion of the insurance market in the country.

4.55 During FY22, the gross direct premium of non-Life insurers (within and outside India) registered YoY growth of 10.8 per cent, primarily driven by health and motor segments. The net incurred claims of non-Life insurers stood at ₹1.4 lakh crore in FY22, primarily driven by rising per capita income, product innovations and customisation, development of strong distribution channels, and rising financial literacy. The life insurance premium registered YoY growth of 10.2 per cent in FY22, with new businesses contributing 45.5 per cent of the total premiums received by the life insurers. The life insurance industry paid benefits of ₹5.02 lakh crore in FY22, out of which 8.3 per cent benefits were on death claims.

Figure IV.26a: Steady increase in Insurance Penetration

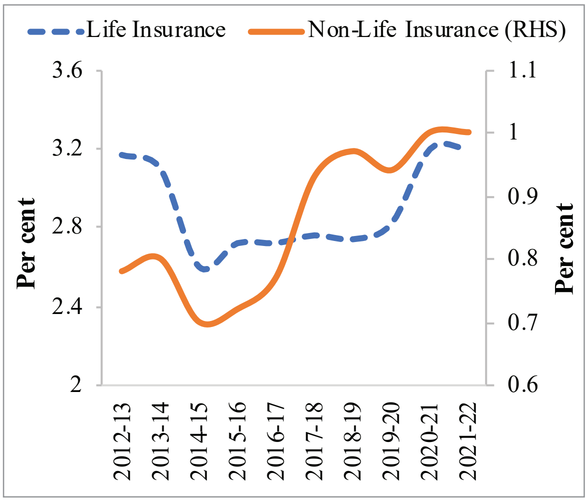
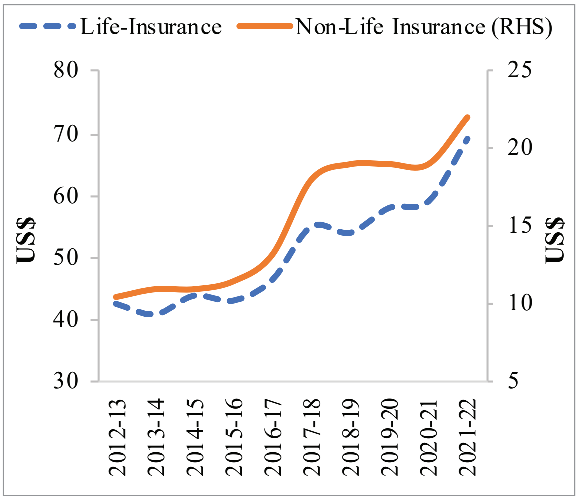


Figure IV.26b: Significant rise in Insurance Density



Source: Swiss Re, Sigma various issues

4.56 Public listings improve public disclosure, corporate governance, and valuation[12]. In keeping with this understanding, India's largest life insurer, the Life Insurance Corporation of India, went public in May 2022, raising US$ 2.7 billion in the country's largest IPO to date. The private insurance providers have also been seizing such opportunities. The largest private-sector health insurer in the country, was listed in December 2021, making it the fifth private-sector insurer to IPO. The insurance sector is highly competitive and is already witnessing mergers and acquisitions (M&A) activity as insurers have tremendous opportunities and volume to co-

12 https://m.rbi.org.in/Scripts/bs_viewcontent.aspx?Id=3619

exist in the space. Additional FDI inflows, IPOs, simplified rules & regulations and improved corporate valuations will likely further accelerate M&A activities in the sector. A rapidly maturing insurance market has provided a lucrative opportunity to the government to privatize its stake in insurance business. Accordingly, the General Insurance Business (Nationalisation) Amendment Act, 2021 allows the central government to pare its stake to less than 51 per cent of the equity capital in a specified insurer.

4.57 To facilitate the penetration of insurance to the lower income segments of the population, the Insurance Regulatory and Development Authority of India (IRDAI) issued IRDAI (Micro Insurance) Regulations, 2015, which provide a platform for distributing insurance products that are affordable for the rural and urban poor and promote financial inclusion. Further, the IRDAI (Obligations of Insurers to Rural and Social Sectors) Regulations, 2015 stipulate obligations for insurers in rural and social sectors and has contributed to developing and promoting micro-insurance products in India. In FY21, 10.7 lakh new micro-insurance policies were issued to individuals with a new business premium of ₹355.3 crore (in the life-insurance segment), and 53,046 new microinsurance policies were issued in the general insurance segment (excluding standalone health insurers).

4.58 Government schemes and financial inclusion initiatives have driven insurance adoption and penetration across all segments. The government's flagship initiative for crop insurance, Pradhan Mantri Fasal Bima Yojana (PMFBY), has led to significant growth in the premium income for crop insurance. Ayushman Bharat (Pradhan Mantri Jan Arogya Yojana) (AB PM-JAY) aims at providing a health cover of ₹5 lakh per family per year for secondary and tertiary care hospitalisation. The insurance regulator IRDAI has also undertaken various initiatives towards boosting insurance penetration, such as permitting insurers to conduct video-based Know Your Customer (KYC), launching standardised insurance products, and allowing insurers to offer rewards for low-risk behaviour. Important government initiatives, strong demographic factors, a conducive regulatory environment, increased M&As, product innovations, and vibrant distribution channels are supporting the insurance market's growth.

A list of various Government Insurance schemes and progress made so far is given in the table below:

Table IV.16: Government Insurance schemes and progress

Scheme name	Brief description	Achievement
Ayushman Bharat Yojana	The scheme provides health coverage of ₹5 lakh per beneficiary family per annum to poor and vulnerable families identified based on select deprivation and occupational criteria	Since inception, 19.7 crore beneficiaries have been provided Ayushman cards, and over 4.3 crore hospital admissions worth over ₹0.49 lakh crore have been authorised through a network of 28,667 empanelled health-care providers, including 13,115 private hospitals as of 20th January 2023.

Pradhan Mantri Suraksha Bima Yojana	Under the scheme, risk coverage of ₹2 lakh for accidental death and complete disability and ₹1 lakh for partial disability is given to beneficiaries	Since its inception, 31.3 crore beneficiaries have been enrolled under the scheme, and 1.07 lakh claims have been disbursed as of 30th November 2022.
Pradhan Mantri Jeevan Jyoti Bima Yojana	Under the scheme, risk coverage of ₹2 Lakh is credited to the savings bank account of the holder in case of the death of the insured	Since its inception, 14.4 crore beneficiaries have been enrolled under the scheme, and 6.3 lakh claims have been disbursed as of 30th November 2022.
Pradhan Mantri Vaya Vandana Yojana	Under the scheme, old age income security is provided to senior citizens through the provision of an assured pension/return linked to the subscription amount based on a government guarantee to LIC	A total number of 8.6 lakh subscribers with a subscription amount of ₹84,659.4 crore deposited by these subscribers have benefited under the scheme as of 30th September 2022
Pradhan Mantri Fasal Bima Yojana	Under the scheme, risk insurance is provided to farmers against crop damage due to non-preventable natural risks from pre-sowing to post-harvest for the crops/areas notified by the concerned State Government	During 2016 and 2022, 2763.9 lakh applications were received under the scheme, and claims of about ₹ 1.28 lakh crore have been paid to the farmers.

Source: DFS, PIB, PMFBY Dashboard

4.59 Global life premiums are expected to contract slightly in 2022 after last year's robust recovery from pandemic-induced lows driven by inflationary pressures, economic uncertainty, and monetary tightening. Saving premiums are expected to decline due to volatility in the financial markets and as disposable incomes fall. Heightened risk awareness due to Covid-19 may continue to support demand for life protection (and health) insurance products.

4.60 As per the Swiss Re Institute World Insurance: 'Inflation risks front and centre report'[13], India is one of the fastest-growing insurance markets in the world. In total premium volumes, it was the 10th largest globally in 2021, with an estimated market share of 1.9 per cent and the second largest of all emerging markets. India is expected to emerge as one of the top six insurance markets in the world by 2032, ahead of Germany, Canada, Italy, and South Korea. Further, growth in the non-life insurance sector is likely to be driven by demand for health coverage, with people more aware of health security post-Covid-19 and strong support from

13 https://www.swissre.com/dam/jcr:4500fe30-7d7b-4bc7-b217-085d7d87a35b/swiss-re-institute-sigma-4-2022.pdf
https://www.oecd.org/daf/fin/private-pensions/Pension-Markets-in-Focus-Preliminary-2021-Data-on-Pension-Funds.pdf
https://www.oecd-ilibrary.org/docserver/ca401ebd-enpdf?expires=1672272470&id=id&accname=guest&checksum=A210559FD020AD478A4ECA831FC94891

the government-sponsored mass health program (Ayushman Bharat). Compulsory motor third-party insurance will multiply as India's middle class expands and buys more cars.

4.61 The digitisation of India's insurance market goes beyond telematics and customer risk assessment. Many digital platforms have emerged over recent years, offering various services, including insurance purchases. These measures, accompanied by an increase in FDI limit for Insurance Companies, are likely to facilitate an increased flow of long-term capital, global technology, processes, and international best practices, which will support the growth of India's insurance sector.

Pension Sector

India's Pension Sector demonstrated remarkable performance during the Covid-19

4.62 The framework of the pension system has evolved globally. In advanced countries, the pension sector is substantial, partly stemming from a large share of formal salaried employment. While the state provides some basic pension, it is only sometimes funded and thus is a pay-as-you-go scheme relying on current government revenue for pension payments. In 2021, pension assets in OECD countries[14] stood at US$ 38.5 trillion, 66.9 per cent of the GDP. In some of the OECD countries, pension assets were over 100 per cent of the GDP. The United States recorded the largest holdings in pension funds, followed by the United Kingdom and Australia. During Covid-19, countries undertook unprecedented and swift health and pension-related reforms[15] to address health challenges, limit the impact of the crisis on labour markets, support incomes and adjust macroeconomic policies.

4.63 In addition, countries took other measures to minimise the impact of Covid-19 on the marginalised, poor and vulnerable sections such as subsidising wages and pension entitlements through Job Retention Scheme (JRS), broadening the access to unemployment benefits, or grant of unemployment insurance to new groups of workers. The United States expanded the coverage of unemployment benefits to the self-employed and Finland broadened the coverage of the already existing scheme for the self-employed. Chile permanently expanded the coverage of unemployment insurance to workers. New Zealand introduced a temporary benefit paid for up to three months to employees who lost their jobs and to the self-employed who stopped their activity.

4.64 The Government of India announced various measures to provide pensions to families who have lost their earning members due to Covid. It also took initiatives towards enhancing and liberalising insurance compensation. The benefit of the Employees State Insurance Corporation (ESIC) pension scheme was extended to even those who have lost earning members due to Covid-19. Dependent family members of such persons were entitled to a pension equivalent to 90 per cent of the average daily wage drawn by the worker as per the existing norms. The insurance benefits under the Employees Deposit Linked Insurance (EDLI) scheme were also enhanced and liberalised.

4.65 Ex-gratia of ₹1,000 was given to around three crore poor senior citizens, widows, and disabled sections of the population (aged above 60 years) for three months during April-June 2020. Rule 64 of CCS (Pension) Rules, 1972, was relaxed to ensure immediate provisional sanction of pensionary benefits amid the unprecedented pandemic. To enhance the "Ease of

Living" of Central Government Civil Pensioners, an Electronic Pension Payment order (e-PPO) was integrated with Digi Locker, creating a permanent PPO record in the Digi Locker. The timeline for submitting Life Certificate was relaxed, along with providing a doorstep facility to pensioners for submission of the life certificate digitally.

4.66 The Government of India is implementing various pension schemes such as the Indira Gandhi National Old Age Pension Scheme (IGNOAPS), Indira Gandhi National Widow Pension Scheme (IGNWPS), Indira Gandhi National Disability Pension Scheme (IGNDPS) under the National Social Assistance Programme (NSAP) with a total beneficiary coverage of 4.7 crore. The National Pension System (NPS) was introduced in January 2004, the primary pension system for government employees with a pay-as-you-go defined benefit plan. NPS for government employees is a defined contribution plan with co-contribution from the government. The value of the pension corpus is marked-to-market, and accordingly, the rate of return is market determined. NPS was extended to all the citizens of the country in the age group of 18-70 years, including the unorganised sector workers (on a voluntary basis) in 2009. In order to ensure that an avenue for savings is available to all sections of society, PFRDA launched "NPS-Corporate Sector Model" in 2011 to provide NPS to the employees of corporate entities, including PSUs.

4.67 The Government introduced APY in June 2015 as a part of the overarching objective of providing universal social security. The scheme applies to all individuals aged 18-40 years, with an emphasis on underprivileged, unorganised, and low-income individuals. Since the introduction of NPS and, more recently, APY, India's pension sector has expanded. The total number of subscribers under the NPS and APY registered a YoY growth of 25.1 per cent in November 2022, with AuM witnessing a growth of 22.7 per cent during the same period. The overall contribution recorded an increase of 27.6 per cent in November 2022, with maximum growth registered by the All-Citizen model followed by the Corporate Sector.

Table IV.17: Performance of India's Pension Sector

	No. of Subscribers		YoY	Contribution (₹ Crore)		YoY	AUM (₹ Crore)		YoY
	Nov-21	Nov-22	per cent	Nov-21	Nov-22	per cent	Nov-21	Nov-22	per cent
CG+SG	77	83	8	3,93,690	4,89,855	24	5,55,932	6,67,255	20
Corporate+All Citizen	32	42	31	8,41,80	1,19,817	42	1,07,554	1,46,705	36
APY	325	429	32	16,877	22,437	33	19,352	24,829	28

Source: PFRDA
Note: CG stands for Central Government and SG for State Government

4.68 A survey by PFRDA[16] on the socio-economic characteristics of NPS subscribers (all citizen models) for the five-year period FY17 to FY21 showed that 24 per cent were female subscribers, with the balance 76 per cent being male subscribers. This contrasts with a better gender balance in the case of APY. Female subscribers under APY have increased from nearly

16 https://www.pfrda.org.in/myauth/admin/showimg.cshtml?ID=2170

38 per cent in the initial years of the scheme to around 44 per cent by March 2021[17]. Among various states, enrolment from Maharashtra was the highest, accounting for 17 per cent. The age profile of the subscribers in the APY scheme suggests increasing enrolments at younger age. As of August 2022, 44.8 per cent subscribers were between 18 and 25 years, as compared to 29.3 per cent as on March 2016[18]. Further, more people are now opting for a pension amount of ₹1000 per month. As of March 2022, around 76 per cent of subscribers have opted for ₹1000 per month pension amount, as compared to 38 per cent of subscribers as on March 2016. However, the number of subscribers opting for ₹5000 per month pension has declined from 47 per cent as of March 2016 to 15 per cent as of March 2022. The coverage of the population in pension under NPS and APY as a share of the total population has raised from 1.2 per cent to 3.7 per cent during the six years FY17 to FY22. Assets as a proportion of GDP have increased from 1.2 per cent to 3.2 per cent, reflecting that the pension sector is progressing much faster than the nominal growth of the economy and population.

4.69 PFRDA has undertaken various measures to ease the accessibility of NPS and APY to subscribers, such as reducing timelines for processing settlements to T+2 days. Central Recordkeeping Agencies have integrated their systems with DigiLocker to provide Subscriber Centric Services such as electronic-Pension Retirement Account Number (e-PRAN), electronic Account statements, and Aadhar & DigiLocker-based account openings. Government sector subscribers can change their investment choices online by submitting the request directly in the CRA login. The contributions through the UPI handle can be accepted for the benefit of NPS subscribers, permitting them to remit funds into their PRAN via the Virtual account number provided by CRA.

4.70 There is tremendous scope for growth in India's pension sector as per capita income is expected to rise further as the economy transitions to a high-middle-income country. India's demographic structure, with a more significant proportion of younger people, favours a phase of accumulation. However, financial literacy is a significant challenge not only in emerging market economies but also in advanced economies. PFRDA, under the aegis of the Financial Stability and Development Council (FSDC), has taken several steps to enhance financial education so that consumers can make informed decisions and reap the benefit of the formal financial sector while being cognizant of risks and various trade-offs involved. These include pension education through print and electronic media, outreach programs through trade bodies, intermediaries such as banks, and town hall events.

4.71 India's pension sector provides a flexible mode of old age income-security for salaried employees and the common person. In the recent five years, FY18 to FY22, the number of subscribers has multiplied over three-fold, led by APY, and AUM by over four-fold, led by NPS. The future expansion in NPS is expected to emanate from the private sector, both the salaried and self-employed. Steps towards enhanced pension literacy, both of the subscribers and the intermediaries, coupled with a nudge from the regulator and the government, along with encouragement to young adults to join a pension scheme, would accelerate the movement towards a pensioned society.

17 https://www.pfrda.org.in/myauth/admin/showimg.cshtml?ID=2307
18 https://www.pfrda.org.in/myauth/admin/showimg.cshtml?ID=2296

Outlook

4.72 The resilience of the domestic financial system is reflected in the healthy balance sheet of banks, stronger capital levels of NBFCs and robust growth in the AuM of domestic mutual funds. Buoyant demand for bank credit and early signs of a revival in the investment cycle are benefiting from improving asset quality, a return to profitability and resilient capital and liquidity buffers. Further, IBC mechanism continues to support the 'Ease of Doing Business' in India by facilitating easy exit with time bound resolutions for firms. These strengths are helping the financial system absorb external spillovers, tightening global financial conditions and high volatility in financial markets.

4.73 India is one of the fastest-growing insurance markets in the world and is expected to emerge as one of the top six insurance markets by 2032. Digitisation of India's insurance market, accompanied by an increase in FDI limit for insurance companies, is likely to facilitate an increased flow of long-term capital, a global technology, processes, and international best practices, which will support the growth of India's insurance sector. Also, as we transition to a high middle-income economy, India's pension sector has tremendous scope for growth. Government initiatives towards enhancing pension literacy of subscribers and intermediaries, and a nudge from the regulator and the government to encourage young adults to join the pension scheme would play a significant role in enhancing pension availability to a more extensive section of society.

05

CHAPTER

PRICES AND INFLATION: SUCCESSFUL TIGHT-ROPE WALKING

Consumer price inflation in India went through three phases in 2022. A rising phase up to April 2022 when it crested at 7.8 per cent, then a holding pattern at around 7.0 per cent up to August 2022 and then a decline to around 5.7 per cent by December 2022. The rising phase was largely due to the fallout of the Russia-Ukraine war and a shortfall in crop harvests due to excessive heat in some parts of the country. Prompt and adequate measures by the Government of India and the Reserve Bank of India (RBI) have reined in the rise in inflation and brought it within the Central Bank's tolerance limit. In contrast, major Western countries, which pumped stimulus during the pandemic periods, continue to grapple with high levels of inflation.

The divergence between a relatively high Wholesale Price Index (WPI) inflation and lower Consumer Price Index (CPI) inflation widened in May 2022 primarily owing to a difference in relative weights of the two indices and the lagged effect of imported input costs on retail prices. However, the gap between the two measures of inflation has reduced since then, demonstrating a tendency towards convergence. An important measure of demand-pull inflation - core inflation - remains sticky. There have been significant variations in retail inflation rates among the States and Union Territories (UTs) of India.

According to Housing Price Index (HPI) published by National Housing Bank (NHB), the overall increase in composite HPI assessment and HPI market price in Quarter Ending (QE) September 2022 over QE September 2021 indicates a revival in the housing finance sector.

RBI's Monetary Policy Committee increased the policy repo rate under the liquidity adjustment facility (LAF) by 225 basis points from 4.0 per cent to 6.25 per cent between May and December 2022. Central Government has undertaken fiscal measures like reduction in excise duty on petrol and diesel, prohibition of the export of wheat products, imposition of export duty on rice, reduction in import duties and cess on pulses, rationalisation of tariffs and imposition of stock limits on edible oils and oil seeds, maintenance of buffer stock for onion and pulses and rationalisation of import duties on raw materials used in the manufactured products.

The RBI forecasts elevated domestic prices for cereals and spices in the near term, owing to supply shortages. Milk prices are also expected to spike, reflecting high feed costs. In general, climate across the world has become increasingly erratic, further fortifying upside risks to food prices. A lot depends on industrial input prices: they may ease, but *on the flip side, their delayed pass-through to consumer prices may contribute to the stickiness of core inflation.*

In general, the year 2022 was marked by a return of high inflation in the advanced world after three to four decades, depending on the country. In India, the government and the central bank took decisive measures to cap the rise in prices. India's retail inflation rate peaked at 7.8 per cent in April 2022. The overshoot of inflation above the upper end of the target range in India was one of the lowest in the world. We are confident that authorities would remain vigilant and be as proactive as they were in 2022 should inflation pressures re-emerge in India in 2023.

Introduction

5.1 Rising prices are always a cause of concern for policymakers as they hurt the common man the most. The perils of inflation are felt more in developing economies, where necessities have a higher share in the consumption basket than in developed countries. In recent years, India's inflation rate has been well-behaved, lying tamely below the RBI target rate of 4 per cent from 2017 to 2019.

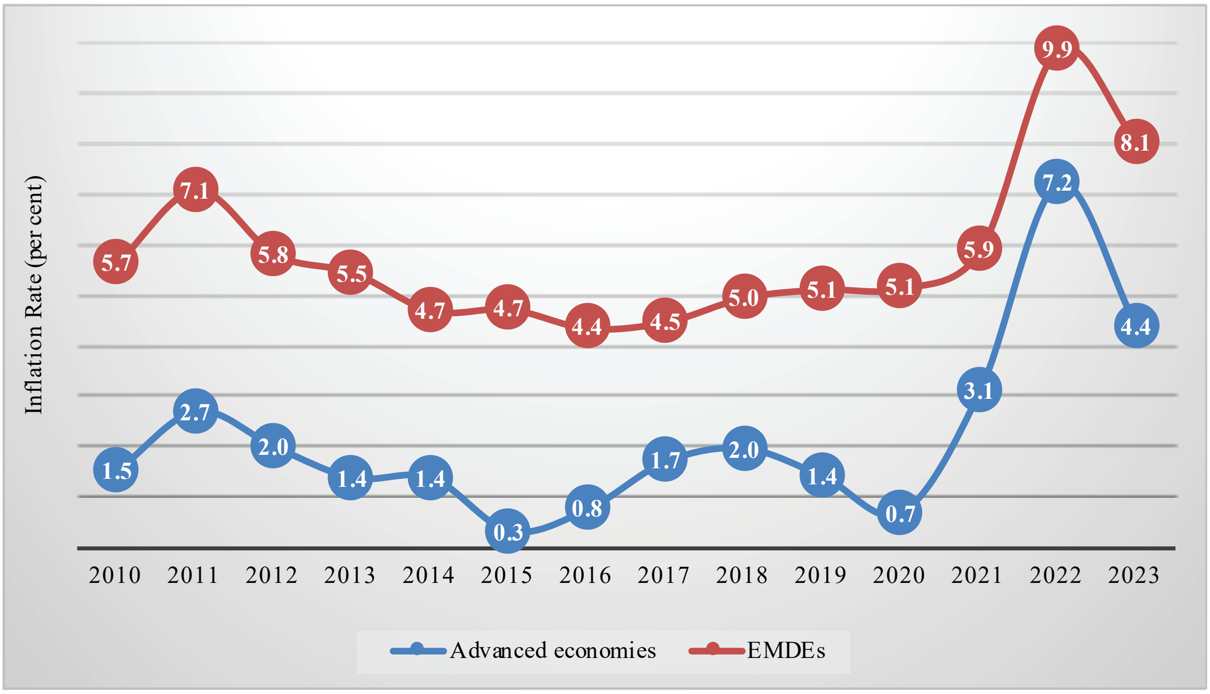
5.2 In 2020, supply-side disruptions pushed inflation beyond the RBI's upper tolerance limit of 6 per cent. The pandemic delivered a larger shock on supply than it did on demand, through supply-chain disruptions in the case of essential goods, food, medicine and industrial goods. In turn, this aggravated cost-push inflation in the country.

5.3 As the pandemic receded, the conflict in Russia-Ukraine broke out, bringing in its wake worldwide inflation, fuelled mostly by surging prices of crude oil and other commodities. Prices soared to a decadal high and ate into household budgets, in turn prodding Central Banks to tighten monetary policy. A convalescing world economy was left to confront unprecedented rates of inflation. The spectre of stagflation loomed large on the horizon. In response, developed economies were left with no option but to raise interest rates. As the US Federal Reserve raised rates, the US dollar appreciated, making dollar-denominated fuel imports even dearer.

5.4 In advanced economies, the rate of inflation is projected by the International Monetary Fund (IMF) to increase from 3.1 per cent in 2021 to 7.2 per cent in 2022, the highest since 1982. The Euro area saw the rate reach 10.0 per cent in September 2022 (WEO, October 2022[1]). The US inflation reached its 40-year high at 9.1 per cent in June 2022 before moderating to 6.5 per cent in December 2022, while the UK saw an annual price rise of 9.2 per cent in December 2022. Germany witnessed inflation of 8.6 per cent in December 2022. Among emerging markets, Brazil saw a moderation in price trends, while Turkey's inflation was above 80 per cent from August to November 2022 before declining slightly to 64.3 per cent in December 2022. The war had compounded the effects of a strong recovery in demand for goods and services after the pandemic. The inflation rate in Emerging Markets and Developing Economies (EMDEs) is anticipated to have increased from 5.9 per cent in 2021 to 9.9 per cent in 2022 (WEO, October 2022).

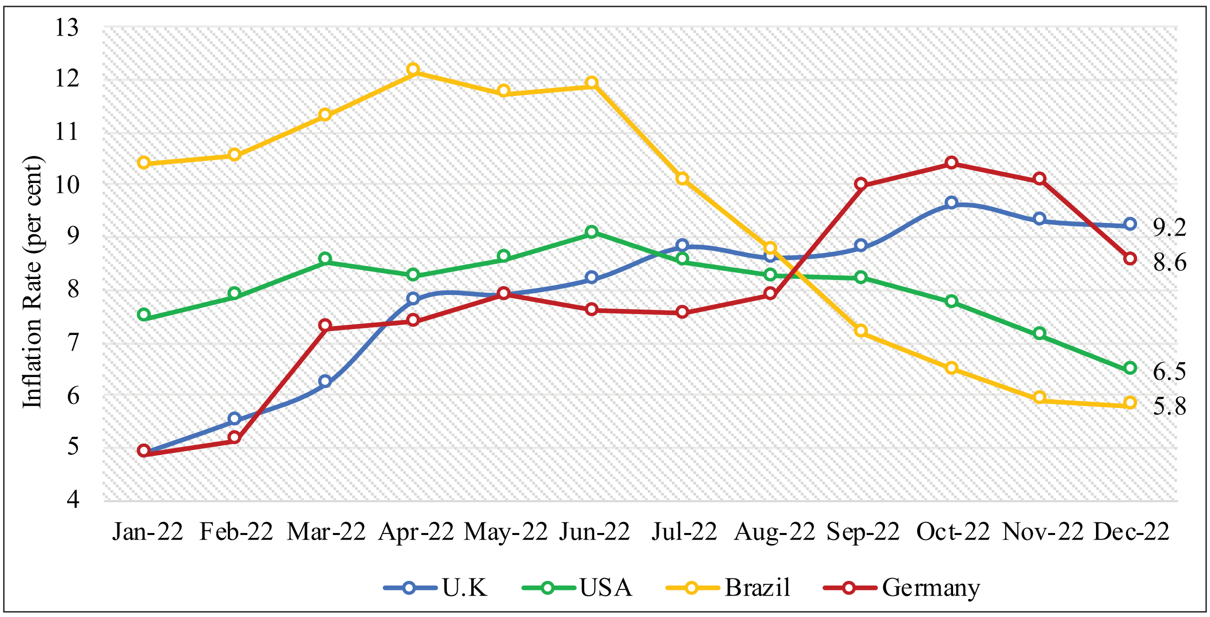
[1] World Economic Outlook (WEO), IMF, October 2022

Figure V.1: Record Consumer Price Inflation in 2022 Calendar Year



Source: World Economic Outlook, October 2022, IMF
Note: *The figure are annual averages; figures for 2022 and 2023 are projections.
Advanced Economies include 40 economies and EMDEs include 156 economies as per IMF classification

Figure V.2: High Consumer Price Inflation in Advanced Economies



Source: OECD

5.5 The groundwork for the commendable inflation management in India was laid earlier as fiscal and monetary measures adopted to stave off the pandemic-induced economic woes were prudent and well-calibrated. India chose not to overstimulate, and hence price pressures due to the Russia-Ukraine conflict could be contained. Excessive heat in summer and uneven rainfall thereafter in some parts of the country affected the farm sector, reducing supply and causing prices of some major products to rise. India's inflation rate peaked in April 2022 at 7.8 per cent before moderating to 5.7 per cent in December 2022 on the back of good monsoons as well as prompt government measures that ensured adequate food supply. Global economic slowdown and interest rate increases brought down commodity prices, contributing to a substantial decline in wholesale price inflation. Thus, input price pressures on Indian manufacturers abated.

5.6 Even as inflation abated at the wholesale level, there has been a pass-through of previously high input costs onto retail prices. Core inflation remains sticky at nearly 6 per cent and reflects the second-round effects of the supply shocks witnessed earlier this year. Further, with the recovery of demand, there has been a pickup in service inflation. Against this backdrop, we discuss trends and drivers of retail and wholesale price inflation in FY22 and FY23, state-wise and rural-urban differential in consumer inflation, fuel price inflation, CPI and WPI convergence, housing prices, pharmaceutical pricing and fiscal as well as monetary policy measures undertaken to contain inflation as the chapter proceeds.

Domestic Retail Inflation

Headline Inflation Declined from its Peak

5.7 FY22 witnessed lower CPI-Combined (CPI-C) based retail inflation as compared to FY21. Even so, inflation remained on the higher side when compared to the moderation seen during the years prior to the pandemic. During FY22, some sub-groups such as 'oils & fats', 'fuel & light' and 'transport & communication' reported high inflation. This was mainly driven by supply disruptions caused by pandemic-induced lockdowns. The subsequent year (FY23) began with the Russia-Ukraine crisis that led to high headline inflation rate in April 2022.

5.8 In FY23, retail inflation was mainly driven by higher food inflation, while core inflation stayed at a moderate level. Food inflation ranged between 4.2 per cent to 8.6 per cent between April and December 2022, while the core inflation rate stayed at around 6 per cent except in April 2022.

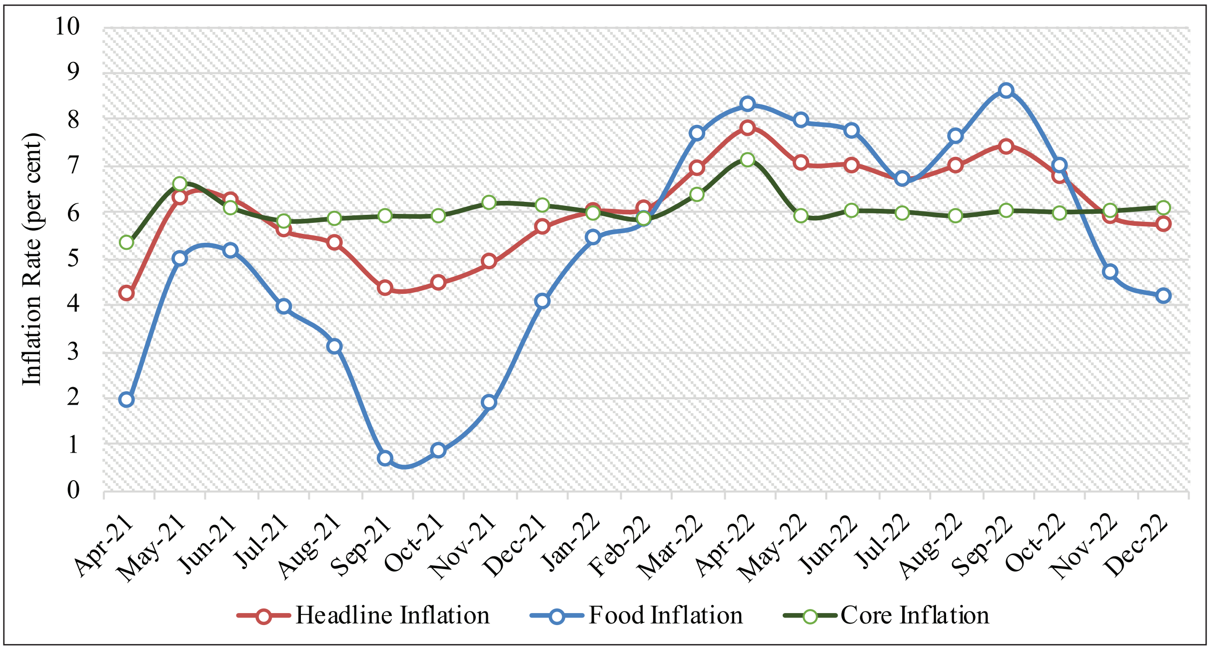
Table V.1: Average Annual Retail Inflation Based on CPI-C (per cent) (base: 2012=100)

Groups/Sub-groups	Weight	FY20	FY21	FY22	FY23*
Food & beverages	**45.9**	**6.0**	**7.3**	**4.2**	**7.0**
Cereals and products	9.7	2.8	3.8	0.5	9.3
Meat and fish	3.6	9.3	15.4	7.9	4.7
Egg	0.4	4.5	12.9	7.6	-1.0
Milk and products	6.6	2.9	5.4	2.8	6.8
Oils and fats	3.6	2.9	16.0	27.4	5.4
Fruits	2.9	0.7	2.6	6.2	4.4
Vegetables	6.0	21.3	5.8	-7.2	7.6
Pulses and products	2.4	9.9	16.4	6.0	1.8

	Weight	FY20	FY21	FY22	FY23*
Sugar and confectionery	1.4	0.8	2.5	2.3	2.7
Spices	2.5	4.4	10.9	5.3	14.9
Pan, tobacco & intoxicants	**2.4**	**4.2**	**9.9**	**4.5**	**2.0**
Clothing & footwear	**6.5**	**1.6**	**3.4**	**7.2**	**9.7**
Housing	**10.1**	**4.5**	**3.3**	**3.7**	**4.1**
Fuel and light	**6.8**	**1.3**	**2.7**	**11.3**	**10.5**
Miscellaneous	**28.3**	**4.4**	**6.6**	**6.7**	**6.3**
Household goods and services	3.8	3.1	3.0	5.8	7.5
Health	5.9	6.2	5.1	7.5	5.8
Transport and communication	8.6	2.4	9.9	10.1	6.4
Recreation and amusement	1.7	4.9	5.1	6.5	6.4
Education	4.5	5.5	2.8	2.9	5.2
Headline Inflation	***100.0***	***4.8***	***6.2***	***5.5***	***6.8***
Core Inflation	***47.3***	***4.0***	***5.5***	***6.0***	***6.1***
Food Inflation	***39.1***	***6.7***	***7.7***	***3.8***	***7.0***

Source: MoSPI,
Note: *April-December, CPI data for December 2022 are provisional

Figure V.3: Declining Food Inflation but Sticky Core Inflation



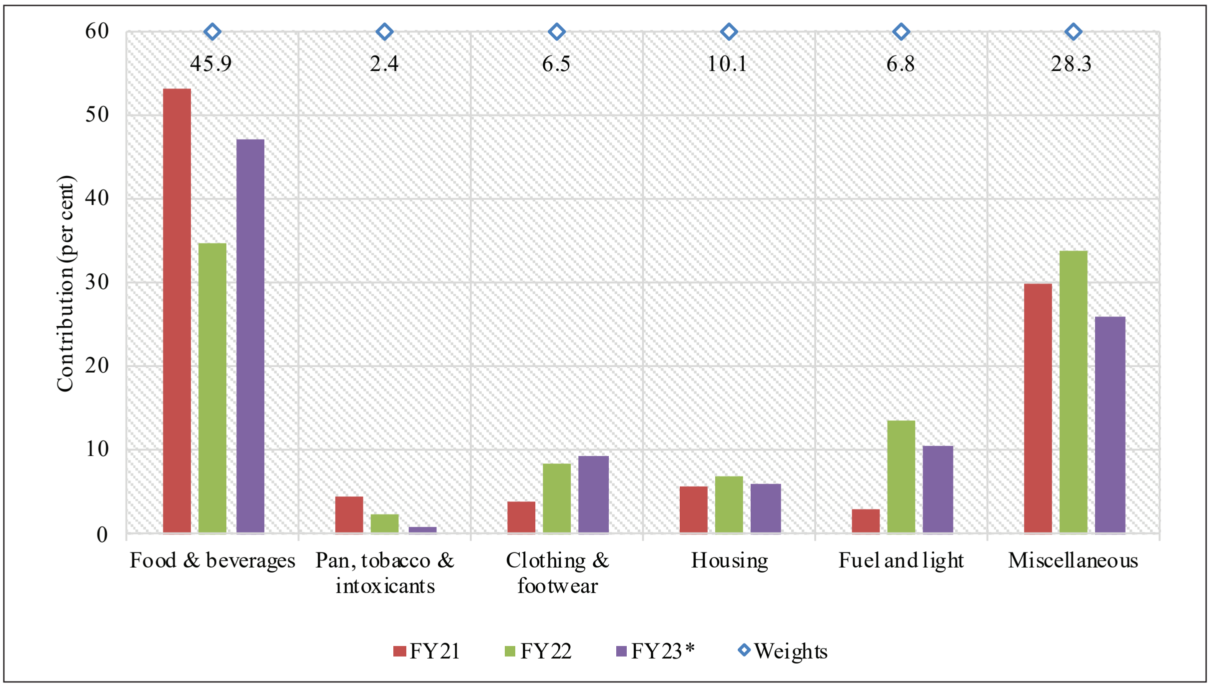
Source: MoSPI

Retail Inflation Driven by Food Commodities

5.9 Retail price inflation mainly stems from the agriculture and allied sector, housing, textiles, and pharmaceutical sectors. Further, the global spillovers, representing the imported inflation channel, driven by price pressures in energy, mining, chemicals, trade, basic and machinery,[2] reaches the retail segment mainly through the wholesale price inflation. During FY23, 'food & beverages', 'clothing & footwear', and 'fuel & light' were the major contributors to headline inflation– the first two contributing more this fiscal than in the previous one.

5.10 Within the 'miscellaneous' group, high inflation was observed in subgroups 'household goods and services' and 'personal care and effects' owing to the revival of consumer demand in the post-Covid-19 period. Moreover, retail inflation in the 'health' sub-group moderated in the current financial year as compared to FY22. However, inflation in the 'education' subgroup surged on account of schools reopening for in-person classes after the pandemic.

Figure V.4: Retail Inflation Driven by 'Food and Beverages' Group



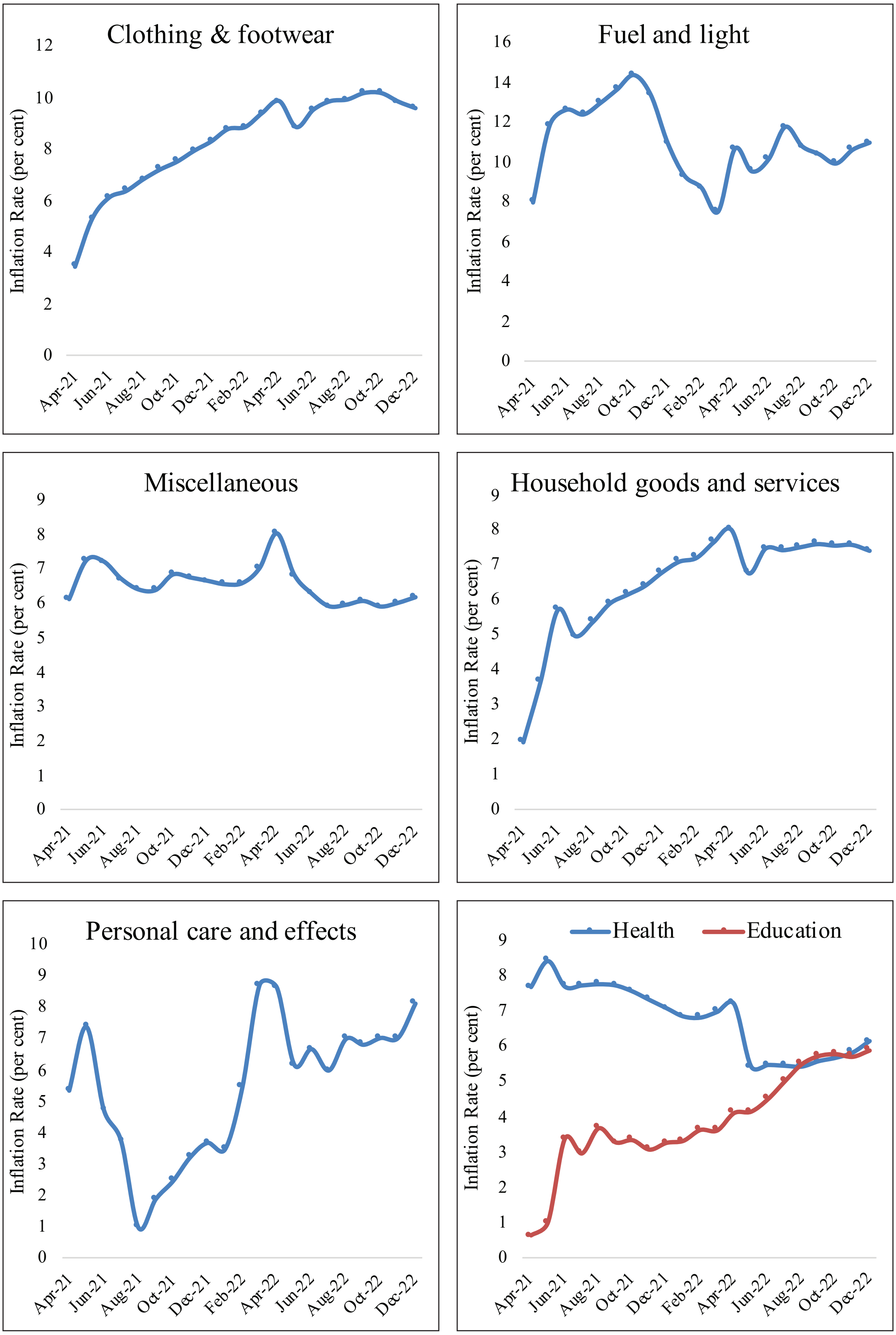
Source: MoSPI
Note: *April-December

Food Inflation Caused by Vegetables and Cereals in FY23

5.11 Food inflation based on Consumer Food Price Index (CFPI) climbed to 7.0 per cent in FY23 from 3.8 per cent in FY22. Though the increase in food inflation is broad-based, the major contributors are vegetables, cereals, milk and spices. The RBI forecasts elevated domestic prices for cereals and spices in the near term, owing to supply shortages. Milk prices are also expected to spike reflecting high feed costs. Since September 2022, double-digit inflation was observed in cereals. To check the soaring prices of wheat and rice, the government has prohibited the export of wheat products under HS Code 1101 and imposed an export duty on rice. Further, in order

[2]Monetary Policy Report, RBI, September 2022

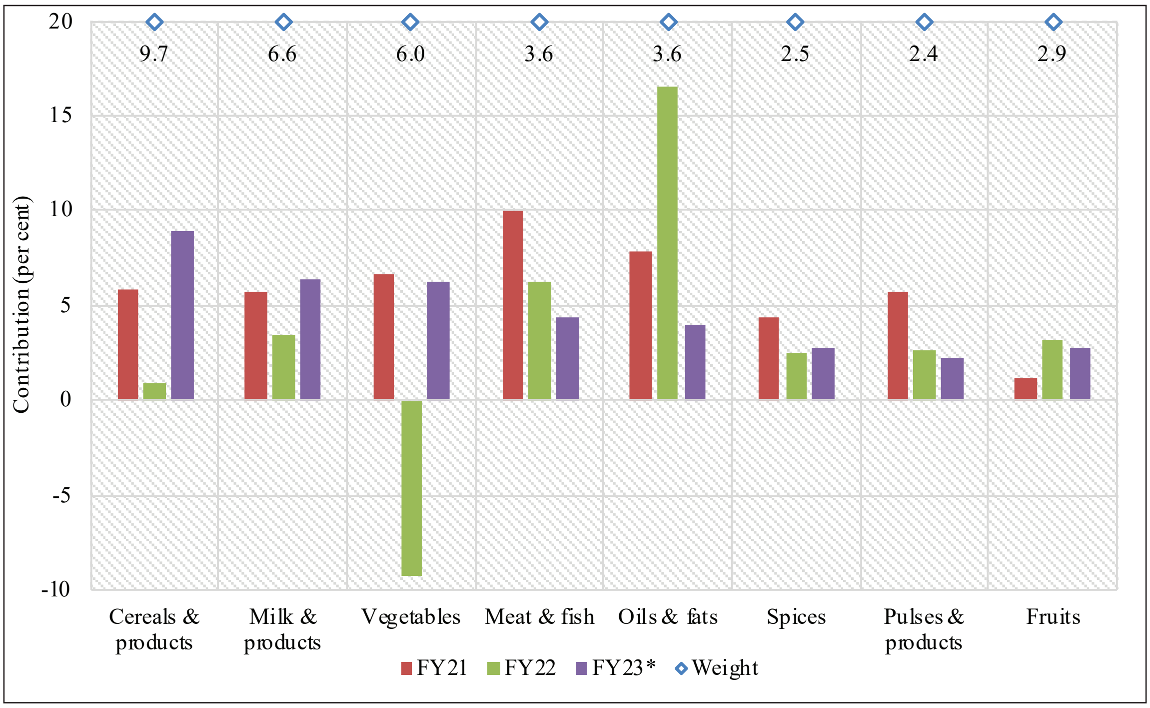
Figure V.5: Retail Inflation in Major Groups/Sub-groups



Source: MoSPI

to insulate vulnerable sections from the rise in prices, the Government has launched a new integrated food security scheme, 'Pradhan Mantri Garib Kalyan Ann Yojana' on 1 January 2023, to provide free foodgrains to more than 80 crore beneficiaries.

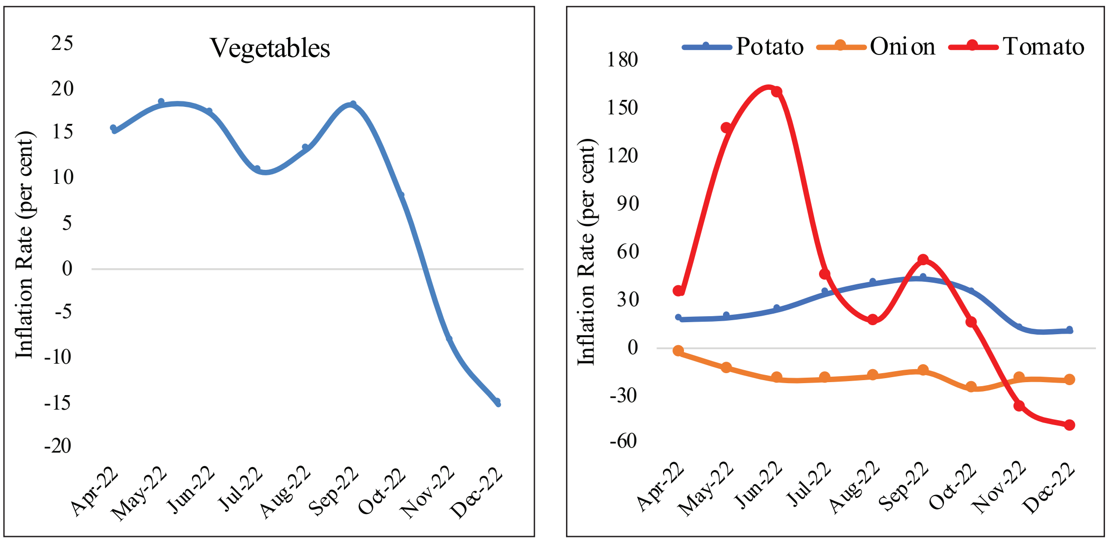
Figure V.6: Drivers of Food Inflation in FY23* – Vegetables, Cereals, Milk and Spices



Source: MoSPI
Note: *April-December

5.12 High inflation in vegetables from April to September 2022 was mainly due to a spike in prices of tomatoes owing to crop damage and supply disruption due to the unseasonal heavy rains in the major producing states of Karnataka, Tamil Nadu, Andhra Pradesh, and Telangana.

Figure V.7: Spike in Tomato Price and 'Vegetables' Inflation in FY23

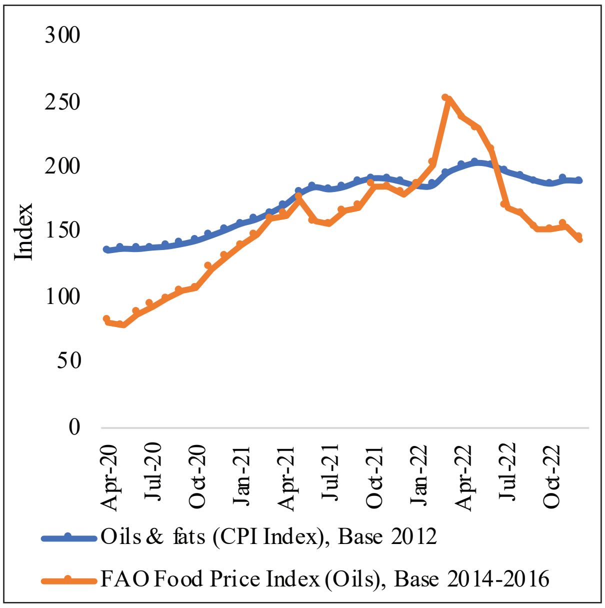


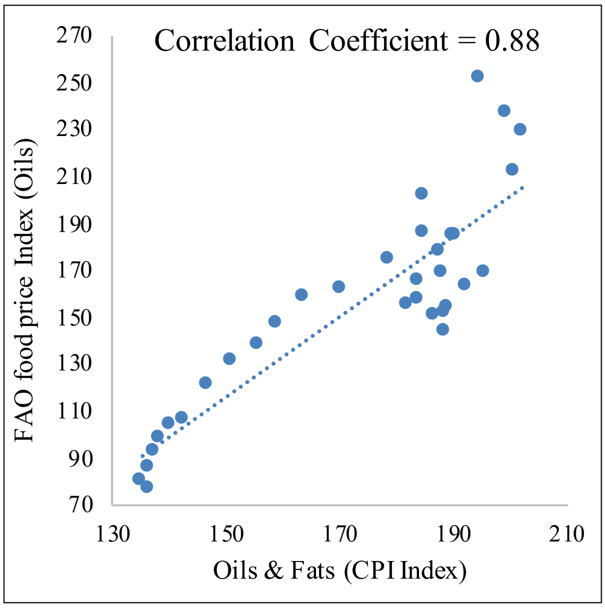
Source: MoSPI

5.13 Inflation in pulses remained muted owing to higher production and measures taken by the government in terms of maintaining a buffer stock and reduction of import duties and cess on pulses.

5.14 International prices of edible oils surged in FY22 owing to a shortfall in global production and an increase in export tax levies by various countries. India meets 60 per cent of its edible oils demand through imports, making it vulnerable to international movements in prices. For instance, sunflower oil, which makes up 15 per cent of our total edible oil imports, is procured mainly from Ukraine and Russia. Thus, FY22 saw edible oil inflation on account of international price pressures. However, inflation remained subdued in FY23 because of rationalisation of tariffs and the imposition of stock limits on edible oils and oil seeds.

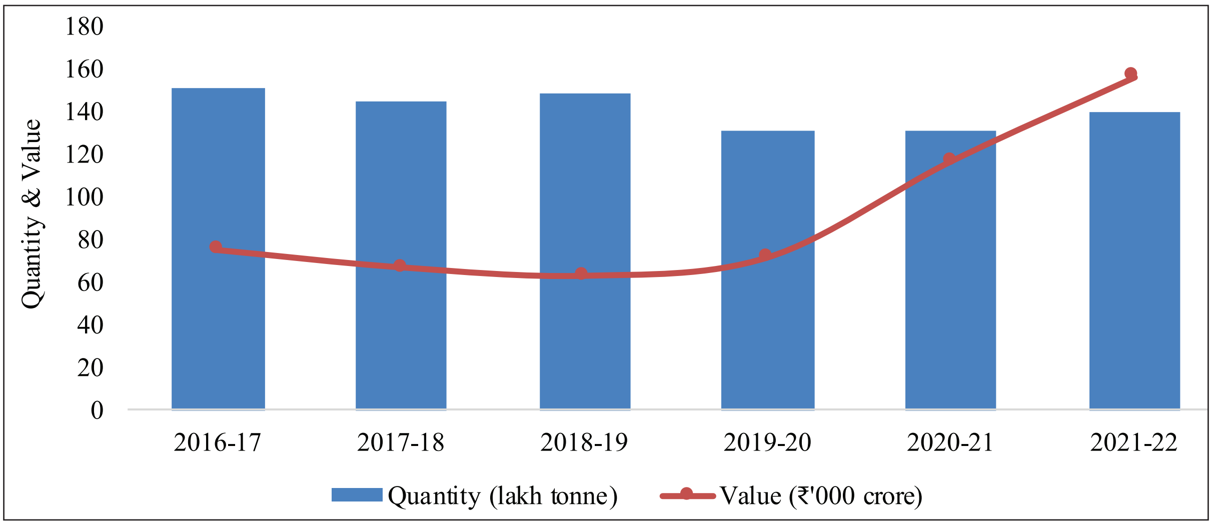
Figure V.8: Imported Inflation in Edible Oils





Source: FAO and MoSPI

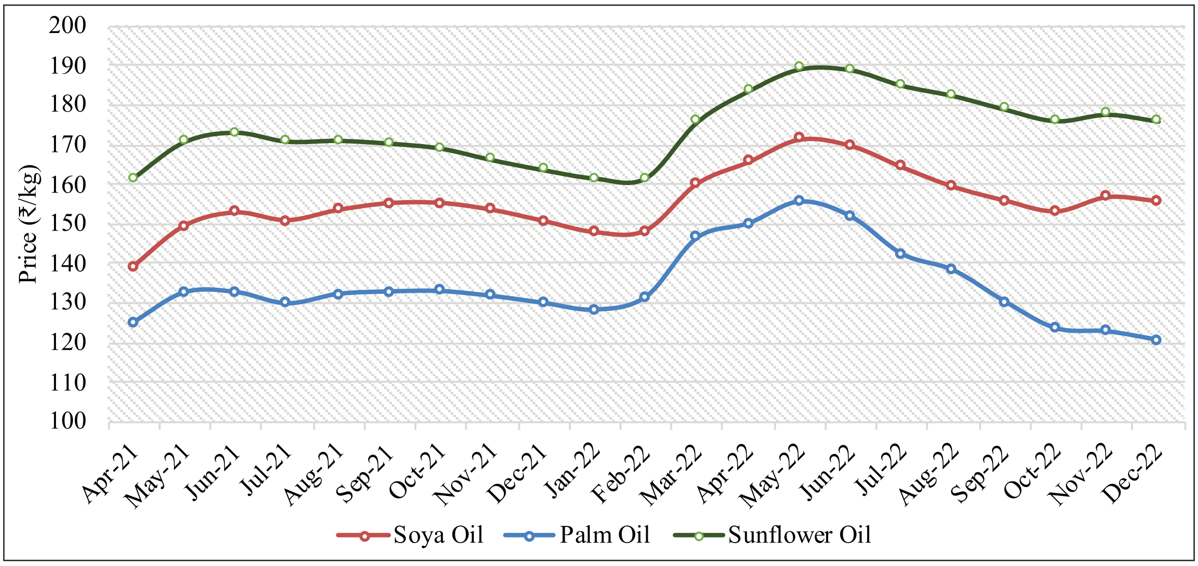
Figure V.9: Import of Edible Oils



Source: Solvent Extractors Association of India

Note: Data corresponding to oil year (November-October)

Figure V.10: Moderating Retail Prices of Edible Oils



Source: DoCA

Box V.1: Measures to Contain Inflation in Essential Food Commodities

The government keeps a close watch on the production and availability of essential commodities through regular reviews by the Inter-Ministerial Committee and Committee of Secretaries. The following fiscal measures are taken to bring down the prices of essential commodities:

Cereals

- On 13 May 2022, wheat flour exports were prohibited in order to prevent a domestic surge in prices.
- From 12 July 2022 wheat flour exports were permitted but were subjected to restrictions as recommended by an inter-ministerial panel.
- With effect from 14 August 2022 the export of maida and suji was allowed only after the approval of the inter-ministerial panel.
- Notification dated 27 August 2022 prohibited export of wheat or meslin flour (atta), maida, samolina (rava/sirgi), wholemeal atta and resultant atta (HS Code 1101). This amendment in the policy aimed to ensure food security and put a check on the mounting prices of wheat flour in the country.
- The Central Government, w.e.f. 9 September 2022, imposed an export duty of 20 per cent on rice, brown rice, and semi-milled as well as wholly milled rice, except parboiled rice.

Pulses

- A buffer stock of pulses has been maintained for price stabilisation in 2020-21, 2021-22 and 2022-23. Calibrated release of pulses from the buffer stock will moderate the prices in the market.
- The import duty on masur was brought down to zero per cent with effect from 26 July 2021. Further, the Agriculture Infrastructure and Development Cess (AIDC) on masur was brought down to zero per cent with effect from 12 February 2022. The nil rate of AIDC has been extended up to 31 March 2023.
- On 30 March 2022, the import of tur and urad under the Free Category was extended until 31 March 2023.
- The Central Government, on 1 September 2022 decided to provide 1.5 million tonnes of chana to States and UTs at a discounted rate for distribution under various welfare schemes. The states will be able to procure chana at a discount of ₹8 per kg over their respective issue prices.

Edible Oils

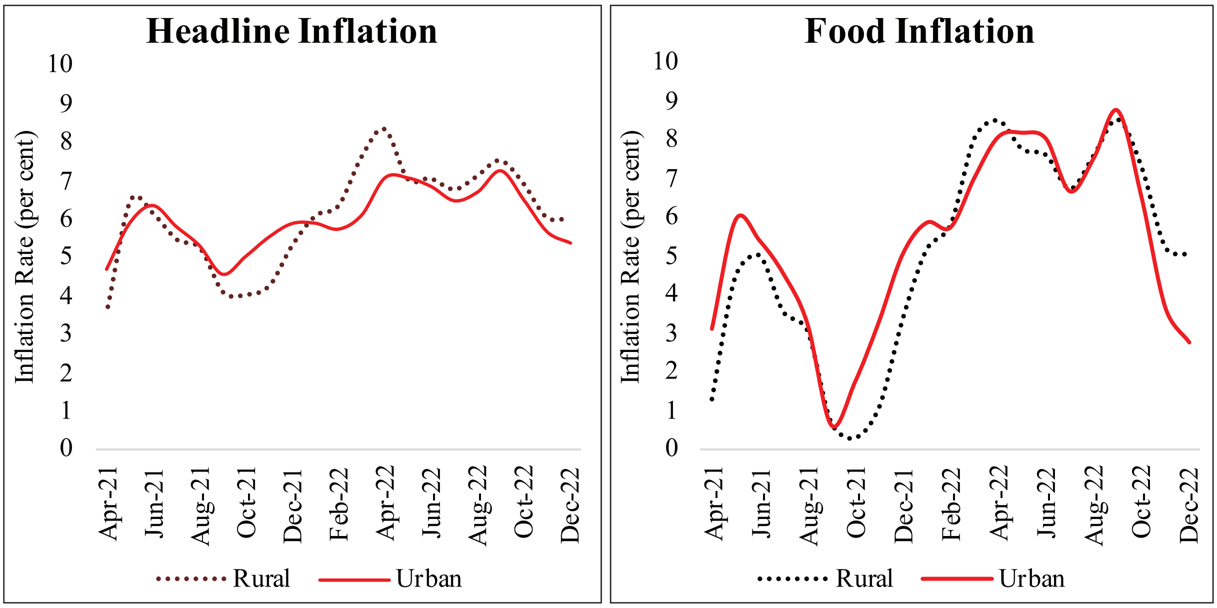
- The Central government, on 24 May 2022, exempted customs duty and AIDC on yearly import of 20 lakh metric tonne each of crude soya bean and sunflower oil for the years 2022-23 and 2023-24.
- The basic duty on refined palm oil was reduced from 17.5 per cent to 12.5 per cent w.e.f 21 December 2021 until 31 March, 2022 and the basic duty on crude palm oil was reduced from 7.5 per cent to 5 per cent w.e.f 13 February 2022 until 30 September 2022. The Central Government has allowed free import of refined palm oil until 31 December 2022.
- The Central Government, in November 2021, cut the basic duty on crude palm oil, crude soyabean oil and crude sunflower oil from 2.5 per cent to Nil. The Agri-cess on these oils has been brought down to 5 per cent.
- *Vide* notification dated 14 October 2021, the basic import duty on refined soyabean oil and refined sunflower oil has been slashed to 17.5 per cent from 32.5 per cent.
- In a bid to cool down the domestic prices of soya meal, Central Government has notified an order under the Essential Commodities Act to declare ‘Soya Meal’ as an Essential Commodity up to 30 June 2022, by amending the Schedule of the Essential Commodities Act, 1955. Stock limit on soya meal had been imposed for a period from 23 December 2021 to 30 June 2022.
- Stock limits imposed on all edible oils and oilseeds, *vide* order dated 3 February 2022, were extended up to 31 December 2022, by amending the Removal of Licensing Requirements, Stock Limits and Movement Restrictions on Specified Foodstuffs Order, 2016. This measure is to curtail any unfair practices like hoarding, black marketing etc. in the market and to control the prices of edible oils.
- In July 2022, the Central Government directed leading Edible Oil Associations to ensure a reduction in the maximum retail price of edible oils by ₹15 per litre with immediate effect. Mother Dairy has slashed prices of rice bran and soybean oil by up to ₹14 per litre after the Centre directed edible oil companies to pass on the benefits of a fall in global edible oil prices to consumers.

Rural-Urban Inflation Differential has Declined

5.15 Rural inflation has remained above its urban counterpart throughout the current fiscal year, reversing the trend seen during the pandemic years. CPI-C based food inflation seems to have cooled down after reaching a high of 8.3 per cent in April 2022 due to a subsequent moderation in global food prices and a reduction in farm input costs. However, the cooling was more pronounced for urban inflation, which softened to 2.8 per cent in December 2022. Rural fuel inflation remained lower than its urban counterpart throughout the current fiscal, due to subdued price pressures on traditional fuel items such as firewood and cow dung cakes as opposed to petrol and diesel.

5.16 While the current fiscal year saw rural and urban inflation closely tracking each other, FY22 had seen a wider differential between the two. The gap between rural and urban inflation reached its widest in March 2022 due to a difference in the experience of food inflation. Urban areas experienced a sharper increase in food prices of vegetables and oils during this time as compared to the hinterlands.

Figure V.11: Urban and Rural Inflation

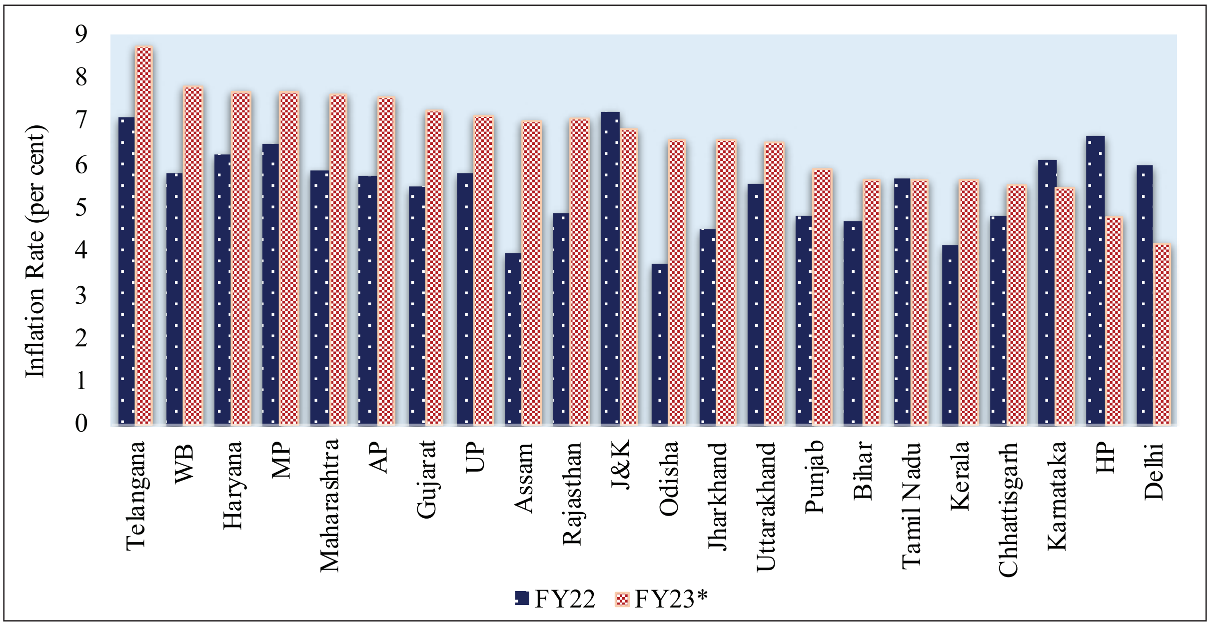


Source: MoSPI

Majority of the States/UTs have Higher Rural Inflation than Urban Inflation

5.17 CPI-C inflation increased in most of the states in FY23 as compared to FY22. Telangana, West Bengal, Maharashtra, Madhya Pradesh, Haryana, and Andhra Pradesh saw especially high rates of inflation in FY23. Fuel and clothing were the major contributors to the surge in inflation.

Figure V.12: Higher Retail Inflation in Majority of States in FY23*



Source: MoSPI

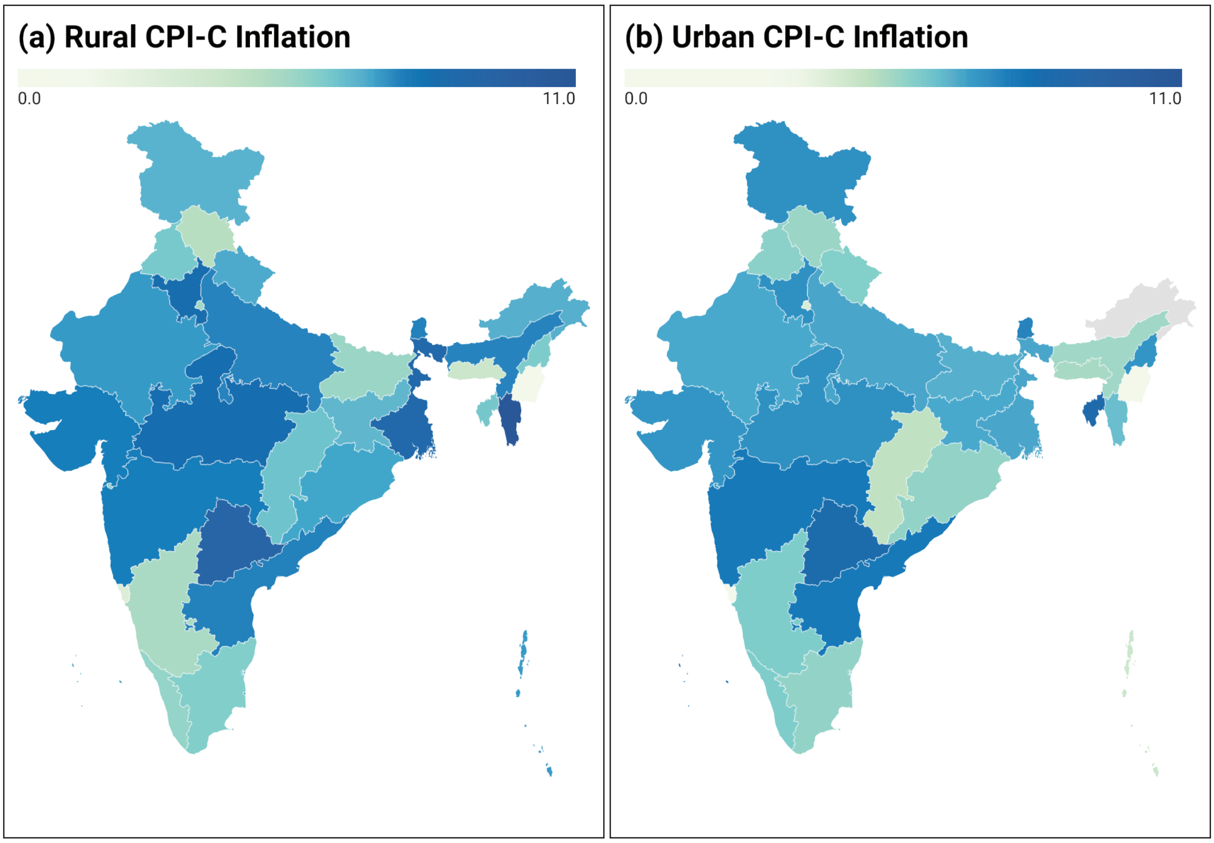
Note: (i) *April-December

(ii) Inflation for the FY22 is based on the average of June 2021 to March 2022, owing to the non-availability of indices for the months of April & May 2020 due to the Covid-19 pandemic.

(iii) 22 major States having a population >50 lakhs as per Population Census 2011 are presented

5.18 Most of the States and UTs have witnessed higher rural inflation than urban inflation in the current year, mainly owing to marginally higher food inflation in rural areas. Assam, Haryana, Madhya Pradesh, Manipur, Mizoram, Odisha, Uttarakhand, West Bengal, and Delhi experienced a higher rural inflation than urban inflation. In rural sectors of Haryana, Mizoram, and West Bengal it was because of higher 'food and beverages' and 'clothing and footwear' inflation. In rural sectors of Madhya Pradesh, Manipur and Assam, it was due to 'fuel and light' segments. Food, clothing and fuel were the major contributors to higher inflation in urban areas of Bihar, Meghalaya, and Tripura.

Figure V.13: Higher Rural Inflation in Most of States/UTs in FY23*



Source: MoSPI
Note: (i) *April-December
(ii) Data for Urban Arunachal Pradesh is not available

Domestic Wholesale Price Inflation

Wholesale Price Inflation Caused by Global Supply Chain Disruption

5.19 WPI-based inflation remained low during the Covid-19 period, and it started to gain momentum in the post-pandemic period as economic activities resumed. The Russia-Ukraine conflict further exacerbated the burden as it worsened global supply chains along with the free movement of essential commodities. As a result, the wholesale inflation rate climbed to about 13.0 per cent in FY22. Prices of items like petroleum products, basic metals, chemicals & chemical products, and edible oils, with maximum exposure to international pricing translated into a rise in the domestic WPI inflation.

Table V.2: Average Annual Wholesale Inflation Based on WPI (per cent) (Base: 2011-12=100)

Groups/Subgroups	Weight	FY20	FY21	FY22	FY23*
Primary Articles	**22.6**	**6.8**	**1.7**	**10.3**	**12.3**
Food articles	**15.3**	**8.4**	**3.1**	**4.1**	**8.3**
Cereals	2.8	7.5	-2.6	1.6	10.7
Pulses	0.6	15.9	11.6	6.9	0.0
Vegetables	1.9	31.2	3.4	0.4	13.2
Fruits	1.6	3.2	1.4	11.3	10.4
Non-Food Articles	**4.1**	**4.5**	**1.4**	**21.1**	**12.0**
Minerals	0.8	13.2	6.7	19.6	6.2
Crude Petroleum & Natural Gas	**2.4**	**-7.7**	**-17.5**	**56.7**	**57.7**
Fuel & power	**13.2**	**-1.8**	**-8.0**	**32.6**	**33.8**
LPG	0.6	-8.3	-2.7	43.3	16.9
Petrol	1.6	-3.2	-11.8	62.9	41.9
High Speed Diesel	3.1	-3.5	-14.4	59.9	60.8
Manufactured Products	**64.2**	**0.3**	**2.7**	**11.1**	**7.1**
Food products	**9.1**	**4.1**	**5.6**	**11.7**	**6.0**
Edible oils	2.6	1.4	20.3	30.5	1.4
Food Inflation (Food articles + Food products)	***24.4***	***6.9***	***3.9***	***6.8***	***7.5***
Core Inflation (Manufactured Products-Food products)	***55.1***	***-0.4***	***2.2***	***11.0***	***9.2***
Headline Inflation	***100***	***1.7***	***1.3***	***13.0***	***11.5***

Source: Office of Economic Adviser, DPIIT
Note: *April-December 2022, WPI data for November and December 2022 are provisional

5.20 Part of the double-digit inflation in WPI during H1 of FY23 could be attributed to food inflation, which stayed at 7.5 per cent against 6.8 per cent in FY22. Cereals and vegetables were the major contributors to food inflation owing to erratic climatic conditons. Inflation in the 'manufactured products' subgroup in FY23 saw a considerable decline compared to the previous year due to the rationalisation of duties on critical inputs and moderation in global commodity prices. In comparison to FY22, core inflation remained lower in FY23.

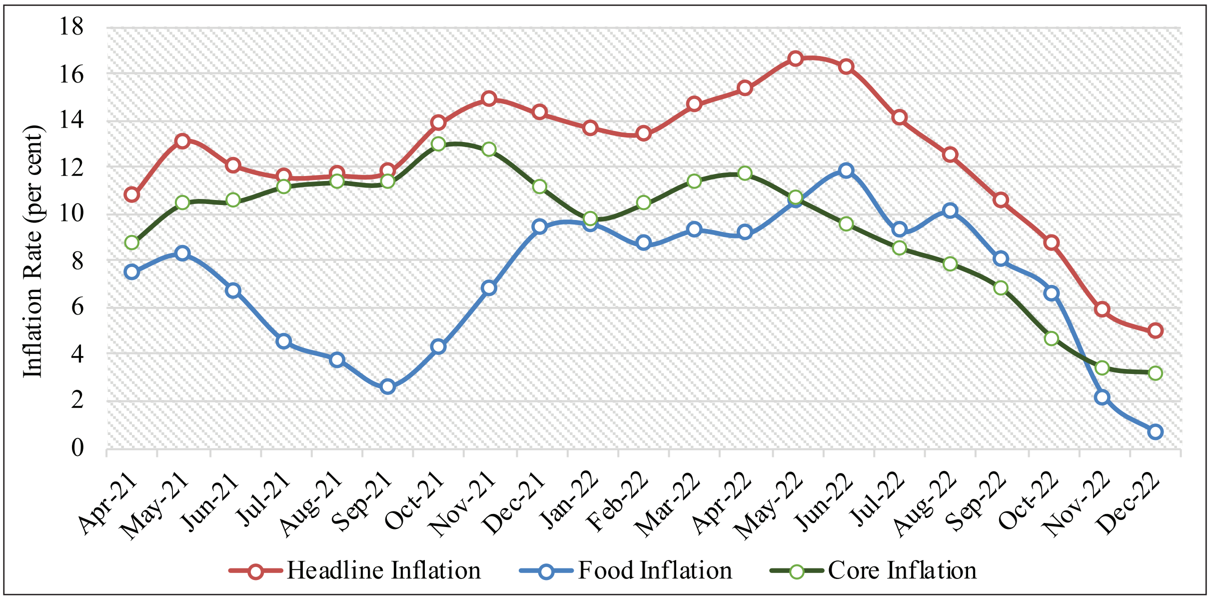
5.21 Overall, the monthly trend of inflation rates based on wholesale prices has been sliding downwards from its peak of 16.6 per cent in May 2022 to 10.6 per cent in September 2022 and further to 5.0 per cent in December 2022. The decline in inflation was observed in all three subgroups of WPI.

5.22 As mentioned earlier, part of WPI inflation is imported inflation. The high import dependence on edible oils has meant that the transitory effect of rising international prices of these products are also reflected in domestic prices. An RBI study[3] indicates that one per cent increase in prices across all the countries and sectors due to global inflation shock could increase inflation in India by around 63 basis points through second-round effects comprising domestic indirect effects (46

[3] Monetary Policy Report, RBI, September 2022

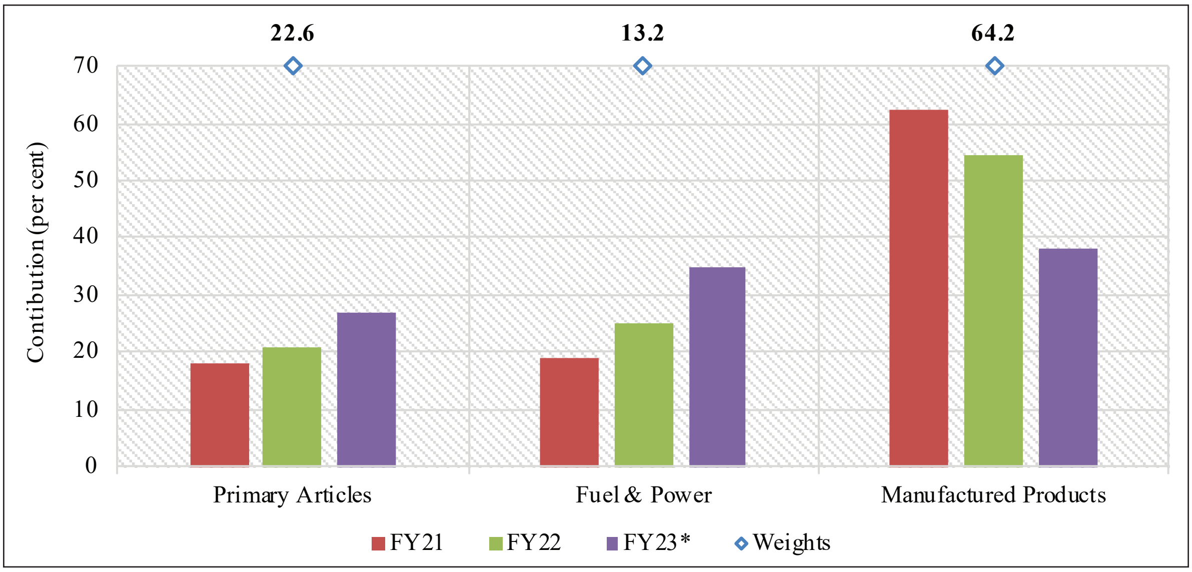
basis points) and global spillovers (17 basis points), in addition to the direct impact of 100 basis points. The impact of prices in world markets on WPI (manufactured products component) was clearly visible, especially in prices of oil and basic metals. In the current financial year, global prices of edible oils, rubber, cotton, crude oil, and metals decreased. Capital outflows in H1 of FY23 had impacted India's exchange rate adversely; this was another reason for high prices of imported inputs, which are mostly dollar-denominated.

Figure V.14: Declining Core and Food Inflation



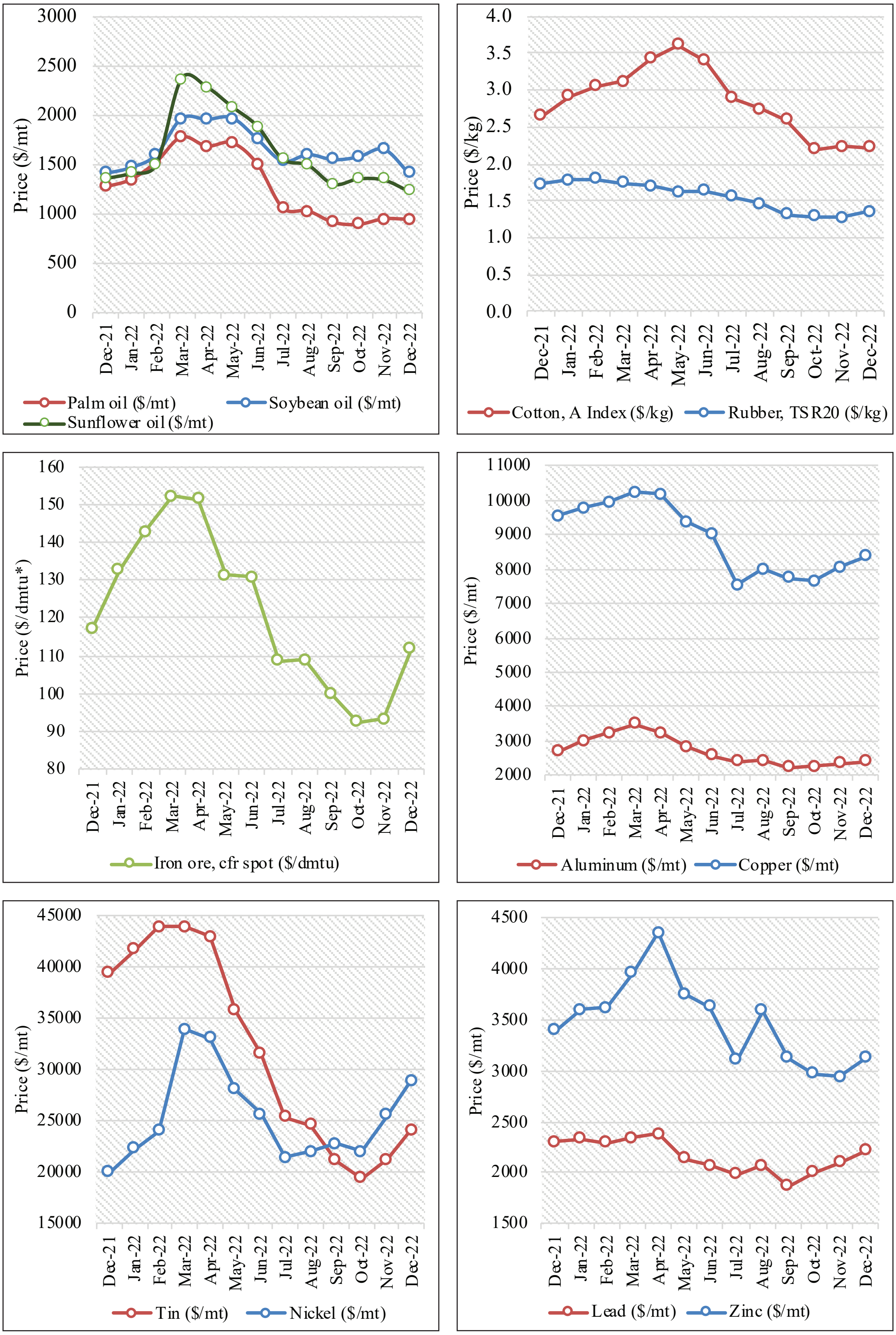
Source: Office of Economic Adviser, DPIIT

Figure V.15: Drivers of Wholesale Inflation in FY23* – 'Primary Articles' & 'Fuel & Power'



Source: Office of Economic Adviser, DPIIT
Note: *April-December

Figure V.16: Slackening Global Commodity Prices



Source: Pink Sheet, World Bank
Note: *dmtu:dry metric tonne unit

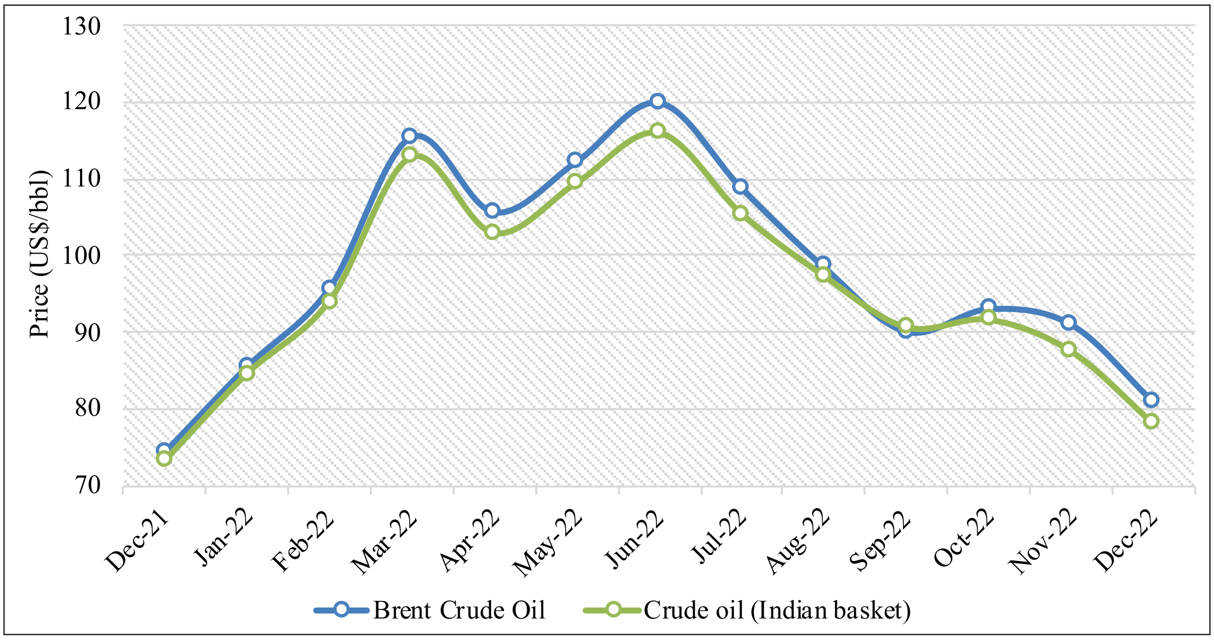
Box V.2: Measures to Contain Inflation in Input Prices

- **Fuel Prices:** The Central Government has made interventions by calibrating the excise duties on petrol and diesel. The first phase of reduction in terms of ₹5 on petrol and ₹10 on diesel was made effective from 4 November 2021 and the second phase from 22 May 2022 (₹8 per litre on petrol and ₹6 per litre on diesel).
- **Plastic products:** The import duty on import of raw materials used in the plastic industry has been reduced to lower the cost of domestic manufacturing. The duties on naphtha, propylene oxide and polymers of vinyl chloride have been reduced from 2.5 per cent to 1 per cent, 5 per cent to 2.5 per cent and from 10 per cent to 7.5 per cent, respectively on 21 May 2022.
- **Steel:** On 21 May 2022, import duty on major inputs – ferronickel, cooking coal, PCI coal – has been cut from 2.5 per cent to zero, while the duty on coke and semi-coke has been slashed from 5 per cent to zero. Tax on export of iron ores and concentrates has increased from 30 per cent to 50 per cent, while that on iron pellets has been raised to 45 per cent.
- **Cotton:** The government waived customs duty on cotton imports w.e.f 14 April 2022, until 30 September 2022, to benefit the textile industry and lower prices for consumers. Earlier, cotton imports attracted 5 per cent Basic Customs Duty (BCD) and 5 per cent AIDC. The Central Board of Indirect Taxes and Customs (CBIC) notified the exemption from customs duty and AIDC for import of cotton.
- **Diamonds and gemstones:** In Budget 2022-2023, customs duty on cut and polished diamonds and gemstones was reduced to 5 per cent and duty on the simply sawn diamond was reduced to nil.
- **Chemical products:** Customs duty on certain critical chemicals namely methanol, acetic acid and heavy feedstocks for petroleum refining was reduced in the Budget 2022-23.

Fuel Price Inflation: Declining Global Crude Oil Prices

5.23 In FY22 and FY23, inflation in WPI 'fuel and power' was mostly driven by high international crude oil prices. In response to subdued global demand because of Covid-19 induced restrictions, the price of the Indian basket of crude oil during FY21 stayed in the range of US$20-65/bbl. Thereafter, prices started surging on account of unprecedented cuts in crude oil supply by the Organisation of the Petroleum Exporting Countries (OPEC) and other oil-producing countries. The upward trend continued in FY22 and FY23, as demand picked up with the easing of Covid-19 restrictions in most regions of the world. Also, owing to supply disruption amid rising tensions in Eastern Europe and the Middle East in June 2022, the Indian basket of crude oil peaked at US$116/bbl. Subsequently, the price declined to US$ 78/bbl in December 2022. Further, a cut in central excise duty on petrol and diesel in November 2021 and May 2022, followed by a reduction in Value Added Tax (VAT) by the State Governments, led to a moderation of the retail selling price of petrol and diesel in India.

Figure V.17: Moderation in Crude Oil Prices



Source: Pink Sheet, World Bank and PPAC, MoPNG

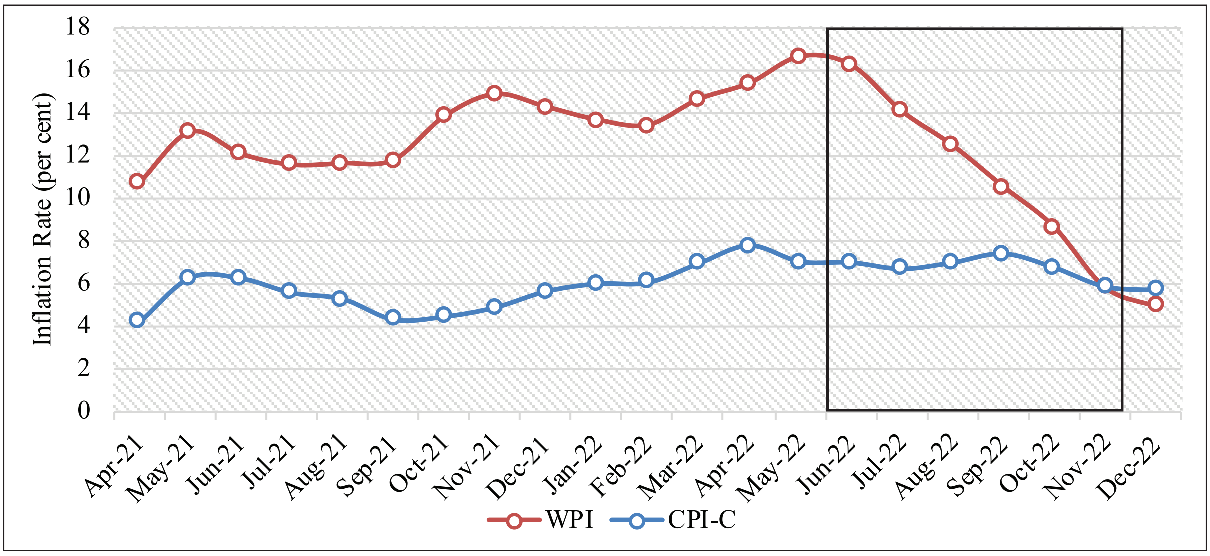
Convergence of WPI and CPI Inflation

5.24 Inflation dynamics in India since the outbreak of the pandemic have been influenced by various domestic and global factors. While the pass-through of international prices to wholesale prices is relatively quick, it impacts retail prices with a lag. This creates a wedge between WPI and CPI inflation rates. It is also due to the difference in composition and weights assigned to different commodities in the two indices.

5.25 The headline inflation based on WPI and the CPI-C started diverging in March 2021, as WPI inflation touched double digits due to unfavourable base effects while CPI-C inflation remained stable. The wedge between CPI-C and WPI inflation continued to widen before reaching its peak at 10 per cent in November 2021. Thereafter, the gap began to narrow until April 2022. The path to convergence, however, was short-lived as another inflationary pressure started building up in February 2022 as a consequence of the Russia-Ukraine conflict. The major brunt of commodity supply chain disruption and increased demand for essentials was reflected in WPI with a short lag of 2 months. As a result, the two indicators of inflation again started diverging in May 2022. It was only after global commodity prices, including crude oil, softened and the effects of strong supporting domestic factors like favourable monsoon, vaccination-led economic resumption, etc., started to be felt that the wedge began to narrow, and it closed in November 2022, after 21 months. It also indicated the near completion of the pass-through of high input costs to the retail segment.

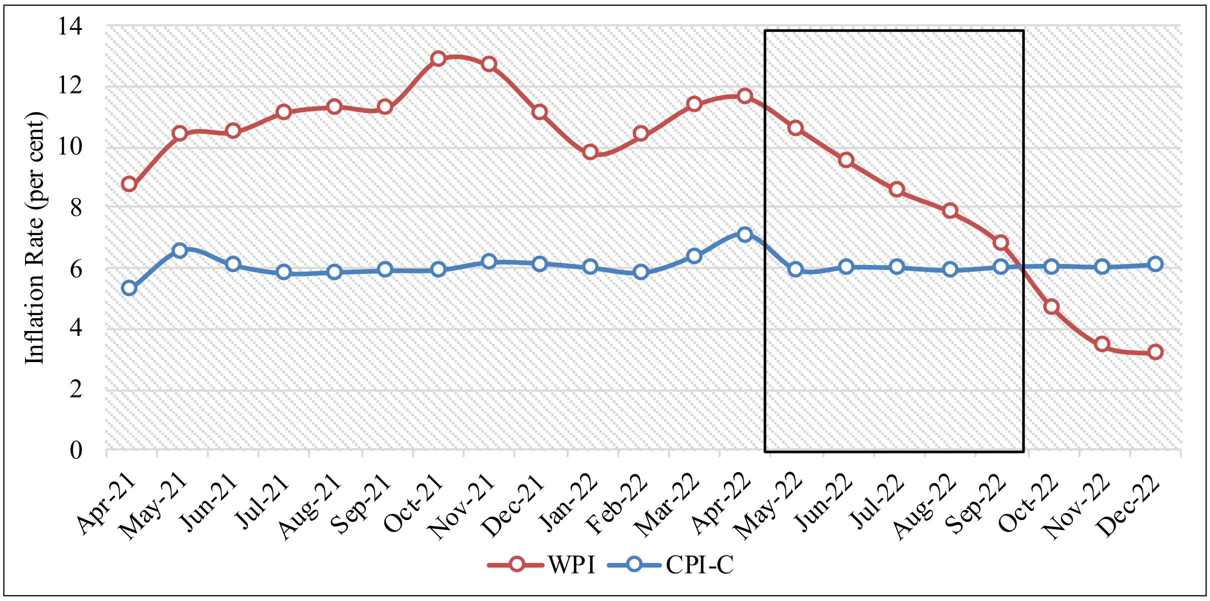
5.26 The convergence between the WPI and CPI indices was mainly driven by two factors. Firstly, a cooling in inflation of commodities such as crude oil, iron, aluminium and cotton led to a lower WPI. These commodities occupy a larger weight in the WPI as compared to the CPI. Further, these commodities are highly vulnerable to fluctuations in international prices and are used intensively by industries producing wholesale goods. As the prices cooled for these commodities, the two measures of inflation began to converge. Secondly, CPI inflation rose due to an increase in the prices of services. Services form a part of the core component of the CPI-C but are not included in the WPI basket.

Figure V.18: Convergence of Headline WPI Inflation with Headline CPI-C Inflation



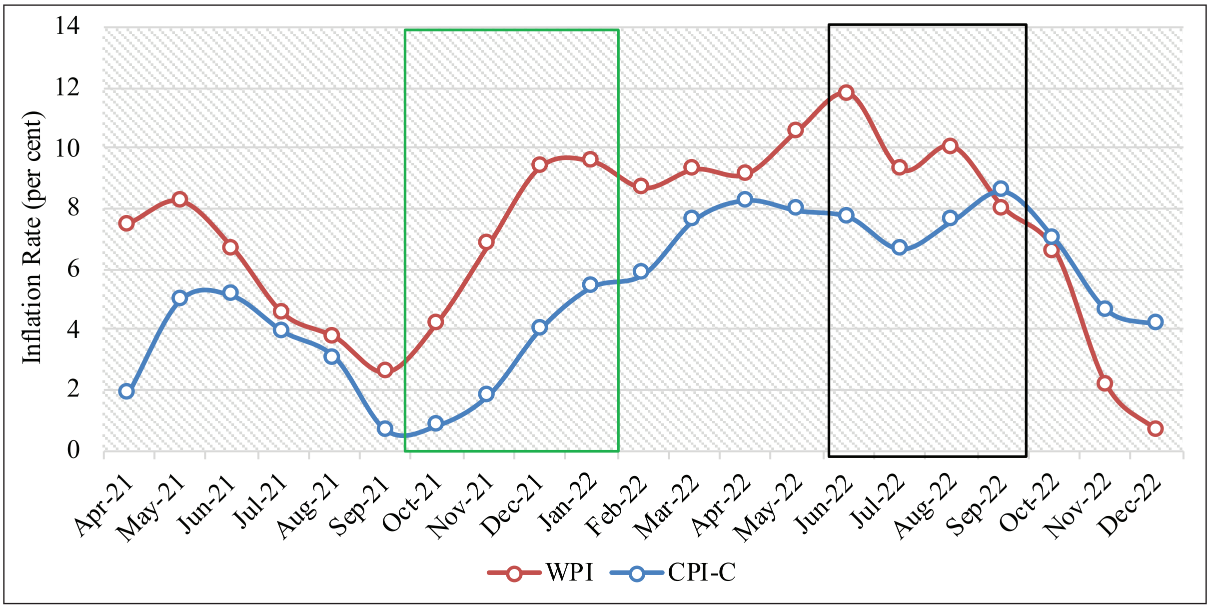
Source: MoSPI and Office of Economic Adviser, DPIIT

Figure V.19: Convergence in Core Inflation – CPI-C vs WPI



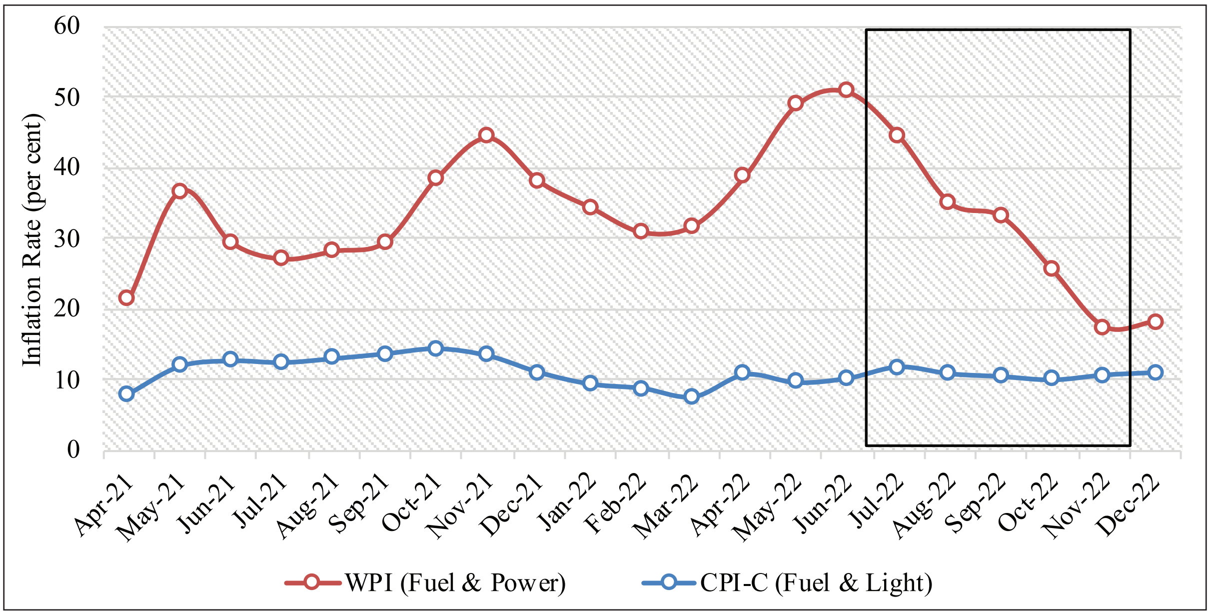
Source: MoSPI and Office of Economic Adviser, DPIIT

Figure V.20: Convergence in Food Inflation – CPI-C vs WPI



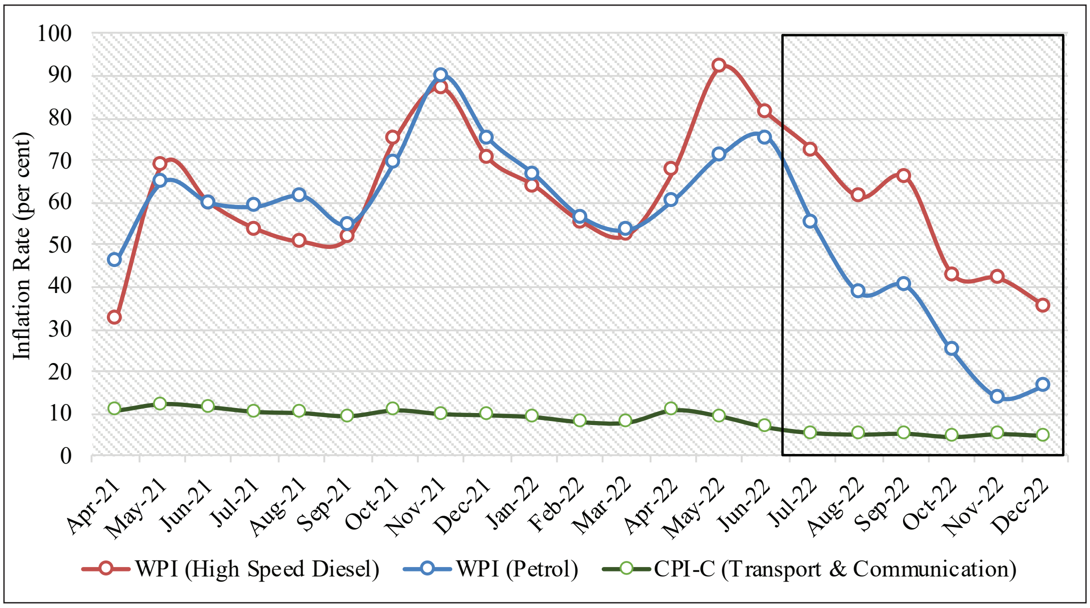
Source: MoSPI and Office of Economic Adviser, DPIIT

Figure V.21: Convergence Between CPI (Fuel & Power) and WPI (Fuel & Light) Inflation Rates



Source: MoSPI and Office of Economic Adviser, DPIIT

Figure V.22: Convergence Between Retail and Wholesale Energy Inflation Rates

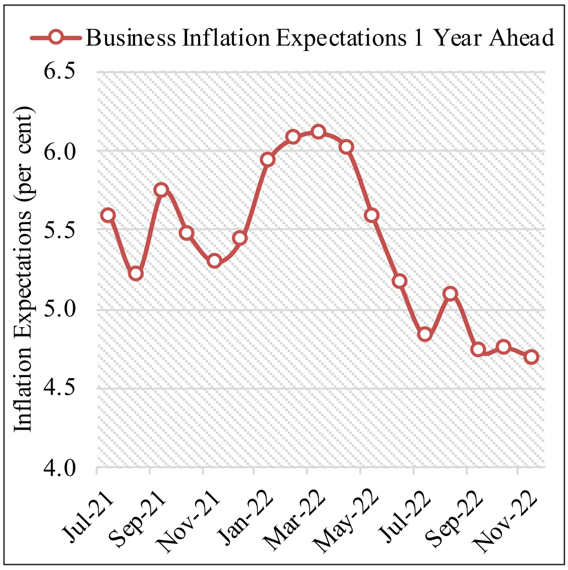


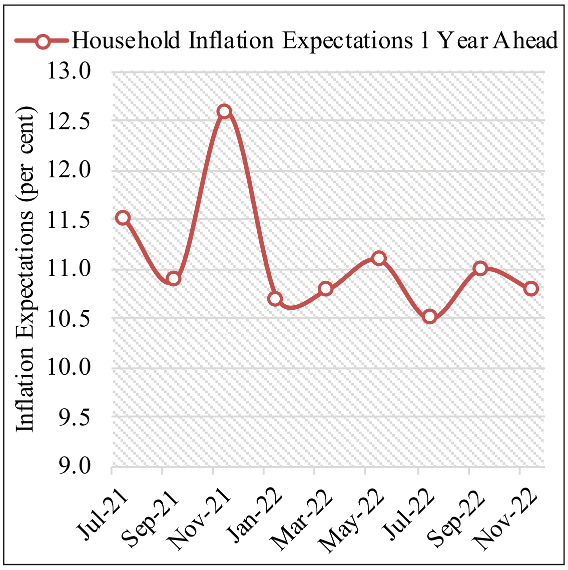
Source: MoSPI and Office of Economic Adviser, DPIIT

Falling Inflationary Expectations

5.27 Inflationary expectations are decisive in charting the course of inflation. The RBI's anchoring of inflationary expectations through forward guidance and responsive monetary policy has helped guide the trajectory of inflation in the country. The one-year-ahead inflationary expectations by businesses have shown a decreasing trend in the current fiscal. As businesses are price-setters, their perceptions on inflation are significant in making sense of whether costs would be passed on, resulting in higher prices in the near future. Similarly, inflationary expectations by households- who are the price takers of the economy- determine their consumption choices in the near future. Much like businesses, household inflation expectations too have moderated.

Figure V.23: Business and Household Inflationary Expectations are Falling





Source: IIM-A and RBI

Monetary Policy Measures for Price Stability

5.28 Reserve Bank of India's Monetary Policy Committee (MPC) increased the policy repo rate under the liquidity adjustment facility (LAF) by 2.25 per cent (225 basis points) from 4.0 per cent to 6.25 per cent between May and December 2022.

Table V.3: Monetary Policy Statements – Tightening Monetary Policy

Date of MPC Statements	Changes in the Policy Repo Rate under the LAF
8 April 2022	Unchanged at 4 per cent
4 May 2022	Increased from 4.0 per cent to 4.4 per cent (40 basis points)
8 June 2022	Increased from 4.4 per cent to 4.9 per cent (50 basis points)
5 August 2022	Increased from 4.9 per cent to 5.4 per cent (50 basis points)
30 September 2022	Increased from 5.4 per cent to 5.9 per cent (50 basis points)
7 December 2022	Increased from 5.9 per cent to 6.25 per cent (35 basis points)

Source: RBI

Box V.3: How is the Current Inflation Different from the 1970s?

Unprecedented global inflation in the current year recalls the experience of the 1970's, particularly the aftermath of the oil crises in 1973 and 1979. Both crises contributed to rising commodity prices worldwide and their spill-over effects on the prices of other goods and services. However, the environment and intensity of the crises differ in various respects.

Firstly, recent oil price rises are proportionally smaller than the 1970s crisis, which had taken oil prices to historic highs.

Secondly, in contrast to the 1970s crisis, which was confined to oil prices, the recent crisis has seen pervasive price increases across a broader range of commodities. Prices of non-oil energy, some agricultural goods, fertilisers, and metals have all risen well above their pre-pandemic levels in the current year.

Thirdly, commodity supply disruptions have played a smaller role in recent price increases than in the 1970s. The rise in commodity prices over the past year has been accompanied by a modest rise in the production of many commodities, although not oil. Global commodity supply chains have now become more efficient than in the 1970s and hence, the inflationary pressure can be absorbed with greater ease. However, supply disruptions could intensify over the coming year, as the war in Ukraine will lower global production of wheat, maize and fertilisers, while price caps on Russian oil and gas may reduce the supply of these products.

Fourthly, global inflation, which has risen significantly since the start of 2021, follows several years of low inflation. In contrast to this, the 1973 crisis took place against a backdrop of several years of steadily rising world inflation and signs of a de-anchoring of inflation expectations.

Lastly, the 1973 crisis closely followed the collapse of the Bretton Woods managed exchange rate regime as the goals and even instruments of monetary policy were poorly defined in many countries. Arguably, central banks have much clearer and more robust institutional frameworks that focus on price stability today. This has prevented inflation expectations of the public from becoming unanchored despite a sharp rise in inflation during the year 2022.

Besides commodity market behaviour, higher energy prices could matter less today than in the past. With better coordination among the global central banks and the application of unconventional monetary policy tools, inflation has been controlled in a better way so that its negative spillovers are limited and transitory. The energy intensity of GDP – the amount of energy required to produce a given amount of goods and services - has fallen by around 40 per cent since the late 1970s. With the diversification of input baskets and destinations for sourcing, commodity shocks' impact has been tamed to some extent. Hence, we may expect recent commodity price rises to be less disruptive than those of the 1970s.

Source: Annual Economic Report, June 2022 by Bank for International Settlements and Vox EU, 2022 (https://bit.ly/3XpYqsI)

Housing Prices: Recovering Housing Sector After the Pandemic

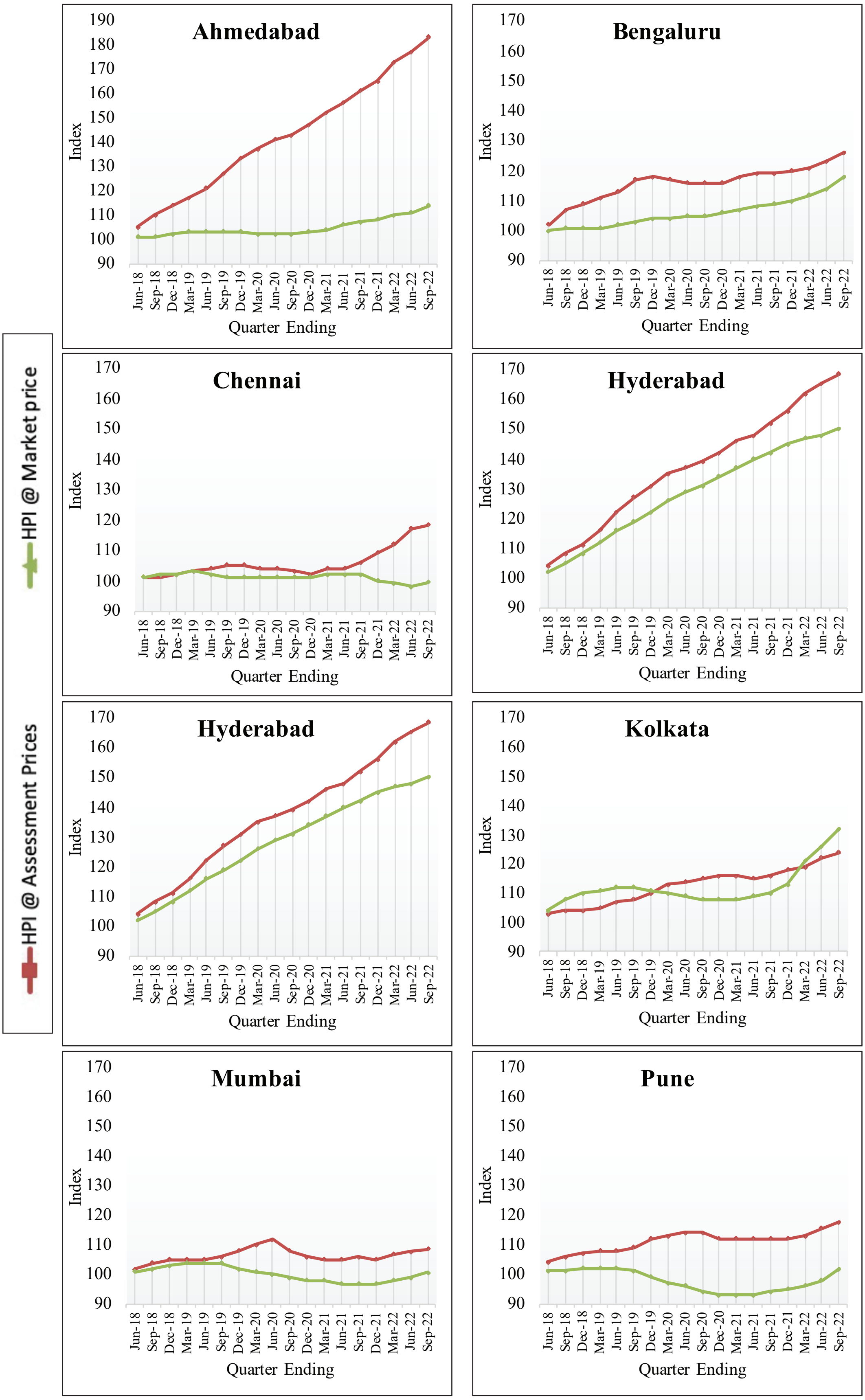
5.29 Housing prices provide helpful information on the state of the economy via booms and busts in asset markets, which give rise to economic imbalances. Monitoring housing prices is essential for achieving the objectives of price stability, financial stability, and growth. Movements in these prices affect consumption spending through its effects on household wealth and consumer confidence.

5.30 The National Housing Bank (NHB) publishes two Housing Price Indices (HPI), namely 'HPI assessment price' and 'HPI market price quarterly', with FY18 as the base year. HPI assessment price is based on the valuation prices of residential units collected from primary lending institutions. In contrast, the HPI market price is based on the market prices for unsold inventories collected from developers. A composite index is calculated for 50 cities across India using the population of the cities as weights.

5.31 The annual variation in HPI market price ranged from an increase of 37.7 per cent in Bhubaneshwar to a contraction of 6.5 per cent in Indore in the Quarter Ending (QE) Sept 22 over QE Sept 21. Out of the 50 cities, 43 saw an increase in the index, whereas 7 cities showed a decline annually. All of the eight major metros of the country, viz., Ahmedabad, Bengaluru, Chennai, Delhi, Hyderabad, Kolkata, Mumbai and Pune, recorded increases in the index on an annual basis.

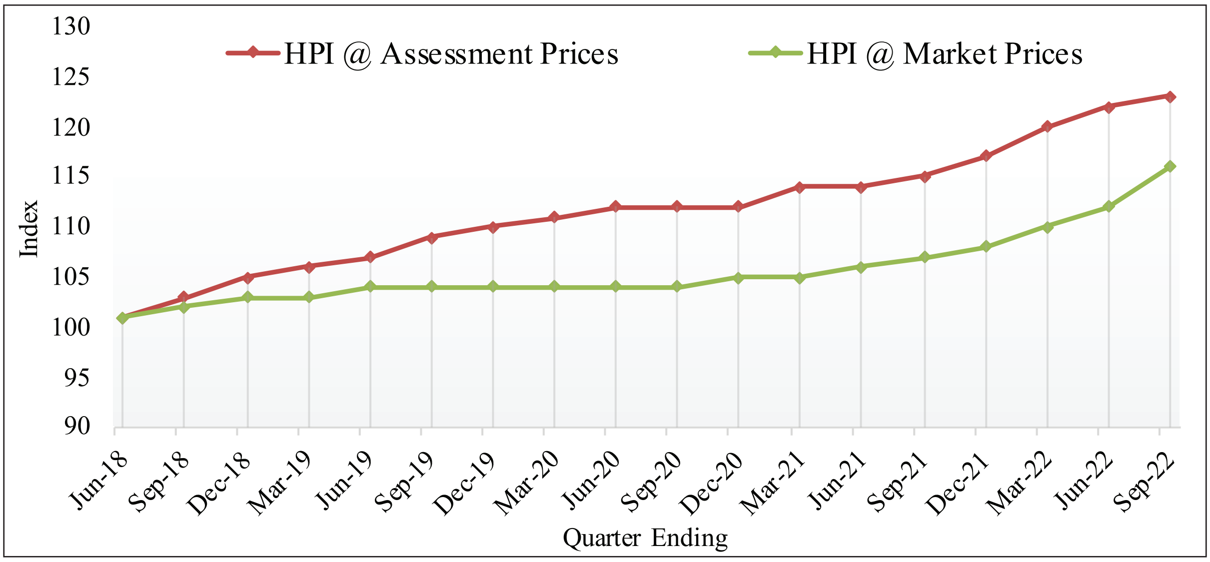
5.32 The annual change in HPI assessment price varied widely across the cities ranging from an increase of 20.2 per cent in Gandhinagar to a decline of 2.3 per cent in Bhiwadi in the QE Sept 22 over QE Sept 21. Out of the 50 cities, 46 cities registered an increase in the index, whereas 4 cities experienced a decline, on an annual basis. All of the eight major metros of the country witnessed an annual increase in the index.

Figure V.24: HPI for Metro Cities – Boom in 'Ahmedabad' and 'Hyderabad'



Source: RESIDEX, NHB

Figure V.25: Composite HPI for All-India – Recovering Housing House



Source: RESIDEX, NHB

5.33 The Covid-19 crisis significantly impacted the residential real estate market. Health concerns and stay-at-home orders led to fewer buyers looking for homes during the initial phase of the pandemic in April-June, 2020. Subsequently, India's real estate industry gained momentum from September 2020 onwards and peaked in the quarter ending in March 2021. The second wave of the pandemic affected the real estate sector yet again when home buyers delayed purchases due to mounting uncertainty and restricted movement. However, timely policy intervention by the government coupled with low home loan interest rates propped up demand and attracted buyers more readily in the affordable segment in FY23. The overall increase in composite HPI assessment and HPI market prices indicates a revival in the housing finance sector. A stable to moderate increase in HPI also offers confidence to homeowners and home loan financiers in terms of the retained value of the asset.

Box V.4: NHBs Support to the Housing Finance Sector (HFC)

The last three years were challenging for the housing sector. NHB has provided a significant impetus to obviate the liquidity issues faced by the Housing Finance Sector in the last 3 years.

- The Liquidity Infusion Facility Scheme was launched in 2019 to support HFCs in creating individual housing loan portfolios that fall under the priority sector, as defined by the RBI.
- During the COVID-19 pandemic, Special Refinance Facility (SRF) was launched for disbursing an amount of ₹10,000 crore provided by RBI under the Special Liquidity Facility and an amount of ₹5,000 crore allocated by RBI under an Additional Special Liquidity Facility.
- During 2020-21, SRF 2021 was launched with a corpus of ₹10,000 crore provided by RBI under SLF-2. NHB has provided refinance disbursement of ₹3.3 lakh crore since inception, of which ₹0.84 lakh crore were disbursed during last 3 financial years.
- Also, as a part of the Azadi Ka Amrit Mahotsav (AKAM), NHB has extended concessions of 25/30 basis points under refinance for the various categories including women, rural areas, SC/ST, aspirational districts, north-eastern region, loans to third gender/differently abled/disabled, UTs of Jammu & Kashmir and Ladakh, and green housing.

- In view of the nation's commitment at COP26 to reach net-zero emission by 2070, NHB has extended 100 bps concession for loans under Green Housing.
- As part of AKAM and to increase the credit offtake in geographically underpenetrated areas which are a national priority, NHB has decided to extend 100 bps concession and refinance for loans in designated aspirational districts, north-eastern States, Jammu & Kashmir and Ladakh, until September 2023.

Keeping check on Phamaceutical Prices

5.34 The principles for the regulation of the prices of drugs are based on the National Pharmaceuticals Pricing Policy, 2012, administered by the Department of Pharmaceuticals. The key principles of the policy are the essentiality of drugs, control of formulation prices and market-based pricing. Until 31 December 2022, ceiling prices for 890 formulations of 358 drugs/medicines across various therapeutic categories under National List of Essential Medicines (NLEM), 2015 have been fixed by National Pharmaceuticals Pricing Authority. Subsequently, NLEM 2022 was promulgated by Ministry of Health and Family Welfare in September 2022 and revised Schedule I of Drugs (Prices Control) Order (DPCO) was notified on 11 November 2022 by Department of Pharmaceuticals incorporating NLEM, 2022. Ceiling prices of 119 formulations under NLEM, 2022 have been fixed until 31 December 2022. In addition, retail prices for 2,196 formulations have been fixed under the DPCO, 2013.

5.35 Pradhan Mantri Bhartiya Janaushadhi Pariyojana (PMBJP) was launched to make quality generic medicines available at affordable prices to all. Under this scheme, dedicated outlets known as Janaushadhi Kendras are opened to provide quality generic medicines at affordable prices to all and especially to the poor and the deprived. Further, Pradhan Mantri Bhartiya Janaushadhi Kendras (PMBJKs) also provide self-employment with sustainable and regular earnings opportunities. Under the PMBJP, until 31 December 2022, more than 9000 PMBJKs have been opened across the country. At present, the product basket of PMBJP comprises 1759 medicines and 280 surgical devices available for sale.

Conclusion

5.36 It is not wishful thinking that 2023 will show less macroeconomic volatility than its preceding financial year. Both CPI-C and WPI have fallen below 6 per cent (which is the RBI tolerance limit for the former) and are on the descending slope of the surge that hit the economy in the first half of the current fiscal. International crude oil prices, the principal drivers of inflation this financial year, have returned to normal levels and so have prices of other major commodities. RBI projects CPI inflation for Q1 - FY24 at 5.0 per cent and for Q2 -FY24 at 5.4 per cent on the assumption of a normal monsoon.

5.37 India's inflation management has been particularly noteworthy and can be contrasted with advanced economies that are still grappling with sticky inflation rates. Due to the anticipated slowdown in advanced economies, inflation risks coming from global commodity prices are likely to be lower in FY24 than in FY23. However, in terms of overall risks to the benign baseline view on inflation, upside risks to India's projected rates may outweigh the downside risks. For instance, the re-emergence of Covid-19 in China can trigger supply chain disruptions as was the case during the pandemic period. On the other hand, if China returns to normalcy from Covid-19, there can be a surge in commodity demand - thus reversing the recent slump in commodity prices. Further, the probability of a soft landing in the US economy has risen in recent months, and that might keep up the US demand for oil. Similarly, the geopolitics associated with oil can particularly affect our imported inflation.

5.38 RBI forecasts elevated domestic prices for cereals and spices in the near term owing to supply shortages. Milk prices are also expected to spike reflecting high feed costs. In general, climate across the world has become increasingly erratic, further fortifying upside risks to food prices. A lot depends on industrial input prices: they may ease, but on the flip side their delayed pass-through to consumer prices may contribute to the stickiness of core inflation.

5.39 Still, overall, the inflation challenge in FY24 must be a lot less stiff than it has been this year. We expect monetary and fiscal authorities to be as proactive and vigilant as they have been this year.

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SOCIAL INFRASTRUCTURE AND EMPLOYMENT: BIG TENT

06

CHAPTER

Post the massive, unexpected disruption to human lives caused by the global pandemic, the year 2022 was when humanity once again picked up the threads and took small steps to get back to a semblance of normalcy. However, the challenges posed by the aftermath of this crisis, subsequent waves of the pandemic and the ensuing Russia-Ukraine conflict have impacted the global as well as India's development trajectory. There was a stress on key aspects of social well being of citizens such as health, education and social security etc. and the Government stepped in to continue its support towards social infrastructure development. Standing on the brink of FY23, various indicators of social development appear to have recouped. Focus on long-term goals of human development and "sabka sath, sabka vikas" have assumed salience. The social sector expenditure outlay of the Centre and State Governments has increased steadily to stand at ₹21.3 lakh crore in FY23 (BE), with its share in total General Government expenditure standing at 26.6 per cent.

Demonstrating the on-track progress to attain Sustainable Development Goal (SDG) of halving poverty by 2030, more than 41 crore people exited poverty between 2005-06 and 2019-21 according to the UN Mutilidimensional Poverty Index. Bouquet of social protection schemes, customised for different sections of the population such as elderly, unorganised workers, have been prioritised ensuring a shield of dignity for every member of society. The special focus on aspirational districts has resulted in steady improvements across health, education, financial inclusion, and basic infrastructure. Transforming welfare through technology, Aadhaar and JAM trinity have revolutionalised the universe of state-citizen interaction, enabling targeted delivery of Direct Benefit Transfers (DBT) through 318 Central schemes and over 720 State DBT schemes, seamless portability of ration card across States through 'One Nation One Ration Card' and national database of unorganised workers 'eShram portal'. The broad-based improvement in employment indicators is observed in data covering both the supply side and demand side of the labour market.

Labour markets have recovered beyond pre-Covid levels, in both urban and rural areas, as observed in supply-side and demand-side employment data. Quarterly urban employment data shows progress beyond pre-pandemic levels as the unemployment rate declined from 8.3 per cent in July-September 2019 to 7.2 per cent in July-September 2022. Reflecting rising formalisation of employment, net addition to EPFO payroll is steadily moving upward after swiftly rebounding from Covid-19, with the majority share coming from the youth. As per Annual Survey of Industries 2019-20, employment in the organised manufacturing sector has maintained a steady upward trend over time, with the employment per factory also increasing gradually. Employment has been rising faster *in factories employing more than 100 workers than in smaller ones, suggesting scaling up of manufacturing units. Year-on-Year (YoY) decline in monthly demand for Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) work is emanating from normalisation of the rural economy due to strong agricultural growth and a swift bounce-back from Covid-19.*

The noticeable rise in Rural Female Labour Force Participation Rate (FLFPR) from 19.7 per cent in 2018-19 to 27.7 per cent in 2020-21 is a positive development. Notably, India's female LFPR is likely to be underestimated, with reforms in survey design and content required to capture the reality of working females more accurately. Self-Help Groups (SHGs), having demonstrated their resilience and flexibility during Covid, can be an effective conduit to tap the rising willingness of females to work. The 1.2 crore SHGs, comprising of 88 per cent all women SHGs, cater to 14.2 crore households.

On the human capital formation front, the twin pillars of education and health are being strengthened from the core. Within the progressive framework of the National Education Policy (NEP), the improvement in basic facilities in schools and the rising availability of teachers is expected to yield dividends which will enrich the nation's growth and development prospects in the decades to come. The Government has also strengthened the health infrastructure and prepared itself to address present and future needs . Ensuring the provision of quality health facilities to citizens, the share of government health expenditure in total health expenditure has increased from 28.6 per cent in FY14 to 40.6 per cent in FY19, with a concomitant decline in out-of-pocket expenditure as a percentage of total health expenditure from 64.2 per cent in FY14 to 48.2 per cent in FY19. Augmenting the rural public healthcare system, the number of Sub-centres, Primary Health Centres (PHCs), and Community Health Centres (CHCs) have improved substantially, along with a rise in doctors, nurses, and other medical personnel in the past eight years. Consequently, a host of health-related indicators such as institutional births, immunisation and, coverage of health insurance, have witnessed an uptrend, as borne out by National Family Health Survey (NFHS) data. The progress of the path-breaking Ayushman Bharat programme, with nearly 22 crore beneficiaries, is being further tech-enabled through digital health IDs 'ABHA' and telemedicine through e-Sanjeevani.

In the Amrit Kaal, the lives of two-thirds of the Indian populace residing in rural India look remarkably better than a few years back, aided by the policy focus on basic amenities and efficient programme implementation. Outcome-oriented statistics concerning the quality of rural lives establish tangible progress in access to electricity, presence of improved drinking water sources, coverage under health insurance schemes, women empowerment, etc. The emphasis on digital land records through SVAMITVA is structural reform in rural land management and individual economic empowerment.

As India marches ahead, the ground lost as regards social sector improvements due to the pandemic has largely been recouped, powered by prompt policymaking and efficient implementation interwoven with technology. Going forward with the vision of 'Minimum Government, Maximum Governance', further developments will hold the key to attaining more equitable economic growth.

Introduction

6.1 The socio-economic milieu and unique ethos of India reside in the diverse and expansive populace transcending innumerable cultures, languages, and geographies, constituting the real wealth of the country. Realising the immense potential harboured by the young and aspirational citizens spanning numerous cities and villages requires ambitious vision and meticulous implementation, customising for the diversity of circumstances and special needs of different sections. The foundational services and structures that support society in availing various amenities important for a better quality of life, i.e the social infrastructure, indirectly contributes to economic development by laying the foundation for enhancement in income and employment opportunities, productivity growth, and technological advancement. That said, quality employment opportunities and working conditions are the essential instruments to chisel this potential into long-term sustainable growth. In its Amrit Kaal for the next 25 years, India envisions rewarding itself with the dividends that can come from demographics.

6.2 With the overall development of the economy, the concept of quality of life has enlarged to include many more elements than the traditional metrics of income (which determine the availability of basic requirements such as food and shelter) and education levels. It now encompasses access to clean drinking water, sanitation, employment prospects, health care, social security, connectivity, etc. All these together determine the quality of life. Research studies have concluded that quality of life depends upon the fulfilment of basic needs and being able to live in an affable environment.[1] Cognisant of this fact, the Government places a high priority on the development of the social infrastructure of the country.

6.3 This is all the more pertinent in the contemporary scenario as India has adopted the UN SDGs 2030, which are a set of comprehensive, far-reaching, and people-centric universal and transformative goals and targets. Many of these seventeen goals concern the social well-being of individuals, resolving as follows:

"We resolve, between now and 2030, to end poverty and hunger everywhere; to combat inequalities within and among countries; to build peaceful, just, and inclusive societies; to protect human rights and promote gender equality and the empowerment of women and girls; and to ensure the lasting protection of the planet and its natural resources. We resolve also to create conditions for sustainable, inclusive and sustained economic growth, shared prosperity and decent work for all, taking into account different levels of national development and capacities."[2]

6.4 The country continues to make good progress in increasing incomes and improving the standard of living over the past decades. As detailed in the chapter, many social indicators have continued to improve. The years 2020 and 2021 were the peak years of the pandemic, which tested the strength of the country's social and health infrastructure, hampering education, loss of job opportunities, etc. Several measures were taken to meet the growing needs of the health pandemic during this time, extending into 2022. FY23 has been a year of rejuvenation for the sector, having withered the storm of the pandemic and come out stronger. Various dimensions of the sector are recouping lost grounds and are on the path of reenergising to meet the vision of "*sabka sath, sabka vikas and sabka vishwas"*.

[1] For example: Martha Nussbaum and Amartya Sen, ed. (1993). The Quality of Life, Oxford: Clarendon Press. and Barcaccia, Barbara (4 September 2013). "Quality of Life: Everyone Wants It, But What Is It?". Forbes/ Education.

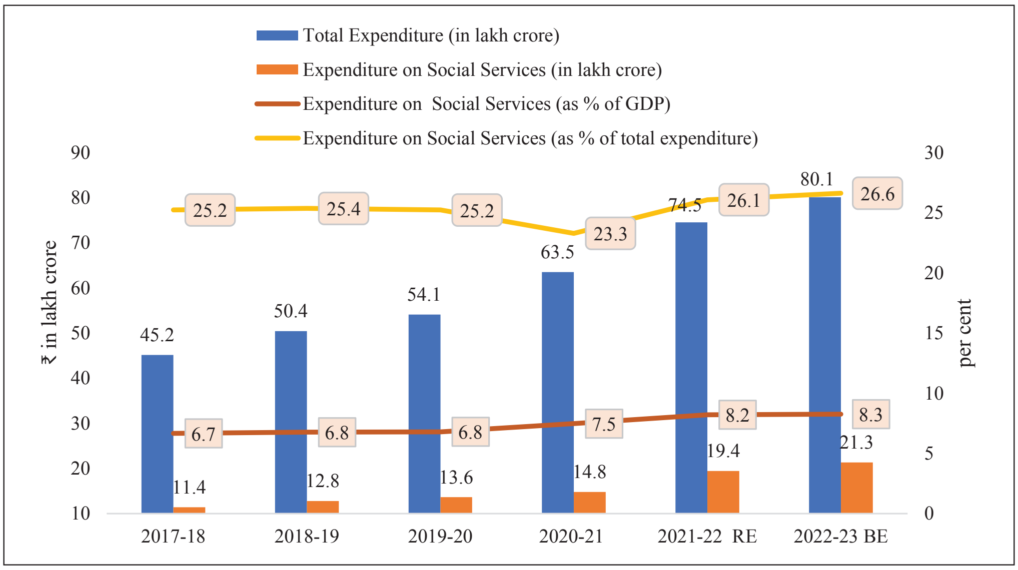
[2] Transforming our world: the 2030 Agenda for Sustainable Development, Resolution adopted by the General Assembly on 25 September 2015

6.5 India is entering the Amrit Kal with better-equipped schools, affordable healthcare, increasing formal employment, empowered women's collectives, and far-reaching access to basic amenities such as sanitation, drinking water and electricity. This Chapter presents emerging evidence of the achievements on these fronts. It reviews the progress on the social infrastructure front and the enhancement of employment opportunities in the country. It covers various aspects of the social sector, including trends in the Government's expenditure on the social sector; the progress on the human development front; multiple measures being taken to ensure basic necessities to all citizens; the trends in employment and education and measures to enhance the quality of life and governance in rural areas. It dwells on various Government initiatives towards attaining different SDGs and the outcomes thereof.

Social Sector Expenditure Keeping Pace with Growing Importance of the Sector

6.6 The Government's spending on social services[3] has shown a rising trend since FY16 with a focus on many aspects of the social well-being of citizens of the country. The share of expenditure on social services in the total expenditure of the Government has been around 25 per cent from FY18 to FY20. It increased to 26.6 per cent in FY23 (BE). The social services expenditure witnessed an increase of 8.4 per cent in FY21 over FY20 and another 31.4 per cent increase in FY22 over FY21, being the pandemic years, which required enhanced outlay, especially in the health[4] and education[5] sectors. While the social sector expenditure outlay of the Centre and State governments was ₹12.8 lakh crore in FY19, it has increased steadily to stand at ₹21.3 lakh crore in FY23 (BE).

Figure VI.1: Trends in social service sector expenditure by General Government (Combined Centre and States)



Source: *Reserve Bank of India, Budget Documents of Union and State Governments.*

Note: 1. Budget Estimate (BE) & Revised Estimate (RE).

2. The ratios to Gross Domestic Product (GDP) at current market prices are based on the 2011-12 base.
3. Projected GDP for BE FY22 is ₹222,87,379 crore.

[3] Social services include education, sports, art, and culture; medical and public health, family welfare; water supply and sanitation; housing; urban development; the welfare of SCs, STs and OBCs, labour and labour welfare; social security and welfare, nutrition, relief on account of natural calamities, etc.

[4] Expenditure on 'Health' includes expenditure on 'Medical and Public Health', 'Family Welfare', and 'Water Supply and Sanitation.

[5] Expenditure on 'Education' pertains to expenditure on 'Education, Sports, Arts, and culture.

6.7 The share of expenditure on health in the total expenditure on social services, has increased from 21 per cent in FY19 to 26 per cent in FY23 (BE). The National Health Policy, 2017 envisages as its goal "*the attainment of the highest possible level of health and well-being for all at all ages, through a preventive and promotive healthcare orientation in all developmental policies, and universal access to good quality healthcare services without anyone having to face financial hardship as a consequence. This would be achieved through increasing access, improving quality, and lowering the cost of healthcare delivery.*" Accordingly, the policy recommended an increase in the Government's health expenditure from the existing 1.2 per cent to 2.5 per cent of GDP by 2025. Also, the Fifteenth Finance Commission, in its report, had recommended that public health expenditure of Union and States together should be increased in a progressive manner to reach 2.5 per cent of GDP by 2025 *(FFC report, para 9.41, iii)*. In keeping with this objective, Central and State Governments' budgeted expenditure on the health sector reached 2.1 per cent of GDP in FY23 (BE) and 2.2 per cent in FY22 (RE), against 1.6 per cent in FY21.

Table VI.1: Trends in social services expenditure by General Government (Combined Centre and States)

(₹ crore)

Items	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22 RE	2022-23 BE
Total Expenditure	3760611	4265969	4515946	5040747	5410887	6353359	7453320	8008684
Expenditure on Social Services	915500	1040620	1139524	1278124	1364906	1479389	1944013	2132059
of which:								
Education	391881	434974	483481	526481	579575	575834	681396	757138
Health	175272	213119	243388	265813	272648	317687	516427	548855
Others	348348	392527	412655	485829	512683	585868	746191	826065
As per cent of GDP								
Expenditure on Social Services	6.6	6.8	6.7	6.8	6.8	7.5	8.2	8.3
of which:								
Education	2.8	2.8	2.8	2.8	2.9	2.9	2.9	2.9
Health	1.3	1.4	1.4	1.4	1.4	1.6	2.2	2.1
Others	2.5	2.6	2.4	2.6	2.6	3.0	3.2	3.2
As per cent of total expenditure								
Expenditure on Social Services	24.3	24.4	25.2	25.4	25.2	23.3	26.1	26.6
of which:								
Education	10.4	10.2	10.7	10.4	10.7	9.1	9.1	9.5
Health	4.7	5.0	5.4	5.3	5.0	5.0	6.9	6.9
Others	9.3	9.2	9.1	9.6	9.5	9.2	10.0	10.3
As per cent of social services								
Education	42.8	41.8	42.4	41.2	42.5	38.9	35.1	35.5
Health	19.1	20.5	21.4	20.8	20.0	21.5	26.6	25.7
Others	38.0	37.7	36.2	38.0	37.6	39.6	38.4	38.7

The ratios to GDP at current market prices are based on 2011-12 base till 2021-22.
GDP for 2022-23 is as per Union Budget 2022-23.
Sources: *Budget Documents of Union and State Governments.*

Improving Human Development Parameters

6.8 'Human Development' is the key enabler for upward social mobility. The challenges posed by the aftermath of the peak of the Covid-19 pandemic in 2020 and 2021 and the ensuing Russia-Ukraine conflict in 2022 have impacted the development trajectory of India and the world. In the wake of these developments, there was a global decline in human development. According to United Nations Development Programme (UNDP) report, 90 per cent of countries have registered a reduction in their Human Development Index (HDI)[6] value in 2020 or 2021, indicating that human development across the world has stalled for the first time in 32 years. India ranked 132 out of 191 countries and territories in the 2021/2022 HDI report[7]. India's HDI value of 0.633 in 2021 places the country in the medium human development category, lower than its value of 0.645 in 2019. However, India's HDI value continues to exceed South Asia's[8] average human development. It has been steadily increasing and moving towards the world average since 1990 due to priority placed on investment in social infrastructure, including ensuring universal health and education.

6.9 On the parameter of gender inequality, India's Gender Inequality Index (GII)[9] value is 0.490 in 2021 and is ranked 122. This score is better than that of the South Asian region (value: 0.508) and close to the world average of 0.465. This reflects the Government's initiatives and investments towards more inclusive growth, social protection, and gender-responsive development policies. The country's progress in dealing with multidimensional poverty is presented in Box VI.1.

Table VI.2: India's position and trends in the Global HDI 2021

	HDI 2021		HDI Rank 2020	Life expectancy at birth (years)	Expected years of schooling (years)	Mean years of schooling (years)	Gross national income per capita (2017 PPP $)
	Rank	Value					
Switzerland	1	0.962	3	84.0	16.5	13.9	66,933
Norway	2	0.961	1	83.2	18.2	13.0	64,660
United Kingdom	18	0.929	17	80.7	17.3	13.4	45,225
Japan	19	0.925	19	84.8	15.2	13.4	42,274
United States	21	0.921	21	77.2	16.3	13.7	64,765
China	79	0.768	82	78.2	14.2	7.6	17,504
Brazil	87	0.754	86	72.8	15.6	8.1	14,370
South Africa	109	0.713	102	62.3	13.6	11.4	12,948
Indonesia	114	0.705	116	67.6	13.7	8.6	11,466
India	**132**	**0.633**	**130**	**67.2**	**11.9**	**6.7**	**6,590**
South Asian region		0.632		67.9	11.6	6.7	6,481
World average		0.732		71.4	12.8	8.6	16,752

Source: 2021/2022 Human Development Report, UNDP

[6] The Human Development Report published by the UNDP 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. It is calculated using 4 indicators – life expectancy at birth, mean years of schooling, expected years of schooling, and the GNI per capita.

[7] Released on 8 September 2022 and provides ranking for the year 2021.

[8] South Asia includes Afghanistan, Bangladesh, Bhutan, India, Islamic Republic of Iran, Maldives, Nepal, Pakistan, Sri Lanka

[9] The index measures inequality in achievement between women and men in three dimensions, viz. reproductive health, empowerment, and the labour market. It shows the loss in potential human development due to inequality between female and male achievements in these dimensions. The value of GIII ranges from 0, where women and men fare equally, to 1, where one gender fares as poorly as possible in all measured dimensions.

Box VI.1: UNDP Multidimensional Poverty Index 2022

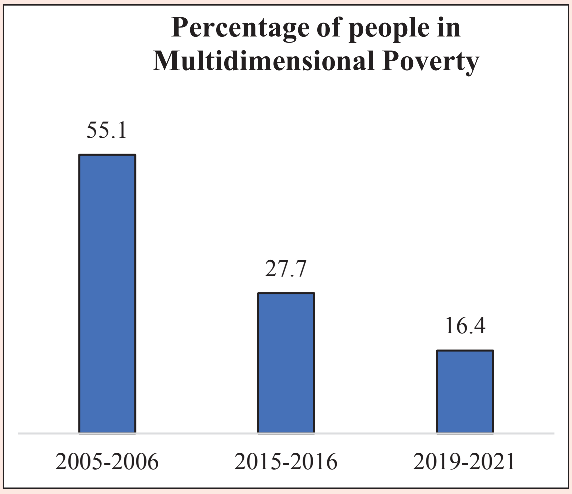
Generally, poverty is primarily measured in terms of lack of monetary means for a decent living. However, by definition 'poverty' has wider implications and leads to multiple disadvantages at the same time – such as poor health or malnutrition, lack of sanitation, clean drinking water or electricity, poor quality of education etc. Focusing on one factor alone, such as income, is not enough to capture the reality of poverty.

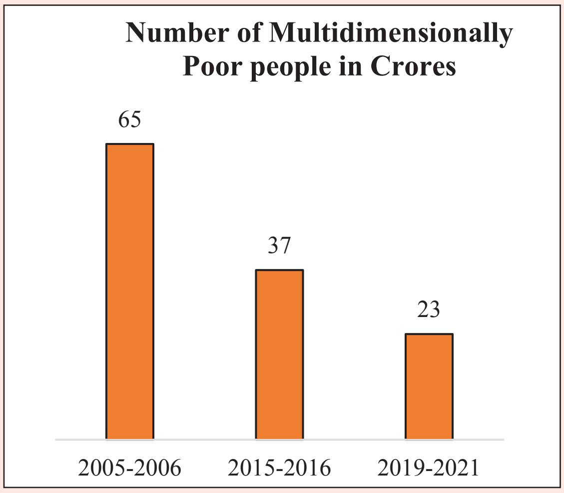
Multidimensional poverty measures are hence used to create a more comprehensive picture. It reveals who is poor and how they are poor and the range of different deprivations experienced by them.

One such measure is the United Nations Development Programme's (UNDP) global Multidimensional Poverty Index (MPI) which measures acute multidimensional poverty across more than 100 developing countries. The methodology involves measuring each person's overlapping deprivations across 10 indicators in three equally weighted dimensions: health, education, and standard of living. The health and education dimensions are based on two indicators each, while the standard of living is based on six indicators. All the indicators needed to construct the MPI for a country are taken from the same household survey. Each indicator is equally weighted within its dimension, so the health and education indicators are weighted 1/6 each, and the standard of living indicators are weighted 1/18 each. The MPI ranges from 0 to 1, and higher values imply higher multidimensional poverty. The MPI complements the international US$ 1.90-a-day poverty line by identifying who is multidimensionally poor and shows the composition of multidimensional poverty.

MPI for India

The 2022 report of the UNDP on MPI was released in October 2022 and covers 111 developing countries. As regards India, the survey data for 2019-21 has been used. Based on these estimates, 16.4 per cent of the population in India (228.9 million people in 2020) is multidimensionally poor while an additional 18.7per cent is classified as vulnerable to multidimensional poverty (260.9 million people in 2020). The intensity of deprivation in India, which is the average deprivation score among people living in multidimensional poverty, is 42 per cent. The MPI value, which is the share of the population that is multidimensionally poor adjusted by the intensity of the deprivations, is 0.069.





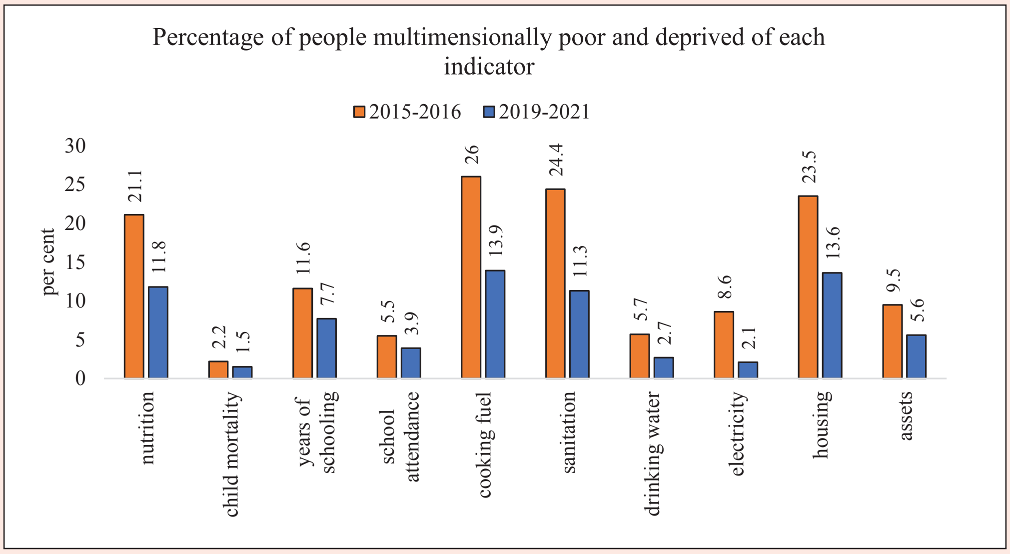
Source: UNDP Report on Multidimensional Poverty, 2022

The report also compares multidimensional poverty with monetary poverty measured by the percentage of the population living below the 2011 PPP of US$1.90 per day. It shows that monetary poverty does not present the complete picture. The headcount or incidence of multidimensional poverty is 6.1 percentage points lower than the incidence of monetary poverty. This implies that individuals living below the monetary poverty line may have access to non-income resources.

The findings of the report suggest that in India, 41.5 crore people exited poverty between 2005-06 and 2019-21, demonstrating that the SDG target 1.2 of reducing at least by half the proportion of men, women, and children of all ages living in poverty in all its dimensions according to national definitions by 2030 is possible to achieve.

The poorest states and groups (children, lower castes and those living in rural areas) reduced poverty the fastest in absolute terms, although the data do not reflect post-Covid-19 pandemic changes.

Among the multidimensionally poor, deprivation prevalence declined across deprivation categories.



Cting an example of how things are changing at the ground level, Dr. Sundipto Mundle, Chairman, Centre for Development Studies, in a newspaper article "Villages at the periphery and the changing face of backwardness", Live Mint, 24 November 2022, informs about his visit to four backward villages in Jharkhand, and reports about considerable progress in physical infrastructure such as roads, houses, digital connectivity, adequate irrigation facilities, Public Distribution System (PDS), education facilities etc. With the intervention of the State and the general market development, extreme deprivation and hunger have been eliminated in these villages.[10]

Transformation of Aspirational Districts Programme

6.10 The Government of India launched the 'Transformation of Aspirational Districts' (Aspirational Districts Programme (ADP)) initiative in January 2018 with a vision of a New India by 2022 wherein the focus is to raise living standards of its citizens and ensuring inclusive growth of all in the burgeoning economy. The districts are prodded and encouraged first to catch up with the best district of their state, and subsequently aspire to become one of the best in the

[10] https://www.livemint.com/opinion/online-views/villages-at-the-periphery-and-the-changing-face-of-backwardness-11669313591060.html

country, by competing with and learning from others in the spirit of competitive and cooperative federalism.

6.11 117 Aspirational Districts (ADs) across 28 States/UTs have been identified by NITI Aayog based upon composite indicators ranging from health and nutrition, education, agriculture, and water resources, financial inclusion and skill development, and basic infrastructure which have an impact on HDI. The broad contours of the programme are Convergence (of Central & State Schemes), Collaboration (of Central, State level Nodal Officers & District Collectors), and Competition among districts through monthly delta ranking; all driven by a mass movement.

6.12 With States as the main drivers, this programme focuses on the strength of each district, identifying low-hanging fruits for immediate improvement and measuring progress by ranking districts every month. The ranking is based on the incremental progress made across 49 Key Performance Indicators (KPI) under five broad socio-economic themes mentioned above.

6.13 NITI Aayog has developed a broad template for the formulation of district plans. Since different districts have different opportunities and challenges, they have been advised to customise the template. A primer comprising steps to be taken to improve each of the indicators, compiled from the inputs received from respective Ministries, has also been developed with the help of Central Ministries and the States and shared with district administration.

6.14 *Achievements of the programme*

(a) Many ADs have surpassed the average state values in several indicators under the Health and Nutrition theme monitored under the programme. For instance, in 10 indicators of health, 73 ADs have surpassed the state averages.

(b) The programme monitors progress across five focus sectors. All districts have made significant improvements across different indicators for instance, under Health and Nutrition, 46 districts have improved by up to 45 per cent, and 23 districts have improved by up to 69 per cent in critical indicators related to pregnant women's health which have a bearing on the Maternal and Infant Mortality Rates such as frequency and coverage of antenatal care check-ups; regularity of supplementary nutrition intake by pregnant women, and timely Anaemia detection and treatment rate. Under education, 46 districts have improved by up to 34 per cent, and 29 districts have improved by up to 49 per cent in critical indicators which affect learning outcomes attained by students such as the percentage of elementary schools complying with Right to Education Act, 2009 (RTE) specified Pupil-Teacher Ratio; percentage of schools with functional drinking water facility and percentage of schools with functional girls' toilets.

(c) While monitoring the outcome of financial inclusion, it was seen that ADs have performed better than non-aspirational districts. This means more people have access to bank accounts, more have been covered under the fold of government insurance schemes and more can secure MUDRA loans in ADs.

(d) Several ADs have reported saturation in the basic infrastructure indicators like the percentage of households with electricity connection; percentage of habitations with access to all-weather roads under Pradhan Mantri Gram Sadak Yojana (PMGSY); cumulative number of kilometres of all-weather road work completed as a percentage of total sanctioned kilometres in the district under PMGSY; and percentage of households with individual household washrooms, etc.

Template of Good Governance

6.15 The ADP has emerged as a template for good governance, especially in remote and difficult areas. At present, two programmes have been conceptualised along the lines of ADP design, one is 'Mission Utkarsh' and the other is 'Aspirational Blocks Programme' (ABP). On 22 January 2022, 'Mission Utkarsh' was launched, under which 15 Central Ministries, having an interface with the public, have identified their low performing 10-15 districts. Following the ADP template, the Ministries have launched actions to bring these districts at par with an average district in the state in one year and close to the all-India average in another.

6.16 The Central Government and States have come together to use the ADP template to identify backward blocks and use similar data monitoring and competition-based programme to improve the most under-developed blocks in the country. In order to further strengthen this initiative, 500 most backward blocks across States and UTs have been identified for rapid development.

Progressing Labour Reform Measures

6.17 In 2019 and 2020, 29 Central Labour Laws were amalgamated, rationalised, and simplified into four Labour Codes, *viz.,* the Code on Wages, 2019 (August 2019), the Industrial Relations Code, 2020, the Code on Social Security, 2020, and the Occupational Safety, Health & Working Conditions Code, 2020 (September 2020). The new laws are in tune with the changing labour market trends and, at the same time, accommodate the minimum wage requirement and welfare needs of the unorganised sector workers, including the self-employed and migrant workers, within the legislation framework. The Labour Codes have been aligned with the present economic scenario and technological advancements along with reduction in multiplicity of definitions and authorities. The Codes also ease compliance mechanism aiming to promote ease of doing business/setting up of enterprises and catalyse creation of employment opportunities while ensuring safety, health and social security of every worker. Use of technology, such as, web-based Inspection has been introduced in order to ensure transparency and accountability in enforcement. Decriminalisation of minor offences has also been provided in the Labour Codes.

6.18 Rules made under the Codes have been entrusted to Central Government, State Government and at appropriate level. There is a requirement for pre-publication of Rules in their official Gazettes for public consultation. As of 13 December 2022, 31 States also have pre-published the draft rules under the Code on Wages, 28 States under Industrial Relations Code, 28 States under Code on Social Security, and 26 States under Occupational Safety Health and Working Conditions Code.

Table VI.3: Status of Rules by States/UTs under the four Labour Codes

Name of Code	Name of States which have pre-published the draft Rules
The Code on Wages, 2019	Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chhattisgarh, Goa, Gujarat, Haryana, Himachal Pradesh, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Mizoram, Odisha, Punjab, Rajasthan, Sikkim, Tamil Nadu, Telangana, Tripura, Uttarakhand, Uttar Pradesh, UTs of Andaman & Nicobar Islands, Chandigarh, Jammu & Kashmir, Ladakh, NCT of Delhi and Puducherry **(31)**
The Industrial Relations Code, 2020	Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chhattisgarh, Goa, Gujarat, Haryana, Himachal Pradesh, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Mizoram, Odisha, Punjab, Tamil Nadu, Telangana, Tripura, Uttarakhand, Uttar Pradesh, Sikkim, UTs of Chandigarh, Jammu & Kashmir, Ladakh and Puducherry **(28)**
The Code on Social Security, 2020	Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chhattisgarh, Goa, Gujarat, Haryana, Himachal Pradesh, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Mizoram, Odisha, Punjab, Telangana, Tripura, Uttarakhand, Uttar Pradesh, Sikkim, UTs of Andaman & Nicobar Islands, Chandigarh, Jammu & Kashmir, Ladakh and Puducherry (**28**)
The Occupational Safety Health and working Conditions Code, 2020	Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chhattisgarh, Goa, Gujarat, Haryana, Himachal Pradesh, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Odisha, Punjab, Tamil Nadu, Telangana, Tripura, Uttarakhand, Uttar Pradesh, UTs of Chandigarh, Jammu & Kashmir, Ladakh and Puducherry **(26)**

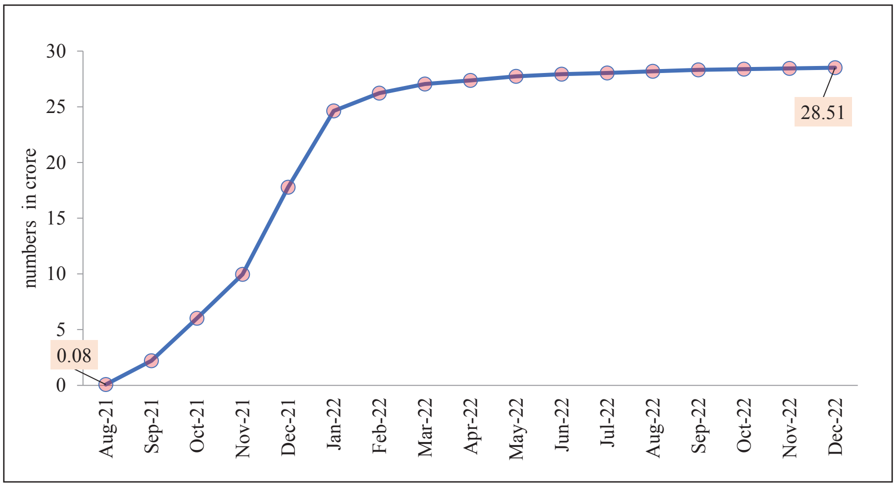
Source: Ministry of Labour & Employment; status as of 13 December 2022

e-Shram portal

6.19 The Government has been working on improving life and dignity of labour force of country by protecting and safeguarding the interest of workers, promoting their welfare and providing social security both in organised and unorganised sectors. Accordingly, Ministry of Labour and Employment (MoLE) has developed eShram portal for creating a National database of unorganised workers, which is verified with Aadhaar. It captures details of workers like name, occupation, address, occupation type, educational qualification, and skill types etc., for the optimum realisation of their employability and extend the benefits of the social security schemes to them. It is the first-ever national database of unorganised workers, including migrant workers, construction workers, gig and platform workers, etc.Currently, e-Shram portal has been linked to NCS portal and ASEEM portal for seamless facilitation of services.

6.20 As on 31 December 2022, total over 28.5 crore unorganised workers have been registered on eShram portal. Female registrations stood at 52.8 per cent of the total and 61.7 per cent of total registrations belonged to the age group 18-40 years. State-wise, Uttar Pradesh (29.1 per cent), Bihar (10.0 per cent), and West Bengal (9.0 per cent) accounted for nearly half of total registrations. Agriculture sector workers contributed to 52.4 per cent of the total registrations, followed by domestic and household workers (9.8 per cent), and construction workers (9.1 per cent).

Figure VI.2: Cumulative registrations under e-Shram portal



Source: e-Shram Dashboard, MoLE

Aadhaar: The Many Achievements of the Unique Identity

6.21 Aadhaar, a 12-digit unique identification number provides a digital identity to the residents of India and ensures authentication. It connects the Government and the individual, replacing the disentangled web of multiple IDs for multiple purposes, and secures the social contract between the State and the Citizen. It is because of the initiative taken in 2010 that today, the nation is consistently building and strengthening a digital economy which will ultimately give a global competitive advantage in how money and goods move around the country over its competitors.

6.22 Paul Romer, a Nobel laureate and former World Bank Chief Economist, has described what 135 crore citizens of India, which is 94 per cent of the population and 100 per cent of the adult (>18 years), have as *"the most sophisticated ID programme in the world."*[11] Aadhaar provides a conclusive connection between the photograph of the Aadhaar holder, his/her fingerprints, and iris scan details.

Achievements of Aadhaar

6.23 Aadhaar is an essential tool for social delivery by the State. 318 Central schemes and over 720 state DBT schemes are notified under section 7 of the Aadhaar Act, 2016, and all these schemes use Aadhaar for targeted delivery of financial services, subsidies, and benefits. Aadhaar is the foundation of India's digital integration, as shown by the following statistics (as of November 2022):

- Aadhaar Generated- 135.2 crore

[11] "'Adhaar' most sophisticated ID programme in the world: World Bank". *Daiji World*, Quoted from an interview with Bloomberg.

- Aadhaar Updated- 71.1 crore
- Authentication Done- 8621.2 crore
- eKYC Done-1350.2 crore
- 75.3 crore residents have linked their Aadhaar with ration cards to avail of ration
- 27.9 crore residents linked Aadhaar with cooking gas connection for LPG subsidy
- 75.4 crore bank accounts are linked with Aadhaar & 1549.8 crore transactions via Aadhaar Enabled Payment Systems

6.24 The key usages of Aadhaar in the daily lives of citizens are:

- ***Aadhaar – Usage in DBT****:* When linked with a bank account, an Aadhaar becomes the 'Financial Address' of an individual, which helps to accomplish the country's goal of financial inclusion. The number is sufficient to transfer any payment to an individual's bank account through Aadhaar Payment Bridge (APB), thus eliminating the need to give other details, viz. the bank account, IFSC Code, and bank branch details to the Government/ Institutions.

- ***Aadhaar Enabled Payment Systems (AEPS):*** AEPS helps an individual to do basic banking transactions, viz. withdrawal, cash deposit, transfer of funds from his bank account, etc., by simply using his Aadhaar. This has immensely facilitated providing door-step banking services and helped mitigate the hardships of the people due to the Covid-19 pandemic.

- ***JAM (Jan-Dhan, Aadhaar, and Mobile*****)** trinity, combined with the power of DBT, has brought the marginalised sections of society into the formal financial system, revolutionising the path of transparent and accountable governance by empowering the people. Till November 2022, multiple large central schemes, including PAHAL, MGNREGS, etc., have paid over ₹7,66,055.9 crore through over 1,010 crore successful transactions.[12]

- ***One Nation One Ration Card (ONORC) Scheme*****:** Aadhaar has played a key role in the implementation of the ONORC Scheme. While Aadhaar seeding of the PDS database has resulted in significant savings due to eliminating ghost and duplicate beneficiaries. Grain disbursal through Aadhaar-based Biometric Authentication has brought meaningful transparency and back-office improvement of the logistic network of PDS. Free distribution of food grains under 'Pradhan Mantri Garib Kalyan Yojana' (PMGKY) has greatly mitigated the Covid pandemic's impact, especially for the weakest and most vulnerable sections of society.

- ***PM Kisan Samman Nidhi:*** Aadhaar platform forms the backbone for the implementation of this scheme, right from registration through Aadhaar eKYC to DBT through the APB.

- ***Co-WIN:*** Successful management of the Covid pandemic without the Co-WIN platform would not have been possible. Aadhaar played a vital role in developing the Co-WIN platform and in the transparent administration of over 2 billion vaccine doses.

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[12] Source: National Payments Coporation of India.

- ***Face Authentication:*** The use of face as an additional modality of authentication is increasing. This has helped, especially the elderly, to get 'Jeevan Praman' through their smartphones to avail of pension.

The Aadhaar Ecosystem

6.25 The Unique Identification Authority of India (UIDAI) is mandated to develop the policy, procedure, and system for issuing an Aadhaar number to each resident individual and performing authentication. It also has the responsibility to take necessary measures to ensure that the information stored in the Central Identities Data Repository (CIDR) is secured and protected against unauthorised access or misuse. The ecosystem required for the purpose now consists of the following (as of 30 November 2022):

- 66,103 Aadhaar counters and 34,834 Child Enrolment Lite Client devices are functional
- 180 Active Registrars
- 507 Active Enrolment Agencies
- UIDAI run 88 Aadhaar Sewa Kendra are functional in 72 cities
- 15,002 Village Level Entrepreneurs operational as Banking Correspondents permitted to undertake Aadhaar updates services
- Around 53,750 postmen/Grameen Dak Sewaks under India Post Payment Bank have been approved to provide mobile number update facility
- 178Aadhaar User Agencies
- 169 e-KYC user agencies

Improving Employment Trends

6.26 Employment trends can be studied from the supply side of labour through household surveys such as the PLFS conducted by the Ministry of Statistics and Programme Implementation (MoSPI), and the demand side of labour through enterprise or establishment surveys such as the Annual Survey of Industries (ASI) by MoSPI, Quarterly Employment Survey (QES) by Labour Bureau, etc. These enable a complete view of the labour market and the trends therein.

6.27 The broad-based improvement in employment indicators can be observed in data covering both the supply side and demand side of the labour market. Labour markets have recovered beyond pre-Covid levels, in both urban and rural areas, with unemployment rates falling from 5.8 per cent in 2018-19 to 4.2 per cent in 2020-21, and a noticeable rise in rural FLFPR from 19.7 per cent in 2018-19 to 27.7 per cent in 2020-21. More recent urban employment data shows progress beyond pre-pandemic levels as the unemployment rate declined from 8.3 per cent in July-September 2019 to 7.2 per cent in July-September 2022.

The net addition to EPFO payroll is steadily moving upward, with the majority share coming from the youth. Employment in nine major sectors has increased by 10 lakh over the year 2021-22 as per the QES. Employment in the organised manufacturing sector has also been rising over the years, as per the ASI 2019-20 data. The steady increase in employment levels can be attributed to multiple measures taken to cushion the impact of Covid-19 on MSMEs, street vendors, and manufacturing units and provide job opportunities through various targeted schemes and measures as detailed in later in the chapter. The trends in employment on the supply and demand side, as available from various data sources, are presented below.

Supply Side of Employment

Annual Periodic Labour Force Survey

6.28 As per usual status[13], the labour force participation rate (LFPR)[14], worker population ratio (WPR)[15] and unemployment rate (UR)[16] in PLFS 2020-21(July-June)[17] have improved for both males and females in both rural and urban areas compared to PLFS 2019-20 and 2018-19.

TableVI.4: Employment trends as per usual status
(principal status + subsidiary status) for persons of all ages

(per cent)

		Rural			Urban			Rural + Urban		
		2018-19	2019-20	2020-21	2018-19	2019-20	2020-21	2018-19	2019-20	2020-21
Male	LFPR	55.1	56.3	57.1	56.7	57.8	58.4	55.6	56.8	57.5
	WPR	52.1	53.8	54.9	52.7	54.1	54.9	52.3	53.9	54.9
	UR	5.6	4.5	3.9	7.1	6.4	6.1	6.0	5.1	4.5
Female	LFPR	19.7	24.7	27.7	16.1	18.5	18.6	18.6	22.8	25.1
	WPR	19.0	24.0	27.1	14.5	16.8	17	17.6	21.8	24.2
	UR	3.5	2.6	2.1	9.9	8.9	8.6	5.2	4.2	3.5
Person	LFPR	37.7	40.8	42.7	36.9	38.6	38.9	37.5	40.1	41.6
	WPR	35.8	39.2	41.3	34.1	35.9	36.3	35.3	38.2	39.8
	UR	5.0	4.0	3.3	7.7	7.0	6.7	5.8	4.8	4.2

Source: Annual PLFS 2017-18 to 2020-21, MoSPI

6.29 While usual status has a long reference period of one year, current weekly status (CWS)[18] is a stricter benchmark. It can capture the loss in duration of employment during events such as a pandemic, with a reference period of one week. As per CWS, labour market indicators recovered swiftly from 2019-20 (July-June) to 2020-21, and for both males and females, with improvement in employment indicators. Region-wise, while rural labour market indicators have been improving for both males and females, the urban labour market is slightly behind pre-Covid levels in 2020-21 (July-June). However, taking a cue from the Quarterly PLFS reports for urban areas available for more recent quarters, the recovery of urban labour markets beyond pre-Covid levels is discernible. Quarterly urban unemployment rate declined from pre-pandemic level

[13] For a person to be categorised as employed as per usual status (ps+ss), he/she must have pursued an economic activity for at least 30 days during the 365 days preceding the date of the survey.
[14] According to the PLFS, LFPR is the percentage of working-age population engaged in work or making tangible efforts to seek 'work' or being available for 'work' if it is available. 'Work' includes self-employment (subsistence agriculture and collection of firewood, poultry farming, etc, for self-consumption), regular wage/salaried employment, and casual labour.
[15] WPR is defined as the per centage of employed persons in the total population.
[16] UR is defined as the per centage of unemployed persons in the labour force.
[17] This is the lastest available annual survey released in June, 2022.
[18] For a person to be categorised as employed as per current weekly status, he/she must have pursued an economic activity for at least 1 hour during the seven days preceding the date of survey.

of 8.3 per cent in July-September 2019 to 7.2 per cent in July-September 2022, accompanied by a rise in LFPR from 47.3 per cent to 47.9 per cent during the same period, as discussed in paraghaphs 6.33 and 6.34.

Table VI.5: Employment trends as per current weekly status
(for ages 15-plus)

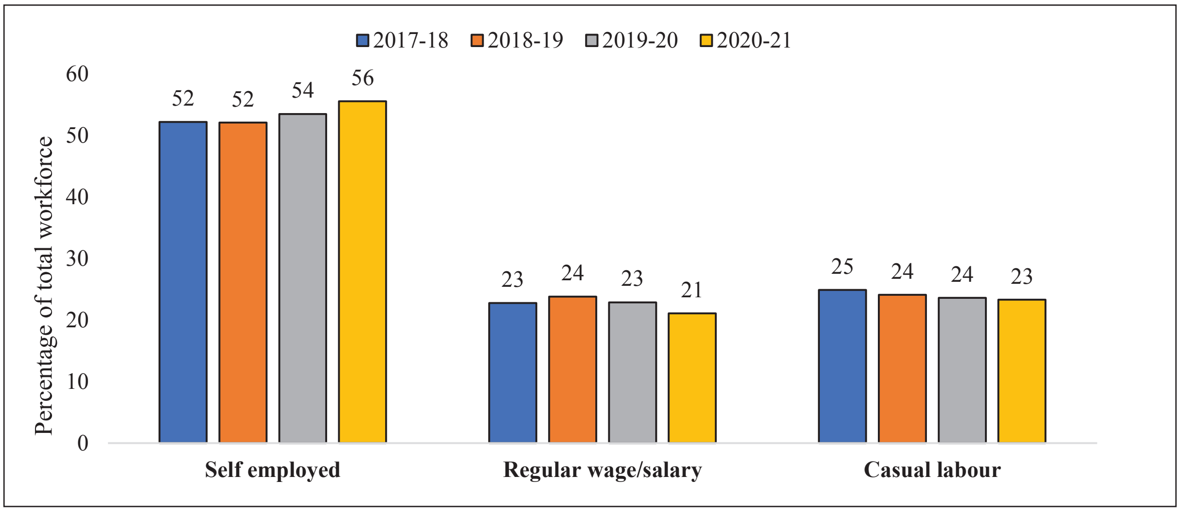
(per cent)

2018-19		Rural			Urban			Rural + Urban		
		2018-19	2019-20	2020-21	2018-19	2019-20	2020-21	2018-19	2019-20	2020-21
Male	LFPR	75.5	76.7	76.7	73.7	73.8	73.8	74.9	75.8	75.8
	WPR	69.0	70.1	71.2	67.2	66.0	66.8	68.4	68.8	69.9
	UR	8.6	8.7	7.1	8.8	10.5	9.4	8.7	9.3	7.8
Female	LFPR	22.5	28.3	30.0	19.7	22.1	21.7	21.6	26.3	27.5
	WPR	20.9	26.7	28.6	17.4	19.4	19.0	19.8	24.4	25.7
	UR	7.3	5.5	4.8	12.1	12.4	12.2	8.7	7.3	6.6
Person	LFPR	49.1	52.5	53.4	47.1	48.2	48.0	48.5	51.2	51.8
	WPR	45.0	48.4	50.0	42.7	43.0	43.1	44.3	46.7	47.9
	UR	8.3	7.8	6.5	9.5	11.0	10.1	8.7	8.8	7.5

Source: Annual PLFS 2017-18 to 2020-21, MoSPI
Note: 2020-21 refers to the period July 2020-June 2021 and likewise for 2019-20 and 2018-19

6.30 According to broad status in employment, the share of self-employed increased and that of regular wage/salaried workers declined in 2020-21 vis-à-vis 2019-20, driven by trend in both rural and urban areas. The share of casual labour declined slightly, driven by rural areas.

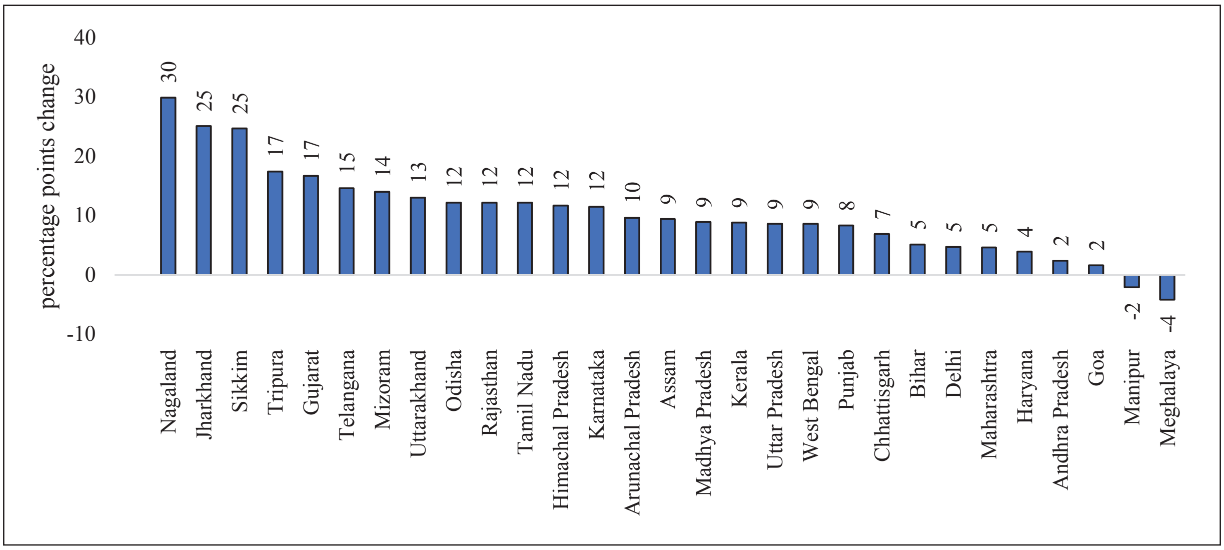
Figure VI.3: Trends in broad employment status *(Persons, rural+urban)*



Source: Annual PLFS, MoSPI

6.31 Based on the industry of work, the share of workers engaged in agriculture rose marginally from 45.6 per cent in 2019-20 to 46.5 per cent in 2020-21, the share of manufacturing declined faintly from 11.2 per cent to 10.9 per cent, the share of construction increased from 11.6 per cent to 12.1 per cent, and share of trade, hotel & restaurants declined from 13.2 per cent to 12.2 per cent, over the same period. This could be attributable to the impact of Covid on manufacturing and services employment (2020-21 data covers July 2020 to June 2021 period), while agricultural growth remained strong during the period. An upturn in the FLFPR (rising by 9.5 percentage points (pp) in 2017-18 to 2020-21 for usual status and by 8.3 pp for CWS) is a positive development on the gender aspect of employment, which could be attributable to rising rural amenities freeing up women's time, and high agricultural growth over the years. Box VI.2 provides a perspective on measurement aspects of FLPFR.

Figure VI.4: Change in female labour force participation rate
(2020-21 over 2017-18; usual status, all ages)



Source: PLFS, MoSPI

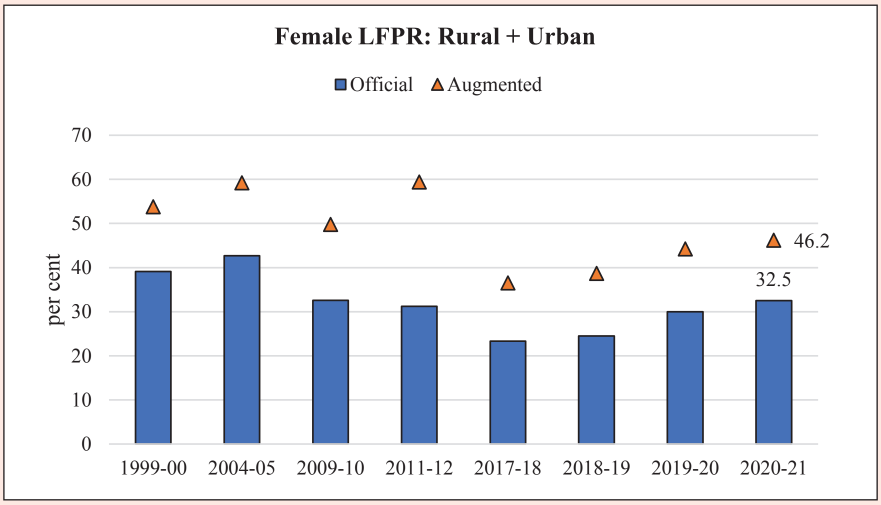
Box VI.2: Measurement issues in Female Labour Force Participation Rate

The common narrative of Indian women's low LFPR misses the reality of working females integral to the economy of the household and the country. Measurement of employment through the survey design and content can make a significant difference to final LFPR estimates, and this matters more for measuring female LFPR than male LFPR. Here, three main measurement issues have been highlighted: overly broad categories, reliance on a single question to categorize labour force status, and the narrow approach of limiting productive work to labour force participation.

Use of overly broad categories clubbing productive work (collection of firewood, poultry farming, etc.) with domestic duties can in one sweep shift a significant proportion of women in the labour force into the out-of- labour-force category. For example, unless the production of primary goods is identified as the main activity by the respondent, the PLFS questionnaire would categorize women who do both domestic activities and primary goods production/collection into 'Activity Code 93,[19] and thus out-of-the-labour-force.

[19] In the NSSO survey questionnaires, activity status codes are assigned to each household member, according to their primary activity undertaken. Activity code 93 refers to "engaged in domestic duties and also engaged in free collection of goods (vegetable, firewood, cattle feed, etc.), tailoring, etc. for household use".

Adding the proportion of women in Activity code 93 to the official LFPR yields an "***Augmented Female LFPR***" of 46.2 per cent for FY21 for ages 15 years and above, much higher than the 32.5 per cent estimated by the conventional definition (PLFS data for usual status). A similar attempt has been made in an International Labour Organization (ILO) research paper[20], arriving at a female LFPR of 56.4 per cent in India for 2012, against the far lower official estimate of 31.2 per cent for 2012.



Source: NSS Employment Unemployment Survey (NSS-EUS) for 1999-00 to 2011-12, PLFS from 2017-18 to 2011-12.
Augmented FLPR calculations estimated using NSO data
Note: 1. Usual activity (ps+ss) status (for age group 15 years & above) in per cent
2. NSS-EUS and PLFS may not be comparable, given different sampling weights, frequencies, and data collection techniques.

No Recovery questions in the PLFS questionnaire: The survey design relies mainly on a single question for measuring the labour force status of an individual, which eliminates the scope to rectify any error in self-reporting, considering the large rural population and literacy levels. Contrary to ILO recommendations, there are no additional questions ('recovery questions') in the PLFS questionnaire to double-check individuals' labour force status, relying too much on how the individual self-identifies in the first instance. ILO recommends using multiple probing or recovery questions such as "whether the person helped in the family business" and "whether the person worked in own business in last one week/year" and "whether person helped the family with job".

In a World Bank and ILO study in Sri Lanka[21], such methodological issues accounted for close to eight percentage point underestimation of the female employment-to-population ratio.

Measurement of "Work" alongside "Employment": There is a need to broaden the horizon of measuring work, which constitutes the whole universe of productive activities alongside employment. According to the latest ILO standards[22], limiting productive work to labour force participation is

[20] Kapsos, S., Bourmpola, E., Silberman, A. (2014), "Why is female labour participation rate declining so sharply in India?", ILO Research Paper No. 10

[21] Discenza, A., Gaddis, I., Palacios-Lopez, A., Walsh, K. (2021). Measuring Women and Men's Work: Main Findings from a Joint ILO and World Bank Study in Sri Lanka.

[22] The 19th International Conference of Labour Statisticians in 2013 adopted a new set of norms to expand the set of productive activities classified as 'work', comprising any activity performed by persons of any sex and age to produce goods or to provide services for use by others or for own use. The definition of work is aligned with the General production boundary as defined in the System of National Accounts 2008, including own use production work and volunteer work.

narrow and only measures work as a market product. It does not include the value of women's unpaid domestic work, which can be seen as expenditure-saving work such as collecting firewood, cooking, tutoring children, etc, and contributes significantly to the household's standard of living. Thus, a wholesome measurement of "work" may require improved quantification through redesigned surveys.

That said, there is further significant scope to nullify the gender-based disadvantages to enable free choice of women to join the labour market. Ecosystem services, including affordable creches, career counselling/handholding, lodging and transportation, etc., can further help unlock the gender dividend for inclusive and broad-based growth.

6.32 It may be noted that more than 75 per cent of rural female workers are employed in the agricultural sector. This implies a need to upskill and create employment for women in agriculture-related sectors such as food processing. Here, the self-help groups (SHGs) can play a crucial role in shaping rural women's potential into concrete developmental outcomes of financial inclusion, livelihood diversification, and skill development as discussed in Box VI.3.

Box VI.3: Role of Self-Help Groups in Women's Empowerment

The Self-Help Groups (SHGs)[23] movement, based on the principles of group solidarity and microfinance, has existed in India for 50 years in one form or another, with its roots tracing back to the formation of the Self-Employed Women's Association in 1972. The transformative potential of SHGs, exemplified through their key role in the on-ground response to Covid-19, has served as the fulcrum of rural development through women empowerment.

India has around 1.2 crore SHGs, 88 per cent being all-women SHGs. Success stories include Kudumbashree in Kerala, Jeevika in Bihar, Mahila Arthik Vikas Mahila Mandal in Maharashtra, and recently, Looms of Ladakh.

The SHG Bank Linkage Project (SHG-BLP), launched in 1992, has blossomed into the world's largest microfinance project. The SHG movement, now in its 30th year, has emerged as a powerful intervention to cover the small and marginalised sections. Currently, bank-linked SHGs are promoted through Central Government, State Governments, NGOs, etc. They must practice the 'Panchasutra' of regular meetings, regular savings, regular inter-loaning, timely repayment and up-to-date books of accounts to avail of loans from banks. With the active collaboration of stakeholders, the SHG-BLP covers 14.2 crore families through 119 lakh SHGs with savings deposits of ₹47,240.5 crore and 67 lakh groups with collateral-free loans outstanding of ₹1,51,051.3 crore, as on 31 March 2022. The number of SHGs credit linked has grown at a CAGR of 10.8 per cent during the last ten years (FY13 to FY22), while credit disbursement per SHG has grown at a CAGR of 5.7 per cent during the same period. Notably, SHGs' bank repayment is more than 96 per cent, underscoring their credit discipline and reliability.

[23] A SHG is a socially and economically homogenous group of up to 20 persons, formed voluntarily for the collective purpose of savings and credit, with no insistence on collateral for loans and end usage of credit.

Table: Progress under SHG-Bank Linkage Programme
(2019-20 to 2021-22)
(Number in lakh/Amount in ₹ crore)

Particulars		2019-20		2020-21		2021-22	
		No. of SHGs	Amount	No. of SHGs	Amount	No. of SHGs	Amount
SHG Savings with Banks as of 31st March	Total SHG Nos.	102.4 (2.3)	26152.1 (12.1)	112.2 (9.6)	37477.6 (43.3)	118.9 (5.9)	47240.5 (26.1)
	All women SHGs (W)	88.3 (3.5)	23320.6 (13.9)	97.3 (10.1)	32686.1 (40.2)	104.1 (7.0)	42104.8 (28.8)
	% of W	86.2	89.2	86.7	87.2	87.5	89.1
	DAY-NRLM SHGs	57.9 (3.8)	14312.7 (11.2)	64.8 (11.9)	19353.7 (35.2)	71.8 (10.9)	27576.9 (42.5)
Loans Disbursed to SHGs during the year	Total No. of SHGs extended loans.	31.5 (16.6)	77659.4 (33.2)	28.9 (-8.2)	58070.7 (-25.2)	33.9 (17.7)	99729.2 (71.7)
	All women SHGs (W)	28.8 (21.9)	73297.6 (37.6)	25.9 (-10.2)	54423.1 (-25.8)	31.5 (21.6)	93817.2 (72.4)
	% of W	91.7	94.4	89.7	93.7	92.7	94.1
	DAY-NRLM SHGs	20.5 (24.3)	52183.7 (56.2)	15.8 (-22.7)	29643.0 (-43.2)	22.9 (44.6)	63100.8 (112.9)

(Figures in parenthesis indicate the increase/decrease over the previous year)

Source: NABARD

Impact of SHGs: Empowered Women, Empowered Hinterland

Women's economic SHGs have a positive, statistically significant effect on women's economic, social, and political empowerment, with positive effects on empowerment achieved through various pathways such as familiarity with handling money, financial decision-making, improved social networks[24], asset ownership[25] and livelihood diversification[26].

According to an recent assessment[27] of DAY-National Rural Livelihood Mission, which is being undertaken through the SHGs, (for details see para 6.104) both participants and functionaries perceived high impacts of the programme in areas related to women empowerment, self-esteem enhancement, personality development, reduced social evils; and additionally, medium impacts in terms of better education, higher participation in village institutions and better access to government schemes.

Covid-19 Response as a montage of SHG's potential

Government's Covid-19 Package for SHGs

- Under PMGKY, the limit for collateral-free loans for women's SHGs was doubled from ₹10 lakh to ₹20 lakh. This is expected to benefit 63 lakh women SHGs and 6.85 crore households.

[24] Brody, C, De Hoop, T, Vojtkova, M, Warnock, R, Dunbar, M, Murthy, P and Dworkin, SL (2016). "Economic Self-Help Group Programmes for Improving Women's Empowerment: A Systematic Review", 3ie Systematic Review. London: International Initiative for Impact Evaluation (3ie)

[25] Datta, U. (2015). "Socio-economic impacts of jeevika: A large-scale self-help group project in Bihar, India", World Development, 68:1-18.

[26] Pandey, V., Gupta, A., and Gupta, S. (2019). "Labour and welfare impacts of a large-scale livelihoods program: Quasi-experimental evidence from India", Policy Research Working Paper No. 8883, World Bank.

[27] IRMA (2017). "Independent Assessment of Design, Strategies and Impacts of DAY-NRLM", p. xvii and p. 198-99.

- NRLM allowed for an additional Vulnerability Reduction Fund of ₹1.5 lakh to be extended to Village Organisations (VOs) in Covid hotspot areas and for vulnerable groups.

SHGs in action during Covid

The years of pestilence acted as an opportunity towards mobilising SHG women to unite, transcend their group identity and collectively contribute to crisis management. They emerged as pivotal players in crisis management, leading from the front in - producing masks (with cultural variants such as Gamusa Masks in Assam), sanitisers, and protective gear, creating awareness about the pandemic (e.g. Patrakar Didis of Jharkhand), delivering essential goods (e.g. Floating supermarkets in Kerala), running community kitchens (e.g. Prerna Canteens in Uttar Pradesh), supporting farm livelihoods (e.g. Pashu Sakhis for animal health care services, Aajeevika Farm Fresh Online selling and distribution mechanism for vegetables in Jharkhand), convergence with MGNREGS (in UP, Bihar, Chhattisgarh), and in delivery of financial services (e.g. Bank Sakhis managing bank rush for availing Covid-relief DBT cash transfers). The production of masks by SHGs has been a noteworthy contribution, enabling access to and use of masks by communities in remote rural areas and providing vital protection against the Covid-19 virus. As on 4 January 2023, more than 16.9 crore masks were produced by SHGs under DAY-NRLM.

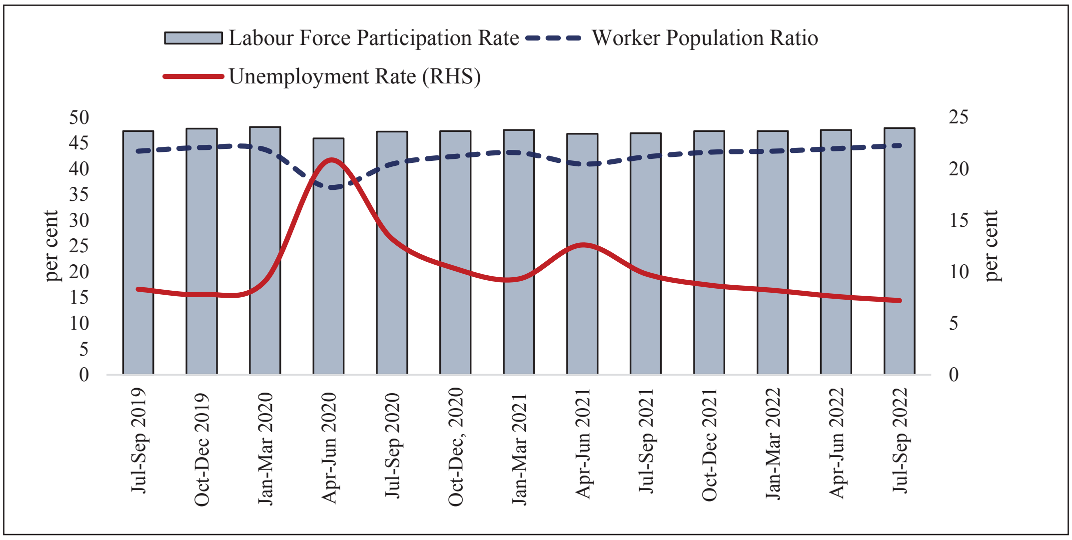
Way forward

SHGs are well-placed to facilitate overall rural development owing to their access to the last mile, ability to draw on communities' trust and solidarity, knowledge of local dynamics, and ability to swiftly manufacture simple products and services through the aggregation of members' economic activities. The demonstration of their resilience and flexibility during crises, including Covid, needs to be thus regularised for long-run rural transformation. This includes, among other things, addressing inter-regional disparity in the deepening of the SHG movement, graduating SHG members into micro-entrepreneurs, culturally contextualised skill development for moving up the value chain in products and services, and including the least privileged under the SHG umbrella.

Quarterly PLFS for urban areas

6.33 The PLFS conducted by the MoSPI at a quarterly level for urban areas is available till July-September 2022. The data shows an improvement in all the key labour market indicators in the quarter ending September 2022 both sequentially and over the last year, as per the CWS. The labour participation rate increased to 47.9 per cent in July-September 2022 from 46.9 per cent a year ago, while the worker-population ratio strengthened from 42.3 per cent to 44.5 per cent in the same period. The unemployment rate declined from 9.8 per cent in July-September 2021 to 7.2 per cent in July-September 2022.This trend highlights that the labour markets have recovered from the Covid impact.

Figure VI.5: Quarterly urban employment indicators



Source: Quarterly PLFS Reports, MoS&PI

6.34 The composition of the urban workforce for the broad status of employment has been stable over the past four quarters, with the share of self-employed at 39.7 per cent, regular wage/ salaried at 48.7 per cent, and casual labour at 11.6 per cent in July-September 2022. Similar stability is visible in the work industry, with the share of workers engaged in the secondary sector at 33.4 per cent, and the share of the tertiary sector at 60.9 per cent in July-September 2022.

Demand Side of Employment

Quarterly Employment Survey (QES)

6.35 The QES, conducted by the Labour Bureau, covers establishments with ten or more workers in nine major sectors viz. manufacturing, construction, trade, transport, education, health, accommodation & restaurants, IT/BPOs, and financial services. These nine sectors account for around 83 per cent of the total employment in establishments with ten or more workers as per the 6th Economic Census (2013-14) conducted by MoSPI.

6.36 So far, results of four rounds of the QES have been released, covering four quarters of FY22.[28] The estimated total employment in the nine selected sectors according to the fourth round of QES (January to March 2022) stood at 3.2 crore, which is nearly ten lakh higher than the estimated employment from the first round of QES (April-June 2021). The increase in estimates of workers from Q1FY22 to Q4FY22 was driven by rising employment in sectors such as IT/BPO (by 17.6 lakh), health (7.8 lakh), and education (1.7 lakh), due to rising digitisation and resurgence of services sector economy.

6.37 Regarding terms of employment, regular employees constituted the majority of workers across sectors, with a share of 86.4 per cent in the total workforce in Q4FY22. Contractual employees formed a relatively small proportion of the workforce in these nine sectors, except Manufacturing (12.4 per cent) and Construction (19.0 per cent). Further, out of the total employed

[28] The latest Report on Fourth Round (January-March, 2022) of QES was released in September 2022.

in the fourth round of QES, 98.0 per cent are employees while 1.9 per cent are self-employed. Gender-wise, 31.8 per cent of the total estimated employed are women and 68.2 per cent are men.

Figure VI.6: Estimated Number of Workers according to QES (*in FY22 , in lakh*)

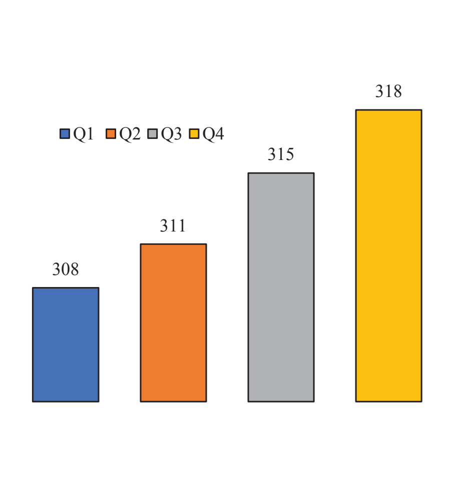
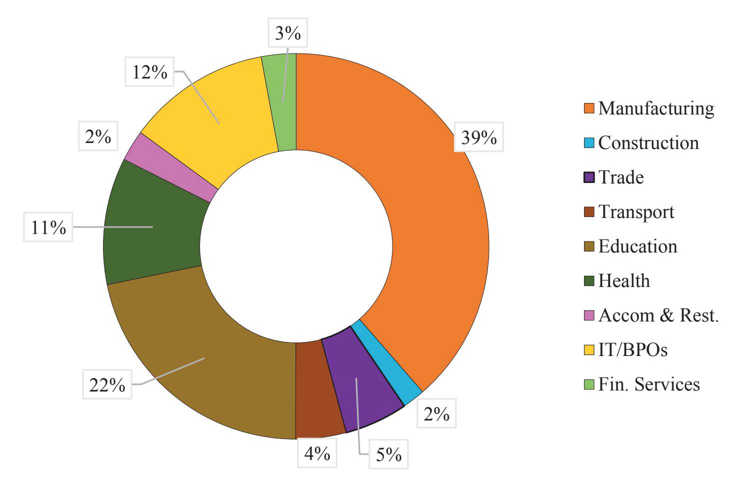


Figure VI.7: Sector-wise share of total employment according to QES (*in Q4 FY22; in percentage*)



Source: QES Reports, Labour Bureau

Table VI.6: Sector-wise estimated number of workers as per QES

(*in lakh*)

Sectors	Apr-Jun, 2021	Jul-Sep, 2021	Oct-Dec, 2021	Jan-Mar, 2022
Manufacturing	125.2	121.4	124.0	122.5
Construction	7.4	6.1	6.2	6.1
Trade	20.4	16.5	16.8	17.0
Transport	13.4	14.4	13.2	13.3
Education	67.3	68.5	69.3	69.0
Health	26.0	33.5	32.9	33.8
Accommodation& Restaurants	8.9	7.8	8.1	8.2
IT /BPOs	20.7	33.2	34.6	38.3
Financial Services	17.4	8.7	8.9	9.1
Total	**308.2**	**310.6**	**314.5**	**318.0**

Source: QES Reports, Labour Bureau

Table VI.7: Sector-wise distribution of workers according to terms of employment as per QES
(per cent, for Jan-Mar 2022)

Sectors	Self-Employed	Regular (Not on contract) Employee	Contractual Employee	Fixed Term Employee	Casual Employee
Manufacturing	2.5	80.2	12.4	1.0	4.0
Construction	1.3	73.4	19.0	0.5	5.7
Trade	4.2	90.1	3.5	0.3	2.0
Transport	0.6	91.9	5.1	0.6	1.8
Education	1.2	91.1	6.4	0.5	0.8
Health	0.6	89.0	9.1	0.5	0.9
Accommodation & Restaurants	6.7	84.5	5.2	0.6	3.0
IT /BPOs	0.1	94.7	4.8	0.0	0.4
Financial Services	6.4	87.7	1.9	0.4	3.6
Total	**2.0**	**86.4**	**8.7**	**0.7**	**2.3**

Source: QES Reports, Labour Bureau

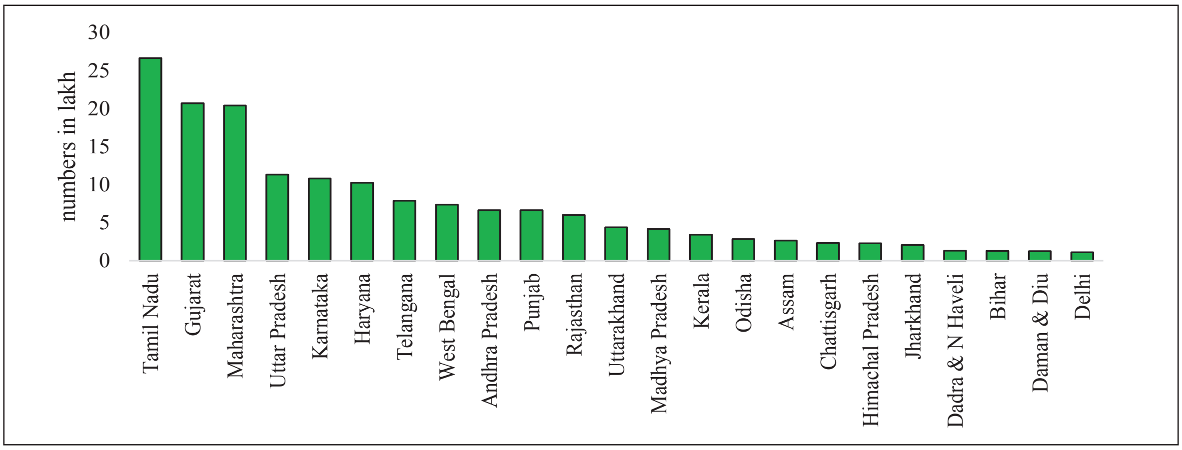
Annual Survey of Industries (ASI) 2019-20[29]

6.38 The ASI, conducted by MoSPI, is an important source of industrial statistics of the registered organised manufacturing sector of the economy. It covers all factories registered under Sections 2m(i) and 2m(ii) of the Factories Act, 1948, i.e., those factories employing ten or more workers using power; and those employing twenty or more workers without using power.

6.39 As per the latest ASI FY20, employment in the organised manufacturing sector has maintained a steady upward trend over time, with the employment per factory increasing gradually. In terms of share of employment (total persons engaged)[30], the food products industry (11.1 per cent) remained the largest employer, followed by wearing apparel (7.6 per cent), basic metals (7.3 per cent), and motor vehicles, trailers, and semi-trailers (6.5 per cent). State-wise, Tamil Nadu had the largest number of persons engaged in factories (26.6 lakh), followed by Gujarat (20.7 lakh), Maharashtra (20.4 lakh), Uttar Pradesh (11.3 lakh), and Karnataka (10.8 lakh).

[29] The results of ASI 2019-20 were released in 2022.
[30] Total Persons Engaged include the employees as defined above and all working proprietors and their family members who are actively engaged in the work of the factory even without any pay, and the unpaid members of the co-operative societies who worked in or for the factory in any direct and productive capacity.

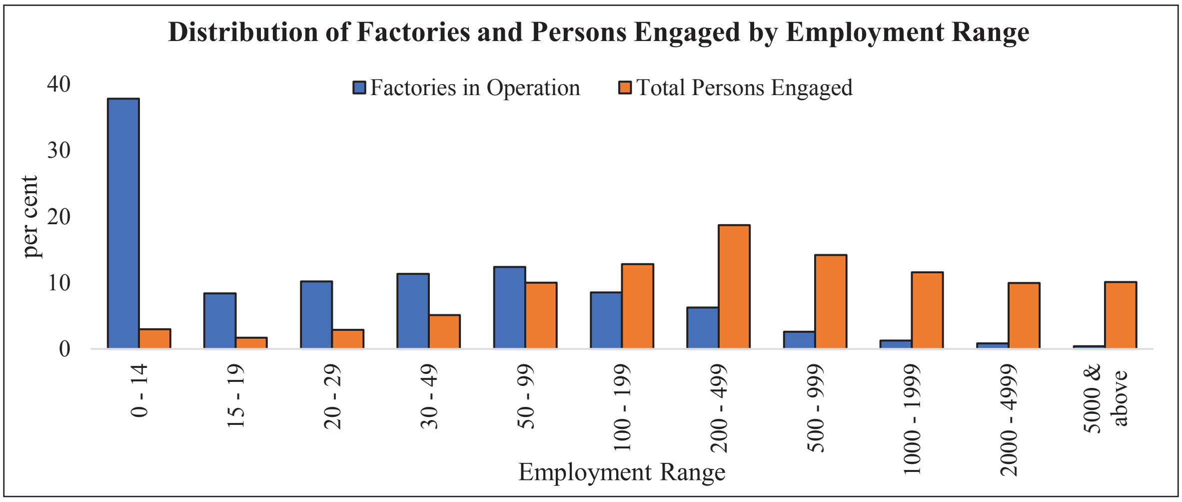
Figure VI.8: Total persons engaged in factories by States/UTs as per ASI
(in FY20)

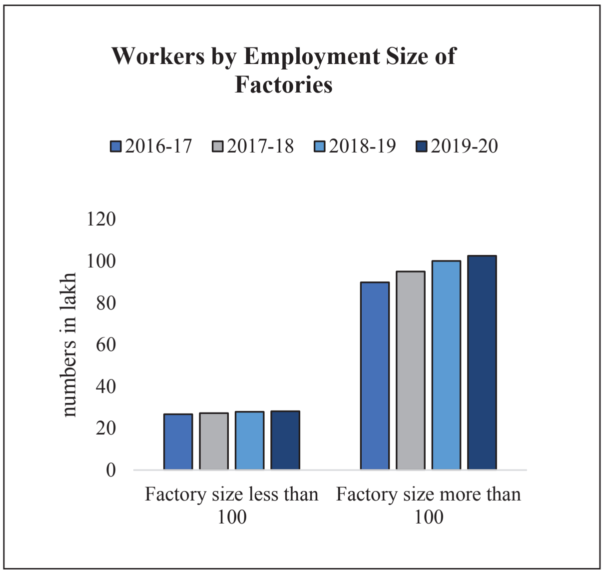


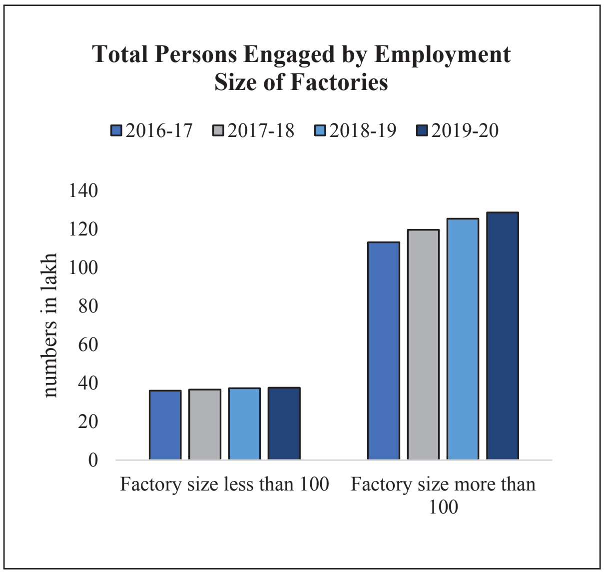
Source: ASI, MoSPI
Note: States/UTs with at least one lakh total persons engaged in factory sector have been shown in the chart.

6.40 In terms of employment size, the data shows a skewed distribution of a larger number of factories with low employment sizes and a few factories with higher employment sizes. For example, out of an estimated 1,98,628 factories in operation, 1,34,577 factories are found to employ less than 50 employees each. However, the distribution of persons engaged is more balanced and right-skewed, with larger factories accounting for a greater share of employment. For instance, 77.3 per cent of the total persons engaged are in factories engaging more than 100 persons. Over time, there is a visible trend towards bigger factories employing more than 100 workers, their numbers rising by 12.7 per cent from FY17 to FY20, compared to a broadly constant number of smaller factories. Between FY17 and FY20, total persons engaged in larger factories rose by 13.7 per cent, compared to 4.6 per cent in smaller factories. Resultantly, the share of larger factories in the total number of factories has increased from 18 per cent in FY17 to 19.8 per cent in FY20, and their share in total persons engaged shows a similar expansion from 75.8 per cent in FY17 to 77.3 per cent in FY20. Thus, in terms of total persons engaged, employment has been rising in larger factories (employing more than 100 workers) than in smaller ones, suggesting scaling up of manufacturing units.

Figure VI.9: Trends in employment in factories as per ASI







Source: ASI, MoSPI

Formal Employment

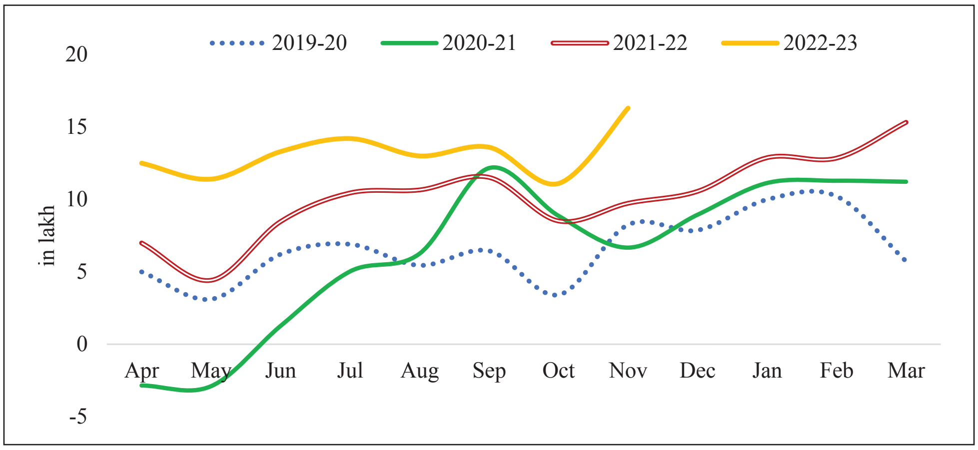
6.41 Employment generation coupled with improving employability is the priority of the Government. Following this path, the organised sector job market conditions measured by payroll data for Employees' Provident Fund Organisation (EPFO) and Employees' State Insurance Corporation (ESIC) reveal the benefits of the government initiatives towards improvement in the labour market. EPFO data indicates a consistent YoY increase in payroll addition, pointing towards improved formalisation as economic activities picked up. The net addition in EPF subscriptions during FY22 was 58.7 per cent higher than in FY21 and 55.7 per cent higher than that in the pre-pandemic year 2019. In FY23, net average monthly subscribers added under EPFO increased from 8.8 lakh in April-November 2021 to 13.2 lakh in April-November 2022.

6.42 The swift rebound of formal sector payroll addition can be attributed to the Aatmanirbhar Bharat Rojgar Yojana (ABRY), launched in October 2020 to boost the economy, increase the employment generation in post Covid-19 recovery phase, and to incentivise creation of new employment along with social security benefits and restoration of employment lost during the pandemic. As on 7 January 2023, total registration under the scheme is 75.1 lakh, and total benefits of ₹8,210 crore have been given to 60.2 lakh beneficiaries through 1.5 lakh establishments.

6.43 Average monthly subscriber additions under ESIC for April-October period improved from 11.9 lakhs in 2021 to 14.4 lakh in 2022. Similarly, under National Pension Scheme (NPS), the average monthly net subscriptions increased from 61.9 thousand in 2021 to 63.2 thousand in 2022 for the April-October period.[31]

[31] Data from Pension Fund Regulatory and Development Authority (PFRDA).

Figure VI.10: Net addition of subscribers in the EPFO *(in lakh)*



Source: EPFO
Note: *Net addition in payroll = No. of new subscribers + No. of exited members who re-joined – No. of members exited.*

6.44 In terms of industrial composition, expert services (consisting of manpower agencies, private security agencies, and small contractors, etc.) form the largest share of EPFO payroll addition (41.1 per cent in FY23, April-November), followed by trading-commercial establishments (6.9 per cent). Across age groups, the age group of 18-25 years contributed to 48.5 per cent of the net payroll addition in April-November 2022. With nearly 62.7 per cent of net payroll addition coming from less than 29 years of age (in the same period), new jobs in the organised sector are mainly going to the youth. In the 18-25 years age group, Maharashtra (21.4 per cent), Karnataka (12.1 per cent), Tamil Nadu (10.9 per cent), Haryana (9.0 per cent), Gujarat (8.4 per cent), and Delhi (7.6 per cent) contributed to nearly 70 per cent of the net payroll addition in Apr-Nov 2022.

Table VI.8: EPFO payroll data for main industries across all age groups ***(in lakhs)***

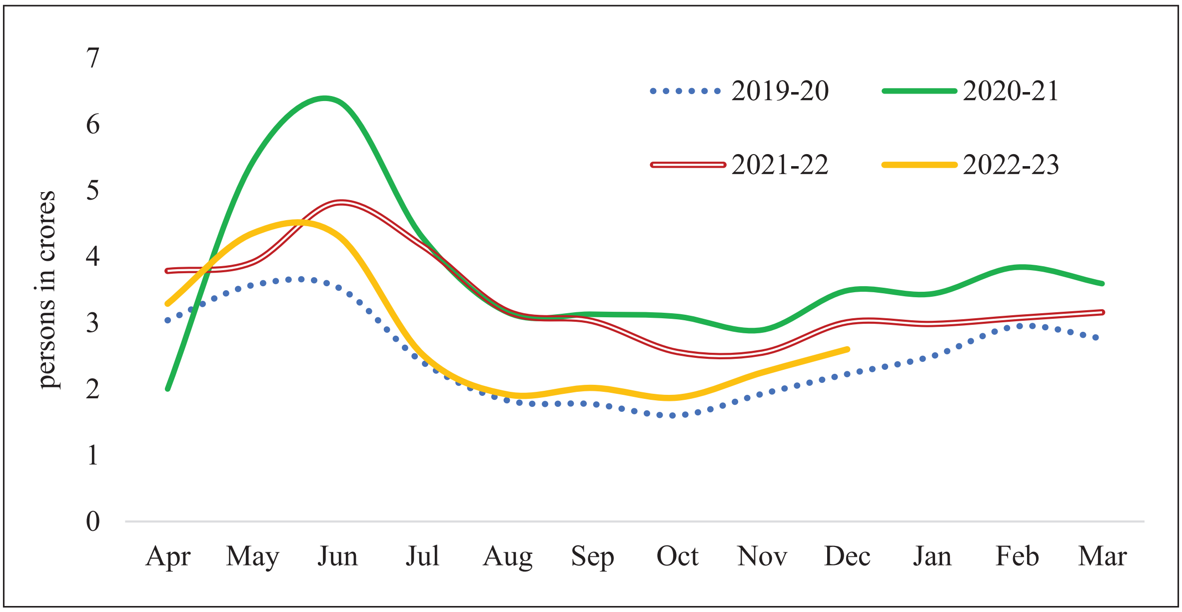
Industry	2019-20	2020-21	2021-22	2022-23 (Apr-Nov)	% Share in 2022-23
Expert Services	35.2	37.0	51.7	43.4	41.1
Trading - Commercial Establishments	5.2	3.4	8.7	7.3	6.9
Others	1.5	2.6	7.3	7.1	6.8
Engineers - Engg. Contractors	4.1	4.9	6.2	5.6	5.4
Building and Construction Industry	5.1	4.7	6.0	5.5	5.2
Elec., Mech. or Gen. Engg. Products	3.8	3.8	4.9	4.9	4.7
Establishment engaged in Manufacture, Marketing Servicing, Usage of Computers	2.7	2.0	4.4	2.9	2.7
Establishments engaged in Cleaning, Sweeping Services	1.8	2.5	3.3	3.0	2.8
Textiles	1.7	1.7	3.1	2.0	1.0
Grand Total (All Industries)	**78.6**	**77.1**	**122.3**	**105.4**	**100.0**

Source: EPFO, MoLE
Note: Main Industries is a subset of all industries

Demand for work under MGNREGS

6.45 The number of persons demanding work under MGNREGS was seen to be trending around pre-pandemic levels from July to November 2022. This could be attributed to the normalisation of the rural economy due to strong agricultural growth and a swift recovery from Covid induced slowdown, culminating in better employment opportunities. In FY23, as on 24 January 2023, 6.49 crore households demanded employment under MGNREGS, and 6.48 crore households were offered employment out of which 5.7 crore availed employment.

Figure VI.11: Number of persons demanding work under MGNREGS



Source: MGNREGS Web portal

6.46 The number of works done under MGNREGS has steadily increased over the years, with 85 lakh completed works in FY22 and 70.6 lakh completed works so far in FY23 (as on 9 January 2023). Regarding the composition of works, the share of "works done on individual's land" (included in the permissible work list in 2009 and expanded since then) has increased from 16 per cent of the total completed works in FY15 to 73 per cent in FY22. These works include creating household assets such as animal sheds, farm ponds, dug wells, horticulture plantations, vermicomposting pits etc., in which the beneficiary gets both labour and material costs as per standard rates. Empirically, within a short span of 2-3 years, these assets have been observed to have a significant positive impact on agricultural productivity, production-related expenditure, and income per household, along with a negative association with migration and fall in indebtedness, especially from non-institutional sources.[32] This has long-term implications for aiding income diversification and infusing resilience into rural livelihoods.

[32] Rapid Assessment of Natural Resource Management Component under MGNREGA and Its Impact on Sustainable Livelihoods, Institute of Economic Growth, May 2018

Figure VI.12: Number of projects under MGNREGS

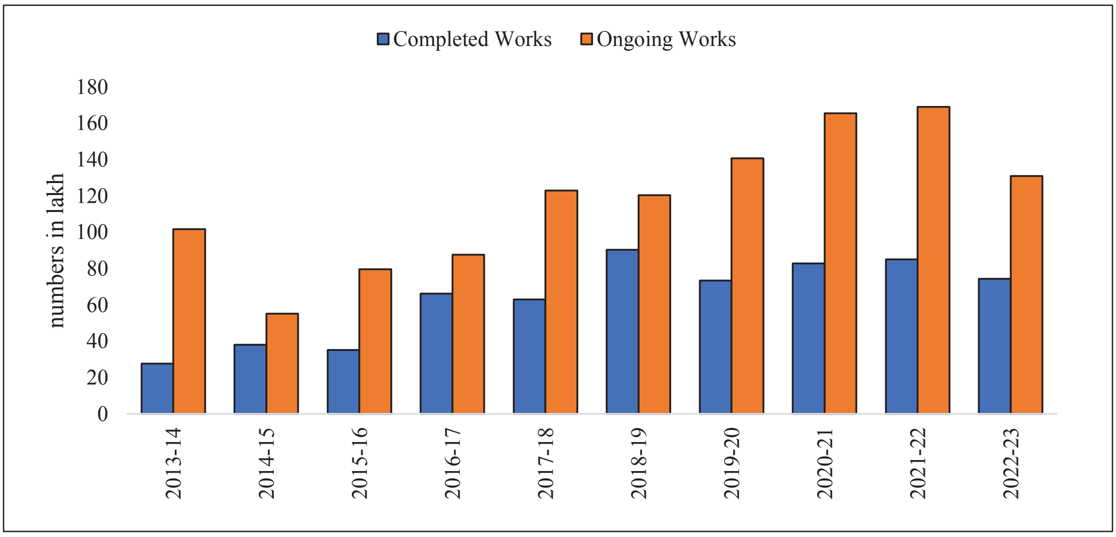
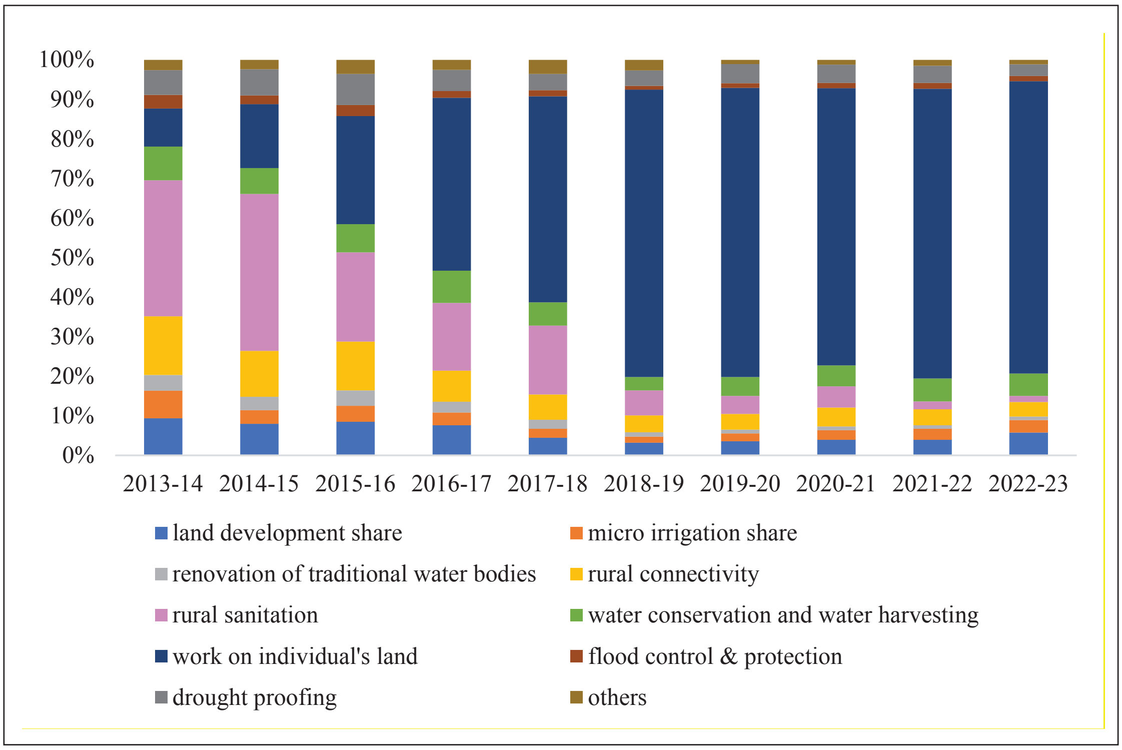


Figure VI.13: Share of completed works under MGNREGS *(by count)*



Source: MGNREGS Web portal, data for FY23 is as on 10 January 2023

6.47 The Government has been taking several measures to enhance the reach of employment opportunities to all eligible and willing to work. One such measure is the National Career Service (NCS) project, which is detailed in Box VI.4.

Box VI.4: National Career Service Project

The 'National Career Service (NCS')project was launched in July 2015, as a one-stop solution providing an array of employment and career-related services. It works towards bridging the gap between candidates and employers; candidates seeking training and career guidance and agencies providing training and career counselling. NCS portal has a job fair module to streamline the process of job fair activity on a single online platform by engaging all stakeholders i.e. model career centres, nodal officers, job seekers and employers. It is also supported by a dedicated helpline (multi-lingual) for assisting users.

As on 5 January 2023, 2.8 crore jobseekers and 6.8 lakh employers have registered in NCS portal, 2.5 lakh active vacancies and 1.2 crore total vacancies have been mobilised, and more than 9,100 job fairs have been organised as part of the Project.

NCS has partnered with private sector under DigiSaksham programme to offer a free, self-paced Online/Offline Training Programme on "Career Skills", to equip the jobseekers with an array of soft and digital skills with the mandate of improving their employability. This programme also includes advanced computing areas and is being provided free of cost.

NCS is also working closely with Ministry of Education All India Council for Technical Education and All India Survey of Higher Education) to ensure that its benefits are reaching to prospective students/ candidates. Online integration with EPFO and ESIC has also been done to link the willing employers for enabling them to shortlist right candidates through a countrywide database of workforce on NCS portal. NCS has also integrated with DigiLocker to enable candidates to upload their documents/ certificates and make them available to the employers to quicken the hiring process.

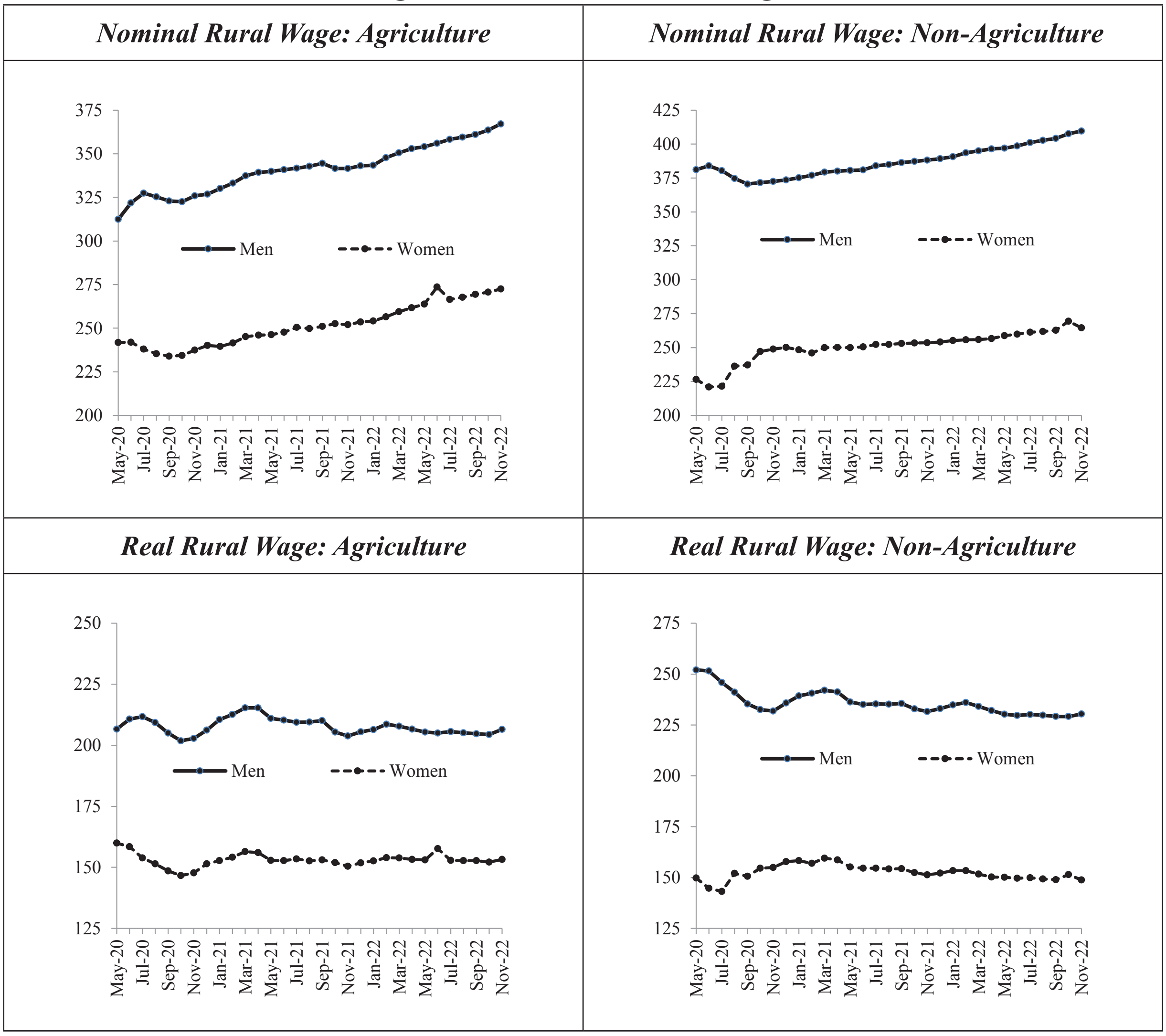
As per budget announcement of 2022-23, NCS portal has been successfully interlinked with e-Shram, Udyam and Skill India portal (primary data source of ASEEM portal). This has resulted in development of an employment ecosystem to facilitate job search and matching for both jobseekers and employers. So far, more than 10 lakh candidates from e-Shram have registered on NCS out of which, more than 1.2 lakh candidates have been shortlisted by employers for jobs. More than 46 lakh skilled candidates of Skill India portal have been registered on NCS through data exchange. These candidates can showcase their skills to the prospective employers, thus enhancing their opportunity to get a job. Integration between Udyam and NCS has facilitated more than 4,76,650 MSME employers in getting seamless registration on NCS portal.

NCS has recently added 'International Job' module on the portal in March 2022, which facilitates employers registered with the Ministry of External Affairs to post international job opportunities on the NCS portal and the jobseekers to search and apply for these opportunities via the NCS portal. So far, more than 400 plus Recruting Agents have registered on the NCS portal and posted around 1400 plus international vacancies.

The trend in rural wages

6.48 Nominal rural wages have increased at a steady positive rate during FY23 (till November 2022). In agriculture, the YoY rate of growth of nominal wage rates in agriculture was 5.1 per cent for men and 7.5 per cent for women, during the period April-November 2022. In non-agricultural activities, the growth of nominal wage rates was 4.7 per cent for men and 3.7 per cent for women, during the same period. However, growth in real rural wages has been negative due to elevated inflation. Going forward, as inflation is expected to soften with the easing of international commodity prices and domestic food prices, it is expected that this will translate into a rise in real wages.

Figure VI.14: Trends in rural wages



Source: Monthly Rural Wage Rates by Labour Bureau[33]

Ensuring Quality Education for All

6.49 The importance of education for all cannot be overemphasised as it is the foundation of every individual and society's development. As remarked by Dr. A.P.J Abdul Kalam – *'Learning gives creativity, creativity leads to thinking, thinking leads to knowledge, and knowledge makes you great !'*

6.50 Education, apart from enhancing the employability of the working-age population, also has an equalising impact in breaking the cycles of poverty and social marginalisation. "Quality

[33] http://labourbureaunew.gov.in/showdetail.aspx?pr_id=iBJEgR8%2bUFY%3d

Education" which is enlisted as Goal 4 under UN SDGs (SDG4), aims to "Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" by 2030. This goal is of critical importance because of the transformative effects that it can have on most other SDGs, such as "no poverty", "zero hunger", "gender equality" etc. Sustainable development, in fact, hinges on every child receiving quality education, offering them the tools to develop to their full potential and become productive citizens aiding their own socioeconomic progress and that of their nation.

6.51 It is in this context that the NEP 2020 was laid down as the first education policy of the 21st century, aiming to address the many growing developmental imperatives of the country. Recognising that education is the lifeblood of human capital formation for a young country like India, this policy provided for the revision and revamping of all aspects of the education structure. This includes its regulation and governance, creation of a new system that is aligned with the aspirational goals of 21st century-education, including SDG4, while building upon India's traditions and value systems. The NEP provides for nurturing all-around development and skill acquisition by youth in an inclusive, accessible, and multilingual set-up.

6.52 As part of the whole-of-ecosystem approach, the Union Government launched Samagra Shiksha in 2018 as an overarching programme for the school education sector extending from pre-school to class XII with an aim to ensure inclusive and equitable quality education at all levels of school education.

School Enrolment

6.53 The year FY22 saw improvement in Gross Enrolment Ratios (GER)[34] in schools and improvement in gender parity. GER in the primary-enrolment in class I to V as a percentage of the population in age 6 to 10 years - for girls as well as boys have improved in FY22. This improvement has reversed the declining trends between FY17 and FY19. GER in Upper-Primary (enrolment in class VI to VIII as a per cent of the population in age 11-13 years), which was stagnant between FY17 and FY19, improved in FY22. In corresponding age groups in Primary and Upper-Primary levels, girls' GER is better than boys.

Table VI.9: School Gross Enrolment Ratios

(in per cent)

Year	Primary			Upper Primary			Secondary		
	Girls	Boys	Total	Girls	Boys	Total	Girls	Boys	Total
2013-14	107.9	106.5	107.2	88.6	85.0	86.7	73.5	74.2	73.8
2019-20	103.7	101.9	102.7	90.5	88.9	89.7	77.8	78.0	77.9
2020-21	104.5	102.2	103.3	92.7	91.6	92.2	79.5	80.1	79.8
2021-22	104.8	102.1	103.4	94.9	94.5	94.7	79.4	79.7	79.6

Source: Unified District Information System for Education (UDISE+)[35]
Notes: 1. UDISE+ data comes with more than one-year lag, hence data is available up to 2021-22
2. GER greater than 100 per cent might represent the presence of over or under-age children in a particular level of education.

[34] GER is defined as total enrolment in a particular level of school education, regardless of age, expressed as a per centage of the population of the official age-group which corresponds to the given level of school education in a given school year.
[35] UDISE+ data comes with more than one-year lag; so data is available up to 2021-22.

6.54 In FY22, a total of 26.5 crore children were enrolled in schools and 19.4 lakh additional children were enrolled in Primary to Higher Secondary levels. Total enrolment of Children With Special Needs (CWSN) in FY22 stands at 22.7 lakh as compared to 21.9 lakh in FY21, which is an increase of 3.3 per cent. The enrolments increased across all levels viz., Primary, Upper-Primary, Secondary, and Higher Secondary except for the Pre-Primary level. At the Pre-primary level, enrolment reduced from 1.1 crore in FY21 to 1.0 crore in FY22. During the year, about 1.0 crore children were enrolled in pre-primary, 12.2 crore in Primary, 6.7 crore in Upper Primary, 3.9 crore in Secondary and 2.9 crore in Higher Secondary.

School Drop-out

6.55 School dropout rates[36] at all levels have witnessed a steady decline in recent years. The decline is for both girls and boys. The schemes such as Samagra Shiksha, RTE Act, improvement in school infrastructure and facilities, residential hostel buildings, availability of teachers, regular training of teachers, free textbooks, uniforms for children, Kasturba Gandhi Balika Vidyalaya and the PM POSHAN Scheme play an important role in enhancing enrolment and retention of children in schools.

Table VI.10: School dropout rates

(in per cent)

Year	Primary			Upper Primary			Secondary		
	Girls	Boys	Total	Girls	Boys	Total	Girls	Boys	Total
2013-14	4.7	4.7	4.7	4.0	2.3	3.1	14.5	14.5	14.5
2019-20	1.2	1.7	1.5	3.0	2.2	2.6	15.1	17.0	16.1
2020-21	0.7	0.8	0.8	2.6	2.0	2.3	13.7	14.3	14.0
2021-22	1.4	1.6	1.5	3.3	2.7	3.0	12.3	13.0	12.6

Source: UDISE+

School Infrastructure

6.56 The education infrastructure in the form of schools, amenities, and digitalisation has been steadily promoted along with a focus on pedagogy. The dividends of the structural reforms in the education sector will enrich the nation's growth and development prospects in decades to come.The basic infrastructure facilities in schools – both in terms of the number of recognised schools and teachers' availability reflected in the Pupil-Teacher Ratio, showed an improvement in FY22. The trend in number of recognised schools for various levels show a steady progress.

Table VI.11: Trends in number of recognised schools

(in lakh)

	2013-14	2019-20	2020-21	2021-22
Total Schools	15.2	15.1	15.1	14.9
Primary & Upper Primary schools	12.9	12.2	12.2	11.9
Secondary & Sr. Secondary Schools	2.3	2.9	2.9	2.9

Source: UDISE+

[36] Dropout rate is defined as proportion of pupils from a cohort enrolled in a given level in a given school year that are no longer enrolled at any grade in the following school year.

6.57 Basic facilities in schools continued to improve in FY22 over earlier years except for medical check-ups in schools as the schools remained closed physically in the wake of Covid-19 curbs. Toilets (girls or boys), drinking water, and hand-washing facilities are now available in most Government schools. Priority to drinking water and sanitation in schools under Samagra Shiksha Scheme as well as Swachh Bharat Mission have been instrumental in providing required resources and creating these assets in schools. Under the Information & Communication Technology (ICT) component of the Samagra Shiksha Scheme, Government supports the establishment of smart classrooms, and ICT labs in schools, including support for hardware, educational software, and e-content for teaching.

Table VI.12: Improving school infrastructure

(Schools with basic facilities as a percentage of all schools)

Year	2012-13	2019-20	2020-21	2021-22
Girls Toilet	88.1	96.9	97.3	97.5
Boys Toilet	67.2	95.9	96.2	96.2
Hand wash Facility	36.3	90.2	91.9	93.6
Library/Reading Room/ Reading corner	69.2	84.1	85.6	87.3
Electricity	54.6	83.4	86.9	89.3
Medical check-ups in school in a year	61.1	82.3	50.4*	54.6*
Computer	22.2	38.5	41.3	47.5
Internet	6.2	22.3	24.5	33.9

** Due to Covid, schools were closed physically. Hence, fewer medical check-ups were done.*
Source: UDISE+

6.58 Further, the availability of teachers, measured by pupil-teacher ratio, an indicator which is inversely related to improvement in quality of education, has improved at all levels continuously from FY13 to FY22: from 34.0 to 26.2 at Primary, 23.0 to 19.6 at Upper Primary, 30.0 to 17.6 at Secondary, and 39.0 to 27.1 at the Higher Secondary level. The improvement in the number of schools, teachers' availability, and facilities in schools is expected to help improve enrolment and reduce dropout rates. Various programmes and schemes for school education launched during FY23 are presented in the following paras.

6.59 **PM Schools for Rising India:** The Government launched a Centrally Sponsored Scheme (CSS) called PM Schools for Rising India (PM SHRI) on 7 September, 2022. These schools will be equipped with modern infrastructure and showcase the implementation of the NEP and emerge as exemplary schools over a period of time, while offering leadership to other schools in the neighbourhood. Under the scheme, there is a provision for setting up more than 14,500 PM SHRI Schools, over the period FY23 to FY27 by strengthening the existing schools from those managed by Central Government/State/UT Government/local bodies. These schools will be equipped with modern infrastructure including labs, smart classrooms, libraries, sports equipment, art room etc. which is inclusive and accessible. They shall also be developed as green schools with water conservation, waste recycling, energy-efficient infrastructure and integration of organic lifestyle in curriculum. More than 20 lakh students are expected to be direct beneficiaries of the scheme.

6.60 **The National Curriculum Framework (NCF) for Foundational Stage:** NCF for Foundational Stage has been launched as the new 5+3+3+4 curricular structure which integrates early childhood care and education for all children of ages 3 to 8. As articulated in NEP 2020, the NCF uses 'play,' at the core of the conceptual, operational, and transactional approaches to curriculum organisation, pedagogy, time and content organisation, and the overall experience of the child. It will deal with the role of teachers as well as parents and communities in enabling and enhancing the developmental outcomes that are sought during this stage.

6.61 **Pilot project of Balvatika:** With a focus on developing cognitive, affective, and psychomotor abilities and also early literacy and numeracy for students in the age groups of 3+, 4+ and 5+ years, Project Balvatika, i.e.,'Preparatory Class', was lauched in October 2022 in 49 Kendriya Vidyalayas.

6.62 **Toy-based pedagogy:** A handbook for Toy-based pedagogy has been designed to promote the integration of indigenous toys and their pedagogy into the curriculum of school education, early childhood care and education and teacher education. This will help teachers select or create age-appropriate toys to explain various concepts to students.

6.63 **Screening tools (Mobile App) for specific learning disabilities:** *PRASHAST*, a Disability Screening mobile app, has been launched, covering 21 disabilities, including the benchmark disabilities as per the Rights of Persons with Disabilities Act 2016. PRASHAST App will help in screening disability conditions at the school level and will generate the school-wise report, for further sharing with the authorities for initiating the certification process, as per guidelines of Samagra Shiksha.

6.64 **National Credit Framework (NCrF):** Taking the vision of the new NEP, the NCrF is an umbrella framework for skilling, re-skilling, up-skilling, accreditation and evaluation, seamlessly integrating the credits earned through school education, higher education, and vocational and skill education by encompassing the National Higher Education Qualification Framework (NHEQF), National Skills Qualification Framework (NSQF) and National School Education Qualification Framework (NSEQF). This would be a game changer by opening numerous options for further progression of students and inter-mingling of school and higher education with vocational education and experiential learning, thus mainstreaming skilling and vocational education**.** The Framework has been released for public consultations on 19 October 2022.

6.65 **Strengthening Teaching-Learning and Results for States (STARS):** STARS Project is being implemented as a CSS in six states namely Himachal Pradesh, Madhya Pradesh, Rajasthan, Maharashtra, Odisha and Kerala over a period of 5 years i.e., till FY25, partly funded by a loan from the World Bank. The objective of the Scheme is to improve the quality and governance of school education in the selected states.

6.66 **Vidyanjali (A School Volunteer Initiative):** With the aim of strengthening schools and improving the quality of school education through community, Corporate Social Responsibility (CSR) and private sector involvement across the country, the Government has initiated Vidyanjali (a school volunteer management program). The Vidyanjali portal (https://vidyanjali.education.gov.in/en) enables community and volunteers/organisations to interact and connect directly with the Government and Government aided schools of their choice and share their knowledge and skills and/or contribute in the form of assets/material/equipment to meet the requirement of the schools. As of 20 January 2023, 3,95,177 schools have been onboarded and 1,14,674 volunteers have registered on the Vidyanjali portal. The programme has successfully managed to impact around 11,34,218 students across the nation by seeking volunteers' support in several areas such as subject assistance, mentoring of gifted children, teaching vocational skills, providing ceiling fans and water purifiers, gifting digital devices for learning via virtual mode, musical instruments, self-defence training to schoolgirls, assistance for basic civil infrastructure and other classroom needs, etc.

6.67 **Samagra Shiksha Scheme:** A CSS of Samagra Shiksha of the Department of School Education and Literacy is an overarching programme for the school education sector extending from pre-school to class XII. The Samagra Shiksha Scheme has been aligned with the recommendations of the NEP 2020 and extended from FY22 to FY26. Under the ICT component of the Scheme, there is a provision to impart computer literacy and computer-enabled learning to children, by developing and deploying curriculum-based interactive multimedia, digital books, virtual labs etc. across the country. It supports the establishment of smart classrooms, and ICT labs in schools, including support for hardware, educational software and e-content for teaching. It envisages covering all Government/Government-aided schools with classes VI to XII. Till November 2022 (since inception), ICT labs have been approved in 1,20,614 schools and smart classrooms in 82,120 schools across the country.

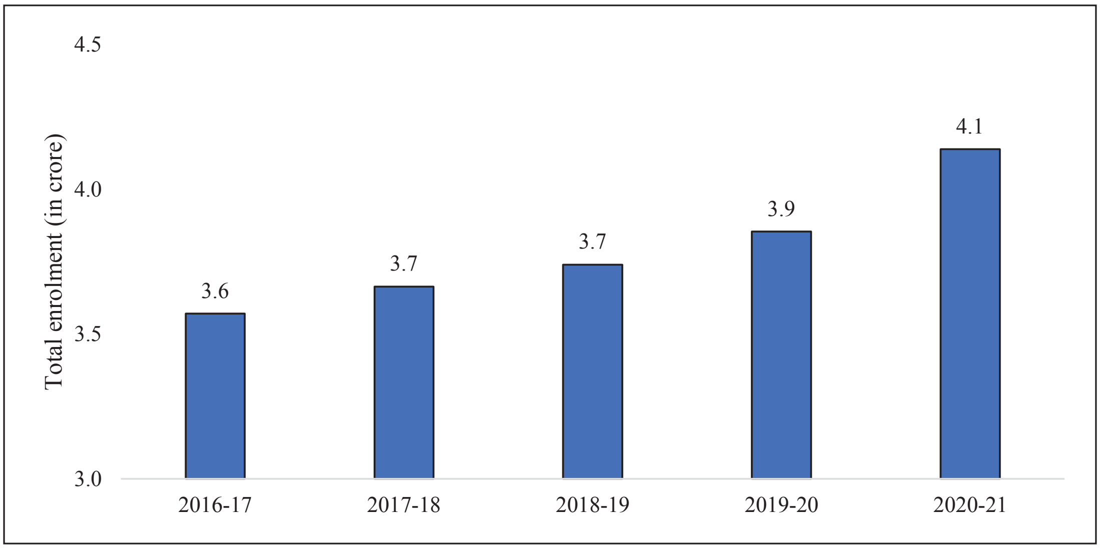
Higher Education

6.68 Indian higher education system is the laboratory of change for one of the largest young populations in the world, with more than 27 per cent of India's population in 15-29 years age bracket.[37] The infrastructure for higher education has been enhanced overtime. Number of medical colleges in the country have been increased from 387 in 2014 to 648 in 2022 and the number of MBBS seats have increased from 51,348 to 96,077. Number of Indian Institutes of Technology (IITs) and Indian Institute of Management (IIMs), respectively stand at 23 and 20 in 2022 against 16 and 13 in 2014. The strength of Indian Institutes of Information Technology (IIITs) is 25 in 2022 against 9 in 2014. In 2014, there were 723 Universities in the country, which have been increased to 1,113.

6.69 The total enrolment in higher education has increased to nearly 4.1 crore in FY21 from 3.9 crore in FY20. Since FY15, there has been an increase of around 72 lakh in enrolment (21 per cent). The female enrolment has increased to 2.0 crore in FY21 from 1.9 crore in FY20.

[37] Youth in India 2022, MoSPI

Figure VI.15: Total students' enrolments in higher education



Source: All India Survey on Higher Education (AISHE) report 2020-21, Ministry of Education

Table VI.13: Students' enrolment in higher education

(in crore)

Year	Male	Female	Total
2016-17	1.9	1.7	3.6
2017-18	1.9	1.7	3.6
2018-19	1.9	1.8	3.7
2019-20	2.0	1.9	3.9
2020-21	2.1	2.0	4.1

Source: AISHE report 2020-21

6.70 Further, the enrolment in Distance Education is 45.7 lakh (with 20.9 lakh females), an increase of around 7 per cent since FY20 and 20 per cent since FY15. The GER in higher education, based on 2011 population projections (revised), was recorded at 27.3 per cent in FY21, which is an improvement from 25.6 in FY20. GER for males increased from 24.8 in FY20 to 26.7 in FY21 while GER for females has also shown improvement from 26.4 to 27.9 during the same period.

6.71 The total number of Universities / University institutions registered as of end of FY21 are 1,113, number of colleges are 43,796 and number of standalone institutions is 11,296. The total number of faculty/teachers is 15,51,070 of which about 57.1 per cent are male and 42.9 per cent are female.

Table VI.14: Number of teachers in higher education institutions

(in lakh)

Year	Male	Female	Total
2016-17	8.1	5.5	13.6
2017-18	7.5	5.4	12.9
2018-19	8.2	6.0	14.2
2019-20	8.6	6.4	15.0
2020-21	8.9	6.6	15.5

Source: AISHE report 2020-21

Initiatives for higher education

6.72 **Research & Development Cell (RDC) in Higher Education Institutions (HEI):** The University Grants Commission (UGC) launched an initiative to establish an RDC in HEIs with the mandate for promoting quality research that contributes meaningfully towards the goal of a self-reliant India, aligned with the provisions of NEP 2020. The RDC would help create a research ecosystem for reliable, impactful, and sustained research output. The Guidelines for the same were issued in March 2022 providing for the creation of a conducive environment for enhanced research productivity; encouraging collaboration across industry, Government, community-based organisations, and agencies at the local, national, and international levels and facilitating greater access to research through mobilisation of resources and funding.

6.73 **Guidelines for pursuing two academic programmes simultaneously:** The UGC, in April 2022, issued Guidelines to allow the students to pursue two academic programmes simultaneously keeping in view the objectives envisaged in NEP 2020, viz. providing flexible curricular structures to enable creative combinations of disciplines for study, that would offer multiple entry and exit points, thus, removing currently prevalent rigid boundaries and creat new possibilities for life-long learning through critical and interdisciplinary thinking. The Guidelines provide that a student can pursue two full-time academic programmes in physical mode or pursue two academic programmes, one in full-time physical mode and another in Open and Distance Learning (ODL)/Online mode; or up to two ODL/Online programmes simultaneously. These will be governed by Regulations notified by the UGC.

6.74 **Interest subsidy on education loan:** Under the Central Scheme on Interest Subsidy (CSIS), launched in 2009, full interest subsidy is provided during the moratorium period (course period plus one year) on education loan taken by students from economically weaker sections (EWS) having parental income less than ₹4.5 lakh per annum for professional study in India. The scheme provides Education loans without any collateral or third-party guarantee.

Box VI.5: Akhil Bharatiya Shiksha Samagam

A three-day Akhil Bharatiya Shiksha Samagam was organised at Varanasi on 7-9 July 2022 by the Ministry of Education in association with the UGC and Banaras Hindu University. The event brought together over 300 Vice Chancellors and Directors from public and private universities, educationists, policymakers, as also industry representatives to deliberate on how the implementation of NEP 2020 can be taken further across the country after successful implementation of several initiatives in the last two years. The Summit provided a platform for thought-provoking discussions that helped articulate the roadmap and implementation strategies, foster knowledge exchange, build networks through interdisciplinary deliberations, and discuss challenges being faced by educational institutions and articulate solutions.

The Samagam was witness to India's extended vision and a renewed commitment to help achieve the goals of the higher education system with education leaders resolving to work collectively for transforming India into an equitable and vibrant knowledge society.

Equipping the Workforce with Employable Skills and Knowledge in Mission Mode

6.75 Skill development is aimed at the removal of the disconnect between demand and supply of skilled manpower, building vocational and technical training framework, skill up-gradation, and building of new skills, and innovative thinking not only for existing jobs but also jobs of the future. In order to address the incremental manpower requirement and to empower youth with adequate skills, the Ministry of Skill Development and Entrepreneurship (MSDE) was created in 2014 and Skill India Mission was launched in 2015. With the establishment of a Central Ministry, efforts to improve and streamline the skilling ecosystem were ramped up as the government launched the National Skill Development Mission as well as the National Policy on Skill Development and Entrepreneurship. Under the NEP 2020 also, there is a special focus on vocational education and skill development. Integration of vocational education with general education and mainstreaming of vocational education have been identified as the key reform in the education System of the country.

6.76 PLFS FY21 shows that formal vocational/technical training among youth (age 15-29 years) and the working population (age 15-59 years) have improved in FY21 over FY19 and FY20. The improvement in skills has been for males and females, both in rural and urban sectors.

Table VI.15: Distribution of persons who received formal vocational/technical training

(per cent)

Age group	Rural			Urban			All India		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
2018-19									
15-29 years	2.4	1.5	2.0	4.8	4.6	4.7	3.2	2.5	2.8
15-59 years	1.8	1.1	1.5	4.9	3.9	4.4	2.8	2.0	2.4
2019-20									
15-29 years	3.1	2.7	2.9	7.0	6.5	6.8	4.3	3.8	4.1
15-59 years	2.2	1.7	2.0	6.3	5.4	5.8	3.5	2.9	3.2
2020-21									
15-29 years	3.4	2.6	3.0	7.3	6.5	6.9	4.5	3.7	4.1
15-59 years	2.5	1.9	2.2	6.2	5.3	5.8	3.6	2.9	3.3

Source: Annual PLFS Reports, 2017-18 to 2020-21

6.77 As per the reports of the fourth round of the QES (for Q4 FY22) in respect of establishments employing at least 10 workers in major nine sectors, 15.6 per cent of estimated establishments imparted formal skill training and 20.5 per cent imparted on-the-job training. The health sector had the highest percentage of estimated establishments imparting formal skill training (24.7 per cent) and on-the-job training (31.6 per cent), followed by financial services (20.4 per cent of establishments imparting formal training and 26.4 per cent imparting on-the-job training).

Table VI.16: Sector-wise percentage of estimated establishments imparting formal skill development training and on-the-job training

(per cent)

	Q1FY22		Q2FY22		Q3FY22		Q4FY22	
	Formal	Job Training	Formal	Job Training	Formal	Job Training	Formal	Job Training
Manufacturing	17.4	28.3	13.2	25.2	14.1	22.2	12.8	19.4
Construction	15.5	26.0	7.8	22.7	11.2	25.0	8.4	23.9
Trade	11.2	17.4	11.6	23.7	10.5	20.5	9.8	16.7
Transport	13.0	20.6	10.7	17.9	13.6	21.5	16.5	20.0
Education	21.1	22.1	21	24.7	19.9	24.0	19.1	20.6
Health	20.2	24.0	26.6	36.6	24.8	34.9	24.7	31.6
Accommodation & Restaurants	7.1	13.4	11.3	15.6	10.9	19.4	8.5	14.9
IT/BPOs	29.8	**36.1**	24.1	34.1	25.1	31.1	18.2	23.4
Financial Services	22.6	34.8	20.9	21.2	27.2	26.1	20.4	26.4
Total	**17.9**	**24.3**	**16.8**	**24.3**	**17.1**	**23.6**	**15.6**	**20.5**

Source: QES Reports, 1st - 4th Quarter FY22, Labour Bureau

Skill India Mission

6.78 The Skill Indian Mission focuses on skilling, re-skilling and up-skilling through short term and long term training programmes. Under the Mission, the government, through more than 20 Central Ministries/Departments, is implementing various skill development schemes across the country. These include Deen Dayal Upadhyaya Grameen Kaushalya Yojna (DDU-GKY), Rural Self Employment Training Institutes (RSETI), Deen Dayal Antyodaya Yojana-National Urban Livelihood Mission (DAY-NULM). MSDE is implementing Schemes such as Pradhan Mantri Kaushal Vikas Yojana (PMKVY), Jan Shikshan Sansthan (JSS), National Apprenticeship Promotion Scheme (NAPS) and Craftsmen Training Scheme (CTS). The advocacy of the programmes is being done through print media, electronic media, and State Governments' campaigns . More and more areas are being aligned with the common framework spanning the skills ecosystem so that the outcomes of the Government skilling programmes are uniform across the skilling ecosystem. The progress in some of these schemes is presented in Box VI.6.

Box VI.6: Progress of Skill India Mission

Skill Development Scheme	Progress
PMKVY was first launched in 2015. Presently, the third phase of PMKVY, i.e., PMKVY 3.0 is being implemented across the country since January 2021 PMKVY has two training components, viz., Short Term Training (STT) and Recognition of Prior Learning (RPL). Pradhan Mantri Kaushal Kendra set up at District level, are envisaged as state of the art, visible and aspirational model training Centres.	✓ Between FY17 and FY23 (as of 5 January 2023), under PMKVY 2.0 about 1.1 crore persons have trained: 83 per cent certified and about 21.4 lakh placed. Under PMKVY 3.0, during FY21 to FY23 (as on 5 January 2023) 7.4 lakh persons have been trained, 66 per cent certified and 41,437 placed. ✓ PMKVY also provided training to Shramiks (migrant labourers) affected by Covid-19. This component covered 116 districts of 6 States, viz., Assam, Bihar, Madhya Pradesh, Odisha, Rajasthan, and Uttar Pradesh. As on 31 October 2022, 1.3 lakh migrants have been trained/ oriented (0.88 lakh in STT and 0.38 lakh in RPL).
Jan Shikshan Sansthan Scheme provides for a lump sum annual grant is released to Jan Shikshan Sansthans (NGOs) for skill training to non-literate, neo-literates, persons with a rudimentary level of education and school dropouts up to class XII in the age group of 15-45 years. The priority groups are women, SC, ST, and other backward sections of society.	✓ From FY20 to FY23 (as of 5 January 2023), 16.0 lakh beneficiaries have been trained of which 28.4 per cent are from urban areas and 69.0 per cent are from rural areas and 2.7 per cent are from tribal areas. Notably, 81 per cent of the trainees are women.
National Apprenticeship Promotion Scheme provides financial support to industrial establishments undertaking apprenticeship programmes under the Apprentices Act, 1961.	✓ Since the launch of the scheme in 2016, as on 31 December 2022, 21.4 lakh apprentices have been engaged by Industries.
Craftsmen Training Scheme provides long-term training in 149 trades through 14,938 Industrial Training Institutes (ITIs) across the country.	✓ Since 2015, 91.7 lakh students have been trained as on 30 October 2022.

Craft Instructor Training Scheme provides comprehensive training both in skills and training methodology is imparted to the instructor trainees to make them conversant with the methodology of teaching and techniques of transferring hands-on skills, to train skilled manpower for the industry.	✓ During the year FY22, a total of 8,847 trainees have been trained in various National Skill Training Institutes and Institute of Training of Trainers.
Making India Skill Capital of the World	With an aim to make India a Skill Capital of the World and improve mobility of Skilled manpower the National Skill Development Corporation (NSDC) International has been set up, which aims to create a network of institutions across India. This network of institutions will be called as Skill India International (SII) Network. It shall be created through the empanelment of state-of-the-art government and private institutions. ✓ MSDE has also signed MoUs with 11 countries, Australia, Belarus, China, Denmark, France, Germany, Japan, Qatar, Switzerland, UAE, and the United Kingdom in the field of skill development and vocational education training. ✓ NSDC has also signed 18 B2B MoUs with countries like Australia, Canada, Germany, Japan, Malaysia, Kingdom of Saudi Arabia, UAE, etc.
Skill Acquisition and Knowledge Awareness for Livelihood Promotion (SANKALP) is a World Bank loan-assisted programme launched in 2018 to decentralise skilling initiatives and align skill development programmes with local demand and aspirations of the youth.	✓ Under the National Component and State Components of SANKALP, 64 and 700 projects respectively have been taken up in the area of Skill and Entrepreneurship development and strengthening of monitoring. ✓ 724 District Skill Committees (DSCs) have been constituted, which are mandated to plan, manage and monitor skilling activities at the District level.

Quality and Affordable Health for All

6.79 Ensuring the provision of quality health facilities to citizens is an important priority for the Government. Towards this objective, multidimensional initiatives have been launched and carried forward for better overall health of the citizens, as encapsulated below. Under the National Health Mission, the Government has made concerted efforts to engage with all relevant sectors and stakeholders to move in the direction of achieving universal health coverage and delivering quality healthcare services to all at affordable cost. Today, the Indian healthcare network is among the largest in the world. The results of an effective health approach are visible in the improvement in some of the important health-related indicators.

Major initiatives from 2014 to 2022 for better overall health

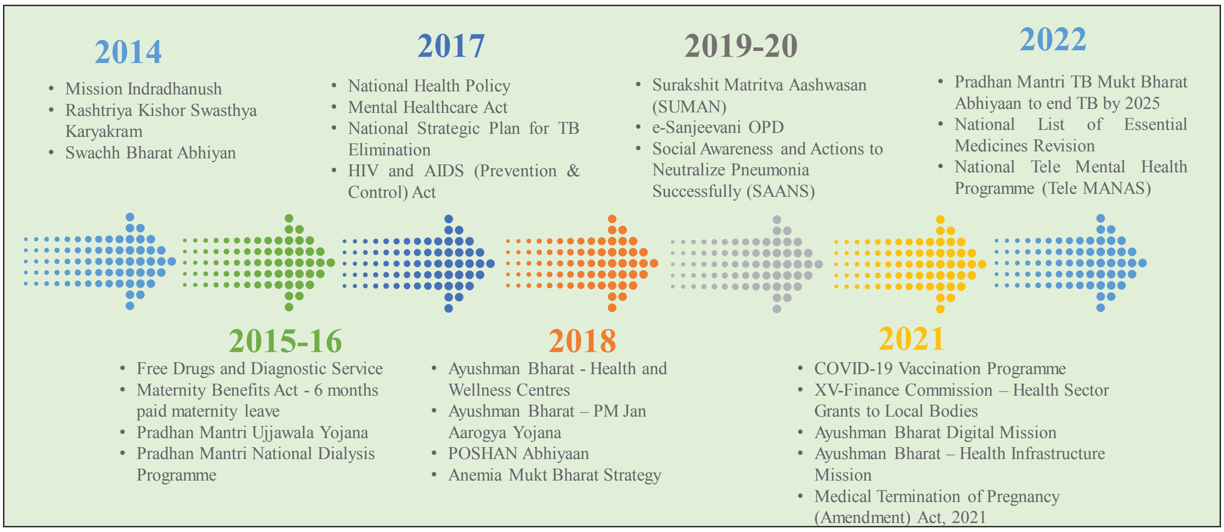


Table VI.17: Improvement in health-related Indicators

	NFHS-4 (2015-16)	NFHS-5 (2019-21)
Households with any usual member covered under a health insurance/ financing scheme (per cent)	28.7	↑ 41.0
Total fertility rate (children per woman)	2.2	↓ 2.0
Current Use of Family Planning Method- Any Method (per cent)	53.5	↑ 66.7
Mothers who had at least 4 antenatal care visits (per cent)	51.2	↑ 58.1
Institutional births (per cent)	78.9	↑ 88.6
Neonatal mortality rate (per 1000 live births)	29.5	↓ 24.9
Infant mortality rate (per 1000 live births)	40.7	↓ 35.2
Under-five mortality rate (per 1000 live births)	49.7	↓ 41.9
Children age 12-23 months fully vaccinated based on information from either vaccination card or mother's recall (per cent)	62.0	↑ 76.4
Children under age 6 months exclusively breastfed (per cent)	54.9	↑ 63.7
Children under 5 years who are stunted (height-for-age) (per cent)	38.4	↓ 35.5
Children under 5 years who are wasted (weight-for-height) (per cent)	21.0	↓ 19.3
Children under 5 years who are underweight (weight-for-age) (per cent)	35.8	↓ 32.1
Children under 5 years who are overweight (weight-for-height) (per cent)	2.1	↑ 3.4
Women who are overweight or obese (BMI≥25.0 kg/m^2) (per cent)	20.6	↑ 24.0
Men who are overweight or obese (BMI≥25.0 kg/m^2) (per cent)	18.9	↑ 22.9
Women age 15-24 years who use hygienic methods of protection during their menstrual period (per cent)	57.6	↑ 77.3

Source: National Family Health Surveys (NFHS) 2015-16 and 2019-21, MoHFW

6.80 With concerted efforts made under the Reproductive, Maternal, New-born, Child, Adolescent Health Plus Nutrition (RMNCAH+N) strategy, India has made considerable progress in improving the health status of both mothers and children. As per the Sample Registration System (SRS) data, India has successfully achieved the major milestone to bring the Maternal Mortality Ratio (MMR) to below 100 per lakh live births by 2020 (laid down in National Health Policy 2017) by bringing it down to 97 per lakh live births in 2018-20 from 130 per lakh live births in 2014-16. Eight states have already achieved the SDG target to reduce MMR to less than 70 per lakh live births by 2030. These include Kerala (19), Maharashtra (33), Telangana (43) Andhra Pradesh (45), Tamil Nadu (54), Jharkhand (56), Gujarat (57), and Karnataka (69).

6.81 Following a steady downward trend, Infant Mortality Rate (IMR), Under Five Mortality Rate (U5MR) and Neonatal Mortality Rate (NMR) have further declined as a result of countrywide efforts towards increasing health service coverage through strengthening of service delivery; quality assurance; RMNCAH+N; human resources, community processes; information and knowledge; drugs and diagnostics, and supply chain management, etc.

Table VI.18: Trends in Mortality indicators

	2014	2016	2018	2020
Maternal Mortality Ratio (per lakh live births)	167 (2011-13)	130 (2014-16)	113 (2016-18)	97 (2018-20)
Infant Mortality Rate (per 1000 live births)	39	34	32	28
Neonatal Mortality Rate (per 1000 live births)	26	24	23	20
Under 5 Mortality Rate (per 1000 live births)	45	39	36	32
Early Neonatal Mortality Rate – 0- 7 days (per 1000 live births)	20	18	18	15

Source: Sample Registration System

Health Expenditure Estimates

6.82 National Health Account (NHA)[38] for the year FY19 (which is the latest available account) highlights the rising importance of public healthcare and social security in ensuring universal health coverage. The NHA estimates for FY19 show that there has been an increase in the share of Government Health Expenditure (GHE)[39] in the total GDP from 1.2 per cent in FY14 to 1.3 per cent in FY19. Additionally, the share of GHE in Total Health Expenditure (THE)[40] has also increased over time, standing at 40.6 per cent in FY19, substantially higher than 28.6 per cent in FY14.

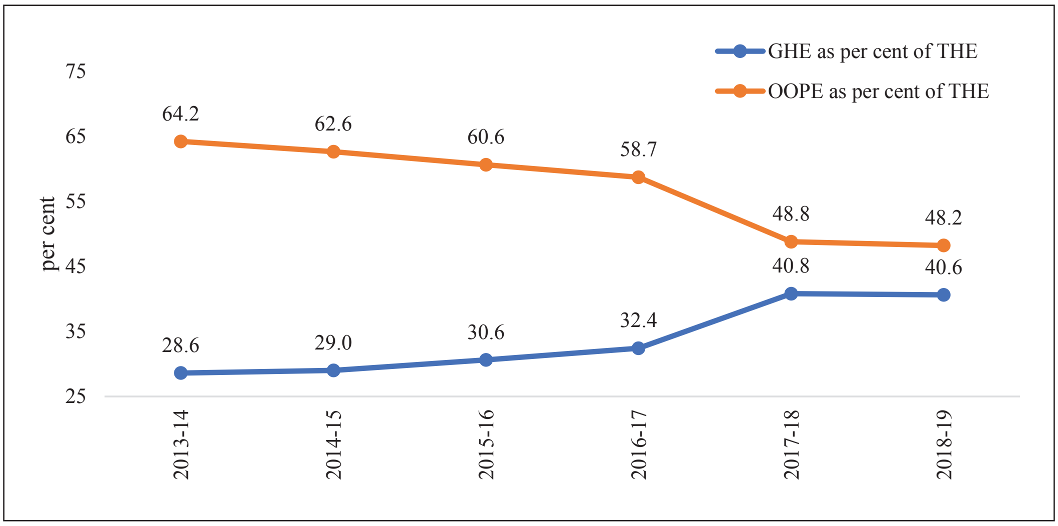
[38] NHA estimates for India 2018-19 is the sixth consecutive NHA estimates report prepared by NHSRC, designated as National Health Accounts Technical Secretariat in 2014 by the Union Health Ministry. This was released on 12 September 2022.
[39] GHE constitutes spending under all schemes funded and managed by Union, State, and Local Governments including quasi-Governmental organisations and donors in case funds are channelled through Government organisations.
[40] THE constitutes current and capital expenditures incurred by government and private sources including external funds.

6.83 Overall, for FY19, THE for India is estimated to be ₹5,96,440 crore (3.2 per cent of GDP and ₹4,470 per capita). Current Health Expenditure (CHE)[41] is ₹5,40,246 crore (90.6 per cent of THE) and capital expenditures is ₹56,194 crore (9.4 per cent of THE). Of the GHE, Union Government's share is 34.3 per cent and the State Governments' share is 65.7 per cent.

6.84 Aligning with the focus on providing healthcare services to all, which comprises one of the policy recommendations of the National Health Policy 2017, the Government is focusing on primary healthcare expenditure which has increased from 51.1 per cent in FY14 to 55.2 per cent in FY19. This not only ensures quality services at the grassroot level but also reduces the chances of ailments requiring secondary or tertiary healthcare services. Between FY14 and FY19, the share of primary and secondary care in the GHE increased from 74.4 per cent to 85.7 per cent. On the other hand, share of primary and secondary care in private health expenditure has declined from 82.0 per cent to 70.2 per cent during the same period.

6.85 The social security expenditure on health, which includes the social health insurance programme, government-financed health insurance schemes, and medical reimbursements made to government employees, has increased from 6 per cent in FY14 to 9.6 per cent in FY19. This is a significant increase which shows that the citizens are better equipped and better provided in terms of healthcare at their doorstep making it more accessible. Due to several such steps, Out-of-Pocket Expenditure (OOPE)[42] as a percentage of THE has declined substantially from 64.2 per cent in FY14 to 48.2 per cent in FY19.

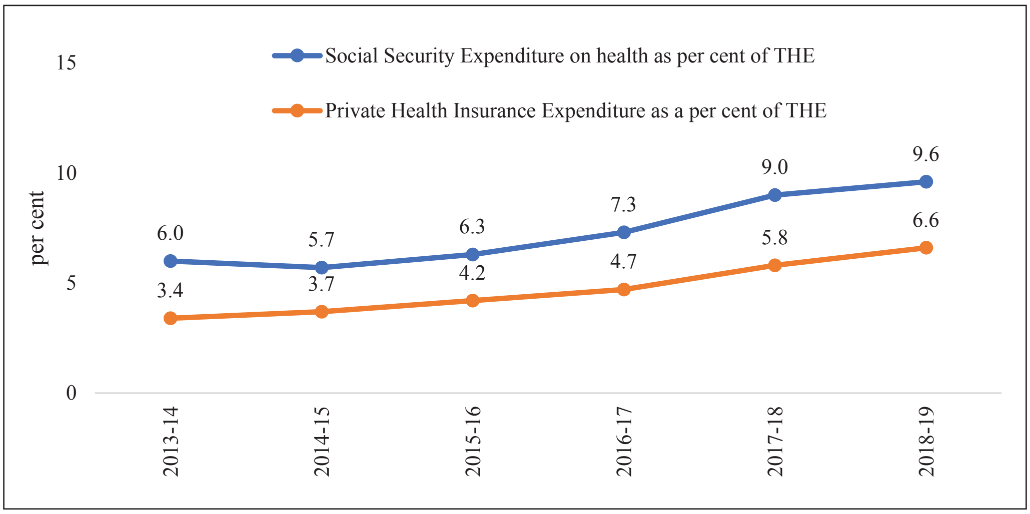
Figure VI.16: Government Health Expenditure (GHE) and Out of Pocket Expenditure (OOPE) as per cent of Total Health Expenditure (THE)



[41] CHE constitutes only recurrent expenditures for healthcare purposes net all capital expenditures.

[42] OOPE are expenditures directly made by households at the point of receiving health care. This expenditure is usually incurred when an individual's visit to healthcare provider (clinic/ hospital/ pharmacy/ laboratory etc.) is not provided for 'free' through a government health facility or a facility run by a not-for-profit organisation or if this individual is not covered under a government/ private health insurance or social protection scheme.

Figure VI.17: Social Security Expenditure and Private Health Insurance Expenditure as per cent of Total Health Expenditure (THE)



Source: National Health Accounts, MoHFW

Figure VI.18: Out of Pocket Expenditure as per cent of Total Health Expenditure - State-wise for 2018-19

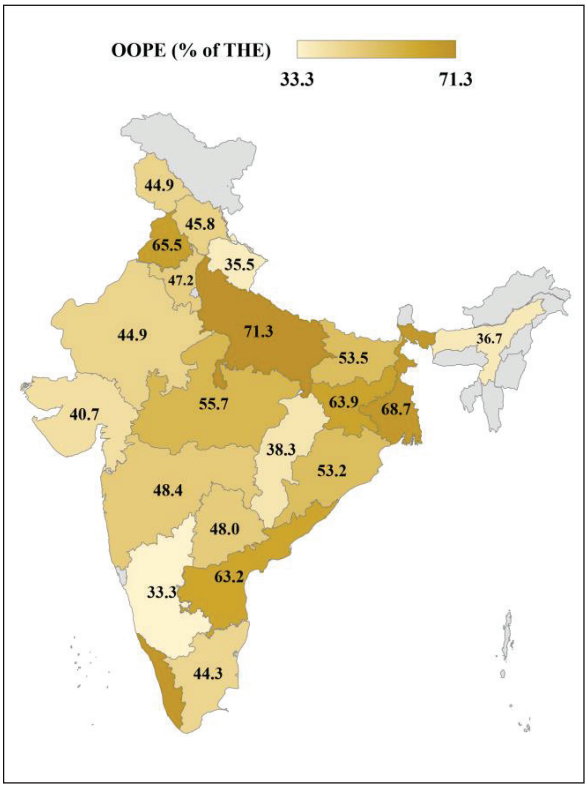
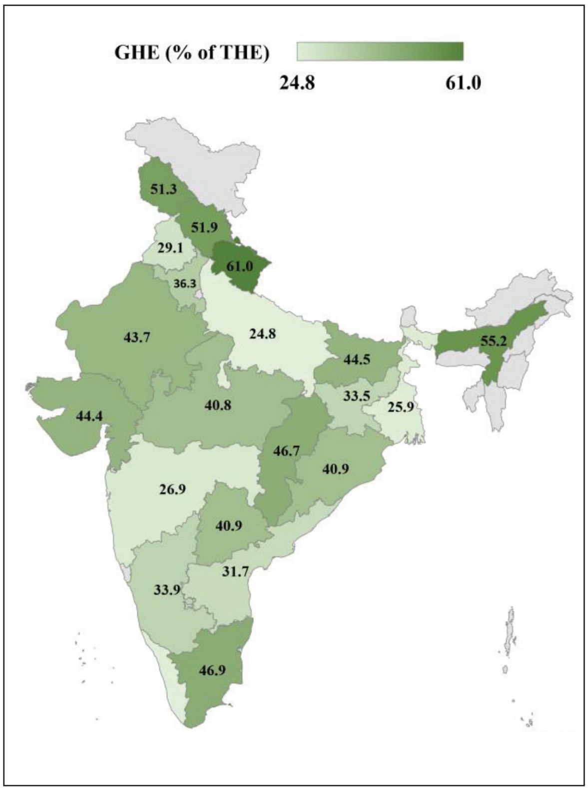


Figure VI.19: Government Health Expenditure as per cent of Total Health Expenditure – State-wise for 2018-19



Source: National Health Accounts 2018-19, MoHFW
Note: Jammu and Kashmir represents the erstwhile J&K including Ladakh

Rural health care – strengthening of infrastructure and human resource

6.86 Health infrastructure is an important indicator for understanding the healthcare delivery provisions and welfare mechanisms in a country. Public health infrastructure has been referred to as 'the nerve centre of the public health system', forming the basic support system for the last-mile delivery of public health services. Alongside, human resources for health are identified as one of the core building blocks of the health system. These include physicians, nursing professionals, pharmacists, midwives, dentists, allied health professionals, community health workers, social health workers and other health care providers, as well as health management and support personnel.

6.87 The recent health sector reforms in India have laid emphasis on strengthening health infrastructure as well as human resource in the public sector system. This can be observed in the rise in the number of Sub-centres (SCs), Primary Health Centres (PHCs), and Community Health Centres (CHCs) in rural areas, along with the rise in doctors, nurses, and other medical personnel over time. With the implementation of the Ayushman Bharat programme, the strengthening of SCs and PHCs are being done by converting them into Health and Wellness Centres (HWCs), in a phased manner, to deliver comprehensive Primary Healthcare services through these Centres. As on 31 December 2022, more than 1.5 lakh HWCs have already been set up.

Rural health care system in India

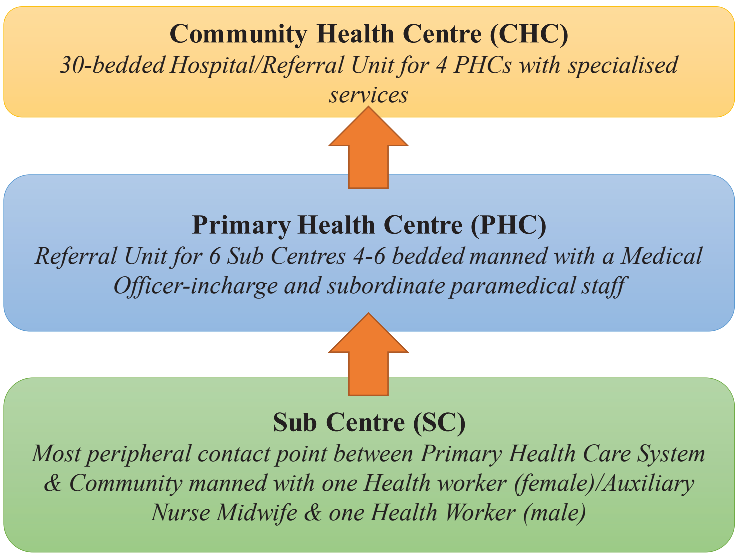


Table VI.19: Progress in health infrastructure

(as of March each year)

(numbers in thousands)

Indicators	2014	2019	2020	2021	2022
Sub-centres (SCs)	152.3	157.4	155.4	156.1	157.9
Primary Health Centres (PHCs)	25.0	24.9	24.9	25.1	24.9
Community Health Centres (CHCs)	5.4	5.3	5.2	5.5	5.5
Doctors at PHCs	27.4	29.8	28.5	31.7	30.6
Total Specialists at CHCs	4.1	3.9	5.0	4.4	4.5
Auxiliary Nurse Midwife at SCs & PHCs	213.4	234.2	212.6	214.8	207.6
Nursing Staff at PHCs & CHCs	63.9	81.0	71.8	79.0	79.9
Pharmacists at PHCs & CHCs	22.7	26.2	25.8	28.5	27.1
Lab Technicians at PHCs & CHCs	16.7	18.7	19.9	22.7	22.8

Source: Rural Health Statistics 2021-22, MoHWF
Note: Greener shades indicate improvements

Progress under Major Government Initiatives for Health

Immunisation

6.88 Under Universal Immunisation Programme (UIP), immunisation is being provided free of cost against 12 vaccine-preventable diseases: Diphtheria, Pertussis, Tetanus, Polio, Measles, Rubella, a severe form of Childhood Tuberculosis, Rotavirus diarrhoea, Hepatitis B, etc. To reinforce universal immunisation, Mission Indradhanush (MI) was launched in December 2014 with the aim to rapidly increase full immunisation coverage of children to 90 per cent and sustain it thereafter. The drive focuses on unvaccinated and partially vaccinated children. Intensified MI was then launched in October 2017 in identified 190 districts/urban areas.

6.89 In FY23, Intensified MI 4.0 was conducted in 416 districts (including 75 districts under Azadi Ka Amrit Mahotsav) across 32 states/UTs, to cover children and pregnant women who missed routine immunisation during the Covid-19 pandemic. Until December 2022, a total of 11 phases of MI have been completed covering 701 districts across the country under which a total of 4.5 crore children and 1.1 crore pregnant women have been vaccinated. Resultantly, NFHS-5 shows a 14.4 per cent increase in Full Immunisation Coverage (FIC) from NFHS-4 and an increase in the percentage of FIC in 30 states/UTs.

eSanjeevani

6.90 eSanjeevani is an innovative, indigenous, cost-effective, and integrated cloud-based telemedicine system application to enable patient-to-doctor teleconsultation to ensure a continuum of care and facilitate health services to all citizens in the confines of their homes, free of cost. At present, eSanjeevani is operational in all states and UTs across India. As of 17

January 2923, 1,12,553 HWCs in rural areas and 15,465 Hubs at tertiary level hospitals, and medical colleges in the states have been enabled in the eSanjeevani. This innovative solution has served over 9.3 crore patients across the country and is currently serving around 4 lakh patients daily. eSanjeevani – National Telemedicine Service of India has evolved into the world's largest outpatient services system.

Box VI.7: Progress under Ayushman Bharat

Ayushman Bharat Pradhan Mantri – Jan Arogya Yojana (AB PM-JAY)

AB PM-JAY is the world's largest health insurance scheme that intends to minimise the OOPE of the target beneficiaries arising due to expenditure on healthcare. The scheme provides health cover of ₹5 lakh per family per year for secondary and tertiary care hospitalisation to over 10.7 crore poor and vulnerable families (approximately 50 crore beneficiaries) that form the bottom 40 per cent of the Indian population identified based on the deprivation and occupational criteria of the Socio-Economic Caste Census 2011 (SECC 2011) and other State schemes.

As of 4 January 2023, approximately 21.9 crore beneficiaries have been verified under the Scheme including 3 crore beneficiaries verified using State IT systems. Approximately 4.3 crore hospital admissions, amounting to ₹50,409 crore, have also been authorised under the Scheme through a network of over 26,055 hospitals.

Ayushman Bharat – Heath and Wellness Centres (AB-HWCs)

Under the scheme, 1.5 lakh AB-HWCs were envisaged to be established by upgrading the SHCs and PHCs in rural and urban areas which will ensure comprehensive primary health care closer to the community. These AB-HWCs provide Comprehensive Primary Health Care, by expanding and strengthening the existing Reproductive & Child Health services and Communicable Diseases services and by including services related to Non- Communicable Diseases such as hypertension, diabetes and 3 common cancers, viz. Oral, Breast and Cervix. The status of service delivery through AB-HWCs as on 31 December 2022 is as under:

- ✓ The first HWCs was inaugurated on 14 April 2018 in the Bijapur District of Chhattisgarh.
- ✓ 1,54,070 HWCs operationalised across the country.
- ✓ More than 135 Crore cumulative footfall.
- ✓ More than 87.0 Crore cumulative screening of Non communicable diseases
- ✓ More than 1.6 crore Wellness Sessions, including Yoga,.
- ✓ Under the e-Sanjeevani teleconsultation platform, more than 9.3 crore tele-consultations have been provided through functional HWCs at 15,465 Hubs (comprising MBBS/ Specialty/Super-Specialty doctors at zonal level) and 1,12,987 Spokes (AB-HWCs at state level) across the country, as on 17 January 2023.

Ayushman Bharat Digital Mission (ABDM)

The Mission aims at creating a secure online platform based on open, interoperable digital standards. This will enable access and exchange of health records of citizens with their consent through Services such as the issuance of Health ID, Healthcare Professionals Registry, Health Facility Registry and Health Records. This will boost the adoption of digital technologies in healthcare, thereby making quality healthcare more accessible and affordable. As on 10 January 2023 key achivements are as under:

- ✓ Ayushman Bharat health account (earlier known as Health ID) created: 31,11,96,965
- ✓ Verified facilities on health facility registry: 1,92,706
- ✓ Verified healthcare professionals on healthcare professional registry: 1,23,442
- ✓ Health records linked : 7,52,01,236

Box VI.8: National Deworming Day
Grabbing the Low Hanging Fruits in Child Health

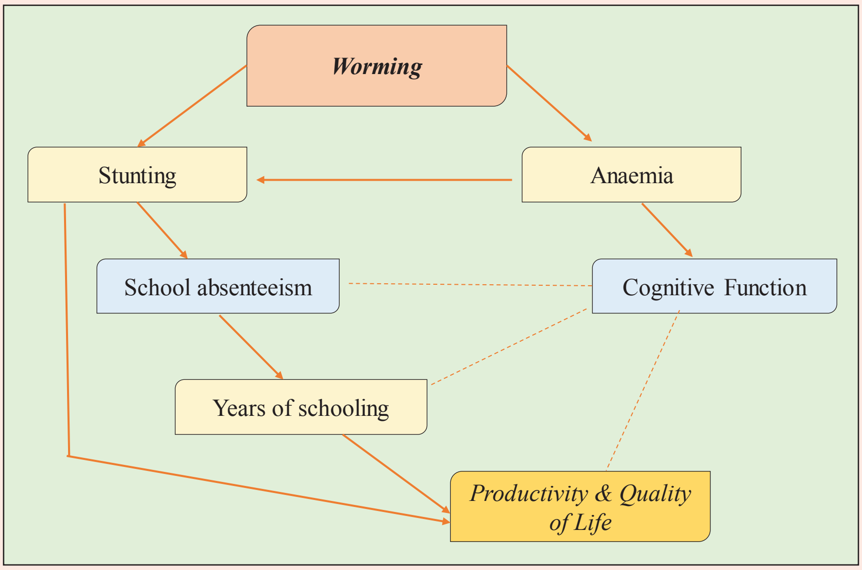
National Deworming Day (NDD), launched in 2015 in 11 states and expanded to the whole country in 2016, is a fixed-day approach to treating intestinal worm infections in children aged 1-19 years with Albendazole tablets. The programme is held every year on 10 February and 10 August through schools and Anganwadis, followed by mop-up days to cover those left out due to absenteeism or sickness. Besides Government and Government-aided schools and Anganwadis, special efforts are made to reach out-of-school children, and private schools have also enthusiastically joined the programme.

During Covid-19, the continuity of deworming efforts were maintained while minimising risks. Frontline health workers were trained to follow appropriate safety guidelines during home visits or through staggered "Village Health Sanitation and Nutrition Day" based model.

Need for the Programme

Soil-Transmitted Helminthiases (STH), also known as parasitic intestinal worm infection, is a public health concern adversely affecting children's physical and cognitive growth. Intestinal worm infection is known to cause, aggravate, and intensify nutritional losses, particularly of Vitamin A and Iron. Micronutrient deficits and worm infestation together culminate into stunted growth and development in children.

Channels of the Impact of Deworming



Deworming: a low-cost high-returns intervention

Eminent research, including by Prof. Michael Kremer, Nobel Laureate in Economics in 2019, has shown the significant impact of deworming on school absenteeism[43], health, nutritional, and learning outcomes[44]. In long-duration studies, deworming was found to have significantly increased the likelihood of higher-wage jobs, ten years after the deworming treatment[45]. Regular deworming thus contributes to achieving better nutrition and health. The deworming initiative also supplements the Swachh Bharat Abhiyan in eliminating sanitation-related health risks.

The combined benefits of deworming, when compared to the low cost of the intervention, lead to a remarkably high benefit-to-cost ratio. The annualised social internal rate of return has been estimated to be around 37 per cent in a 20-years long study in Kenya.[46]

National Deworming Day is, thus, a low-hanging fruit of programme innovations in health well plucked for deep-rooted development.

National Covid-19 Vaccination Programme

6.91 India's National Covid-19 Vaccination Programme, which is the world's largest vaccination programme, began on 16 January 2021, initially with the aim of covering the adult population of the country in the shortest possible time. The programme was expanded to include all persons aged 12 years and above and for the precautionary dose for all persons aged 18 years and above. Test-Track-Treat-Vaccinate and adherence to Covid appropriate behaviour continue to remain the tested strategy for Covid management.

6.92 The introduction of Covid-19 vaccines entailed many challenges such as research and development for new Covid vaccines, training of more than 2.6 lakh vaccinators and 4.8 lakh other vaccination team members, optimum utilisation of available vaccine, difficult-to-reach population, and the need to ensure all essential health services along with scaling up of vaccination programme. In addition, logistical challenges such as storage and decentralised distribution of vaccines across 29,000 cold chain points, augmenting cold chain capacity, and developing IT platform for registering the beneficiaries and vaccine service delivery, were also noticed. The programme was able to overcome these challenges and meet its goals within a short time frame.

6.93 As on 6 January 2023, India has been able to administer more than 220 crore Covid vaccine doses across the country. 97 per cent of eligible beneficiaries have already received at least one dose of Covid-19 vaccine and around 90 per cent of eligible beneficiaries have received both the doses. Vaccination for the age group 12-14 years was started on 16 March 2022, followed by the precautionary dose for the age group 18-59 years starting from 10 April 2022. So far, more than

[43] Miguel, E. & Kremer, M. (2004). Worms: Identifying impacts on education and health in the presence of treatment externalities. Econometrica, 72:159-217.

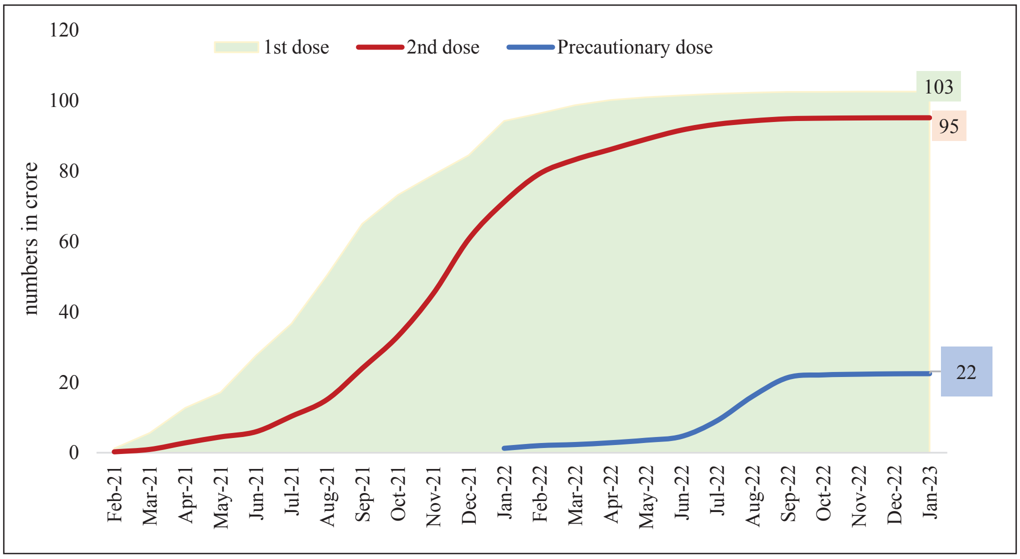
[44] Ozier, O. (2018). Exploiting Externalities to Estimate the Long-Term Effects of Early Childhood Deworming. American Economic Journal: Applied Economics. 10(3):235-262

[45] Baird, S., Hicks, J.H., Kremer, M. & Miguel, E.(2016). Worms at Work: Long-run Impacts of a Child Health Investment. The Quarterly Journal of Economics, 131(4):1637-1680.

[46] Hamory, J., Miguel, E., Walker, M., Kremer, M. & Baird, S. (2021). Twenty-year economic impacts of deworming. Proceedings of the National Academy of Sciences, vol 118(14).

4.2 crore adolescents have been administered the first dose of the Covid-19 vaccine and 22.4 crore precautionary doses have been administered.

Figure VI.20: Number of Covid-19 vaccinations



Source: Ministry of Health and Family Welfare[47]

Box VI.9: Health- a narrative on dedicated Covid infrastruture

The first Covid-19 case in India was detected on 30 January 2020, the same day the World Health organisation (WHO) declared it a public health emergency of international concern. India had alertly implemented surveillance as early as 17 January 2020, even before the first few cases were officially detected. Covid-19 virus posed an unprecendented challenge to the country which was tackled with an agile approach, based on feed-back loops, real-time monitoring of actual outcomes, flexible responses, and safety-net buffers, as discussed in previous Economic Surveys.[47] Over two years since the pandemic was declared, the Government has taken various fiscal and social measures to balance the revival of the economy and deal with increasing caseloads. These included ramping up health infrastructure, both physical and digital, enhanced training of health professionals and, continuing with the mass vaccination drive.

Under the Aatmanirbhar Bharat Abhiyaan, the Union Government focussed on scaling up expenditure on health infrastructure by (a) investing in grass root health institutions and ramping up HWCs in rural and urban areas; (b) setting up critical care hospital blocks in all districts; and (c) strengthening the laboratory network and surveillance by integrated public health laboratories in all districts and blocks and public health units to manage pandemics. The State Governments also took various measures to fight the pandemic. This was complemented by digital infrastructure through Co-WIN for mass vaccination and e-Sanjeevani for telemedicine to reach the last mile. The timely intervention at all levels helped India navigate the Covid pandemic successfully despite successive shocks.

In the last few months, the caseload has subsided significantly, where the active caseload is below 4000 and daily new cases recorded below 300 (as of 29 December 2022). India may have won a

[47] Economic Survey 2021-22 and 2020-21 (Chapter 1 "State of the Economy" and Chapter 10 "Social Infrastructure and Employment").

major battle. India is one of the countries which has learned the most from the pandemic to create a mechanism for protecting its citizens and economy. After the successful rollout of two doses of indigenous vaccines, the third dose was introduced.

Dedicated Covid Infrastructure:

A three-tier arrangement of dedicated Covid-19 health facilities in the country had been implemented to reduce the risk of cross-infection to non-Covid patients and to make provision for non-Covid essential health services. This three-tier arrangement of health facilities comprises (i) a Dedicated Covid Care Centre with isolation beds for mild or pre-symptomatic cases; (ii) a Dedicated Covid Health Centre oxygen-supported isolation beds for moderate cases, and (iii) Dedicated Covid Hospital with ICU beds for severe cases. Besides this, tertiary care hospitals under the ESIC, Defence, Railways, Central Armed Police Forces, Steel Ministry, etc., were also leveraged for case management. In addition, in many states, the Defence Research and Development Organisation (DRDO) has utilised large-scale field hospitals to rapidly scale up treatment capacities.

Oxygen Infrastructure Strengthening during Covid Pandemic

*Pressure Swing Adsorption (PSA) Oxygen Generation Plant*s: PSA plants are being established in hospitals, especially in far-flung areas enabling the hospitals to become self-sufficient in the generation of oxygen for their needs and, thereby, reducing the burden on the medical oxygen supply grid across the country. It was emphasised that each district of the country should have at least 1 PSA plant from PM-CARES support at the public health facilities. Accordingly, 4,135 PSA plants are being established in the country, which enhances the oxygen generation capacity by 4,852 MT, as per details below. Ministry of Health and Family Welfare (MoHFW) has developed and shared the guidelines on indicative norms for setting up oxygen plants in all health facilities on 6 July 2021 with the states.

Source	No. of PSA Plants	Commissioned
PM-CARES	1225	1225
Central Government PSUs	283	283
Foreign Aid	53	50
State/CSR Initiatives	2574	2571
Total	**4135**	**4127**

* Data as on 28 December 2022

- *Oxygen Cylinders:* The Government has ensured an adequate supply of medical oxygen for patient care in the states. Until now, 4,02,517 oxygen cylinders have been supplied to States/UTs/Central Government hospitals; which consists of 1.0 lakh by Central Medical Services Society (CMSS) in 2020; 1.3 lakh by CMSS in 2021; 1.5 lakh by DRDO in 2021 and 23,000 from foreign aid. The oxygen cylinder allocation has been performed in a transparent and participative manner with States/UTs.
- Moreover, MoHFW has also approved the distribution of additional 14,340 D-Type oxygen cylinders among states from UNICEF-ADB (Asian Development Bank) support, which is under process.

- *Oxygen Concentrators:* A total of 1,13,186 oxygen concentrators have been procured by the Government for Covid management, i.e., 99,186 under PM-CARES through ONGC for use in rural areas; and 14,000 under Emergency Covid Response Package (ECRP) support. All these domestically procured concentrators have already been allocated to states/UTs. Moreover, states have been advised to promptly issue oxygen concentrators to districts with details of consignee points and promptly enter data pertaining to the receipt of oxygen concentrators at the district level on the OC-MIS portal (OxyCare MIS Portal).

Doctor-Patient Ratio

The intervention in the medicinal education system since 2014 has resulted in improved recruitment of doctors and supporting staff. As per National Medical Commission (NMC), 13,08,009 allopathic doctors are registered with the State Medical Councils and NMC as on June 2022. Assuming 80 per cent availability of registered allopathic doctors and 5.7 lakh AYUSH doctors, the doctor-population ratio in the country is 1:834 against the WHO norms of 1:1000.

Initiatives for increasing/hiring/recruitment of Doctors & Staff

To further augment the medical education facilities and improve the medical standards, the Government has envisaged various short and long-term measures, including: -

(a) A CSS for establishing new medical colleges by upgrading district/ referral hospitals, under which 157 new medical colleges have been approved, out of which 94 are already functional.

(b) A CSS for strengthening/ upgradation of existing State Government/Central Government Medical Colleges to increase the number of MBBS and PG seats.

(c) Under the "Upgradations of Government Medical Colleges by the construction of Super Specialty Blocks" of Pradhan Mantri Swasthya Suraksha Yojana (PMSSY) scheme, 75 projects have been approved.

(d) Under the Central Sector Scheme for setting up new AIIMS, 22 AIIMS have been approved. Undergraduate courses have started in 19 of these.

(e) Relaxation in the norms for setting up of Medical College in terms of the requirement for faculty, staff, bed strength, and other infrastructure.

(f) Diplomate of National Board qualification has been recognised for appointment as teaching faculty to take care of the faculty shortage.

(g) Enhancement of age limit for appointment/ extension/ re-employment against posts of teachers/ dean/principal/ director in medical colleges up to 70 years.

To summarise, 'Public Health' being a State Subject, all the administrative and personnel matters, including appointment/recruitment/ engagement of doctors and staff in public health facilities, lie with the respective State/UT Governments. No set of measures is sufficient to counter any instantaneous shock like the Covid pandemic, as the measures are designed with the assumption of '*ceteris paribus*', meaning everything else remains the same. But the major difference is that we are operating in a new normal, and hence towards the end, it is all about better management of the crisis and planning ahead. Thus, the strong inventory India has built over the last few years will improve the country's overall health infrastructure and governance system.

Box VI.10: Co-WIN: A successful digital story of vaccination to tell

The history of vaccines and vaccinations in India takes us back to 1802 when the first dose of vaccine was registered for smallpox.[48] Tracing the medical history of the vaccines during those times was a rigorous task. However, in the contemporary scenario, we have substantially progressed in the digital journey, and most medical science searches are a ‘click’ away. Also, even before Covid arrived, India had laid down the strategy for mass vaccination as year-long programs were running for several other diseases. Over the years, the government focused on digital health service delivery by imbibing the basic philosophy of “Antyodaya”. However, the need for end-to-end digitisation in the vaccination process was felt as this was the only way to achieve herd immunity during the pandemic. While many economies had to develop a model from scratch, India was in a comfortable position. Thanks to the Government’s vision of the JAM trinity, the critical challenge was addressed in a time-bound manner through Co-WIN (Covid Vaccine Intelligence Network) in implementing the National Covid-19 Vaccination Programme.

Co-WIN has been developed as an extension of the eVIN (electronic Vaccine Intelligence Network) platform. A comprehensive cloud-based IT solution for planning, implementing, monitoring, and evaluating Covid-19 vaccination in India, the Co-WIN system provided an end-to-end solution with utilities for the entire public health system. The dual interface of the open platform made it scalable across citizen and administrator-centric services. To ensure accountability and transparency in supply chains for vaccination, the platform provided real-time stock tracking at the national, state, and district levels (Government and Private). This further plugged the wastage of Covid-19 vaccines, which otherwise occurred pre-Co-WIN.

Going beyond the users (admins, supervisors, and vaccinators), vaccination centres, and beneficiaries’ registration in 12 regional languages, the web solution extended the issuance of digitally verifiable certificates. The Vaccination Certificate was designed at par with WHO Guidelines to assist even international travellers. To reduce the burden of registration hinging on a single document (Aadhaar), the Government allowed registration using any of the 10 photo identity cards [Aadhaar Card, Driving License, PAN Card, Passport, Pension Passbook, NPR Smart Card, Voter ID, Unique Disability Identification Card,Ration Card with Photo, Student Photo ID card]. Tackling the problem of the digital divide and digital exclusion, multiple beneficiaries (up to six) were allowed onboarding using a single mobile number through the National Covid helpline. To ensure that those having limited access to physical facilities during times of Covid, either due to age, disability or identity, are not left out, special provisions through the “Workplace Covid Vaccination Centre” in the Government and private sector and also “Near to Home Covid Vaccination Centres “ were made available.

The present administration of more than 220 crore Covid-19 vaccine doses was made possible because of the robust digital infrastructure of Co-WIN. It was this broad interlock of digital framework and the Government’s vigour of continuously improving its outreach for better inclusion that India could register a quick and durable economic recovery while continuing to secure both lives and livelihoods. With more than 84.7 crore Co-WIN beneficiaries seeded with Aadhaar among the total 104 crore (between January 2021 to September 2022), the seeds of JAM sown in FY15 proved to be a life saver for the nation.

[48] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4078488/

Social Protection for the Rainy Day

6.94 While growth can lift people out of the low-income trap, it may not be able to ensure that they no longer remain vulnerable to any crisis situations in their lifetime. Thus, it is important to protect citizens from risks posed by rainy days, such as health issues, natural disasters, old age, etc. Especially in the wake of the hardships posed by the pandemic, the government invested more resources in social protection programmes and continued to do so in the FY23 with the understanding that strong social protection systems can support the growth process. Some of the key programmes/schemes in this area are as listed below.

6.95 **Pradhan Mantri Vaya Vandana Yojana (PMVVY):** PMVVY is offered by the Life Insurance Corporation of India and supported by the Government of India, to provide senior citizens of age 60 years or more an assured minimum pension for a term of 10 years, linked to the price at which they purchase the pension policy. A total number of 8,59,708 subscribers are currently benefitting from the scheme through deposits worth ₹87,081.1 crore collectively under 11,97,159 policies as on 31 December 2022.

6.96 **Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJY):** The Scheme is available to people in the age group of 18 to 50 years and provides risk coverage of ₹2 lakh in case of death of the insured, due to any reason, at an annual premium of ₹436/. As on 11 January 2023, 14.96 crore persons have been enrolled cumulatively and 6,39,032 claims have been paid under PMJJY.

6.97 **Pradhan Mantri Suraksha Bima Yojana (PMSBY):** The Scheme is available to people in the age group 18 to 70 years providing a risk coverage of ₹2 lakh in case of accidental death or total permanent disability and ₹1 lakh for partial permanent disability due to accident at a premium of ₹20 per annum. As on 11 January 2023, 32.1 crore persons have been enrolled cumulatively and 1,10,298 claims have been paid under PMSBY.

6.98 **Pradhan Mantri Shram Yogi Maan-Dhan Yojana (PM-SYMDY):** Launched in March 2019, the PM-SYMDY is a voluntary and contributory pension scheme for providing a monthly minimum assured pension of ₹3,000 upon attaining the age of 60 years. The workers in the age group of 18 to 40 years having a monthly income of ₹15,000 or less and not a member of EPFO/ ESIC/ NPS (Govt. funded) can join the scheme. As of 2 November 2022, over 49.1 lakh beneficiaries have been enrolled under the Scheme.

6.99 **PM Street Vendor's Atmanirbhar Nidhi Scheme (PM SVANidhi):** This is a Central Sector Scheme launched on 1 June 2020, to empower street vendors by extending working capital loans of up to ₹10,000 with a one-year tenure and free onboarding of beneficiaries on digital payment platforms. Beneficiaries are also eligible for the second tranche of loan up to ₹20,000 with 18 months tenure after timely repayment of the first tranche. The scheme is available for beneficiaries belonging to only those states/ UTs which have notified the Rules and Scheme under the Street Vendors (Protection of Livelihood and Regulation of Street Vending) Act, 2014. As on 12 January 2023, 45,74,866 loan applications have been sanctioned in all tranches together; out of which 39,43,094 loans have been disbursed.

6.100 Further, to provide loans on easier terms for income generating activities, the **Pradhan Mantri Mudra Yojana (PMMY)** was launched in April 2015 to grant loans of up to ₹10 lakh for income-generating manufacturing, trading, and service sectors, including activities allied to agriculture such as poultry, dairy, beekeeping, etc. Under PMMY, both term loan and working capital requirements can be met. Loans are extended through Member Lending Institutions (MLIs) viz; Banks, Non-Banking Financial Companies (NBFCs) and Micro Finance Institutions (MFIs). The salient features of the Scheme are:

- Under the aegis of PMMY, MUDRA has created three products namely 'Shishu' (loans up to ₹50,000/-), 'Kishore' (loans above ₹50,000/ and up to ₹5 lakh) and 'Tarun' (loans above ₹5 lakh and up to ₹10 lakh) signify the stage of growth / development and funding needs of the beneficiary micro unit / entrepreneur and also provide a reference point for the next phase of graduation / growth;
- There is no insistence on collateral(s) during sanction of loan;
- Rate of Interest is decided by the lending institution, interest is charged only on the money held overnight by borrower;
- A Credit Guarantee Fund for Micro Units (CGFMU) was set up for guaranteeing loans extended to eligible micro units under PMMY by MLIs and overdraft loan amount sanctioned under Pradhan Mantri Jan Dhan Yojana (PMJDY) accounts.;
- From FY21 onwards, loans sanctioned to SHGs between ₹10 lakh to ₹20 lakh are also eligible for coverage under CGFMU. The National Credit Guarantee Trustee Company Ltd., a wholly-owned company of Government of India is the trustee of the Fund.

Present status

More than 38.4 crore loans, amounting to ₹21.5 lakh crore, have been sanctioned since the launch of the scheme. Out of this, more than 8.2 crore loans amounting to ₹6.8 lakh crore have been extended to new entrepreneurs/ accounts which is approximately 21 per cent of total loans extended under the scheme. About 68 per cent of the loans have been sanctioned to women entrepreneurs.

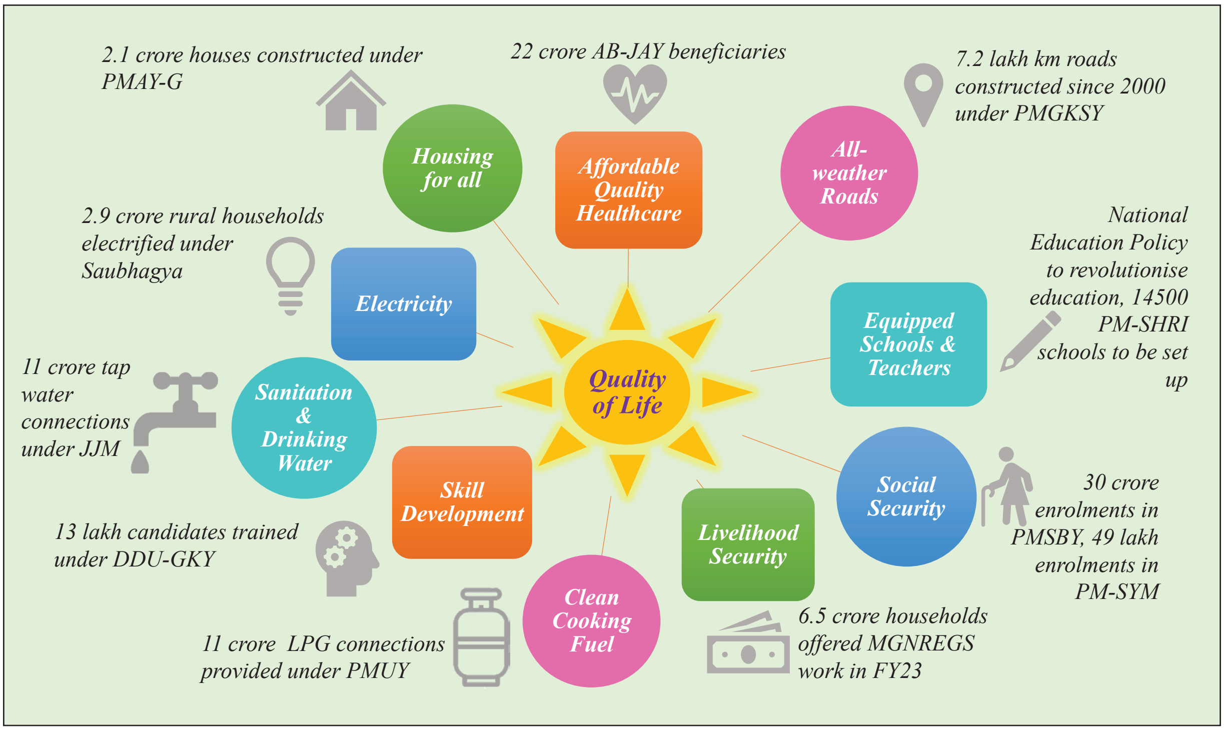
Development of India's Aspiring Rural Economy

6.101 The percentage of the population living in India's rural areas was as high as around 80 per cent in the 1960s and remained over 70 per cent till 2007. It presently stands at 65 per cent for 2021.[49] Further, 47 per cent of the population is dependent on agriculture for livelihood. Thus, the focus of the government on rural development is imperative. The emphasis has been on improving the quality of life in rural areas to ensure more equitable and inclusive development. The aim of engagement of the government in the rural economy has been "*transforming lives and livelihoods through proactive socio-economic inclusion, integration, and empowerment of rural India.*"[50]

[49] Source: World Bank staff estimates based on the United Nations Population Division's World Urbanisation Prospects: 2018 Revision.
[50] Vision document of the Ministry of Rural Development, Department of Rural Development, November 2019.

6.102 Various measures have been taken to enhance the quality of life in rural areas encompassing rural housing, drinking water, and sanitation, clean fuel, social protection, rural connectivity along with enhancing rural livelihoods. The financing needs of rural households and small businesses are being met through microfinance institutions, self-help groups (SHGs), and other financial intermediaries. Taking digitisation and technology to the rural economy has also been a key aspect of the rural development agenda, be it in agricultural activities or governance. A primary focus has also been on the health parameters of the rural population, with enhanced emphasis necessitated by the pandemic. The improvements in these aspects are discussed in the following paragraphs.

Multifaceted initiatives to improve the ecosystem of quality of life



6.103 The NFHS data for 2019-21 illustrates a significant improvement vis-à-vis 2015-16 in an array of indicators concerning the quality of rural lives, including, *inter alia*, access to electricity, presence of improved drinking water sources, coverage under health insurance schemes, etc. Women empowerment has also gained momentum, with visible progress in female participation in household decision-making, owning bank accounts, and use of mobile phones. Most of the indicators concerning the health of rural women and children have improved. These outcome-oriented statistics establish tangible medium-run progress in rural living standards, aided by the policy focus on basic amenities and efficient programme implementation. Some of the important schemes/programmes of the Government in various areas to improve the quality of life in rural areas are detailed in the following paragraphs.

Table VI.20: Quality of rural lives – findings from the National Family Health Survey

	For Rural Areas	NFHS 4 (2015-16)	NFHS 5 (2019-21)
Population	Sex ratio at birth for children born in the last five years (females per 1,000 males)	927	↑ 931
	Total fertility rate (children per woman)	2.4	↓ 2.1
Household Amenities	Population living in households with electricity (per cent)	83.2	↑ 95.7
	Population living in households with an improved drinking-water source[51]	89.3	↑ 94.6
	Households using clean fuel for cooking[52] (per cent)	24.0	↑ 43.2
	Population living in households that use an improved sanitation facility[53] (per cent)	36.7	↑ 64.9
Health	Households with any usual member covered under a health insurance/financing scheme (per cent)	28.9	↑ 42.4
	Infant mortality rate	46.0	↓ 38.4
	Mothers who had an antenatal check-up in the first trimester (%)	54.2	↑ 67.9
	Mothers who consumed iron folic acid for 100 days or more when they were pregnant (per cent)	25.9	↑ 40.2
	Institutional births (per cent)	75.1	↑ 86.7
	Children aged 12-23 months fully vaccinated based on information from vaccination card only (per cent)	61.3	↑ 84.0
	Children aged 12-23 months who received most of their vaccinations in a public health facility (per cent)	94.2	↑ 97.0
	Prevalence of diarrhoea in the 2 weeks preceding the survey (per cent)	9.6	↓ 7.7
	Children under 5 years who are stunted (height-for-age) (per cent)	41.2	↓ 37.3
	Children under 5 years who are wasted (weight-for-height) (per cent)	21.5	↓ 19.5
	Children under 5 years who are underweight (weight-for-age) (per cent)	38.3	↓ 33.8

[51] Piped water into dwelling/yard/plot, piped to a neighbour, public tap/standpipe, tube well or borehole, protected dug well, protected spring, rainwater, tanker truck, cart with small tank, bottled water, community RO plant.

[52] Electricity, LPG/natural gas, biogas.

[53] Flush to the piped sewer system, flush to a septic tank, flush to pit latrine, flush to don't know where, ventilated improved pit (VIP)/biogas latrine, pit latrine with slab, twin pit/composting toilet, which is not shared with any other household. This indicator does not denote access to a toilet facility.

	For Rural Areas	NFHS 4 (2015-16)	NFHS 5 (2019-21)
	Children age 6-23 months receiving an adequate diet	8.8	11.0
	Women whose Body Mass Index (BMI) is below normal (BMI <18.5 kg/) (per cent)	26.7	21.2
	Children aged 6-59 months who are anaemic (per cent)	59.5	68.3
	All women aged 15-49 years who are anaemic (per cent)	54.3	58.5
	Men aged 15-49 years who are anaemic (per cent)	25.3	27.4
Women Empowerment	Currently married women who usually participate in three household decisions[54] (per cent)	83.0	87.7
	Women who worked in the last 12 months and were paid in cash (per cent	25.4	25.6
	Women owning a house and/or land (alone or jointly with others) (per cent)	40.1	45.7
	Women having a bank or savings account that they themselves use (per cent)	48.5	77.4
	Women having a mobile phone that they themselves use (per cent)	36.9	46.6
	Women who have ever used the internet (per cent)	na	24.6
	Women age 20-24 years married before age 18 years (per cent)	31.5	27.0

Source: National Family Health Surveys (NFHS) 2015-16 and 2019-21, MoHFW

Enhancing Rural incomes

Deendayal Antyodaya Yojana-National Rural Livelihood Mission (DAY-NRLM)

6.104 NRLM aims to enable economically weak households to access gainful self-employment and skilled wage employment opportunities resulting in sustainable and diversified livelihood options for them. This is one of the world's largest initiatives to improve the livelihoods of the poor. The Mission seeks to achieve its objective through investing in four core components viz., (a) social mobilisation and promotion and strengthening of self-managed and financially sustainable community institutions of the rural poor women; (b) financial inclusion; (c) sustainable livelihoods; and (d) social inclusion, social development, and access to entitlements through convergence.

6.105 The cornerstone of the Mission is its '*community-driven*' approach which has provided a huge platform in the form of community institutions for women empowerment. Rural women are at the core of the program which is extensively focused on their socio-economic empowerment

[54] Decisions about health care for herself, making major household purchases, and visits to her family or relatives.

by way of building their capacities, providing financial support, and training in order to enable them to undertake livelihoods activities and become financially independent. Nearly 4 lakh SHG members have been trained as Community Resource Persons (CRPs) (viz. Pashu Sakhi, Krishi Sakhi, Bank Sakhi, BimaSakhi, PoshanSakhi etc.) help in the implementation of the Mission at the ground level.

6.106 The Mission has its footprint across 6,880 blocks in 723 districts across all states and UTs (except Delhi and Chandigarh) under its implementation strategy. It has mobilised a total of 8.7 crore women from poor and vulnerable communities into 81 lakh SHGs. The progress of the programme on key components is summarised below.

Components of DAY-NRLM

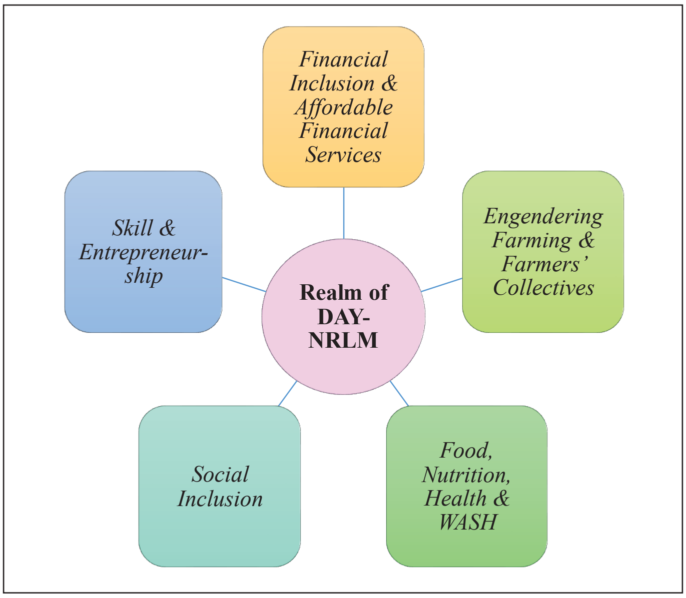


Table: VI.21 Progress under DAY-NRLM

Indicator	*Cumulative progress (up to December 2022)*
No. of Blocks covered	6880
No. of SHGs promoted (in lakh)	81.1
No. of Households mobilized (in lakh)	875
Capitalization Support provided to SHGs (in ₹crore)	20250.0
Amt. of Bank credit accessed by SHGs (in ₹ lakh crore)	5.9
No. of individual enterprises set up under SVEP[55] (in ₹ lakh)	2.2
No. of vehicles deployed under AGEY[56]	2208
No. of Mahila Kisan covered (in lakh)	196.0
No. of Custom Hiring Centres established	26026
No of households having kitchen garden (in lakh)	110.3

Source: Ministry of Rural Development

[55] Start-Up Village Entrepreneurship Programme
[56] Aajeevika Grameen Express Yojana

Mahatma Gandhi National Rural Employment Guarantee Scheme

6.107 The Mahatma Gandhi National Rural Employment Guarantee Act 2005 (MGNREGA) aims at enhancing the livelihood security of households in rural areas of the country by providing at least 100 days of guaranteed wage employment in a financial year to every household whose adult members volunteer to do unskilled manual work. In case employment is not provided within 15 days from the date of registration of the demand for work or the date from which work has been demanded in case of advance applications, whichever is later, the worker is entitled to a daily unemployment allowance.

6.108 A total of 5.6 crore households availed employment and a total of 225.8 crore person-days employment has been generated under the Scheme (until 6 January 2023). The physical progress of MGNREGS in terms of person-days generation, average person-days per household, and participation of women are indicated below. Box VI.11 lists the achievements and governance measures under the MGNREGA.

Table VI.22: Progress under MGNREGS

Indicator	2018-19	2019-20	2020-21	2021-22	2022-23*
Person-days generated (in crore)	267.9	265.4	389.1	363.3	225.8
Average person-days per household	50.9	48.4	51.5	50.1	40.7
Women participation rate (per cent)	54.6	54.8	53.2	54.7	56.3

**as of 6 January 2023*
Source: Ministry of Rural Development

Box VI.11: Achievements under MGNREGA

Geo-tagging of the Assets: Geo MGNREGA Phase-I was rolled out on 1 September 2016 for geo-tagging of all completed works which started before 1 November 2017, under the scheme. Geo-MGNREGA Phase-II was rolled out on 1 November 2017 and under this phase, the geo-tagging of assets is carried out in three stages viz: before initiation of work, during the work, and after completion of work. More than 5.2 crore assets have been geo-tagged (as of 6 January 2023) and made available in the public domain.

Mandatory expenditure on agriculture and allied activities: As per the provision of the Act, the District Programme Coordinator is required to ensure that at least 60 per cent of the works to be taken up in a district in terms of cost shall be for the creation of productive assets directly linked to agriculture and allied activities through development of land, water, and trees. The expenditure on agriculture and allied activities is 68.5 per cent in FY23 (as of 6 January 2023).

e-Payments: e-payments are done under MGNREGA using National Electronic Fund Management System (Ne-FMS)/ Electronic Fund Management System (e-FMS) for the payment of wages of workers directly to their bank/post office accounts. So far, total expenditure through NeFMS/e-FMS is 99.7 per cent.

DBT: Under the scheme, 99 per cent of wage seekers are receiving their wages directly into their bank accounts. It is a big step towards transparency.

Aadhaar-based payment: 14.0 crore Aadhaar have been seeded in Management Information System (MIS) which is 92.0 per cent of total active workers (15.3 crore). A total of 7.9 crore workers have been linked to Aadhaar Based Payment System.

Some of the **Good Governance initiatives** under the Scheme are:

(a) The Job Cards (JC) need to be verified and updated from time to time to weed out the bogus JCs, duplicates, and for reasons like migration and death. The states/ UTs have taken up this exercise to verify/ update the JCs.

(b) As a good governance initiative, the number of Registers (average 22 Registers in a Gram Panchayat) being maintained at every Gram Panchayat has been brought down to seven Registers.

(c) Cases of violation of Guidelines and Schedules are being followed up regularly. The Interstate Standard Operating Procedures (SoP) for visits were developed to improve the quality of the social audit process for all the states/UTs. This SoP will ensure all the Social Audit compliance as per Audit Standard Rule, 2011 which includes the establishment of an independent social audit unit, independent social audit director, and complete human resources to be trained as Village Resource Persons (VRPs), timely calendar upload on MIS, timely conduct of the regular audit and uploading the issues on MIS within the stipulated timeline.

(d) MGNREGA workers are being trained under recent initiatives like Bare Foot Technicians (BFT) to move them up the skilling ladder. So far, 8,394 BFTs have been trained in 20 States.

(e) The project "UNNATI" intends to upgrade the skill base of the MGNREGS workers, and thereby improve their livelihoods so that they can move from their current partial employment to full employment. This project was launched in the FY20 and aims to enhance the skill base of 2 lakh MGNREGA beneficiaries in three years i.e., FY20, FY21, and, FY22. So far, about 27,383 candidates have been trained. UNNATI skilling project is meant to provide training to one adult member (of age 18-45 years) of a household who has completed 100 days of work under MGNREGA in the financial year from FY19. Full expenditures towards a stipend, against wage loss compensation, are entirely borne by the Central Government. A total of 2 lakh beneficiaries are to be imparted training in 26 States and 2 UTs.

(f) Around 5.5 crore households fall under the category of landless households dependent on manual casual labour for livelihood as per the SECC 2011. The Government is making all efforts to get these households, not having JCs, to obtain employment under MGNREGA. Around 4.6 crore such households have been surveyed.

(g) Area Officer Monitoring App was launched in May 2021, in a bid to facilitate the authorities to record their findings online. It will also help in recording time-stamped and geo-coordinate tagged photographs for all the schemes of the Department of Rural Development. It facilitates analysis of findings which in turn help in the implementation of the programme in a better manner.

(h) National Mobile Monitoring Software (NMMS) App was launched in May 2021 which permits taking real-time attendance of workers at MGNREGA worksites along with a geo-tagged photograph. This app is a big step towards bringing transparency and proper monitoring of the schemes and will help in increasing citizen oversight of the programme.

Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY)

6.109 DDU-GKY is a placement-linked skill development programme for rural poor youth under the NRLM. It is a market-led, placement-linked skill development programme for providing wage employment to rural poor youth. Until 30 November 2022, a total of 13,06,851 candidates have been trained under this scheme of which 7,89,685 have got job placements.

Rural Housing

6.110 Housing is one of the basic necessities, along with food and clothing. "Housing for All by 2022" was rolled out to provide shelter with dignity for each and every one. With this target, the *Pradhan Mantri Awaas Yojana –Gramin* (PMAY-G) was launched in November 2016 with the aim of providing around 3 crore pucca houses with basic amenities to all eligible houseless households living in kutcha and dilapidated houses in rural areas by 2024. Through convergence with other Government Schemes, the PMAY-G also addresses basic needs such as the construction of the toilet, piped drinking water, electricity connection, LPG gas connection, and 90/95 person-days of unskilled labour from MGNREGS.

6.111 To ensure that assistance is targeted at those who are genuinely deprived and that the selection is objective and verifiable, PMAY-G selects beneficiaries using housing deprivation parameters in the SECC, 2011 date which is to be verified by the *Gram Sabhas*. Under the scheme, landless beneficiaries are accorded the highest priority in the allotment of houses. A total of 2.7 crore houses have been sanctioned and 2.1 crore houses have been completed by 6 January 2023 under the Scheme. Against the total target of completion of 52.8 lakh houses in FY23, 32.4 lakh houses have been completed.

Drinking Water and Sanitation

6.112 The UN-SDG6 aims to "*Ensure availability and sustainable management of water and sanitation for all.*" India has made considerable progress in providing drinking water and safe sanitation to urban and rural households. Some details of key schemes/programmes under operation towards achieving the SDG goal on water and sanitation, are listed below.

Jal Jeevan Mission

6.113 The Government has accorded the highest priority to improve the quality of life and enhance the 'ease of living' of people, especially those living in rural areas. On the 73rd Independence Day, 15 August 2019, the Jal Jeevan Mission (JJM) was announced, to be implemented in partnership with States, to provide tap water connection to every rural household and public institutions in villages like schools, Anganwadi centres, *ashram shalas* (tribal residential schools), health centres, Gram Panchayat building, etc., by 2024.

6.114 At the time of the rollout of the JJM in August 2019, about 3.2 crore (17 per cent) households out of the total of 18.9 crore rural households had a tap water supply. Since the launch of the Mission, as of 18 January 2023, of 19.4 crore rural households, 11.0 crore households are getting tap water supply in their homes. Further, four States, i.e., Goa, Gujarat, Telangana & Haryana, and three UTs, i.e., Andaman & Nicobar Islands, Dadra Nagar Haveli & Daman Diu and Puducherry have become '*Har Ghar Jal*' State/ UT, i.e., 100 per cent households are having tap water supply. Similarly, 121 districts, 1,515 Blocks, 82,071 Gram Panchayats, and more than 1.5 lakh villages have also become '*Har Ghar Jal Block*', '*Har Ghar Jal Panchayat*', and

'*Har Ghar Jal Gaon'* respectively. Further, more than 8.8 lakh schools and 9.1 lakh Anganwadi centres are getting potable piped water supply. Box VI.12 provides more details about the Mission and how it is serving to improve public health.

Box VI.12: Jal Jeevan Mission as an instrument of public health

A recent study by Kremer et al. (2022) estimated that supply of microbiological contamination free water through Jal Jeevan Mission (JJM) can prevent 1.36 lakh deaths of under-5 children every year.[57] Thus, water treatment is likely to have sizeable net benefits and is complementary to steps such as Swachh Bharat Abhiyan in preventing child mortality through improved hygiene.

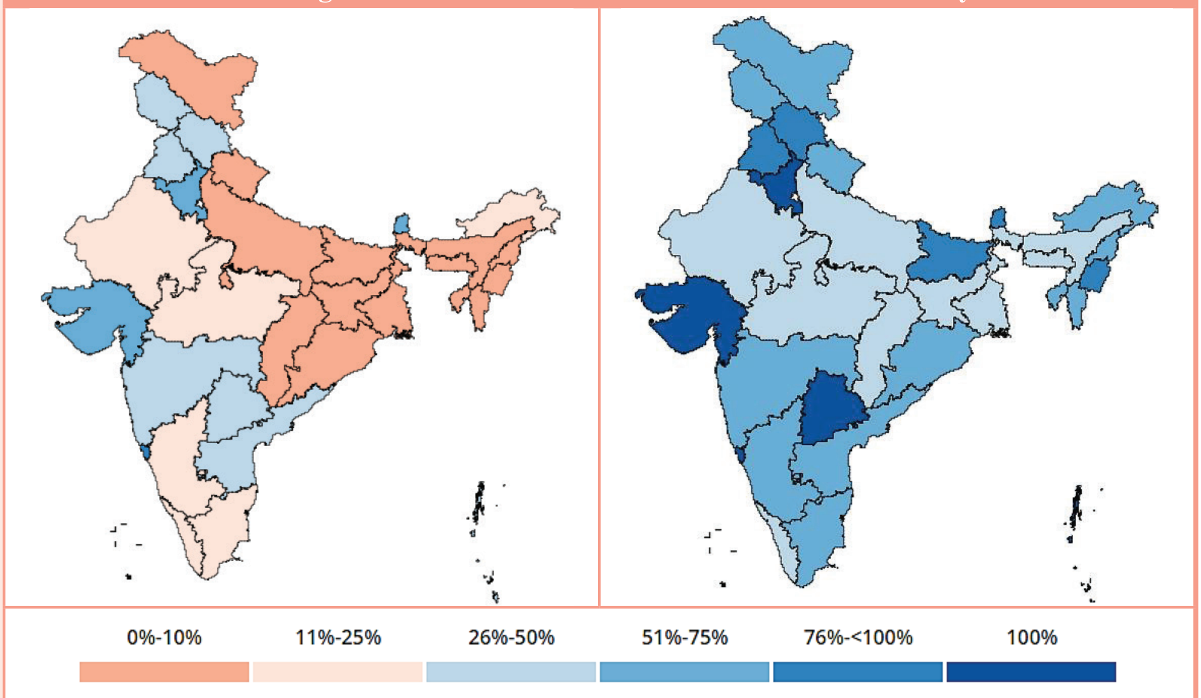
With the availability of safe and potable drinking water at the doorstep of every rural household, water-borne diseases have drastically reduced from 1.8 crore in 2019 to 59.0 lakh in 2021, as per data from Directorate General of Health Services, M/o Health and Family Welfare.[58]

Steps taken for ensuring water quality

- JJM stresses on the provision of potable water of adequate quantity and good quality as prescribed by the Bureau of Indian Standards. Water quality monitoring & surveillance activities are given top priority under the mission.
- To bring focus on water supply, sanitation and hygiene (WASH), thus to improve public health, a nation-wide Water Quality Management Information System (WQMIS) has been launched on by using field testing kits as well as water quality testing in laboratories. The data is uploaded, analyzed and in case of quality issues, local authorities are alerted to take up immediate remedial action.

Percentage of Rural Households with Functional Tap Water Connections

As on 15 August 2019 | **As on 21 January 2023**



Source: Jal Jeevan Mission Dashboard

[57] Kremer, M., Saletore, A., Więcek, W., Baker, A. (2022). Potential reduction in child mortality through expanding access to safe drinking water in India, Jal Jeevan Samvad, November 2022, Department of Drinking Water and Sanitation. This was based on the meta-analysis in Kremer, M., Luby, S., Maertens, R., Tan, B., Więcek, W. (2023). Water Treatment and Child Mortality: A Meta-analysis and Cost-effectiveness Analysis, Development Innovation Lab, working paper no. 2022-26

[58] https://pib.gov.in/PressReleasePage.aspx?PRID=1796173

- Five women in each village, preferably including at least one ASHA worker and one Anganwadi worker, are being trained to test water samples of any kind of contamination by using Field Test Kits (FTKs). FTKs are procured and handed over to Panchayats. The FTK helps to test water on nine parameters viz. pH, alkalinity, chloride, nitrate, total hardness, fluoride, iron, residual free chlorine and H2S. Until December 2022, 16.2 Lakh women have been trained in nearly 2.0 lakh villages on Water Quality Testing through FTKs, and more than 58.0 Lakh water samples have been tested.
- There are 2,067 water testing laboratories in the country. Of these, 657 laboratories are NABL accredited. Water testing laboratories have been opened to the public to get their water samples tested at nominal rates. Many States have provided mobile vans to enable collecting and testing water samples in faraway remote villages. In FY23, until December 2022, more than 27.0 lakh water samples have been tested in laboratories.
- To assess the performance of various local water utilities in states/UTs, a functionality assessment exercise is undertaken every year to assess the status of water service delivery to households. As per functionality assessment of household tap connection – 2022, 87 per cent of the sample households received potable water.
- As on 10 October 2022, 8.7 lakh schools (84.6 per cent) and 8.9 lakh (80.6 per cent) Anganwadi centers across the country have been provided with potable tap water supply for drinking & cooking mid-day meals, hand-washing and use in toilets.
- 100-days water quality campaign "Swachh Jal Se Suraksha" was announced on 2 October 2022 focusing on awareness creation on the importance of water quality through Information, Education, and Communication, training activities and capacity building of villagers using citizen science approach.
- Five "Centers for Sustainable Drinking Water", in various IITs, supported by the JJM are working on developing innovations and technologies for bringing sustainability in drinking water.

Mission Amrit Sarovar

6.115 Mission Amrit Sarovar was launched on National Panchayati Raj Day on 24 April 2022 with the objective to conserve water for the future. The Mission is aimed at developing and rejuvenating 75 water bodies in each district of the country during this Amrit Varsh, 75th Years of Independence. So far, against the initial target of 50,000 Amrit Sarovar, a total of more than 93,291 Amrit Sarovar sites have been identified and works have commenced on more than 54,047 sites. Out of these commenced works, a total of more than 27,071 Amrit Sarovars have been constructed so far. The impact of this initiative has been:

- About 32 crore cubic meters of water holding capacity has been enhanced.
- Water Users' groups have been associated with each Amrit Sarovar inter-alia improving the livelihoods base of the local community.
- Participation of freedom fighters, Martyr's families, Padma Awardees, and other eldest citizens of the local areas helped in community participation at a large scale, promoting social harmony and patriotism, and making this mission a mass movement.

- People's participation has been seen in this mission in a form of "Shram -Daan."
- This will result in the creation of a total carbon sequestration potential of 1,04,818 tonnes of carbon per year.

JALDOOT App

6.116 JALDOOT app was launched on 27 September 2022 for measuring the water level in a Gram Panchayat through 2-3 selected open wells twice a year (pre-monsoon and post-monsoon). Gram Rojgar Sahayak is required to measure the water level and document the same at the Central server using the Jaldoot mobile app. This will enable groundwater monitoring, water budgeting, and planning for water harvesting and conservation-related works. A total of 3,66,354 wells have been measured as on 7 December 2022.

Swachh Bharat Mission (Grameen)

6.117 Swachh Bharat Mission – Grameen (SBM(G)) was launched on 2 October 2014 to ensure cleanliness in India and make it Open Defecation Free (ODF). Having achieved the ODF status in all villages in the country as of 2 October 2019, Phase-II of SBM (G) is now being implemented during FY21 to FY25, with the focus to sustain the ODF status of villages and covering all the villages with Solid and Liquid Waste Management, i.e., to convert the villages from ODF to ODF Plus. About 1,24,099 villages have been declared ODF plus till 10 November 2022 under this Mission. Andaman & Nicobar Islands has declared all its villages as ODF plus model, thus becoming the first *Swachh, Sujal Pradesh*.

LPG connections

6.118 The government is continuing to support the vulnerable as commodity prices, including that of essentials, have remained volatile in the past year. This includes supporting the households with subsidised cooking fuel.

6.119 ***Pradhan Mantri Ujjwala Yojana 2.0, Swachh Indhan Behtar Jeevan****:* The 'Pradhan Mantri Ujjwala Yojana' (PMUY) was launched in May 2016 as a flagship scheme to make clean cooking fuel such as LPG available to rural and deprived households which were otherwise using traditional cooking fuels such as firewood, coal, cow-dung cakes, etc. The usage of traditional cooking fuels had detrimental impacts on the health of rural women as well as on the environment. The release of 9.5 crore LPG connections under the scheme has also helped in increasing the LPG coverage from 62 per cent on 1 May 2016 to 99.8 per cent as on 1 April 2021.

6.120 Under the Union Budget for FY22, provision for the release of an additional one crore LPG connections under the PMUY scheme, i.e., Ujjwala 2.0, has been made. This scheme will offer deposit-free LPG connection, first refill and hot plate free of cost to beneficiaries, and a simplified enrolment procedure. In this phase, a special facility has been given to migrant families. Under this Ujjwala 2.0 scheme, 1.6 crore connections have been released until 24 November 2022.

Rural connectivity

Pradhan Mantri Gram Sadak Yojana (PMGSY)

6.121 The objective of PMGSY is to provide single all-weather road connectivity to all eligible unconnected habitations of the designated population size (500+ in plain areas, 250+ in North-Eastern and Himalayan States) in rural areas of the country. The programme also has an upgradation component for those districts, where all the eligible habitations of the designated population size have been provided all-weather road connectivity. However, upgradation is just one of the components of the programme.

6.122 The programme has been launched in three phases with the latest third phase having been launched on 10 July 2019 for consolidation of 1,25,000 km through routes and major rural links connecting habitations, inter-alia, to Gramin Agricultural Markets, higher secondary schools, and hospitals. Since its inception, a total of 1,84,984 roads measuring 8,01,838 km and 10,383 Long Span Bridges (LSBs) have been sanctioned under all the interventions/ verticals of PMGSY. 1,73,775 number of roads measuring 7,23,893 km and 7,789 LSBs have been completed.

6.123 The scheme has helped immensely in providing access to basic services and lifting the income of rural masses. Various independent impact evaluation studies were carried out on PMGSY, which have concluded that the scheme has had a positive impact on agriculture, health, education, urbanization, employment generation, etc.

Electricity

SAUBHAGYA- Pradhan Mantri Sahaj Bijli Har Ghar Yojana

6.124 The government launched the Pradhan Mantri Sahaj Bijli Har Ghar Yojana – Saubhagya in October 2017 with the objective to achieve universal household electrification by providing electricity connections to all willing un-electrified households in rural areas and all willing poor households in urban areas in the country by March 2019. The Scheme involved the organisation of camps in villages/clusters villages for on-spot registration and the release of connections. The connections were given free for economically poor households and for others ₹500 was charged after the release of the connection in 10 instalments. The Saubhagya scheme has been successfully completed and closed on 31 March 2022.

Deendayal Upadhyaya Gram Jyoti Yojana (DDUGJY)

6.125 This scheme was launched in November 2014 with the objective to improve the quality and reliability of power supply in rural areas. It envisaged the creation of basic electricity infrastructure in villages/habitations, strengthening & augmentation of existing infrastructure, and metering of existing feeders/distribution transformers/consumers to improve the quality and reliability of power supply in rural areas. Further, last-mile connectivity and free electricity connections were also provided to BPL households only identified by the States as per their list.

6.126 A total of 2.9 crore households have been electrified since the launch of the Saubhagya period in October 2017 under various schemes viz (Saubhgaya, DDUGJY, etc.)

Direct Benefit Transfer: A Game Changer

6.127 The Economic Survey 2014-15 showed that although price subsidies are widely used as part of a standard toolkit by Governments in India in their anti-poverty programmes, they are often regressive, distort the markets in ways that ultimately hurt the economically weak and the leakages thereof seriously undermine the effectiveness of price as well as product subsidies. These distortions and leakages are such that they have an adverse impact on social welfare. It was recommended that the benefit that price subsidies seek to create for the poor can be directly transferred to the poor through lump-sum income transfers, avoiding the distortions that price subsidies induce. Eliminating or phasing down subsidies is neither feasible nor desirable unless accompanied by other forms of support to cushion the poor and vulnerable and enable them to achieve their economic aspirations. The JAM Number Trinity – Jan Dhan Yojana, Aadhaar and Mobile numbers – has allowed the Government to offer this support to identified households in a targeted and less distortive way in the form of DBT.

6.128 Since the inception of DBT, cumulative transfers of over ₹26.5 lakh crore in respect of Central schemes have been made through the DBT route. In this process, total savings of over ₹2.2 lakh crore have accrued as on 31 March 2021 for Central schemes alone due to the removal of 9.4 crore duplicate, fake/non-existent beneficiaries across databases.

6.129 With the onset of the Covid-19 pandemic and the imposition of lockdown and enforcement of social distancing norms, the DBT ecosystem faced a tough trial and emerged as a means of relief to millions of citizens whose livelihoods were impacted. DBT played a major role in sustaining life, especially for the underprivileged segments of society, helping millions by providing immediate relief. Cash transfers under central schemes like PM-KISAN, MGNREGS, National Social Assistance Programme (NSAP), Pradhan Mantri Matru Vandana Yojana (PMMVY), NRLM, National Health Mission (NHM), scholarship schemes of various ministries through the National Scholarship Portal (NSP) and food subsidy under Pradhan Mantri Garib Kalyan Ann Yojana and Atma Nirbhar Bharat Package were a big relief for all the adversely affected masses of India during the Covid-19 period.

6.130 To make DBT schemes more accessible and transparent, major DBT schemes are being end-to-end digitized (EED) with provision for online and mobile-based access. 170 and 150 Central Government DBT schemes are EED and available on Unified Mobile Application for New Age Governance (UMANG) mobile platform respectively. Similarly, over 1000 States / UTs DBT schemes are EED. For citizens who do not have access to smartphones, services available on UMANG are also available in assisted mode through Common Service Centres (CSCs) across India. The citizen experience in accessing DBT schemes through the UMANG app is markedly rich since UMANG offers a well-catalogued bouquet of services in multiple Indian languages to cater to a wide audience.

6.131 India's successful implementation of DBT has won praise from the International Monetary Fund and World Bank, among other international organizations, for efficiently providing support (subsidies, food grain, and cash benefits directly) to large masses at low-income levels (85 per cent of rural households and 69 per cent of urban households). Box VI.11 informs the progress the JAM-trinity-based DBT framework of social security schemes in India.

Box VI.13: Progress in Direct Benefit Transfer Scheme

DBT was launched in 2013 to re-engineer the then-existing delivery processes using modern Information and Communication Technology (ICT) to transfer benefits directly into the preferably Aadhaar-seeded bank accounts of accurately targeted beneficiaries. In the span of the past decade, DBT has expanded from a mere 24 schemes (as part of a pilot programme) in 43 districts in 2013 to over 300 Central schemes and greater than 2000 State schemes across India by December 2022.

Table: Overall DBT Progress Report

	2013-14	2016-17	2018-19	2019-20	2020-21	2021-22	2022-23 (Till 5 Jan 2023)
No of DBT Schemes	28	142	440	426	316	313	310
Total Funds Transferred (in ₹crore)	7,368	74,689	3,29,796	3,81,632	5,52,527	6,30,265	3,80,380
Cash schemes	7,368	74,689	2,14,092	2,39,729	2,96,578	2,68,139	1,71,842
In-kind schemes	-	-	1,15,704	1,41,902	2,55,950	3,62,126	2,08,538
Eligible Beneficiaries [non-unique] (in crore)	10.8	35.7	129.2	144.7	179.9	178.9	159.5

Source: Data as reported by Ministries / Departments to DBT Mission, Cabinet Secretariat

In the years of its operation, the DBT paradigm has enabled:

- Accurate identification & targeting of beneficiaries;
- Greater inclusion and ease of availing services through online application;
- Transparency in fund transfers to beneficiaries;
- Curbing of leakages in the benefit delivery processes through the elimination of middlemen/agents;
- Creation of greater accountability on behalf of the Government;
- Facilitating reforms in Government processes through re-engineering;
- Increase in efficiency in scheme delivery processes; and
- Effectiveness of schemes through timely implementation.

Enhancing Rural Governance for Inclusive Growth

6.132 Good rural governance is imperative to help translate various programmes and schemes of the Government at the grassroots level, ensure equal rights to all, and achieve sustainability of rural development programmes. Some of the recent measures taken towards improving rural governance are narrated below.

Rashtriya Gram Swaraj Abhiyan

6.133 A CSS of Rashtriya Gram Swaraj Abhiyan (RGSA) was approved by the Union Cabinet in April 2018 for implementation from FY19 to FY22 with the primary aim of strengthening Panchayati Raj Institutions (PRIs) for achieving SDG's with the main thrust on convergence with Mission Antyodaya and emphasis on strengthening PRI's in the 117 Aspirational Districts. The scheme extends to all states and UTs including non-Part IX of the Constitution of India areas where Panchayats do not exist.

6.134 The major focus of the scheme of RGSA was Capacity Building and Training (CB&T) to empower PRIs and to prepare convergent Plans at the respective level of Panchayats. Under the Scheme, not only around 31 lakh elected representatives (ERs) have been capacitated through various modes of training but also functionaries and other stakeholders of Panchayats including SHG members have been provided training for better SHG-PRIs convergence at the grassroots level to create an ecosystem to prepare inclusive village poverty reduction plan.

6.135 The scheme has been revamped and approved in April 2022 for implementation over the period FY23 to FY26. The focus of the scheme of Revamped RGSA is on re-imagining PRIs as vibrant centres of local self-governance with a special focus on the Localisation of SDGs (LSDGs) at the grassroots level adopting thematic approach through concerted and collaborative efforts of Central Ministries and State line departments and other stakeholders with 'Whole of Government and Whole of Society' approach. The Scheme has been formulated with the aim to strengthen the capacities of institutions for rural local governance to become more responsive towards local development needs, prepare participatory plans leveraging technology, and efficiently utilise available resources for realising sustainable solutions to local problems linked to SDGs adopting the nine thematic approaches of LSDGs.[59]

SVAMITVA Scheme

6.136 SVAMITVA (*Survey of Villages* a*nd Mapping with Improvised Technology in Village Areas*) is a Central Sector Scheme launched on 24 April 2020, the National Panchayati Raj Day. The scheme aims to provide the 'Record of Rights' to village household owners possessing houses in inhabited rural areas. The scheme covers multifarious aspects viz. facilitating monetization of properties and enabling bank loans; reducing property-related disputes; comprehensive village-level planning, which would be the stepping-stone towards achieving Gram Swaraj in the true sense and making rural India Atmanirbhar. The scheme aims to provide the following benefits:

- Creation of accurate land records for rural planning and reducing property-related disputes.
- To bring financial stability to the citizens in rural India by enabling them to use their property as a financial asset for raising loans and other financial benefits.
- Determination of property tax, which would accrue to the Gram Panchayats directly in states where it is devolved or else, add to the state exchequer.
- Creation of survey infrastructure and GIS maps that can be leveraged by any department for their use.

[59] Following are the themes for LSDGs: Poverty Free and Enhanced Livelihoods in Village; Healthy Village; Child-Friendly Village; Water Sufficient Village; Clean and Green Village; Village with Self-Sufficient Infrastructure; Socially Secured and Socially Just Village; Village with Good Governance and Women Friendly Village.

- To support the preparation of a better-quality Gram Panchayat Development Plan by making use of GIS maps.

6.137 As on 31 December 2022, drone surveys have been completed in 2.15 lakh villages across the country, and saturated in the States of Haryana, Uttarakhand, Goa, and UT of Lakshadweep, A&N Islands, Delhi, Puducherry, and Dadra & Nagar Haveli, and Daman & Diu. Over one crore property Cards have been prepared for nearly 65,000 villages. Property Cards of all the inhabited villages of Haryana followed by Uttarakhand, and Puducherry has been prepared.

Conclusion and Way Forward

6.138 History suggests that when different aspects of human development like education, skill, employment, health, and rural development are dovetailed with technology, all-round revolutionary innovation resulting in technology-led growth and prosperity follows. The Hon'ble Prime Minister observed in 2015:

"*The government must nurture an eco-system:*

– where the economy is primed for growth; and growth promotes all-round development;

– where development is employment-generating; and employment is enabled by skills;

– where skills are synced with production; and production is benchmarked to quality;

– where quality meets global standards; and meeting global standards drives prosperity

Most importanty, this prosperity is for the welfare of all" [60]

6.139 Today, India is moving towards the attainment of the UN SDGs. While doing so, it is cognisant of the fact that for equitable development, a country as vast and diverse as India requires the implementation of broad-based inclusive social policies, supported by adequate and commensurate financial resources. Thus, the character and contour of such an approach to development presents a unique set of challenges which is consistently being addressed in the form of mindful reforms. Ensuring that intended outcomes of social sector development schemes reach the intended, involvement of the grassroot level of governance is imperative and is being actively pursued. Technology has been a great enabler in ensuring the last-mile connectivity of government schemes to the targeted citizens. It has revolutionised the delivery of services while ensuring transparency and accountability. It needs to be harnessed further to help the government attain the lofty SDGs on the social front.

6.140 As India marches ahead, the ground lost as regards social sector improvements due to the pandemic, has largely been recouped, powered by prompt policymaking and efficient implementation interwoven with technology. Going forward with the vision of 'Minimum Government; Maximum Governance', further developments will hold the key to attaining more equitable economic growth. Evident ones include stepping up learning outcomes through digital and teaching interventions in schools, enhancing the role of community workers in healthcare, pushing SHGs through better product design and upscaling enterprises. Further, channelising women's economic potential through ecosystem services such as affordable market alternatives for care work, safe transportation and lodging, and long-term counselling support, can help capitalise the gender dividend for the country's future economic and social development.

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[60] PM's Inaugural address at Economic Times Global Business Summit, January 2015 https://pib.gov.in/newsite/PrintRelease.aspx?relid=114728

CLIMATE CHANGE AND ENVIRONMENT: PREPARING TO FACE THE FUTURE

07

CHAPTER

Climate change is primarily attributed to disproportionately high cumulative emissions, both historical and high per capita annual emissions of greenhouse gases (GHGs) of the developed countries. The global nature of the problem makes India one of the most vulnerable regions despite having contributed only about 4 per cent in the cumulative global emissions (for the period 1850-2019) and maintaining its per capita emission at far less than the world average. While India is less responsible for the high stock of emissions, however, it has consistently engaged in demonstrating global leadership towards adopting various measures and ensuring a low-emission growth pathway with a commitment to the net-zero emissions goal by 2070.

India has integrated the development goals with ambitious climate action goals, be it in the form of augmented solar power capacity (installed), higher energy saving targeting notified in PAT cycle-VII, improved green cover facilitated by Green India Mission, among other targeted Government actions. As part of dedicated efforts to preserve ecosystems, India now has 75 Ramsar sites for wetlands, in addition to various regulatory and promotional measures to protect and conserve mangroves. Continued river conservation and rejuvenation efforts are underway through Namami Gange and National River Conservation Plan (NRCP).

In August 2022, the country updated the Nationally Determined Contributions (NDCs) in line with the Hon'ble PM's vision expressed in the 26th meeting of the Conference of Parties of UNFCCC. In terms of transition to renewable energy sources, India has already achieved its target of 40 per cent installed electric capacity from non-fossil fuels ahead of 2030. It has advanced the target to 50 per cent, which shall also translate to a significant reduction in the average emission rate. The National Hydrogen Mission and Green Hydrogen Policy have been introduced to enable India to be energy independent by 2047. Its pivotal role is also reflected in India's Long Term Low Emissions Development Strategy (LT-LEDS).

The availability of adequate and affordable finance remains a constraint in India's climate actions. The country has so far largely met its requirements from domestic sources only. Finance is a critical input for its climate actions. Therefore, the country has scaled up its efforts towards mobilising private capital, including through sovereign green bonds, to meet climate action goals. A framework for the latter has been issued in compliance with International Capital Market Association (ICMA) Green Bond Principles (2021).

India's initiatives on the international stage have been noteworthy. The country has actively engaged in global actions by championing the formation and strengthening of various intergovernmental organisations.

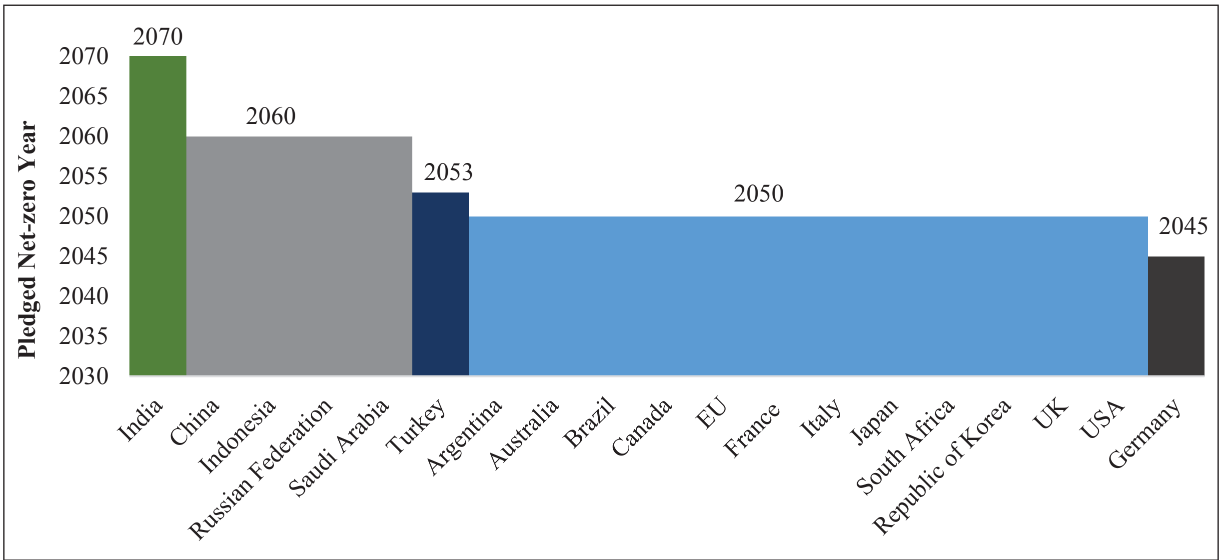
Introduction

7.1 Climate change is the long-term change in temperature and weather patterns that can occur due to natural reasons, but since the beginning of the industrial revolution in the 19th century, it has been predominantly due to anthropogenic activities. GHG emissions remain in the atmosphere for tens to hundreds of years, trapping the sun's heat from escaping. While within limits, these make our earth more habitable, allowing for salubrious weather conditions, the enhanced emissions have led to rising temperatures with the potential to bring about sea level rise, change monsoon cycles and impact land systems.

7.2 GHG emissions are the most significant threat to humanity and the inescapable reality the world faces. Action to reduce carbon emissions and adapt to the changing climatic conditions are required urgently as the world has already started to experience its consequences. For instance, it is estimated that by 2030, about 700 million people worldwide will be at risk of displacement by drought alone (U.N. SDG Portal). Thus, global warming is a reality, and so is climate change. Nor is there much doubt that human activity is primarily responsible for it this time, although climate change occurred in the distant past even when Planet Earth was scarcely populated.

7.3 Despite agreement on the above, there can still be much divergence about what comes next and what to do about it when it comes to climate change. Much of the global angst associated with climate change is about the emission of GHGs and carbon, in particular. The more GHGs are emitted, the more they stay trapped in the atmosphere, accelerating global warming. Hence, the argument goes that if some of the cataclysmic consequences are to be avoided, then global warming must be arrested, slowed and, if possible, reversed. One way to strive for it is to reduce emissions of GHG, including carbon. Many nations pledge to reduce their net emission to zero by 2050. Some wish to achieve it by 2060 and by 2070.

Figure VII.1: Net Zero Pledges of countries (the Year pledged is on top of the bars)



Source: Emissions Gap Report 2022, UNEP

7.4 However, this is where things begin to get interesting. Science is not very clear on whether further emission reduction would necessarily guarantee a stoppage or reversal of global warming. The reason being much carbon dioxide and other GHGs have already been emitted over the last two and half centuries of industrialisation-led economic growth in today's advanced nations, principally in North America and Europe. The share of developing countries in the stock of GHGs (usually measured as carbon dioxide equivalent) has been minimal compared to developed countries. This is corroborated by the Inter-Governmental Panel on Climate Change (IPCC), which highlights that the challenges faced due to global warming are mainly due to cumulative historical and current GHG emissions of developed countries. The impact of the accumulation would also be iniquitous, with the developing countries not only bearing the brunt of climate change but also constrained by their capacity to respond to its challenges. The IPCC's Sixth Assessment Report (AR6) notes that high human vulnerability global hotspots are found particularly in West, Central & East Africa, South Asia, Central, and South America, Small Island Developing States, and the Arctic.

7.5 Further, as per the report, Asia is most vulnerable to climate change, especially to extreme heat, flooding, sea level rise, and erratic rainfall. Ironically, the burden of adaptation is highest for those who have contributed the least to global warming. That unfortunate inevitability means that the stock of GHGs in the atmosphere may have already set a train of events that future emission reduction could do very little to stop or reverse.

7.6 Even if the answer to this question is unclear or unknown, some correctly argue that not doing whatever we can to make the planet more liveable and less dangerous may amount to criminal negligence. The problem is that the people and nations making this argument have their priorities correct for themselves but not for the countries yet to climb the ladder of prosperity. It is an enduring principle of economics that resources have competing uses and that there are always trade-offs.

7.7 Today's developing nations are therefore caught in the horns of a dilemma. How much resources to devote to bread-and-butter developmental priorities and to adapting to the already changing climate, and how much to dedicate to mitigating emissions of GHGs? Today's developed nations have prospered through the unrestricted use of fossil fuels, including coal, crude oil, and natural gas. It is theoretically elegant to argue that switching to renewable or non-fossil fuel energy would generate investments and jobs. Still, it seldom works out so smoothly in practice.

7.8 For example, China has declared that future energy supplies, including alternative ones, must be secured first before dispensing with existing energy sources. Countries might find themselves not scrapping coal-fired power plants, and the alternatives may be held up either due to a lack of technology, financial resources, skilled and trained human resources, or some combination of all three. Countries have also learnt that the jobs that are likely to be created in the so-called 'green economy' are tilted towards skill and technology-intensive than in traditional industries.[1] One may also argue that it may be easier to speak of retraining and relocating people than actually doing so.

1 World Economic Outlook, October 2021, Ch.1 World Economic Outlook, October 2021: Recovery During A Pandemic (imf.org)

7.9 Nobel Laureate Thomas Schelling (2005) argued that the most effective way to combat climate change was to let nations grow first[2]:

"If per capita income growth in the next 40 years compares with the 40 years just past, vulnerability to climate change should diminish, and the resources available for adaptation should be greater. I say this not to minimise concern about climate change but to anticipate whether developing countries should make sacrifices in their development to minimise the emission of gases that may change the climate to their disadvantage. Their best defence against climate change may be their own continued development."

7.10 That economic growth would enable resource generation will come as no surprise to students of corporate finance. Companies generate profits and internal resources and thus fund their investments. For companies worldwide, the single biggest source of finance for their capital investments is their own resources before they turn to markets. That would work for nations too.

7.11 Another reason why it is a realistic proposition is that securing funding from either developed nations or multilateral organisations is rather difficult. Public finances in developed countries are stretched and do not seem to have the intent to mobilise adequate resources for climate action in developing countries. They also do not have the appetite to provide additional capital to multilateral institutions for them to be able to lend more or mobilise greater resources. Further, the willingness and incentives-alignment of the private sector to undertake long-gestation projects are questionable at best or non-existent at worst.

7.12 Lastly, it does not seem so strange or irresponsible that developing countries must put their own growth and development aspirations ahead of their global climate obligations when one considers that developed countries set aside their obsessive concerns about climate change and global warming to burn more coal to generate electricity this year. Aiming to reduce their dependence on Russian crude oil and natural gas, countries in Europe had to switch to coal to keep their homes warm and well-lit[3]. The behaviour of European nations in 2022, eminently understandable, demonstrates the return of energy security as a prime requirement for countries. Therefore, it stands to reason that it would be no different for developing economies too.

7.13 Earlier in the year, the OECD and the Social Economics Lab at Harvard teamed up to understand why policies to address climate change have been difficult to implement and surveyed over 40,000 respondents across 20 of the world's most carbon-emitting countries (representing 72 per cent of global CO_2 emissions). The findings were striking[4]. In general, citizens in developed countries expressed considerable reluctance to change their lifestyles and habits with respect to driving, flying and eating that would contribute to reduced emissions. Policies to implement carbon pricing have not been easy in all European countries. France tried and retreated in 2018. Switzerland's proposal was defeated in a referendum in 2021.

2 Thomas C. Schelling (1992): 'Some economics of global warming', American Economic Review, March 1992 Some Economics of Global Warming on JSTOR

3 'Germany Revives Coal as Energy Security Trumps Climate Goals', Bloomberg, 22 December 2022 (https://www.bloomberg.com/news/articles/2022-12-22/germany-returns-to-coal-as-energy-security-trumps-climate-goals)

4 'Fighting Climate Change: International Attitudes Toward Climate Policies', NBER Working Paper No. 30265, September 2022 (https://www.nber.org/papers/w30265)

7.14 As though these challenges are not enough, many experts also warn of the availability of rare earth elements (REE) and critical minerals (CM) to be the next geopolitical battleground as crude oil has been over the last fifty years.[5] As we are aware, REE and CM are essential for generating renewable energy. The problem is that they are produced in a few countries and processed in even fewer countries. A globally synchronised energy transition to non-fossil fuels might be difficult to pull off if adequate REE and CM are not available. That would leave the fossil fuel-based assets stranded for many countries' economies!

7.15 Jean Pisani-Ferry, associated with the Bruegel Institute and an advisor to the French Government, has begun to sound the alarm about climate change's significant short-run macroeconomic costs. Citing him in his article for the International Monetary Fund's 'Finance and Development', Daniel Yergin writes[6],

"*The economist Jean Pisani-Ferry, cofounder of Bruegel, Europe's leading economic think tank, has observed that accelerating the targets for net carbon emission reductions too aggressively could create much larger economic disruptions than generally anticipated—what he called "an adverse supply shock—very much like the shocks of the 1970s." Such a transition, Pisani-Ferry presciently wrote in 2021, just before the current energy crisis began, is "unlikely to be benign and policymakers should get ready for tough choices." He subsequently added, in 2022: "Climate action has become a major macroeconomic issue, but the macroeconomics of climate action is far from the level of rigour and precision that is now necessary to provide a sound basis for public discussions and to guide policymakers adequately. For understandable reasons, advocacy has too often taken precedence over analysis. But at this stage of the discussion, complacent scenarios have become counterproductive. The policy conversation now needs methodical, peer-examined assessments of the potential costs and benefits of alternative plans for action.*"

7.16 However, whether we like it or not, the climate change issue will be increasingly relevant and will occupy the airwaves and the attention of policymakers. Countries, even if they wait for financial, technological and human resources for emissions mitigation, have to take action to make their people resilient and adapt to climate change. So, actions on multiple fronts are needed, including the estimation of resources, lifestyle adjustments etc.

7.17 Here, India, considered to be one of the most vulnerable countries given its long coastline, monsoon-dependent agriculture, and large agrarian economy, is one of the leading examples of this. It has contributed only 4 per cent (until 2019) to the cumulative global emissions and its per capita emission is far less than the world average.

7.18 The fact that climate change is a global phenomenon and requires collective efforts has been widely accepted and is the basis of the commitments in the United Nations Framework Convention on Climate Change (UNFCCC) and its Paris Agreement. Recognising the differentiated responsibility of countries (in view of their role in GHG emissions) and the higher developmental needs of the developing countries, they call for a collective action based on the

5 'The new-style energy crisis', Daniel Yergin interviewed by Project Syndicate, July 2022 (https://www.project-syndicate.org/onpoint/new-style-energy-crisis-by-daniel-yergin-2022-07)

6 Daniel Yergin (2022): 'Bumps in the Energy Transition', Finance & Development, International Monetary Fund, December 2022 (https://www.imf.org/en/Publications/fandd/issues/2022/12/bumps-in-the-energy-transition-yergin)

principles of equity and Common But Differentiated Responsibility and Respective Capabilities (CBDR-RC). The collective action has translated into NDCs-through which each country has made a commitment to work towards a collective goal of keeping temperature rise to below 2° C above pre-industrial levels.

7.19 India has been striving to pursue the goal of sustainable development. It spearheads one of the most robust climate actions through its NDCs, which includes an ambitious programme for transitions to clean energy in the world. Despite the adverse impacts of Covid-19 on the economy, the country has enhanced its climate ambition manifold and embarked on a long-term strategy towards a low GHG emission based development.

7.20 Having set the context, this chapter presents an updated discussion on the issue of climate change from India's perspective, including a discussion on forests and their role in mitigating carbon emissions, an approach to transition to renewable energy and the recently submitted low emissions development strategy. The chapter further presents a discussion on the outcomes of the 27th session of the Conference of Parties (COP 27), progress made on enabling financing for sustainable development and India's role in global efforts towards addressing climate change. Besides this, recent changes in environmental regulations and other environmental aspects, such as biodiversity and wildlife, are also discussed.

Progress on India's Climate Action

7.21 India's climate vision is integrally linked to its vision of development that foregrounds the goals of poverty eradication and guaranteeing basic well-being to all its citizens. Action on addressing climate action was initiated even before the Paris Agreement came into being. In 2008, India launched the National Action Plan on Climate Change (NAPCC), establishing eight National Missions, covering several initiatives and a slew of measures in the area of solar, water, energy efficiency, forests, sustainable habitat, sustainable agriculture, sustaining Himalayan ecosystem, capacity building and research and development (R&D).

Figure VII.2: Progress on Eight National Missions of the NAPCC highlighting achievements across various domains

National Solar Mission	•Solar power capacity of 61.62 GW installed by October 2022
National Mission for Enhanced Energy Efficiency	•PAT Cycle–VII notified in October 2021 for energy saving target of 6.63 Million Tonnes of Oil Equivalent (MTOE)
National Mission on Sustainable Habitat	•721 km of metro rail network made operational by August 2022. •62.79 lakh individual household toilets and 6.21 lakh community and public toilets constructed by April 2022
National Mission for a Green India	•₹ 626.96 crore for afforestation targets over an area of 2.1 lakh ha
National Water Mission	•Jal Shakti Abhiyan: Catch The Rain 2022
National Mission on Strategic Knowledge for Climate Change	•Created and strengthened 12 Centres of Excellence for climate change (June 2021)
National Mission for Sustaining Himalayan Ecosystems	•Inter-University Consortium •8 Major R&D Programmes initiated
National Mission for Sustainable Agriculture	•Key targets for FY 2022-2023 covering 0.15 lakh ha under organic farming and 10 lakh ha under micro irrigation

7.22 National Adaptation Fund for Climate Change (NAFCC), a central sector scheme, was initiated in 2015-16 to support adaptation activities in the States and Union Territories (UTs) of India that are vulnerable to the adverse effects of climate change. NAFCC is implemented in project mode, and to date, 30 projects have been sanctioned in 27 States and UTs with a total project cost of ₹847.5 crore. NAFCC supports adaptation action, in, inter alia, agriculture, water, forestry, livestock, and restoring ecosystems. At present (November 2022), 28 projects are under implementation.

7.23 Demonstrating higher ambition in its climate action, the Government of India submitted its updated NDC on August 26, 2022. The new NDC with enhanced targets translates the vision of the Hon'ble PM expressed through the "*Panchamrit*" at the UNFCCC Conference of Parties (COP 26) in Glasgow in November 2021. The vision mentions of sustainable lifestyles and climate justice to protect the poor and vulnerable from the adverse impacts of climate change. Aligning with this vision, the share of non-fossil fuel-based capacity in overall capacity has risen rapidly over time. Including the large hydro, the share of non-fossil sources in total installed electricity capacity is estimated to be about 40.4 per cent (on 31.09.2022) compared to 27.3 per cent in 2014-15. This period has seen a sizeable enhancement in the share of installed electricity capacity in solar and wind energy from 8.9 per cent in 2014-15 to 25.1 per cent in 2022-23 (April-Sept).

Box VII.1: India's updated Nationally Determined Contribution (NDC)

India submitted its first NDC to UNFCCC in October 2015. This was updated in August 2022. The 2015 NDC comprised eight goals, three of which were quantitative targets to be achieved up to 2030. The three targets included cumulative electric power installed capacity from non-fossil sources to reach 40 per cent, reduction in the emissions intensity of GDP by 33 to 35 per cent compared to 2005 levels, and creation of additional carbon sink of 2.5 to 3 billion tonnes of CO_2 equivalent through additional forest and tree cover.

Article 4 of the Paris Agreement provides that each Party shall communicate or update its NDC every five years. Therefore, in accordance with the aforesaid provision of the Paris Agreement, India submitted the following updates to its first NDC of 2015.

1. To put forward and further propagate a healthy and sustainable way of living based on traditions and values of conservation and moderation, including through a mass movement for 'LIFE'– 'Lifestyle for Environment' as a key to combating climate change.
2. To adopt a climate-friendly and cleaner path than the one followed hitherto by others at the corresponding level of economic development.
3. To reduce the Emissions Intensity of its GDP by 45 per cent by 2030, from the 2005 level.
4. To achieve about 50 per cent cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030, with the help of the transfer of technology and low-cost international finance, including from the Green Climate Fund (GCF).

5. To create an additional carbon sink of 2.5 to 3 billion tonnes of CO_2 equivalent through additional forest and tree cover by 2030.

6. To better adapt to climate change by enhancing investments in development programmes in sectors vulnerable to climate change, particularly agriculture, water resources, the Himalayan region, coastal regions, and health and disaster management.

7. To mobilise domestic and new & additional funds from developed countries to implement the above mitigation and adaptation actions in view of the resource required and the resource gap.

8. To build capacities and create a domestic framework and international architecture for quick diffusion of cutting-edge climate technology in India and for joint collaborative R&D for such future technologies.

Source: Ministry of Environment, Forest and Climate Change

Status of Forest and Tree Cover

7.24 One of the three quantifiable targets of India's NDC is to achieve an additional carbon sink of 2.5 billion to 3.0 billion tonnes through additional forest and tree cover by 2030. The forest and tree cover in India has shown a gradual and steady trend of increase in the last one and a half decades.

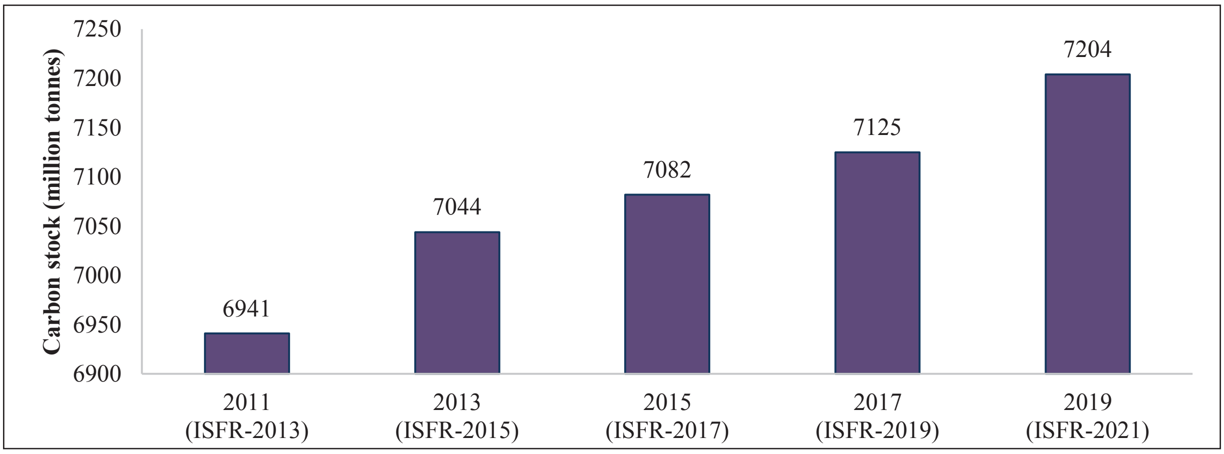
7.25 The country ranks third globally with respect to the net gain in average annual forest area between 2010 and 2020. This gain is mainly attributed to the robust framework and policies of the National and State Governments that have promoted and safeguarded forests. Schemes like the Green India Mission (GIM), Compensatory Afforestation Fund Management and Planning Authority (CAMPA), National Afforestation Programme (NAP), Green Highway Policy - 2015, Policy for enhancement of Urban Greens, National Agro-forestry Policy, and Sub-Mission on Agro-forestry (SMAF), etc. are among the most important ones.

Carbon Stock in India's Forest and Tree Cover

7.26 A robust forest ecosystem is a vital sink of carbon. Forest Survey of India (FSI) assessed the carbon stock (which is the amount of carbon sequestrated from the atmosphere and stored in biomass, deadwood, soil, and litter in the forest) in India's forests for the first time in 2004 and then biennially since 2011. The Indian State of Forest Report (ISFR) estimates the carbon stock of forests to be about 7,204 million tonnes in 2019[7], which is an increase of 79.4 million tonnes of carbon stock as compared to the estimates of the previous assessment for 2017. This translates into carbon emissions sequestrated through forest and tree cover to be 30.1 billion tonnes of CO_2 equivalent.

7 ISFR-2021. https://fsi.nic.in/forest-report-2021-details

Figure VII.3: Carbon stock in forests in India has been rising



Source: Based on data of the Forest Survey of India

7.27 Among the Indian States, Arunachal Pradesh has the maximum carbon stock in forests (1023.84 million tonnes), followed by Madhya Pradesh (609.25 million tonnes). The per-hectare forest carbon stock among different States/UTs indicates that Jammu & Kashmir is contributing the maximum per-hectare carbon stock of 173.41 tonnes, followed by Himachal Pradesh (167.0 tonnes), Sikkim (166.2 tonnes) and Andaman & Nicobar Islands (162.9 tonnes).

Preservation of Ecosystems: A Critical Adaptation Action

7.28 Ecosystems play an important role in carbon storage, protect the coastal areas, and enhance water quality besides other services, such as cultural, spiritual or tourist attractions. Wetlands are natural buffers against floods, droughts, and tropical cyclones. Wetlands can act as sponges, storing peak rainfall and releasing water gradually during the lean season. The floods in Kashmir Valley in September 2014 and Chennai city in December 2015 are reminders of the ways wetland destruction can make lives vulnerable. The Ramsar Convention, signed on February 2, 1971, is one of the oldest inter-governmental accords signed by member countries to preserve the ecological character of their wetlands of international importance. Wetlands declared as Ramsar sites are protected. India has 75 Ramsar sites covering an area of 13.3 lakh ha, and 49 of these have been added in the last 8 years.

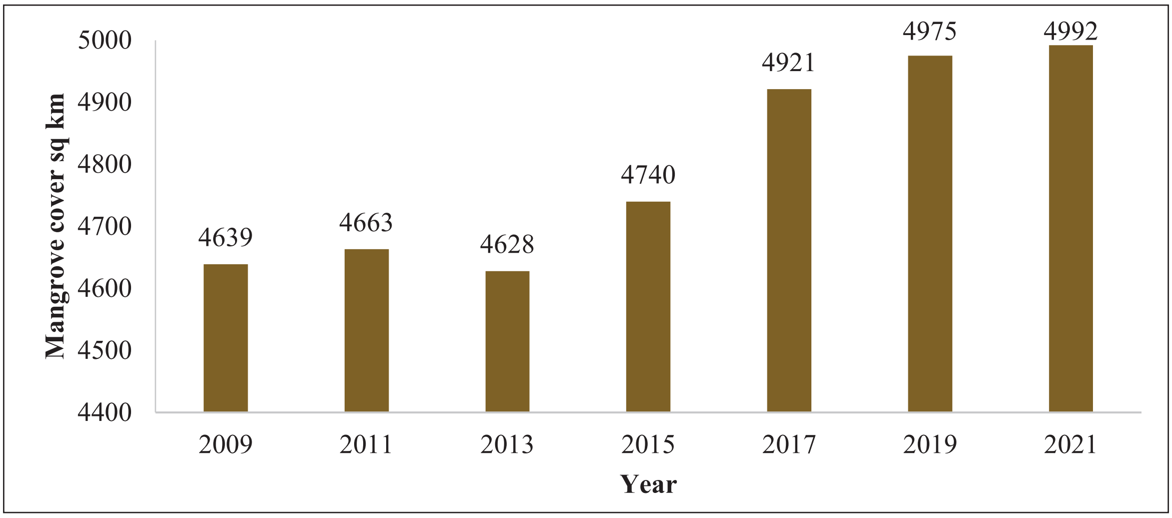
7.29 Mangroves and coastal wetlands form the first line of defence for coastal communities against increased storm surges, flooding, and hurricanes. As per a recent study, certain mangrove species in Chilika and Sundarbans along the east coast and Dwarka and Porbandar along the west coast of India are likely to reduce and shift landward by 2070 due to a decline in suitable habitats in response to precipitation and sea level changes.[8]

7.30 The Government has taken both regulatory and promotional measures to protect and conserve mangroves. The National Coastal Mission Programme on 'Conservation and Management of Mangroves and Coral Reefs' is being implemented. Regulatory measures are implemented through Coastal Regulation Zone (CRZ) Notification (2019) under the Environment

8 Pujarini Samal, Jyoti Srivastava, S.R. Singarasubramanian, Pooja Nitin Saraf, Bipin Charles, Ensemble modeling approach to predict the past and future climate suitability for two mangrove species along the coastal wetlands of peninsular India, Ecological Informatics, Volume 72, 2022. https://doi.org/10.1016/j.ecoinf.2022.101819.

(Protection) Act, 1986; the Wild Life (Protection) Act, 1972; the Indian Forest Act, 1927; the Biological Diversity Act, 2002; and rules under these acts as amended from time to time. As per the ISFR 2021, the mangrove cover in the country has increased by 364 sq. km. in 2021 as compared to 2013.

Figure VII.4: Increasing Mangrove cover in India



Source: ISFR 2021

River Conservation and Rejuvenation

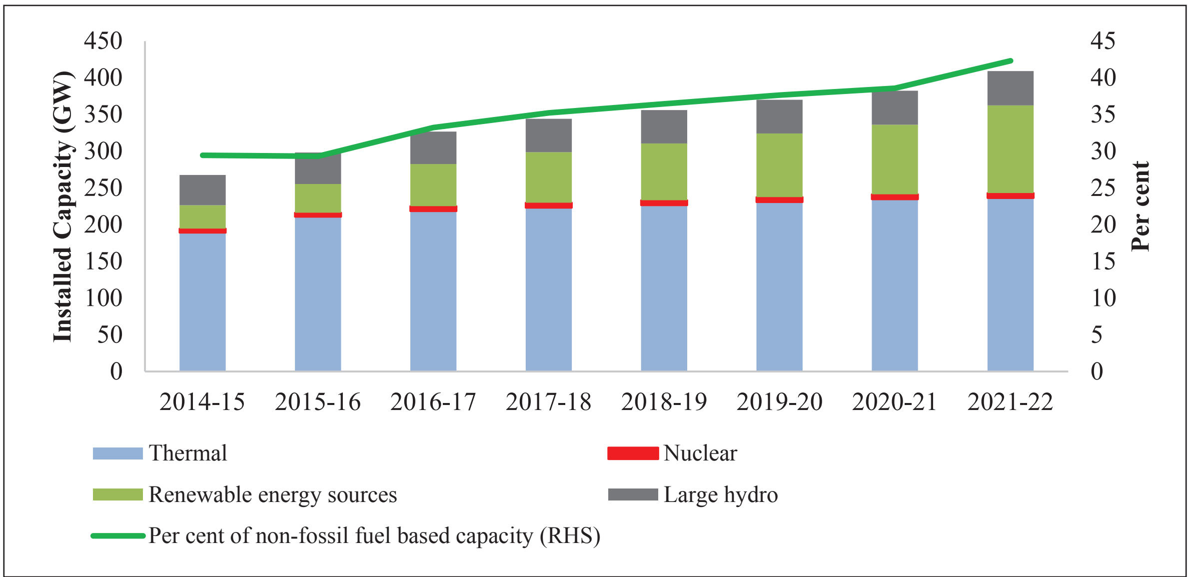
7.31 The Government is working on mapping and converging the 5Ps' - People, Policy, Plan, Programme and Project. It has been supplementing the efforts of the States/Union Territories (UTs) by providing financial and technical assistance for the abatement of pollution in identified polluted stretches of rivers in the country through the Central Sector Scheme of Namami Gange for River Ganga and its tributaries, and the Centrally Sponsored Scheme of National River Conservation Plan (NRCP) for other rivers.

7.32 In addition, the government has recently released Detailed Project Reports (DPR) for the rejuvenation of 13 major rivers prepared by the Indian Council of Forestry Research and Education (ICFRE), Dehradun in consultation with the State Forest Departments and other line Departments. Works proposed under these DPRs include afforestation on riverbanks leading to increased green cover, measures to contain soil erosion, recharge the groundwater table, sequester carbon dioxide, catchment area treatment, ecological restoration, moisture conservation, livelihood improvement & income generation, etc.

Approach to Transition to Renewable Energy Sources

7.33 While the target was to achieve 40 per cent of the installed electric capacity from non-fossil fuel sources by 2030 in the initial NDC submitted in 2015, the target has already been achieved. India is now striving to achieve the target of 50 per cent cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030, in line with updated NDCs.

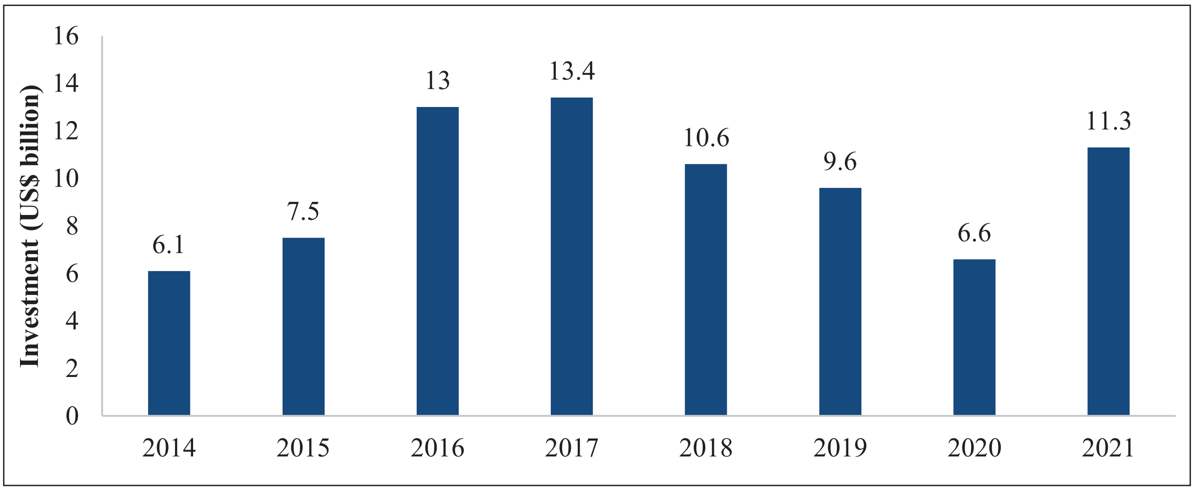
Figure VII.5: Increasing installed Electricity Generation Capacity with a rising share of non-fossil fuel-based capacity



Source: Based on data from the Ministry of Power.

7.34 India is progressively becoming a favoured destination for investment in renewables. As per the Renewables 2022 Global Status Report, during the period 2014 -2021, total investment in renewables stood at US$ 78.1 billion in India. Investment in renewable energy has been close to or higher than US$ 10 billion per year since 2016, except for a dip in 2020 likely due to various Covid-19 restrictions.

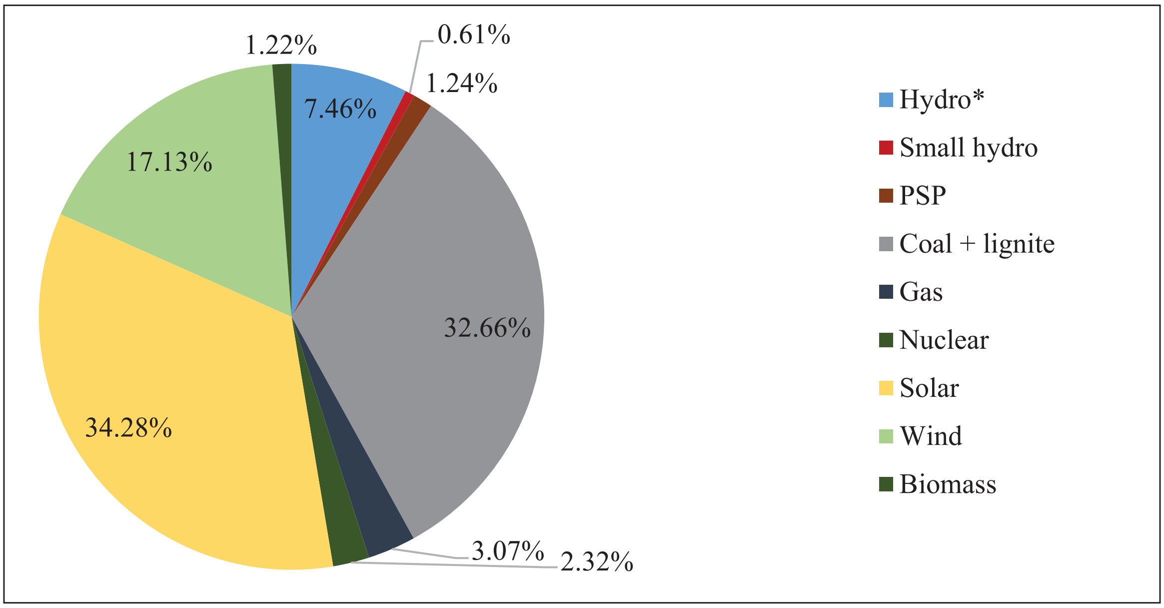
Figure VII.6: Investment in Renewables in India since 2014



Source: REN 21. Renewables 2022 Global Status Report

7.35 The Central Electricity Authority (CEA) has projected the optimal generation capacity mix to meet the peak electricity demand and electrical energy requirement for 2029-30. The estimate builds in improved efficiency and minimises the total system cost subject to various technical/financial constraints. The likely installed capacity by the end of 2029-30 is expected to be more than 800 GW of which non-fossil fuel would be more than 500 GW.

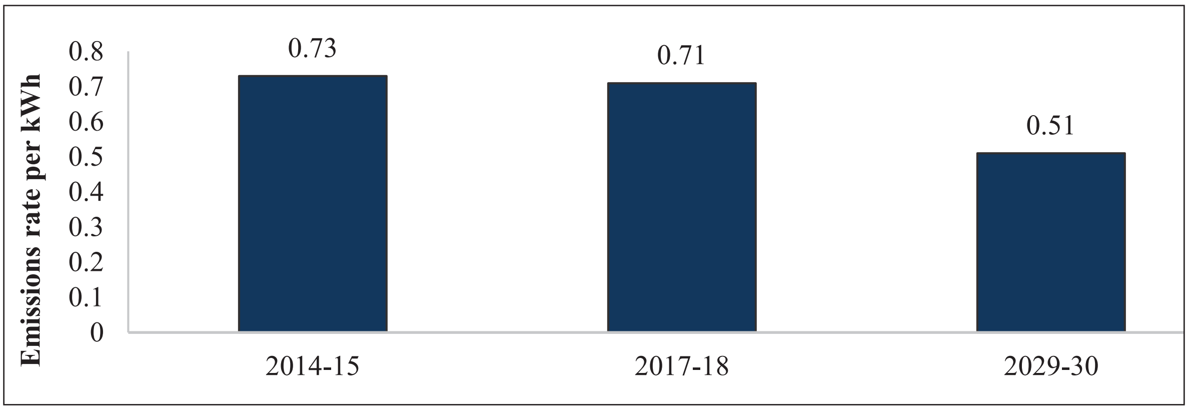
Figure VII.7: Projected optimal mix of installed capacity for 2029-30



Source: Central Electricity Authority
* Including hydro imports of 5856 MW

7.36 Moreover, the CEA has also estimated that the average emission rate will decline by around 29 per cent by 2029-30 compared to 2014-15.

Figure VII.8: Projected fall of average CO_2 emissions rate per kWh of electricity due to significant additions in non-fossil fuel-based installed capacity



Source: Based on data of the Central Electricity Authority

Green Hydrogen-A critical source of alternate energy

7.37 From the emerging global momentum on green hydrogen, India can situate this decarbonisation opportunity not just within the context of a low-carbon economy but also as an enabler of energy security and economic development for the nation. It will be crucial for achieving decarbonisation of harder-to-abate sectors such as fertilisers, refining, methanol, maritime shipping, iron & steel and long-haul transport. Green hydrogen is also an important element of India's Long Term Low Emissions Development Strategy (LT-LEDS).

7.38 With a vision to make India an energy-independent nation, and to de-carbonise critical sectors, the Government approved the National Green Hydrogen Mission on January 4, 2023 with an initial outlay of ₹19,744 crore. The Mission will facilitate demand creation, production, utilisation and export of Green Hydrogen and mobilisation of over ₹8 lakh crore of investment by 2030.

Figure VII.9: Salient Features of the National Green Hydrogen Mission

Likely Outcomes by 2030	• Green hydrogen production capacity of at least 5 MMT (Million Metric Tonne) per annum. • Cumulative reduction in fossil fuel imports over ₹1 lakh crore and creation of over 6 lakh jobs. • Renewable energy capacity addition of about 125 GW and abatement of nearly 50 MMT of annual GHG emissions.
Interventions	• Financial incentive targeting domestic manufacturing of electrolysers and production of Green Hydrogen. • Regions capable of supporting large scale production and/or utilisation of Hydrogen to be developed as Green Hydrogen Hubs.
Policy Framework	•Development of an enabling policy framework to support establishment of Green Hydrogen ecosystem. • Robust Standards and Regulations framework. • Public-private partnership framework for R&D. • Skill development programme

Source: Ministry of New & Renewable Energy

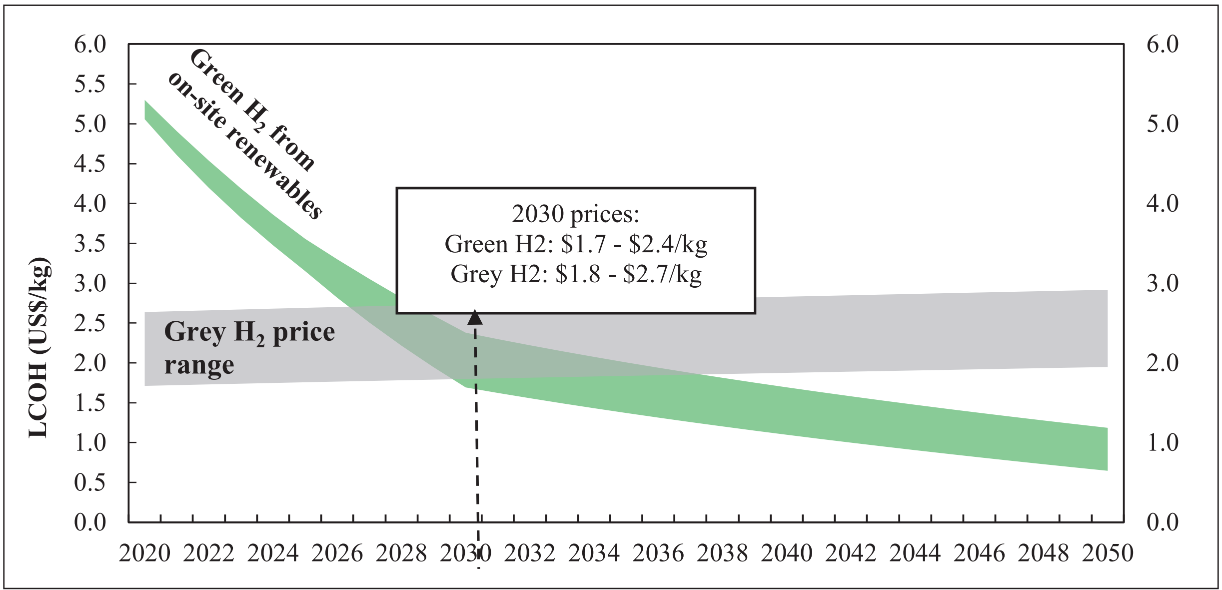
7.39 A report by NITI Aayog[9] in June 2022 shows that in the case of India, renewable tariffs have fallen in recent years, and electrolyser costs are expected to fall in the future. A recent report by the International Renewable Energy Agency (2020)[10] suggests that the cost of electrolysers is crucial for making green hydrogen economically viable. The report also underscores the importance of innovation in electrolyser technology and the rapid increase in its scale of production as the main factors that would drive down the cost of electrolysers and green hydrogen.

7.40 NITI's report estimates that the cumulative value of the green hydrogen market in India will be US$ 8 billion by 2030 and US$ 340 billion by 2050. The electrolyser market will be approximately US$ 5 billion by 2030 and US$ 31 billion by 2050. In addition, the adoption of green hydrogen will also result in 3.6 Giga tonnes of cumulative CO_2 emission reduction by 2050. This will also generate enormous energy import savings, ensure stability in industry input prices, and strengthen foreign exchange reserves in the long run.

9 'Harnessing Green Hydrogen – Opportunities for Deep Decarbonisation in India', published in June 2022 by NITI Aayog. https://www.niti.gov.in/sites/default/files/202206/Harnessing_Green_Hydrogen_V21_DIGITAL_29062022.pdf

10 International Renewable Energy Agency (IRENA) (2020) Green hydrogen cost reduction: Scaling up electrolysers to meet the 1.5^0C Climate Goal. Green hydrogen cost reduction (irena.org)

Figure VII.10: Falling Levelised Cost of Hydrogen (LCOH[11]) for green hydrogen



Source: NITI Aayog

7.41 However, all this is based on the assumption that access to critical minerals essential for renewable energy at a reasonable cost will continue-an assumption that could be an effective constraint in the face of the concentration of these minerals in certain geographies with a monopoly in access to some countries.

Box VII.2: Critical Minerals-Key to Green Transition

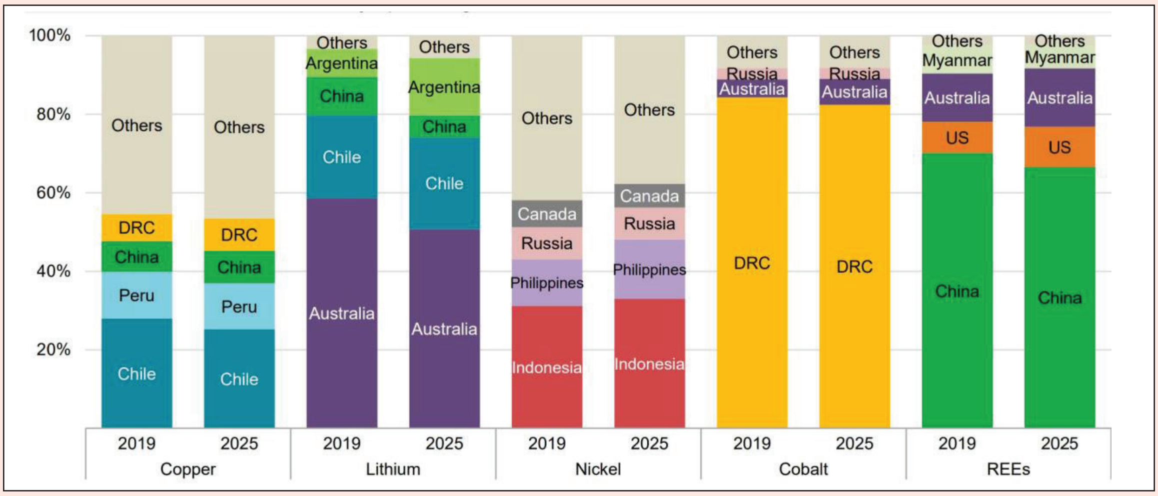
The shift to a clean energy system is set to drive a huge increase in the requirements for critical minerals. This is because an energy system powered by clean energy technologies differs profoundly from one fuelled by traditional hydrocarbon resources. Cobalt, copper, lithium, nickel, and rare earth elements (REEs) are critical for producing electric vehicles and batteries and harnessing solar power and wind energy. Solar photovoltaic (PV) plants, wind farms and electric vehicles (EVs) generally require more minerals than their fossil fuel-based counterparts. A typical electric car requires six times the mineral inputs of a conventional car, and an onshore wind plant requires nine times more mineral resources than a gas-fired plant[12].

The types of mineral resources used vary by technology. Lithium, nickel, cobalt, manganese and graphite are crucial to battery performance, longevity and energy density. REEs are essential for permanent magnets that are vital for wind turbines and EV motors. Electricity networks need a huge amount of copper and aluminium, with copper being a cornerstone for all electricity-related technologies.

While the demand for critical minerals is set to increase because of the global preference and emphasis towards renewable energy, the global supply chain of the critical minerals is highly concentrated and unevenly distributed. The skewed distribution of the resource poses a supply risk in the face of its enhanced demand.

11 LCOH refers to the cost of hydrogen production per unit of hydrogen includind capital and operational costs.
12 International Energy Agency Report on 'The Role of Critical Minerals in Clean Energy Transitions'. The Role of Critical Minerals in Clean Energy Transitions – Analysis - IEA

Figure VII.11: Concentration of production of selected minerals in 2019 and 2025



Source: International Energy Agency Report on 'The Role of Critical Minerals in Clean Energy Transitions'

A carefully crafted multi-dimensional mineral policy would reduce our dependence and address the problems for the future. The country has resources of nickel, cobalt, molybdenum, and heavy REEs, but further exploration would be needed to evaluate the quantities of their reserves. There is a need to create strategic mineral reserves along the lines of strategic petroleum reserves to ensure a continuous supply of minerals. Also, policies should consider investing in internal research including technological innovation for mineral exploration and processing and the development of Recycling, Reusing, and Repurposing (R3) technologies.

In order to ensure the mineral security of the nation and to attain self-reliance in the area of critical and strategic minerals, the Ministry of Mines has created a Joint Venture company, namely Khanij Bidesh India Ltd (KABIL), with participating interests of NALCO, HCL and MECL. KABIL is mandated to identify and acquire overseas mineral assets of critical and strategic nature, such as Lithium, Cobalt etc. Further, the Ministry of Mines, Government of India and the Department of Industry, Science, Energy and Resources (DISER), Government of Australia, signed an MoU on June 3, 2020 for cooperation in the field of mining and processing of critical and strategic minerals. Further, KABIL has also signed a detailed MoU with a collaborative framework with the Critical Minerals Facilitation Office under the DISER on March 10, 2022 to identify lithium and cobalt mineral assets for final joint investment decisions and acquisition of the assets in Australia catering to the critical and strategic ecosystem of both the countries.

Long-Term Low Emissions Development Strategy (LT-LEDS)

7.42 India submitted its Long-Term Low Carbon Development Strategy (LT-LEDS) on November 14, 2022, at COP 27. The salient features of LT-LEDS are:

- Focus on the rational utilisation of national resources with due regard to energy security. The transitions from fossil fuels will be undertaken in a just, smooth, sustainable and all-inclusive manner.
- Encompasses the objectives of the National Hydrogen Policy. The rapid expansion of green hydrogen production, increasing electrolyser manufacturing capacity in the country, and a

three-fold increase in nuclear capacity by 2032 are some of the other milestones that are envisaged alongside the overall development of the power sector.

- Increased use of biofuels, especially ethanol blending in petrol. The drive to increase electric vehicle penetration, and the increased use of green hydrogen fuel are expected to drive the low carbon development of the transport sector. India aspires to maximise the use of electric vehicles, ethanol blending to reach 20 per cent by the Ethanol Supply Year 2025-26, and a strong modal shift to public transport for passengers and freight.
- Climate-resilient urban development will be driven by smart city initiatives, integrated planning of cities for mainstreaming adaptation and enhancing energy and resource efficiency, effective green building codes and developments in innovative solid and liquid waste management.
- India's industrial sector will continue on a strong growth path, with the vision of '*Aatmanirbhar Bharat'* and '*Make in India'*.

7.43 LT-LEDS has been prepared in the framework of India's right to an equitable and fair share of the global carbon budget and is the practical implementation of India's call for "climate justice." This is essential to ensure that there are no constraints on realising India's vision of rapid growth and economic transformation while protecting the environment. The LT-LEDS is driven by the vision of LiFE, Lifestyle for the Environment that calls for a worldwide paradigm shift from mindless and destructive consumption to mindful and deliberate utilisation. Here, the transition to low carbon development pathway will entail costs. In addition, the provision for climate finance by developed countries will play a very significant role and, therefore, needs to be considerably enhanced in the form of grants and concessional loans.

Finance for Sustainable Development

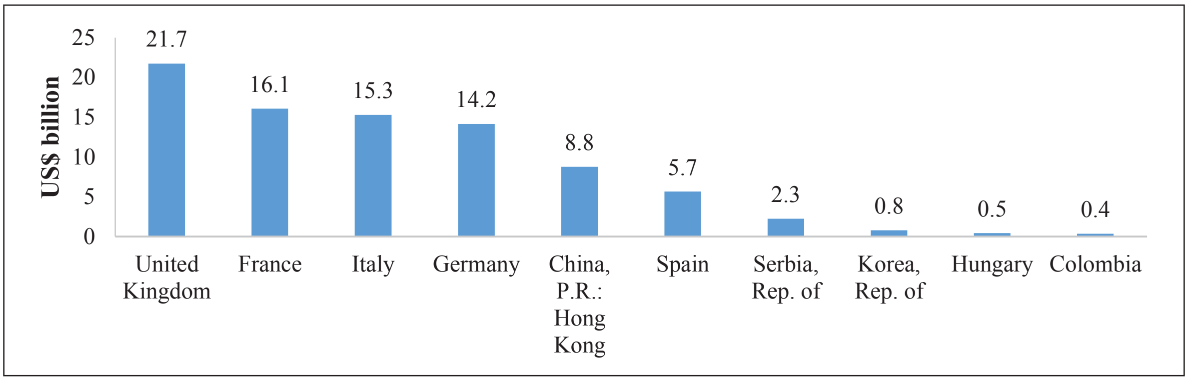
7.44 Finance is a critical input in India's climate actions. The country's climate actions have so far been largely financed from domestic sources, including government budgetary support, a mix of market mechanisms, fiscal instruments, and policy interventions. India has shown global leadership in the fight against climate change and has committed itself to achieving net-zero emissions by 2070. While several estimates of the required investments are indicated in the LT-LEDS report prepared by India, it is important to note that all allude to a need for tens of trillions of US dollars.

7.45 The understanding in the Convention and the Paris Agreement has been that the developed countries will mobilise the resources through public and other sources, including by catalysing private finance to enable a flow of financial resources at a reasonable cost. While these are yet to materialise, India has scaled up its efforts towards greater mobilisation of private capital to meet its ambitious climate action goals.

Green Bonds

7.46 Green bonds are financial instruments that generate proceeds for investment in environmentally sustainable and climate-suitable projects. With the growing focus on the environmental sustainability of projects, green bonds have become widely accepted as an instrument to raise funds to support climate and environmental projects and command a relatively lower cost of capital vis-à-vis regular bonds. Major countries that resorted to green bonds to raise funds include the UK, France, Germany, the USA, and China. IMF data indicates that green bonds of value around US$ 620 billion were issued across the world in the year 2021, in which countries issued green bonds of value US$ 587.7 billion and international organisations issued bonds of value US$ 32.3 billion. As per SEBI's data on green debt securities, during the period of 2017 to September 2022, 15 Indian corporates have issued green bonds of value ₹4,539 crore. Most of these are related to renewable energy generation, while one is slated to be used for the tertiary treatment of wastewater.

Figure VII.12: Status of Sovereign Green Bond issuances in 2021



Source: IMF Climate Change Dashboard

7.47 In keeping with the ambition to reduce the carbon intensity of the economy significantly, the Union Budget 2022-23 announced the issue of Sovereign Green Bonds. The issuance of Sovereign Green Bonds will help the government to tap the requisite finance from potential investors for deployment in public sector projects aimed at reducing the carbon intensity of the economy. The final Sovereign Green Bonds framework of India has been issued. The Framework has been designed to comply with the components and key recommendations of the International Capital Market Association (ICMA) Green Bond Principles (2021).

7.48 A Green Finance working committee has also been set up to oversee and validate key decisions on the issuance of Sovereign green bonds. The committee has the mandate to select the projects for allocation of proceeds, do a time-bound review of the allocation and carry out annual reporting along with an impact assessment of the proceeds from sovereign green bonds issued.

7.49 The Reserve Bank of India (RBI) has notified the indicative calendar for the issuance of Sovereign Green Bonds (SGrBs) for the fiscal year 2022-23. The issuance would take place through two auctions on January 25, 2023 and February 9, 2023, respectively, for ₹8,000 crore each, totalling ₹16,000 crore. The security-wise allocation would include 5 year and 10 year SGrBs for ₹4,000 crore each for both auctions. Five per cent of the notified amount of sale has been reserved for retail investors as specified under the 'Scheme for Non-competitive Bidding Facility in the auction of Government of India Dated Securities and Treasury Bills'. The SGrBs will be designated as specified securities under the 'Fully Accessible Route' for investment in Government Securities by non-residents. Over time, the SGrBs would provide a pricing reference for private sector entities in India for their domestic borrowings through Environment, Social, and Governance (ESG) bonds. Thus, the issuance of SGrBs would help in creating an ecosystem which fosters a greater flow of capital into green projects and entities undertaking such projects.

Regulatory Framework for Issuance of Green Debt Securities

7.50 On November 3, 2021, the RBI published its 'Statement of Commitment to Support Greening India's Financial System' - NGFS. Here, the Reserve Bank of India (RBI) laid out, keeping in view its national commitments, priorities, and complexity of our financial system, committed to, among others, exploring how climate scenario exercises can be used to identify vulnerabilities in RBI-supervised entities' balance sheets, business models and gaps in their capabilities for measuring and managing climate-related financial risks. Also, in 2007, the RBI advised banks to put in place an appropriate action plan for making a meaningful contribution to sustainable development. Over time, RBI has incentivised bank lending towards greener industries and projects. For example, renewable energy projects have been included under Priority Sector Lending (PSL). The RBI has also been spreading awareness on the issue of green and sustainable finance by discussing the opportunities and challenges of green finance through its publications and other communication.

7.51 SEBI introduced the regulatory framework for issuance of green debt securities as a mode of sustainable finance under the erstwhile SEBI (Issue and Listing of Debt Securities) Regulations, 2008, (ILDS Regulations), vide circular dated May 30, 2017.

7.52 At the time of review of the ILDS Regulations, the provisions of the erstwhile circular were subsumed, and the definition of "green debt security" was incorporated as Regulation 2(1)(q) in the SEBI (Issue and Listing of Non-Convertible Securities) Regulations, 2021 (*'NCS Regulations'*). The disclosure requirements were prescribed vide Operational Circular dated August 10, 2021.

7.53 Recently, vide a circular dated November 24, 2022, SEBI has allowed an issuer under the SEBI (Issue and Listing of Municipal Debt Securities) Regulations, 2015 ('ILMDS Regulations') to issue a green debt security if it falls within the definition of "green debt security" as per Regulation 2(1)(q) of the NCS Regulations. Such an issuer has to comply with both ILMDS Regulation and NCS Regulations.

7.54 In the backdrop of increasing interest in sustainable finance in India as well as around the globe, and with a view to aligning the extant framework for green debt securities with the updated Green Bond Principles recognised by International Organisation of Securities Commission (IOSCO), SEBI undertook a review of the regulatory framework for green debt securities. Based on the review, it has been decided in the SEBI board meeting dated December 20, 2022, to:

a. Enhance the scope of the definition of green debt security by including new modes of sustainable finance in relation to pollution prevention and control, eco-efficient products, etc.;

b. Introduce the concept of blue bonds (related to water management and marine sector), yellow bonds (related to solar energy) and transition bonds as subcategories of green debt securities.

Investing in Resilience for Sustainable Development

7.55 SEBI has been one of the early adopters of sustainability reporting for listed entities and requires mandatory ESG-related disclosures for the top 100 listed entities (by market capitalisation) since 2012. Over the years, the requirement was strengthened to cover the top 500 and then the top 1000 entities. SEBI has issued new sustainability reporting requirements under the Business Responsibility and Sustainability Report (BRSR), which are more granular with quantifiable metrics in line with the principles ensconced in the 'National Guidelines on Responsible Business Conduct'. The BRSR was made mandatory for the top 1000 listed entities (by market capitalisation) from 2022–23. Early research show that for top Indian firms, ESG performance reduced stock return volatility during Covid-19[13] and enabled firms to access capital at lower cost by building investors' confidence as ESG disclosures create long-term value for investors as well as reduce information asymmetry[14].

Major Decisions at COP 27

7.56 The COP 27 to the UNFCCC was held from 6 to 20 November 2022 in Sharm el-Sheikh, Egypt. In conjunction with COP 27, the 17th Session of the Conference of Parties serving as the meeting of the Parties to the Kyoto Protocol (CMP17), the 4th Session of the Conference of the Parties serving as the Meeting of Parties to Paris Agreement (CMA4), 57th session of the Subsidiary Body for Scientific and Technological Advice (SBSTA) and the Subsidiary Body for Implementation (SBI) were also held.

7.57 India participated in COP 27, with a focus on mainstreaming the theme of LiFE - Lifestyle for Environment. The Indian Pavilion at COP 27 highlighted the theme of LiFE in various ways – models, audio-visual displays, activities, and 49 side events. India invited all countries to join the LiFE movement, which is a pro-people and pro-planet effort seeking to shift the world from mindless and wasteful consumption to mindful and deliberate utilisation of natural resources.

7.58 The cover decision of COP 27, titled the Sharm el-Sheikh Implementation Plan, notes the 'importance of the transition to sustainable lifestyles and sustainable patterns of consumption and production for efforts to address climate change'. Other decisions were setting up the Just Transition and Mitigation Work Program and the agreement on Joint work on the implementation of climate action on agriculture and food security to be conducted over four years.

7.59 During COP 27, developing nations strongly voiced setting up a separate fund for loss and damage. After negotiations, it was decided to establish new funding arrangements for assisting developing countries that are particularly vulnerable to the adverse effects of climate change in responding to loss and damage, with a focus on addressing loss and damage. A transitional committee has been established to work out the modalities.

13 Beloskar, V. D., & Rao, S. V. D. (2022). Did ESG Save the Day? Evidence from India During the Covid-19 Crisis. Asia-Pacific Financial Markets, 1-35.

14 Mulchandani, K., Mulchandani, K., Iyer, G., & Lonare, A. (2022). Do Equity Investors Care about Environment, Social and Governance (ESG) Disclosure Performance? Evidence from India. Global Business Review, 23(6), 1336-1352.

7.60 Other substantive elements covered in the Sharm el-Sheikh Implementation Plan are the importance of science in guiding climate action, doubling adaptation finance, dialogue on making finance flows consistent with low-emissions, and climate-resilient development calls on Multilateral Development Banks (MDB) reform for delivering climate finance at scale; diversity of sources of finance (including new and additional finance), etc. COP 27 also saw progress on adaptation, with governments agreeing on how to move forward on the Global Goal on Adaptation, which will conclude at COP 28 and inform the first Global Stocktake in 2023.

7.61 Lastly, during COP 27, it was also recognised that the target of US$ 100 billion per year is yet to be achieved. The COP 21 decided that, prior to 2025, a New Collective Quantified Goal (NCQG) on climate finance from a floor of US$ 100 billion per year, taking into account the needs and priorities of developing countries, shall be set. To further the agenda of setting the NCQG by 2024, COP 27 decided that Four Technical Expert Dialogues (TEDs) will be carried out prior to COP 28.

India's Initiatives at the International Stage

International Solar Alliance (ISA)

7.62 The International Solar Alliance (ISA) is a treaty-based inter-governmental organisation working to create a global market system to tap the benefits of solar power and promote clean energy applications. ISA's mission is to unlock US$ 1 trillion of investments in solar by 2030 while reducing the cost of the technology and its financing. With the signing and ratification of the ISA Framework Agreement by 15 countries on 6 December 2017, ISA became the first international intergovernmental organisation to be headquartered in India. ISA is partnering with multilateral development banks (MDBs), development financial institutions (DFIs), private and public sector organisations, civil society, and other international institutions to deploy cost-effective and transformational solutions through solar energy, especially in the least Developed Countries (LDCs) and the Small Island Developing States (SIDS).

7.63 The ISA has expanded its coverage to all its 110 member countries. It assists them with the adoption of solar energy with the view to improving energy access, ensuring energy security and facilitating the energy transition. Through the programmatic support offered by ISA, a pipeline of 9.5 GW of solar energy capacity has been identified in its member countries, including large-scale solar parks in multiple developing countries. In its member countries, with a grant of US$ 50,000, ISA is assisting in setting up solar energy demonstration projects. Three such demonstration projects were inaugurated at the Fifth Assembly of ISA.

Coalition for Disaster Resilient Infrastructure

7.64 The CDRI was launched by the Hon'ble Prime Minister of India during the United Nations Climate Action Summit on 23 September 2019 in New York. It is a global partnership of National Governments, UN agencies and programmes, multilateral development banks and financing mechanisms, the private sector, and academic and knowledge institutions. It aims to promote the resilience of infrastructure systems to climate and disaster risks, thereby ensuring sustainable development.

7.65 As on 29 June 2022, thirty-one Countries, six International Organisations and two private sector organisations have joined as members of CDRI. CDRI has been expanding its membership consistently by attracting a wide variety of economically advanced countries, developing countries, and countries that are most vulnerable to climate change and disasters. Over a period, a network of organisations/stakeholders will be developed to advance disaster-resilient infrastructure not only in India but in other partner countries as well.

Leadership Group for Industry Transition (LeadIT)

7.66 The LeadIT gathers countries and companies that are committed to action to achieve the Paris Agreement. It was launched by the governments of Sweden and India at the UN Climate Action Summit in September 2019 and is supported by the World Economic Forum. LeadIT members subscribe to the notion that energy-intensive industries can and must progress on low-carbon pathways, aiming to achieve net-zero carbon emissions.

7.67 During COP 27, LeadIT members adopted a joint statement wherein members collectively agreed to:

(i) promote value chain partnerships and material circularity;

(ii) invest and cooperate on the planning and implementation of infrastructure to support energy and industry transitions;

(iii) give multilateral development banks and multilateral climate funds mandates to de-risk investments in the transition of heavy industries in emerging and developing countries;

(iv) formulate roadmaps for heavy industry sectors that include regulatory frameworks, incentives, and long-term strategies, to facilitate transition finance and attract private investments.

Initiatives Related to other Environmental Issues

Ensuring the Conservation of Biodiversity

7.68 Conservation of biodiversity is crucial as it provides resources and services necessary for human beings and for the sustenance of all living beings. It enhances ecosystem productivity, where each species, however small, has an important role to play. May 22nd is celebrated as an International Day for Biological Diversity every year globally to create awareness among the citizens and stakeholders on the importance and need for the conservation of biological diversity.

7.69 India ranks eighth in the world and fourth in Asia among the mega-diverse countries in the world. It is also rich in fauna, and nearly 62 per cent of the recorded amphibian species are endemic to India, which is majorly found in the Western Ghats. Globally, India holds the eighth position for the origin and diversity of crop plants, as it has more than 300 wild ancestors and close relatives of cultivated plants growing naturally. Notably, around 9,500 plant species are used as medicine in indigenous health practices. Moreover, local and indigenous people use more than 3,900 plant species as food, fibre, fodder, insecticides and pesticides, gum, resins, dyes, perfumes, and timber.

7.70 The 1992 Earth Summit held at Rio de Janeiro led to the adoption of an internationally binding legal instrument, the Convention on Biological Diversity (CBD), with the objectives of conservation, sustainable use, and fair and equitable sharing of benefits arising from the use of biological diversity. The fifteenth meeting of the Conference of Parties (COP 15) to the Convention on Biological Diversity (CBD) took place between 7th and 19th December 2022 in Montreal, Canada. Key outcomes of the COP 15 include-

- Effective conservation and management of at least 30 per cent of the world's lands, inland waters, coastal areas, and oceans. Currently, 17 per cent and 10 per cent of the world's terrestrial and marine areas are under protection.
- Reduce to near zero the loss of areas of high biodiversity importance.
- Cut global food waste in half and significantly reduce overconsumption and waste generation.
- Reduce by half both excess nutrients and the overall risk posed by pesticides and highly hazardous chemicals.
- Progressively phasing out or reforming subsidies that harm biodiversity by 2030 by at least US$500 billion per year while scaling up positive incentives for biodiversity's conservation and sustainable use.
- Mobilise by 2030 at least US$ 200 billion per year in domestic and international biodiversity-related funding from all sources – public and private.
- Raise international financial flows from developed to developing countries, in particular, least developed countries, small-island developing States, and countries with economies in transition, to at least US$ 20 billion per year by 2025 and to at least US$ 30 billion per year by 2030.

7.71 In conformity with the spirit of the CBD, India enacted the Biological Diversity Act in 2002. The Act mandates the implementation of the objectives through a decentralised system with the National Biodiversity Authority at the national level, the State Biodiversity Boards at the State level, and Biodiversity Management Committees at the local body level. Each of these entities is a statutory and autonomous body with specific mandates and powers to facilitate the effective implementation of the provisions of the Act and the Rules.

7.72 India and Nepal signed a Memorandum of Understanding (MoU) in August 2022 on biodiversity conservation to strengthen and enhance the coordination and cooperation in the field of forests, wildlife, environment, biodiversity conservation, and climate change, including restoration of corridors and interlinking areas and sharing knowledge and best practices between the two countries. The MoU would help promote cooperation between the Parties in the field of forests, wildlife, environment, biodiversity conservation, and climate change, including restoration of corridors and interlinking areas and sharing knowledge and best practices.

Box VII.3: Project Cheetah

The introduction of Cheetahs in India is being done under Project Cheetah, the world's first inter-continental large wild carnivore translocation project. The cheetah was declared extinct from India in 1952. Under the scheme, eight Namibian wild cheetahs were introduced on 17 September 2022 in Kuno National Park, Madhya Pradesh. Out of the eight Cheetahs, there are five female and three male Cheetahs.

The historic reintroduction of Cheetahs in India is part of a long series of measures for ensuring sustainability and environmental protection. Cheetahs can help restore open forest and grassland ecosystems in India. This will help conserve biodiversity and enhance the ecosystem services like water security, carbon sequestration, and soil moisture conservation, benefiting society. This effort, in line with the Prime Minister's commitment to environmental protection and wildlife conservation, will also lead to enhanced livelihood opportunities for the local community through eco-development and ecotourism activities.

The Government has constituted a Task Force for monitoring Cheetah introduction. The Task Force shall be in force for a period of two years. The Task Force has been formed to:

- Review, progress, and monitor the health status of Cheetah, upkeep of the quarantine & soft release enclosures, protection status of the entire area, adherence to the defined protocols by forest & veterinary officials, and advice on Cheetah introduction in India concerning overall health, behaviour and their upkeep.
- Monitor hunting skills and adaptation of Cheetahs to the habitat of Kuno National Park.
- Monitor the release of Cheetah from Quarantine bomas to soft-release enclosures, grassland, and open forest areas.
- Open Cheetah habitat for eco-tourism and suggest regulations in this regard.
- Suggest and advise on developing tourism infrastructure in the fringe areas of Kuno National Park and other Protected Areas.

Wildlife - Its Preservation and Protection

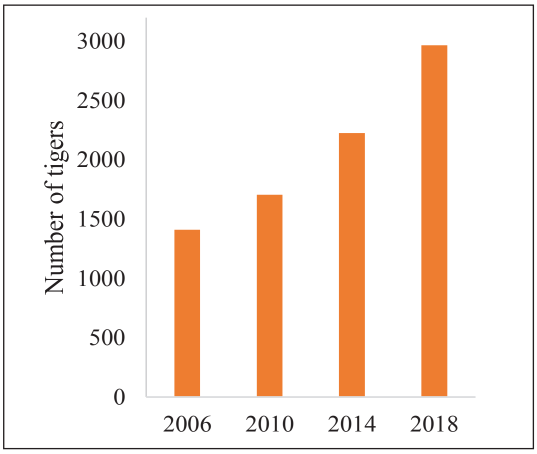
7.73 India has a rich heritage of wildlife and a long history and tradition of conservation. The concern for wildlife is, indeed, the concern for the man himself. All forms of life – human, animal and plants are so closely interlinked that disturbance in one leads to an imbalance in others. A comprehensive legislation was enacted in 1972 called the Wildlife (Protection) Act 1972 to provide special legal protection to our wildlife and the endangered species of fauna.

7.74 Animals such as tigers, lions, and elephants are keystone and flagship species whose preservation benefits the entire ecosystems. As of 10 August 2022, India is home to 53 Tiger Reserves covering approximately 75,796.8 sq. km area in 18 States, with about 75 per cent of the wild tiger population at the global level. India achieved the goal of doubling the tiger numbers in 2018, four years before the targeted year 2022. In addition, 17 Tiger Reserves in the country have CA|TS international accreditation, and two have received International Tx2 Award[15].

15 The TX2 Tiger Conservation Award is given away by Conservation Assured | Tiger Standards (CA|TS), Fauna & Flora International, Global Tiger Forum, IUCN Integrated Tiger Habitat Conservation Programme, Panthera, UNDP Lion's Share, Wildlife Conservation Society, and World Wide Fund For Nature's (WWF's) Tigers Alive Initiative.

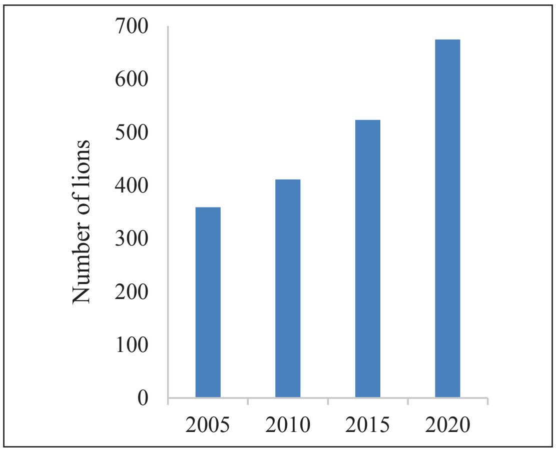
7.75 Similarly, the population of Asiatic Lions has shown a steady increase, with a population of 674 individuals (2020), 28.87 per cent (one of the highest growth rates so far) higher than the 523 lions in 2015. India now (2020) has 12,852 leopards compared to the previous estimate of 7910 conducted in 2014. More than a 60 per cent increase in population has been recorded. The current population estimates indicate about 50,000 – 60,000 Asian elephants worldwide. More than 60 per cent of the population is in India. Indian Elephant has also been listed in Appendix I of the Convention of the Migratory species in the Conference of Parties of CMS 13 at Gandhi Nagar, Gujarat, in February 2020.

Figure VII.13: Success story of tiger conservation efforts reflected in increased tiger count



Source: National Tiger Conservation Authority

Figure VII.14: Rising lion count over the years, driven by various conservation efforts



Source: Press Information Bureau release

7.76 The Act has been amended multiple times to strengthen conservation measures and fulfil multilateral commitments on wildlife preservation. Targeting further reforms in wildlife conservation, the government has brought in the Wild Life (Protection) Amendment Act, 2022. The Act seeks to increase the number of species protected under the law and implement the Convention on International Trade in Endangered Species of Wild Fauna and Flora[16] (CITES). The Wild Life (Protection) Act 1972 has six schedules. The Act aims to rationalise the schedules by (i) reducing the number of schedules for specially protected animals to two, (ii) removing the schedule for vermin species, and (iii) inserting a new schedule for specimens listed in the Appendices under CITES (scheduled specimens). Lastly, the Act empowers the government to regulate or prohibit the import, trade, possession or proliferation of invasive alien species.

Plastic Waste Management and Elimination of Identified Single-Use Plastics

7.77 India is committed to mitigating pollution caused by littered single-use plastics. According to a report on Plastic Waste Management released by the Ministry of Housing and Urban Affairs, the global average of plastic per capita consumption is 28 kg, and India has a per capita plastic consumption of 11 kg. However, as an attempt to reduce pollution caused due to littered plastic waste in the country, the Ministry of Environment, Forest and Climate Change, Government of India, notified the Plastic Waste Management Amendment Rules, 2021, on August 12, 2021. On July 1, 2022, a ban was imposed on the manufacture, import, stocking, distribution, sale and

16 CITES is an international agreement between governments to ensure that international trade in specimens of wild animals and plants does not threaten the survival of the species.

use of identified single-use plastic items, which have low utility and high littering potential, all across the country. The measures will promote a circular economy, reduce the plastic footprint of plastic packaging, promote the development of new alternatives to plastic packaging and provide the next steps for moving towards sustainable plastic packaging by businesses.

7.78 The following domestic regulatory actions were taken in 2022:

i. The Ministry of Environment, Forest and Climate Change notified the Guidelines on Extended Producer Responsibility for plastic packaging vide Plastic Waste Management Amendment Rules, 2022, on 16 February 2022. The key highlights of the Guidelines on Extended Producers Responsibility (EPR) on plastic packaging notified on February 16, 2022 are:

   (a) mandatory registration of Producers, Importers, and Brand Owners (PIBOs) and Plastic Waste Processors (PWPs) through a centralised online portal;

   (b) coverage of four categories of plastic packaging viz. rigid, flexible, multi-layered plastic packaging, and compostable plastic packaging;

   (c) clearly defined targets for EPR;

   (d) mandatory targets for reuse of rigid plastic packaging, minimum level of recycling of plastic waste and use of recycled plastic content in plastic packaging;

   (e) centralised online portal to support the implementation of EPR;

   (f) provision for the sale and purchase of surplus EPR certificates;

   (g) levy of environmental compensation for non-fulfilment of EPR obligations and

   (h) provision for verification, audit and monitoring of obligated entities.

ii. The Plastic Waste Management (Second Amendment) Rules, 2022, were notified on July 6, 2022. The amendment aligns the rules with the Guidelines on Extended Producer Responsibility for plastic packaging. The amendment provides a statutory framework for biodegradable plastics after conforming to BIS Standards and the Central Pollution Control Board (CPCB) certification. The rules mandate that environmental compensation shall be levied based upon the polluter pays principle, on persons not complying with the provisions of these rules, as per guidelines notified by the Central Pollution Control Board.

7.79 The waste management infrastructure in the States/UTs is also being strengthened through the Swachh Bharat Mission. All States/UTs have constituted a Special Task Force for eliminating single-use plastics and effectively implementing Plastic Waste Management Rules, 2016. A National Level Taskforce has been formed by the Ministry of Environment, Forest and Climate Change to make coordinated efforts to eliminate identified single-use plastic items and effective implementation of Plastic Waste.

7.80 The resumed session of the fifth United Nations Environment Assembly held in Nairobi on 2 March 2022 adopted a resolution "End plastic pollution: towards an international legally binding instrument". India engaged constructively with all member states to develop a consensus on the resolution for driving global action on plastic pollution. On the insistence of India, the principle of national circumstances and capability[17] while addressing plastic pollution was included in the resolution text to allow developing countries to follow their development trajectories.

Battery Waste Management

7.81 The Government published the Battery Waste Management Rules, 2022, on August 24, 2022 to ensure environmentally sound management of waste batteries. Notifying these rules is a transformative step towards promoting the circular economy. New rules will replace Batteries (Management and Handling) Rules, 2001. The rules cover all types of batteries, viz. Electric Vehicle batteries, portable batteries, automotive batteries, and industrial batteries.

7.82 The rules function based on the concept of Extended Producer Responsibility (EPR), where the producers (including importers) of batteries are responsible for the collection and recycling/refurbishment of waste batteries and the use of recovered materials from wastes into new batteries. EPR mandates that all waste batteries be collected and sent for recycling/refurbishment, prohibiting disposal in landfills and incineration. To meet the EPR obligations, producers may engage themselves or authorise any other entity to collect, recycle, or refurbish waste batteries.

E-waste Management

7.83 The Government notified the E-Waste (Management) Rules, 2022, on November 2, 2022. These rules will replace the E-waste (Management) Rules, 2016, and will be effective from April 1, 2023. These rules will launch a new Extended Producer Responsibility (EPR) regime for e-waste recycling. The salient feature of new rules is as under:

- Applicable to every manufacturer, producer, refurbisher, dismantler, and recycler who must register with CPCB. No entity shall carry out any business without registration and not deal with any unregistered entity.
- The authorisation has now been replaced by registration through an online portal, and only manufacturers, producers, refurbishers and recyclers require registration.
- Schedule I has been expanded, and now 106 Electrical and Electronic Equipment (EEE) have been included under the EPR regime.
- Producers of notified EEE have been given annual E-Waste Recycling targets based on the generation from the previously sold EEE or based on sales of EEE, as the case may be.
- Management of solar PV modules /panels/ cells added in new rules.
- The recycled quantity will be computed based on end-products to avoid false claims.
- Provision for generation and transaction of EPR Certificate has been introduced.
- Provisions for environmental compensation and verification & audit have been introduced.

17 It was essential as not all countries are equally placed in terms of development and capabilities.

7.84 Under these rules, a provision for reducing hazardous substances in the manufacturing of EEE has been provided. It mandates that every producer of EEE and their components shall ensure that their products do not contain lead, mercury, and other hazardous substances beyond the maximum prescribed concentration. It also provides for recognition and registration, skill development, monitoring, and ensuring the safety and health of workers involved in dismantling and recycling e-waste.

Conclusion

7.85 India is spearheading one of the world's most ambitious clean energy transitions and remains steadfast in its commitment to combating climate change. Despite the adverse impacts of Covid-19 on the economy, India has enhanced its climate ambition manifold and embarked on a long-term strategy towards a Low GHG Emission Development Strategy by adopting a multi-pronged approach.

7.86 The energy transition plan is complemented by numerous policies intended to improve the ecosystem to deploy promising technological innovations, like green hydrogen. The country has consistently modified/amended regulatory standards and adopted policy-level interventions to support the development and adoption of new technology. India's progress on energy transition may be understood from the fact that it has enhanced its non-fossil fuel based installed capacity target to 50 per cent in its updated NDC as the target of 40 per cent of the first NDC was achieved well in advance.

7.87 The sustainable finance framework has also evolved from the initial steps covering the top listed 100 companies required to conform to sustainability standards. The requirement has now not only been extended to 1000 top listed companies on a mandatory basis but also the sustainability standards have become much stronger and measurable that correspond to the best practices while taking into account the specific context of India.

7.88 As mentioned earlier, resources have competing use, and development strategies are not substitutable. Modification in the development pathway has a transition cost, including social and economic costs. India's climate ambitions require resources to be dedicated to the cause of climate change, in addition to, what is needed for the country's development goals. Obligations on climate should be matched with the on-time availability of climate finance, technology, and inputs like critical minerals, while not jeopardising the socio-economic development objectives and aspirations.

7.89 Even if India has so far undertaken climate actions on its own, the heightened expectations of further large-scale climate measures have to be equated with the enhanced initiatives by developed countries in terms of providing means of implementation, including finance, technology transfer, and capacity-building support.

7.90 More importantly, the global climate agenda will advance if advanced countries can set examples of policy and behavioural changes that work in their backyard and whose trade-offs are well recognised and accepted by their people. Then, it might be realistic to expect such policies and behavioural expectations of households to succeed in developing countries with suitable adaptation.

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AGRICULTURE AND FOOD MANAGEMENT: FROM FOOD SECURITY TO NUTRITIONAL SECURITY

08

CHAPTER

The performance of the agriculture and allied sector has been buoyant over the past several years, much of which is on account of the measures taken by the government to augment crop and livestock productivity, ensure certainty of returns to the farmers through price support, promote crop diversification, improve market infrastructure through the impetus provided for the setting up of farmer-producer organisations and promotion of investment in infrastructure facilities through the Agriculture Infrastructure Fund. The chapter discusses these aspects while also focussing on other government interventions to enhance credit availability, facilitate mechanisation and boost horticulture and organic farming.

The chapter documents the performance of the animal husbandry, dairying and fisheries sectors, which are increasingly recognised as emerging sectors by way of performance relative to the crop sector and their importance in the food basket and the farmers' incomes.

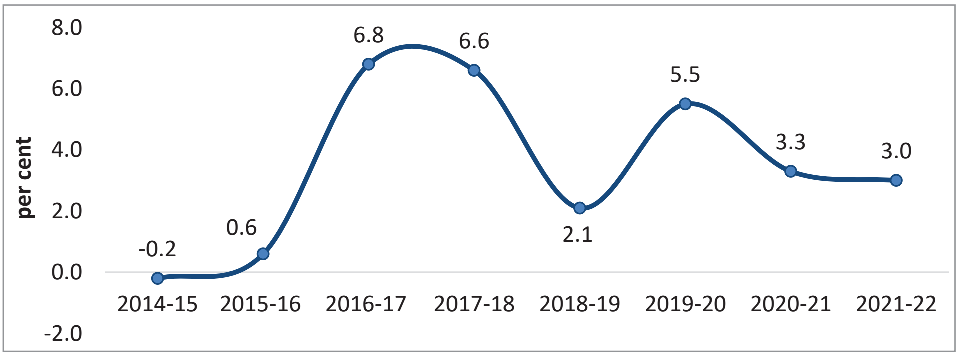
The legislation-backed nationwide food management programme, the National Food Security Act (NFSA), is discussed. To remove the financial burden of the poor, the Government has taken a decision to give free foodgrains to about 81.4 crore beneficiaries under the NFSA for one year from January 1, 2023

Introduction

8.1 With its solid forward linkages, the agriculture and allied activities sector significantly contributed to the country's overall growth and development by ensuring food security. The Indian agriculture sector has been growing at an average annual growth rate of 4.6 per cent during the last six years. It grew by 3.0 per cent in 2021-22 compared to 3.3 per cent in 2020-21. In recent years, India has also rapidly emerged as the net exporter of agricultural products. In 2020-21, exports of agriculture and allied products from India grew by 18 per cent over the previous year. During 2021-22, agricultural exports reached an all-time high of US$ 50.2 billion. This period of buoyant performance could be ascribed to the measures taken by the Government to promote farmer-producer organisations, encourage crop diversification, and improve productivity in agriculture through support provided for mechanisation and the creation of the Agriculture Infrastructure Fund. Thus, enabling the country, in the spirit of Vasudhaiva

Kutumbakam, to provide necessary and essential support to other countries for the losses faced during Covid-19. Further, income support to farmers through the Pradhan Mantri Kisan Samman Nidhi (PM-KISAN) and the promotion of allied activities has led to diversification in sources of farmers' income, improving their resilience to weather shocks.

Figure VIII.1: Despite Covid-19 shock agriculture and allied sector shows resilient growth

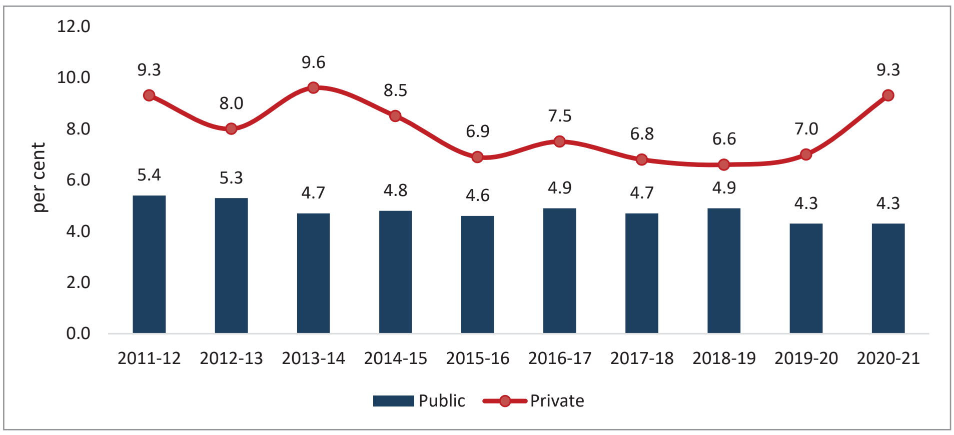


Source: MoSPI's Annual and Quarterly Estimates of GDP at constant prices, 2011-12 series.

8.2 The interventions of the Government have been in line with the recommendations of the Committee on Doubling Farmers' Income, which had identified improvement in crop and livestock productivity, diversification towards higher value crops, better resource efficiency, enhanced cropping intensity, improvement in real prices received by farmers and shift from farm to non-farm occupations as being significant sources of growth. Several policy measures, such as the Minimum Support Price (MSP) to secure the price at one and half times the all-India weighted average cost of production, schemes and price measures to focus on high-value added crops such as oilseed, incentives for crop diversification through price policy measures, improvements in agricultural marketing and by enhancing resource use efficiency etc. have been adopted. While Indian agriculture has performed well, the sector needs re-orientation in the backdrop of certain challenges like adverse impacts of climate change, fragmented landholdings, sub-optimal farm mechanisation, low productivity, disguised unemployment, rising input costs, etc.

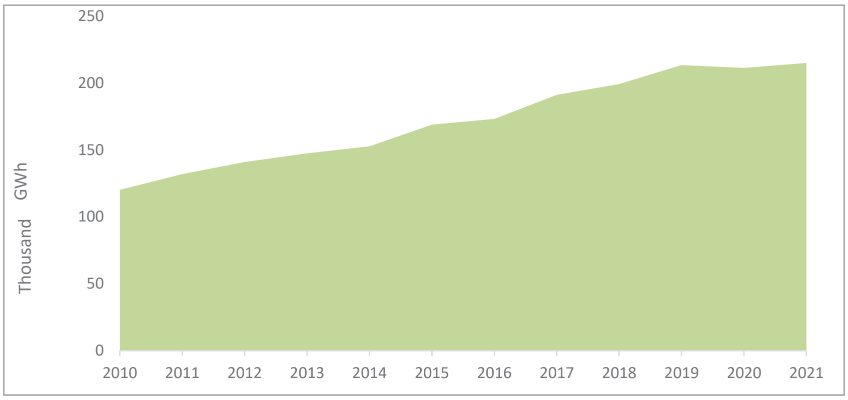
Various policy initiatives introduced and implemented to deal with these issues are discussed later in this chapter.

Figure VIII.2: Crowding in of Private investment in agriculture



Source: Agricultural Statistics at a Glance 2021.

Figure VIII.3: India's Electricity Consumption in Agriculture (Annual)

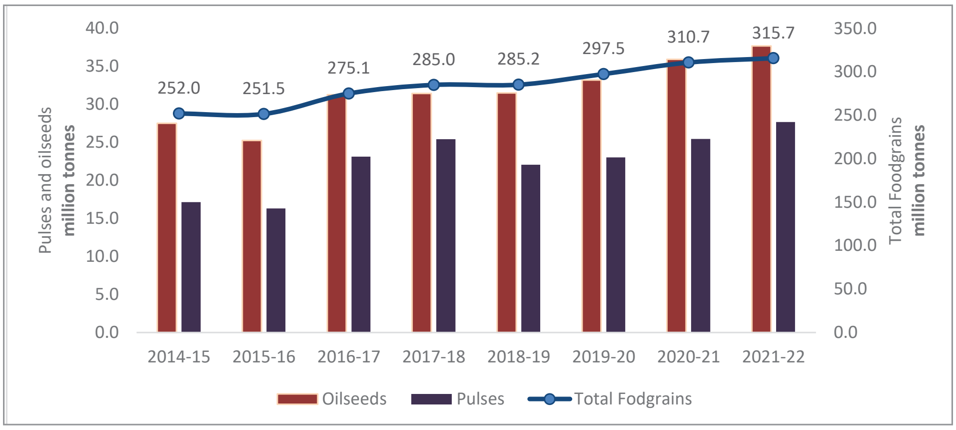


Source: Ministry of Statistics and Programme Implementation

Record Production of Foodgrains

8.3 As per Fourth Advance Estimates for 2021-22, the production of food grains and oil seeds has been increasing Year-on-Year (YoY). Production of pulses has also been notably higher than the average of 23.8 million tonnes in the last five years. However, as indicated earlier changing climate has been impacting agriculture adversely. The year 2022 witnessed an early heat wave during the wheat-harvesting season, adversely affecting its production. The year experienced a decline in the sown area for paddy cultivation too in the Kharif season due to delayed monsoons and deficient rainfall. As per First Advance Estimates 2022-23 (kharif only) the paddy area was about 3.8 lakh hectares less than the sown area of 411.2 lakh hectare during 2021-22 (kharif season). Further, in the current rabi season the area under rabi paddy has expanded by 6.6 lakh hectares as compared to last year (Crop Weather Watch Group 12 January 2023). As per the First Advance Estimates for 2022-23 (Kharif only), total food grains production in the country is estimated at 149.9 million tonnes which is higher than the average Kharif food grain production of the previous five years (2016-17 to 2020-21). Despite a fall in the sown area of Kharif paddy, the total production of Kharif rice during 2022-23 is estimated at 104.9 million tonnes, which is higher than the previous five years (2016-17 to 2020-21) average Kharif rice production of 100.5 million tonnes.

Figure VIII.4: Sustained increase in Foodgrains Production in India (Million Tonnes)

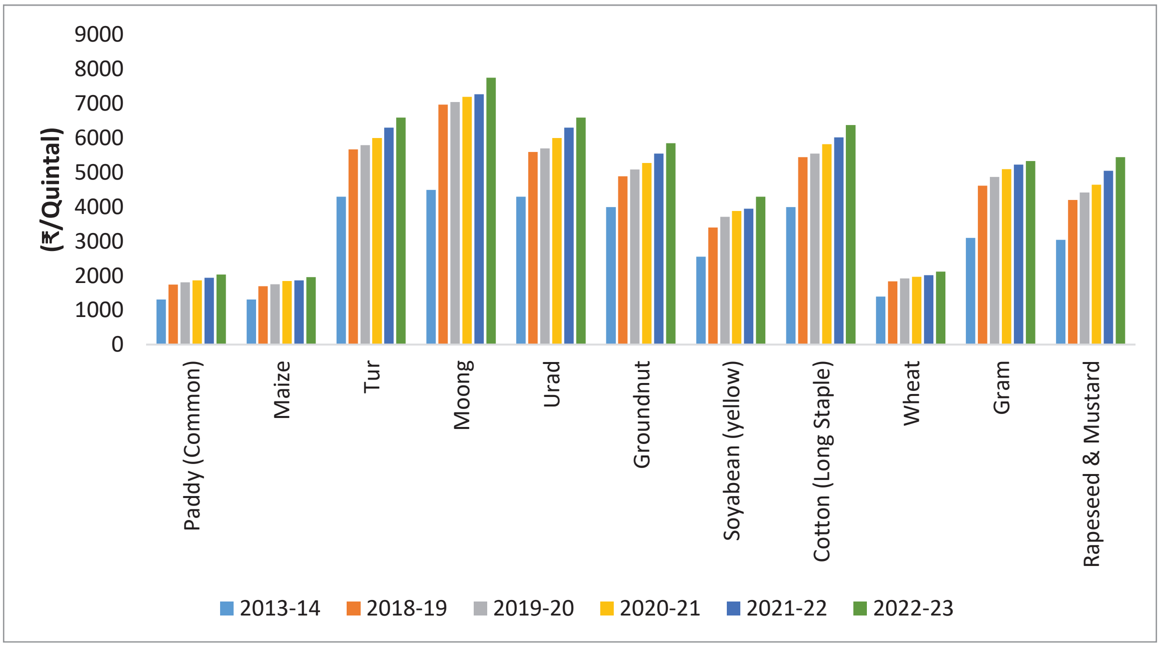


Source: 1st Advance Estimates (2022-23) of DA&FW released dated 21.09.2022.

MSP to Ensure Returns Over the Cost of Production

8.4 The Union Budget for 2018-19 announced that farmers in India would be given an MSP of at least one and a half times the cost of production. Accordingly, the Government has been increasing the MSP for all 22 Kharif, Rabi and other commercial crops with a margin of at least 50 per cent over the all-India weighted average cost of production since the agricultural year 2018-19. Given nutritional requirements and changing dietary patterns and to achieve self-sufficiency in pulses and oilseeds production, the Government has fixed relatively higher MSP for pulses and oilseeds.

Figure VIII.5: Minimum Support Price for selected Kharif and Rabi Crops (₹/Quintal)



Source: Based on data of DAFW and CACP.

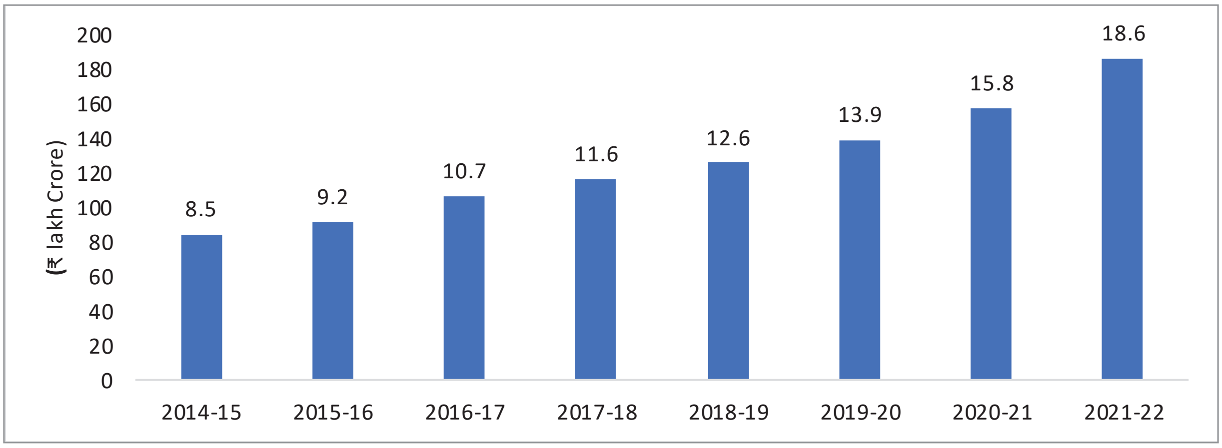
Enhanced Access to Agricultural Credit

8.5 Ensuring hassle-free credit availability at a cheaper rate to farmers has been the top priority of the Government of India. Accordingly, the Kisan Credit Card Scheme (KCC) was introduced in 1998 for farmers to empower them to purchase agricultural products and services on credit at any time. As of 30 December, 2022, banks issued Kisan Credit Cards (KCC) to 3.89 crore eligible farmers with a KCC limit of ₹4,51,672 crore. With the Government of India extending the KCC facility to fisheries and animal husbandry farmers in 2018-19, the number of such cards in the fisheries and animal husbandry sector has also grown. As of 17 October 2022, 1.0 lakh KCCs have been sanctioned for the fisheries sector and 9.5 lakh (as of 4 November 2022) for the animal husbandry sector.

8.6 To ensure that the farmers pay a minimal interest rate to the banks, the Government of India has introduced the Interest Subvention Scheme (ISS), now renamed Modified Interest Subvention Scheme (MISS), to provide short-term credit to farmers at subsidised interest rates. Under this scheme, short-term agriculture loan up to ₹3 lakh is available at 7 per cent per annum to farmers engaged in Agriculture and other Allied activities, including Animal Husbandry, Dairying, Poultry, Fisheries etc. An additional 3 per cent subvention (Prompt Repayment Incentive) is also given to the farmers for prompt and timely repayment of loans. Therefore, if a farmer repays his loan on time, he gets credit at 4 per cent per annum.

8.7 As a result of the initiatives taken and the measures to strengthen existing policies, there has been a consistent increase in the agriculture credit flow over the years, exceeding the target every year for the past several years. In 2021-22 also, it was about 13 per cent more than the target of ₹16.5 lakh crore. The target for the flow of credit to agriculture for 2022-23 has been fixed at ₹18.5 lakh crore.

Figure VIII.6: Continued Increase in Institutional Credit to Agriculture Sector (₹ lakh crore)



Source: Based on data from DAFW and Agricultural Statistics at a Glance 2021.

Farm mechanisation- Key to Improving Productivity

8.8 Farm mechanisation helps increase productivity through timely and efficient use of other inputs and natural resources while at the same time reducing the cost of cultivation and the drudgery associated with various farm operations. Under the Sub Mission on Agricultural Mechanisation (SMAM), State Governments are being assisted in training and demonstrating agricultural machinery and helping farmers procure various farm machinery and equipment besides setting up Custom Hiring Centres (CHC). As of December 2022, 21628 CHCs and 467 Hi-Tech hubs and 18306 farm machinery banks have been established. Increasing fragmentation of farm holdings (with the average size of household ownership holdings declining from 1.23 ha in 2005-06 to 1.10 ha in 2010-11 and further to 1.08 ha in 2015-16) requires machines that are viable and efficient for small farm holdings [1].

Chemical-free India: Organic and Natural Farming

8.9 Organic and natural farming provides chemical fertiliser and pesticide-free food grains and other crops, improves soil health and reduces environmental pollution. India has 44.3 lakh organic farmers, the highest in the world, and about 59.1 lakh ha area was brought under organic farming by 2021-22. Sikkim voluntarily adopted going organic, and the process of getting the total cultivable land of 58,168 hectares under organic farming commenced at ground level in

[1] Agriculture Statistics at a glance 2021

2010. It became the first State in the world to become fully organic, and other States, including Tripura and Uttarakhand, have set similar targets.

8. 10 The Government has been promoting organic farming by implementing two dedicated schemes, i.e., Paramparagat Krishi Vikas Yojana (PKVY) and Mission Organic Value Chain Development for North Eastern Region (MOVCDNER) since 2015 through cluster/ Farmer Producer Organisations (FPOs) formation. PKVY Scheme is being implemented in a cluster mode (with min. 20 ha size). Financial assistance of ₹50,000 per ha for three years is provided to the farmer, out of which ₹31,000 is given as incentives for organic inputs provided directly through Direct Benefit Transfer (DBT). Under PKVY as of 16 November 2022, 32,384 clusters totalling 6.4 lakh ha area and 16.1 lakh farmers have been covered. In addition, as part of the Namami Gange Programme, a 1.2 lakh ha area has been covered under organic farming. MOVCDNER is dedicated to promoting organic farming of niche crops of the North East Region through FPOs. Under the MOVCDNER, 177 FPOs/FPCs have been created, covering 1.5 lakh farmers and 1.7 lakh hectares.

8. 11 Promotion of natural farming began in 2019-20, when Bhartiya Prakratik Krishi Paddhati (BPKP), a sub-scheme of PKVY, was launched to assist farmers in adopting traditional indigenous practices for encouraging all forms of ecological farming, including Zero-Budget Natural Farming (ZBNF). The scheme focuses on capacity building, training, handholding, and on-field demonstration of natural farming through champion farmers. Under the BPKP, 4.09 lakh ha of land have been brought under Natural farming in 8 States (Andhra Pradesh, Chhattisgarh, Kerala, Himachal Pradesh, Jharkhand, Odisha, Madhya Pradesh and Tamil Nadu).

Other Important Initiatives in Agriculture

8.12 PM KISAN Scheme: It is a Central Sector Scheme to supplement the financial needs of land-holding farmers. The financial benefit of ₹6,000 per year is transferred into the bank accounts of farmer families through DBT. It is one of the largest DBT schemes in the world. About 11.3 crore farmers were covered under the Scheme in its April-July 2022-23 payment cycle. The Scheme, through a span of over 3 years, has successfully provided assistance of more than Rs. 2 lakh crore to crores of needy farmers. Many studies and findings indicate that the PM KISAN scheme has helped farmers towards productive investment in agricultural activities. This, through a multiplier effect, has contributed to the overall improvement of the farm sector. For instance, in an empirical[2] study with the Indian Council of Agriculture Research (ICAR), the International Food Policy Research Institute (IFPRI) found that the scheme has enabled addressing the liquidity constraints of farmers for buying agricultural inputs. Further, for the small and marginal farmers, it has helped them meet their requirement of funds for farm inputs and their daily consumption, education, health and other incidental expenses.

8. 13 Agriculture Infrastructure Fund (AIF): AIF is a financing facility operational from the year 2020-21 to 2032-33 for the creation of post-harvest management infrastructure and community farm assets, with benefits including 3 per cent interest subvention and credit guarantee support. Under this, a provision of ₹1 lakh crore for 2020-21 to 2025-26 has been made, and interest

[2]Varshney, Deepak; Joshi, Pramod Kumar; Roy, Devesh; and Kumar, Anjani. 2020. Pradhan Mantri Kisan Samman Nidhi (PM-KISAN) and the adoption of modern agricultural technologies in Uttar Pradesh, India. IFPRI Discussion Paper 1907. Washington, DC: International Food Policy Research Institute (IFPRI)

subvention and credit guarantee assistance will be given until 2032-33. AIF scheme has the facility of convergence with any other scheme of the State or Central Government and can prove to be a milestone in investment in the agriculture sector.

Since its inception, an amount of ₹13,681 crore has been sanctioned for agriculture infrastructure in the country, covering more than 18,133 projects. These include 8,076 warehouses, 2,788 primary processing units, 1,860 custom hiring centres, 937 sorting & grading units, 696 cold store projects, 163 assaying units and around 3613 other kinds of post-harvest management projects and community farming assets.

8.14 Pradhan Mantri Fasal Bima Yojana (PMFBY): PMFBY is currently the largest crop insurance scheme in the world in terms of farmer enrolments, averaging 5.5 crore applications every year and the third largest in terms of the premium received. The scheme promises minimal financial burden on the farmer, with farmers paying only 1.5 per cent and 2 per cent of the total premium for the Rabi and Kharif seasons, respectively, with Centre and State Governments bearing most of the premium cost. During the last six years of its implementation, farmers paid a premium of ₹25,186 crore and received claims amounting to ₹1.2 lakh crore (as of 31 October 2022). The acceptability of the scheme amongst the farmer can be ascertained from the fact that the share of non-loanee, marginalised, and small farmers have increased by 282 per cent since the scheme's inception in 2016.

Box VIII.1: Pradhan Mantri Fasal Bima Yojana (PMFBY)

- PMFBY was launched in the 2016 Kharif season to provide comprehensive insurance coverage to farmers in case of crop failure, helping stabilise their incomes. The scheme is implemented through empanelled general insurance companies. It is modified/revamped on a timely basis considering the prevailing policy regime and requirement of policy intervention in crop insurance in the country. The Scheme covers all Food & Oilseeds crops and Annual Commercial/Horticultural Crops for which past yield data is available and for which the requisite number of Crop Cutting Experiments (CCEs) are being conducted under the General Crop Estimation Survey (GCES). The revamped Scheme w.e.f Kharif 2020 has many features, which include voluntary participation for all farmers, selection of Insurance Companies by the States for 3 years in a go, a two-step process of crop yield estimation, use of smart sampling technique through satellite data for crop cutting experiments, etc.

- The scheme is implemented on an 'Area Approach' basis. Admissible claims are worked out and paid directly to the insured farmer's account by the insurance companies on the yield data based on the requisite number of CCEs per unit area furnished to the concerned insurance. However, losses due to localised risks of hailstorms, landslides, inundation, etc., are calculated on an individual-insured farm basis. These claims are assessed by a joint committee comprising representatives of the State Government and concerned insurance companies.

- PMFBY is currently the largest crop insurance scheme in the world in terms of farmer enrolments, averaging 5.5 crore applications every year and the third largest in terms of premiums received. In the last six years of its implementation, farmers have paid a premium of ₹25,186 crore and received claims amounting to ₹1.26 lakh crore (as of 31st October 2022). The increase in acceptability of the scheme amongst the farmer can be ascertained from the fact that the share of non-loanee, marginalised and small farmers increased by 282 per cent since the scheme's inception in 2016. During the arduous seasons of 2017, 2018 and 2019 marred by weather extremities, the scheme proved to be a decisive factor in securing the livelihoods of farmers, wherein the claims paid ratio in several states averaged more than 100 per cent against the gross premium collected. For example, the States of Chhattisgarh (2017), Odisha (2017), Tamil Nadu (2018), and Jharkhand (2019) received 384 per cent, 222 per cent, 163 per cent and 159 per cent of claims ratio against a gross premium.

- To better resolve grievances within the scheme, National Crop Insurance Portal has been developed to handle all grievances from end to end. This portal is equipped with the necessary features, such as Complaint/Query capturing through multiple modes, farmer authentication & online ticket forwarding to the concerned company, online escalation as per escalation matrices, updating of resolution details, MIS & Dashboards for data analysis. It has API-based connectivity to the insurance companies and is well-designed, ensuring that every grievance is taken to a logical conclusion to the farmer's satisfaction. Along with this, the redressal of complaints within the prescribed time limits is monitored through the portal by the concerned State and Central Government officials. The Beta version of the portal was launched in Chhattisgarh on 21st July 2022.

- Further, a provision of Stratified Grievance Redressal Mechanism, viz. District Level Grievance Redressal Committee (DGRC), State Level Grievance Redressal Committee (SGRC) has been made in the Revised Operational Guidelines of the Scheme to resolve such complaints.

8.15 Mission for Integrated Development of Horticulture (MIDH): Several expert groups have identified horticulture as a high-growth area and a source of buoyant income and improved resilience for farmers. The scheme to promote horticulture covering fruits, vegetables, root and tuber crops, spices, flowers, plantation crops etc., was introduced in 2014-15. The interventions include introducing improved varieties and quality seeds, incentives for plantation crops, cluster development, and post-harvest management. According to third advance estimates (2021-22), a record production of 342.3 million tonnes in an area of 28.0 million hectares was achieved. The government has identified 55 horticulture clusters, of which 12 have been selected for the Cluster Development Programme (CDP) pilot phase. This programme is designed to leverage the geographical specialisation of horticulture clusters and promote integrated and market-led development of pre-production, production and post-harvest activities, including the entire supply chain.

8.16 National Agriculture Market (e-NAM) Scheme: The Government of India launched the National Agriculture Market (e-NAM) Scheme in 2016 to create an online transparent, competitive bidding system to ensure farmers get remunerative prices for their produce. Under the e-NAM Scheme, the Government provides free software and assistance of ₹75 lakh per APMC mandi for related hardware, including quality assaying equipment and the creation of infrastructure like cleaning, grading, sorting, packaging, compost unit, etc. As on 31 December 2022, more than 1.7 crore farmers and 2.3 lakh traders have been registered on e-NAM portal

8.17 Climate-Smart Farming Practices: This is slowly gaining acceptance with farmers using clean energy sources like solar for irrigation. The farmers have been incentivised to transfer electricity generated through solar to the local grid. Crop yield prediction models using artificial intelligence and drones for monitoring soil and crop health have been initiated. Smart farming also enables crop diversification, which will help farmers reduce their dependence on monsoons for water. There are over 1,000 agritech start-ups in India. These assist farmers in improving farming techniques [3].

Box VIII.2: International Year of the Millets: Our traditional Staple and a healthier alternative

Source: Ministry of Agriculture & Farmers Welfare

The United Nations General Assembly, in its 75th session during March 2021, declared 2023 the International Year of Millets (IYM). Millets are Smart Food with high nutritional value, are climate resilient, and align with several UN Sustainable Development Goals (SDGs). These are also important by virtue of their mammoth potential to generate livelihood, increase farmers' income and ensure food & nutritional security all over the world.

[3] www.investindia.gov.in/team-india-blogs/digitalization-agriculture-india

India produces more than 50.9 million tonnes (as per fourth advance estimate) of millet which accounts for 80 per cent of Asia's and 20 per cent of global production. The global average yield is 1229 kg/ha, whereas India has a higher average yield of 1239 kg/ha. In India, millets are primarily a Kharif crop mostly grown in rainfed conditions, requiring less water and agricultural inputs than other staple crops.

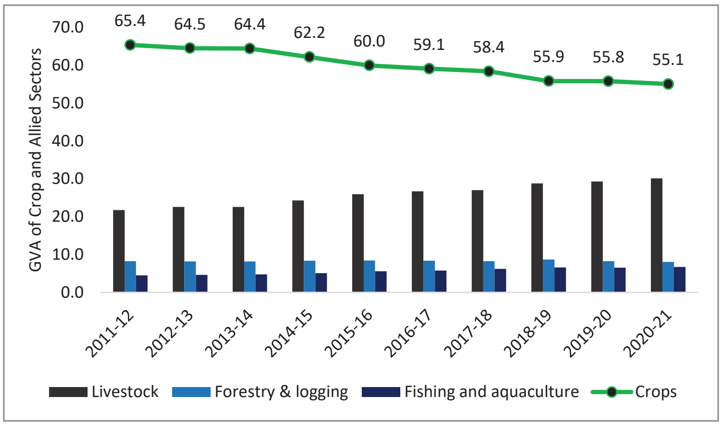
Given the nutritional value of the millets, the Government notified Millets as Nutri-cereals in April 2018. Under the National Food Security Mission (NFSM), millets have been introduced to provide nutritional support. A sub-mission on Nutri-cereals is being implemented since 2018-19 in 212 districts of 14 States.

India has more than 500 start-ups working in the millet value chains, while the Indian Institute of Millets Research has incubated 250 start-ups under Rashtriya Krishi Vikas Yojana – Remunerative Approaches for Agriculture and Allied Sectors Rejuvenation (RKVY-RAFTAAR).

Allied Sectors: Animal Husbandry, Dairying and Fisheries Catching Up in Recent Years

8.18 The allied sectors of Indian agriculture - livestock, forestry & logging and fishing & aquaculture are gradually becoming sectors of buoyant growth and a potential source of better farm incomes. The livestock sector grew at a CAGR of 7.9 per cent during 2014-15 to 2020-21 (at constant prices), and its contribution to total agriculture GVA (at constant prices) has increased from 24.3 per cent in 2014-15 to 30.1 per cent in 2020-21. Similarly, the annual average growth rate of the fisheries sector has been about 7 per cent since 2016-17 and has a share of about 6.7 per cent in total agriculture GVA. Higher growth in allied sectors compared to the crop sector has obvious implications in terms of the increasing importance of the former in total agricultural GVA. Recognising the growing importance of allied sectors, the Committee on Doubling Farmers' Income (DFI, 2018) considers dairying, livestock, poultry, fisheries and horticulture as high-growth engines and has recommended a focussed policy with a concomitant support system for the allied sector.

Figure VIII.7: Though the Crop sector is still the major contributor to agriculture GVA, the livestock sector is catching up (per cent)



Source: Based on data of MoSPI.

8.19 The dairy sector is the most critical component of the livestock sector, employing more than eight crore farmers directly, and is the most prominent agrarian product. Other livestock products, such as eggs and meat, are also growing in importance. While India ranks first in milk production in the world, it ranks third in egg production and eighth in meat production in the world.

8.20 Cognisant of the importance of allied sectors, the Government has made several critical interventions to enhance infrastructure and improve livestock productivity and disease control. As a part of the Aatmanirbhar Bharat (ANB) stimulus package, the Animal Husbandry Infrastructure Development Fund (AHIDF) worth ₹15,000 crore was launched in 2020. Under this scheme, the Central Government provides a 3 per cent interest subvention to the borrower and credit guarantees up to 25 per cent of total borrowing. As of 14 October 2022, 116 projects have been approved under the scheme involving project costs of ₹3,731.4 crore. National Livestock Mission (NLM) scheme has been restructured for 2021-22 to 2025-26. The scheme focuses on entrepreneurship development and breeds improvement in poultry, sheep, goat and piggery, including feed and fodder development. Also, the Livestock Health and Disease Control (LH&DC) Scheme is being implemented to supplement the State/UT governments' efforts towards preventing, controlling and containing animal diseases of economic and zoonotic importance by vaccination. National Animal Disease Control Programme (NADCP) is being implemented to control Foot & Mouth Disease and Brucellosis by completely vaccinating cattle, buffalo, sheep, goat and pig populations against Foot & Mouth Disease and bovine female calves of 4-8 months of age against brucellosis.

8.21 In May 2020, as a part of the ANB package, the Government of India launched its flagship scheme Pradhan Mantri Matsya Sampada Yojana (PMMSY), with a total outlay of ₹20,050 crore. PMMSY marks the highest-ever investment in the fisheries sector in India, to be implemented over five years from FY21 to FY25 in all States/Union Territories to drive sustainable and responsible development of the fisheries sector while ensuring socio-economic development of the fishers, fish farmers and fish workers. Before this, attention had been paid to addressing infrastructure gaps in the fisheries sector. A dedicated Fisheries and Aquaculture Infrastructure Development Fund (FIDF) was established for five years, from 2018-19 to 2022-23, with an investment of ₹7,522 crore. Under the FIDF, as of 17 October 2022, proposals to the tune of ₹4,923.9 crore have been approved and have benefitted over 9.4 lakh persons, through direct and indirect employment, in fishing and allied activities.

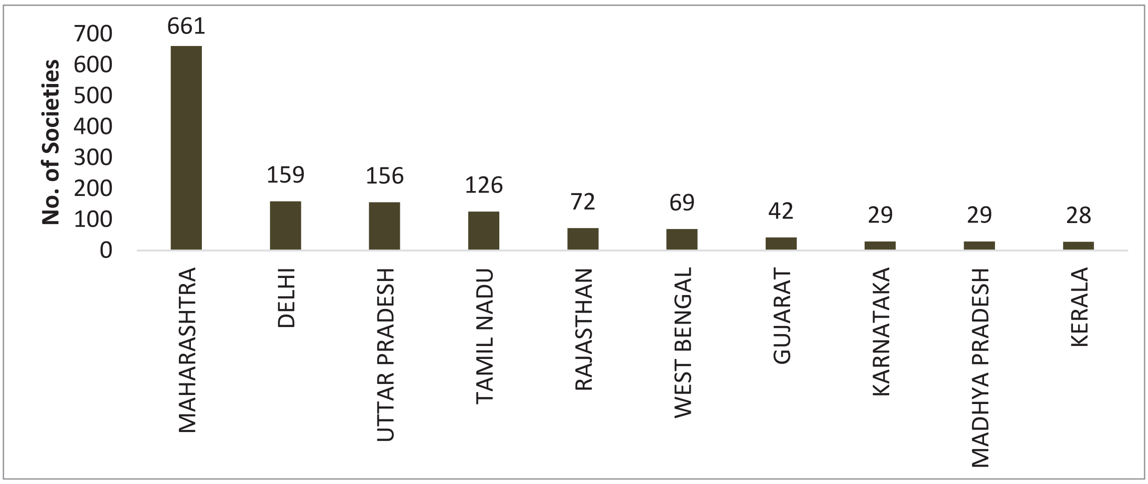
Sahakar-Se-Samriddhi: From Cooperation to Prosperity

8.22 The cooperative societies, especially in the agriculture, dairy and fisheries sectors, provide the rural population with livelihood opportunities and a financial safety net with a community-based approach. Cooperatives hold the key to rural economic transformation. There are 8.5 lakh registered cooperatives in the country, having more than 29 crore members mainly from the marginalised and lower-income groups in the rural areas, and 98 per cent of villages are covered by Primary Agriculture Credit Societies (PACS).

8.23 To realise the vision of "Sahakar-see-Samriddhi", a renewed impetus was given to the growth of the cooperative sector. Currently, around 19 per cent of agriculture finance is through cooperative societies. A full-fledged Ministry of Cooperation was established in July 2021 to provide greater focus to the cooperative sector. In addition, the Government has taken various initiatives to promote and strengthen PACS, like the computerisation of 63,000 functional PACS and the preparation of by-laws for enabling PACS to expand their activities.

8.24 The Multi-State Cooperative Societies Act, 2002 (MSCS) was enacted after repealing the Multi-State Cooperative Act 1984, to facilitate the democratic functioning and autonomous working of Multi-State Cooperative Societies in line with the established Cooperative Principles. As of date, there are 1528 registered societies under the Multi-State Cooperative Societies Act 2002. The MSCSs include 66 Multi-State Cooperative Banks with deposits of approx. ₹2.6 lakh crore. Maharashtra leads 661 cooperatives, followed by Delhi and Uttar Pradesh.

Figure VIII.8: Top ten states with Multi-State Cooperative Societies as on 20 October 2022



Box VIII.3: New National Cooperation Policy

With the view to strengthening the cooperative movement in the country, deepening its reach to the grassroots, and promoting cooperative-based economic development, a New National Cooperation Policy is being formulated involving the relevant stakeholders such as experts of the cooperative sector, representatives from National/ State/ District/ Primary level cooperative societies, Secretaries (Cooperation) and Resident Commissioners from States/UTs, officers from Central Ministries/ Departments. The objective is to have a policy that unlocks the true potential of the Cooperation sector.

In addition, the Government has also decided to introduce the Multi-State Co-operative Societies (Amendment) Bill, 2022. The Bill seeks to amend the Multi-State Co-operative Societies Act, 2002, to bring it in line with Part IXB of the Constitution and to strengthen the cooperative movement in the country by bringing in provisions relating to electoral reforms, strengthening governance and transparency, reforming the composition, meetings and membership of board; enabling the raising of funds by co-operative sector, strengthening monitoring mechanism, enhancing 'Ease of doing business', etc. The bill was introduced in the Lok Sabha on 7 December 2022 in the winter session of Parliament.

Food Processing Sector-The Sunrise Sector

8.25 The food processing sector is of enormous significance for India's development because of the strong connections and interactions it promotes between industry and agriculture. During the last five years ending FY21, the food processing industries sector has been growing at an average annual growth rate of around 8.3 per cent. As per the latest Annual Survey of Industries (ASI) 2019-20, 12.2 per cent of persons in the registered manufacturing sector were employed in the food processing sector. The value of agri-food exports, including processed food exports, was about 10.9 per cent of India's total exports during 2021-22.

8.26 With the growing importance of processed food items in the consumer basket, new horizons are now open for both the agriculture and the industry sector pushing diversification and commercialisation in farming, improvement in the efficiency of resource use, enhancement in the income of farmers, expansion in the avenues to export agro foods and generation of employment opportunities. Optimum development of the food processing sector will contribute significantly to tackling several developmental concerns such as disguised rural unemployment in agriculture, rural poverty, food security, food inflation, improved nutrition, prevention of wastage of food etc.

8.27 To facilitate the unfettered growth of the food processing sector, there is a continuous need for extensive investment in cold chain infrastructure and address logistical challenges. The NITI Aayog Strategy for New India identifies the lack of adequate and efficient cold chain infrastructure as a critical supply-side bottleneck that leads to massive post-harvest losses (mostly of perishables) estimated at ₹92,561 crore annually[4] . The uneven geographic distribution of cold storage infrastructure also contributes to regional-level disparities. Given that countries worldwide have stringent guidelines for importing food and agricultural products, the probability of exports from India getting rejected increases with the lack of adequate cold chain infrastructure. Further, logistical barriers relating to connectivity also pose supply-side challenges. For instance, Indian national highways, while accounting for 2 per cent of the total road network, carry 40 per cent of all cargo – exemplifying the burden on the existing road networks and potential for congestion, which is detrimental to food (and particularly perishables) transport.

8.28 Recognising the abundant potential of the sector, the Government has been at the forefront with various interventions aimed at the development of food processing in the country. The Ministry of Food Processing Industries, through the component schemes of Pradhan Mantri Kisan SAMPADA Yojana (PMKSY), provide financial assistance for the overall growth and development of the food processing sector. Under PMKSY, 677 projects have been completed till 31 December 2022. The Ministry also launched in 2020 the Prime Minister's Formalisation of Micro Food Processing Enterprises (PMFME) Scheme as part of the ANB Abhiyan to enhance the competitiveness of individual micro-enterprises in the unorganised segment and promote the formalisation of this sector by providing financial, technical and business support for upgradation/setting up of 2 lakh micro units in the country. As of 31 December 2022, 15,095 loans of ₹1402.6 crore were sanctioned. The scheme adopts the One District One Product

[4]Niti Aayog, New Strategy for India @75, Dec 2018, chapter 7, page 36.

(ODOP) approach to reap the benefit of scale in procuring inputs, using shared services and marketing products. So far, 713 Districts with 137 unique products were approved under the ODOP in 35 States/ UTs.

8.29 The Production Linked Incentive Scheme for Food Processing Industry (PLISFPI), launched in March 2022, has the specific mandate to incentivise investments to create global food champions. Sectors with high growth potential, like marine products, processed fruits & vegetables, and 'Ready to Eat/ Ready to Cook' products, are covered for support. In phase -I, 149 applications have been selected for assistance under the PLISFPI. Subsequently, a PLI Scheme for millet-based products was also introduced with an outlay of ₹800 crore. In phase-II, 33 applications (both organic and millet products) have been selected.

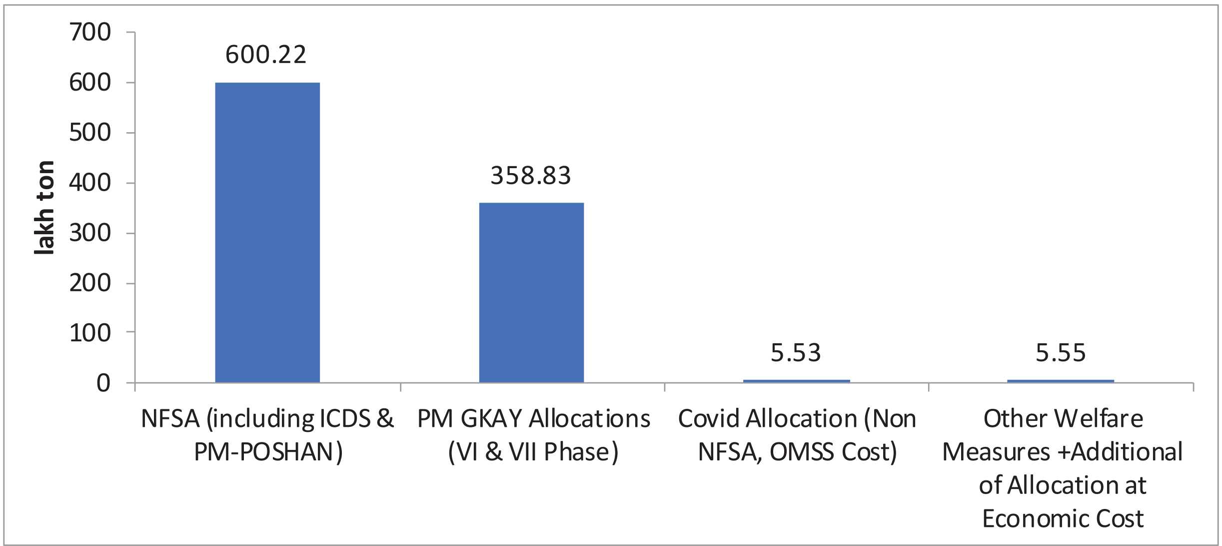
8.30 To focus on transporting perishable food products, including horticulture, fishery, livestock and processed products, from the Hilly Areas, North-Eastern States and Tribal Areas, Krishi UDAN 2.0 version was launched in October 2021 as a six-month pilot project. The Airports Authority of India (AAI) provides a full waiver of Landing, Parking, Terminal Navigational Landing Charges (TNLC) and Route Navigation Facility Charges (RNFC) for Indian freighters and P2C (Passenger-to-Cargo) aircraft. The scheme covers around 25 airports focusing on North Eastern, Hilly and Tribal regions and 28 airports in other regions/areas. Thus, the scheme assists farmers in transporting agricultural products and improves value realisation.

Food Security- Social & Legal Commitment to the People of the Nation

8.31 Food security is not only a question of the ability to produce food but also of the ability to access food. The Government is currently running the most extensive legislation-based food security programme in the world, covering about 80 crore of India's population under the National Food Security Act (NFSA), 2013. The food management programme in India comprises procurement of food grains from farmers at remunerative prices, distribution of food grains to consumers, particularly the vulnerable sections of society, at affordable prices and maintenance of food buffer stock for food security and price stability. Till December 2022, the NFSA provided, for coverage of up to 75 per cent of the rural and up to 50 per cent of the urban population highly subsidised food grains at ₹1/2/3 per kg for coarse grains/ wheat/rice, respectively, at the rate of 35 kg per family per month to households covered under Antyodaya Anna Yojana (AAY) and at the rate of 5 kg per person per month to priority households. In a recent decision, the government has decided to provide free foodgrains to about 81.35 crore beneficiaries under the NFSA for one year from January 1, 2023. To remove the financial burden of the poor, the government will spend more than ₹2 lakh crore in this period on food subsidies under NFSA and other welfare schemes. Under this, the Government will provide 5 kg of foodgrains per person to Priority Households (PHH) beneficiaries and 35 kg per household to Antyodaya Anna Yojana (AAY) beneficiaries (poorest of the poor) free of cost for the next year.

8.32 Procurement from farmers for this programme is at MSP. During Kharif Marketing Season (KMS) 2021-22, 581.7 lakh metric tons (LMT) of Rice was procured against an estimated target of 532.7 LMT. In the current year, KMS 2022-23, a total of 355 LMT of rice has been procured up to 31 December 2022. Also, during Rabi Marketing Season (RMS) 2022-23, 187.9 LMT wheat was procured against 433.4 LMT procured during RMS 2021-22. The procurement was lower as the market price of wheat was higher than its MSP during its procurement season. During 2022-23, the Government of India allocated 970.1 lakh tons of foodgrains to States/UTs under NFSA and Other Welfare Schemes, etc.

Figure VIII.9: Allocation of Foodgrains under NFSA and Other Welfare Schemes in 2022-23 and as of 1 January 2023 (LMT)



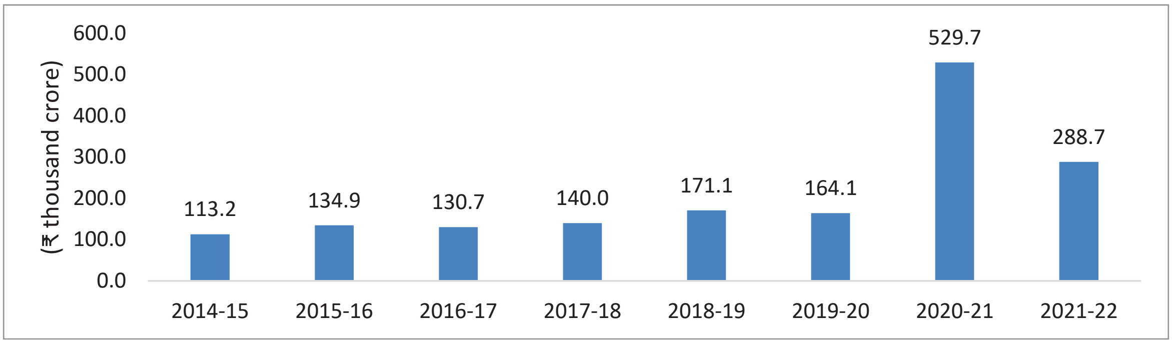
Source: Department of Food and Public Distribution.

8.33 To ease the hardships faced by the poor due to economic disruption caused by Covid-19, the Government initially launched Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY) for the period from April to June 2020. However, keeping in view the need for continuous support to the poor and the needy, the scheme has been extended and implemented in various phases (Phase VII is the latest covering October-December,2022). Under the scheme, 5 kg of additional food grains per person per month has been/is being provided free of cost to NFSA beneficiaries in all the phases. Under the PM-GKAY scheme (covering all phases), the Government has allocated about 1,118 LMT foodgrains to the States/UTs.

8.34 To further ease the process of access to food, the Government launched a citizen-centric and technology-driven scheme in 2019 called the One Nation One Ration Card (ONORC) scheme. The ONORC system enables intra-State and inter-State portability of ration cards. It helps the migrant beneficiaries access their food security entitlements from any fair price shop (FPS) of their choice by using the same ration card after biometric/Aadhaar authentication on electronic Point of Sale (e-PoS) devices at the FPS. Presently, the national/inter-State portability is enabled in all 36 States/UT, covering 100 per cent of the total NFSA population.

8.35 The food subsidy bill was higher during 2020-21 and 2021-22 in comparison to other years as a result of the free food distribution programme of the government under the PMGKAY. This dedicated support was provided to ensure that the farmers and vulnerable households remained protected from the Covid-19 led shocks.

Figure VIII.10: Total Food Subsidy released by the Government of India since 2014-15. (In ₹ thousand crore)



Source: Based on data received from DFPD

Note: i. Aforesaid subsidy figure includes repayment of NSSF loan of ₹40,000 crores in FY2017-18, ₹70000 crores in FY2018-19 and ₹44,164.02 crores in FY2019-20.

ii. Out of total funds released to FCI in FY2020-21, ₹462789 crores were utilised to repay the entire NSSF loan and as on 31.03.2021 NSSF loan is NIL.

Conclusion

8.36 The performance of the agriculture sector remains critical to growth and employment in the country. Investment in the sector must be encouraged through an affordable, timely and inclusive approach to credit delivery. Intervention by the Government through PM Kisan to provide income support, strengthening of institutional finance and insurance through the PMFBY and the push given to Kisan Credit Cards as also access to machines and tools that improve productivity have been significant. A focus on the horticulture sector and the thrust towards allied activities have diversified farmers' income making them more resilient to weather shocks. All these initiatives have led to sustainable and inclusive development of the sector.

8.37 A greater focus on the development of the food processing sector can reduce wastage/ loss and increase the length of storage, ensuring better prices for the farmers. The initiatives like e-NAM and the Promotion of FPOs formation have been introduced to strengthen the agricultural market. With the interventions including PMKSY, PMFME, PLI, etc., attempts have been made to boost the food processing industries to harness its linkages with the agriculture sector. A well-developed food processing sector with improved infrastructure like cold storage and better logistics helps reduce wastage, improve value addition, ensure better farmers' returns, promote employment, and increase export earnings.

INDUSTRY: STEADY RECOVERY

09

CHAPTER

The industry holds a prominent position in the Indian economy contributing about 30 percent of total gross value added in the country. In FY23, the Indian industry faced some extraordinary challenges as the Russian-Ukraine conflict broke out. That led to a sharp rise in the prices of many commodities. Prices of edible oil, crude oil, fertilisers and food grains rose sharply. They remained at elevated levels for several months. The risk of another round of supply chain disruptions emerged, but they were not as severe as feared. Nonetheless, both the price and the availability of essential commodities had the potential to dent the industry's optimism on consolidating the recovery of FY22 and further accelerating it. It is fair to say that the Indian industry acquitted itself rather well under trying circumstances. Overall Gross Value Added (GVA) by the Industrial Sector, based on data available for the first half of the FY23, rose 3.7 per cent, which is higher than the average growth of 2.8 per cent achieved in H1 of the last decade.

Robust domestic conditions since FY22 have provided a demand stimulus to industrial growth. Private Final Consumption Expenditure (PFCE) as a share of GDP in H1 of FY23 was the highest among all half years, H1 or H2, since FY15. Further, the strong export performance of FY22 continued somewhat in the first half of FY23. In this half of the year, exports of goods and services as a share of GDP have been the highest since FY16. However, the performance began to wane in the first half itself as the Year-on-Year (YoY) growth of exports declined from Q1 to Q2 due to persistently high inflation and rising interest rates in the advanced economies. The increase in investment demand has emerged as another powerful stimulus to industrial growth. It has been triggered by the augmented capex of the central government in the current and the previous year as compared to the pre-pandemic years. The leap also has crowded in private investment, already upbeat on the pent-up demand, export stimulus, and strengthening of the corporate balance sheets.

The supply response of the industry to the demand stimulus has been robust, as seen in high-frequency indicators. PMI manufacturing has remained in the expansion zone for 18 months since July 2021, and its sub-indices indicate an easing of input cost pressures, improving supplier delivery times, robust export orders, and future output. While growth in the consumer durables component of the Index of Industrial Production (IIP) is on account of the release of 'pent-up' demand, the increase in capital goods and infrastructure/construction goods is indicative of the beginnings of a virtuous investment cycle that is expected to be led by the private sector. The growth of the eight core industries of coal, fertilisers, cement, electricity, steel, and refinery products has held steady, reflecting a broad momentum in industrial activity. However, the manufacturing landscape further shows uneven growth across various categories, with industries such as automobiles and *electronics registering impressive performances while sectors such as textiles have been showing tepid growth, as export demand for these products has been mellowing with the slowing of global output and demand.*

Industrial activity has been supported by an upswing in bank credit to the sector. Credit to industry started recovering from the beginning of the year and has been growing in double digits since July 2022. Credit to MSMEs has also seen a significant increase in part, assisted by the introduction of the Emergency Credit Linked Guarantee Scheme (ECLGS). While the growth in total credit has been driven by an increase in credit demanded by MSMEs, large industries have begun to increase the pace of their credit offtake too since the beginning of FY23 as they look to reduce their pace of capital raising from volatile debt and equity markets. The robust growth in credit demand combined with rising capacity utilisation and investment in manufacturing underscores businesses' optimism regarding future demand.

Amidst heightened global uncertainty, Foreign Direct Investment (FDI) in the manufacturing sector moderated in the first half of FY23. However, inflows stayed well above the pre-pandemic levels, driven by structural reforms and measures improving the ease of doing business, making India one of the most attractive FDI destinations in the world.

The electronics industry continues to ascend in importance as its applications become pervasive. Electronics, supported by continuously improving communication services, will significantly enhance productivity, efficient service delivery, and social transformation. This industry's significant growth drivers are mobile phones, consumer electronics, and industrial electronics. In the mobile phone segment, India has become the second-largest mobile phone manufacturer globally, with the production of handsets going up from 6 crore units in FY15 to 29 crore units in FY21.

The Indian Pharmaceuticals industry plays a prominent role in the global pharmaceuticals industry. India is ranked 3rd worldwide in the production of pharma products by volume and 14th by value. The sector is the largest provider of generic medicines globally, occupying a 20 per cent share in global supply by volume, and is also the leading vaccine manufacturer globally with a market share of 60 per cent. The performance of pharma exports has been robust, sustaining positive growth despite the global trade disruptions and drop in demand for Covid-19-related treatments. The cumulative FDI in the pharma sector crossed the US$ 20 billion mark by September 2022.

The pandemic and the Russia-Ukraine conflict have demonstrated the risk of supply chain shocks to the global economic order. As companies adapt their manufacturing and supply chain strategies to build resilience, India has a unique opportunity to become a global manufacturing hub this decade. In this context, the government's Make-in-India initiative has facilitated investment, fostered innovation and built world-class infrastructure while addressing the gaps in domestic manufacturing capabilities. The Production Linked Incentive (PLI) schemes across 14 categories has further complemented it with an estimated Capex of around ₹3 lakh crore over the next five years and the potential to generate over 60 lakh jobs. In the medium term, the scheme will help reduce net imports by building domestic manufacturing capacity that will cater to domestic and global needs.

Introduction

9.1 Industry holds a prominent position in the Indian economy, accounting for 31 per cent of GDP, on average, during FY12 and FY21 and employing over 12.1 crore people. The sector's relevance can be identified through various direct and indirect linkages with other sectors, contributing to economic growth and employment. First, it ensures that domestic production can accommodate domestic demand and reduces the reliance on imports. Thereby assisting in the improvement of trade and current account balances. Second, industrial growth has multiplier effects, which translates into employment growth. Some industries, such as textiles and construction, have high employment elasticities. Third, industrial growth spurs growth in services sectors such as banking, insurance, logistics, etc.

Table IX.1: Growth and Share of Industrial Components (in Per cent)

	Growth in Per cent		Real GVA growth in FY23 over FY22	Real GVA growth in FY23 over FY20	Share in total GVA FY23
	H1:FY23	H2:FY23 (Estimated)			
Industry	3.7	4.5	4.1	11.1	30.0
Mining & quarrying	2.2	2.6	2.4	4.4	2.3
Manufacturing	0.1	3.0	1.6	11.0	17.3
Electricity, gas, water supply & other utility services	10.0	7.9	9.0	13.0	2.3
Construction	11.5	7.3	9.1	12.8	8.1
Overall GVA	**9.0**	**4.7**	**6.7**	**9.8**	**-**

Source: National Statistical Office (NSO), Ministry of Statistics and Programme Implementation (MoSPI)
Note: Data for FY23 presents the First Advance Estimates

9.2 Industrial production is a means to increase industrial income in the country. As measured by industrial GVA, growth in industrial income has kept pace with overall GVA growth in the economy since the pre-pandemic year of FY20. Manufacturing GVA, which contributes more than 50 per cent of industrial GVA, has grown at an even higher rate when compared to overall GVA. In FY23, the Industry sector witnessed modest growth of 4.1 per cent compared to the strong growth of 10.3 per cent in FY22. This is likely on account of input cost-push pressures, supply chain disruptions and the China lockdown impacting the availability of essential inputs and slowing the global economy. The fading away of the base effect must have also weighed on growth in FY23. On a positive note, estimates of H2:FY23 shows improvement in overall industrial growth, especially in the manufacturing sector, both yearly and sequentially. Easing input prices and conducive demand conditions will support growth, ceteris paribus.

9.3 In this chapter, the survey will review the performance of the Indian industry in the current financial year. It explores the demand stimulants to industrial growth, the supply response of the industry, trends in credit to the industry and foreign investment in India's industrial sector. The chapter also addresses the developments in key sub-industries and their challenges. Towards the end, it evaluates India's aspirations and prospects of becoming a key player in global value chains.

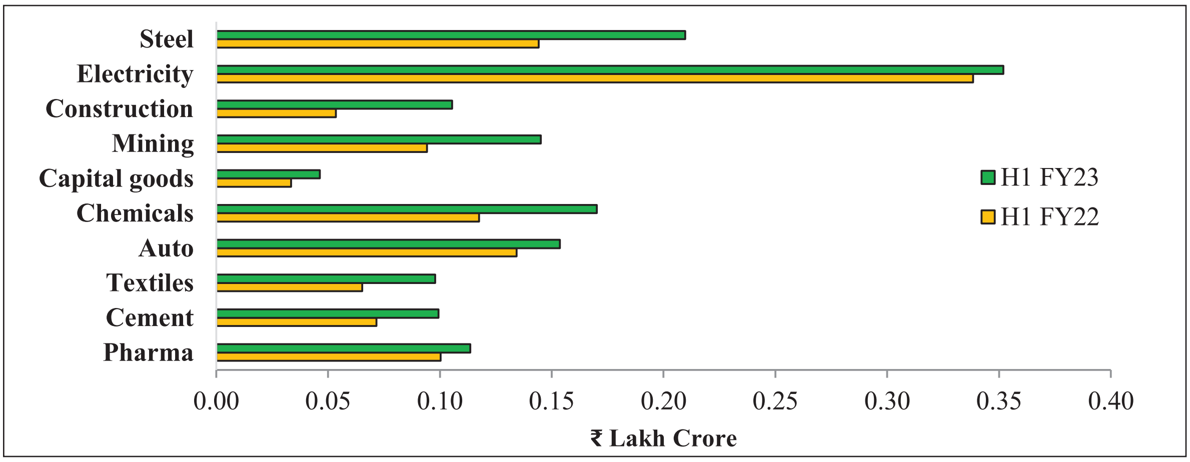
Demand Stimulus to Industrial Growth

9.4 FY23 began with the month-old Russian-Ukraine conflict showing no signs of relenting. As the year draws to a close, the conflict appears to have plateaued, although global commodity prices are yet to deescalate to their pre-pandemic levels. Industry, throughout the year, has thus faced high input costs imported into the country. Fearing demand impact, the industry has been gradually passing on the higher production costs, which has led to sticky but non-rising core retail inflation. Non-core retail inflation, on the other hand, comprising food and energy components, has been declining as local weather extremities have eased and interventions by the government to restrict price rises have proven effective. The consequent decrease in overall retail inflation has thus sustained the pent-up consumer demand in the post-pandemic Indian economy, inducing an industrial recovery despite the global headwinds. With world commodity prices now also on a downward trajectory and showing up in declining rates of India's wholesale inflation, core retail inflation is expected to relent, making domestic consumption demand much stronger to further induce industrial growth in the country. PFCE as a share of GDP in H1 of FY23 was the highest since FY15.

9.5 Strong external demand also served the Indian industry well in FY22 when manufactured exports soared, responding to a rebound in global growth. Trade had also recovered and grown as bottlenecks in global supply chains eased. The export stimulus for the Indian economy persisted in the first half of FY23. In this half of the year, exports of goods and services as a share of GDP have been the highest since FY16. However, the export impulse has been waning in the first half itself as the YoY growth of exports has declined from Q1 to Q2 due to persistently high inflation and rising interest rates in the advanced economies. Export growth may slow further in the second half of the current financial year and remain weak beyond that, too, if the global economy falls into recession. However, the strong domestic consumption growth and investment revival is expected to keep industrial production humming.

9.6 Indeed, an increase in investment demand has emerged as another powerful stimulus to industrial growth. It has been triggered by a jump in the Capex of the central government in the current and the previous year as compared to the pre-pandemic years. The leap also has crowded-in private investment, already upbeat on the pent-up consumption demand, export stimulus, and strengthening of the corporate balance sheets. Capacity utilisation at 74.3 per cent in Q1 of FY23 has already reached the tipping point of 75.3 per cent in Q4 of FY22, at which investments in building new capacities are undertaken. New Investment announced in the manufacturing sector during April-December of FY23 was five times the corresponding level in FY20. The surge in investment is also attributable to the policy actions taken by the Government over the past several years. A beginning has been made in H1 of FY23, which recorded the highest share of Gross Fixed Capital Formation (GFCF) in GDP among all half-years since FY15.

Figure IX.1: Private Investment gathers momentum

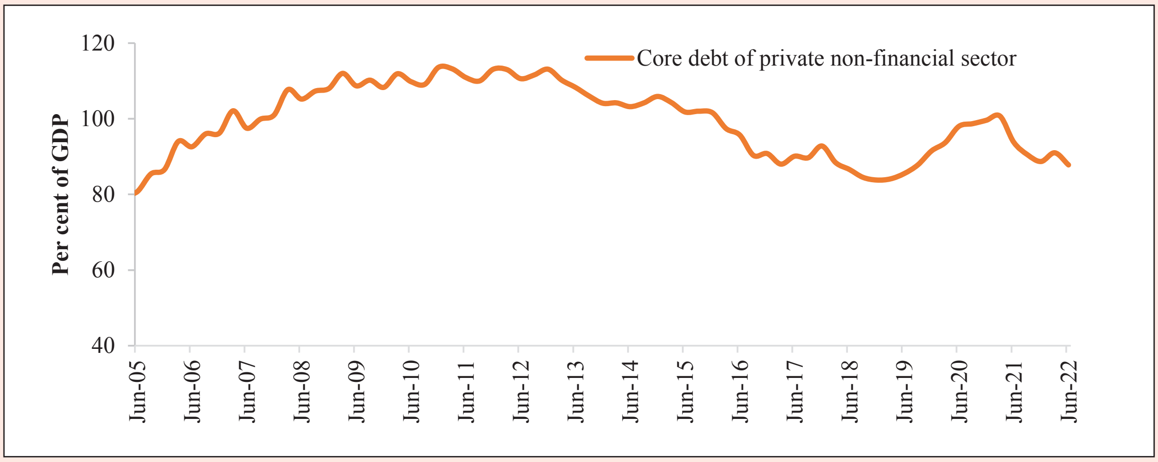


Source: Axis Bank Research, Capitaline

Box IX.1: Unfolding of Private Capital Investment Cycle

A view is fast emerging that the private sector is predisposed to increasing investment in the third decade of the new millennium. This has roots in the first decade of the new millennium when a credit boom financed rising levels of investment rates. Consequently, by the time the second decade began, the balance sheets of both the corporates and banks became stressed. As a result, corporates switched focus from investment to deleveraging while banks slowed credit disbursement in view of high Non-Performing Assets (NPAs). Consequently, the investment rate declined, and the economy began to slow. Midway into the second decade, the problems were identified, and mitigation measures were initiated. For the banks, the Insolvency and Bankruptcy Code (IBC) was instituted to resolve their stressed assets while the equity base of public sector banks was strengthened. For the corporates, the Goods and Services Tax (GST) rollout improved their ease of doing business while the corporate tax rate was slashed to increase their profits/ investible reserves for financing investment. During the pandemic, the implementation of ECLGS lent additional support to the MSMEs. Maturing digital infrastructure and easy and cheap data access have further enriched the investment climate.

Figure A: Deleveraging by private non-financial sector



Source: Bank for International Settlements (BIS)
Note: Credit to the non-financial sector captures the borrowing activity of the private non-financial sector.

Deleveraging has strengthened the corporate balance sheets, as evident in the declining core debt of the private non-financial sector. Credit to the private non-financial sector as a percentage of GDP in India had come down from a peak of 113.0 per cent in December 2010 to a low of 83.8 per cent in December 2018. This shows that de-leveraging was completed by the end of 2018. With the elections out of the way in May 2019 and with corporate tax cuts announced in September 2019, it would have resulted in an improvement in investment and economic growth cycles, but it was delayed due to the disruption caused by the pandemic for two years. Deleveraging resumed from the beginning of FY22 as core debt of the private non-financial sector decreased to 87.8 per cent of GDP in the June 2022 quarter from 100.7 per cent in the March 2021 quarter on the back of improved corporate performance and a recovery in GDP levels.

During H1:FY23, the interest coverage ratio was 5, higher than its five-year (FY20) average of 3. The debt-equity ratio also declined from 0.8 to 0.4. These improvements have further absorbed the increase in working capital requirements triggered by volatility in global commodity prices and supply chain disruptions. On the other hand, profit margins peaked in the second half of FY21 as low inflation kept input costs from rising while restricted mobility reduced overheads. Subsequently, profit margins started to decline as input costs rose on the back of rising global commodity prices. With global commodity prices declining, input costs are set to fall, and profit margins are expected to increase. Expected increases in profits and strengthened balance sheets have made the corporate sector financially stronger and optimistic about increasing net sales. The Reserve Bank of India's (RBI) Industrial Outlook Survey conducted during July-September 2022 points towards optimism about production, order books, employment, and profit margins for the period covered until Q1 of FY24.

Figure B: Net Sales expected to rise

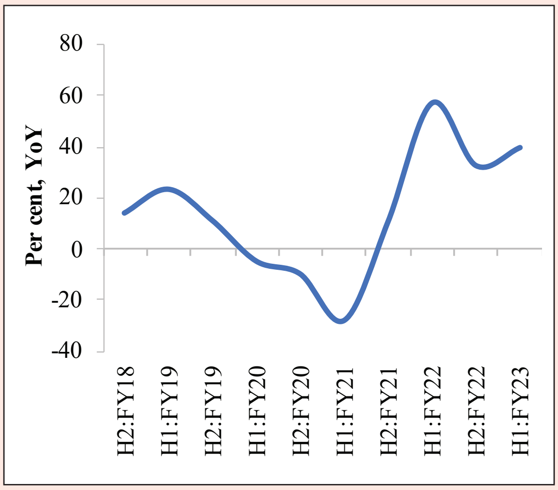


Figure C: Profit Margins Improving

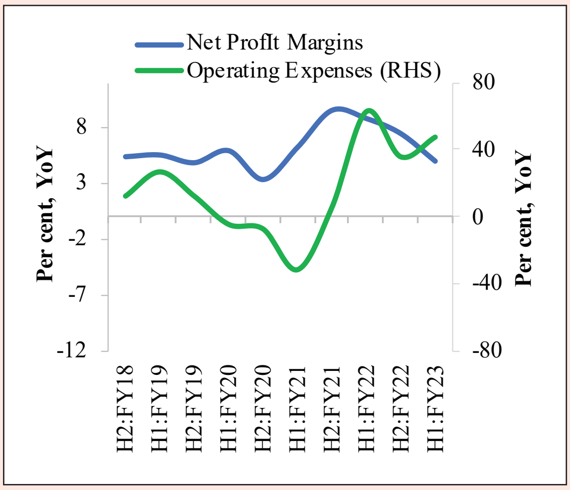
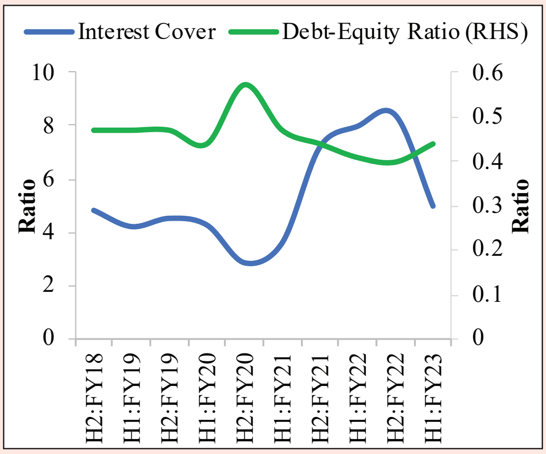
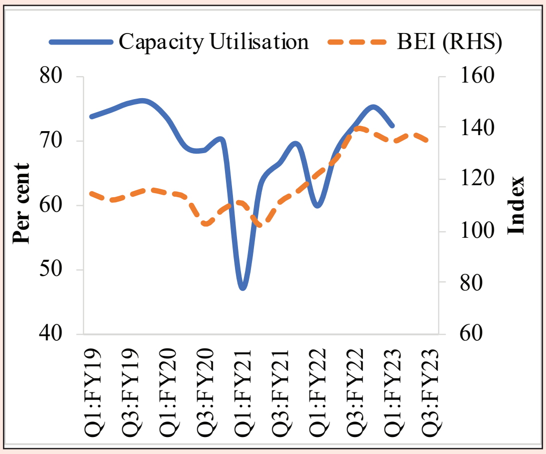


Figure D: Liquidity and Gearing Ratios marginally healthier



Source: Centre for Monitoring Indian Economy (CMIE)

Figure E: Capacity Utilisation and Business expectation



Source: RBI

Note: BEI stands for Business Expectation Index

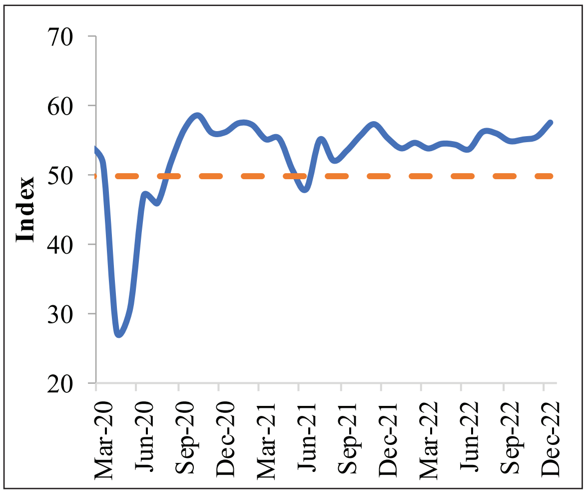
The credit boom in the first decade increased the banking sector advances to the non-financial sector from 36.5 per cent of GDP in 2004 to 57.3 per cent in 2014 (Bank for International Settlements). This led to the RBI imposing a more stringent assessment of NPAs. Consequently, NPAs rose from 4.3 per cent of gross bank advances in FY15 to 11.2 per cent in FY18. However, with the enforcement of the IBC code and a more disciplined approach to credit disbursements, NPA fell to 7.3 per cent in FY21 and to a seven-year low of 5.0 per cent in September 2022. The Capital-to-Risk-Weighted Assets Ratio (CRAR) and provisioning coverage ratio (PCR) have also improved and stood at 16.0 per cent and 71.5 per cent, respectively, in September 2022. With well-capitalised banks ready and willing to lend and corporates financially stronger and willing to borrow, the credit-investment cycle is poised for an upturn in the third decade.

Supply Response of Industry

9.7 The supply response of the industry to the demand stimulus has been robust, as seen in high-frequency indicators. The PMI-Manufacturing, for example, has remained in the expansionary zone for 18 months since July 2021. In December 2022, the sub-indices of the PMI-Manufacturing indicated an easing pace of input cost pressures, improving supplier delivery times, robust export orders, and future output. The moderation in input cost inflation has also led to an easing in the momentum of output prices. However, the pace of expansion in new export orders decreased, reflecting a subdued global demand.

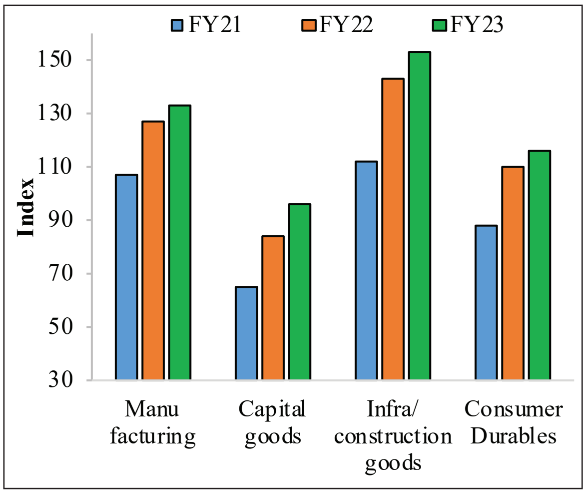
9.8 The sustained growth of manufacturing output is also seen within the overall IIP producing consumer durables in sync with the "pent-up" consumption demand. Robust growth in the production of capital goods and infrastructure/construction goods is indicative of the beginnings of an investment cycle in the private sector in the next financial year.

Figure IX.2: PMI Manufacturing remains in expansionary zone



Source: IHS Markit

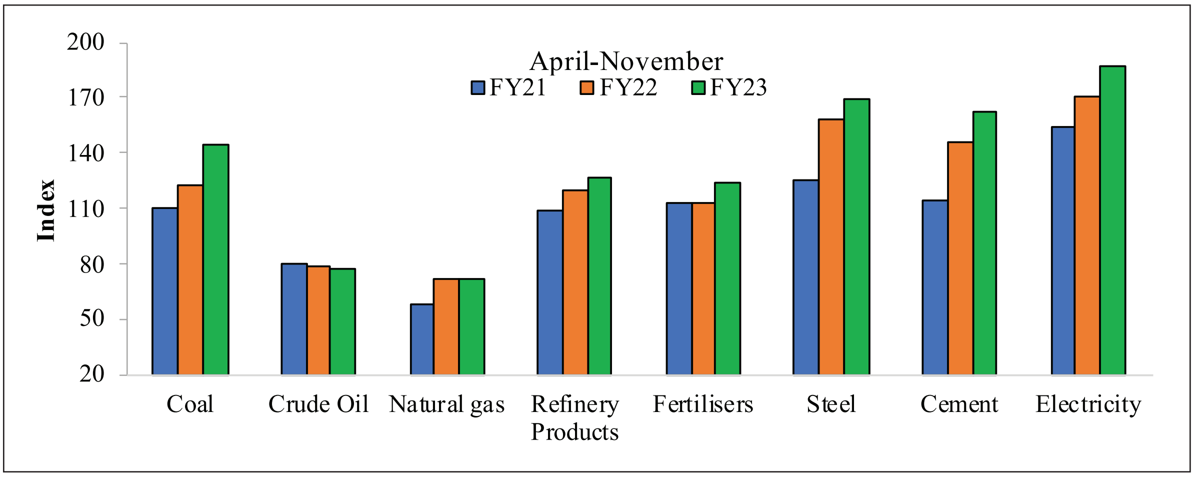
Figure IX.3: Sub-indices of IIP growing at a healthy pace (Apr-Nov)



Source: MoSPI

9.9 The eight core industries of coal, fertilisers, cement, steel, electricity, refinery products, crude oil, and natural gas are critical in meeting the demand for inputs across industries. The growth in these industries has held steady, reflecting a broad momentum in industrial activity. Their growth underscores the importance that nations have been attaching to the indigenous presence of core capacities in the aftermath of the pandemic and the Russia-Ukraine conflict breaking down the global supply chain.

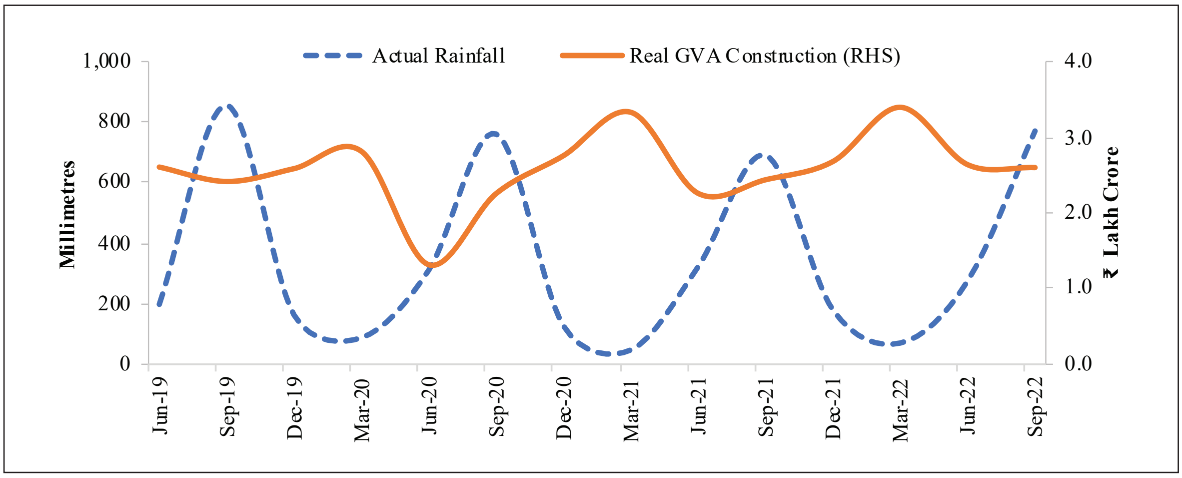
Figure IX.4: Steady Growth in Components of Index of Core Industries



Source: Department for Promotion of Industry and Internal Trade (DPIIT)

9.10 Growth in industrial output would have been higher, but for some constraints it faced in the first half of FY23. Seasonality has contributed to constraining the growth of production in respect of mining and quarrying, and construction, as total rainfall in Q2 of FY23 was about 12 per cent higher than in Q2 of FY22. Further, as higher rainfall cooled temperatures, electricity demand fell, and hence output rose by less than 5 per cent in Q2 of FY23 over Q2 of FY22.

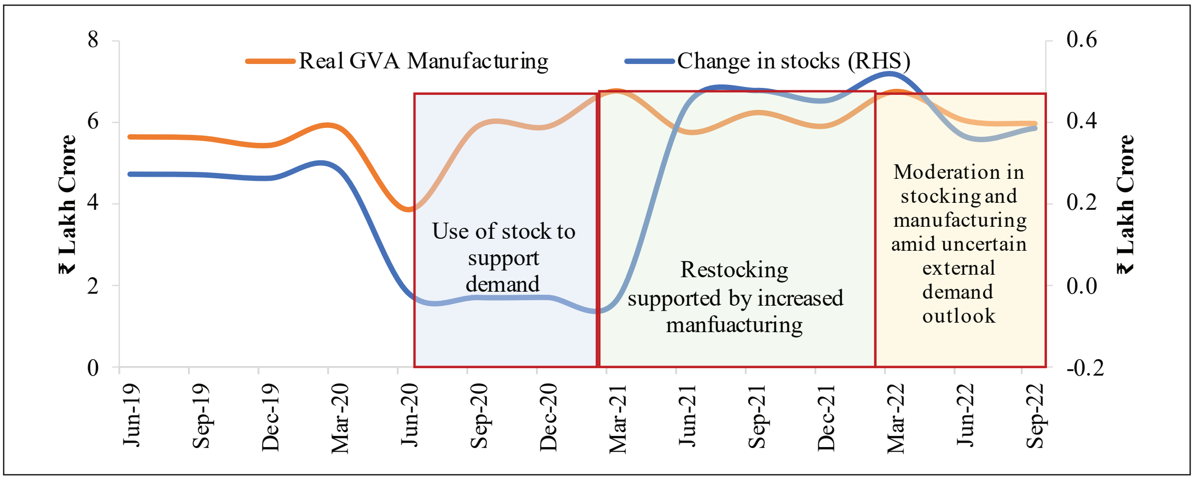
Figure IX.5: GVA Construction (a proxy for construction output) constrained by Higher Rainfall



Source: MoSPI

9.11 Manufacturing output appears to have been constrained by a large build-up in inventory. For five consecutive quarters ending in Q2 of FY23, an increase in stocks had accumulated to more than 1.3 per cent of the annual GDP. A typical cycle of change-in-stocks juxtaposed with the growth of manufacturing GVA (a proxy for manufacturing output) suggests that the build-up of stock allows manufacturing to slow its pace with the accumulated stock meeting current demand. When stocks start shrinking, manufacturing output increases to meet current demand and replenish stocks before the onset of the next cycle. Stock build-up appears to have thus played an important role in keeping the growth of manufacturing output restrained in Q2.

Figure IX.6: GVA Manufacturing slowing with build-up in stocks and elevated global uncertainty



Source: MoSPI; Note: Change in stocks refers to change in stocks of GFCF.

9.12 The manufacturing landscape shows uneven growth across various categories. For example, the motor vehicles manufacturing segment's performance continues to improve, induced by robust demand and an easing of chip shortage. The manufacturing of 'computer, electronic and optical products', an upcoming industry, has also been rising. Multiple players looking to make India a manufacturing hub of semiconductors have made the investment outlook in this sector positive. Production of coke and refined petroleum has also increased, fetching high returns in a global market where crude oil prices were higher than in FY22. Chemicals and chemical products such as caustic soda, soda ash, fertilisers and petroleum products have also performed well, contributing to sustaining the growth momentum in the agriculture sector while increasing exports. At the same time, a few product categories, including textiles, apparel and leather, have been showing tepid growth, as export demand for these products has been mellowing with the slowing of global output and demand. Growth in pharmaceutical output has slowed due to an unfavourable base effect and the waning of the pandemic.

Table IX.2: Growth in Manufacturing Sectors (Per cent, YoY)

	<0		>0 but <5		>5

	Weights	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22
Food Products	5.3	3.8	10.1	5.1	-2.6	0.7	4.0	-3.7	9.9
Beverages	1	29.2	130.3	45.7	13.1	6.4	12.3	2.7	8.2
Tobacco Products	0.8	22	21.4	52.7	-9.1	-12.8	-0.7	-14.3	-5.0
Textiles	3.3	-0.4	5.9	-3.1	-9.0	-12.5	-13.9	-18.7	-9.0
Wearing Apparel	1.3	55.2	69.9	42.6	15.1	-18.3	-21.6	-36.6	-11.7
Leather And Related Products	0.5	5	47.5	1.9	-13.5	-16.0	-17.5	-25.5	-2.0
Wood And Products Of Wood And Cork	0.2	4.1	54.1	14.4	7.9	-7.9	-3.7	-14.8	-0.5
Paper And Paper Products	0.9	-1.9	9.7	8.3	-0.2	-0.1	6.2	-8.2	-2.3
Printing and Reproduction Of Recorded Media	0.7	30.1	43	45.1	41.2	27.6	29.1	13.5	22.1
Coke And Refined Petroleum Products	11.8	10.6	18.1	17.4	7.2	6.6	9.7	-1.0	-9.8
Chemicals And Chemical Products	7.9	4.4	24.3	14.8	7.2	5.7	6.4	-2.5	6.2
Pharmaceuticals, Medicinal Chemical And Botanical Products	5	-5.5	-13.4	-4.6	-4.7	-17.6	-15.1	-21.2	10.0
Rubber And Plastics Products	2.4	-1.5	8.7	5.7	-2.2	-4.4	-2.8	-2.1	5.6
Other Non-Metallic Mineral Products	4.1	6.9	22.1	19.6	0.0	1.4	9.7	-3.7	19.8
Basic Metals	12.8	6.9	16.5	7.2	6.7	4.0	5.7	4.4	8.1
Fabricated Metal Products,	2.7	-0.4	29.2	14.3	-4.1	-14.4	14.6	-11.8	8.2
Computer, Electronic And Optical Products	1.6	6.3	28.7	43.8	2.8	3.3	-0.2	-11.8	3.0
Electrical Equipment	3	8.3	59.6	11	-16.1	-28.5	-31.0	-33.0	1.2
Machinery And Equipment N.E.C.	4.8	5.4	38.8	19.9	4.1	2.9	6.4	-7.2	20.8
Motor Vehicles, Trailers And Semi-Trailers	4.9	6.5	87.3	31.2	17.8	22.7	29.1	12.2	22.2

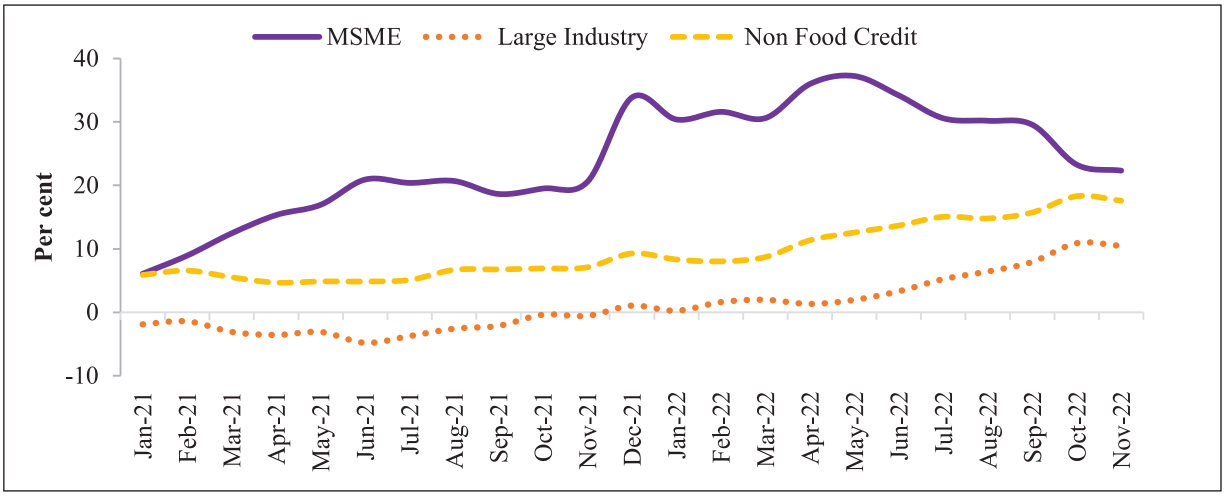
	Weights	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22
Other Transport Equipment	1.8	-1.5	126.6	36.2	-1.2	7.8	14.8	-8.1	24.0
Furniture	0.1	59.3	73.7	31.8	32.4	44.1	30.3	6.4	15.7
Other manufacturing	0.9	-3.2	18.5	26.4	6.9	4.2	4.8	-31.1	13.1

Source: MoSPI

Robust Growth in Bank Credit to Industry

9.13 Growth in bank credit has kept pace with industrial growth, with a sequential surge evident since January 2022. While a large share of bank credit continues to be assigned to large industries, credit to MSMEs has also seen a significant increase in part assisted by the introduction of the ECLGS, which supports around 1.2 crore businesses of which 95 per cent are MSMEs [1]. The impact of ECLGS on increasing the growth of credit to MSME was felt most during the pandemic impacted years of 2020 and 2021. It continued in 2022 as the scheme was extended to March 2023. Furthermore, growth in credit to MSME was buttressed by rebounding consumption levels, particularly in the services sector. Consequently, the share of MSMEs in gross credit offtake to the industry rose from 17.7 per cent in January 2020 to 23.7 per cent in November 2022. While the growth in total credit has been driven by an increase in credit demanded by MSMEs, large industries have also begun to increase the pace of their credit offtake since the beginning of FY23. With the spread between corporate bond yields and marginal costs of funds-based lending rate (MCLR) narrowing, and the volatility in the corporate bond market remaining high, corporates appear to be shifting their sources of financing from bond markets to bank capital, where rates have remained stable and predictable. Robust growth in credit demand combined with rising capacity utilisation and investment in manufacturing underscores businesses' optimism regarding future demand.

Figure IX.7: Double-digit credit growth in Industry driven by MSMEs



Source: RBI

1 As per the National Credit Guarantee Trustee Company Ltd. (NCGTCL), the agency which operates the ECLGS

Table IX.3: Growth in credit deployed in Industry Subsegments (Per cent, YoY)

Industry	Nov-21	Apr-22	Nov-22
Mining and quarrying (incl. coal)	13.8	10.9	6.3
Food processing	6.1	10.7	7.4
Beverages and tobacco	2.0	4.1	24.4
Textiles	8.6	7.1	3.0
Leather and leather products	-1.7	7.3	5.9
Wood and wood products	6.6	8.4	15.9
paper and paper products	8.4	9.3	6.6
Petroleum, coal products and nuclear fuels	24.6	25.4	65.0
Chemicals and chemical products	6.4	10.4	19.1
Rubber, plastic and their products	23.3	26.4	18.4
Glass and glassware	-13.2	-3.8	11.0
Cement and cement products	-23.4	-12.2	10.2
Basic metals and metal products	-15.5	-4.4	15.3
Engineering	5.2	9.7	11.1
Vehicles, vehicle parts and transport equipment	-2.0	6.8	8.3
Gems and Jewellery	5.0	11.9	-1.2
Construction	-8.2	-6.5	2.1
Infrastructure	6.1	9.7	10.5
Other Industries	10.9	12.8	25.3

Colour scale: -23 | 0 | 65

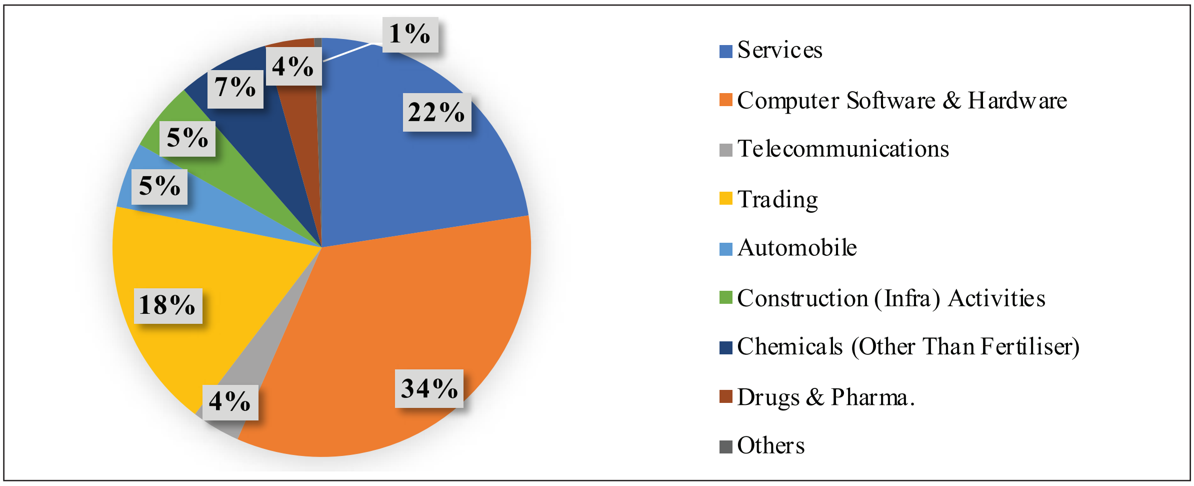
Source: Survey Calculations, RBI

9.14 All segments within the manufacturing sector except the textile industry witnessed growth in credit offtake in November 2022. While segments such as "Petroleum, coal products and nuclear fuels", "Rubber, plastic and their products", and "Engineering" have had a steady credit appetite, the improvement in growth of credit to the cement and construction sectors over the past year reflects the improved outlook of the construction sector.

Resilient FDI inflow in Manufacturing Sector

9.15 Annual FDI equity inflows in the manufacturing sector have been steadily increasing over the last few years. It jumped from US$ 12.1 billion in FY21 to US$ 21.3 billion in FY22 as the pandemic-driven expansionary policies of advanced economies led to a surge in global liquidity. With the rise in global uncertainty in the wake of the Russia-Ukraine conflict, FDI equity inflow in manufacturing in the first half of FY23 fell below its corresponding level in the first half of FY22. The monetary tightening at the global level has further restricted the FDI equity inflows. A rebound in FDI inflows is, however, expected as the Indian economy sustains its high growth while monetary tightening the world over eventually eases with the weakening of inflationary pressures.

Figure IX.8: Sector-wise FDI Equity Inflows in 2022-23 during April-September 2022



Source: DPIIT data

9.16 Notwithstanding an overall drop in FDI in the first half of FY23, inflows have stayed above the pre-pandemic levels, driven by structural reforms and measures improving the ease of doing business, making India one of the most attractive FDI destinations in the world. The government has implemented an investor-friendly FDI policy under which FDI up to 100 per cent is permitted through automatic route in most sectors. India continues to open up its sectors to global investors by raising FDI limits, removing regulatory barriers, developing infrastructure, and improving the business environment.

Box IX.2: FDI Policy Reforms to bolster Investment

- India continues to open up its sectors to global investors by raising FDI limits and removing regulatory barriers to attracting increased investments, in addition to developing infrastructure and improving the business environment. To make India a more attractive investment destination, the Government has implemented several radical and transformative FDI reforms across sectors such as Defence, Pension, e-commerce activities etc.
- In FY20, 100 per cent FDI under automatic route was permitted for the sale of coal, and coal mining activities, including associated processing infrastructure, subject to provisions of relevant acts. 26 per cent FDI under the government route has been permitted for uploading/ streaming of News & Current Affairs through Digital Media. 100 per cent FDI has been permitted in Intermediaries or Insurance Intermediaries, including insurance brokers, reinsurance brokers, insurance consultants, corporate agents, third-party administrators, Surveyors and Loss Assessors and such other entities as may be notified by the Insurance Regulatory and Development Authority from time to time.

- To curb opportunistic takeovers/acquisitions of Indian companies due to the Covid-19 pandemic, the government amended the FDI policy, according to which an entity of a country which shares a land border with India or where the beneficial owner of investment into India is situated in or is a citizen of any such country, can invest only under the Government route. Further, in the event of the transfer of ownership of any existing or future FDI in an entity in India, directly or indirectly, resulting in the beneficial ownership falling within the restriction/purview of the said policy amendment, such subsequent change in beneficial ownership will also require government approval.
- To simplify the approval process of foreign Investment and to promote ease of doing business, the erstwhile Foreign Investment Promotion Board (FIPB) was abolished in May 2017, and a new regime has been put in place. Under the new regime, the process for granting FDI approvals has been simplified, wherein the work relating to the processing of applications for FDI has been delegated to the concerned Ministries/ Departments, and DPIIT is the nodal department for facilitating the process.
- A revamped portal, "Foreign Investment Facilitation Portal (FIF Portal)", has been launched as the online single-point interface of the Government of India for investors to facilitate Foreign Direct Investment. The portal facilitates single window clearance of applications which are through the government approval route. The FIF Portal has been integrated with the National Single Window System (NSWS).

Industry Groups and their Challenges

Micro, Small and Medium Enterprises (MSMEs) post smart recovery from pandemic

9.17 While the contribution of the MSME sector to overall GVA rose from 29.3 per cent in FY18 to 30.5 per cent in FY20, the economic impact of the pandemic caused the sector's share to fall to 26.8 per cent in FY21. MSME contribution to the manufacturing sector's GVA also marginally fell to 36.0 per cent in FY21.

MSME Performance

Figure IX.9a: MSME share in exports

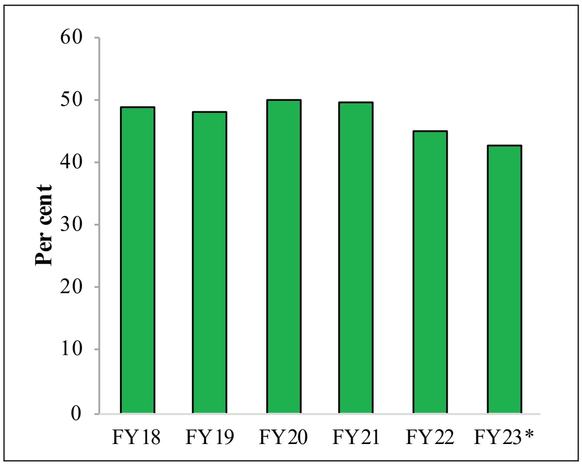
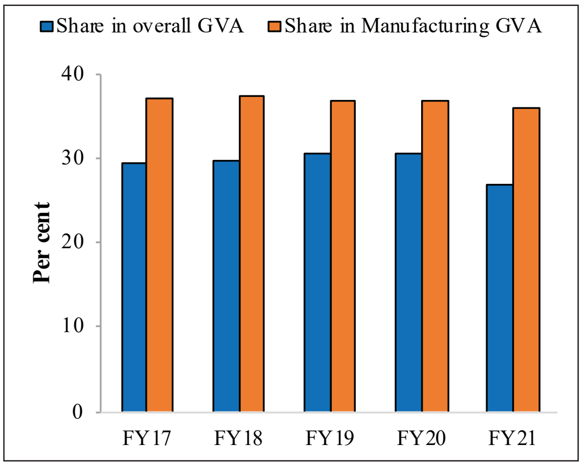


Figure IX.9b: MSME Share in overall GVA and Manufacturing GVA



Source: MoSPI, Directorate General of Commercial Intelligence and Statistics (DGCI&S

Note: *Data for FY23 is until Aug 2022

9.18 Through the AatmaNirbhar Bharat Package, the government has taken multiple steps to cushion the economic impact of the pandemic on MSMEs. Some of the measures undertaken include the modification of the definition of MSMEs; the provision of ₹20,000 crore subordinate debt for stressed MSMEs, ₹50,000 crore equity infusion through Self Reliant India fund; the waiving of the global tender requirement for procurement of up to ₹200 crore; launching of the Udyam portal for MSME registration, a paperless, zero-cost registration portal that is based on self-declaration and only requires Aadhaar. Registrations on the Udyam portal crossed the one-crore mark in August 2022, surpassing the total registration done in the past 14 years under the old regime in just 2.5 years. As of 7th January 2022, the portal has a total registration count of 1.32 crore, of which 1.27 crore have been classified as micro-enterprises. Enterprises registered on the portal employ 9.6 crore people, of which 2.3 crore are women. There are 1.5 lakh exporting units, which have contributed a cumulative ₹9.7 lakh crore worth of exports.

9.19 The government's initiative of the Samadhaan Portal, set up under the Micro, Small and Medium Enterprises Development (MSMED) Act to monitor the outstanding dues to the MSME sector, is helping MSMEs in resolving their cashflow difficulties. As of 7th January 2022, the portal has received a total of 1.3 lakh applications, of which 16.8 per cent have been disposed while 25.0 per cent are currently under consideration, and 25.1 per cent have been rejected. In order to fast-track this process, the government has instructed Central Public Sector Enterprises (CPSEs) and all companies with a turnover of ₹200 crore or more to get themselves onboarded on the Trade Receivables Discounting System (TReDS) platform for facilitating the discounting of trade receivables of MSMEs through multiple financiers. CHAMPIONS, the single-window grievance redressal portal for MSMEs launched by the Ministry of MSME in June 2020, has received 56,825 grievances as of 16th January 2023, of which 55,878 grievances have been responded to. The portal continues to be improved through initiatives such as the localisation of the portal in 11 regional languages and the introduction of a Chatbot.

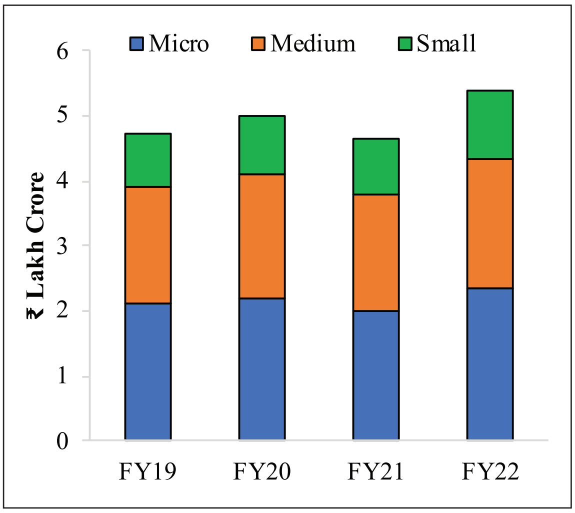
9.20 The government has also initiated the 'Raising and Accelerating MSME Performance' scheme (RAMP) in FY23. The World Bank-supported scheme aims at strengthening institutions and governance at the Centre and State, improving Centre-State linkages and partnerships and improving access of MSMEs to market and credit, technology upgradation and addressing issues of delayed payments and greening of MSMEs. The RAMP programme will be implemented over a period of five years. The total outlay for the scheme is ₹6,062.4 crore, out of which ₹3750 crore would be a loan from the World Bank, and the Government of India would fund the remaining ₹2312.4 crore.

9.21 The bouquet of measures introduced by the government aided the resilience of the MSME sector. Data from the National Credit Guarantee Trustee Corporation (NCGTC) shows that as of 30th November 2022, 1.2 crore MSME units availed the ECLGS scheme and raised collateral-free resources to the tune of ₹3.6 lakh crore. A recent CIBIL report[2] showed that 83 per cent of the borrowers who availed of the ECLGS were micro-enterprises, and more than half of these borrowers had an exposure of less than ₹10 lakh. The NPA rate in banks for the category of MSME borrowers who availed of ECLGS was lower than the category that did not avail of the scheme. The recovery of the MSME sector from the pandemic-induced shock is evident in the

2 https://www.transunioncibil.com/resources/tucibil/doc/insights/reports/eclgs-insights-report.pdf

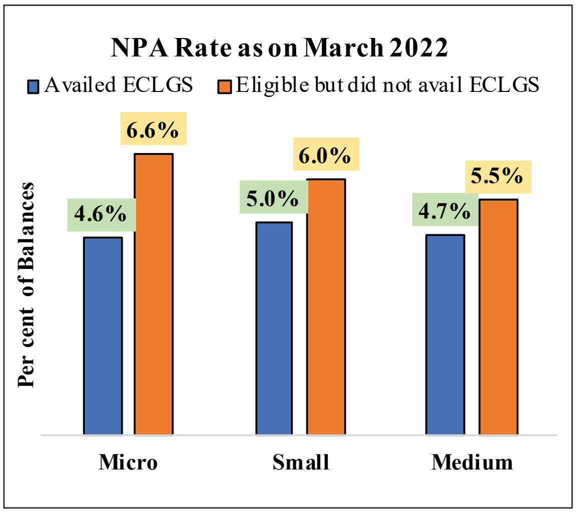
trend in GST paid by MSME units. The GST paid by the sector in FY22 has crossed the pre-pandemic level in FY20.

Figure IX.10: GST paid by MSMEs in FY22 crossed the pre-pandemic level



Source: Ministry of Finance
Note: Includes firms with turnover up to ₹1000 crore. Micro -- <= 25cr; Small <= 25 to 100 Cr.; Medium 100 to 1000 Cr.

Figure IX.11: ECLGS aided MSMEs in improving their asset quality



Source: ECLGS Insights Report', TransUnion CIBIL, August 2022

Electronics industry to be a key driver of manufacturing output and exports.

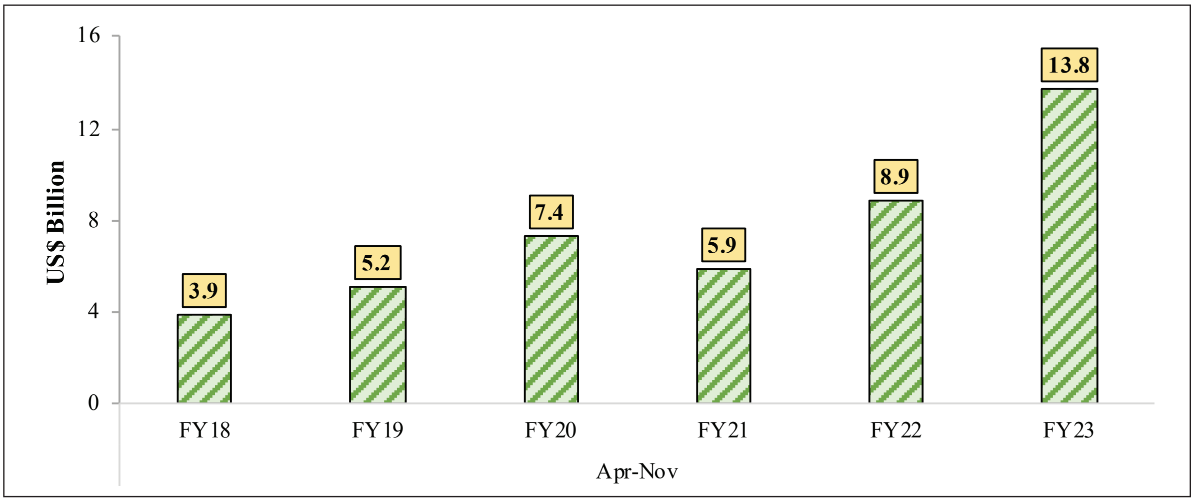
9.22 The electronics industry continues to ascend in importance as its applications become pervasive, particularly in the socio-economic development of a country. Electronics, supported by continuously improving communication services, will significantly enhance productivity, efficient service delivery, and social transformation. The domestic electronics industry, as of FY20, is valued at US$118 billion. India aims to reach US$300 billion worth of electronics manufacturing and US$ 120 billion in exports by FY26[3], supported by the vision of a US$ 1 trillion digital economy by 2025. Improvement in manufacturing and export over the past five years ensures that India is on the right trajectory to achieve this target. Electronic goods were among the top five commodity groups exhibiting positive export growth in November 2022, with the exports in this segment growing YoY by 55.1 per cent.

9.23 The major drivers of growth in this industry are mobile phones, consumer electronics, and industrial electronics. In the mobile phone segment, India has become the second-largest mobile phone manufacturer globally, with the production of handsets going up from six crore units in FY15 to 31 crore units in FY22. These numbers are expected to improve as more domestic and global players set up and expand their bases in India. Two major global and domestic players in electronic manufacturing services have already embraced the PLI scheme[4]. Participation in the

3 https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1792189
4 https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1885189

PLI scheme will help many more domestic players to attain economies of scale in production through localising. Hence, this will further enhance export competitiveness and increase India's participation in the global value chain. The industrial electronics sector is also seeing growth due to improved digitisation and robotics applications in Industry 4.0. Additionally, the impetus on Smart Cities and the Internet of Things (IoT) will streamline the demand for smart and automated electronics.

Figure IX.12: Robust growth in Electronics Exports



Source: DGCI&S

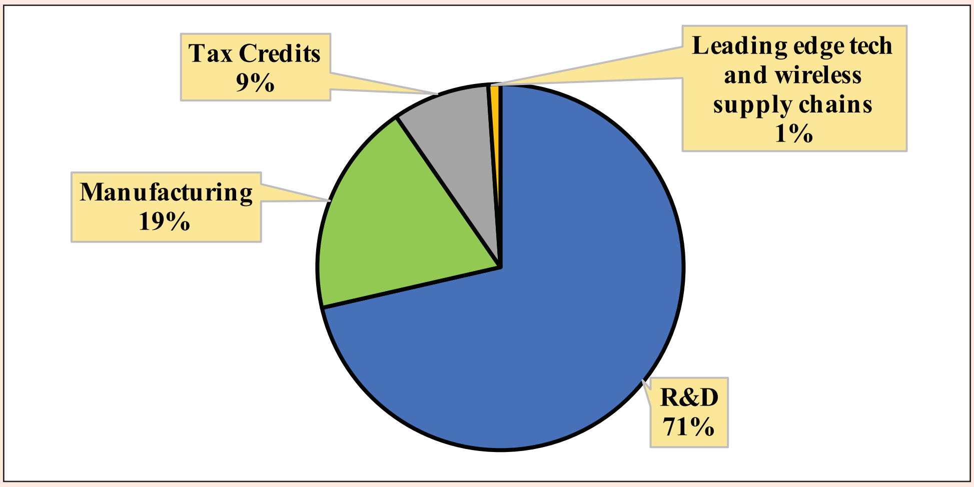
9.24 Some of the initiatives and incentives provided by the government to nurture and enhance the electronics manufacturing base include the PLI scheme for Large Scale Electronics Manufacturing, the PLI scheme for IT hardware, the Scheme for Promotion of Manufacturing of Electronic Components and Semiconductors (SPECS). Additionally, under the Programme for Development of Semiconductors and Display Manufacturing Ecosystem in India, the Cabinet approved the comprehensive development of a sustainable semiconductor and display ecosystem in the country with an outlay of ₹76,000 crore, the details of which are in Box 3. These schemes and initiatives are expected to boost India's manufacturing capacity, reduce import dependence, and also contribute to achieving the country's ambitions of becoming a major player in global supply chains.

Box IX.3: Incentives to encourage semiconductor manufacturing in the US and India

The global economic recovery from the Covid-19 pandemic exposed the frailties in the supply chains of many goods and services. One product that was under the spotlight was the semiconductor (more commonly referred to as 'chips'), and the effect of its shortage was particularly amplified in the automotive industry globally. While the situation has limped back to normalcy, it has prompted a policy response by countries towards diversifying the semiconductor supply chain.

One of the most notable policies is the United States' Creating Helpful Incentives to Produce Semiconductors and Science Act, 2022 (CHIPS and Science Act, 2022). The legislation aims to catalyse investments in the domestic semiconductor manufacturing capacity of the US. The country produces about 10 per cent of the world's semiconductors and relies heavily on East Asia to import chips. The CHIPS and Science Act directs US$ 280 billion in spending over the next ten years, with the bulk of it going to Research and Development (R&D).

Figure A: Incentives under the CHIPS and Science Act, 2022



Source: whitehouse.gov.in; McKinsey and Co.

In the pursuit of Aatmanirbharta and with the objective of plugging itself into the global value chain, India has announced multiple incentives to attract investment for developing a semiconductor manufacturing ecosystem. To this end, a comprehensive programme with an outlay of ₹76,000 crore (approx. US$ 10 billion) was approved by the Government of India in September 2022. The government will provide financial support for 50 per cent of the capital expenditure to be incurred by the investing firms.

Table A: Various incentives under Semiconductor Scheme

Scheme for	Financial Support	R&D Support
Setting up of Semiconductor Fabs in India	**50 per cent** of firm's Capex	Up to **2.5 per cent** of the scheme outlay
Setting up Display Fabs	**50 per cent** of firm's Capex	Up to **2.5 per cent** of the scheme outlay
Setting up of Compound Semiconductors / Silicon Photonics / Sensors Fab and Semiconductor ATMP /OSAT facilities	**50 per cent** of firm's Capex	Up to **2.5 per cent** of the scheme outlay

Source: MEITY

Note: ATMP stands for assembly, testing, marking, and packaging. OSAT stands for Outsourced Semiconductor Assembly and Test

Recognising that even though India possesses 20 per cent of the world's semiconductor design engineers but a minuscule share in the intellectual property (IP), the Government of India has also announced a Design Linked-Incentive (DLI) scheme. The scheme's objectives include the nurturing and facilitation of domestic companies of semiconductor design, achieving significant indigenisation of semiconductor products and IPs deployed across the country, and strengthening the infrastructure for design. The scheme will provide financial support of 50 per cent of eligible expenditure on the design, subject to a ceiling of ₹15 crore per applicant and a deployment-linked incentive of 4 per cent to 6 per cent of net sales achieved over five years, subject to a ceiling of ₹30 crore per applicant.

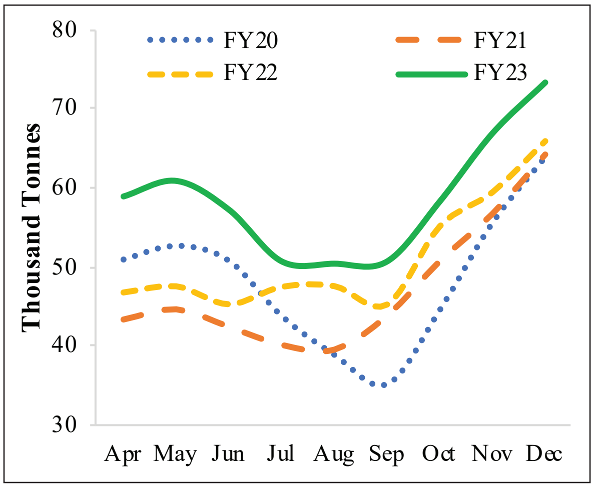
While these are early stages, global and domestic players have evinced interest based on the prospects for the semiconductor industry in India and the fiscal incentives provided. Israel-based International Semiconductor Consortium has signed a Memorandum of Understanding (MoU) to invest ₹ 22,900 crore in Karnataka to set up India's first chip-making plant. Domestic players such as Vedanta and Tata have also indicated plans to establish semiconductor fabs in the country.

CoaI Industry: Key in maintaining energy self-reliance during uncertain times

9.25 At the beginning of the fiscal year, coal availability became a challenge for India's largely thermal-based power generation plants because of a resurgence in economic activity and the emergence of intense heat waves from early March to mid-May of 2022, increasing the demand for power in the country. In addition, in the wake of rising international coal prices, the power sector curtailed coal import drastically from 69 MT in FY20 to 45 MT in FY21 and further to 27 MT in FY22. As domestic coal production could not keep pace with its rising demand from power-generating plants, its availability got limited. Resultantly, in April 2022, even as coal offtake rose to meet higher demand, coal stock with power plants, as on 31st April 2022, fell to 8 days from 12 days a year ago.

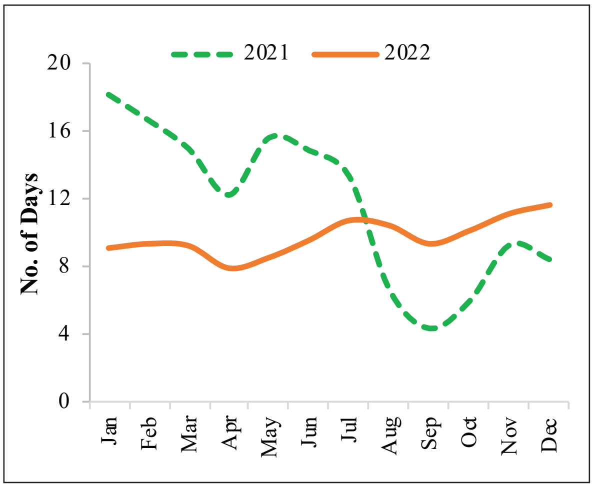
9.26 The government of India undertook several steps on a priority basis through April and May of 2022 to address the supply constraints of coal. First, all generators were asked to import coal to the extent of 10 per cent of their requirements (as against 4 per cent earlier). Penalties, including curtailment of domestic coal entitlements, were announced if power plants failed to import coal. Second, Section 11 of the Electricity Act 2003 (Act) was invoked to direct imported coal-based plants to run at full capacity with the assurance that their enhanced cost of operation would be compensated. Third, tolling was enabled, which allowed states to transfer their allotted coal to private generators near the mines instead of transporting it too far away from state generators. This move eased the burden on the availability of railway rakes. Fourth, Rural Electrification Corporation (REC)/ Power Finance Corporation (PFC) and commercial banks were advised to facilitate the availability of additional working capital to power generating plants.

Figure IX.13: Adequate Coal Production



Source: Ministry of Coal
Note: Production by Coal India Limited (CIL), Singareni Collieries Company Ltd (SCCL) and Captives/Others

Figure IX.14: Improving Coal Stock



Source: National Power Portal

9.27 Well-timed measures have placed India in a better position to cater to excess energy demand. The coal production for FY23 is estimated to increase to 911 million tonnes, about 17 per cent higher compared to the previous year. In April-December, 2022, coal production rose by 14 per cent on a YoY basis and was 21 per cent higher than the pre-pandemic of FY20. Further, the coal stock at power plants improved to 12 days as of 30 December 2022 compared to 10 days on 30 June 2022 and 8 days a year ago.

9.28 Different measures have been initiated towards achieving self-reliance in coal production, including private participation in coal production, FDI under the automatic route, auctioning of coal blocks for commercial production, expansion of existing mines and opening of new mines, greater use of mass production technology in mining, mechanisation of loading, development of evacuation infrastructure etc.

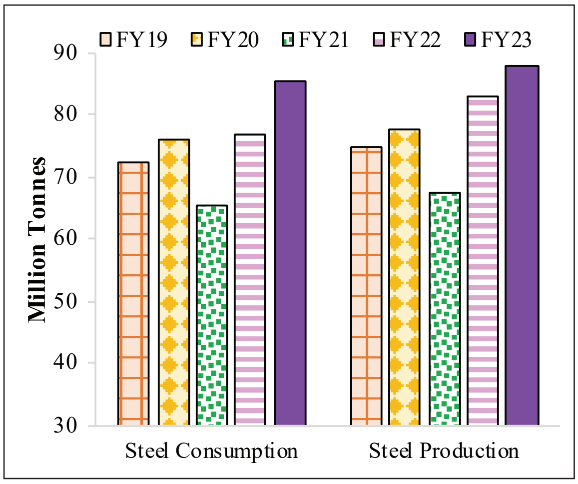
9.29 The coal industry is expected to grow at 6-7 per cent annually to reach a production level of 1 billion tonnes by FY26 and about 1.5 billion tonnes by 2030. The enhanced domestic coal production is expected to meet domestic coal demand, replace substitutable imports, and escalate exports. There has also been a persistent effort to improve system capacity utilisation from about 80 per cent to above 90 per cent.

Re-invigorated infrastructure sector & construction activity to drive steel industry.

9.30 Steel Sector plays a pivotal role in crucial sectors such as construction, infrastructure, automobile, engineering and defence. Over the years, the steel sector has witnessed tremendous growth. The country is now a global force in steel production and the 2nd largest crude steel producer in the world. The steel sector's performance in the current fiscal year has been robust, with cumulative production and consumption of finished steel at 88 MT and 86 MT, respectively, during April-December 2022, higher than the corresponding period during the previous four years. The growth in finished steel production is aided by double-digit growth in consumption (11 per cent on a YoY basis), bolstered by a pick-up in the infrastructure sector significantly driven by increased Capex of the government.

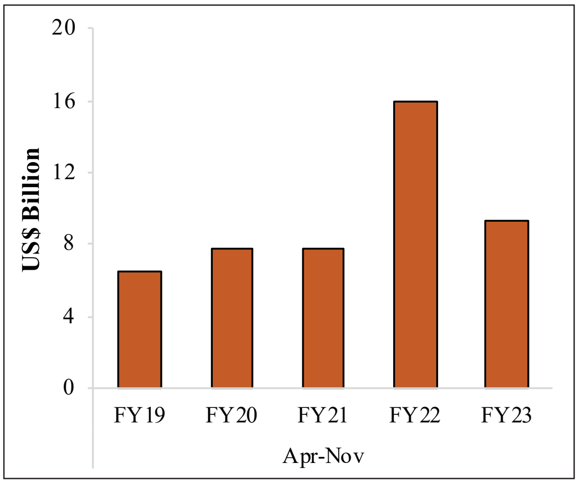
9.31 Further, 67 applications from 30 companies have been selected under the PLI Scheme for speciality steel. This will attract a committed investment of ₹42,500 crore, with an increase in capacity by almost 26 million tons and an employment generation potential of nearly 70,000 people. Further, domestic steel makers' stable credit profiles, deleveraged balance sheets, and robust cash accrual support continue to support their capex. Iron and steel exports moderated in the first eight months of the current fiscal owing to a slowdown in the global economy, particularly in Europe and China, and export duty levied to enhance domestic availability. Yet, iron and steel exports are higher by 20 per cent over the corresponding pre-pandemic levels of FY20.

Figure IX.15: Increasing Steel Production and Consumption (Apr-Dec)



Source: Joint Plant Committee (JPC), Ministry of Steel

Figure IX.16: A slight moderation in Iron and Steel Exports during FY23



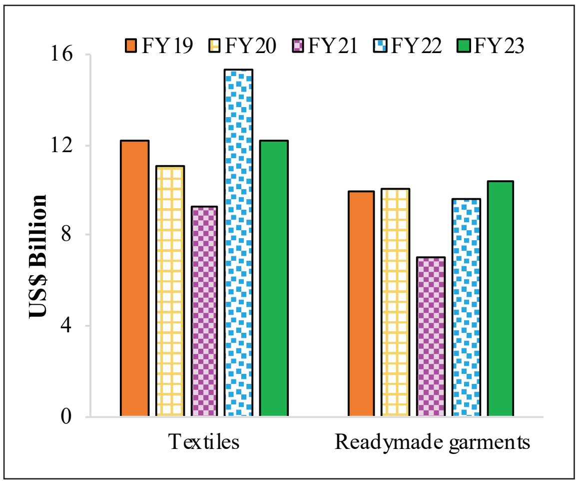
Source: DGCI&S

9.32 In the future, the government's thrust towards infrastructure projects, pick-up in construction and real estate activity, and healthy demand from the automobile sector augur well for the demand for steel products. However, export demand may remain subdued with the global slowdown.

Government support to help textile Industry weather current challenges.

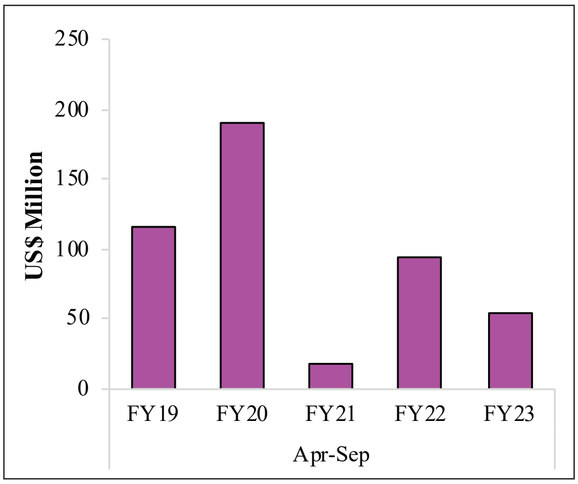
9.33 The Textile industry is one of the country's most significant sources of employment generation, with an estimated 4.5 crore people directly engaged in this sector, including a large number of women and the rural population. In the current financial year, the textile industry has been facing the challenge of moderating exports compared to FY22. However, the levels in the eight six months still prevail, 9.5 per cent higher than the corresponding pre-pandemic level of FY20. Export of readymade garments registered a growth of 3.2 per cent YoY basis during the same period. FDI inflows into the textile sector are yet to recover to pre-pandemic levels.

Figure IX.17: Export of Textiles moderated, while there is an uptick in Readymade Garment exports (April-Nov)



Source: Dept. of Commerce

Figure IX.18: FDI Equity inflows in Textile yet to Recover



Source: DPIIT

9.34 To develop integrated large-scale and modern industrial infrastructure facilities for the entire value chain of the textile industry, the government approved the setting up of seven PM Mega Integrated Textile Region and Apparel (PM MITRA) Parks. The parks will not only reduce logistics costs and improve the competitiveness of Indian Textiles but also boost employment generation, attract domestic investment and FDI, and position India firmly in the global textile market. The parks are expected to create a total of one lakh direct and two lakh indirect employment.

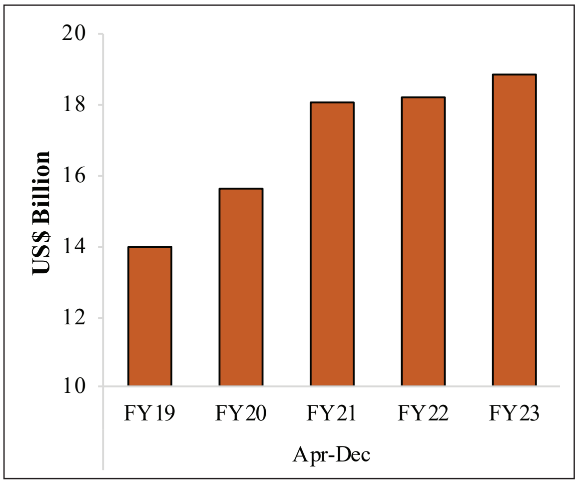
9.35 Further, to boost the production capacity, the government launched the Textile PLI Scheme with an approved outlay of ₹10,683 crore over five years starting from 1st January 2022 to promote investments and increase the production of Man-Made Fibre (MMF) Apparel, MMF Fabrics and Products of Technical Textiles. This will enable the textile sector to achieve size and scale, enhancing export competitiveness. In the approved 64 applications so far, the proposed total investment commitment is ₹19,798 crore, with projected turnover and employment generation of ₹1.9 lakh crore and 2.5 lakh, respectively.

Growth momentum in pharmaceuticals industry sustains after the pandemic

9.36 The Indian Pharmaceuticals industry plays a prominent role in the global pharmaceuticals industry. India's domestic pharmaceutical market is estimated at US$ 41 billion in 2021 and is likely to grow to US$ 65 billion by 2024 and is further expected to reach US$ 130 billion by 2030[5]. India is ranked 3rd worldwide in the production of pharma products by volume and 14th by value. The nation is the largest provider of generic medicines globally, occupying a 20 per cent share in global supply by volume, and is the leading vaccine manufacturer globally with a market share of 60 per cent.

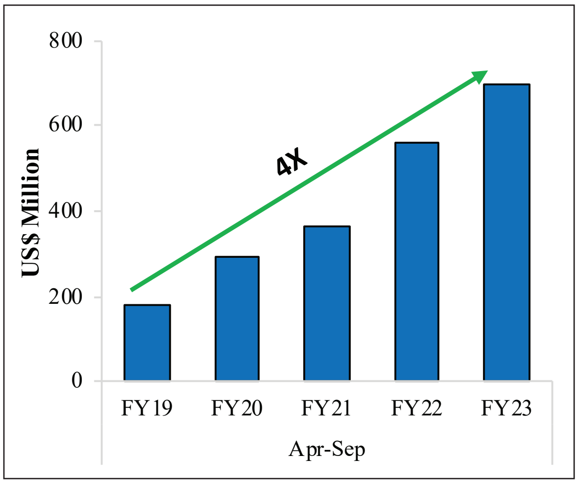
5 https://pib.gov.in/Pressreleaseshare.aspx?PRID=1660739

Figure IX.19: Strong growth in pharmaceutical exports



Source: DGCI&S

Figure IX.20: High inflow of FDI in the Pharma Sector



Source: DPIIT

9.37 Indian pharmaceutical exports achieved a healthy growth of 24 per cent in FY21, driven by Covid-19-induced demand for critical drugs and other supplies made to over 150 countries. The performance of pharma exports in FY22 has been robust, sustaining growth despite the global trade disruptions and drop in demand for Covid-19-related treatments. Carrying forward this growth momentum, drug and pharmaceutical exports during April-October 2022 was 22 per cent higher than the corresponding pre-pandemic period of FY20. Cumulative FDI in the pharma sector crossed the US$ 20 billion mark in September 2022. Further, FDI inflows have increased four-fold over five years until September 2022, to US$ 699 million, supported by investor-friendly policies and a positive outlook for the industry.

Figure IX.21: Three PLI Schemes to boost Manufacturing Capacity in the Pharmaceutical Sector

Critical KSMs/DIs/APIs

- **Tenure**:FY21 to FY30
- **Outlay**: ₹6,940 crore
- **Progress**: Until Dec 2022, 51 applicants approved with committed investment of ₹4,138.4 crore.
- **Employment**: Estimated employment generation from 51 projects is 10,598 persons.
- **Financial incentive**: NA

Medical Devices

- **Tenure**: FY21 to FY28
- **Outlay**: ₹3,420 crore
- **Progress**: Until Dec 2022, 21 applicants approved with committed investment of Rs 1,058.97 crore.
- **Employment**: Estimated employment generation from 21 projects of around 6,411 persons.
- **Financial incentive**: The financial incentive at the rate of 5 per cent on incremental sales of medical devices for 5 years.

Pharmaceuticals

- **Tenure**: FY21 to FY29
- **Outlay**: ₹15,000 crore
- **Progress**: Until June 2022, 55 applicants approved with actual investment of Rs 18,669 crore.
- **Employment**: Estimated employment generation from 55 projects : 20,000 direct and 80,000 indirect jobs.
- **Financial Incentive**: on incremental sales under various categories at varying rate over the years ranging from 10 per cent to 3 per cent.

Source: Department of Pharmaceuticals

9.38 The government has undertaken various measures to improve the infrastructural facilities of the pharma sector. The concerned scheme, Strengthening the Pharmaceutical Industry (SPI), was launched on 11th March 2022 with a total financial outlay of ₹500 crore for five years from FY22 to FY26 with multiple objectives. First, it aims to strengthen the existing infrastructure facilities by providing financial assistance to pharma clusters to create common facilities. Second, it upgrades the production facilities of MSMEs to meet national and international regulatory standards by providing interest subvention or capital subsidy on their capital loans. Third, it also promotes knowledge and awareness about the pharmaceutical and medical devices industry by undertaking studies, building databases and bringing industry leaders, academia and policymakers together to share their knowledge and experience.

India becomes the world's 3rd largest automobile market

9.39 The automobile sector is a key driver of India's economic growth. In December 2022, India became the 3rd largest automobile market, surpassing Japan and Germany in terms of sales. In 2021, India was the largest manufacturer of two-wheeler and three-wheeler vehicles and the world's fourth-largest manufacturer of passenger cars. The sector's importance is gauged by the fact that it contributes 7.1 per cent to the overall GDP and 49 per cent to the manufacturing GDP while generating direct and indirect employment of 3.7 crore at the end of 2021.

Figure IX.22: Rising Automobile Sales

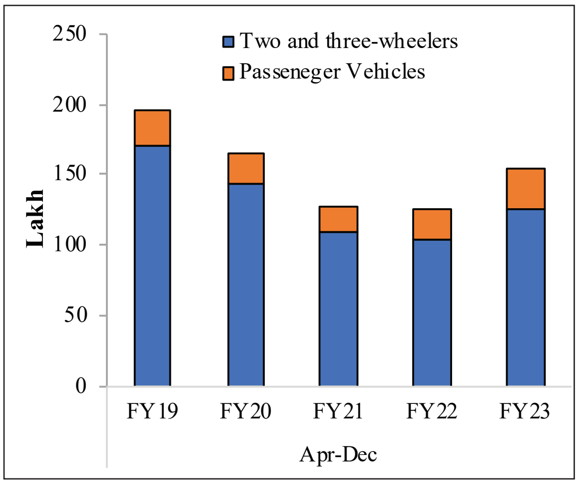
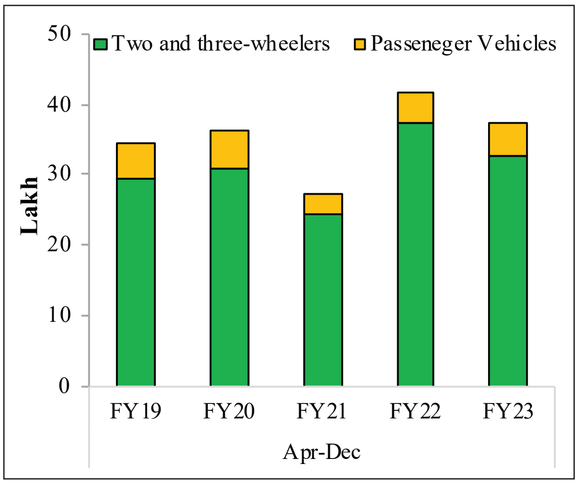


Figure IX.23: Moderation in Automobile exports amid weakening global demand

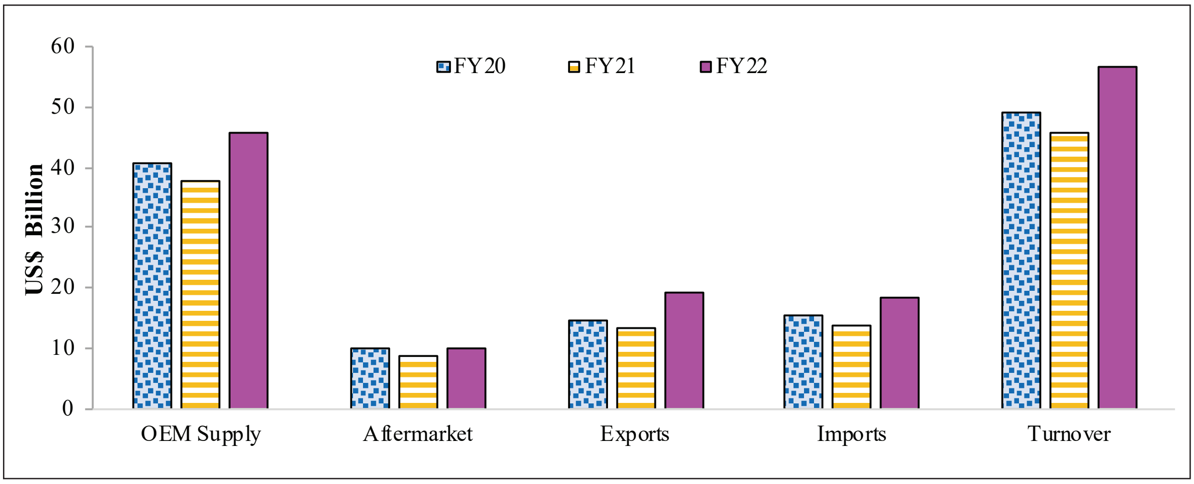


Source: Society of Indian Automobile Manufacturers (SIAM)

9.40 The automotive industry is expected to play a critical role in the transition towards green energy. The domestic electric vehicles (EV) market is expected to grow at a compound annual growth rate (CAGR) of 49 per cent between 2022 and 2030 and is expected to hit one crore units annual sales by 2030. The EV industry will create 5 crore direct and indirect jobs by 2030[6]. To support and nurture this development, the government has undertaken multiple steps.

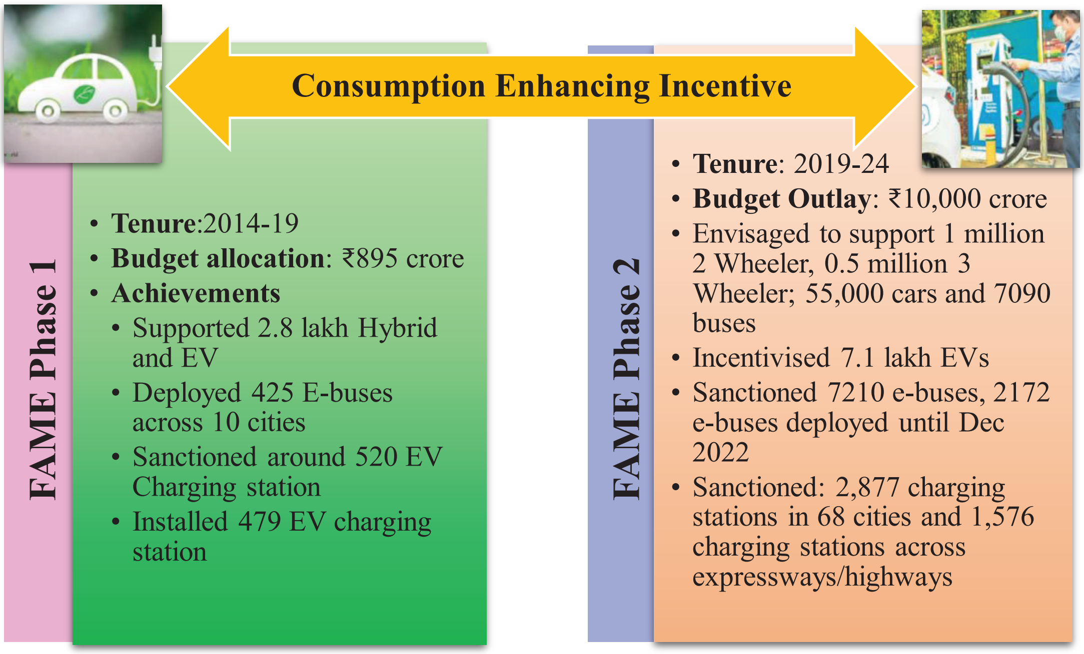
6 https://www.investindia.gov.in/team-india-blogs/electric-vehicle-ev-sector-india-boost-both-economy-and-environment

Figure IX.24: Rising Sales of auto components



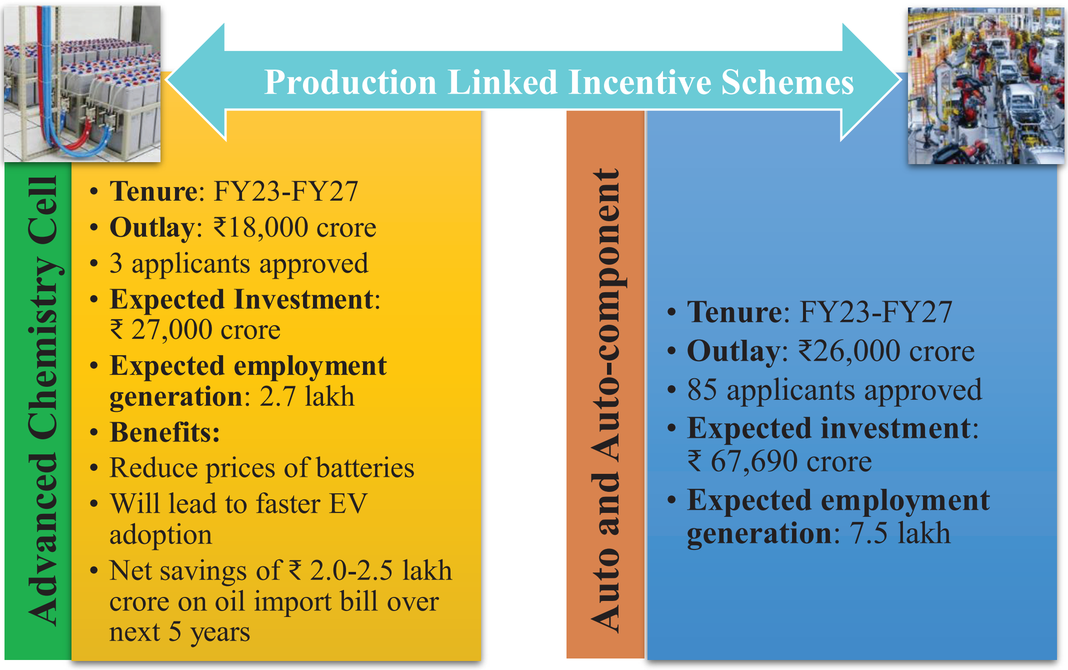
Source: Ministry of Heavy Industries
Note: OEM stands for Original Equipment Manufacture
Aftermarket means the market for spare parts, accessories, and components for motor vehicles.

Figure IX.25: Consumption Enhancing Incentive Schemes



Source: Ministry of Heavy Industries
Note: FAME stands for Faster Adoption and Manufacturing of Electric Vehicles

Figure IX.26: Production Linked Incentive Schemes



Source: Ministry of Heavy Industries

9.41 Despite the upbeat outlook, the automotive industry faces certain challenges. Higher borrowing costs and tempering global demand are expected to be near-term hurdles. Amongst structural issues, the increase in long-term third-party vehicle insurance premiums has increased the total upfront insurance cost by about 10-11 per cent, especially for two-wheelers. Therefore, the two-wheeler segment is the most affected and witnessed the lowest sales in the last ten years. Addressing these challenges will boost the automobile industry.

India's Prospects as a Key Player in the Global Value Chain

9.42 The risk of supply chain shocks has never been more palpable than today, following compounding crises from the US-China trade war, the Covid-19 pandemic, and the war in Ukraine. In this fast-evolving context, as global companies adapt their manufacturing and supply chain strategies to build resilience, India has a unique opportunity to become a global manufacturing hub this decade. The three primary assets to capitalise on this unique opportunity are the potential for significant domestic demand, the Government's drive to encourage manufacturing, and a distinct demographic edge, including a considerable proportion of the young workforce. The manufacturing sector in India is gradually shifting to more automated and process-driven manufacturing, which is expected to increase efficiency and boost the production of the industry. The 'Make-in-India' Initiative was launched in 2014 to make India a hub for manufacturing, design, and innovation. Since then, it has facilitated investment, fostered innovation and built world-class infrastructure. The progress made in infrastructure development is discussed in chapter 12 "*Physical and Digital Infrasturcture: lifting potential growth*".

Make in India 2.0 and the PLI schemes

9.43 To further enhance India's integration in the global value chain, 'Make in India 2.0' is now focusing on 27 sectors, which include 15 manufacturing sectors and 12 service sectors. Amongst these, 24 sub-sectors have been chosen while keeping in mind the Indian industries' strengths and competitive edge, the need for import substitution, the potential for export and increased employability. Efforts are on to boost the growth of the sub-sectors in a holistic and coordinated manner.

Figure IX.27: 24 Sub-Sectors under Make in India 2.0

Source: DPIIT

9.44 In pursuit of the objectives of the Make-in-India programme and with a vision to achieve Aatmanirbharta, the government launched the PLI scheme. The scheme is expected to attract a capex of approximately ₹3 lakh crore over the next five years. It has the potential to generate employment for over 60 lakh in India and increase the share of the manufacturing sector in total capital formation, which currently stands at around 17-20 per cent between FY12 and FY20. It is further believed that there will be a significant reduction in the trade deficit with domestic production substituting for imports. Sectors under which the PLI scheme has been announced currently constitute around 40 per cent of the total imports. The scheme, spread across 14 sectors, can enhance India's annual manufacturing capex by 15 to 20 per cent from FY23.

9.45 PLI Scheme across these key specific sectors is poised to make Indian manufacturers globally competitive, attract investment in the areas of core competency and cutting-edge technology; ensure efficiencies; create economies of scale; and make India an integral part of the global value chain. The scheme will benefit the MSME ecosystem in the country. The anchor units built in every sector will require a new supplier base in the entire value chain. Most of these ancillary units will be built in the MSME sector.

9.46 As of 31st December 2022, 717 applications have been approved under 14 Schemes. More than 100 MSMEs are among the PLI beneficiaries in sectors such as Bulk Drugs, Medical Devices, Telecom, White Goods and Food Processing. As per recent reporting from implementing Ministries/ Departments, around ₹47,500 crore (US$ 6 billion) of actual investment has been made; production/ sales of ₹3.85 lakh crore (US$ 47 billion) of eligible products and employment generation of around 3 lakh has been reported and 106 per cent achievement of actual investment reported versus the corresponding projections of FY22[7]. Key sectors such as Large-Scale Electronics Manufacturing, Pharmaceuticals, Telecom & Networking Products, Food Processing and White Goods have contributed considerably to investment, production, sales and employment.

9.47 Some of the latest developments under the PLI programme include the launch of a design-led PLI in June 2022 to promote the entire value chain in telecom manufacturing and to build a strong ecosystem for 5G as part of the PLI Scheme for Telecom & Networking products. Approvals under this Scheme have already been granted to eligible companies. In September 2022, the Cabinet recently approved PLI Scheme (Tranche II) on 'National Programme on High-Efficiency Solar PV Modules', with an outlay of ₹19,500 crore to build an ecosystem for manufacturing of high-efficiency solar PV modules in India, thus reducing import dependence in the area of renewable energy.

Box IX.4: Shipbuilding Sector: Achieving Self-Reliance and promoting Make in India

The Shipbuilding industry is a strategically important industry due to its role in energy security, national defence and the development of the heavy engineering industry. It has the potential to increase the contribution of the industry and the services sector to the national GDP. With its immense direct and indirect linkages with most other leading industries, such as steel, aluminum, electrical machinery and equipment etc., and its huge dependence on infrastructure and services sectors of the economy, the shipbuilding industry has the potential to strengthen the mission of an 'Aatmanirbhar' Bharat. The Indian Navy (IN) shipbuilding projects currently in progress at various Indian shipyards are poised to provide the requisite impetus to the industry. With the objective to achieve strategic independence in shipbuilding and development of niche technology, as of date, more than 130 IN warships have been constructed at Indian shipyards, and presently, 41 of 43 ships and submarines are being constructed at various public and private sector Indian shipyards. These initiatives, through various channels, are contributing to economic growth and employment in the country.

Boost to Ancillary Industry

Shipbuilding with its links to other ancillary industries, including steel, engineering equipment, port infrastructure, trade and shipping services has the potential to create a collaborative production eco-system. With the development of these ancillary industries, the sector generates opportunities for smaller businesses and strengthens supply chain networks. It is noteworthy that a significant proportion of value addition, approximately 65 per cent, in the construction of a ship is derived from manufacturers of shipboard materials, equipment, and systems.

Significant Investment and Employment Generation Multiplier Effects

Based on International shipbuilding statistics, if one takes a conservative Marginal Consumption to GDP Ratio (MCGR) of 0.45 for the shipbuilding sector, the investment multiplier would be approx. around 1.82. For example, an injection of approx. ₹1.5 lakh crore in naval shipbuilding projects would accrue a circulation of ₹2.73 lakh crore in the shipbuilding sector due to the multiplier effect.

Among manufacturing activities, shipbuilding has one of the highest employment multipliers of 6.4[8]. It is capable of generating mass employment in remote, coastal and rural areas, thereby

7 https://www.pib.gov.in/PressReleseDetailm.aspx?PRID=1884181
8 https://pib.gov.in/Pressreleaseshare.aspx?PRID=1593424

absorbing the labour migrating from agricultural pursuits to manufacturing facilities established by shipyards and their ancillary industries. The Indigenisation initiatives implemented by the IN have resulted in a significant infusion of economic activity by creating employment opportunities for MSMEs and other industries. For instance, the recently commissioned INS Vikrant alone engaged approximately 500 MSMEs, 12,000 employees from ancillary industries, and 2,000 shipyard employees.

Further, a study undertaken by the IN for the construction of seven P17A ships reveals that around three-fourths of the total project cost of warships is invested back into the Indian economy. This investment is ploughed back into the economy through indigenous sourcing of raw materials, development of equipment and systems installed onboard ships and other manpower services.

Besides benefiting the ancillary industries and creating massive employment opportunities, an indigenous shipping and shipbuilding industry can also reduce freight bills and forex outgo, thereby reducing the current account deficit.

Thus, we see that the strong forward and backward linkages of the shipbuilding sector play an important part in the creation of a self-relient India.

Fostering Innovation

9.48 The government's efforts towards fostering innovation include incubation, handholding, funding, industry-academia partnership and mentorship. The government has also strengthened its IPR regime by modernising the IP office, reducing legal compliances and facilitating IP filing for start-ups, women entrepreneurs, small industries and others. This has resulted in a 46 per cent growth in the domestic filing of patents over 2016-2021, signalling India's transition towards a knowledge-based economy.

9.49 These measures have begun to pay dividends. The Global Innovation Index (GII) ranks the countries based on innovation performance, comprising around 80 indicators, including measures on the political environment, education, infrastructure and knowledge creation of each economy. As per the GII 2022 report, India entered the top 40 innovating countries for the first time in 2022 since the inception of the GII in 2007 by improving its rank from 81 in 2015 to 40 in 2022. Further, India became the most innovative nation in the lower middle-income group overtaking Vietnam (48th) and leading the Central and Southern Asia region.

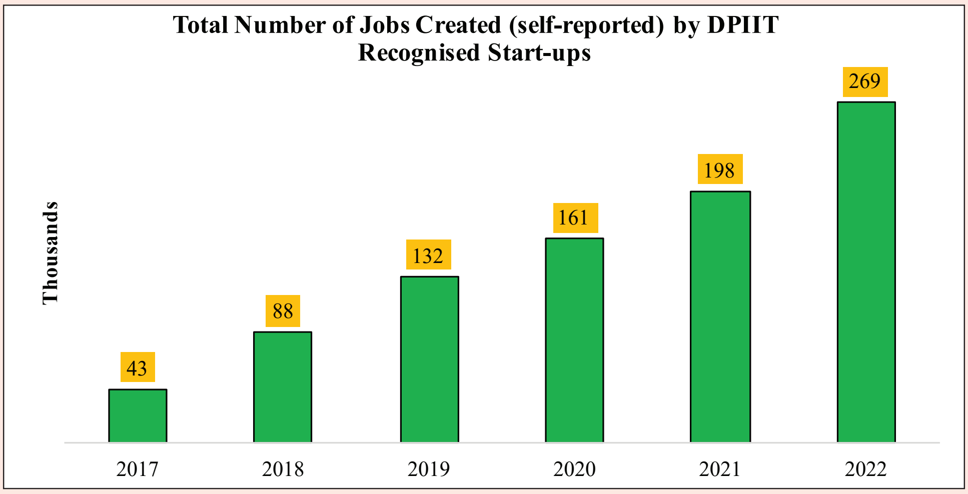
Box XI.5: 'Flipping and Reverse Flipping: the recent developments in Start-ups'

India ranks amongst the largest startup ecosystems in the world. An impressive 9 lakh+ direct jobs have been created by the DPIIT recognised startups (self-reported), with a notable 64 per cent increase in 2022 over the average number of new jobs created in the last three years. About 48 per cent of our startups are from Tier II & III cities, a testimony of our grassroots' tremendous potential.

Various targeted initiatives of the Government have given a major boost to start-ups. For instance, under the **Start-up India Initiative**, eligible companies get recognised as Start-ups by DPIIT to access a host of tax benefits, easier compliance, and IPR (Intellectual Property Rights) fast-tracking. As part of the umbrella schemes of the **National Initiative for Developing and Harnessing Innovations (NIDHI)** and **Atal Innovation Mission (AIM)**, entrepreneurship and innovation are fostered across the start-up ecosystem in the country. The Fund of Funds for Start-ups (FFS) and Credit Guarantee

Scheme for Start-ups (CGSS) support seed funding and successive credit needs. The R&D platform for technology sectors is offered by schemes such as MeitY Start-up Hub (MSH) and **Technology Incubation and Development of Entrepreneurs (TIDE 2.0)**, among others. Engaging Indian start-ups with global peers is another essential pillar of Start-up India and is facilitated through Government-to-Government partnerships, participation in international forums, and hosting of global events. Further, the **Support for International Patent Protection in E&IT (SIP-EIT)** Scheme encourages international patent filing by Indian MSMEs and start-ups[9].

Figure A: Jobs created by Start-ups



Note: Data as on 17th January 2023

While external support from the government has made it relatively easier than before for entrepreneurship to thrive, there are several inherent challenges faced by start-ups. Be it ever-elusive funding, revenue generation struggles, lack of easy access to supportive infrastructure, or wading through the regulatory environment and tax structures. It has also been observed that many Indian companies have been getting headquartered overseas, especially in destinations with favourable legal environments and taxation policies. The technical jargon for this may be identified as '**Flipping**', which is the process of transferring the entire ownership of an Indian company to an overseas entity, accompanied by a transfer of all IP and all data hitherto owned by the Indian company. It effectively transforms an Indian company into a 100 per cent subsidiary of a foreign entity, with the founders and investors retaining the same ownership via the foreign entity, having swapped all shares.

Typically, "Flipping" happens at the early stage of the Start-ups, driven by commercial, taxation and personal preferences of founders and investors. Some companies decide to "Flip" because the major market of their product is offshore. Sometimes, investor preferences like access to incubators drive the companies to "Flip" as they insist on a particular domicile. Some companies prefer to domicile in countries where they would like to access Capital Market later for better valuations and ticket size. Better protection and enforcement of IP and tax treatment of Licensing revenue from IP, residential status of Founders, and agile corporate structures have been the reasons for "Flipping" in the Past.

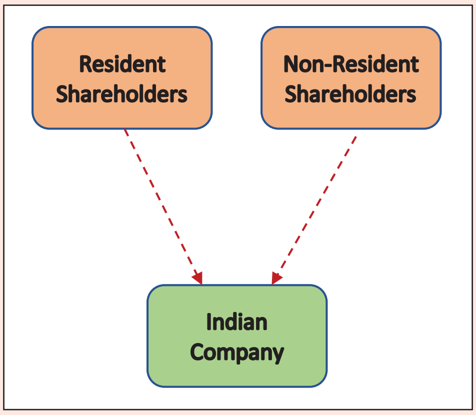
In popular holding company jurisdictions like **Singapore**, dividends received from a Singaporean company/subsidiary are not taxed at the holding level. There are no withholding taxes when

9 Source: PIB https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1884256, https://pib.gov.in/PressReleaseIframePage.aspx-?PRID=1884069#:~:text=PLI%20Scheme%20extends%20an%20incentive,2020

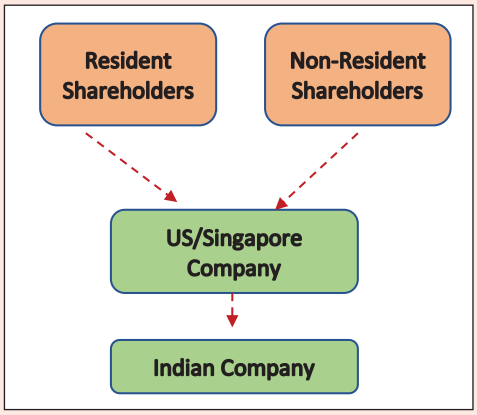
distributing dividends to residents or non-resident shareholders. This is a critical component since the dividend is one of the most popular repatriation tools. There are no withholding taxes in the United Arab Emirates **(UAE)** under current legislation. These jurisdictions have tailor-made their policies and tax and incentive structures to incentivise companies to store IPs and create Holding companies as Regional Headquarters. European jurisdictions, such as the **Netherlands**, provide for participation exemptions on dividends and capital gains (based on certain shareholding thresholds, i.e., 5 per cent and other tests). These exemptions are currently unavailable in India, and any migration of existing structures to India triggers capital gains tax. However, of late, with relatively easy access to Capital through a vibrant Private Equity/Venture Capital Ecosystem, changes in rules regarding round-tripping, and the growing maturity of India's capital markets have not only slowed down the Flipping, but companies are also exploring "Reverse Flipping".

Figure B: Effect of Flipping on the structure of the company

Pre-Flipping



Post-Flipping



To accelerate 'Reverse Flipping', certain measures are possible, some of which are listed below:

i. Simplifying the process for grant of "Inter-Ministerial Board (IMB) certification" for Start-ups

ii. Further simplification of taxation of Employee Stock Options (ESOPs)

iii. Simplifying multiple layers of tax and uncertainty due to tax litigation

iv. Simplifying procedures for capital flows: Many countries, such as US and Singapore, have easier corporate laws, with lesser restrictions on the inflow and outflow of capital and treatment of Hybrid Securities

v. Facilitating improved collaboration and partnerships with established private entities to develop best practices and state-of-the-art start-up mentorship platforms

vi. Exploring the incubation and funding landscape for start-ups in emerging fields like social innovation and impact investment.

The flipping phenomenon mentioned above reflects start-ups venturing out for short-term gains in the dynamic, uncertain geopolitical world. However, the flip can be reversed with the collective action by the Government related regulatory bodies and other stakeholders. With solution-oriented strategies, start-ups will continue to be the messengers of India's entrepreneurial dynamism.

Structural reforms have enhanced the Ease of Doing Business

9.50 The 'Make in India' initiative has been striving to ensure that the business ecosystem in the nation is conducive for investors doing business in India and contributing to the growth and development of the Nation. This has been done through various reforms that have led to increased investment inflows and economic growth. The reform measures include amendments to laws and liberalisation of guidelines and regulations to reduce compliance burdens, bring down costs and enhance the ease of doing business in India. Burdensome compliances with rules and regulations have been reduced through simplification, rationalisation, decriminalisation, and digitisation. Steps to promote manufacturing and investments include reduction in corporate taxes, public procurement and Phased Manufacturing Programme.

9.51 The DPIIT's Business Reform Action Plan (BRAP) 2020 (fifth edition), based on the implementation of reforms by States/UTs, was released on 30th June 2022. It shows that 7,496 reforms were implemented across States and UTs as part of the BRAP 2020 assessment, thereby significantly enhancing the Ease of Doing Business across the country. Reducing the Compliance Burden (RCB) on businesses and citizens is a continuous exercise to leapfrog to the next level of governance excellence and improve Ease of Living. Ministries and States/UTs have reduced more than 39,000 compliances (as on 17th January 2023). Specifically, more than 3,500 provisions related to minor technical or procedural defaults have been decriminalised by Ministries and States/UTs based on details uploaded on DPIIT's Regulatory Compliance Portal as on 17th January 2023. Further, the NSWS was soft-launched in September 2021 to improve the ease of doing business by providing a single digital platform to investors for approvals and clearances. The portal is rapidly gaining traction amongst the investor community and, as of 10th January 2023, has about 4.3 lakh plus unique visitors. 81,000+ approvals have been facilitated through NSWS, and 43,000+ approvals are currently under process. The portal will progressively onboard more approvals and licenses based on user /industry feedback. This portal has integrated multiple existing clearance systems of the various Ministries/Departments of the Government of India and State Governments to enhance investor experience.

India and Industry 4.0

9.52 The advent of the fourth industrial revolution or industry 4.0 as it's commonly referred to, has begun. The transformation integrates new technologies such as cloud computing, IoT, machine learning, and artificial intelligence (AI) into manufacturing processes, leading to efficiencies across the value chain. While the adoption of these technologies in the Indian manufacturing sector is underway, large-scale adoption is yet to happen. However, an enabling environment is rapidly developing. In recent years, India has made significant strides in internet penetration which is one of the key requisites of industry 4.0. The push towards self-reliance in semiconductor technology and production will help India erect another pillar of this revolution – hyper-efficient processing technology.

9.53 The government is cognisant of the importance of industry 4.0 in achieving the goals of Aatmanirbharta and its ambitions of becoming a key player in global value chains. A few initiatives by the government include the SAMARTH (Smart Advanced Manufacturing and Rapid Transformation Hubs) Udyog Bharat 4.0 under the Ministry of Heavy Industries and Public Enterprises, which aims to encourage technological solutions to Indian manufacturing units through awareness programmes and demonstrations. Another initiative is the establishment of the Centre for Fourth Industrial Revolution in India in 2018, which looks to develop policy frameworks for emerging technologies.

Conclusion and Outlook

9.54 Despite global headwinds, industrial production expanded during FY23, backed by sustained demand conditions. The growth in bank credit has kept pace with industrial growth, with a sequential surge evident since January 2022. Credit to MSMEs has seen a significant increase in part, assisted by the introduction of the ECLGS. Amidst heightened global uncertainty, FDI in the manufacturing sector moderated in the first half of FY23. However, inflows stayed well above the pre-pandemic levels, driven by structural reforms and measures improving the ease of doing business, making India one of the most attractive FDI destinations in the world.

9.55 On the positive side, easing input cost pressures owing to a fall in international commodity prices augurs well for company margins. Capacity utilisation in the manufacturing sector has been rising. It bodes well for new investment activity in creating additional capacity. Credit growth in the industry has also increased remarkably, suggesting that prospects for Capex investments by companies are brighter. The PLI schemes are set to unlock manufacturing capacity, boost exports, reduce import dependence and lead to job creation for both skilled and unskilled labour. On the downside, exports are slowing down and are likely to moderate along with the probable global economic slowdown. Volatile international commodity prices and supply disruptions in raw materials can weigh on industrial growth in the wake of new disruptions at the global level. The re-emergence of Covid-19 in China can trigger supply chain disruptions, as was the case during the pandemic period. On the other hand, if China returns to normalcy from Covid-19, there can be an increase in commodity demand - thus reversing the recent decline in commodity prices. Of course, the strength and duration of the recovery in commodity prices will be a function of many factors, such as the pace of China's economic recovery and growth outlook in North America and Europe. Notwithstanding such open questions, industrial output in India should continue to grow steadily based on resilient domestic demand.

SERVICES: SOURCE OF STRENGTH

10

CHAPTER

India's services sector witnessed a swift rebound in FY22 driven by growth in the contact-intensive services sub-sector, which bore the maximum burden of the pandemic. This sub-sector completely recovered from the pre-pandemic level in Q2 of FY23, driven by the release of pent-up demand, ease of mobility restriction, and near-universal vaccination coverage. Going forward, strong momentum growth and an uptick in the High-Frequency Indicators (HFIs) for the contact-intensive services sector reflect a strong growth opportunity in the next fiscal. PMI services, indicative of service sector activity, has also witnessed a strong rebound in recent months with the retreating of the price pressures of inputs and raw materials.

India has been a major player in services trade, being among the top ten services exporting countries in 2021, having increased its share in world commercial services exports from 3 per cent in 2015 to 4 per cent in 2021. India's services exports have remained resilient during the Covid-19 pandemic and amid current geopolitical uncertainties, driven by higher demand for digital support, cloud services, and infrastructure modernisation catering to new challenges.

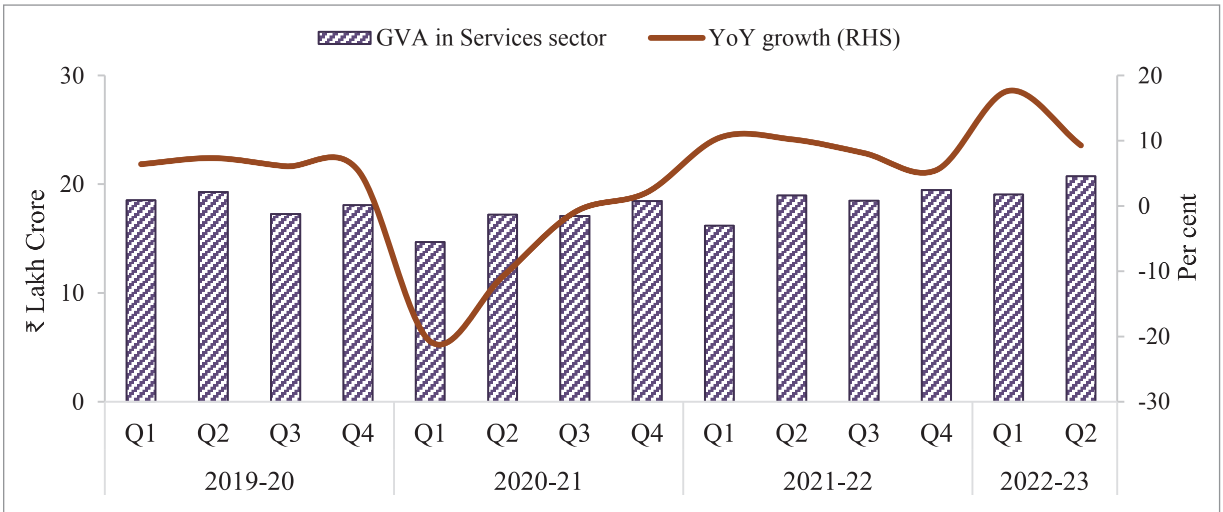
To ensure the liberalisation of investment in various industries, the Government has permitted 100 per cent foreign participation in telecommunication services including all services and infrastructure providers, through the Automatic Route. The FDI ceiling in insurance companies was also raised from 49 to 74 per cent. Measures undertaken by the Government, such as the launch of the National Single-Window system and enhancement in the FDI ceiling through the automatic route, have played a significant role in facilitating investment.

With the waning of the pandemic and external shocks on account of the Russia-Ukraine conflict, there is evidence of improvement in the performance of various services sub-sectors. The hotel industry is thriving with improvements in occupancy rate, increase in the Average Room Rate (ARR) and rise in Revenue Per Available Room (RevPAR) which are now much nearer to the pre-pandemic level of FY20. The tourism sector is also showing signs of revival, with foreign tourist arrivals in India in FY23 growing month-on-month with the resumption of scheduled international flights and the easing of Covid-19 regulations. The Real Estate sector has witnessed resilient growth in the current year, with housing sales and the launch of new houses surpassing in Q2 of FY23 the pre-pandemic level of Q2 of FY20. Information Technology-Business Process Management (IT-BPM) and the E-commerce industry have been exceptionally resilient during the Covid-19 pandemic, driven by accelerated technology adoption and digital transformation. The Government's push to boost the digital economy, growing internet penetration, rise in smartphone adoption and increased adoption of digital *payments have also given a renewed push to these industries. The introduction and piloting of Central Bank Digital Currency (CBDC) will also provide a significant boost to digital financial services. They may lay the framework for another generation of financial innovation.*

Introduction

10.1 The Covid-19 pandemic hurt most sectors of the economy, with the effect particularly profound for contact-intensive services sectors like tourism, retail trade, hotel, entertainment, and recreation. On the other hand, non-contact services such as information, communication, financial, professional, and business services remained resilient. However, the services sector witnessed a swift rebound in FY22, growing Year-on-Year (YoY) at 8.4 per cent compared to a contraction of 7.8 per cent in the previous financial year. The improvement was driven by growth in the 'Trade, Hotel, Transport, Storage, Communication and Services related to broadcasting' sub-sector, which bore the maximum burden of the pandemic. The growth momentum has continued in FY23 as well. As per the First Advance Estimates, Gross Value Added (GVA) in the services sector is estimated to grow at 9.1 per cent in FY23, driven by 13.7 per cent growth in contact-intensive services sector.

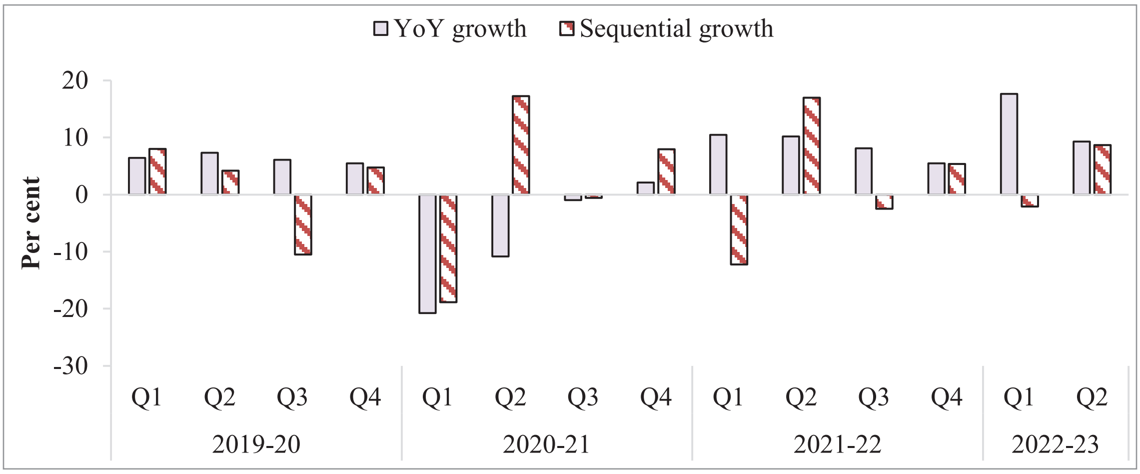
Figure X.1: Broad-based growth in the Services sector



Source: NSO, MOSPI

10.2 Even on a sequential basis, the rebound continued in Q2 of FY23, with the services sector recording 8.7 per cent sequential growth. The contact-intensive services sub-sector completely recovered the pre-pandemic level and registered sequential growth of 16 per cent, driven by the release of pent-up demand, ease of mobility restriction, and near-universal vaccination coverage. Going forward, the buoyant recovery of the contact-intensive services sector, accompanied by the robust performance of HFIs, suggests that the sector is likely to be the growth driver in the next fiscal.

Figure X.2: The services sector witnessed strong growth momentum in Q2 of FY23.



Source: NSO, MOSPI

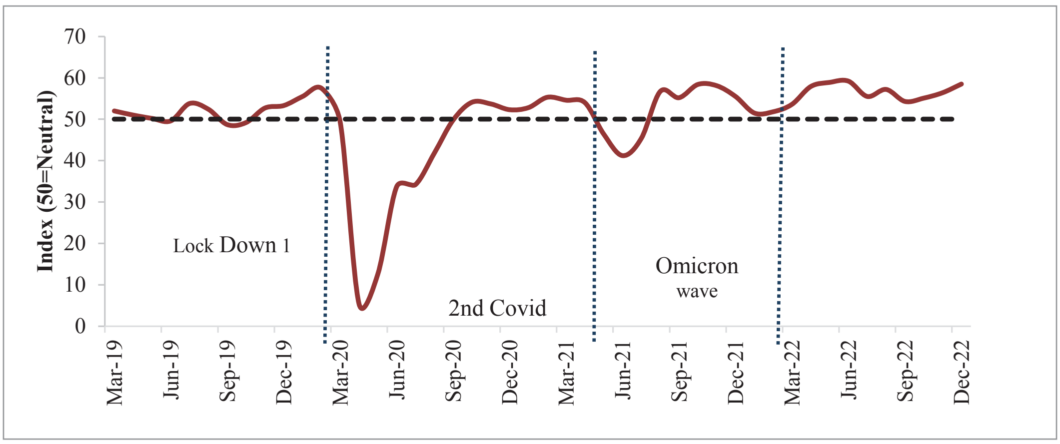
10.3 The following sections discuss the trend in various HFIs to track the growth momentum of the services sector as a whole and also discuss the performance of various services sub-sectors.

Trends in High-Frequency Indicators

Services PMI

10.4 India's services sector activity, gauged by PMI Services, which remained in the contractionary zone for several months during 2020 and 2021 on account of the restrictions imposed to tackle the Covid-19 pandemic, recovered swiftly with the waning of the Omicron variant at the beginning of 2022. However, PMI services again witnessed a setback with the outbreak of the Russia-Ukraine conflict. The indicator moderated from May to September 2022 as economic uncertainty resulted in weaker sales growth and inflationary pressures restricting the upturn in business activity. Further, price pressures and unfavourable weather also dampened domestic demand. However, following an overall easing of retail inflation leading to retreating price pressures of inputs and raw materials, PMI services witnessed an uptick and expanded to 58.5 in December 2022.

Figure X.3: PMI Services remained in an expansionary zone despite geopolitical tensions

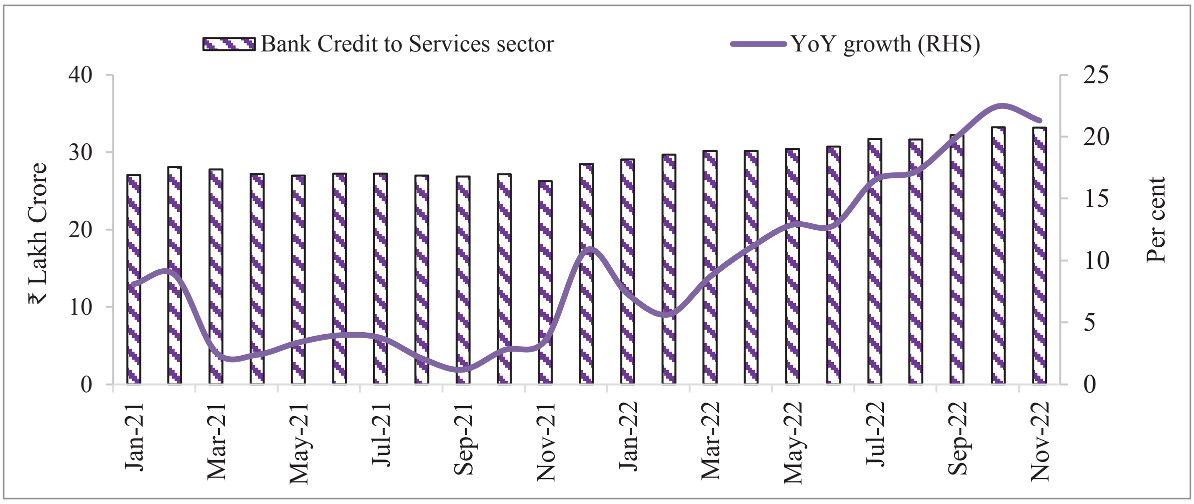


Source: IHS Markit

Bank Credit

10.5 Bank credit to the services sector has witnessed significant growth since October 2021 with the improvement in vaccination coverage and recovery in the services sector. The credit to services sector saw a YoY growth of 21.3 per cent in November 2022, the second highest in 46 months, compared to a 3.3 per cent growth in November 2021. Within the services sector, credit to wholesale and retail trade increased by 10.2 per cent and 21.9 per cent in November 2022, respectively, reflecting the strength of the underlying economic activity. Credit to NBFCs grew by 32.9 per cent as NBFCs shifted to bank borrowings because of high bond yields. Uncertain growth prospects in the global markets and uneven credit allocation to the transport sector led to a decline in credit to the shipping and aviation sector by 7.9 per cent and 8.7 per cent respectively in November 2022.

Figure X.4: Credit offtake by the services sector registering double-digit growth since April 2022



Source: RBI

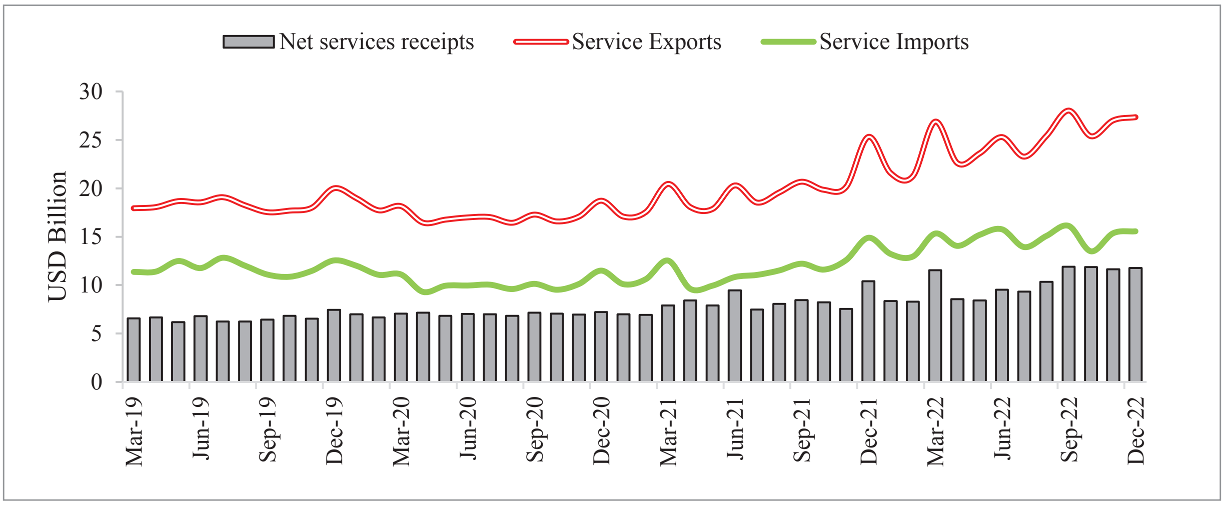
Services Trade

10.6 World services trade volume finally surpassed its pre-pandemic peak in the second quarter of 2022 and was expected to remain strong in the third quarter, buoyed by spending on travel, Information and Communication Technology (ICT) services, and financial services. However, WTO's Services Trade Barometer Index reading fell to 98.3 for October 2022 (slightly below its baseline value of 100), well below the previous reading of 105.5 in June 2022 indicating that YoY growth in real commercial services began moderating in the third quarter of 2022 and may slow further in the fourth as well as into the first quarter of 2023 due to declining growth prospects in major service industry economies. Financial and ICT Services have been so far most resilient to the slowing global economy, whereas, construction services and container shipping fell into contraction territory.

10.7 Insofar as India is concerned, some headwinds may be observed in the coming months because of the slowing growth in some of India's major trading partners. On the contrary, India's services exports may improve as runaway inflation in advanced economies drives up wages and makes local sourcing expensive, opening up avenues for outsourcing to low-wage countries, including India. India is a significant player in services trade, being among the top ten services exporter countries in 2021, having increased its share in world commercial services exports from 3 per cent in 2015 to 4 per cent in 2021. A further increase in the share is likely, with the services exports registering growth of 27.7 per cent during April-December 2022 as compared to 20.4 per cent in the corresponding period last year.

10.8 Among services exports, software exports have remained relatively resilient during the Covid-19 pandemic as well as amid current geopolitical uncertainties, driven by higher demand for digital support, cloud services, and infrastructure modernisation catering to new challenges. Transport and travel exports have been the most impacted sub-components of the services exports in FY21 and FY22, which contracted due to the imposition of restrictions on international travel and tourism during the Covid-19 pandemic. If there is a meaningful economic slowdown in advanced nations, tourism and travel earnings in FY24 may be on the lower side.

Figure X.5: Services Exports remained resilient amid geopolitical uncertainties.



Source: RBI

Foreign Direct Investment (FDI) in Services

10.9 The World Investment Report 2022 of UNCTAD places India as the seventh largest recipient of FDI in the top 20 host countries in 2021. In FY22 India received the highest-ever FDI inflows of US$ 84.8 billion including US$ 7.1 billion FDI equity inflows in the services sector. To facilitate investment, various measures have been undertaken by the Government, such as the launch of the National Single-Window system, a one-stop solution for approvals and clearances needed by investors, entrepreneurs, and businesses. To ensure the liberalisation of investment in various industries, the Government has permitted 100 per cent foreign participation in telecommunication services, including all services and infrastructure providers, through the Automatic Route. The FDI ceiling in insurance companies was also raised from 49 to 74 per cent, under Automatic Route. Further, Government has allowed 20 per cent foreign investment in Life Insurance Corporation (LIC) under the automatic route.

Box X.1: Initiatives in the Insurance Sector by the Insurance Regulatory and Development Authority of India (IRDAI) in FY23[1]

The Indian Insurance sector is at an inflexion point. India will be one of the main drivers of global insurance industry growth over the next decade. Indian Insurance Market is the 10th largest in the world and is poised to become the 6th largest by 2032, ahead of Germany, Canada, Italy, and South Korea[2]. The insurance regulator, IRDAI, has taken up the mission of universal insurance, which is expected to lead to a significant increase in insurance penetration such that, when India celebrates 100 years of its independence in 2047, every Indian has appropriate life, health, and property insurance cover and every enterprise is supported by appropriate insurance solutions. Towards this objective, the insurance regulator has taken various steps to promote healthy growth of the insurance industry, rationalise the regulatory framework, and reduce the compliance burden of regulated entities.

In line with the Government of India's vision towards Financial Inclusion and a strong emphasis on accelerating reforms, IRDAI, during FY23, has implemented the following measures to increase accessibility, innovation, competition, distribution efficiency, and choice availability while mainstreaming technology and moving towards principle-based regime: -

i. **Easy entry into the insurance sector:** A Single Window NOC Portal (www.noc.irdai.gov.in) was launched to facilitate the incorporation of an insurer by making the NOC available in a hassle-free and timely manner.
ii. **Quick launch of Insurance Products:** Insurers can now launch all Health & General Insurance products, as well as the majority of Life Insurance products, without seeking prior approval from IRDAI, thereby reducing the time taken to launch a new product in the market from a few months to a few days.
iii. **Ease of doing business:** IRDAI has taken several actions to lessen the burden of compliance. In this direction, so far, 70 returns have been rationalised, and about 85 circulars have been repealed while dispensing with the prior approval requirements in certain identified areas.
iv. **Providing further impetus to the industry:** Given that the sector has reached a level of maturity that may not necessitate closer supervision, more flexibility to the regulated entities in the areas of operational and business decisions is being considered.
v. **Addressing dynamic needs of the industry:** IRDAI has facilitated various measures as per the evolving needs of the sector, such as Tech-based add-ons (General insurers have been permitted to introduce tech-enabled concepts for Motor Insurance such as Pay as You Drive, Pay How You Drive, etc.), expansion in the scope of the cashless facility in health insurance, Innovative products in Fire Insurance, Ease of living for Senior Citizen.

Major Services: Sub-Sector-Wise Performance

Tourism and Hotel Industry

10.10 The post-pandemic scenario of global tourism is gradually converging to the pre-pandemic one. With travel restrictions and health concerns subsiding, tourism has become a vital driver of a strong upswing in contact-intensive activity. As per the World Tourism Barometer of the United Nations World Tourism Organisation (November 2022), international tourism showed robust performance in January-September 2022, with international tourist arrivals reaching 63 per cent of the pre-pandemic level in the first nine months of 2022, boosted by strong pent-up demand, improved confidence levels and the lifting of restrictions. The pace of recovery would have been even stronger but for the lingering global uncertainties and higher inflation in advanced nations.

[1]Until October 2022
[2]Sigma Report (No 4/2022) by Swiss Re (Page no 15)

10.11 The Covid-19 pandemic affected the fortunes of the hospitality and tourism industries in recent years. The hotel industry closed the year 2020 with an average hotel occupancy rate of 33-36 per cent, reflecting a decline of 32 per cent[3]. In the wake of falling demand and occupancies, hotels reduced tariffs significantly to attract business, thus, pulling down Revenue per Available Room (RevPAR) to a dismal low of ₹1,500 - ₹1,800, a decline of around 57-59 per cent. However, hotel occupancy began a strong recovery in the third quarter of 2021[4], driven by domestic leisure travel growth, partial resumption of business travel in the country, as well as wedding and social events. Small-to-medium-sized domestic MICE (Meetings, Incentives, Conference, Exhibitions) events also made a comeback, fuelling demand for hotels. The sector ended the year with an average occupancy of 42-45 per cent, up 10-13 percentage points over the previous year.

10.12 The reintroduction of travel restrictions across States at the beginning of 2022 due to the emergence of a new Covid-19 strain, Omicron, again threw the Indian hospitality sector into an upheaval. Other leisure and business travel plans were put on hold, barring critical and urgent travel as people exercised caution. The low demand resulted in an average hotel occupancy rate of 50 per cent during January-March 2022. However, due to the lower severity and hospitalisation rate of the Omicron variant, travel demand in India began its return to normalcy in March 2022. Aiding the revival of travel demand was the high vaccination rate in the country, as also effective pandemic management that ensured speed in imposing as well as the lifting of mobility restrictions closely tracking the spread and subsiding of the virus. After a two-year hiatus, India also resumed all regular international flights at full capacity as 2021-22 came to a close. Consequently, the entire aircraft movement (cargo aircraft + passenger aircraft) in the country increased by 52.9 per cent YoY between April and November 2022, reaching 93.9 per cent of the movement recorded between April and November 2019. Presently, the hotel industry is thriving with improvements in occupancy rate, an increase in Average Room Rate (ARR) and a rise in RevPAR[5]. The occupancy rate in November 2022 stood at around 68-70 per cent, completely recovering the average pre-pandemic level of 2019-20.

10.13 Tourism industry was another sector that was adversely impacted by the pandemic. A significant decline in Foreign Tourist Arrivals in India was witnessed in FY21. As per a study[6] conducted by the Ministry of Tourism in collaboration with the National Council of Applied and Economic Research (NCAER), Tourism Direct Gross Value Added (TDGVA) witnessed a decline of 42.8 per cent in Q1, 15.5 per cent in Q2, and 1.1 per cent in Q3 of FY21 due to the overall economic slowdown in FY21. Tourism being a contact-intensive sector, employment in the sector was impacted due to the lockdown, and it was a global phenomenon. 14.5 million direct jobs in Q1, 5.2 million in Q2, and 1.8 million in Q3 are expected to have been lost compared to an estimated 34.8 million direct jobs in the tourism sector in the pre-pandemic period of FY20.

10.14 However, with the waning of the pandemic, India's tourism sector is also showing signs of revival. Foreign tourist arrivals in India in FY23 have been growing month-on-month with the resumption of scheduled international flights and the easing of Covid-19 regulations. Yet, the arrivals are below the pre-pandemic level. Profitability ratios of the tourism industry further

[3]https://api.anarock.com/uploads/research/HVS%20ANAROCK%20Indian%20Hospitality%20Overview%202020.pdf
[4]https://api.anarock.com/uploads/research/HVS%20ANAROCK%20India%20Hotel%20Industry%20Overview%202021%20E-book.pdf
[5]https://api.anarock.com/uploads/research/HVS%20ANAROCK_H2O_DEC%2022.pdf
[6]https://tourism.gov.in/sites/default/files/2021-11/Tourism-Corona%20Report_Print%20version.pdf

point towards a strong rebound in the June 2022 quarter. In addition, with the resumption of corporate travel and flexible work arrangements, the rebound in MICE tourism and bleisure[7] travel is re-gaining popularity in India. With infrastructure amenities constantly improving, India is increasingly the preferred destination for MICE events.

Figure X.6: Hotel Occupancy Rate near the pre-pandemic level

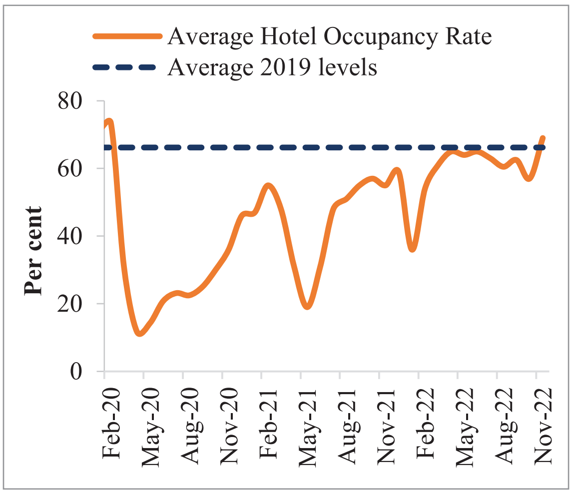
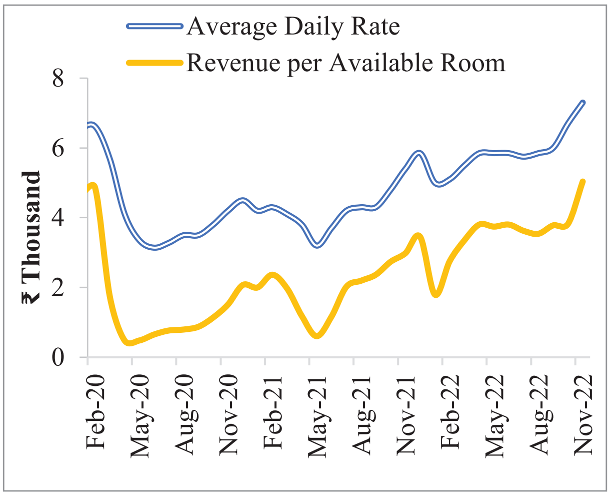


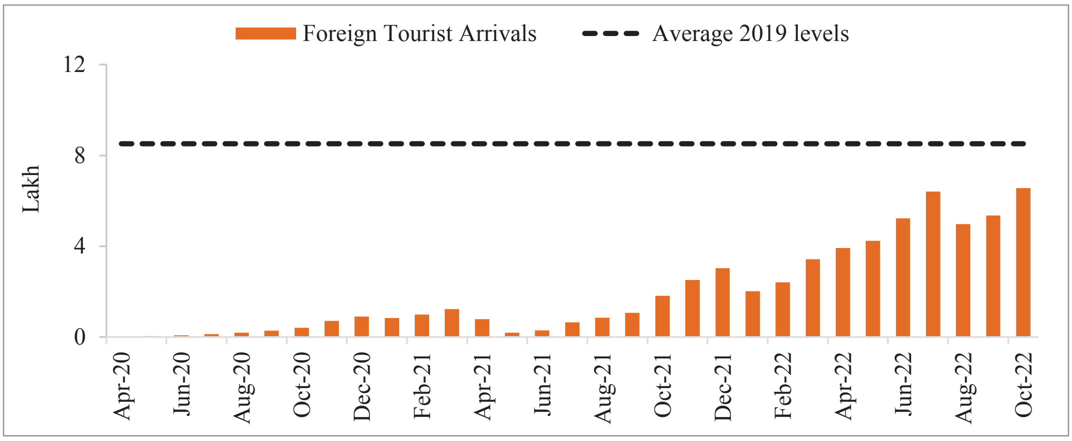
Figure X.7: Improvement in Average Daily Rate (ADR) and Revenue per Available Room (RevPAR)



Source: Anarock

10.15 India is ranked 10th out of the top 46 countries in the World in the Medical Tourism Index FY21 released by Medical Tourism Association. The way India has handled the Covid situation and also prepared itself for future shocks, trust in India's medical infrastructure has improved. This will give a big push to Medical Value Tourism (MVT) which is expected to grow to US$ 13 billion by 2022[8]. Several factors, such as the presence of world-class hospitals and skilled medical professionals, superior quality healthcare, low treatment costs compared with other countries, credibility in alternative systems of medicine, and increased global demand for wellness services like Yoga and meditation, make India a popular medical tourism destination.

Figure X.8: Foreign Tourist Arrivals (FTAs) in India are catching-up with the pre-pandemic levels



Source: Ministry of Tourism

[7]Bleisure is a term used to describe travel that combines both business and leisure

[8]https://www.niti.gov.in/sites/default/files/2022-02/AIM-NITI-IPE-whitepaper-on-Blended-Financing.pdf

10.16 India has also attempted to improve its attractiveness as a destination for specialised tourism. Recent initiatives like the Ayush visa for tourists who desire to visit India for medical treatment, the launch of the National Strategy for Sustainable Tourism & Responsible Traveller Campaign, the introduction of the Swadesh Darshan 2.0 scheme, and Heal in India can assist in capturing a larger share of the global medical tourism market. Going forward, the G20 presidency presents a unique opportunity for the Indian travel and tourism industry to take advantage of this chance to promote India as a "major tourism destination", which is likely to positively impact passenger travel and hotel occupancy rate.

Box X.2: Making India an attractive tourist destination

The Ministry of Tourism has undertaken various measures to boost the Tourism sector, which include: -

NIDHI: The Ministry of Tourism, with the help of State Governments and Union Territory Administrations, is making efforts to register accommodation units in the country in the Ministry's portal National Integrated Database of Hospitality Industry (NIDHI). The comprehensive national database will help in creating policies and strategies for the promotion and development of tourism at various destinations.

SAATHI: System for Assessment, Awareness, and Training for Hospitality Industry (SAATHI) was launched in association with the Quality Council of India to restrict any further transmission of the virus while providing accommodation and other services post-lockdown. The objective of the scheme is to sensitise the industry on the Covid-19 regulations of the government and instil confidence amongst the staff and guests that the hospitality unit has exhibited intent towards ensuring safety and hygiene at the workplace.

RCS UDAN3: Better connectivity is the critical component for flourishing tourism in any region. With this objective, the Regional Connectivity Scheme (RCS- UDAN) was launched by the Ministry of Civil Aviation to facilitate/stimulate regional air connectivity by making it affordable. The total number of Tourism RCS air routes has increased to 59, out of which 51 are presently operational. An amount of ₹104.19 core has already been reimbursed to the Airport Authority of India in the form of Viability Gap Funding (VGF) during FY21 and FY22.

LGSCATSS: Under the Loan Guarantee Scheme for Covid Affected Tourism Service Sector (LGSCATSS) administered through the National Credit Guarantee Trustee Company (NCGTC), working capital/personal loans are provided to households that were impacted due to the Covid-19 pandemic to discharge liabilities and restart businesses. The scheme was launched to cover 10,700 Regional Level Tourist Guides (recognised by the Ministry of Tourism), Tourist Guides (recognised by the State Governments/ UT Administration), and about 1,000 Travel and Tourism Stakeholders (TTS) (recognised by the Ministry of Tourism).

To boost the tourism sector, the first 5 lakh Tourists Visa were announced by the Government for tourists of foreign nationals visiting India. The scheme was applicable until 31st March 2022 or until 5 lakh free visas were issued, whichever is earlier. The benefit was available only once per tourist.

Real Estate

10.17 The onset of the Covid-19 pandemic accentuated a slowdown in every economic space, and the real estate sector was no different. Project delays, deferment of big-ticket purchases, stagnation of property prices, and scarce funding for developers induced slackening of demand. The situation was further aggravated by the associated lockdown and migration of workforces involved in the sector to their natives. The work-from-home model had an impact on the demand for office space requirements by the corporates.

10.18 The Pandemic, however, brought about a change in individual home buyers' sentiment in favour of owning a house. With the easing of curbs, there was an increase in interest in the residential housing sector and more so in the readily available and affordable segment. The hybrid work mode with the privileges of working from anywhere encouraged first-time home buyers to move away from the conventional metros, and this brought about a pent-up demand in the residential real estate markets of Tier II and III cities. Improvement in affordability in response to measures taken by the government during the pandemic, such as lower interest rates, reduction in circle rates, and cut in stamp duties on transaction of sale/purchase of immovable property, the extension of the Real Estate Regulation Act (RERA) also played a significant role in post-pandemic rebound of Real Estate sector.

Box X.3: Measures taken by the Government to boost the Housing sector

The various policy intervention by the government, including 'Housing for All', Aatmanirbhar Bharat, etc., provided an impetus to the Housing Finance sector. The permission by RBI to lending institutions to grant a total moratorium of 6 (3+3) months in case of payment failure due between 1st March 2020 to 31st August 2020, infusion of ₹75,000 crore for Non-Banking Financial Corporations (NBFCs), Housing Finance Companies (HFCs) and Micro Finance Institutions (MFIs), among others, have also contributed to the revival of the real estate sector.

The interest subvention under Pradhan Mantri Awas Yojana-Credit Linked Subsidy Scheme Urban) (PMAY-CLSS (U)) has been the demand-side driver in the residential housing space. This, along with streamlined policies to increase the credit flow, has helped in the creation of a consumer-friendly ecosystem for housing finance. Since its inception, the government has released a subsidy amounting to ₹ 53,548 crore benefitting approximately 22.87 lakh households. Further, the Affordable Housing Fund (AHF) created sufficient liquidity in the sector for viable growth. Under the Affordable Housing Fund, National Housing Bank has disbursed ₹ 34,588 crore for 3.9 lakh dwelling units since its inception. Under the Special Liquidity Facility of RBI, National Housing Bank (NHB) disbursed ₹13,917 crore and ₹8,112 crore during the 1st and 2nd waves of the pandemic, respectively, to ensure seamless business as usual in the sector. Including the above, National Housing bank has provided Liquidity support of ₹ 88,400 crore through various refinance schemes since the onset of the Pandemic.

The concessional liquidity provided the sector with the much-needed liquidity influx for keeping the sector resilient. The Co-lending model has been put forward with the aim to leverage the liquidity base of the banks and reach of HFCs to deliver formal housing credit to the bottom of the pyramid. The Smart City Project, with a plan to build 100 smart cities across India, was aimed at improving the overall opportunity for the real estate sector and encouraging investments. The overall affordability in the residential real estate sector was high during the post-pandemic period, as reflected by a decline in the weighted average annual interest rate on home loans from 8.6 per cent during January-March 2020 to 7.3 per cent during January-March 2022 for Scheduled Commercial Banks. Also, with a consistent thrust on affordable housing and a series of measures taken by the Government and the Regulators, the sector bounced back, registering a more robust growth with consistent improvement in sales as well as new launches.

10.19 The geopolitical tensions between Russia and Ukraine have again raised concerns regarding disruption in the global supply chain and its consequent impact on the real estate sector. With a volatile international market, the surge in prices of construction materials has pushed developers to halt ongoing construction. The Wholesale Price Index for Cement, Lime & Plaster has increased from 127.1 in December 2021 to 137.6 during December 2022, indicating an uptick in the input cost for construction. The Russia-Ukraine conflict has further affected the supply chain resulting in price escalations of steel, cement, finishing materials, imported chemicals, and fuel, thereby increasing the overall construction cost and resulting in a rise in housing prices.

10.20 Notwithstanding the current impediments, such as rising interest rates on home loans and an increase in property prices, the sector has witnessed resilient growth in the current year, with housing sales and the launch of new houses in Q2 of FY23 surpassing the pre-pandemic level of Q2 of FY20. There is evidence of a significant decline in the inventory overhang[9] dipping to 33 months during Q3 of FY23 from 42 months last year. The unsold inventory stood at 8.5 lakh at the end of 2022 with 80 per cent of the stocks under various stages of construction. This comes on the back of sustained sales momentum as the sector steadily recovers from the impact of the pandemic. Going forward, the recent government measures, such as the reduction in import duties on steel products, iron ore, and steel intermediaries, will cool off the construction cost and help to check the rise in housing prices.

Figure X.9: Sustained growth in Housing sales and launches, surpassing the pre-pandemic level

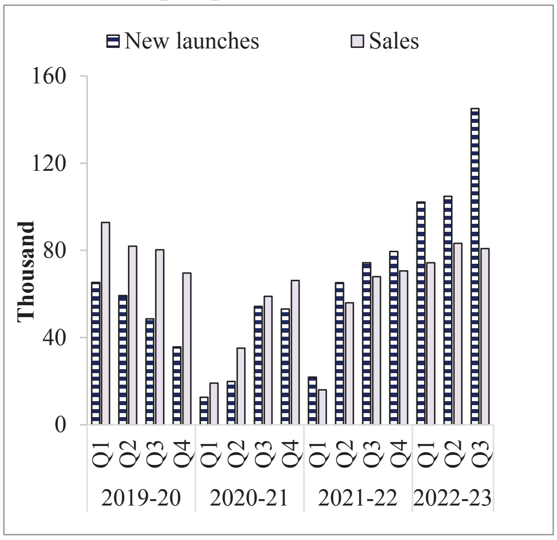
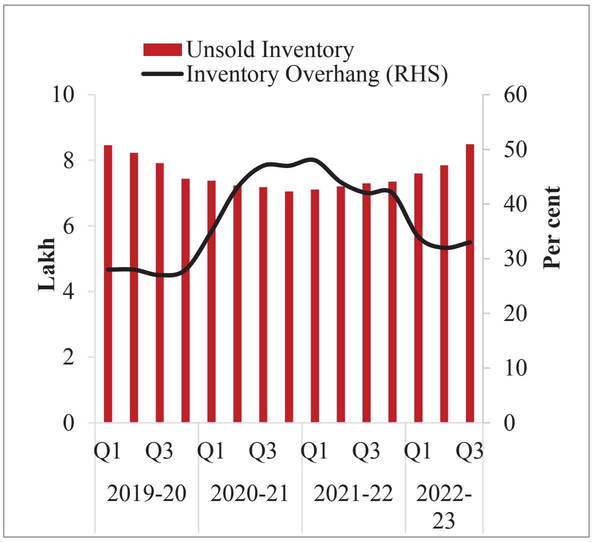


Figure X.10: The decline in Inventory Overhang



Source: Prop Tiger

10.21 According to JLL's 2022 Global Real Estate Transparency Index[10 11], India's real estate market transparency is among the top ten most improved markets globally, with its composite

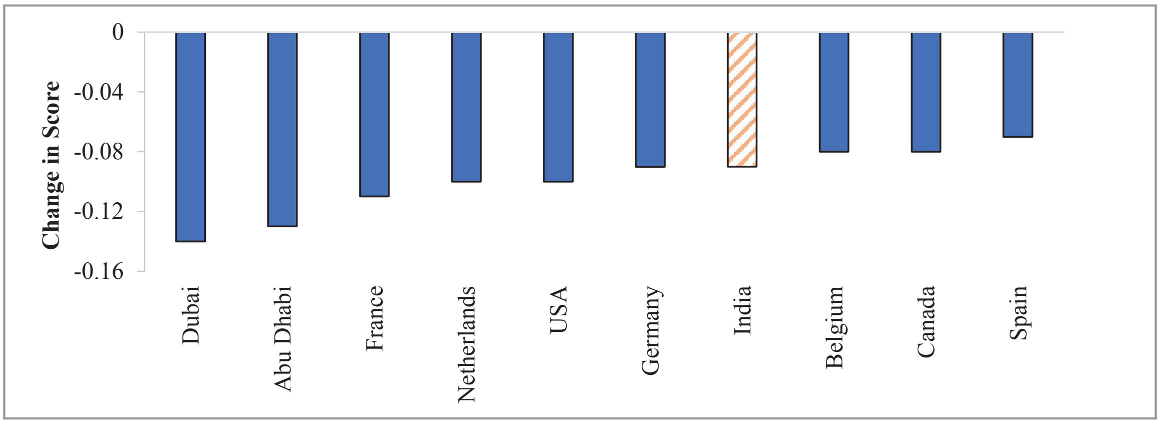
[9]Inventory overhang refers to the estimated time period developers are likely to take to sell off the unsold inventory, based on the current sales velocity.

[10]The Global Real Estate Transparency Index is based on a combination of quantitative market data and survey results across 94 countries and 156 city markets. The Index scores markets on a scale of 1 to 5 based on their performance in the following indicators-Performance measurement, Market fundamentals, Governance of Listed Vehicles, Regulatory and Legal, Transaction Process and Sustainability

[11]https://www.us.jll.com/content/dam/jll-com/documents/pdf/research/global/jll-global-real-estate-transparency-index-2022.pdf. A lower value represents a more transparent market, and a higher value represents that the market is opaque

transparency score improving from 2.82 in 2020 to 2.73 in 2022, driven by increased institutional investment and the growing number of Real Estate Investment Trusts (REITs). Regulatory initiatives such as the Model Tenancy Act and digitisation of land registries & market data through the Dharani and Maha RERA platforms have helped to broaden the market and bring more formalisation to the sector.

Figure X.11: Top Transparency Improvers in Global Real Estate Transparency Index between 2020 and 2022



Source: JLL, LaSalle 2022

IT-BPM Industry

10.22 Covid-19 has accelerated the pace of digital transformation across most of India's end-user industries, with companies witnessing a rise in investment, more complex technology convergence use-cases, and the prioritisation of enterprise-scale data and cloud strategy. With rapid digitisation across the value chain, end-user industries are primed to adopt holistic and high-end enterprise performance solutions in an evolutionary journey over the near to long term.

10.23 According to NASSCOM's report[12], India's IT-BPM industry has been exceptionally resilient during the pandemic, driven by increased technology spending, accelerated technology adoption, and digital transformation. This is evident in the swift and wide-scale remote working adoption of one of the world's largest IT workforces. Capitalising on the learnings from the first wave, the industry's response to the second wave has moved beyond addressing the immediate challenges to significantly enhancing capabilities to become a future-ready organisation. An obsession with customer-centricity, domain-specific solutions, a digital-first talent pool, and a laser-sharp focus on creating future-ready solutions have been the key pillars that enabled technology firms to respond proactively to emerging customer demand throughout the pandemic.

10.24 IT-BPM revenues registered YoY growth of 15.5 per cent during FY22 compared to 2.1 per cent growth in FY21, with all sub-sectors showing double-digit revenue growth. Within the IT-BPM sector, IT services constitute the majority share (greater than 51 per cent). Exports (including hardware) witnessed a growth of 17.2 per cent in FY22 compared to 1.9 per cent growth in FY21, owing to the increased reliance of businesses on technology, the roll-out of cost-reducing deals[13]

[12] https://nasscom.in/knowledge-center/publications/technology-sector-india-2022-strategic-review

[13] Cost-reducing deals refer to business deals which result in a decline in the company's expenses to maximise profits. It involves identifying and removing expenditures that do not provide added value while also optimizing processes to improve efficiency.

and the use of core operations. Growth in exports was seen across all the major markets, with the USA, Europe (excl. UK), and the UK continues to be the major markets. Many firms are now focusing on new markets, more prominently the Middle East and Latin America leading to market diversification which will increase the IT-BPM sector's resilience in the coming years. The industry recorded nearly 10 per cent estimated growth in direct employee pool in FY22 with a highest-ever net addition to its employee base. The domestic technology industry is estimated to grow at 10 per cent on account of enterprise digital acceleration and transformation.

Figure X.12: Geographic distribution of IT-BPM exports (excluding hardware)

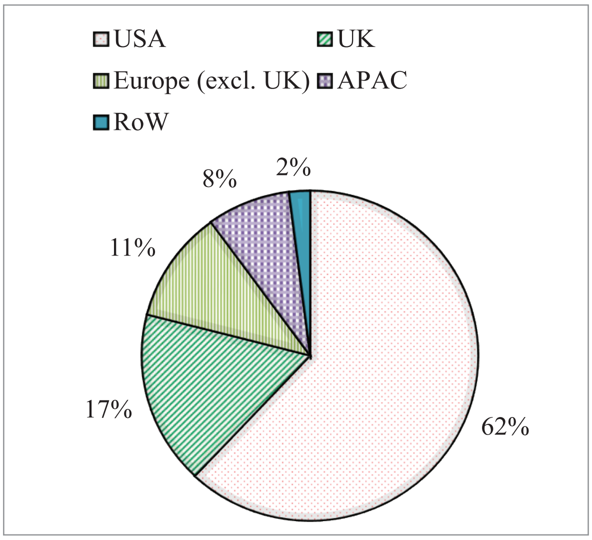
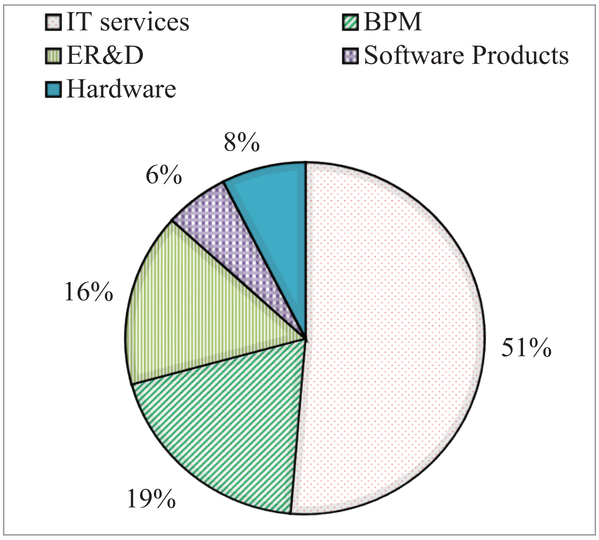


Figure X.13: Segment-wise break-up of Revenues in FY22



Source: NASSCOM
Note: APAC stands for Asia Pacific Region

10.25 The industry undertook over 290 Mergers and Acquisitions in FY22, primarily focusing on digital services. India's massive digital infrastructure played a crucial role in driving technology adoption, with public digital platforms becoming the bedrock of India's digital advantage. However, NASSCOM's quarterly review in August 2022 indicates that technology spending during FY23 is likely to see a relatively muted growth dampened by an expected global slowdown.

Box X.4: Major growth drivers in the IT-BPM Industry

- **Increasing penetration of digital tech and "Made in India digital-first solutions for the world."**

  In India, the proportion of digital revenue as a percentage of total revenue has increased from around 26-28 per cent in FY20 to 30-32 per cent in FY22. In recent years, India has emerged as a global powerhouse for Engineering R&D (ER&D) and innovation and is steadfastly committed to ushering future growth and innovation for global enterprises. Many Global Competency Centres (GCCs) have been incorporated in India in the last six years. GCCs in India are increasingly performing complex R&D functions and are leveraging futuristic technologies and developing digitally innovative products as well building either the largest or the second-largest ER&D hubs in India. Patent filing has increased drastically, with over 138,000 patents filed between 2015- 21, with over 85,000 filed in emerging technologies.

- **Margin defence through operational excellence**
  Margin defence has been the critical focus amidst supply challenges as growing demand for tech talent puts pressure on margins with a limited opportunity to pass on the cost increase. Key margin levers include increased capacity utilisation, a higher share of offshore revenue, a declining share of travel and facility costs, and operating leverage.
- **India is a digital talent nation**
  India has emerged as a digital talent nation with a high share of the working population and growing undergraduate enrolments. Employment across technology companies witnessed an increase, with an uptrend in the digital talent base. New talent hiring from tier-2 cities, with a focus on reskilling non-tech talent, has led India to evolve as a significant sub-contractor base, with more women getting back into the workforce.
- **Leading in hybrid work models**
  Indian tech industry led the adoption of hybrid work models. The technology used for augmenting employee experience and integrating tech solutions in aspects such as employee onboarding, communication, collaboration, and employee well-being & enablement has been the major driver. The HR functions at organisations are undergoing a transformation journey; the organisations are moving forward with an objective to deliver cost savings while expanding services and improving experiences by using a combination of labour arbitrage, optimised workforce models, elimination of low-value vendor spends, increasing talent liquidity and reducing people space cost.

E-Commerce

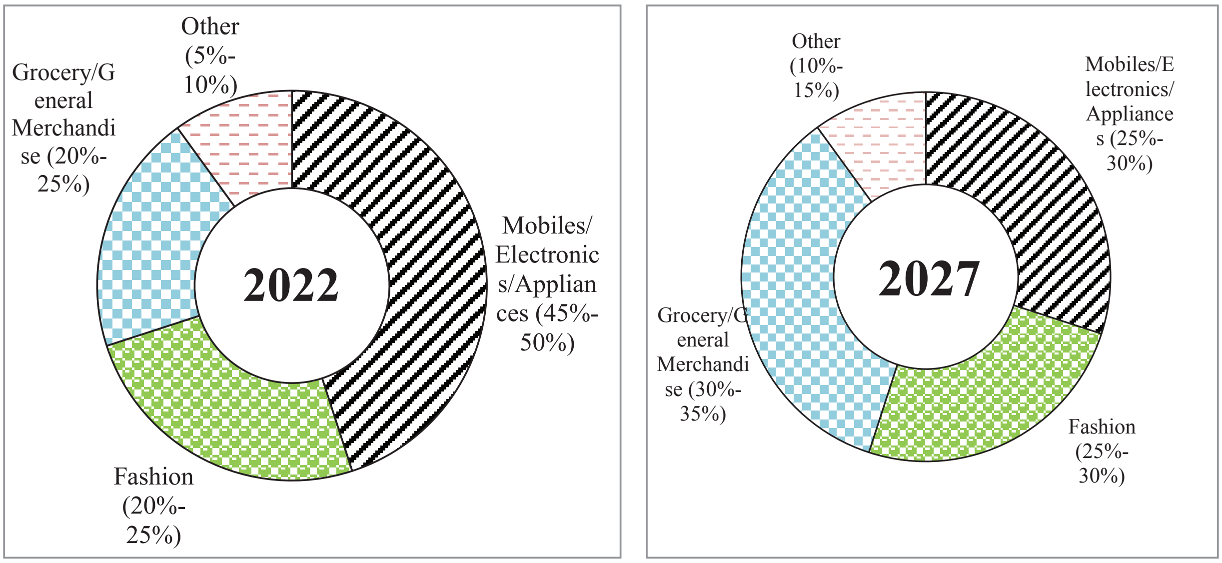
10.26 On the same lines as the IT-BPM sector, the E-Commerce sector also witnessed a renewed push and a sharp increase in penetration in the aftermath of the pandemic. Lockdowns and mobility restrictions disrupted consumer behaviour and gave an impetus to online shopping. The Government's push to boost the digital economy, growing internet penetration, rise in smartphone adoption, innovation in mobile technologies, and increased adoption of digital payments further accelerated the adoption and growth of e-commerce. According to the Global Payments Report by Worldpay FIS, India's e-commerce market is projected to post impressive gains and grow at 18 per cent annually through 2025.

10.27 The expansion of e-commerce to newer segments like grocery, fresh-to-home fruits and vegetables, and general merchandise has contributed to the expansion of the customer base beyond traditional buyers. And as per the latest report 'How India Shops Online 2022' by Bain & Company, emerging categories – fashion, grocery, general merchandise – would shore up e-commerce growth in India and would capture nearly two-thirds of the Indian e-commerce market by 2027.

10.28 There has also been an increase in the adoption of digital solutions by Micro, Small and Medium Enterprises (MSMEs) like e-commerce and e-procurement, realising the prospects of increased revenues and margins, improved market reach, access to new markets, and customer acquisition. A recent study by IIFT analysing the impact of the interaction between MSMEs and e-commerce found that in recent years, MSMEs that adopted digital solutions fared far better than offline MSMEs, assisting them in accessing a large marketplace without incurring huge costs. The E-commerce platform has not only empowered small businesses by removing geographical barriers and providing a large customer base but also allowed them to deal directly with manufacturers and suppliers, thus reducing the cost of procurement. This increased access to suppliers significantly helps small business owners scale up their businesses at a much lower investment level, thus boosting their cost structure.

10.29 Further, there has been a phenomenal geographical expansion with the growth of e-commerce business in rural India driven by increased smartphone penetration, internet adoption, and increased purchasing power of rural customers. In addition, fiscal support during the pandemic helped boost e-commerce penetration in rural areas, likely by increasing consumption, which could mostly be done online in the presence of pandemic restrictions. A vast untapped rural market holds the potential for strengthening consumption growth; new E-commerce companies like Trell, Meesho, and shop 101, are expanding and gaining popularity in Tier 3 and 4 cities. The E-commerce industry is focusing on local solutions to penetrate rural areas by strengthening the network of rural distributors and retailers and using local distribution centres as Pick Up Drop Off points, enabling logistics companies to serve rural consumers.

Figure X.14: Fashion, grocery, and general merchandise to capture nearly two-thirds of the Indian e-commerce market by 2027



Source: How India Shops Online 2022, Bain and Company

10.30 In terms of order volume and valuation, post-Covid-19 years have been the most successful years for Indian E-commerce start-ups. As per the Retail and E-commerce Trends report released by Unicommerce and Wazir Advisors[14], overall e-commerce order volume witnessed a growth of 69.4 per cent YoY in FY22, driven mainly by consumers from tier-II and tier-III cities in the last two years. The shoppers from tier-II and tier-III cities accounted for over 61.3 per cent of the overall market share in FY22, increasing from 53.8 per cent in FY21. The order volume from tier-II and tier-III cities grew at almost double the pace of tier-I cities, with 92.2 per cent and 85.2 per cent YoY growth, respectively, in FY22. In contrast, tier-I cities indicated a comparatively slower order volume growth rate of 47.2 per cent.

10.31 The Government E-Marketplace (GeM) has also witnessed tremendous growth in Gross Merchandise Value (GMV) and is catching up with E-commerce giants like Amazon and

[14] https://retail.economictimes.indiatimes.com/files/cp/1294/cdoc-1661333692-ECOM_july_7_5in%20x%208in_Correction.pdf

Flipkart. GeM attained an annual procurement of ₹1 lakh crore within FY22, representing a 160 per cent growth compared to last FY. GeM has taken a host of steps to onboard products of Self-Help Groups (SHGs), tribal communities, artisans, weavers, and MSMEs. 57 per cent of the total business on GeM has come through the MSME units, and female entrepreneurs have contributed over 6 per cent.

10.32 Initiatives taken by the Government for the promotion of e-Commerce, including the Digital India program, Unified Payment Interface (UPI), GeM, etc., have been major contributory factors to the growth of E-commerce in recent years. Various initiatives have also been taken to provide an opportunity to small retailers, manufacturers, and Self-Help Groups for greater outreach. One District – One Product (ODOP) initiative has been facilitating the onboarding of sellers of identified products on e-Commerce platforms to provide greater visibility for small businesses from the rural sector. E-marketplace www.tribesindia.com portal through Tribal Cooperative Marketing Development Federation of India Limited (TRIFED) has been onboarding tribal artisans with their products for online sales, ensuring tribal products find a larger audience in the international market as well.

10.33 The recent initiative of the launch of Open Network for Digital Commerce (ONDC) is also playing a significant role in democratising digital payments, enabling interoperability, and bringing down transaction costs. ONDC provides better market access to sellers and helps bring the country's remotest corners into the e-Commerce framework by empowering them with digitisation. Details on the applicability and advantages of ONDC are further discussed in Ch-12 on Physical and Digital Infrastructure: Lifting Potential Growth.

Digital Financial Services

10.34 Digital financial services enabled by emerging technologies and innovative solutions are accelerating financial inclusion, democratising access, and spurring the personalisation of products. With a strong foundation provided by the Jan Dhan-Aadhaar-Mobile (JAM) trinity, UPI, and other regulatory frameworks, the pandemic has aided acceleration in digital adoption and provided a fillip to digital financial services solutions by banks, NBFCs, insurers as well as fintech. The pandemic provided the opportunity for fintech companies to reach the underserved and provide cost-effective financial services to those at the bottom of the pyramid. While globally, the technological solutions cushioned the reverberations of the pandemic, India took the lead with the fintech adoption rate of 87 per cent, substantially higher than the world average of 64 per cent as per the latest Global FinTech Adoption Index[15].

10.35 Over the last few years, the number of neobanking platforms and global investments in the neo-banking segment has also risen consistently. Neobanks operate under mainstream finance's umbrella but empower specific services long associated with traditional institutions such as banks, payment providers, etc. Neobanks operate entirely online, with no physical presence apart from office space in the offline world. The growth of these institutions is spurred by the need for on-demand and easier-to-access financial solutions by a young and increasingly digitally savvy demographic. Neobanks have eased availability and provided access to financial services to MSMEs and underbanked customers and areas. The government also, through various

[15] https://assets.ey.com/content/dam/ey-sites/ey-com/en_gl/topics/banking-and-capital-markets/ey-global-fintech-adoption-index.pdf

initiatives, has given a push to digital banking solutions. 75 Digital Banking Units (DBU) across 75 districts announced in Union Budget 2022-23 to take banking solutions to every nook and corner of the country have been launched.

10.36 The introduction of CBDC will also significantly boost digital financial services. Issuance of CBDC in India offers several benefits, which inter alia, include reduction in operational costs involved in physical cash management, fostering financial inclusion, bringing resilience, efficiency, and innovation in the payments system, boosting innovation in cross-border payments space, and providing public with uses that any private virtual currencies can provide, without the associated risks. As of July 2022, there are 105 countries in the process of exploring CBDC, a number that covers 95 per cent of the global GDP. Many countries have already launched the CBDC, while others are in the pilot stage.

10.37 RBI has also recently launched pilots of CBDC in both the Wholesale and Retail segments. Digital Rupee –Wholesale- the pilot in the wholesale segment was launched on 1st November 2022, with the use case being limited to the settlement of secondary market transactions in government securities. Use of Digital Rupee- Wholesale is expected to make the inter-bank market more efficient. The pilot in the retail segment, known as Digital Rupee-Retail kicked off on 1st December 2022, within a closed user group comprising participating customers and merchants. For full operationalisation of CBDC, RBI is gradually expanding the pilots' scope to include more banks, users, and locations based on feedback received during the pilots.

10.38 Digitalising documents has also played a pivotal role in giving further impetus to digital financial services. The digitisation of documents ensures safety, online verification, improved accessibility, and fraud reduction, enhancing use for end customers and the service provider.

Box X.5: Account Aggregator Framework: Transforming India's Financial Services

Account Aggregator (AA) is a Non-Banking Financial Company (NBFC) engaged in the business of providing the service of retrieving or collecting financial information pertaining to the customer. No financial information of the customer is retrieved, shared or transferred by AA without the explicit consent of the customer. AA transfers data from one financial institution to another based on an individual's instruction and consent. Registering with an AA is fully voluntary for consumers. Entities may enrol themselves on AA framework as Financial Information Provider (FIP) viz. banking company, non-banking financial company, asset management company, depository, depository participant, insurance company, insurance repository, pension fund etc. and as Financial Information User (FIU) which is an entity registered with and regulated by any financial sector regulator. In this direction, RBI has issued the Master Direction viz Non-Banking Financial Company – Account Aggregator (Reserve Bank) Directions, dated September 02, 2016. At present, RBI has granted a Certificate of Registration to six companies as AA.

Achievements so far

- As on 31st December 2022, 27 Financial Institutions have gone live as FIPs, including all 12 PSBs, 10 Private Sector Banks, 1 Small Finance Bank, and 4 Life Insurance Companies.

- 119 Financial Institutions have gone live as FIUs viz; 93 RBI Regulated, 12 SEBI Regulated, 12 IRDAI-regulated entities, and 2 PFRDA-regulated entities.
- With 23 Banks onboarded to the Account Aggregator framework, more than 1.1 billion bank accounts are eligible to share data on AA. 3.3 million users have linked their accounts on the AA framework out of which 3.28 million users successfully shared data via AA.

RBI has also notified Goods and Services Tax Network as FIP on 23rd November 2022 which will enable digital invoice financing and provide much-needed credit to the MSME sector.

Box X.6: Dematerialisation of documents: The next wave of digitisation

In line with the objective of the Digital India mission, which seeks to transform India into a digitally empowered nation, National e-Governance Services Limited (NeSL), an Information Utility registered with and regulated by the Insolvency and Bankruptcy Board of India under the aegis of the IBC 2016, introduced the Digital Document Execution (DDE) platform in 2020. This was done at the behest of the Insolvency and Bankruptcy Board of India and with the support of the Department of Financial Services (DFS), Ministry of Finance.

The core principle of the NeSL-DDE platform is to digitise all the steps of the document/agreement execution journey. These include: -

- Submission of information and document/agreement to be executed on the platform
- Flexibility to accommodate any agreement/document format
- Consent-based process
- Digital payment of stamp duty and affixing of digital e-stamp certificate
- Verification of the identity of the executants and digital execution using an electronic signature
- Secure storage transmission and retrieval of the digitally executed document generated using the platform

The NeSL-DDE platform eliminates the need for the physical presence of the executants and the manual process to be carried out for executing documents/agreements. By doing so, the platform generates several benefits, such as lower execution time and cost, a secure system, authorised access, bulk processing, fraud prevention, legal robustness, and evidentiary value. A significant enabler in the journey of digitisation of documents/agreements in the financial sector is the use of the Aadhaar e-Sign, which has made electronic signatures widely available to citizens at a nominal cost.

The NeSL-DDE platform has garnered the support of state governments, ministries, and financial institutions. DFS has been encouraging banks to consider adopting DDE for their agreements. Currently, 23 States and Union Territories are available for digital e-stamping on the NeSL DDE platform. 27 banks and NBFCs are using the platform for executing their agreements, and so far, more than 9 lakh transactions have been undertaken. This includes small-ticket consumer lending transactions to large-value corporate lending transactions.

One use case of the NeSL-DDE platform is the electronic bank guarantee (e-BG), which takes away all the issues and challenges associated with the issuance, transfer, and management of physical bank guarantees and brings inefficiencies of time and cost savings. As the adoption of e-BG picks up, the NeSL platform can also function as a central repository of bank guarantees. Recently, the Department of Expenditure has amended the General Financial Rules, 2017, to permit the acceptance of e-BG in the government procurement process.

While the initial use case of NeSL-DDE is financial documents/agreements, the platform shall also enable the digital execution of other documents/agreements. This secure, paperless, hassle-free contracting offered by NeSL-DDE will have significant implications on the ease of doing business in the nation.

Outlook

10.39 India's services sector growth which was highly volatile and fragile during the last 2 fiscal years, has shown resilience in FY23 driven by the release of pent-up demand, ease of mobility restriction, near-universal vaccination coverage and pre-emptive government interventions. Broad-based recovery has been observed in recent months, with pick up in almost all sub-sectors especially contact intensive services sector, which bore the maximum brunt of the pandemic. This is reflective of an uptick in the performance of various HFIs, reflecting a solid upswing in recent months, hinting at an enhanced presentation of the services sector in the next fiscal. The prospects look bright with improved performance of various sub-sectors like Tourism, Hotel, Real estate, IT-BPM, E-commerce etc. The downside risk, however, lies in the external exogenous factors and bleak economic outlook in Advanced Economies impacting growth prospects of the services sector through trade and other linkages.

EXTERNAL SECTOR: WATCHFUL AND HOPEFUL

11

CHAPTER

India's external sector has been buffeted by shocks and uncertainty manifested in terms of elevated, though now easing global commodity prices; tightening international financial conditions; heightening financial market volatility; reversal of capital flows; currency depreciation, and looming global growth and trade slowdown. However, it has been able to face these headwinds from a position of strength on the back of strong macroeconomic fundamentals and buffers.

During FY23 (till December 2022) India's exports have displayed resilience on the back of record levels of exports in FY22. Petroleum products, gems & jewellery, organic & inorganic chemicals, drugs & pharmaceuticals were among the leading export items. However, the slowdown in Indian exports is inevitable in a slowing global economy characterised by slowing global trade. Recognising the key role exports play in improving the resilience of the external sector, from a medium to long-term perspective, various export promotion measures are being considered/implemented. These measures would nurture the inherent comparative advantage that Indian exports embody. In addition, while National Logistics Policy would ease the domestic frictions to encourage Indian exports by reducing the cost of internal logistics, the latest Free Trade Agreements, such as with UAE and Australia, would address the external frictions by creating opportunities for exports at concessional tariffs and non-tariff barriers. Thus, the whole ecosystem would evolve in an export-friendly manner over time.

Apart from the elevated crude oil prices, the revival of economic activity contributed to an increase in imports. Petroleum, crude & products; electronic goods; coal, coke & briquettes, etc.; machinery, electrical & non-electrical and gold were among the top import items. While the continued softening of the global commodity price outlook would assist moderate imports going forward, non-gold, non-oil imports may not decelerate significantly. Further, efforts are underway to promote international trade settlement in Indian Rupees. Once these initiatives gain traction, dependence on foreign currency would potentially reduce, making the economy less vulnerable to external shocks.

Balance of Payments (BoP) encountered pressures during the year under review. While the impact of a sharp rise in oil prices was discernible in the widening of the Current Account Deficit (CAD), notwithstanding the cushion provided by the surplus on Invisibles (services, transfer, and income), policy tightening by the US Federal Reserve and the strengthening of the US dollar led to Foreign Portfolio Investment (FPI) outflows. As a result, the surplus of the capital account was lower than the CAD leading to a depletion of forex reserves on a BoP basis. However, going forward, the expected easing of crude oil *prices, the resilience of net services exports and buoyant inward remittances would result in lower CAD during the remainder of FY23 and is expected to be within sustainable limits.*

The fortified shock absorbers of India's external sector are in place to cushion the global headwinds be it the formidable forex reserves, sustainable external debt indicators, or market-determined exchange rate. While forex reserves as of the end December 2022 stood at US$ 562.72 billion, accounting for 9.3 months of imports, the ratio of external debt to GDP is at a comfortable level of 19.2 per cent as of end-September 2022.

Introduction

11.1 Two global shocks in the new millennium – one an economic shock and the other, a health shock - have had very contrasting repercussions on the global economy. Following the global financial crisis in 2007-08 as the inflationary pressures were muted, interest rates were extremely low for long years. The easing financial conditions supported global economic growth, which reached 4.5 per cent in 2010. Now, the Covid-19 pandemic is another shock to global growth performance, with economic growth down to a negative of 3.8 per cent in 2020. The following two years saw inflation rates rise to multi-decade highs, fuelled by global commodity and food price spikes. The situation has been further amplified by the Russia-Ukraine conflict. To stem the situation, monetary authorities in advanced economies, especially the US Federal Reserve (US Fed), are accelerating the pace of monetary policy normalisation. The 10-year Treasury yield in the US increased almost six-fold between mid-2020 and mid-2022. Risk assets were sold off sharply triggering capital flight from many emerging and frontier market economies, bringing to a halt the rebound of net capital flows to developing countries observed since the last quarter of 2020.

11.2 Interest rates and prices of risk assets have been extremely volatile since April 2022, reflecting heightened uncertainty about the economic and policy outlook, exacerbated by low liquidity. The US dollar appreciated sharply against currencies of Emerging Market Economies (EMEs) and major advanced economies facing high borrowing costs. Thus, global financial conditions have considerably tightened especially since April 2022, and the balance of risks is significantly skewed to the downside, thereby weakening the global economic outlook. Global growth is forecast to slow from 6.0 per cent in 2021 to 3.2 per cent in 2022 and 2.7 per cent in 2023 according to the International Monetary Fund (IMF).[1] This is the weakest growth profile since 2001 except for the global financial crisis and the acute phase of the pandemic. Further, external public debt vulnerability concerns are being exacerbated as such debt in developing economies is at record levels presently and most of it is owed to private creditors, with much of it involving variable interest rates that could spike suddenly.[2] Thus, emerging markets face a host of risks emanating from elevated external borrowing costs, sticky high inflation, volatile commodity markets, uncertain global economic growth outlook, and spill overs from policy tightening in advanced economies.

[1]World Economic Outlook Report, IMF, October 2022.

[2]"South Asia's Current Macroeconomic Challenges and Policy Priorities", Keynote Address by Shri Shaktikanta Das, Governor, Reserve Bank of India –6 January 2023 - at the high-level Conference co-organised by IMF Asia and Pacific Department and IMF South Asia Regional Training and Technical Assistance Centre, New Delhi

11.3 Against this fast-evolving global backdrop, this chapter chronicles the developments in the external sector of the Indian economy focusing on exports, imports, international investment, foreign exchange reserves, movement of the currency against the US dollar, external debt, and the BoP situation. Where available, a comparison of some of these indicators with some peer countries is also made to present India's external sector situation in a proper perspective.

Trade Helping India Reap the Benefits of Globalised World

11.4 In the present globalised and integrated world, trade is essential for developing countries to reap the benefit of increased globalisation of products and financial markets. It is well recognised that trade is not an end in itself but a means to balanced, equitable, and sustainable development. Conventional economic theories point towards potential gains that could emerge from openness to international trade and investment.

11.5 Over time, the trade openness of countries across the globe has been increasing as measured by trade as a proportion of GDP. For the world as a whole, the share of trade as a percentage of world GDP[3] has been in the range of 50-60 per cent since 2003 and stood at 52 per cent in 2020, according to the World Bank database. For India as well, the share of trade as a percentage of GDP has been steadily increasing, being above 40 per cent since 2005 (except 2020 being the pandemic year). The ratio stands at 46 per cent in 2021 and 50 per cent for H1 of 2022.

Global Scenario

11.6 Post Covid-19-induced disruptions, global trade prospects have improved in FY22. Global trade exhibited resilience in the first half (H1) of 2022, notwithstanding the headwinds from the Russia-Ukraine conflict. Robust merchandise imports – emerging primarily from Europe, the United States, and parts of the developing world supported the growth of merchandise trade in H12022. This partially reflected pent-up demand relating to the legacy of the pandemic-driven spending shift from services towards goods that were constrained earlier because of the supply bottlenecks. Other factors contributing to the trend were the appreciation of the dollar in the case of the United States, the relative dynamism of intra-regional trade in Europe, and favourable terms-of-trade effects in some large emerging economies due to elevated energy prices.[4] The global trade volume grew by 4.8 per cent in H12022, on top of an impressive recovery of 9.7 per cent in 2021, as per the World Trade Organisation (WTO) statistics. The global merchandise trade in value terms rose year-on-year (YoY), by 22.2 per cent in 2021, reversing the deceleration observed in the previous three years. During the H1 of 2022, the trade-in value terms grew by 32 per cent compared to the corresponding period of 2019.[5]

11.7 However, the global trade outlook turned grimmer in the second half (H2) of 2022 on the back of a confluence of adverse factors including the increasing likelihood of a recession in the major economies and the tapering demand for consumer durables; aggressive monetary policy tightening by several central banks; disorderly financial conditions; continued supply-chain disruptions and elevated freight charges. The leading indicators of global trade viz., inventories

[3]Trade is the sum of exports and imports of goods and services measured as a share of GDP.

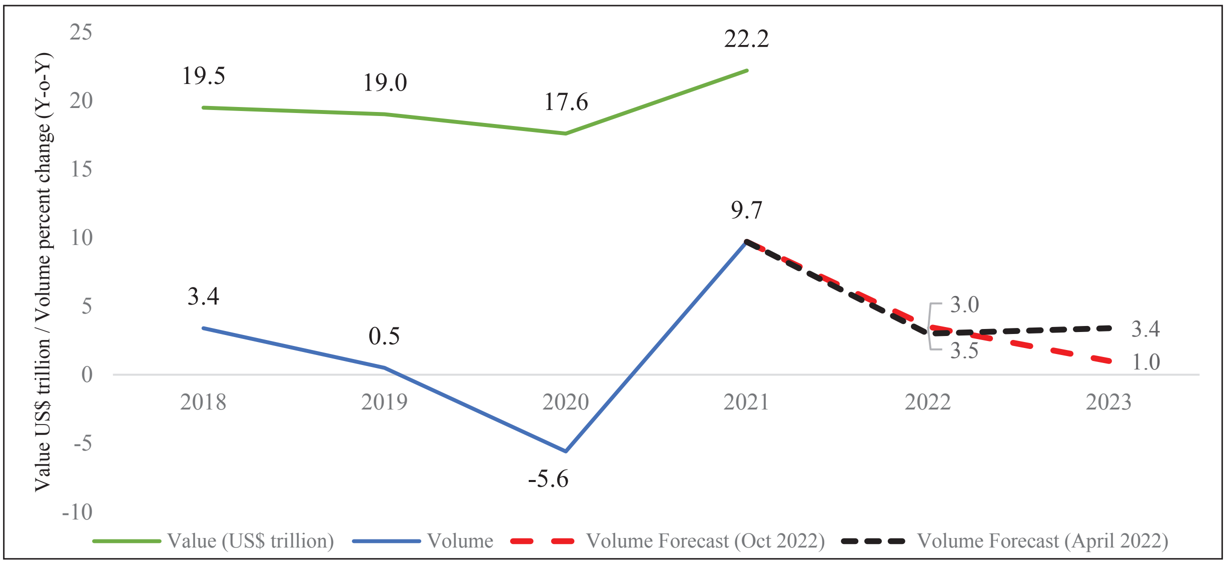
[4]UNCTAD, Trade and Development Report 2022, Development prospects in a fractured world: Global disorder and regional responses, October 2022.

[5]WTO's press release, International Trade Statistics, 5 October 2022.

and new export orders seem to bear testimony to these adverse events. Trade growth is likely to slow in the closing months of 2022 and into 2023, according to the WTO Goods Trade Barometer[6] released on 28 November 2022, as the global economy continues to be buffeted by strong headwinds. The current reading of 96.2 is below both the baseline value for the index and the previous reading of 100.0, reflecting the slowdown in demand for traded goods.

11.8 Thus, as regards the future trade projections, according to the WTO, world trade is expected to lose momentum in H2-2022 and remain subdued in 2023. The organisation forecasts global trade to grow in 2023 by just 1 per cent, a sharp downward revision from the previous estimate of 3.4 per cent[7]. However, there is a high degree of uncertainty associated with the forecast due to shifting monetary policy in advanced economies and the unpredictable nature of the Russia-Ukraine conflict. The United Nations Conference on Trade and Development (UNCTAD), in its Global Trade update of December 2022 has also noted that the ongoing trade slowdown is expected to worsen for 2023 and further that while the outlook for global trade remains uncertain, negative factors appear to outweigh positive trends.

Figure XI.1: Growth in Global Merchandise Trade: Actual and Forecast



Source: WTO

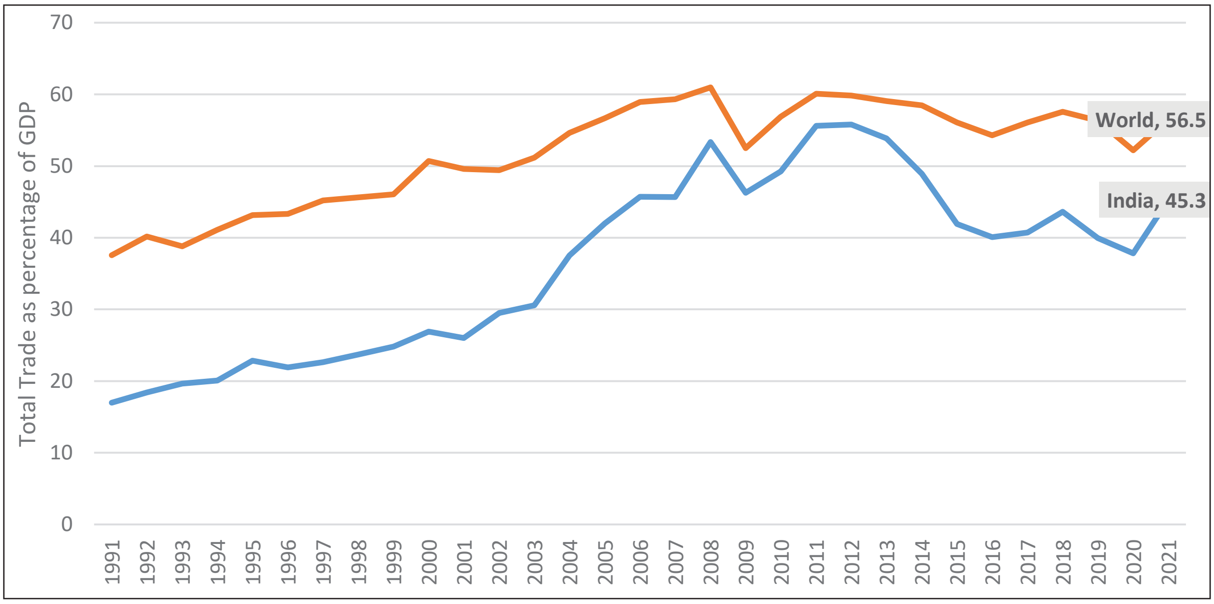
India's growing and diversifying trade

11.9 International trade has been an important pillar of the resilience of India's external sector. Trade as a percentage of GDP for India was in the range of 12-15 per cent in the 1980s; 16-25 per cent in the 1990s and 25-50 per cent in the 2000s. In the following paragraphs, a detailed analysis of India's trade performance is presented.

[6]The WTO has developed a set of indicators to provide "real-time" information on trends in world trade. The Goods Trade Barometer is a leading indicator that signals changes in world trade growth two to three months ahead of merchandise trade volume statistics. Values greater than 100 signal above-trend expansion while values less than 100 indicate below-trend growth.

[7]WTO's press release, International Trade Statistics, 5 October 2022.

Figure XI.2: India's Trade catching up with global trade levels



Source: World Bank database

Table XI.1: Key aspects of India's trade (Calendar year-wise)

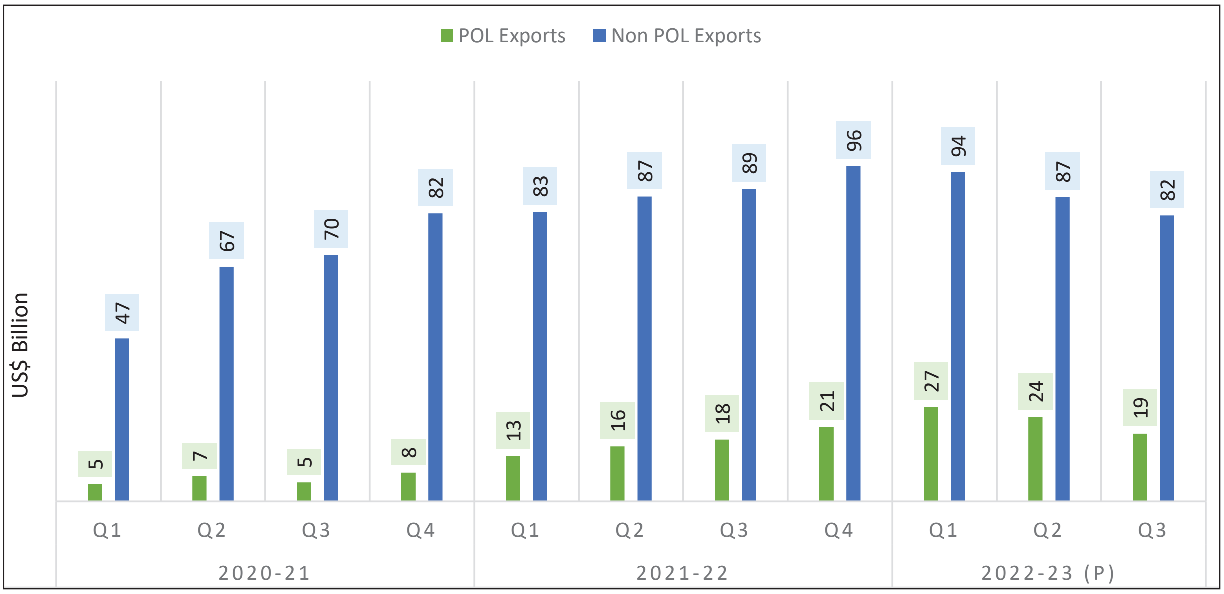
	2019	2020	2021
Export performance (in per cent)			
Share in World Merchandise Exports	1.7	1.6	1.8
Share in World Commercial Services Exports	3.5	4.0	4.0
Share in World Merchandise Plus Services Exports	2.1	2.1	2.2
Import Performance (in per cent)			
Share in World Merchandise Imports	2.5	2.1	2.5
Share in World Commercial Services Imports	3.0	3.2	3.5
Share in World Merchandise Plus Services Imports	2.6	2.3	2.7
India's rank in world trade			
Merchandise Exports	18	21	
Merchandise Imports	10	14	
Services Exports	8	7	
Services Imports	10	10	

Source: DGFT, Monthly Foreign Trade Statistics, November 2022 (based on data till October 2022)

Trends in Merchandise Trade

11.10 India achieved an all-time high annual merchandise export of US$ 422.0 billion in FY22. However, the global economy has started facing formidable headwinds and the ripple effect of the global trade slowdown has started reflecting in India's merchandise export growth, wherein moderation in pace is observed in 2022. Merchandise exports were US$ 332.8 billion over April-December 2022 against US$ 305.0 billion during the period April-December 2021. Non-petroleum and non-gems & jewellery exports in April-December 2022 were US$ 233.5 billion, as compared to US$ 230.0 billion in April-December 2021. Petroleum, oil, and lubricants (POL) exports constituted about 21.1 per cent and non-POL exports were 78.9 per cent of total exports during FY23 (until December 2022). Owing to the rise in global crude oil prices, petroleum products continued to be the most exported commodity in FY22 and April-December, 2022, followed by gems and jewellery, organic & inorganic chemicals, and drugs & pharmaceuticals (Tables 6.3A & B of Statistical Appendix).

Figure XI.3: India's Merchandise Exports



Source: Department of Commerce Note: P: Provisional

Bright spots in India's Trade performance

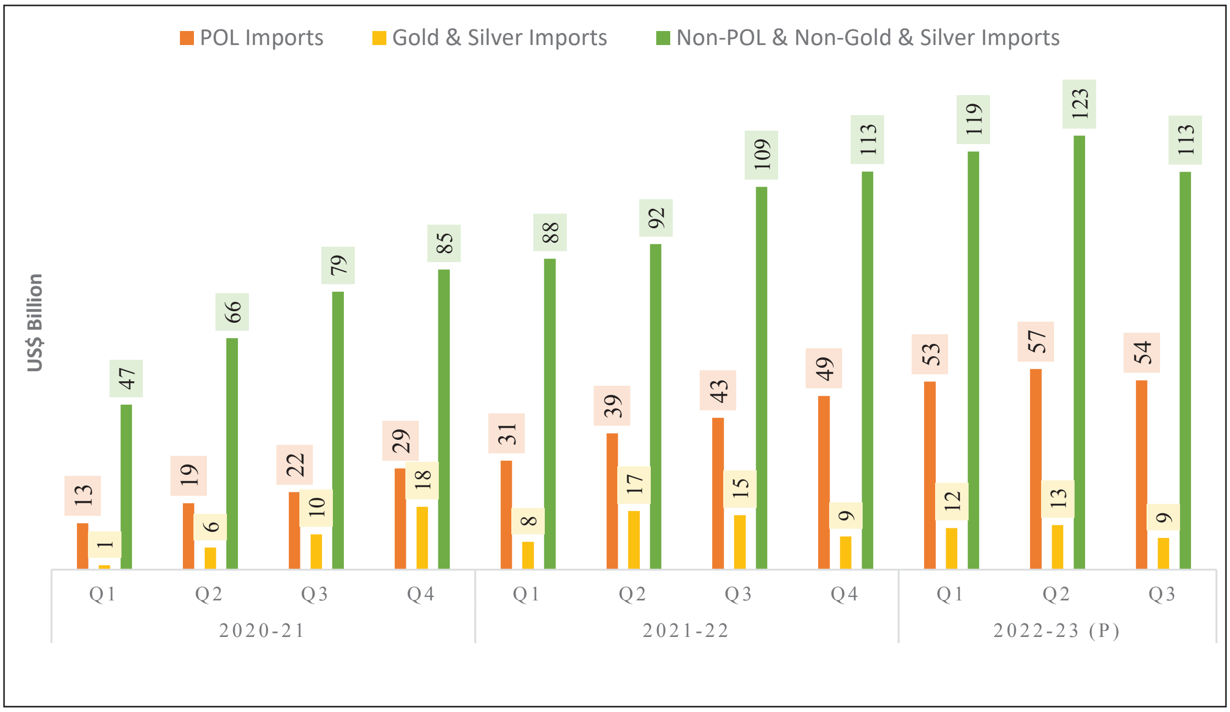
11.11 Significant strides in exports were registered in drugs and pharmaceutical, electronic goods, engineering goods and organic and inorganic chemicals sectors in FY22. These sectors have sustained their growth momentum despite the global headwinds in H1FY23. India's pharma exports grew despite Covid impacted disruptions in supply chain increasing significantly from US$ 15.4 billion in FY15 to US$ 24.6 billion in FY22 and stood at US$ 18.8 billion during April-December 2022, registering a positive growth of 3.6 per cent over April- December 2021. The high growth in export was on account of the stocking of inventories of medicines by countries all over the world, and increased demand for vaccines and medicines related to the Covid-19 pandemic which India was in a position to provide. India has also been seeing consistent growth in exports of electronic goods. Electronic goods exports which remained below US$ 10 billion till FY19, have shown an increase of 51.6 per cent from US$ 11.0 billion during April-December

2021 to US$ 16.7 billion during April-December. 2022. Engineering goods exports crossed the US$ 100 billion mark in FY22 for the first time. Organic and inorganic chemicals exports have increased significantly in FY22 and were USD 23.0 billion during April-December 2022 registering a growth of 6.5 per cent over the same period last year.

11.12 As the pandemic ebbed, India witnessed a revival in domestic demand resulting in strong import growth. Merchandise imports for the period April-December 2022 were US$ 551.7 billion as against US$ 441.5 billion during the period April-December 2021. Among major import commodities, petroleum crude & products imports increased by 45.6 per cent to US$ 163.9 billion in April-December 2022 compared to US$ 112.6 billion in April-December 2021 and continue to be the highest imported commodity.

11.13 Energy demand may be pushing India's imports for fuel including coal and Petroleum, Oil & Lubricants (POL), whose share rose to 37.1 per cent in total imports in April-December 2022 against 30.4 per cent in the corresponding period last year. Other principal imports included electronic goods; coal, coke & briquettes; machinery electrical & non-electrical, and organic & inorganic chemicals (Tables 6.2 A&B of Statistical Appendix).

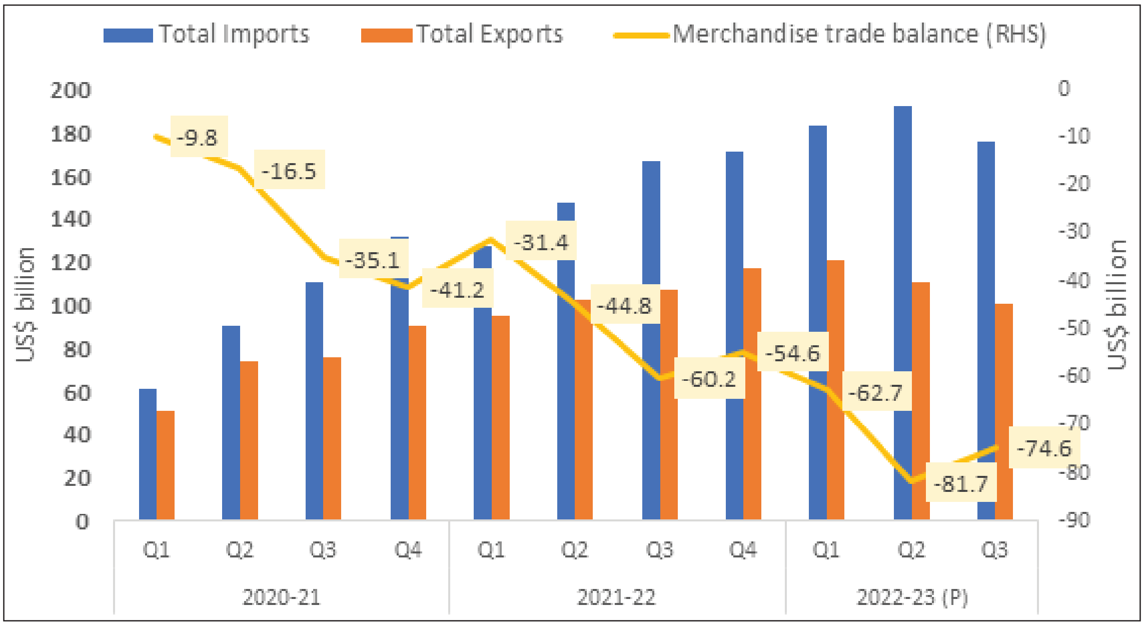
Figure XI.4: India's Merchandise Imports



Source: Department of Commerce Note: P: Provisional

11.14 The merchandise trade deficit for April-December 2022 was estimated at US$ 218.9 billion as against US$ 136.5 billion in April-December 2021.

Figure XI.5: Trends in merchandise imports, exports, and trade balance



Source: Department of Commerce   P: provisional

11.15 The USA remained the top export destination in April-November, 2022 followed by UAE and the Netherlands. The Netherlands has displaced China from the 3rd spot as India's exporting partner. India has diversified its export destinations over time. For example, the share of South Africa in total exports has risen from 1.2 per cent in FY19 to 2.0 per cent in FY23 (April to November). Over the same period, the share of Brazil has increased from 1.2 per cent to 2.5 per cent and that of Saudi Arabia from 1.7 per cent to 2.3 per cent. As regards imports, China, UAE, USA, Russia, and Saudi Arabia have a joint share of 40 per cent of the total imports of India. However, the share of China declined to 13.8 per cent during April-November 2022 from 15.5 per cent a year ago. Similarly, the share of the USA declined to 6.9 per cent in April-November 2022 from 7.2 per cent a year ago (Refer to Table 6.4 in Statistical Appendix).

Trade in Services

11.16 India maintained its dominance in the world services trade in FY22. Despite pandemic-induced global restrictions and weak tourism revenues, India's services exports stood at US$ 254.5 billion in FY22 recording a growth of 23.5 per cent over FY21 and registered a growth of 32.7 per cent in April-September 2022 over the same period of FY22. Software and business services together constitute more than 60 per cent of India's total services exports and exhibited strong growth during Q2FY23. While strong revenues in major information technology (IT) companies from various segments such as retail and consumer business; communications and media; healthcare; and banking, financial and insurance services drove the growth in software exports, a significant pick-up in engineering, and research and development related services boosted the growth in business services exports during the quarter.

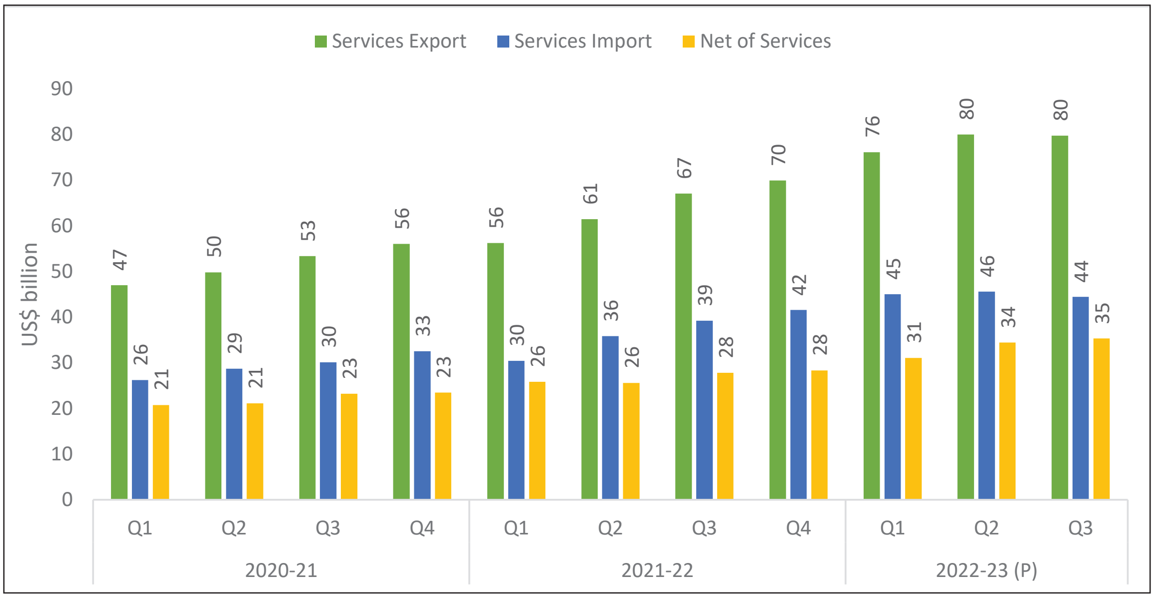
11.17 Services imports rose by 25.1 per cent between FY22 and FY21 to reach US$ 147.0 billion and have registered growth of 36.7 per cent in April-September 2022 over the same period of FY22. The increase in services imports is mainly on account of payments for transport services, travel and other business services. Following the resumption of global activity, shortages of shipping vessels and high transportation costs resulted in a spike in transport payments. Travel imports saw a growth following the easing up of travel restrictions.

Table XI.2: Resilient Performance of Service Trade (Values in USD Billion)

	2020-21		2021-22		Apr-Sept 2022 (P)	
	Exports	Imports	Exports	Imports	Exports	Imports
Total Services	**206.1**	**117.5**	**254.5**	**147.0**	**156.1**	**90.6**
Manufacturing services on physical inputs owned by others	0.3	0.03	0.5	0.1	0.6	0.1
Maintenance and repair services n.i.e.	0.2	0.8	0.2	1.4	0.1	1.0
Transport	21.9	19.8	32.7	35.8	19.4	23.1
Travel	8.5	11.5	9.1	16.3	10.5	13.8
Construction	2.6	2.6	2.6	2.9	1.6	1.6
Insurance and pension services	2.4	2.1	3.3	2.1	1.7	1.1
Financial services	4.3	4.8	5.5	5.6	3.8	3.1
Charges for the use of intellectual property n.i.e.	1.3	7.7	0.8	9.0	0.7	4.5
Telecommunications, computer, and information services	103.1	12.3	125.6	14.5	72.6	8.6
Other business services	49.2	49.5	58.9	51.7	36.9	28.3
Personal, cultural, and recreational services	2.3	2.8	3.2	4.5	1.9	2.9
Government goods and services n.i.e.	0.6	1.0	0.8	0.9	0.4	0.4
Others n.i.e.	9.5	2.6	11.3	2.2	6.1	2.2

Source: RBI, BoP statement P: provisional

Figure XI.6 Accelerating trend in services trade



Source: Department of Commerce, RBI ; P: provisional

11.18 While merchandise exports are witnessing some slowdown in the second half of 2022, India's service exports have been robust. Since India offers low-cost knowledge-based services, the demand for them has not fallen even amid a global economic slowdown and a negative outlook for the near future. The estimated value of services export for April-December 2022 is US$ 235.8 billion as against a value of US$ 184.7 billion in April- December 2021. The estimated value of services imports for April- December 2022 is US$ 135.0 billion compared to US$ 105.5 billion in the corresponding period last year. Supported by the services sector, India's overall exports (Merchandise and Services combined) in April-December 2022 are estimated to be US$ 568.6 billion, exhibiting a positive growth of 16.1 per cent over the same period last year. Overall imports in April-December 2022 are estimated to be US$ 686.7 billion, displaying a positive growth of 25.6 per cent over the same period last year.

Foreign Trade Policy

11.19 India’s Foreign Trade Policy (FTP) has, conventionally, been formulated for five years at a time. The focus of the FTP has been to provide a framework of rules and procedures for exports and imports and a set of incentives for promoting exports. The latest FTP for 2015-2020 is in vogue at present. To provide policy stability during the pandemic period, the five-year FTP 2015-20 was extended from 2020 to 2022. The policy has been further extended till March 2023 on account of volatile global economic and geopolitical situations and currency fluctuations. During this period, the Government has been taking significant measures and consistently looking into opportunities to diversify the exports both in terms of products as well as potential markets. The Government is actively working on facilitating trade agreements and launching schemes in consultation with various stakeholders. In the year 2022, India signed Free Trade Agreements (FTAs) with UAE and with Australia. This aims to provide greater market access with a reduction in tariff and non-tariff barriers on goods and services and make the exporters competitive. The Export Preparedness Index[8] has also been introduced to evaluate States’ potentials and capacities. It will guide all stakeholders towards strengthening the export ecosystem at both the national and sub-national levels.

International Trade Settlement in Indian Rupees

11.20 In July 2022, the Reserve Bank of India (RBI) issued a circular permitting an additional arrangement for invoicing, payment, and settlement of exports/imports in Indian Rupees (INR) to promote the growth of global trade with emphasis on exports from India and to support the increasing interest in the global trading community in INR as an international currency. The framework involves invoicing of exports and imports in INR, market-determined exchange rates between the currencies of the trading partner countries, and settlement through special Rupee Vostro[9] accounts opened with authorised dealer banks in India.

11.21 Under this arrangement for settlement, (a) Indian importers undertaking imports through

[8]NITI Aayog in partnership with the Institute of Competitiveness has prepared an Export Preparedness Index to identify challenges and opportunities; enhance the effectiveness of government policies; and encourage a facilitative regulatory framework. The structure of the EPI includes 4 pillars –Policy; Business Ecosystem; Export Ecosystem; Export Performance – and 11 sub-pillars –Export Promotion Policy; Institutional Framework; Business Environment; Infrastructure; Transport Connectivity; Access to Finance; Export Infrastructure; Trade Support; R&D Infrastructure; Export Diversification; and Growth Orientation.

[9]A Vostro account is an account that a domestic bank holds for a foreign bank in the domestic bank’s currency, i.e., Rupee. Such accounts enable domestic banks to provide international banking services to their clients who have global banking needs.

this mechanism shall make payment in INR which shall be credited into the Special Vostro account of the correspondent bank of the partner country, against the invoices for the supply of goods or services from the overseas seller /supplier, while (b) Indian exporters, undertaking exports of goods and services through this mechanism, shall be paid the export proceeds in INR from the balances in the designated Special Vostro account of the correspondent bank of the partner country.

11.22 The above-mentioned framework for international settlement in INR acquires significance against the backdrop of the US Fed aggressively hiking the policy rates and its hawkish stand, the consequent rallying of the US dollar to multi-decade high levels, and concomitant weakening of currencies of various EMEs including the INR. The framework could largely reduce the net demand for foreign exchange, the US dollar in particular, for the settlement of current account-related trade flows. Further, the use of INR in cross-border trade is expected to mitigate currency risk for Indian businesses. Protection from currency volatility not only reduces the cost of doing business but also enables better business growth, improving the chances for Indian businesses to grow globally. It also reduces the need for holding foreign exchange reserves and dependence on foreign currency, making Indian economy less vulnerable to external shocks.[10] Further, it could assist Indian exporters in getting advance payments in INR from overseas clients and in the longer term promote INR as an international currency once the rupee settlement mechanism gains traction. One of the prerequisites for the emergence of an international currency is that the said currency needs to be increasingly used for trade invoicing. In terms of foreign exchange market turnover (daily averages), as per the BIS Triennial Central Bank Survey 2022, the US dollar is the dominant vehicle currency accounting for 88 per cent of the global forex turnover. The INR accounted for 1.6 per cent. If the INR turnover rises to equal the share of non-US, non-Euro currencies in global forex turnover of 4 per cent, INR could be regarded as an international currency, reflecting India's position in the global economy.[11]

Initiatives to enhance trade

11.23 The commendable performance of India's exports, standing at US$ 422.0 billion in FY22, exceeding the target of US$ 400 billion, has been the culmination of efforts from all quarters and across stakeholders. Some of the factors leading to the achievement of this target were putting in place of targets by the Government, including the setting of specific targets - country-wise, product-wise, and Export Promotion Council-wise; monitoring of the targets and course correction where required. The export growth was driven by an increase in demand for products like petroleum, cotton yarn, textiles, chemicals, and engineering goods. India was able to leverage the gap in the supply of certain products in the wake of the pandemic-related disruptions and meet the global demand. Exports were also helped by favourable global commodity prices. Some of the specific schemes of the Government which have and are facilitating and encouraging exports are as follows.

11.24 **Focus on Agricultural Products:** India's agricultural exports achieved the highest ever export in FY22 reaching US$ 37.8 billion and it continued to perform well in FY23 with exports

[10]Keynote address delivered by Shri T Rabi Sankar, Deputy Governor, RBI at the Annual Day event of the Foreign Exchange Dealers Association of India (FEDAI) on 20 October 2022 in Mumbai.

[11]Patra, M. D (2022): India@75, RBI Bulletin, August, pp 13-34.

of US$ 26.8 billion during April- November 2022 backed by an effective agriculture export policy. Pro-active support of export promotion agencies including Export Inspection Council, Plantation Boards, and Agricultural and Processed Food Products Export Development Authority (APEDA), and export facilitating measures like online issuance of certificates required for exports, aided growth of agricultural exports. Regular promotions were organised for agricultural products through participation in trade fairs and special events in association with the Indian Missions.

To initiate agriculture exports from UTs of Jammu and Kashmir and Ladakh, APEDA has linked Kashmir valley start-ups, new entrepreneurs, Farmer Producer Organisations/farmer groups, and exporters of the region with importers. Regular shipments of high-value Kashmir Saffron (GI) are taking place to destinations including the Middle East, EU, and North America.

11.25 **Interest Equalisation Scheme:** This Scheme was formulated to give benefit in the interest rates being charged by the banks to the exporters on their pre- and post-shipment rupee export credits. While extending the scheme, from 1 October 2021 onwards, subvention rates have also been reduced. Henceforth, reduced revised rates of 3 per cent (erstwhile 5 per cent) subvention to MSME manufacturing exporters and 2 per cent (erstwhile 3 per cent) applies to merchant and other manufacturer exporters exporting along 410 (erstwhile 416) HS lines.

11.26 **Remission of Duties and Taxes on Exported Products (RoDTEP) scheme:** The scheme seeks remission of Central, State and Local duties/taxes/levies at different stages at the Central, State, and local level, which are incurred in the process of manufacturing and distribution of exported products, but are currently not being refunded under any other duty remission scheme.

11.27 **Export Credit Guarantee:** The Export Credit Guarantee Corporation (ECGC) supports Indian exporters and banks by providing export credit insurance services. ECGC provides insurance cover on the export consignment to protect exporters from the consequences of the payment risks. It also provides Export Credit Insurance to Banks (ECIB) to protect the Banks from losses on account of export credit given to exporters due to the risks of insolvency and/or protracted default of the exporter borrower. The ECGC has launched a new scheme in July 2022, under its ECIB products. Under this scheme the insurance cover to banks providing pre-shipment and post-shipment finance has been enhanced to 90 per cent from an average coverage of 70 per cent for accounts with an export working capital limit of up to X20 crore to support small exporters.

11.28 **Krishi Udan Scheme:** Krishi Udan Scheme was launched in August 2020 on international and national routes to assist farmers in transporting agricultural products so that it improves their value realisation. Krishi Udan 2.0 was launched in October 2021 enhancing the existing provisions, mainly focusing on transporting perishable food products from the hilly areas, North-Eastern states, and tribal areas. For facilitating and incentivising the movement of agricultural produce by air transportation, the Airports Authority of India provides a full waiver of Landing, Parking charges, Terminal Navigational Landing Charges and Route Navigation Facility Charges for Indian freighters and Passenger-to-Cargo Aircraft primarily around 25 airports focusing on North Eastern, Hilly and Tribal region and 28 airports in other regions/areas. Further, five more airports have been included under the Scheme, making it 58 airports.

11.29 **Trade Infrastructure for Export Scheme:** The Government has been implementing the Trade Infrastructure for Export Scheme since FY18 to assist Central and State Government

Agencies in the creation of appropriate infrastructure for the 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.

11.30 **Districts as Export Hubs** – One District One Product Initiative: The Districts as Export Hubs-ODOP initiative is aimed at targeting export promotion, manufacturing, and employment generation at the grassroots level, making the States and Districts meaningful stakeholders and active participants in making India an export powerhouse thereby contributing to the AatmNirbhar mission and achieving the vision of Make in India for the world and being Vocal for Local. The initiative is also aimed at fostering balanced regional development across all districts of the country. It seeks to select, brand, and promote products/services from each district of the country for enabling holistic socioeconomic growth across all regions, attract investment in the district to boost manufacturing and exports. A growing emphasis on exports by focusing on districts as potential export hubs is also likely to integrate India more closely with the global value chain and propel India to be a significant exporter by leveraging the diversity and competitiveness in agriculture, marine, textile, pharmaceutical, chemicals and many engineering products.

India's Global Trade Engagements

11.31 This era of globalisation has been accompanied by a proliferation of trade agreements and the emergence of competing trade blocs. These trends are affecting every business, every industry, and every country so that keeping up with these changes has become a challenging task for policymakers around the globe. Governments have been pursuing international trade cooperation largely driven by diverse external and internal political economy considerations such as promoting peace and stability, increasing market size and most importantly, insuring themselves against unfavourable trade policies of other countries.

11.32 India has always stood for an open, equitable, predictable, non-discriminatory, and rule-based international trading system. India considers Regional Trading Arrangements (RTAs) as 'building blocks' towards the overall objective of trade liberalisation and as complementing the multilateral trading system. Recognising that RTAs would continue to feature permanently in world trade, India has engaged with its trading partners/blocs with the intention of expanding its export market since the early part of the previous decade and began concluding, in principle agreements to move, in some cases, towards Comprehensive Economic Cooperation Agreements (CECA) which covers FTA in goods, services, investment and identifies areas of economic cooperation.

11.33 The economic rationale for FTAs was the diversification and expansion of India's exports to its trading partners, providing a level playing field vis-à-vis the competing countries having preferential access in our trading partners, as well as gain easier access to raw materials and intermediate products, at lower costs, for stimulating value-added domestic manufacturing. In the case of the India-Association of Southeast Asian Nations (ASEAN), India-Korea, and India-Japan Agreements, this was also part of a geopolitical strategy that dovetailed well into India's "Look East Policy."

11.34 India has so far concluded 13 FTAs and 6 Preferential Trade Agreements (PTAs). The most recent in the list are the India-UAE Comprehensive Economic Partnership Agreement (CEPA) which was signed on 18 February 2022 and officially entered into force on 1 May

2022 and the India-Australia Economic Cooperation and Trade Agreement (Ind-Aus ECTA), which was signed on 2 April 2022 and entered into force on 29 December 2022. Further, India is presently engaged in FTA negotiations with some of its trading partners, notable among these FTAs are – (i) India-UK FTA, (ii) India-Canada CEPA/ Early Progress Trade Agreement (EPTA), (iii) India-EU FTA. Moreover, India has also initiated action to review some of the existing FTAs, namely, India-Singapore CECA, India-South Korea CEPA, and India-ASEAN Trade in Goods Agreement and initiated discussions on scoping for the CECA with Australia, as envisaged under Ind-Aus ECTA.[12] Box XI.1 discusses the rise in the number of FTAs being entered into worldwide and various factors that determine their usefulness to a trading partner.

Box XI.1: Free Trade Agreements

FTAs or RTAs in terms of the WTO rules[13], are economic instruments available to a country for leveraging its competencies in trade and investment. As of June 2016, all WTO members now have at least one RTA in force. There has been a substantial rise in the number of trade agreements with 355 notifications of RTAs having been made to the WTO (As of 1 December 2022– Source: WTO website). Many WTO members continue to be involved in negotiations to create new RTAs, which are mostly bilateral. However, a recent development has been negotiations and new agreements among more than two WTO members, such as:

- Pacific Alliance between Chile, Colombia, Mexico, and Peru (Signed on 10 February 2014; entered into force on 1 May 2016);
- Tripartite Agreement, linking parties to the Common Market for Eastern and Southern Africa, the East African Community and the Southern African Development Community (Launched on 10 June 2015 and entered into force at different dates by different members);
- Comprehensive and Progressive Trans-Pacific Partnership Agreement (Signed on 8 March 2018; entered into force on 31 October 2018);
- African Continental Free Trade Area (AfCFTA) (Signed on 21 March 2018 and entered into force at different dates by different members); and
- Regional Comprehensive Partnership Agreement (RCEP) between the ASEAN members and six other WTO members (Signed on 15 November 2020; entered into force on 1 January 2022).

The limited progress in the multilateral trade negotiations at the WTO is one of the reasons responsible for the increase in FTAs. FTAs are viewed favourably by trading countries in comparison to multilateral negotiation at the WTO forum as they are easy to negotiate and provide flexibility to factor in geopolitical considerations.

The purpose of RTAs is to lower tariffs on goods and services and increase cooperation between trading partners with the aim of increasing trade, lower prices for consumers, and provide enhanced export opportunities for producers. RTAs can also have a larger impact on the economy. For instance, Bailé et al. (2019) found that FTAs are positively correlated with direct domestic value-added exports, as well as forward and backward participation in global value chains.

[12] For an understanding of various types of trade agreements that India has entered into, may refer to: https://www.tpci.in/research_report/types-of-trade-agreements/.

[13] RTAs, as per WTO rules, are any reciprocal trade agreement between two or more partners, not necessarily belonging to the same region.

According to the conventional gravity model, developed by Tinbergen (1962), bilateral trade between two nations is proportional to their respective sizes, measured by their GDPs and inversely proportional to the geographic distance, a proxy for transportation cost. Over time, more variables, such as exchange rates, income levels and shifting demand patterns, have been added to the standard gravity model to test their relevance in influencing trade (Osabuohien et al., 2019).

While an FTA provides the enabling environment for enhancing trade by reducing tariff and non-tariff barriers (NTBs), the trade growth of a country depends on many factors, such as:

(a) Specific features of the FTA such as the extent of tariff relaxations given vis-à-vis the Most Favoured Nation (MFN) tariffs[14], on which products they are given and how the relaxation is staggered, i.e., is it over a long time or short time that the relaxations are agreed to be rolled out.[15]

(b) The extent of concessions in terms of Rules of Origin (RoO)[16] and removal/easing of NTBs. While tariff barriers are agreed to be reduced in an FTA, NTBs, such as sanitary and phytosanitary measures, technical barriers to trade, contingent trade-protective measures etc., may lower the utilisation of the FTAs by traders.

(c) The capacity of an economy to increase the supply of products/services for which the FTA has provided an enhanced export venue. This 'supply-response' is determined by a wide range of factors which largely fall outside the ambit of an FTA. They include various policies on production aspects, a country's physical and institutional infrastructure, and other elements determining the short-term flexibility of an economy. In other words, the supply-response is governed by the potential for trade creation wherein a member of an FTA, having a comparative advantage in producing a product, is now able to sell it to its FTA partners because trade barriers have been removed (Viner, 1950).

(d) The effect of the FTA would also depend on income growth in the importing markets and the price competitiveness of exports of a partner country in a trade agreement so as to be able to take advantage of the agreement.

Further, not all trade may happen through the FTA route, especially if the RoO are cumbersome or goods are already trading at MFN zero duty. In order to take advantage of the FTAs, these must be aggressively utilised by the traders and service providers. Thus, it may not happen that there will be a sudden or significant increase in trade after an FTA is signed between two or more countries. The trade balance would shift only gradually and may also turn out to not be in favour of each partner, depending on a host of factors, some of which are listed above.

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[14] The MFN clause refers to a special trading status given by one country to another that gets applied to all the other members of the WTO.

[15] FTAs generally have phase-in periods in which existing trade barriers are phased out over time. This is generally done so that producers in the importing country can adjust to import competition. This typically occurs over 10 to 15 years after the ratification of the FTA.

[16] Rules of origin are the criteria needed to determine the national source of a product. Their importance is derived from the fact that duties and restrictions in several cases depend upon the source of imports.

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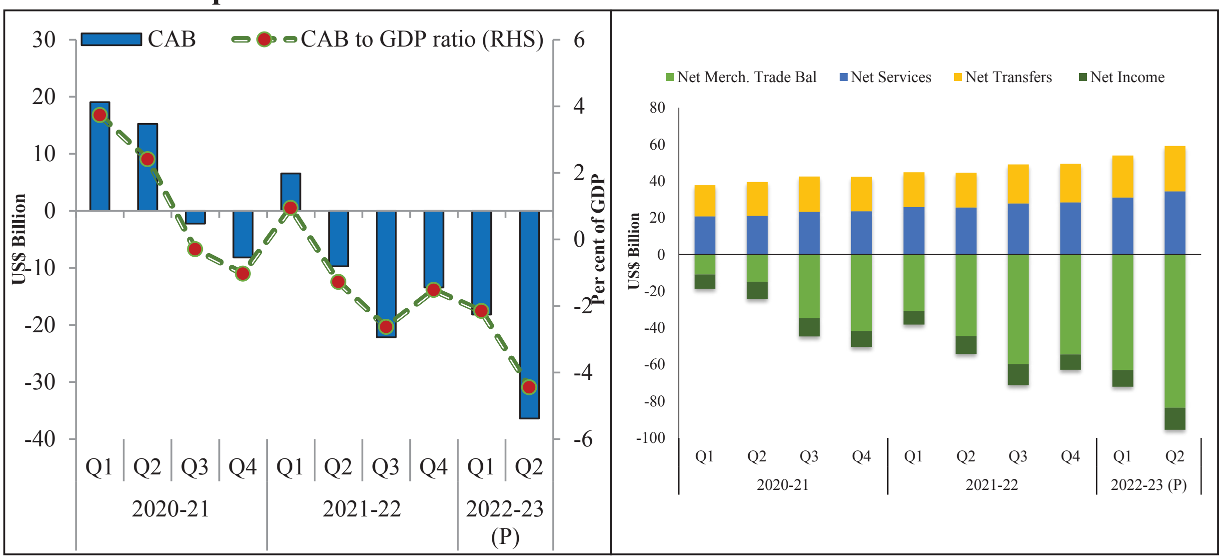
Balance of Payments in Challenging Times

Current Account Balance

11.35 India's external sector has been facing considerable global headwinds reflecting the geopolitical developments as detailed in the Introduction section above. India's current account balance (CAB) recorded a deficit of US$ 36.4 billion (4.4 per cent of GDP) in Q2FY23 in contrast to a deficit of US$ 9.7 billion (1.3 per cent of GDP) during the corresponding period of the previous year. The widening of the current account deficit (CAD) in the second quarter of FY23 was mainly on account of a higher merchandise trade deficit of US$ 83.5 billion and an increase in net investment income outgo. For the period April- September 2022 (H1FY23), India recorded a CAD of 3.3 per cent of GDP on the back of an increase in the merchandise trade deficit, as compared with 0.2 per cent in H1FY22. However, a comparison with the position of the CAB for selected countries shows that India's CAD is modest and within manageable limits.

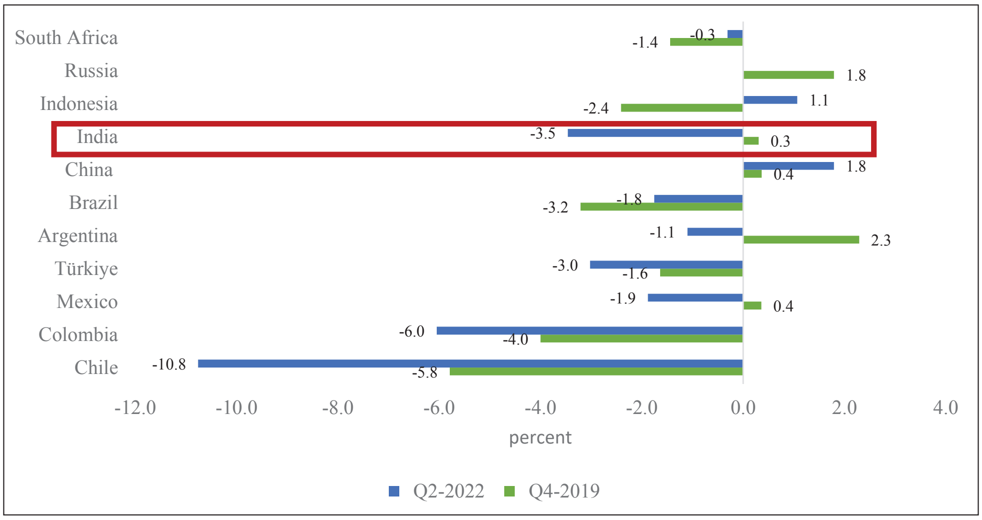
XI.7: Current Account Balance (CAB): Magnitude and Composition

a. Current account balance and as a per cent of GDP | **b. Composition of Current account balance**



Source: RBI P: provisional

XI.8: Current account balance as percentage of GDP: India vs Select Countries

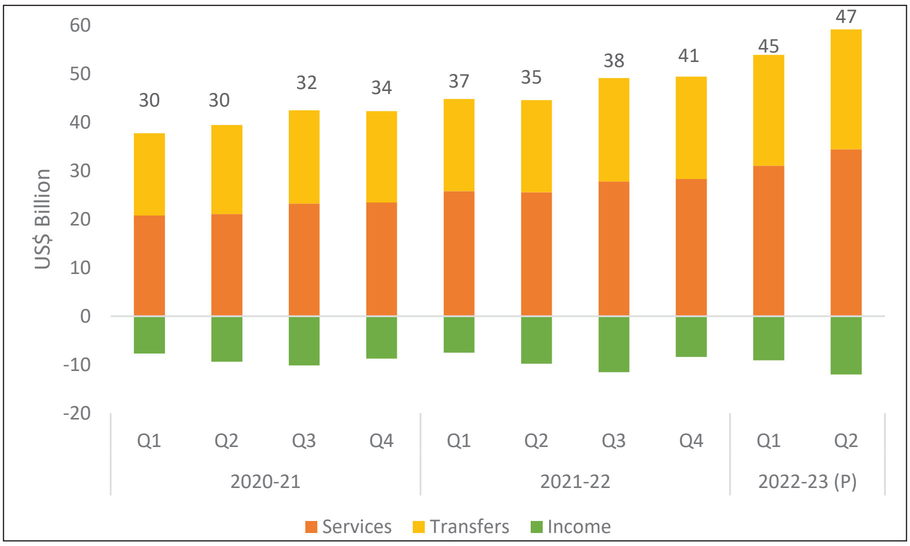


Source: OECD Economic Outlook 112 Database

Invisibles

11.36 Net services receipts increased from US$ 51.4 billion in H1FY22 to US$ 65.5 billion in H1FY23, primarily on account of robust computer and business services receipts. Similarly, the net private transfer receipts, mainly representing remittances by Indians employed overseas, was US$ 48.0 billion in H1 FY23 against their level of US$ 38.4 billion during the same period a year ago. A sharp rise in crude oil prices and the deprecation of the INR seem to have boosted remittance flows into India. Net services exports and remittances contributed to the surplus on the invisible account, which cushioned the merchandise trade deficit.

XI.9: Composition of Net Invisibles: Robust services and buoyant transfers

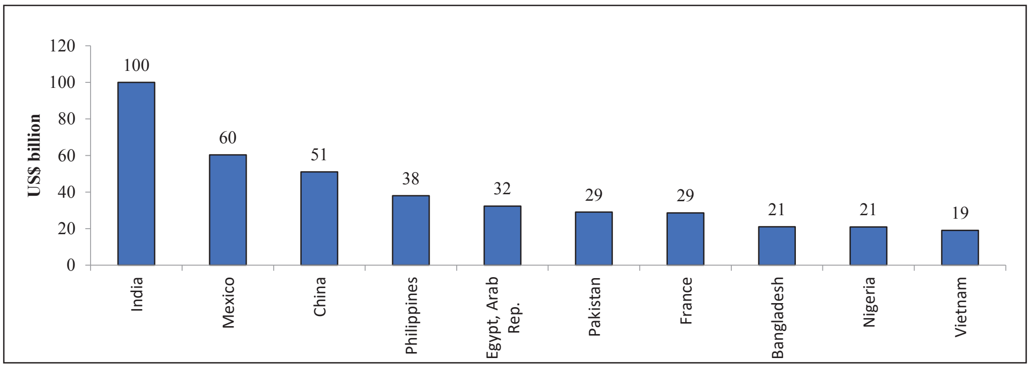


Source: RBI P: Provisional

11.37 Remittances are the second largest major source of external financing after service export, which contribute to narrowing the CAD and has always been a stable constituent of the BoP. India has the largest emigrant population and is the top remittance recipient country with remittances anticipated to reach a milestone of US$100 billion in 2022 according to the World

Bank.[17] Remittances have benefitted from a gradual structural shift in Indian migrants' key destinations from largely low-skilled, informally employment in the Gulf Cooperation Council (GCC) countries to a dominant share of high-skilled jobs in high-income countries such as the United States, the United Kingdom, and East Asia (Singapore, Japan, Australia, New Zealand).[18]

Figure XI.10 Top Remittance recipients of the World during 2022 (Estimated)



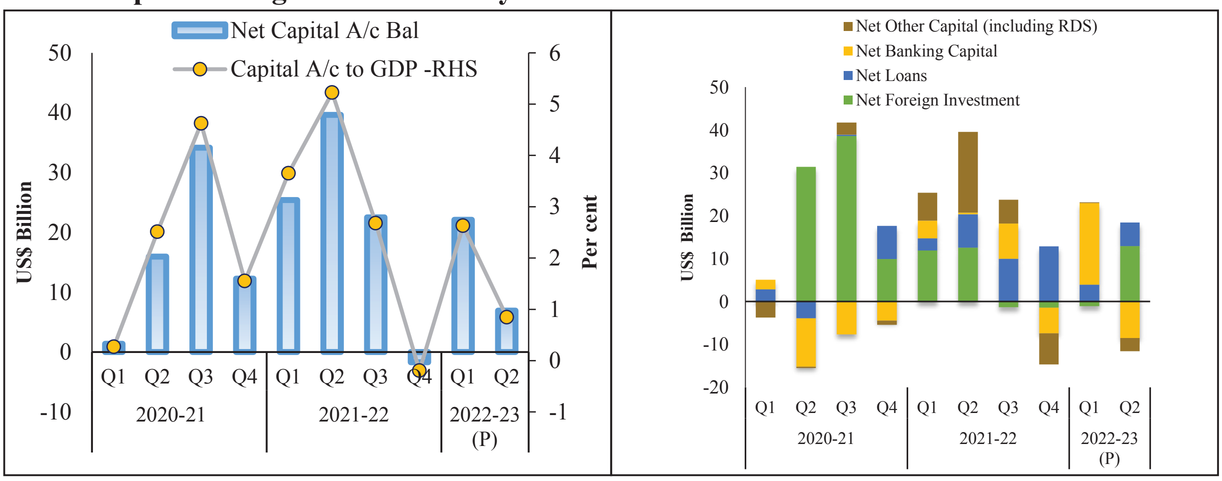
Source: World Bank

Capital Account Balance

11.38 Foreign investment, consisting of Foreign Direct Investment (FDI) and foreign portfolio investment (FPI), is the largest component of the capital account. On a BoP basis, the net capital inflows declined to US$ 29.0 billion in H1FY23 from US$ 65.0 billion[19] in H1FY22 primarily driven by the FPI outflow of US$ 14.6 billion in Q1FY23. Net FDI inflows at US$ 20.0 billion in H1FY23 were comparable with US$ 20.3 billion in H1FY22.

XI.11: Capital Account Balance: Magnitude and Composition

a. Capital Account Balance: Narrowing surplus amid global uncertainty: | **b. Composition of Capital Account Balance**



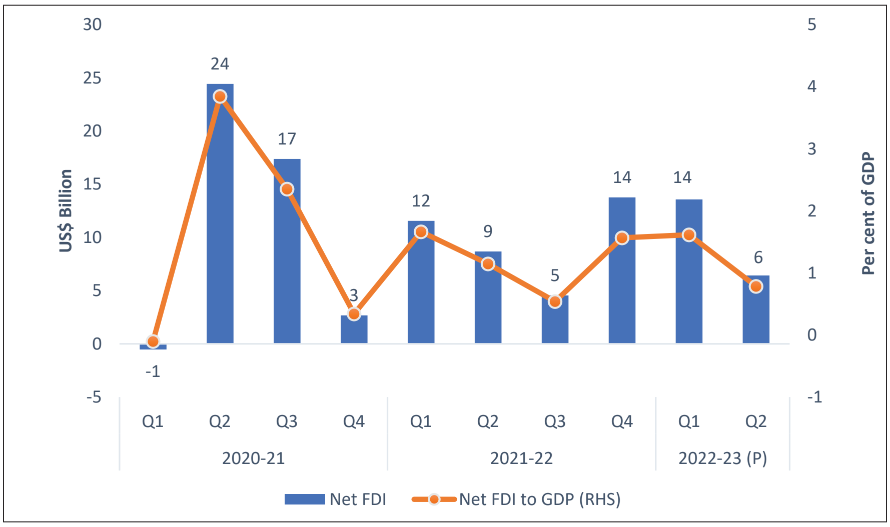
Source: RBI P: Provisional

11.39 During April-September 2022, gross FDI inflows were US$ 39.3 billion as compared to US$ 42.5 billion a year ago. Computer Software and Hardware attracted the highest share of FDI equity inflow (23.4 per cent) followed by Services (15.4 per cent) and Trading (12.2 per

[17] World Bank, Migration and Development Brief 37, November 2022
[18] Fifth Round of the Survey on Remittances for the year 2020–21, Reserve Bank of India.
[19] This included an additional allocation of SDRs of US$ 17.9 bn. in Q2FY22.

cent). In terms of FDI inflow, Singapore was the top investing country with a 37.0 per cent share, followed by Mauritius (12.1 per cent), UAE (11.0 per cent), and the USA (10.0 per cent).

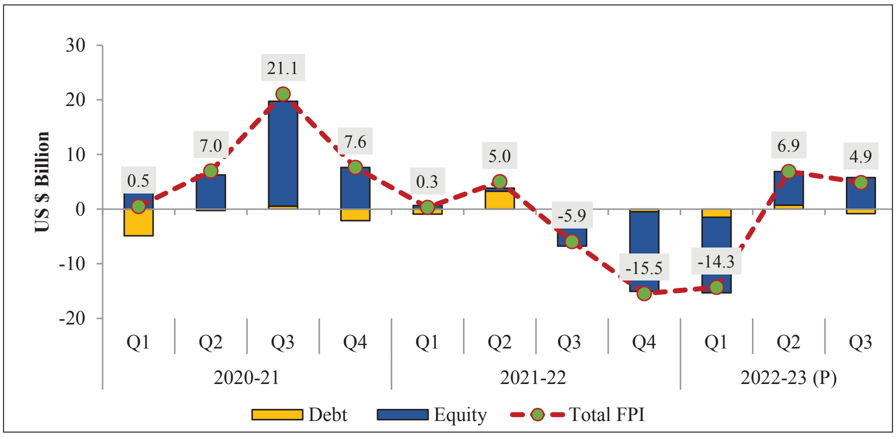
Figure XI.12 Net Foreign Direct Investment



Source: RBI P: Provisional

11.40 Repercussions of the Russia-Ukraine conflict and aggressive monetary policy tightening by the US Fed escalated global financial market volatility leading to net outflow by FPIs in Q1FY23. However, FPI flows turned positive in Q2FY23. Overall, FPIs recorded a net outflow of US$ 2.5 billion during April-December 2022 as against an outflow of US$ 0.6 billion a year ago.

Figure XI.13 Net Foreign Portfolio Investment



Source: National Securities Depository Limited P: Provisional

11.41 Among other forms of capital flows, in H1FY23, banking capital reported higher net inflows of US$ 10.6 billion against US$ 4.4 billion during the same period of FY22. As global liquidity conditions tightened, demand for short-term trade credit rose during H1FY23, resulting in higher net short-term credit receipts of US$ 10.1 billion. Furthermore, with more repayments in comparison to fresh disbursals, external commercial borrowings (ECBs) to India recorded net outflows of US$ 3.0 billion in H1FY23 as against net inflows of US$ 5.0 billion a year ago.

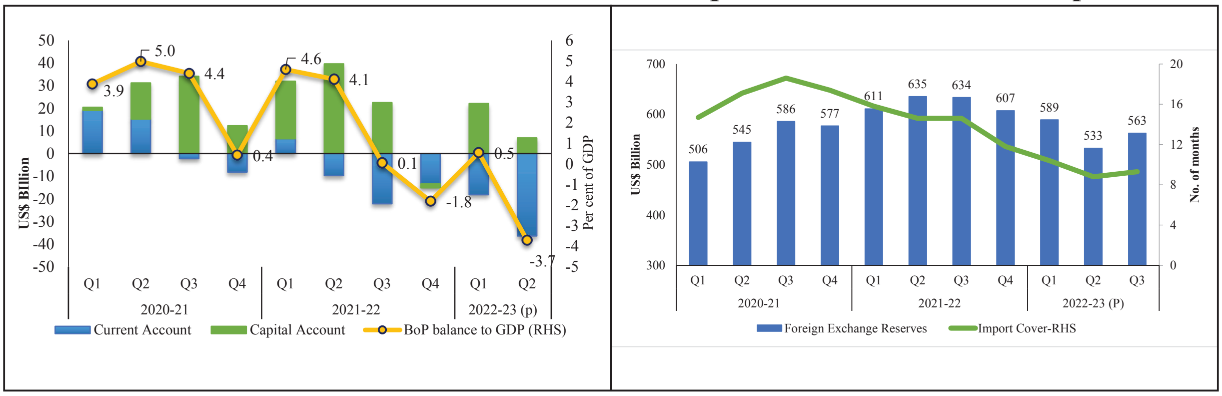
Balance of Payments and Foreign Exchange Reserves

11.42 Overall, the adverse global economic situation placed India's BoP under pressure in 2022. While the impact of a sharp rise in oil prices was discernible in the widening of the CAD, policy tightening by the US Fed and the strengthening of the US dollar led to FPI outflows. As a result, as the net financial inflows fell short of the CAD, there was a depletion of foreign exchange reserves on a BoP basis to the tune of US$ 25.8 billion in H1FY23 in contrast to an accretion of US$ 63.1 billion in H1FY22. But huge valuation losses (US$ 48.9 billion) contributed to the net depletion of US$ 74.6 billion of reserves in nominal terms during the period.

11.43 India's foreign exchange reserves stood at US$ 532.7 billion as of end-September 2022, covering 8.8 months of imports. The reserves augmented to US$ 562.7 billion as of end-December 2022 covering 9.3 months of imports. As of end-November 2022, India was the sixth largest foreign exchange reserves holder in the world according to data compiled by the IMF. As seen from the graph, the import coverage of foreign currency reserves has declined since the pre-pandemic levels in most emerging market economies; however, that of India has increased from 95% in Q4 2019 to 96.5% in Q3 2022. Box XI.2 discusses some aspects of the literature on what constitutes adequate forex reserves for a country.

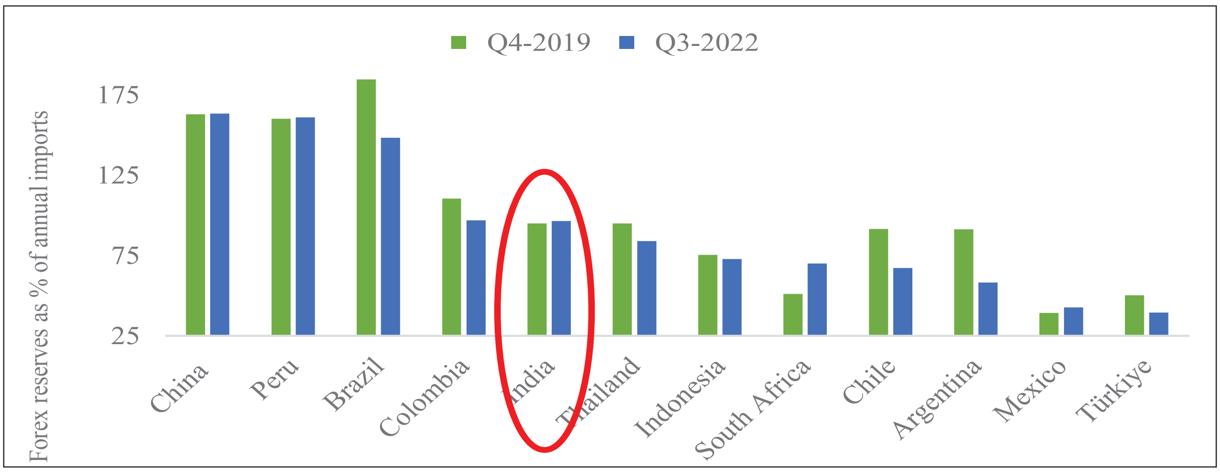
XI.14: Overall BoP Balance and Forex Reserves

a. The surplus in the BoP balance | **b. Adequate Forex reserves and Import Cover**



Source: RBI P: Provisional

Figure XI.15 Adequacy of India's Forex Reserves (as a percentage of Annual Imports): A Cross-country perspective



Source: IMF (forex reserves) and WTO (for imports data)

Box XI.2: Adequacy of foreign exchange reserves

How to assess what constituted an adequate level of Foreign Exchange Reserves (FER)? Are there some international benchmarks or thumb rules which can serve as a guide? What are the factors which a country should consider while determining its own threshold of "adequacy"? How best to ensure the liquidity of such reserves as against mere availability? This box attempts to answer these questions by drawing from the relevant literature and present an academic perspective.

FER is required for various purposes, such as to maintain the exchange rate within a certain range, or to maintain a certain level of exchange rate if the country follows a fixed exchange rate system; maintain liquidity and allow time to absorb shocks in situations where access to borrowing is curtailed or very costly. The optimal level of reserves empowers the government to maximise the welfare of the representative consumer, given the constraint of sudden stops in terms of debt rollover crisis. The drivers behind the accumulation of reserves have evolved over the years: initially for precautionary purposes until the early 2000s, followed by goals of monetary and exchange rate policies (Arslan Yavuz, et al 2019). Accordingly, the FERs of several countries have witnessed a rising trend, more so since the global financial crisis of 2008.

Table: Total Foreign exchange reserves excluding gold (in US$ bn)

	2005	2008	2019	2020	2021	Nov-2022	%change: 2021 over 2008
Russian Federation	175.9	411.8	443.9	457.0	497.6	567.3	20.8
India	131.9	247.4	432.4	549.1	594.4	555.3	140.3
Brazil	53.3	192.8	353.6	351.5	354.6	331.5	83.9
United States	54.1	66.6	118.4	133.9	240.2	237.8	260.7
United Kingdom	54.0	56.1	158.4	161.2	176.0	204.1	213.7
Indonesia	33.1	49.6	125.3	131.1	140.3	134.0	182.9
South Africa	18.6	30.6	48.9	47.4	50.3	60.0	64.4
Australia	41.9	30.7	55.6	39.2	53.8	57.9	75.2
World	**4395.0**	**7418.2**	**12195.3**	**13122.5**	**13944.7**	**11598.6***	**88.0**

Source: International Financial Statistics, IMF
*Figure as of Sept 2022

This brings in the debate on adequacy of reserves. Conventionally, there are three measures of adequacy of reserves, viz. ratios of reserves to imports, to monetary aggregates, and measures of external debt (IMF, 2000). According to the traditional approach to determining the adequacy of reserves, the simple rule of thumb is three months of imports or full cover of short-term debt. As regards the former, there is little empirical support for whether the adequate coverage should be three months, as opposed to say two or six (IMF, 2011). The latter derives from the Guidotti–Greenspan-IMF rule which states that a country's reserves should equal short-term external debt (one-year or less maturity), suggesting a ratio of reserves-to-short term debt of one. The rationale is that countries should have enough reserves to cope with the withdrawal of short-term foreign capital. Then there are also money-based indicators of reserves which provide a measure of the potential for resident-based capital flight from the currency. The indicators used are the ratio of reserves to broad money or the ratio of reserves to base money which help in assessing reserve adequacy under fixed exchange rate regimes. Each of these indicators may, in themselves, not be adequate to assess the requirements of FERs for an economy and different measures may typically be used for different purposes.

The IMF (SM/00/65, 3/23/2000), noted the importance of short-term debt as a source of risk but cautioned against excessive reliance on a single indicator and pointed to the need to consider various potential sources of short-term demand for reserves. Further, IMF (SM/01/311, 10/16/2001) has noted the need to complement indicator-based analyses with stress-testing of the BoP. In addition, there are customised risk-based broader-based metrics tailor-made to capture sources of risk emanating from external liabilities (debt and equity) as well as current account variables (export earnings) and some measure of potential capital flight (broad money) (IMF, 2011). Adequacy should be considered against total resources available to meet shocks, a broader concept than the BoP-determined definition of reserve assets.

While reserves are imperative in both preventing crises situations and mitigating their impact, there is a cost involved in holding them and they are subject to diminishing returns. The costs borne by an economy for holding FER include the opportunity cost, in terms of the difference between domestic and foreign borrowing rates and loss due to the value reduction in the denominated FER. Rodrik (2006) examines the social cost of FERs and finds that the income loss to most developing countries amounts to close to one per cent of GDP.

Fukuda and Kon (2010) evaluate the macroeconomic impact of reserve accumulation and find evidence that an increase in FERs raises external debt outstanding but shortens debt maturity. Further, in the long-run, consumption declines, and exports, are promoted by encouraging a switch from the non-tradable sector to the tradable sector through higher investment and growth. Further, FERs could be inflationary through exchange rate effects (Lin, et al 2009) and moral hazard and incentive effects (Chitu, 2016).

Therefore, an economy should organise its reserves FER, in terms of the optimal size and currency composition, considering the benefits, costs, and impacts of holding them. Co-movement of the domestic currency with key currencies and the currency invoicing of trade (Ito, 2019); trade flows (trade invoicing), financial flows (share of debt service payments in a currency), and currency pegs (Eichengreen, 2000) are the dominant factors influencing the currency composition of FERs. Further, drawing from the field of finance, the Value at Risk (VaR) approach has also been employed to arrive at the optimal foreign exchange portfolio (Hung et al. (2008).

As briefly reviewed above, the rich literature on reserve adequacy presents very useful background information and empirical analysis for policy choices and likely outcomes.

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Exchange Rates Moving in Tandem with Global Developments

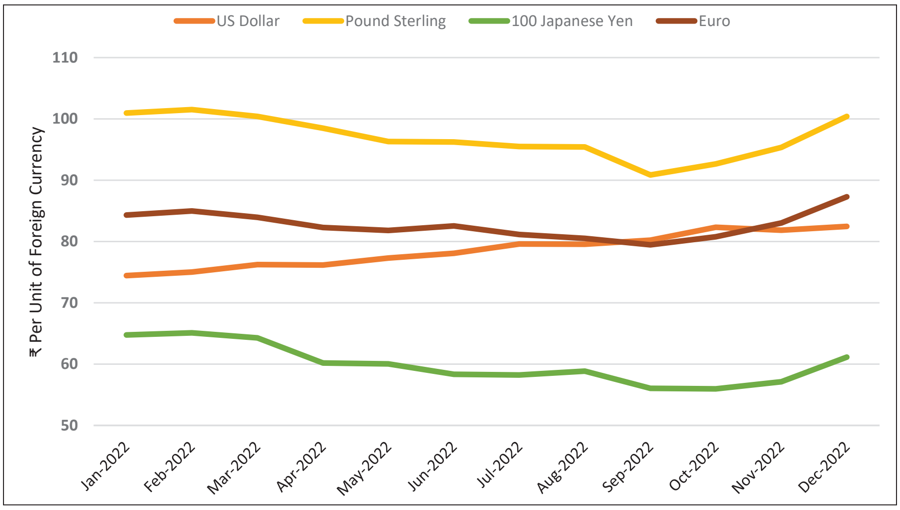
11.44 The exchange rate of the Indian Rupee is market-determined as the RBI's intervention in the foreign exchange market is mainly to contain instances of excessive volatility. On a financial year basis, i.e., from April to December 2022, the INR has depreciated against US$ by 8.3 per cent.[20] Over the same period, the US dollar has appreciated by 4.4 per cent in terms of the US dollar index.[21] This holds even on a calendar year basis, i.e., from January to December 2022, the INR has depreciated by 10.8 per cent whereas the US dollar has appreciated by 6.4 per cent. The Nominal Effective Exchange Rate (NEER) of the US dollar (27 economies) appreciated by 7.8 per cent in the calendar year 2022, up to December, while the NEER of India (64 economies) depreciated by 4.8 per cent. In other words, it is not that the INR has weakened, but it is the US dollar that has strengthened. No matter how many tweets are written against that observation, it is a fact. Several other currencies depreciated even more value against the US dollar than the INR (Refer Figure I.12 of Chapter I). Thus, the external value of INR vis-à-vis the US dollar has seen very orderly movements during the year since the onset of the current geopolitical crisis.

11.45 Further, the INR appreciated against select major currencies barring the US dollar. The average exchange rate of INR against the Pound Sterling appreciated by 6.7 per cent in April -December 2022 over April - December 2021. This rate of appreciation was 14.5 per cent with respect to the Japanese Yen and 6.4 per cent against the Euro.

[20] Change in Monthly average exchange rate in December 2022 over April 2022.

[21] The U.S. dollar index (US$X) is a measure of the value of the U.S. dollar relative to a basket of foreign currencies. These are: the Euro, Swiss franc, Japanese yen, Canadian dollar, British pound, and Swedish krona.

Figure XI.16 Exchange Rate of Indian Rupee vis-à-vis Major Currencies



Source: RBI

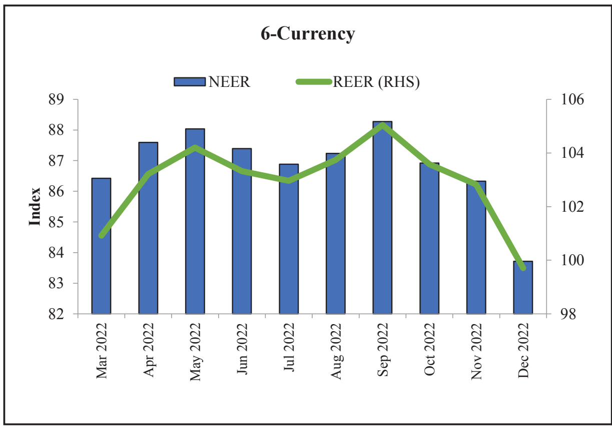
Note: The exchange rate for Japanese Yen is in Rupees per 100 Yen.

11.46 Cross-country comparisons of exchange rate movements are often made on an inflation-adjusted basis or what is called in real effective terms, viz. the Real Effective Exchange Rate (REER). On a financial year basis, i.e., between April 2022 and December 2022, the INR depreciated 3.4 per cent and 4.0 per cent measured in terms of 6-currency and 40-currency trade-weighted indices, respectively. Thus, even in real terms, the INR witnessed modest depreciation in the face of global spill overs.

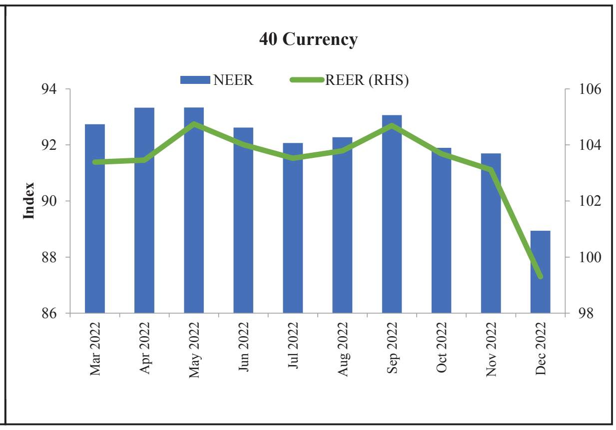
11.47 In terms of the 6-currency NEER (trade-weighted), the rupee depreciated by 4.4 per cent in December 2022 over April 2022. Similarly, the rupee depreciated by 4.7 per cent in terms of 40-currency NEER[22] (trade-weighted) in December 2022 over April 2022.

XI.17: Movement of Index of 6-Currency and 40-Currency NEER and REER (Trade-based weight) (The base Year 2015-16 = 100)

a. 6- Currency Trade-Based



b. 40- Currency Trade Based



Source: RBI

[22] The indices NEER and REER are used as indicators of external competitiveness. NEER is the weighted average of bilateral nominal exchange rates of the home currency in terms of foreign currencies, weights being based on the average of India's bilateral trade (exports plus imports) with countries/regions represented by the 6/40 currencies during the preceding three years. The REER, defined as a weighted average of nominal exchange rates adjusted for relative price differential between the domestic and foreign countries, relates to the PPP hypothesis.

International Investment Position: A Reflection of India's Financial Soundness

11.48 The international investment position (IIP) is a statistical statement that shows at a point in time the value and composition of (a) financial assets of residents of an economy that are claims on non-residents and gold bullion held as reserve assets, and (b) liabilities of residents of an economy to non-residents. The difference between an economy's external financial assets and liabilities is the economy's net IIP, which may be positive or negative.[23] The Net IIP position determines whether a country is a net creditor or debtor nation by measuring the difference in its external assets and liabilities. These statistics serve as an indicator of a country's financial condition and soundness. The Net IIP, along with the BoP transactions, reflects the domestic economy's set of international accounts.

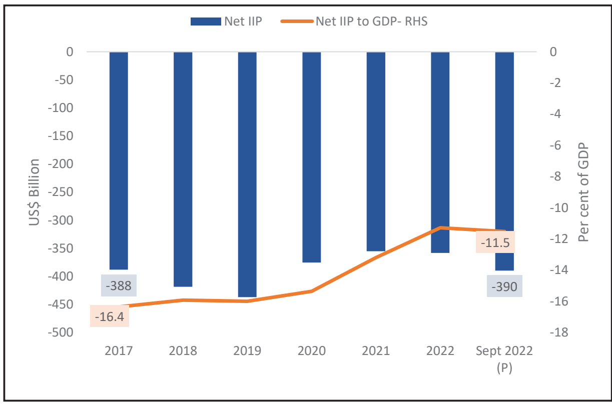
11.49 For India, as of end-September 2022, Indian residents' overseas financial assets at US$ 847.5 billion were lower by US$ 73.0 billion or 7.9 per cent compared to the level as of end-March 2022, mainly due to the reduction in reserve assets even as trade credit and overseas direct investment recorded an increase. Reserve assets at US$ 532.7 billion, accounting for around 62.9 per cent of India's international financial assets fell by 12.3 per cent over the same period.

11.50 International liabilities at US$ 1,237.1 billion as of end-September 2022 were lower by US$ 41.6 billion (3.2 per cent) as compared to the level as of end-March 2022. This fall was attributed primarily to direct investment (net) outflows, while variations in the exchange rate of the rupee vis-a-vis other currencies also had an impact on the change in liabilities when valued in US$ terms. The share of debt liabilities in total external liabilities was 50 per cent as of end-September 2022.

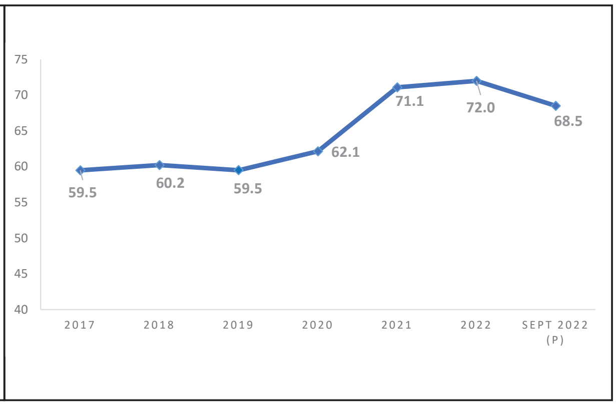
11.51 Thus, the net claims of non-residents on India, valued at US$ 389.6 billion as of end-September 2022, increased by US$ 31.4 billion over the level as of end-March 2022. India's international financial assets covered 68.5 per cent of international financial liabilities as of end-September 2022.

XI.18: India's net International Investment Position in end-September 2022

a. Net IIP and as percentage to GDP



b. Asset Liabilities Ratio (in per cent



Source: RBI; P: Provisional

[23] IMF, Balance of Payments and International Investment Position Manual, sixth edition (BPM6),

Safe and Sound External Debt Situation

11.52 India's external debt, at US$ 610.5 billion as of end-September 2022, grew by 1.3 per cent (US$ 7.6 billion) over US$ 602.9 billion as of end-September 2021. However, external debt as a ratio to GDP fell to 19.2 per cent as of end-September 2022 from 20.3 per cent a year ago. The literature documents that the optimal threshold for India's external debt is around 23-24 per cent of GDP.[24] Thus, India has the potential growth positive space as far as the external debt level is concerned. While testifying to the prudent management of India's external debt, this contrasts with the external debt distress unfolding in many peer countries, post-covid.

11.53 The long-term debt was lower at US$ 478.7 billion as of end-September 2022 than US$ 498.1 billion a year ago with the share of long-term debt falling to 78.4 per cent from 82.8 per cent during the same period. On the other hand, the short-term debt at US$ 131.7 billion as of end-September 2022 was higher than US$ 104.8 billion as of end-September 2021. Accordingly, the share of short-term debt in total debt went up to 21.6 per cent from 17.4 per cent. In this context, it needs to be noted that about 97 per cent of short-term debt is in the form of trade credit to finance imports and hence the rise in short-term debt is stability-friendly. Further, while a major part of India's external debt is denominated in the US dollar (55.5 per cent as at-September 2002), the Indian rupee-denominated component (30.2 per cent) occupies the second largest position, insulating the external debt from foreign currency risk, thereby augmenting stability friendly characteristics of the external debt.

11.54 As of end-September 2022, Sovereign External Debt (SED) amounted to US$ 124.5 billion, decreasing by 5.7 per cent over the level a year ago. Non-SED, estimated at US$ 486.0 billion as of end-September 2022, posted a growth of 3.2 per cent over the level a year ago. Deposit-taking Corporations (except the Central Bank) and non-financial corporations accounted for the bulk of non-SED.

11.55 The Ministry of Finance's "India's External Debt: A Status Report 2019-20", provides details of the evolution of India's external debt.[25] A discernible trend in the rise in external debt of the non-sovereign sector over the SED is seen since FY99. Accordingly, typically, in a normal year, it is the relative movements in non-SED that influences the dynamics of the country's external debt. In the pandemic year of FY21, it was the growth in SED that accounted for a larger share of the overall growth of foreign debt due to Covid-19 loans from multilateral institutions. As the pandemic receded and normalcy was restored with the revival of the economy, the usual dynamics of India's external debt returned as the growth in non-SED constituted as much as 4.7 percentage points out of the overall external debt growth of 8.0 per cent at end-March 2022. However, the quarter ending September 2022, yet again witnessed deviation from the usual dynamics. It was the relative growth in SED (akin to the pandemic year) that influenced the overall external debt dynamics on the back decline in external assistance as well as other government debt which includes FPI investment in G-Sec and SDR. Out of the overall decline in India's external debt by 0.4 per cent, the fall in the SED was 0.5 per cent, while the rise in non-SED was 0.2 per cent.

[24] Gopinath, Tulasi and Rajeshwar. S, Tangjam (2022): Growth Maximising External Debt of India, RBI, Bulletin, May, P 73-86

[25] https://dea.gov.in/external-debt; Refer Box 2.1

11.56 India's external debt vulnerability indicators continued to be benign. External debt as a ratio to GDP at 19.2 per cent as of end-September 2022 was lower than 19.9 per cent as of end-March 2022. The debt service ratio (principal repayments plus interest payments) stood at 5.0 per cent vis-à-vis 5.2 per cent as of end-March 2022.

11.57 Comparing various debt vulnerability indicators of India with peer countries for 2021 informs that the country is in a better position in terms of relatively low levels of total debt as a percentage of Gross National Income (GNI) and short-term debt as a percentage of total debt. The current stock of external debt is well shielded by the comfortable level of foreign exchange reserves.

Table XI.3: External Debt Outstanding

(US$ Billion unless indicated otherwise)

Sector/Instrument	Sept 2021	June 2022 PR	Sept 2022 P	Absolute Variation		Percentage Variation	
				Sept 2022 over Sept 2021	Sept 2022 over June 2022	Sept 2022 over Sept 2021	Sep 2022 over Jun 2022
1	2	3	4	5	6	7	8
I. General Government	132.0	127.7	124.5	-7.5	-3.2	-5.7	-2.5
II. Central Bank	0.1	0.1	0.1	0.0	0.0	-18.0	-0.5
III. Deposit-taking Corporations, except the Central Bank	160.1	155.3	152.2	-8.0	-3.1	-5.0	-2.0
IV. Other Sectors	284.7	301.9	305.6	20.9	3.7	7.3	1.2
IV.1. Other financial corporations	52.0	51.6	50.5	-1.5	-1.1	-2.8	-2.1
IV.2. Non-financial corporations	232.7	250.3	255.1	22.3	4.8	9.6	1.9
IV.3. Households and non-profit institutions serving households (NPISHs)	0.0	0.0	0.0	0.0	0.0	-18.5	-6.3
V. Direct Investment: Intercompany Lending	26.0	27.7	28.1	2.2	0.4	8.4	1.6
Gross External Debt (I to V) (As a percentage of GDP)	602.9 (20.3)	612.7 (19.3)	610.5 (19.2)	7.6	-2.3	1.3	-0.4
Memo Items:							
A. Total Long-term Debt	498.1	486.7	478.7	-19.4	-8.0	-3.9	-1.6
B. Short-term Debt#	104.8	126.1	131.7	27.0	5.7	25.8	4.5

Source: RBI, Ministry of Finance

PR: Partially Revised; P: Provisional

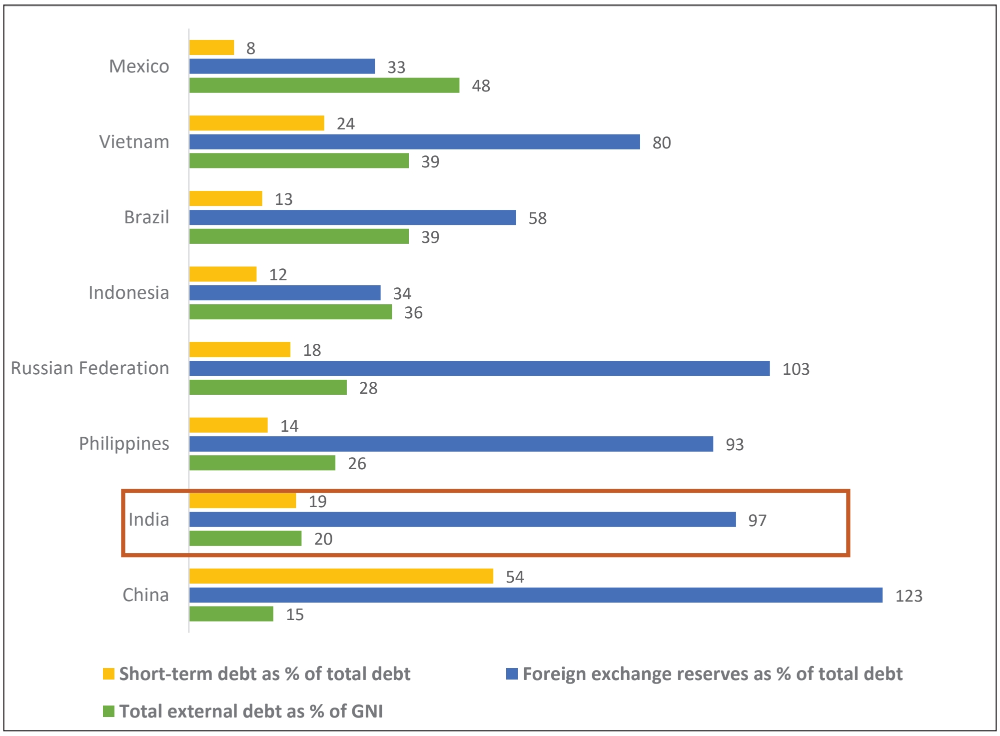
Table XI.4: India's Key External Debt Indicators: A snapshot of stability

(Per cent, unless indicated otherwise)

End-March	External Debt (US$ billion)	Ratio of External Debt to GDP	Debt Service Ratio	Ratio of Foreign Exchange Reserves to Total Debt	Ratio of Concessional Debt to Total Debt	Ratio of Short-Term Debt (original maturity) to Foreign Exchange Reserves	Ratio of Short-Term Debt (original maturity) to Total Debt
2017	471.0	19.8	8.3	78.5	9.4	23.8	18.7
2018	529.3	20.1	7.5	80.2	9.1	24.1	19.3
2019	543.1	19.9	6.4	76.0	8.7	26.3	20.0
2020	558.4	20.9	6.5	85.6	8.8	22.4	19.1
2021	573.6	21.2	8.2	100.6	9.0	17.5	17.6
2022PR	619.0	19.9	5.2	98.0	8.3	20.0	19.7
End-June 2022 PR	612.7	19.3	4.9	96.5	8.0	21.4	20.6
End-Sept 2022 P	610.5	19.2	5.0	87.3	7.7	24.7	21.6

PR: Partially Revised. P: Provisional.
Source: RBI and Ministry of Finance

Figure XI.19 Debt ratios: Cross-country comparison for 2021



Source: Source: International Debt Report, 2022, World Bank

Outlook for the External Sector: Cautious Amidst Global Headwinds

11.58 Slowing global demand is weighing on India's merchandise exports. The empirical literature documents that global growth exerts a strong statistically and economically significant impact on India's real exports, though the impact has reduced over the years.[26] As noted earlier (para 11.2), global growth is forecast to slow down in 2022 and 2023 as per IMF estimates. This is the weakest growth profile since 2001 except for the global financial crisis and the acute phase of the Covid-19 pandemic.

11.59 Thus, the export outlook may remain flat in the coming year if global growth does not pick up in 2023, as indicated by many forecasts. In such cases, product basket and destination diversification which India is taking through FTAs would be useful to enhance trade opportunities. At times when the base (global growth and global trade) is not growing, export growth will have to come predominantly through market share gains. In turn, that comes from the focus on efficiency, productivity, technology, and innovation. That game has to be lifted. Governments can try and open markets through FTAs. But, to take advantage of that is in the hands of private sector participants.

11.60 India is facing competition from South Asian countries in a few of its export competitive products. In the textile sector, Bangladesh and Vietnam are seen to be expanding their exports globally, in recent years. Further, Vietnam has been able to expand its exports in machinery and equipment; computers, electronic products, certain agriculture products etc. However, given the benefits of the lower average age of the working population along with the advantage of economies of scale, India has the potential to cater to the global demand for several products in a cost-effective manner.

11.61 On the imports side, notwithstanding uncertainty surrounding the outlook on global crude oil prices, the recent softening in its prices augurs well for India's POL imports. However, non-oil, non-gold imports, which are growth-sensitive, may not witness a significant slowdown as Indian growth continues to be resilient.

11.62 While recognising the potential adverse developments, it is important to take cognisance of innate buffers to India's external sector. India's export of services, primarily contributed by software, business, and travel services, while remaining robust during the year so far, embodies a greater degree of resilience. India is cementing its position as the top remittance receiver in the world, with inward remittances projected to be at record levels during 2022. Accordingly, a large surplus under services and remittances would cushion the widening trade deficit. Consolidating an increasing share of non-debt flows in financing CAD over the years, net FDI flows remained robust during the current year, while the net FPI inflows turned positive in recent months. Thus, the CAD would be within manageable limits and eminently financeable. Above all, the forex reserves remained comfortable at US$ 562.7 billion as of end-December 2022, covering 9.3 months of imports. The stock of India's external debt has been prudently managed.

[26]Chinoy, S. Z and Jain, T (2018): What Drives India's Exports and What Explains the Recent Slowdown? New Evidence and Policy Implications; NCAER, Policy Forum; https://www.ncaer.org/wp-content/uploads/2022/09/a4.pdf

11.63 From a cross-country perspective too, India's external sector has fared relatively better and hence positioned relatively stronger to face the evolving adverse global scenario as evidenced by the Indian rupee outperforming most EME currencies, comfortable import cover and moderate CAD. India's external debt vulnerability indicators are benign by international standards. To sum up, while India's external sector faces challenges, it is performing relatively better as compared to many of its peers as it has inbuilt shock absorbers to weather them.

PHYSICAL AND DIGITAL INFRASTRUCTURE: LIFTING POTENTIAL GROWTH

12

CHAPTER

The invention of the wheel set in motion the necessity of travelable paths, and since then the saga of infrastructure has expanded from canals to modern capital structures such as railways, roads etc. depending on the necessities of the region. In the last 75 years in India since Independence, infrastructure development has moved on a consistent growth curve building the assets required by the nation across sectors such as transportation, housing, commercial development, telecom and most recently, sanitation. As a key enabler of socio-economic enhancement of a region, the government has used 'social overhead capital' to push development in the remotest areas of the country through dedicated budgetary allocation, cross-subsidising revenue-generating infrastructure and focussed programme delivery. This has helped in expanding physical transportation and connectivity, providing services at point-of-use and deepening digital penetration.

Infrastructure, being a melange of numerous sectors, its multiplier effects in the economy cannot be realised if it operates in silos. Thus, in 2019, Government of India adopted a forward-looking programmatic approach towards infrastructure. The National Infrastructure Pipeline was born with a projected investment of around ₹111 lakh crore for FY20-25 for developing a comprehensive view of infrastructure development in the country, monitoring its progress at the highest levels in the government for timely completion, and enabling a pipeline view for investors for them to plan infrastructure investments. The funding for infrastructure comes from a variety of sources, from government to private sector to multilateral. However, given the quantum of funding involved, a creative financing option such as asset monetisation was also envisaged through the 5 lakh crore National Monetisation Pipeline. Apart from generating critical financial resources, private participation in running risk-free brownfield assets will also help in ushering in operational efficiencies and better management of public assets.

The programmatic approach to infrastructure is complemented by structural and financial reforms such as infrastructure financing options of InvITs and REITs, creation of Dedicated Financing Institution (NaBFID), recapitalisation of other sectoral DFIs, push to PPP ecosystem through Model Concession Agreements by line ministries and enabling social infrastructure development through the revamped Viability Gap Funding scheme.

To bring in further convergence with comprehensive planning across centre and states, PM GatiShakti has sectoral complementarity of logistics facilitation through the National Logistics Policy launched in Sept 2022. All of this is expected to tighten the nuts and bolts for the arduous infrastructure journey that our country has undertaken together by the *participation of centre, state, local governments and the private sector.*

This story has seen many successes. While roads, railways, and waterways have seen unprecedented expansion in the last eight years, ports and airports have been substantially upgraded. This has also helped the country move from unimodal to multi-modal transportation, providing a window of opportunity to the private sector to invest and reinvest in these assets, which has already been facilitated by the policy of asset monetisation. Extending infrastructural facilities is only part of the story; modernisation is the other important principle that has been attempted with verve and achieved with commendable speed.

In keeping with the winds of change around the globe, we have placed a great emphasis on digital and communications development, but, have taken the principle to new heights in terms of usability, interoperability and accessibility. The country has come a long way from a time when a basic telephone connection was viewed as a luxury, to a stage where most individuals now have a mobile connection. It is not a hyperbole to state that with the thrust on Digital India, the story of digital infrastructure and services in India will always be seen by the world with a certain regard and appreciation. In a very short time, the country has seen a great multiplier effect on social and economic growth through the different uses of digital enablement led by the humble mobile phone and the Aadhar number– targeted beneficiary identification for various benefits, provision of healthcare and education services and financial inclusion. Close on this, arrived the success story of India's sui-generis payment infrastructure (UPI), which travelled internationally with select adoption and global acclaim. The bouquet of digital public infrastructure products like e-rupi,e-way bill, TReDS for MSMEs etc have ensured real value for money to consumers while reducing the compliance burden for producers. And now, with the vision of $1 trillion digital economy by 2025, the government is marching towards providing more and more e-governance based services.

All of these developments are a testament to the fact that India has been one of the few countries where innovation in technology and digital connectivity has been and continues to be led by the public sector. The success of UPI, a common platform that serves as the backbone for diverse developments, has prompted government to task itself with another innovative attempt towards democratising digital commerce through the ONDC which could potentially transform how businesses and consumers interact at present. Empowering the end-users with control over their data is an essential ongoing task that is guided by the Account Aggregator framework.

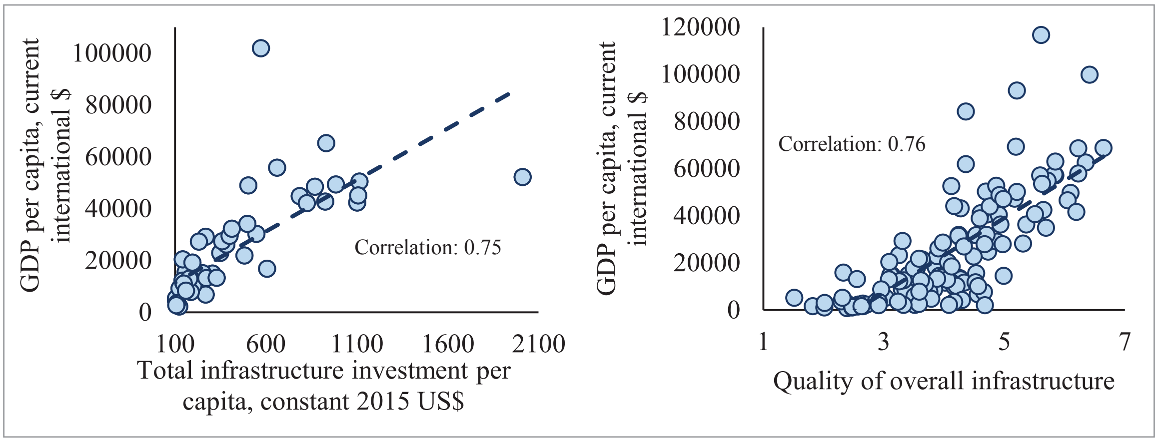
As the developments would indicate, the world has moved seamlessly from the focus on physical infrastructure to investing in digital infrastructure. Moving forward, it is almost a certainty that most of the future real-world applications are going to marry the two, something akin to that attempted under Smart Cities, that interlocks area-based development with digital assets and digital services.

In the context of unique challenges, which only a country with a billion people can face, India's infrastructure journey has been global in outlook, but domestic in innovation and implementation.

Introduction

12.1 As India completes 75 years of Independence, the nation is evolving into a prominent force in the global economic order. India is the world's fifth largest economy and the prospect of steady progress in the coming years is bright. Here, the critical role played by infrastructure in economic growth cannot be overemphasised. Investing in high-quality infrastructure[1] is crucial for accelerating economic growth and sustaining it in the long run. As the empirical evidence states, this has a salutary effect on the productivity and efficiency of Indian manufacturing firms[2]. It further plays a significant role in poverty reduction[3] and promotes both rural and agricultural development[4,5]. Empirical evidence also points to the positive effect of infrastructure towards bringing overall economic growth in India[6].

Figure XII.1: Quantity and quality of infrastructure and level of economic development across countries are strongly correlated



Note: The left graph pertains to 2019, and the right graph pertains to 2018.
Quality of overall infrastructure: 1=worst and 7=best.
Source: World Bank, Global Infrastructure Hub, and World Economic Forum Global Competitiveness Index

12.2 The above correlation between infrastructure and development brings us to the present scenario when during the times of pandemic and geo-political crisis, the government kept its focus on reforms in areas of physical, digital and regulatory infrastructure. In order to increase the private sector participation in creation of new infrastructure and development of existing ones, the government took initiatives like Public-Private Partnership (PPP), National Infrastructure Pipeline (NIP) and National Monetisation Pipeline (NMP). In addition to this, as part of the structural reforms with the objective to enhance efficiencies and cost competitiveness, Gati

[1] In a broad sense, the term infrastructure refers to the "…physical facilities, institutions and organisational structures, or the social and economic foundations, for the operation of a society" (World Investment Report 2008: Transnational Corporations and the Infrastructure Challenge. United Nations Conference on Trade and Development.). The present chapter focuses only on emerging issues in the context of physical and digital infrastructure. Separate chapters of this survey provide in-depth views on social infrastructure and financial infrastructure related issues.

[2] Mitra, A., Varoudakis, A., & Véganzonès-Varoudakis, M. (2002). Productivity and Technical Efficiency in Indian States' Manufacturing: The Role of Infrastructure. Economic Development and Cultural Change, 50(2), 395–426. DOI:10.1086/321916.

[3] Dutt, G. and Ravallion, M. (1998). Why have some Indian States Done Better than Others at Reducing Rural Poverty? Economica, 65: 17-38. https://doi.org/10.1111/1468-0335.00112

[4] Binswanger, H; Khandker, R. & Rosenzweig, M. (1993). How infrastructure and financial institutions affect agricultural output and investment in India, Journal of Development Economics, Volume 41, Issue 2, 1993, Pages 337-366, https://doi.org/10.1016/0304-3878(93)90062-R.

[5] Fan, S., Hazell, P. and Thorat, S. (2000). Government Spending, Growth and Poverty in Rural India. American Journal of Agricultural Economics, 82: 1038-1051. https://doi.org/10.1111/0002-9092.00101.

[6] Sahoo, P. & Dash, R. (2009) Infrastructure development and economic growth in India, Journal of the Asia Pacific Economy, 14:4, 351-365, DOI:10.1080/13547860903169340

Shakti and National Logistics Policy (NLP) were also launched. This buffet of reforms on all aspects related to infrastructure investment and project execution not just ensures economic growth and economic efficiency but also generates confidence among various stakeholders in the economy towards government functioning.

12.3 Building upon it, the government has also kept its focus towards developing the traditional infrastructure like roads, railways, airports, ports, mass transport and waterways. These play a vital role in national integration and regional development. The mechanisms like multi-modal transport system have also been put in place. The multi-modal connectivity will provide integrated and seamless connectivity for movement of people and goods from one mode of transport to another. It will facilitate the last mile connectivity and also reduce travel time for people, further reducing the logistics cost and promoting export competitiveness. These measures collectively can bring out the untapped potential of underutilised modes of infrastructure.

12.4 With increasing financialisation of the economy and penetration of digital services, growth in physical infrastructure alone could not be the answer for development. Though India's digital journey predates the pandemic, it would be rational to say that the testing times of the pandemic have accelerated its acceptance, application and coverage in many ways. The adaptability displayed by the citizens towards technology-driven changes was very encouraging. This confluence of digitisation and innovation acted as a game changer for India.

12.5 Reflecting on the journey of digital infrastructure growth and its global adoption, it is pertinent to mention that in 2009, only 17 per cent of adults in India had bank accounts, 15 per cent used digital payments, 1 in 25 had a unique ID document, and about 37 per cent had mobile phones. Today, these numbers have seen a meteoric rise — tele density has reached up to 93 per cent, over a billion people have a digital ID document, more than 80 per cent have bank accounts, and as of 2022, over 600 crore of digital payment transactions are completed per month. A Bank for International Settlements (BIS) working paper[7] has estimated that progress towards financial inclusion, which would have taken almost half a century had India followed traditional growth processes, was achieved in India in just about ten years.

12.6 Today, India is able to offer many best practices, particularly with respect to its digital infrastructure innovations, that can be emulated globally. Successful vaccination drive through the one-stop Co-WIN portal, DigiLocker, Open Network for Digital Commerce (ONDC), Open Credit Enablement Network (OCEN), Goods and Services Tax (GST) Sahay are a few success stories among many. The National Payments Corporation of India International (NPCIL) led Unified Payment Interface (UPI) is another such innovation which transformed the payment landscape. UPI based transactions grew both in value and volume terms, paving the way for its international adoption.

12.7 Capitalising on the digital infrastructure support, India has also emerged as one of the world's most vibrant destinations for start-up ecosystems. Start-ups are being envisioned as the spine of new India, as they encourage the youth to become job creators rather than job seekers. With the highest FinTech adoption rate of 87 per cent among the public compared to the global average of 64 per cent, India has gained the 3rd place in digital payments[8] only after US and

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[7] https://www.bis.org/publ/bppdf/bispap106.pdf, page 4.

[8] https://bfsi.economictimes.indiatimes.com/news/fintech/indias-fintech-market-size-at-31-billion-in-2021-third-largest-in-world report/88794336 BLinC per cent20report_Fintech_2022.pdf

China, signifying that India has an untapped market. These untapped opportunities, along with the favourable ecosystem, creates a large growth potential for FinTechs in India. Taking this vision forward, under the government's policy initiative, a world-class FinTech Hub at Gujarat International Finance Tec-City (GIFT) International Financial Services Centre (IFSC) has been developed.

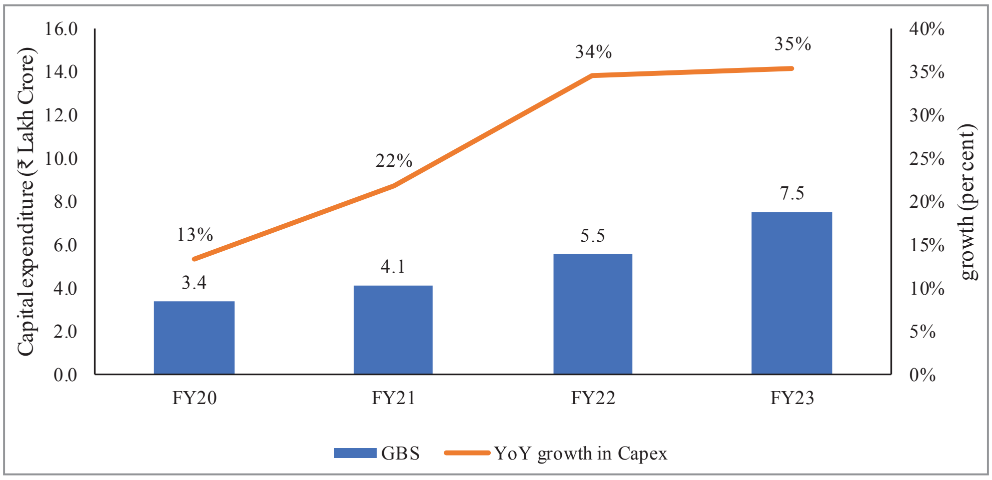
12.8 This is just an illustration of the opportunities that exist. The massive wave of digitisation, increased penetration of smartphones, and adoption of technology have opened the doors for both traditional and new-age sectors. The rollout of 5G services can unleash new economic opportunities and help the country leapfrog the traditional barriers to development, spur innovations by start-ups and business enterprises, and advance the 'Digital India' vision. The journey is far from complete, and a lot remains to be accomplished to realise our true potential.

12.9 To summarise, this chapter covers the recent and past experiences of the government in transforming and inter-locking the potential of physical, regulatory and digital infrastructure. In doing so, the chapter looks to answer the following: How have the various infrastructural sectors fared after the Covid-19 shock? How has the government leveraged digital technologies in the service of the public? How far has the government been able to determine the role of co-ordination and efficiency in infrastructure projects and what is the government's vision towards infrastructure development? In doing so, we will cover the government's plans to place India among the top three global economies and inch closer to the status of a developed nation by the 100th year of its Independence.

Government's Vision and Approaches to Infrastructure Development in India

12.10 Increase in infrastructure investment provides a critical push to the potential growth of the economy. The government, in recent years, provided an increased impetus for infrastructure development and investment through the enhancement of capital expenditure. This push has happened at a time of crisis when the capital expenditure by the private sector has been subdued. The outlay (target) for capital expenditure in 2022-23 (BE) was increased sharply by 35.4 per cent from ₹ 5.5 lakh crore in the previous year (2021-22) to ₹ 7.5 lakh crore, of which approximately 67 per cent has been spent from April to December 2022.

Figure XII.2: Central Government has sharply increased Capital Expenditure in the last two consecutive years*



* All figures are representative of Budgeted Estimates for the respective Financial Year
Source: Union Budget of India

12.11 The result of the efforts is visible in Ministries'/ Departments' Capex spending till December 2022, which has been ₹5 lakh crore (around 67 per cent has been achieved against the Budgeted Capex of 7.5 lakh crore) as against ₹3.9 lakh crore for the same period in FY22 (i.e., till December 2021). The actual expenditure in FY23 is also 28 per cent higher than the expenditure in FY22 for the corresponding period.

12.12 The steady increase in public capital expenditure has helped support economic growth while laying the foundation for future growth as capital assets boost economic efficiency and potential growth. It could also crowd in private investment, as the IMF observed in the case of India[9]. This is evident from the fact that capacity utilisation in the private sector has been recovering.

12.13 While the NIP and the NMP would provide the much-needed impetus for stepping up infrastructure investment, the NLP will address the gaps in services, digital infrastructure and skills in the logistics workforce. PM GatiShakti, with a multimodal approach, is designed to fill the gaps in physical infrastructure and to integrate existing and proposed infrastructure development initiatives of different agencies. As physical infrastructure requires continuous support over its long gestation period, the government has also set up National Bank for Financing Infrastructure and Development (NaBFID) as development financial institution to set in motion a virtuous investment cycle. An institutional mechanism to fast-track investments has been put in place, in the form of Project Development Cells (PDCs) in all concerned Ministries/ Departments of Government of India.

12.14 The government's vision for infrastructure does not stop here. As India has already submitted its Long-Term Low Emission Development Strategy at COP27, the next leap would be towards advanced infrastructure, which is more energy efficient, incorporates the idea of a circular economy and transitions towards low carbon development. The amount of investment that may be needed for putting in place climate resilient and climate resistant infrastructure might be too vast to be provided for by either the public sector or the private sector alone. Both financing and the creation of such infrastructure are likely to require Public-Private Partnership, a topic to which we turn next.

Public-Private Partnerships (PPPs)

12.15 Private investment in infrastructure is mainly in the form of PPPs. PPPs are vital instruments for governments in channelling the strength of private sector in critical areas of infrastructure. It helps to address infrastructure gap and improve efficiency in infrastructure service delivery. The very success of PPPs lies in the robustness of institutional structure, financial support, and use and availability of standardised documents, such as Model Request for Qualification (RFQ), Model Request for Proposal (RFP) and Model Concession Agreements (MCAs).

12.16 In India, private participation in infrastructure programmes supports several PPP models, including management contracts like Build-Operate-Transfer (BOT), Design-Build-Finance-Operate-Transfer (DBFOT), Rehabilitate-Operate-Transfer (ROT), Hybrid Annuity Model (HAM), and Toll-Operate-Transfer (TOT) model. Under the BOT model, there are two variants – BOT (Toll) and BOT (Annuity) depending on who bears the traffic risk. In the case of BOT

9 Bahal, Girish & Raissi, Mehdi & Tulin, Volodymyr. (2018). Crowding-Out or Crowding-In? Public and Private Investment in India.

(Toll), the traffic risk is borne by the PPP concessionaire, while in the case of BOT (Annuity), it is borne by the public authority.

12.17 The Public Private Partnership Appraisal Committee (PPPAC), the apex body for appraisal of PPP projects in the Central Sector has streamlined appraisal mechanism to ensure speedy appraisal of projects, eliminate delays, adopt international best practices and have uniformity in appraisal mechanism and guidelines. The PPPAC is chaired by Secretary, Department of Economic Affairs (DEA) with Secretaries of Department of Expenditure, Department of Legal Affairs, the Sponsoring Ministry/Department and CEO, NITI Aayog as members to consider and appraise the proposals for Central Sector PPP Projects. The Public Private Partnership Appraisal Committee has cleared 79 projects with a total project cost of ₹2,27,268.1 crore from FY15 to FY23.

12.18 To provide financial assistance to financially unviable but socially/ economically desirable PPP projects, DEA launched the Viability Gap Funding (VGF) scheme in 2006. Under this scheme, economic sector projects may get up to 40 per cent of Capex as VGF grant. The Scheme includes higher provisions of VGF grant for social sectors. Social sectors may get up to 80 per cent of the Capex and up to 50 per cent of the Operating Expenditure (Opex) for five years after Commercial Operation Date (CoD) as VGF grant.

12.19 Social Sector projects get VGF under two categories: Sub Scheme-1 and Sub-Scheme-2. Sub-Scheme-1 caters to social sectors such as wastewater treatment, water supply, solid waste management etc. The projects under this category should have at least 100 per cent Operational Cost recovery. The Government of India (GoI) will provide a maximum of 30 per cent of Capex and the State Government concerned may provide an additional support of up to 30 per cent of Capex. Sub-scheme 2 supports demonstration/pilot projects from Health & Education sectors. The projects eligible under this category should have at least 50 per cent Operational Cost recovery. The GoI will provide a maximum of 40 per cent of the Capex of the project and a maximum of 25 per cent of the Opex of the project for the first five years of commercial operations as VGF.

12.20 From 2014-15 to 2022-23, under the VGF Scheme, 56 projects with TPC of ₹57870.1 crore were granted In-Principle Approval and 27 projects with TPC of ₹25263.8 crore were granted final approval with a Total Viability Gap Funding approval of ₹5813.6 crore (Both GoI & State Share). The GoI share of approved VGF is ₹3102.6 crore and the State Share of Total VGF approved is ₹2710.9 crore. The total VGF amount disbursed by DEA under the scheme from FY15 to FY23 is ₹2982.4 crore.

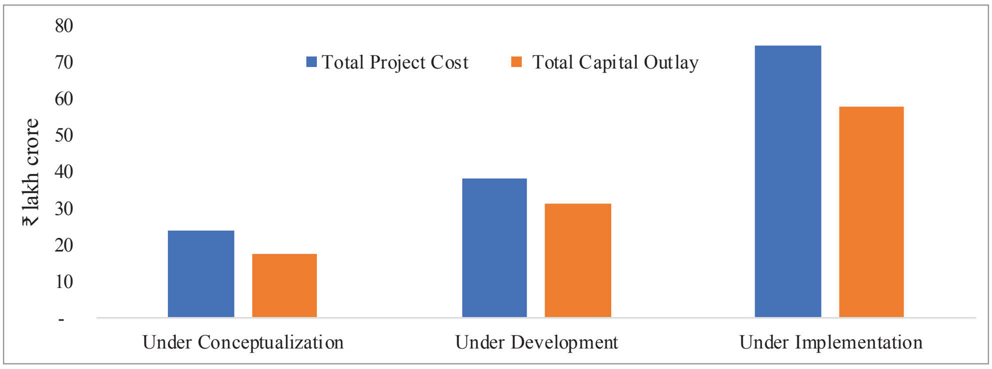
12.21 A scheme for financial support for project development expenses of PPP Projects – the 'India Infrastructure Project Development Fund Scheme' (IIPDF) – was notified by the government on 3 November 2022. The aim of the scheme is to develop quality PPP projects by providing necessary funding support to the project-sponsoring authorities, both in the Central and State Governments, for creating a shelf of bankable, viable PPP projects by on-boarding transaction advisers.

12.22 IIPDF Scheme has a total outlay of ₹150 crore for a period of 3 years from FY23 to FY25. Under the scheme, a maximum amount of ₹5 crore for a single proposal, inclusive of any tax implications, can be funded, which can include the cost of consultants/transaction advisers of a PPP project. Any funding requirement over and above ₹5 crore may be borne by the project sponsoring authority itself, and funding under IIPDF shall not be recovered.

National Infrastructure Pipeline (NIP)

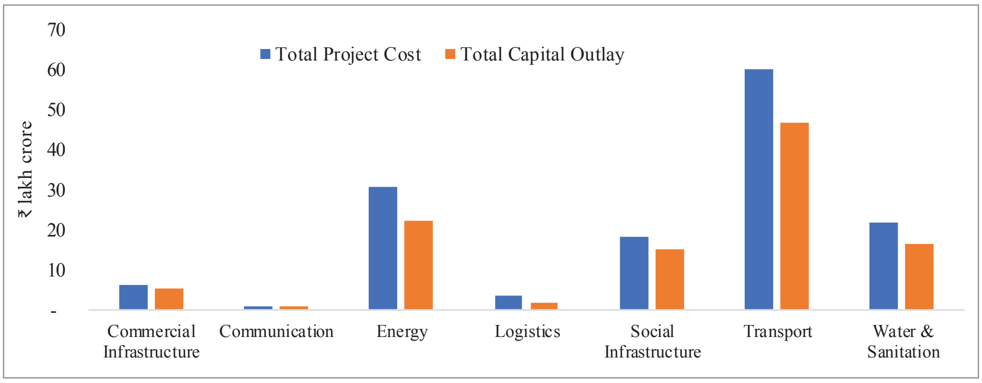
12.23 A developing economy such as ours requires a continued stepping up of infrastructure investment to sustain a high rate of growth, which in turn is a pre-requisite for achieving wide-ranging social objectives. In view of this, the government launched the National Infrastructure Pipeline (NIP) with a forward-looking approach and with a projected infrastructure investment of around ₹111 lakh crore during FY20-25 to provide high quality infrastructure across the country. It also envisages improving project preparation and attracting domestic and foreign investment in infrastructure. The NIP includes infrastructure projects of more than ₹100 crore covering greenfield and brownfield investments. The NIP currently has 8,964 projects with a total investment of more than ₹108 lakh crore under different stages of implementation. Regarding sectoral composition, the transport sector constituted more than half of the projects.

Figure XII.3: Status of Projects under NIP



Source: Department of Economic Affairs.
Note: Data as of 13 January 2023

Figure XII.4: Transportation sector dominates the NIP



Source: Department of Economic Affairs.
Note: Data as of 13 January 2023

12.24 NIP is hosted on the Invest India Grid (IIG) platform and provides opportunities for States/UTs and Ministries to collate all major infrastructure projects at a single location. IIG thus acts as a centralised portal to track and review project progress across all economic and social infrastructure sub-sectors. The portal also enables project-sponsoring authorities to showcase investment opportunities to national and international investors. Project Monitoring Group (PMG) is an institutional mechanism put in place by the government for resolution of issues related to large-scale projects. PMG is also involved in the fast-tracking of approvals/clearances for projects with an anticipated investment of ₹500 crore and above. Now, it has been proposed to integrate NIP and PMG portals. When implemented, NIP will become the first entry point (database) for all infrastructure projects (costing ₹100 crore or more). PMG portal will pick up data, as per requirements (project cost of ₹500 crore or more), from the NIP database. This will save substantial time and effort by Ministries and States/UTs and ease the monitoring of large infrastructure projects.

National Monetisation Pipeline – Creation through monetisation

12.25 The need for scaling up infrastructure investment despite fiscal pressures from Covid-19 pandemic required unlocking of capital from various projects across sectors. The National Monetisation Pipeline (NMP), was thus announced on 23 August 2021. Based on the principle of 'asset creation through monetisation', it taps private sector investment for new infrastructure creation.

12.26 It is expected that private players would operate and maintain the assets. The NMP provides an opportunity for deleveraging balance sheets and providing fiscal space for investment in new infrastructure assets. The estimated aggregate monetisation potential under NMP is ₹6.0 lakh crore through core assets of the Central Government, over a four-year period, from FY20-25.

12.27 The process of monetisation entails a limited period license/ lease of an asset, owned by the government or a public authority, to a private sector entity for upfront or periodic consideration. Funds so received by the public authority are reinvested in new infrastructure or deployed for other public purposes. Such contracts include provisions for the transfer of assets back to the authority at the end of the contract period. It includes a selection of de-risked and brownfield assets with a stable revenue generation profile (or long-term revenue rights) that can be clearly ring-fenced. It contains 20+ asset classes across 12+ line ministries/ departments. In addition, the top 5 sectors (by estimated value) capture around 83 per cent of the aggregate pipeline value: roads (27 per cent) followed by railways (25 per cent), power (15 per cent), oil & gas pipelines (8 per cent), and telecom (6 per cent). Roads and railways together contribute around 52 per cent of the total NMP value.

12.28 Against the monetisation target of ₹0.9 lakh crore in FY22, ₹0.97 lakh crore have been achieved during the period under roads, power, coal and mines. The cumulative investment potential over the years of transactions completed is estimated at ₹9.0 lakh crore (value captured in the form of accruals, receipts, and/or private investment). NMP's 2nd year, i.e., FY23, target envisaged is ₹1.6 lakh crore (27 per cent of overall NMP Target) under Core-Asset Monetisation. This is an indicative value while the actual realization for public assets may differ depending on the timing, transaction structuring, investor interest, etc.

National Logistics Policy: Reducing the cost of logistics

12.29 Given that India aims to increase its exports manifold, it is important that the logistics aspects, that will facilitate this goal, be addressed. Logistics costs in India have been in the range of 14-18 per cent of GDP against the global benchmark of 8 per cent. Key dimensions to be addressed to improve logistics for trade include: ensuring efficiency of the clearance process (i.e., speed, simplicity, and predictability of formalities) by border control agencies, including customs; improving the quality of trade and transport-related infrastructure (e.g., ports, railroads, roads, information technology); easing of arranging competitively priced shipments; enhancing the competence and quality of logistics services (e.g., transport operators, customs brokers);

providing for tracking and tracing of consignments and ensuring timeliness of shipments in reaching destinations within the scheduled or expected delivery time. These aspects have been captured by the World Bank in the form of a Logistics Performance Index (LPI).

12.30 Many efforts have already been made by the Government of India to improve the logistics ecosystem through 'infrastructure initiatives' such as Ude Desh ka Aam Nagrik (UDAN), Bharatmala, Sagarmala, Parvatamala, National Rail Plan, and through 'process reforms' GST, e-Sanchit, Single Window Interface for Trade (SWIFT), Indian Customs Electronic Data Interchange Gateway (ICEGATE), Turant Customs, and others.

12.31 However, a need was felt to integrate all these efforts by different government agencies and lay an overarching interdisciplinary, cross-sectoral, and multi-jurisdictional framework for the logistics sector. To realise this idea, NLP was launched on 17 September 2022, addressing the components of improving efficiency in logistics through streamlining processes, regulatory framework, skill development, and mainstreaming logistics among others.

12.32 The vision of the NLP is "to develop a technologically enabled, integrated, cost-efficient, resilient, sustainable and trusted logistics ecosystem in the country for accelerated and inclusive growth." The policy is an endeavour to improve the competitiveness of Indian goods, enhance economic growth and increase employment opportunities. It is aimed at bringing global standards to warehousing, multimodal digital integration, ease of logistics services, human resources, and skill enhancement.

12.33 The targets for achieving the vision of the NLP are to (i) reduce the cost of logistics in India to be comparable to global benchmarks by 2030; (ii) improve the Logistics Performance Index ranking - endeavour is to be among the top 25 countries by 2030, and (iii) create a data-driven decision support mechanism for an efficient logistics ecosystem.

12.34 The Policy will be implemented through a Comprehensive Logistics Action Plan (CLAP). The interventions under the CLAP are divided into specific key action areas, including Integrated Digital Logistics Systems, standardisation of physical assets & benchmarking service quality standards, Logistics Human Resources Development and Capacity Building, State Engagement, EXIM (Export-Import) Logistics, Service Improvement framework, Sectoral Plan for Efficient Logistics and Facilitation of Development of Logistics Parks.

12.35 Among other steps taken to enhance logistics performance in the country, there has been an initiative to undertake a sub-national view of the state of logistics in the country through the Logistics Ease Across Different States (LEADS) index. The following Box provides some details of this initiative.

Box XII.1: Logistics Ease Across Different States

The Government undertook a survey-based assessment of logistics ease in various States and UTs in the form of the LEADS index in 2018 to gauge their logistics ecosystem. It was followed by surveys in 2019, 2021, and 2022[10]. Each of these surveys has been aimed at analysing the business environment at the State level relating to the logistics infrastructure, policy framework, and regulatory regime, across States and UTs.

[10] The survey could not be undertaken in 2020 in the wake of the COVID-19 pandemic.

It is based on a stakeholders' survey and uses the World Bank's Logistics Performance Index (LPI) methodology. The State LPI is arrived at using a ranking methodology for stakeholder engagement based on a series of meetings and online surveys in the key areas of logistics- infrastructure, services timelines, traceability, competitiveness, security, operating environments, and efficiency of regulation. Following the LEADS initiative, 13 States/UTs have prepared and notified their logistic policies.

The LEADS 2022 survey report was released on 13 October 2022, which considered the PM GatiShakti NMP and current developments in the logistics sector in the wake of the COVID-19 pandemic. The survey has garnered more than 6500 responses from more than 2100 respondents across the country. Unlike the previous versions of LEADS which were based on ranking systems for all states, LEADS 2022 has adopted a classification-based grading, and States have been now classified under four categories viz., coastal States, hinterland/ landlocked States, North-Eastern States, and UTs for the assessment of how well a State or UT has performed in comparison to the top State/UT within the specific cluster.

Taking a break from the past, states have not been ranked in order. This time, they have been allotted three performance categories, namely, Achievers: States/UTs achieving a percentage score of 90 per cent or more, Fast Movers: States/UTs achieving percentage scores between 80 to 90 per cent, and Aspirers: States/UTs achieving percentage scores below 80 per cent. The results are indicated below.

Achievers	Fast Movers	Aspirers
Uttar Pradesh	Kerala	Goa
Tamil Nadu	Sikkim	Bihar
Uttarakhand	Madhya Pradesh	Chhattisgarh
Telangana	Tripura	A&N Islands
Punjab	Puducherry	Mizoram
Odisha	Rajasthan	J&K
Karnataka		Arunachal Pradhesh
Himachal Pradesh		Ladakh
Assam		Lakshadweep
Delhi		Nagaland
Chandigarh		
Haryana		

PM GatiShakti: A master plan for integrated project planning

12.36 The growth experience of advanced economies has highlighted the importance of having a multimodal transport network approach. Introducing the holistic planning in the case of infrastructure projects, the government launched PM GatiShakti, charting a transformative approach to infrastructure development. The PM GatiShakti National Master Plan entails creation of a common umbrella platform with all infrastructure projects pertaining to various ministries/ departments incorporated within a comprehensive database for efficient planning and implementation on a real-time basis. The projects pertaining to seven engines (roads, railways, airports, ports, mass transport, waterways, and logistic infrastructure) in the NIP will be aligned with PM GatiShakti framework. The touchstone of the Master Plan will be high quality modern infrastructure and logistics synergy among different modes of movement – both of people and of goods – and location of projects. This will help raise productivity, and accelerate economic growth and development.

12.37 The focus is on integrated planning and synchronised implementation across ministries/ departments, with innovative use of technology. The aim is to improve multimodal connectivity and logistics efficiency while addressing the critical gaps for the seamless movement of people and goods, with a focus on minimising disruptions and timely completion of infrastructure projects.

12.38 In order to facilitate integrated planning and coordinated implementation, a GIS-based and data-driven decision support platform called PM GatiShakti National Master Plan has been introduced. Around 1950 data layers of 22 ministries/departments and 36 States/UTs were mapped up to the village, district, and taluka levels on the national master plan. It can be integrated with various applications of different ministries/agencies to prevent duplication of work and create a single window system for infrastructure planning. Data layers on important assets pertaining to health, education, culture, tourism, gram panchayats, municipal corporation, social welfare housing etc. are being mapped and data validation is being done for optimum use of PM GatiShakti principles in planning of both physical and social infrastructures. Use cases of GatiShakti National Master Plan include connectivity to model schools and disaster management planning etc.

Developments in Physical Infrastructure Sectors

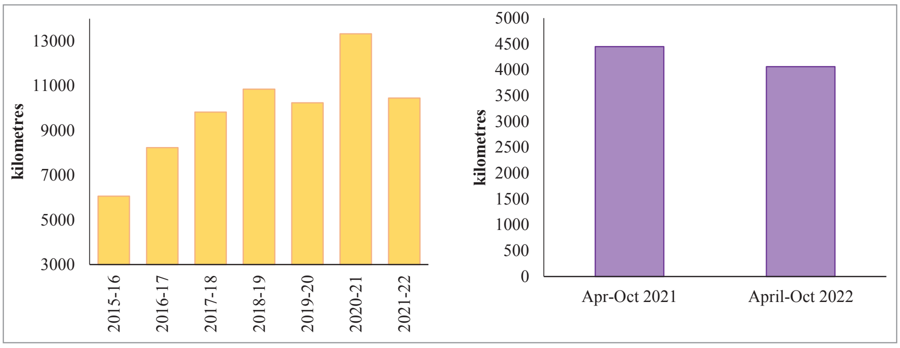
Road Transport: Increased budgetary support by the government augmented road connectivity

12.39 Road infrastructure in the form of a network of national highways, state highways, district roads, rural roads, and urban roads acts as a major mode of transportation and connectivity for the country's diverse population of consumers and businesses. Roads supplement the other modes of transport through last-mile connectivity to the far-flung regions of the country.

12.40 There has been an increase in the construction of National Highways (NHs)/roads over time, with 10,457 km of roads constructed in FY22 as compared to 6,061 km in FY16. In FY23 (until October 2022), 4,060 km of NHs/roads were constructed, which was around 91 per cent of the achievement in the corresponding period of the previous financial year. Total budgetary support for investment in the sector has been increasing rapidly in the last four years and stood at around ₹1.4 lakh crore during FY23 (as of 31 October 2022).

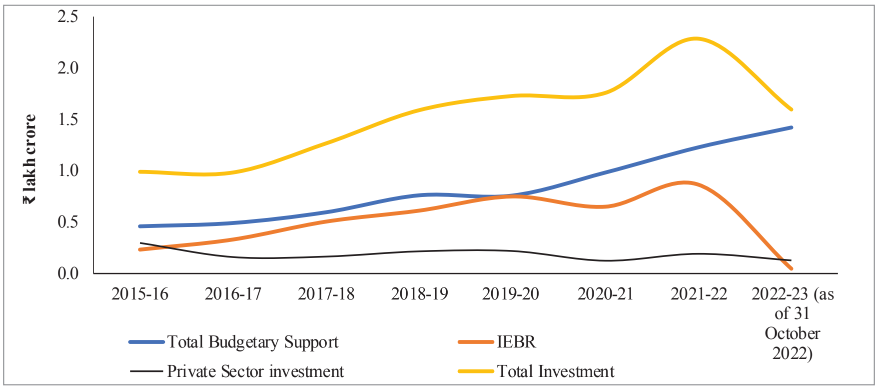
12.41 In line with the vision of monetisation of public sector assets, National Highways Authority of India (NHAI) launched its InvIT in FY22 not only to facilitate monetisation of roads but also to attract foreign and domestic institutional investors to invest in the roads sector. So far, NHAI InvIT has raised more than ₹10,200 crore from high quality foreign and Indian institutional investors (up to December 2022).

Figure XII.5: National Highways/Road construction has increased since 2015-16, hitting unprecedented levels in 2020-21



Source: Ministry of Road Transport and Highways

Figure XII.6: Tremendous increase in total budgetary support for investment in the road sector



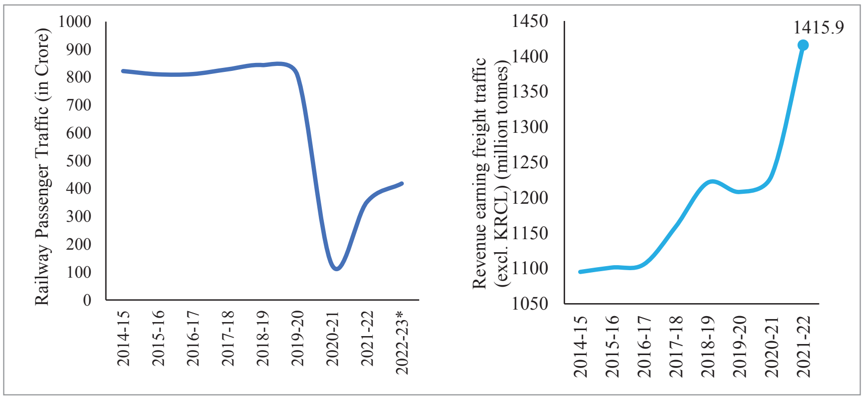
Source: Ministry of Road Transport and Highways

Railways: Expansion and modernisation, a continuous process

12.42 A major transport infrastructure, that can very well be called India's lifeline, and which had a huge role to play in national integration and regional development, is the railways. The Indian Railways (IR), with over 68,031 route kms, is the fourth largest network in the world under single management. Passenger traffic originating in IR was 809 crore during pre-Covid-19 period (2019-20), but dipped to 125 crore in 2020-21. It has since recovered to 351.9 crore in 2021-22. During the current financial year, passenger traffic has seen further strong growth with the number of originating passengers already hitting 418.4 crore (up to November 2022). Enhanced mobility across the country and demand for faster and competitive trains will assist the growth in passenger traffic in the coming years.

12.43 In the case of revenue-earning, freight traffic was sustained by IR despite the Covid-19 shock. Between FY20-21 and FY21-22, there was a sharp increase in the freight traffic, reflecting the strong revival in the economic activity in the domestic economy. During FY22-23 (up to November 2022), Indian Railways (IR) carried 976.8 million tonnes of revenue-earning freight traffic (excluding KRCL[11]), as against 901.7 million tonnes during the corresponding period in FY21-22 (excluding KRCL), which translated into an increase of 8.3 per cent.

Figure XII.7: Railways passenger as well as freight traffic have seen strong growth post Covid-19 period



Note: * For FY23 the data is from April-November, 2022
Source: Ministry of Railways

12.44 The capital expenditure (Capex) on infrastructure in railways has received tremendous boost since 2014. It has seen a continuous increase in the last four years with Capex (B.E.) of ₹2.5 lakh crore in FY23, up by around 29 per cent compared to the previous year. During the current financial year (till 12 December 2022), IR has already completed 2022 Track Kilometres (TKM) which includes 109 TKM of New Line, 102 TKM of Gauge Conversion and 1811 TKM of multi-tracking projects. To understand the pace of progress, it may be noted that during last financial year this figure was reached only during the first week of March. From FY2014-22, across IR, 20,628 km sections (3,970 km New Line, 5,507 km Gauge Conversion and 11,151 km doubling) have been commissioned at an average of 2,579 km/year, which is 70 per cent more than the average commissioning during 2009-14 (1,520 km/year). Further, during the last eight years (2014-22), 30,446 Route Kilometres (RKM) have been electrified compared to an electrification of 4,698 RKM during the previous eight-year period, a more than six-fold increase.

Table XII.1: Infrastructure Capital Expenditure on Railways has seen a tremendous boost

Description	Average during 2009-14	Average during 2014-19	2019-20	2020-21	2021-22	2022-23 (BE)
				(₹ crore)		
NL, GC & Doubling	10,623	40,389	52,446	43,597	↑ 66,690	↑ 78,576
Rolling stock	16,029	20,878	37,339	32,627	↑ 41,406	↓ 39,853
Railway Electrification	884	3,258	7,145	6,148	↑ 6,961	↑ 7,700
Track renewals	4,958	7,186	9,391	13,523	↑ 14,082	↓ 13,335
ROB/RUB	916	3,178	3,522	4,139	↑ 4,222	↑ 8,750
Bridge Works	351	488	782	772	↑ 1,297	↓ 940
Other Plan Heads	12,219	23,801	37,440	54,375	↑ 55,609	↑ 96,646
Total Capex	45,980	99,178	1,48,064	1,55,181	↑ 1,90,267	↑ 2,45,800

Source: Ministry of Railways
Note: NL: New lines, GC: Gauge Conversion

[11] KRCL: Konkan Railway Corporation Ltd.

12.45 The fast pace of infrastructure augmentation by IR has been a result of substantial increase in allocation of funds and various steps being taken by the government. This includes delegation of powers at the field level which has helped in commissioning of doubling projects, close monitoring of the progress of projects at various levels, regular follow-up with State Governments and relevant authorities for expeditious land acquisition, forestry and wildlife clearances and resolving other issues pertaining to the projects.

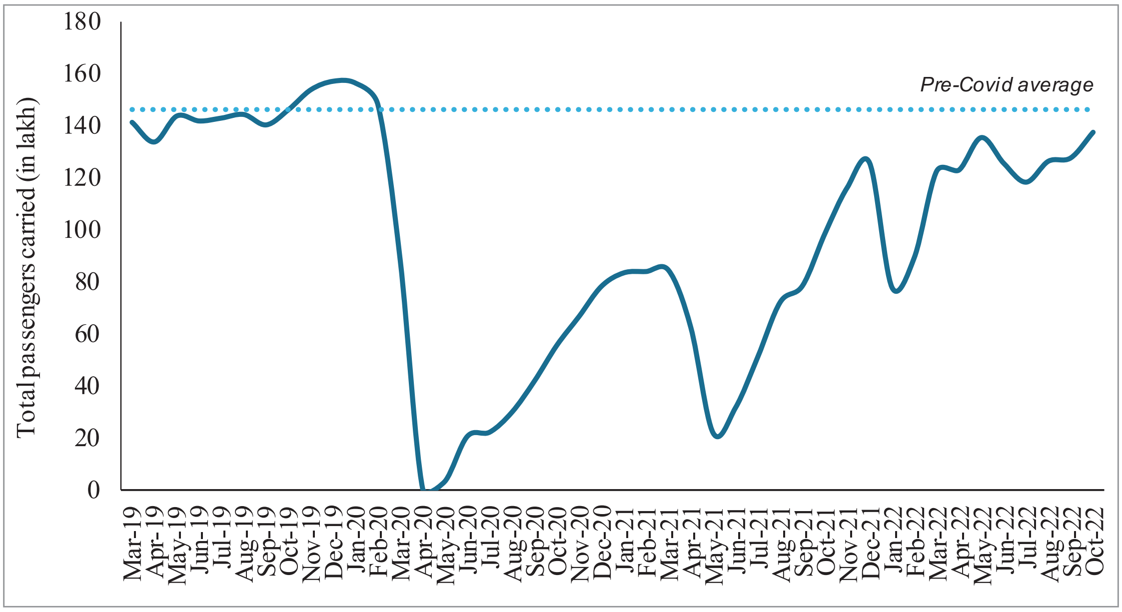
Box XII.2: Major initiatives of the Indian Railways

- ✓ Mumbai-Ahmedabad High Speed Rail (MAHSR) Project: The MAHSR project, which was sanctioned by the government in 2015, with technical and financial cooperation from Government of Japan, is under execution and survey & design aspects of it have been finalised.
- ✓ Dedicated Freight Corridor (DFC) Project: One of the most ambitious and biggest ever infrastructure project in the railways, which comprises construction of two dedicated freight corridors, i.e., Eastern and Western DFCs along the golden quadrilateral, will offer higher transport output in the country with reduced transit time and cost.
- ✓ GatiShakti Multi-Modal Cargo Terminal (GCT): GCTs are being developed by private players on non-railway land as well as fully/ partially on railway land, based on demand from industry and potential of cargo traffic. 21 GCTs have been commissioned and more than 90 more locations have been provisionally identified for development of GCTs (as of 31 October 2022). This will boost investment from industry in the development of additional terminals for handling rail cargos.
- ✓ Induction of semi-high-speed Vande Bharat Trainsets: Semi High-Speed Self-Propelled Vande Bharat Trainsets were manufactured by Integral Coach Factory, Chennai, with indigenous efforts. These trains have ultra-modern features like quick acceleration, substantial reduction in travel time, having maximum speed of 160 kmph, on-board infotainment and Global Positioning System (GPS) based passenger information system, etc.
- ✓ Electrical/Electronic Interlocking System: envisages centralized operation of points and signals to enhance safety in train operations. These systems have been provided at 6,322 stations covering 99 per cent stations of Indian Railways (as of 30 September 2022).
- ✓ Development of Hyperloop technology: Hyperloop is an emerging transportation technology that can be faster and greener than airplanes and railways. In this system, vehicles run in the levitating state (with the help of Linear Induction Motors/Electromagnets) and in vacuum environment. The technology is still in the development phase. Indian Railways intends to develop a demonstrative project on Hyperloop Technology. Indian Railways has collaborated with IIT Madras for developing Hyperloop Technology by setting up Centre of Excellence for Hyperloop Technology at IIT Madras at the cost of ₹8.34 crore.
- ✓ Kisan Rail trains were introduced in FY21 to enable speedy movement of perishables from production or surplus regions to consumption or deficient regions. Up to 31 October 2022, Indian Railways have operated 2,359 Kisan Rail services, transporting approximately 7.91 lakh tonnes of perishables including fruits and vegetables.

Civil Aviation: Revival backed by domestic demand

12.46 With the containment of Covid-19 infections and the lifting of travel restrictions worldwide, air travel has rebounded. While in FY21, there was a considerable decline in the air-traffic (a decline of 54 per cent) as well as passenger traffic handled (a decline of 66 per cent), FY22 saw a recovery, mainly led by the domestic sector. The current financial year has further shown a rebound, with both passenger and cargo movement close to the pre-Covid-19 levels. The total number of passengers carried in December 2022 stood at 150.1 lakh, which was 106.4 per cent of the pre-Covid level (average for 11 months from April 2019 to February 2020). During November 2022, total air cargo tonnage stood at 2.5 lakh MT, which is 89 per cent of the pre-Covid levels.

Figure XII.8: Performance of the Indian aviation sector



Source: Ministry of Civil Aviation

12.47 The civil aviation sector in India has great potential owing to growing demand from the middle class, growth in population and tourism, higher disposable incomes, favourable demographics, and greater penetration of aviation infrastructure. This is further supported by the government through schemes such as UDAN, which has considerably enhanced regional connectivity through the opening of airports in India's hinterland. Under this scheme, the government has approved a budget of ₹4500 crore for revival of existing unserved/ underserved airports/airstrips of the State governments, Airports Authority of India (AAI), public sector undertakings and civil enclaves. The government has also accorded 'in-principle' approval for the setting up of 21 greenfield airports across the country. More than one crore air passengers have availed themselves of the benefit of the UDAN scheme since its inception. The scheme focuses on the connectivity between the Tier-2 and 3 cities in the country and the number of beneficiaries will increase manifold as the connectivity improves between unserved and underserved airports.

Ports: Handling higher capacity with governance reforms

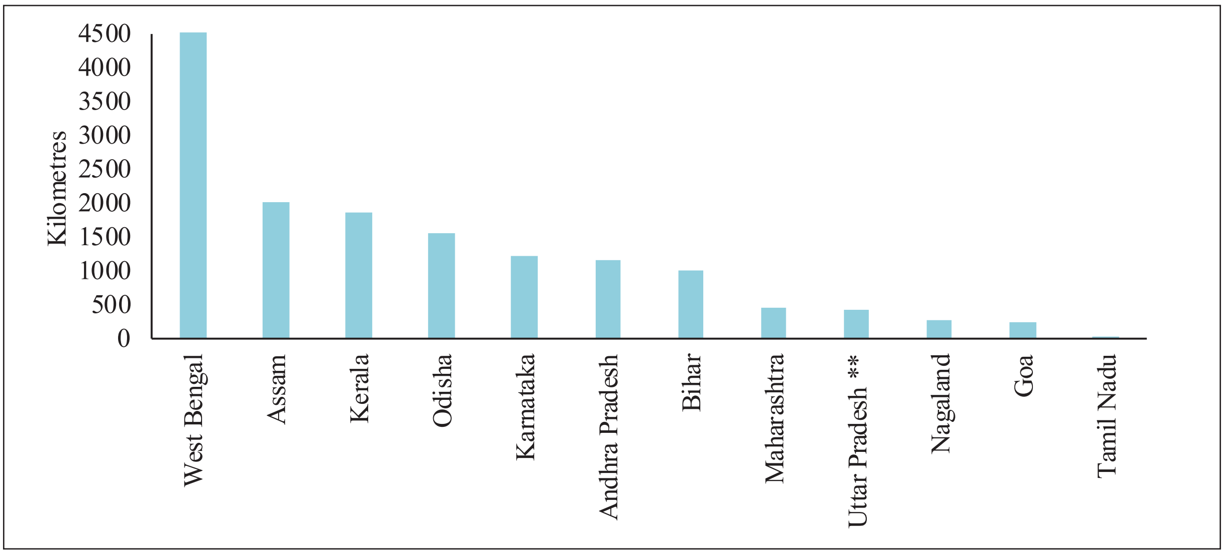
12.48 For ages, the sea has been the source of opportunity and seashores have acted as the gateways to prosperity for India. The development of ports is crucial for the economy, given that most of the international trade is handled through ports (around 90 per cent of international trade cargo by volume and 79.9 per cent by value). The capacity of major ports, which was 871.5 Million Tonnes Per Annum (MTPA) at the end of March 2014, has increased to 1534.9 MTPA by the end of March 2022. Cumulatively they handled 720.1 MT traffic during FY22.

12.49 To meet the ever-increasing trade requirements, the expansion of port capacity has been accorded the highest priority by the government through the implementation of well-conceived infrastructure development projects. To further enhance their efficiency, the government is focusing on improving port governance, addressing low-capacity utilisation, modernising berths with techno efficient loading/unloading equipment, and creating new channels for port connectivity. For streamlining the port compliances and for reducing the Turn Around Time for (TAT) for vessels, long strides have been taken at the major ports towards the digitisation of key EXIM processes. The Port Community System (PCS 1x) has digitised processes such as Electronic Invoice (e-Invoice), Electronic Payment (e-Payment) and Electronic Delivery Order (e-DO) for the physical release of cargo by custodians, in addition to the processes of generating electronic Bill of Lading (e-BL) and Letter of Credit (LC). Further, the Radio Frequency Identification Device (RFID) solution has been implemented at all major ports to enable seamless movement of traffic across port gates, including substantial reductions in documentation checks. Additionally, the process to bootstrap PCS 1x into National Logistics Portal-Marine (NLP-Marine) is already under way which will act as a Unified Digital Platform for all maritime stakeholders.

Inland Water Transport: Tapping the potential of navigable waterways

12.50 Inland water transport holds great untapped potential as a means for the transportation of goods and passengers. India has a large endowment of rivers, canals, and other waterways. The total navigable length of waterways in India is around 14,850 kilometres.

Figure XII.9: Navigable Length of Waterways in Different States



Source: Statistics of Inland Water Transport 2020-21, Ministry of Port, Shipping and Waterways
Note: Data pertains to 2020-21. **Data for Uttar Pradesh pertains to 2016-17

12.51 Under the National Waterways Act 2016, 106 new waterways have been declared as National Waterways (NWs), taking the total number of NWs in the country to 111. Based on the outcome of techno-economic feasibility and Detailed Project Reports (DPRs), 26 NWs viable for cargo movement have been prioritised, out of which developmental activities have been initiated in the 14 most viable NWs. Further, to promote the use of inland waterways, waterway usage charges levied by the Inland Waterways Authority of India (IWAI) on vessels moving on NWs were waived in July 2020, initially for a period of three years. The cargo movement on National Waterways achieved an all-time high of 108.8 million tons during FY22, recording 30.1 per cent growth compared to the previous year.

12.52 The Inland Vessels Bill 2021, which replaced the over 100 year-old Inland Vessels Act, 1917 (Act No.1 of 1917), was passed by the Parliament in August 2021. This will usher in a new era for inland water transport sector and fulfil the vision to utilise the potential of multi-modal transport ecosystem while making the legislative framework user-friendly and promoting ease of doing business. The uniform application of rules and regulations will ensure seamless, quick, and cost-efficient trade and transportation by inland vessels using the inland waterways. Various sections of this Act as detailed in the box below have come into force in 2022.

Box XII.3: Inland Vessels Act 2021

The Inland Vessels Act of 1917, which had undergone several amendments, had provisions for the restrictive movement of mechanically propelled vessels and non-uniform standards and regulations across different states. The Inland Vessels Act 2021, which replaced the erstwhile Act, aims to bring uniformity in the application of the law relating to inland waterways and navigation within the country. Some salient features of the Act include:

- ✓ State governments may declare by notification any inland water area as a “Zone” depending on the maximum significant wave height criteria as prescribed in the Act. Any mechanically propelled vessel would have to obtain a certificate, which would indicate the zone in which the vessel is to be operated.
- ✓ A central database of inland vessels would be maintained by the government.
- ✓ The standards for qualification, training, training institutes, examination, and grant of certificate of competency would be prescribed by the Central Government.
- ✓ Standards for prevention of environmental pollution.
- ✓ Constitution of a Development Fund by the State Government to be utilised for meeting emergency preparedness, containment of pollution, removal of unidentified wrecks or obstruction, boosting development works of inland water navigation, etc.

Overall, the new Act would lead to uniformity of rules across states ensuring unhindered and safe movement of vessels within and across states. This is likely to promote inland water transport as a potential mode for large-scale movement of cargo as well as passengers across the country owing to its relative cost effectiveness.

Electricity: Installed capacity growth driven by renewables

12.53 The total installed power capacity of utilities and captive power plants (industries having demand of 1 Mega Watt (MW) and above) was 482.2 GW on 31 March 2022 as compared to 460.7 GW on 31 March 2021, up by 4.7 per cent. Installed capacity in utilities was 399.5 GW on 31 March 2022 as against 382.1 GW a year back (higher by 4.5 per cent). Thermal sources of energy make up the largest (59.1 per cent) share of total installed capacity in utilities, followed by renewable energy resources with 27.5 per cent and hydro with 11.7 per cent.

Table XII.2: All India Installed Capacity Mode-Wise (GW)

	Hydro	Thermal	Nuclear	Renewables	Total
2020-21	46.3	307.4	6.8	100.1	460.7
2021-22@	46.9	312.2	6.8	116.4	482.2
Growth (in per cent)	1.1	1.6	0	16.2	4.7

Source: Ministry of Power.
Note: @ Estimated

12.54 The total electricity generated, including that from captive plants during the year FY22 was 17.2 lakh GWh as compared to 15.9 lakh GWh during the FY21, of which 14.8 lakh GWh was generated by utilities and 2.3 lakh GWh in captive plants. Between FY22 and FY21, the maximum rise in electricity generation was recorded in renewable energy resources for utilities and for captive plants. There has been a gradual transition in India's energy sector from the conventional sources to the non-fossil fuel sources. India is steadfast in its commitments towards non-fossil fuel-based energy resources. India has put in place a target of achieving 50 per cent cumulative installed capacity for generating electric power from non-fossil fuel-based energy resources by 2030. India is well on its way to fulfilling its commitments with the share of renewables in overall installed capacity growing at a fast pace. This is a result of the various government initiatives aimed at supporting the renewable energy sector.

Table XII.3: All India Gross Electricity Generation Mode-Wise (GWh)

	Hydro	Thermal	Nuclear	Renewables	Total
2020-21	1.5	12.5	0.4	1.5	15.9
2021-22@	1.5	13.4	0.4	1.7	17.2
Growth (in per cent)	0.9	7.3	9.5	16.2	7.6

Source: Ministry of Power.
Note: @ Estimated

12.55 Government of India has been driving a vibrant renewable energy programme aimed at achieving energy security and energy access, and reducing the carbon footprints of the national economy. In order to reduce the carbon footprint of the farm sector, Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan (PM-KUSUM) aims to provide energy and water security, de-dieselise the farm sector and generate additional income for farmers by producing solar power. In addition, the government has introduced the Solar Park Scheme to facilitate necessary infrastructure like land, power evacuation facilities, road connectivity, water facility, etc. along with all statutory clearances. As on 30 September 2022, the government has sanctioned the entire target capacity of 40 GW for the development of 59 Solar Parks in 16 states.

12.56 Indian Railways, which is a major user of electricity in the country, has announced its intention to achieve net zero carbon emission by 2030. In this regard, Indian Railways has reoriented its energy demand towards greater use of renewable sources. As of November 2022, plants generating about 143 MW of solar power (both on rooftops and on land) and about 103 MW of wind power have been commissioned.

12.57 Other important incentives for renewable power generation include Hydropower Purchase Obligation (HPO) within Non-Solar Renewable Purchase Obligation (RPO). With the government support, the private sector has actively participated in boosting the overall generation capacity and bringing down unit costs over a short period.

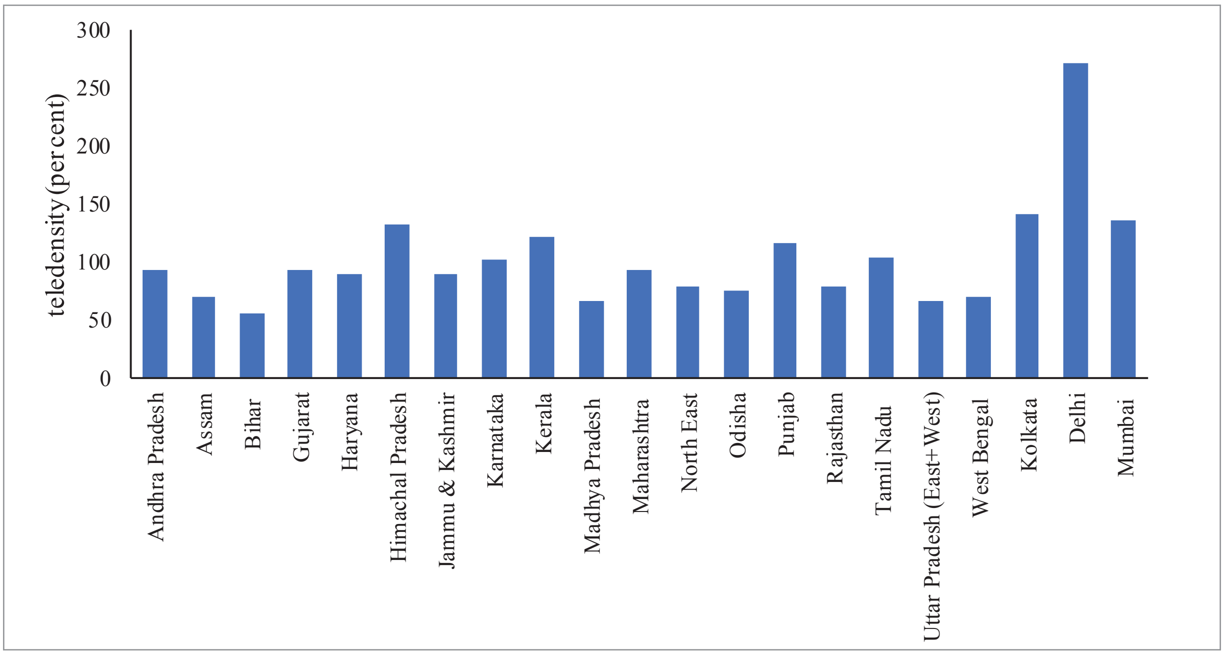
Developments in Digital Infrastructure

12.58 While the role of traditional infrastructure has been well recognised, in recent years, the role of digital infrastructure in socio-economic development of the country has assumed an increased importance. This was especially true during the Covid-19 period when the curtailment of physical interactions necessitated the utilisation of digital infrastructure already available for service delivery and remote work. In the coming years, the availability and spread of digital infrastructure will contribute significantly to economic growth. Recognising this, the government's Digital India programme, which aims to transform India into a digitally empowered society and knowledge economy, envisions digital infrastructure as a core utility to every citizen. The focus areas include the availability of high-speed internet as a core utility for delivery of services to citizens, unique digital identity, enabling citizen participation in digital and financial space, shareable private space on a public cloud (citizens can digitally store their documents, certificates, etc. and share them with public agencies or others without the need to physically submit them), and a safe and secure cyber-space. Some developments in the digital infrastructure sphere are detailed below.

Telecommunications: Accelerating provision of affordable services

12.59 As a result of the persistent efforts made by the government towards promoting technological development, telecommunications services have penetrated the remotest corners of the nation. The country has come a long way from the days when a telephone connection was seen as a luxury to the present where a majority of people have a mobile connection. This was due to a cumulative effort of telecom players who widened their network bandwidth, government's enabling environment and consumers' outreach for smartphones. Today, the total telephone subscriber base in India stands at 117 crore (as of November 2022). While more than 97 per cent of the total subscribers are connected wirelessly (114.3 crore at the end of November 2022), 83.7 crore have internet connections as of June 2022. The overall tele-density in India stood at 84.8 per cent, with wide differences across states. It ranged from 55.4 per cent in Bihar to 270.6 per cent in Delhi. Eight license service areas, namely, Delhi, Mumbai, Kolkata, Himachal Pradesh, Kerala, Punjab, Tamil Nadu, and Karnataka had a tele-density of above 100 per cent.

Figure XII.10: Overall tele density, license service area wise



Source: Department of Telecommunications

12.60 Apart from the interstate disparity in tele-density, in rural areas the tele-density continues to be at much lower levels compared to urban areas. However, the catch-up by the rural areas is heartening as the YoY change in internet subscribers is greater in rural (for the majority of the states) than in urban areas. This provided a cushion to the rural economy during the initial phase of the Covid-19 as many people went back to rural India for their livelihood. The digital infrastructure created over the years ensured not just the continuous transmission of information but also added economic value when businesses went digital.

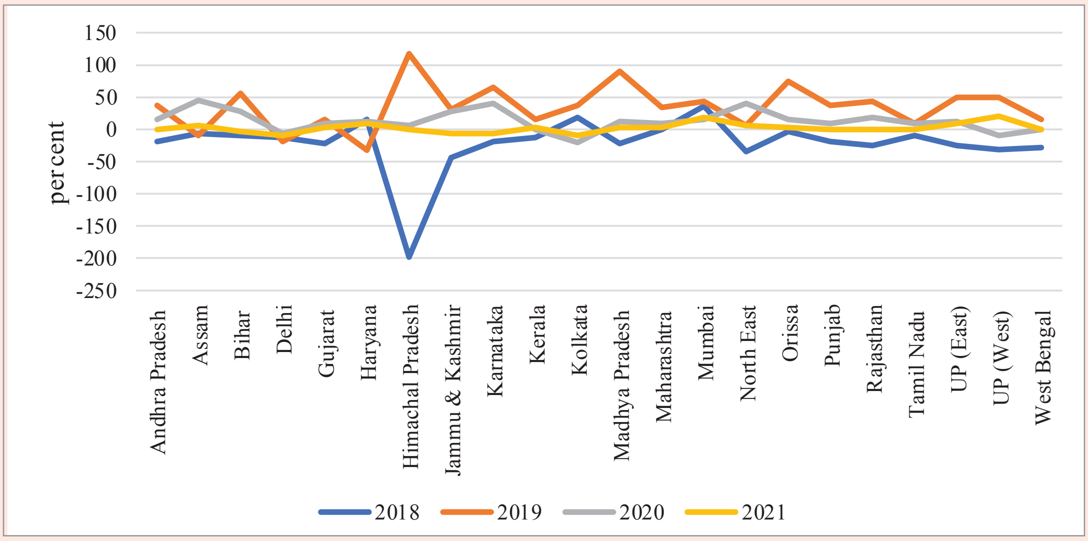
Box XII.4: Lessening the Rural-Urban Digital Divide

Converting the crisis into opportunity, India, through its resilient measures, has been able to contain the impact of the pandemic through structural reforms in several sectors, telecom being one of them. During the challenging times of Covid-19 pandemic, the telecommunication sector continued to provide seamless connectivity for the smooth functioning of critical activities and services such as ‘work from home’, ‘study from home’ etc. This was supported by the significant increase in affordable smartphones, which became more than a communication device. It emerged as the key enabler of Digital India initiative with various new services and applications like digital payments, e-governance, e-commerce, e-health, and e-education. Acting as the backbone, these services have boosted the overall economic growth of the country.

Before 2014, access to digital services was perceived as a prerogative of urban households.

This was substantiated by the then-existing digital divide seen from tele density (number of subscribers per 100 inhabitants) in rural and urban areas being 44.01 and 145.46 respectively in 2014. However, with the vision of developing digital infrastructure as a core utility for every citizen, Digital India as an umbrella programme was launched in 2015. Service delivery through digital tools has travelled a long way since then. We have added more internet subscribers in rural areas in the last 3 years (2019-21) than in their urban counterparts (95.76 million vis-a-vis 92.81 million in rural and urban areas respectively). This has been a result of dedicated digital drives across rural areas through ambitious government schemes, like the flagship BharatNet Project Scheme, Telecom Development Plan, Aspirational District Scheme, initiatives in North-Eastern Region through Comprehensive Telecom Development Plan (CTDP) and initiatives towards areas affected by Left Wing Extremism (LWE)etc.

Figure: LSA wise difference in rural growth (per cent) over Urban growth (per cent) in Internet Subscribers



This concrete focus on bridging the gap between rural and urban internet penetration has borne positive results. The plot of the difference in the growth rates (per cent) of internet subscribers in rural over urban areas is somewhat volatile across states and years. The steep transition from a negative gap[12] in 2018 for most LSAs to above 50 per cent in positive territory (for a majority of LSAs) in 2019 reflects the demand side growth in digital services, which was backed by the availability of budget smartphones and affordable data usage. The difference has been positive since then.

This significant growth in rural India was the major shock absorber during the COVID-19 pandemic when both businesses and consumer demand were impacted. When majority of the workforce reverse-migrated to rural areas in search of livelihoods, agriculture (3.4 per cent growth in FY20-21) as well as the world's largest employment scheme MNREGA supported the domestic economy. The digital infrastructure created over the years in rural areas ensured transparent and timely payments to the beneficiaries directly into their account thus limiting their exposure to the virus. With affordability and accessibility to private education restricted,

[12] per cent change in Rural subscriptions - per cent change in Urban subscriptions.

the digital support system in government schools absorbed the then much-needed enrolment to counter the learning gap. As schooling went online for a considerable period even post-pandemic, the increase in internet subscriptions in rural areas helped mitigate learning loss significantly. This even facilitated the successful rollout of mass vaccination in rural areas.

The 200 per cent increase in rural internet subscriptions between 2015 and 2021 vis-a-vis 158 per cent in urban areas, reflects the increased impetus the government is putting to bring rural and urban digital connectivity to the same level. For further widening the net, to include unconnected areas and populations, dedicated long-term efforts by the government have been taken. Government Schemes like Production Linked Incentive (PLI) for telecom and networking products will promote domestic mobile manufacturing as well as network installation. Continuous proliferation of measures such as Bharat Net Project shall continue to improve accessibility, affordability, connectivity, and inclusivity pan-India. This in turn will help in realizing the vision of our Hon'ble Prime Minister to digitally empower every Indian, as we march towards India's 'Techade'.

12.61 To further create digital linkages at the grassroots level and increase the consumer experience like the one in urban centres, a project for the saturation of 4G mobile services in uncovered villages across the country has been approved. The project will provide 4G mobile services in 24,680 uncovered villages in remote and difficult areas, and 6,279 villages having only 2G/3G connectivity shall be upgraded to 4G.

12.62 With a special focus on the states in the North-Eastern Region, the government is implementing a Comprehensive Telecom Development Plan (CTDP). Under CTDP for NER, mobile connectivity on 2G is to be provided by setting up 2004 towers in the uncovered villages and along National Highways of Assam, Manipur, Mizoram, Nagaland, Tripura, Sikkim, and Arunachal Pradesh (National Highways only). As of 25 October 2021, 1,358 towers have been installed and they are operational. In addition, other projects on providing 4G mobile coverage to uncovered villages in Meghalaya, Arunachal Pradesh and two districts of Assam (Karbi Anglong & Dima Hasao) are under way. Furthermore, to make available high-quality and high-speed internet access to the states of the North-Eastern Region of the country, Universal Service Obligation Fund (USOF) signed an Agreement with Bharat Sanchar Nigam Limited (BSNL) on 18 August 2021 for the hiring of 10 Gigabits per second (Gbps) International Bandwidth for Internet Connectivity to Agartala from Bangladesh Submarine Cable Company Limited (BSCCL), Bangladesh. The first 10 Gbps link was commissioned on 26 November 2021, and the second 10 Gbps link on 21 April 2022.

12.63 When telecom is spanning coastlines, forests, and even deserts why should islands be left behind? A comprehensive initiative to connect our islands to the mainland has been realised through the government's initiative of the Comprehensive Telecom Development Plan for Islands. The Submarine OFC connectivity from Chennai to Andaman & Nicobar Islands (CANI) project was launched to connect Port Blair and seven other islands of Andaman & Nicobar Islands with Chennai through 2,313 km of underwater OFC. There has been an immense proliferation of bandwidth utilisation, almost 30 times, from 2.7Gbps to 75.7Gbps. The project has led to an FTTH speed of 100 Mbps, and up to 15 times more data volume is available now. The Submarine OFC connectivity from Kochi to Lakshadweep Islands (KLI) project was launched to connect Kochi with Kavaratti and ten other islands of Lakshadweep through 1869 kms of underwater OFC project, and the project is likely to be completed by May 2023. The project is currently under way and will ensure digital inclusion across the islands and is expected to trigger significant transformation across all sectors, including agriculture, tourism, health, and education.

12.64 A landmark achievement in telecommunications in India was the launch of 5G services. 5G could impact consumers directly through higher data transfer speeds and lower latency. 5G use cases developed by Telecom Service Providers and start-ups in education, health, worker safety, smart agriculture etc., are now being deployed across the country. Telecom reforms and clear policy direction led to the spectrum auction of 2022 garnering the highest-ever bids.

12.65 As a major reform measure, the Indian Telegraph Right of Way (Amendment) Rules, 2022, will facilitate faster and easier deployment of telegraph infrastructure to enable speedy 5G rollout. The government has brought in procedural reforms in Wireless Licensing, including delicensing of various frequency bands to promote innovation, manufacturing and export. The National Frequency Allocation Plan 2022 (NFAP) provides a broad regulatory framework, identifying which frequency bands are available for cellular mobile services, Wi-fi, sound and television broadcasting, radio navigation for aircraft and ships, and other wireless communications. NFAP will give guidance to the users of the spectrum to plan their networks in accordance with the relevant frequency and parameters provided therein. Given that spectrum is a scarce resource, NFAP is useful in aligning spectrum usage with demands from emerging technologies in an efficient manner.

12.66 To propel growth and to accelerate the provisioning of affordable services to the citizens in the fast-emerging area of satellite-based services, reforms have been undertaken to promote ease of doing business by limiting the multiplicity of charges at different stages of rolling out satellite-based communication services. To simplify the existing processes, vital changes have also been carried out to streamline satellite-related clearance processes.

12.67 Universal and equitable access to broadband services across the country, especially in rural areas, is an important part of the government's vision for national digital connectivity. Toward realising that vision, the GatiShakti Sanchar portal was launched on 14 May 2022. This portal will streamline the process of Right of Way (RoW) applications and permissions across the country. The portal has been developed keeping in view the vision areas of the National Broadband Mission at the core, which are providing broadband infrastructure as a core utility to every citizen, governance and services on demand and in particular, digital empowerment of the citizens of our country.

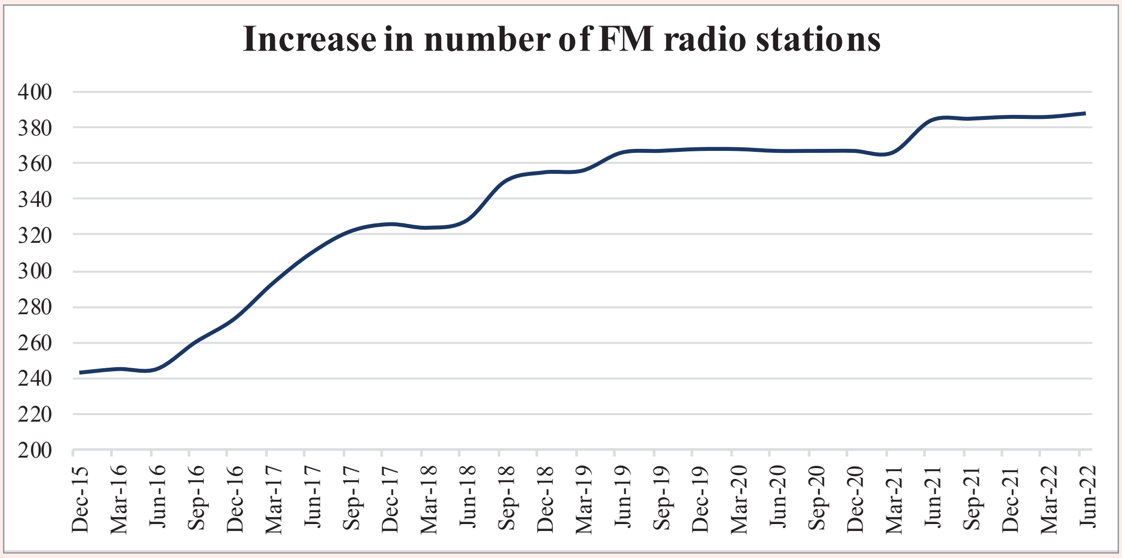
12.68 Now, having discussed telecom at length, the next digital story which rings in our ears is radio which has been one of the best media to reach all residents of the country.

Box XII.5: Radio - the waves that connected ..!!

In today's fast-moving social media age, it is noteworthy how one of the components of mass media, namely the radio has not only persisted as the bulwark for outreach during the times of pandemic and beyond but in this fast-evolving digital era has also embossed a separate identity of its own in the hearts of many. Radio continues to be the most affordable and popular medium of mass communication in India and has been a tool that has consistently helped in empowerment and social development of the people of our country. The accessibility, wide coverage, variety of programmes, mobility and vernacularity have continued to be reasons for its popularity. For instance, the popular 'Mann ki Baat' programme where the Prime Minister establishes a dialogue with the citizens on issues of day-to-day governance reached the milestone of completing its 96th episode on 25th December 2022, with more to follow this year.

The iconic line "This is All India Radio. The news read by..." rings in our ears as we reminisce how Prasar Bharati, India's autonomous public service broadcaster, has not only been witness to the history and landmark events of the country, but has also been the proverbial story-teller for all citizens across the country, standing by its motto 'Bahujan Hitaya: Bahujan Sukhaya', meaning 'for the happiness of many, for the welfare of many'. It broadcasts in 23 languages, 179 dialects from 479 stations across the country, reaching nearly 92 per cent of the area and 99.2 per cent of the total population of the country. Prasar Bharati marked its silver jubilee on 23 November 2022, and it is notable how it has embraced technology, reflected in the fact that over 240 radio services of All India Radio are live-streamed on NewsOnAir App, Prasar Bharati's official App. These streams have a large number of listeners not just in India, but globally, in more than 85 countries across the world.

Along with the public broadcaster, private commercial radio stations (FM Radio) and Community Radio Stations (CRS) each serve as platforms for a variety of programmes. FM Radio has flourished in the last few years, as observed in the quarterly growth in private FM Radio stations, with their number increasing from 243 in the quarter ending December 2015 to 388 in quarter ending June 2022[13].



The rising number of FM radio stations depicts how radio as mass media has satisfactorily delivered on their mandate of public service and stood strong with the people during the time of the pandemic. While FM increased its outreach to even far-flung rural areas, CRS targeted local and well-defined communities. The daunting task of spreading awareness on the pandemic, and that too in vernacular, with innumerable dialects, was made possible, as CRS channelized the community partnerships. In times when the reach of centralized media to every nook and corner of the country was a gargantuan task, these radio waves travelled without interruption for the larger public cause. They not only became a medium for information dissemination but also functioned as a channel for empowerment as virtual education also took the recourse of radio.

With this, we see the radio as being significantly important through good and tough times. As we operate in a new normal and as things settle down with time, these small boxes requiring manual tuning may again find their place in some household cupboards. However, their identity will remain intact. It will once again come to the fore to speak for itself with the iconic line "This is All India Radio. The news read by...".

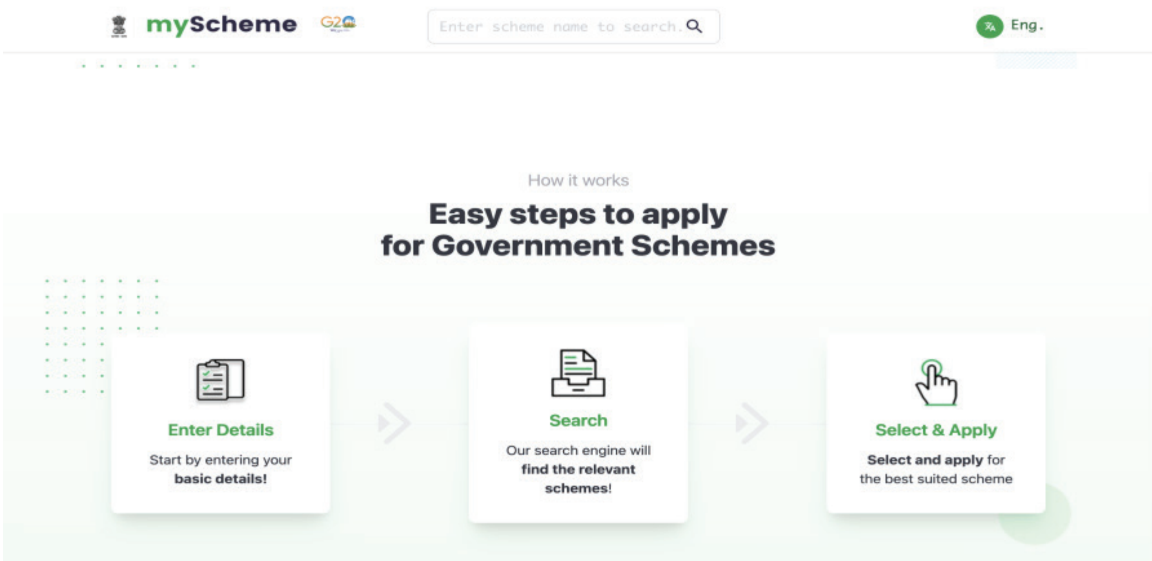
Growth Story of Digital Public Infrastructure

12.69 The emergence of Digital Public Infrastructure (DPI), aimed at improving financial literacy, innovation, entrepreneurship, employment generation, and empowering beneficiaries has played a critical role in uplifting the economy and bringing it to the stature where it stands today. The journey of DPI has been remarkably memorable, dating to 2009, when Aadhaar was first launched. It is fourteen years now, and the digital journey since then has taken the country quite far. The three growth drivers that acted as catalysts for DPI growth were favourable demographics, vast expansion of the middle-class, and digital behaviour patterns. By leveraging these growth drivers, India has built a competitive digital economy that empowers every individual and business to transact paperless and cashless.

12.70 With Aadhaar establishing the authentication framework for verifying the identity of beneficiaries of welfare schemes, the next logical step was to make major government services available digitally. However, a lack of knowledge about the existing schemes was seen as a primary reason behind the beneficiaries' inability to access the schemes' benefits. 'MyScheme' is an e-Marketplace for schemes where users can look for suitable schemes based on their eligibility. It helps reduce users' time and effort by doing away with the requirement of searching multiple websites of government departments and studying multiple scheme guidelines to check their eligibility. The scheme also acts as the single national platform for launching any government scheme. As on 16 January, 2023, more than 181 Central and State/UT government schemes across 14 diverse categories have been hosted on the portal.

[13] Data sourced from quarterly Performance Indicator Reports by TRAI (Telecom Regulatory Authority of India)

Figure XII.11: MyScheme portal provides information on schemes in three easy steps



Source: https://www.myscheme.gov.in/, accessed on 3rd January 2023.

12.71 To reduce the search cost for the commoners, the government launched Unified Mobile Application for New-Age Governance (UMANG), which enables citizens to access e-Government services offered by the Central and State Government in various sectors such as agriculture, education, health, housing, employees, pensioners, and students' welfare, the Public Distribution System, and others. Until 16 January 2023, UMANG catered to about 21,869 services (1,672 Central and State Govt. services and 20197 Bill Payment services) under 310+ departments of Central Government and departments of 34 States/UTs. Over 4.9 crore users are registered and benefiting from services on UMANG. Four hundred and eighty-nine DBT (Direct Benefit Transfer) schemes were made live on UMANG until September 2022. During the trying times of Covid-19, UMANG was instrumental in making available the services of EPFO for claims related to Covid-19. Around 4.9 lakh advance claims in EPFO have been raised via the UMANG Platform until September 2022.

12.72 While the initiatives mentioned above focused on bringing the government to the doorsteps of the citizens, a unique initiative that deserves special mention is the Open Network for Digital Commerce (ONDC). ONDC aims to go beyond the current platform-centric digital commerce model where the buyer and seller can use the same platform or application for transactions. ONDC is a network-based open protocol that would connect all the buyers and sellers on the network thus bringing better visibility across the Business-to-Consumer (B2C) & Business-to-Business (B2B) landscape. In the ONDC framework, consumers can potentially discover any seller, product, or service by using any compatible application or platform. This will increase the freedom of choice for the consumers and will enable them to match demand with the nearest available supply, allowing them to choose their preferred local businesses. ONDC's beta test in the city of Bengaluru is a major first step in operationalising a network approach to e-commerce as an alternative to a platform-centric approach. The open network system will make the e-Commerce landscape more inclusive, accessible, and experience-driven for all consumers and sellers, especially for small businesses that will exercise more freedom in business decision-making.

12.73 The government is also cognizant of the need to improve the productivity of human capital. In order to promote open collaborative software development of e-governance applications, a platform called OpenForge has been developed. Through OpenForge, the use of open-source software and sharing and reuse of e-governance-related source code is promoted. As on 16 January 2023, there are 10,328 users on the platform, with 2,205 projects [14].

12.74 Another important domain that the government has emphasised is the availability of open resources on Artificial Intelligence (AI). The national AI portal has been developed with a view to strengthening the AI ecosystem in the country by pooling together and highlighting the latest developments happening in Central and State Governments, industry, academia, NGOs, and civil societies. As on 16 January 2023, it has published 1724 articles, 829 news items, 276 videos, 127 research reports, and 120 government initiatives, all related to AI.

12.75 In a country such as India, with its unmatched linguistic and cultural diversity, AI has great potential as a tool for overcoming the language barrier. 'Bhashini', the National Language Translation Mission, aiming at nurturing Indian language technologies and solutions as a public good, was launched in July 2022. The Digital India Bhashini portal[15] is a public digital platform on which 260 open-source API-based AI models are available for speech-to-text conversion, machine translation, and text-to-speech conversion in 11 Indian languages and English for various purposes. Bhashini has great potential to bring access to the internet and other digital resources to millions of Indians in their own languages.

12.76 The digital landscape is a fast-changing one with overarching technologies arriving at the doorstep of consumers and businesses. The third generation in web technologies, 'Web 3.0' is one such example where in the entire experience of the internet is changing in the way how it will be used, how websites are managed, and how internet services are provided. The horizons of internet use have broadened, and so has their deployment of better standards. The Open Credit Enablement Network (OCEN) is one such set of standards that is being hailed as a major shift in how lending and borrowing will be conducted in the future. This is another good initiative towards democratising lending operations and thus ensuring that small borrowers are able to avail themselves of the best terms under which credit is available.

12.77 Today, we have a powerful story on digital public infrastructure that is finding global resonance. The increasing digital adoption during covid-19 in areas like healthcare, agriculture, FinTech, education, and skilling indicates that the digital delivery of services in India has a massive potential across economic sectors. It is usually suggested that developing countries must follow global best practices. However, how India has created and harnessed its DPI is capturing the attention of many nations globally. Low-cost accessibility (Aadhaar), the success of citizen-centric services like Unified Payments Interface (UPI), large-scale adoption and reach (DigiLocker, MyGov), and the vaccine journey through Co-Win are important and successful milestones in India's public digital infrastructure journey.

[14] As per https://openforge.gov.in/ , last accessed 4 January 2023.

[15] https://bhashini.gov.in

Box XII.6: Unified Payments Interface - The game changer in real-time payments!

'I like how you've brought out the rising popularity of UPI. I laud my fellow Indians for embracing digital payments! They've shown remarkable adaptability to tech and innovation'

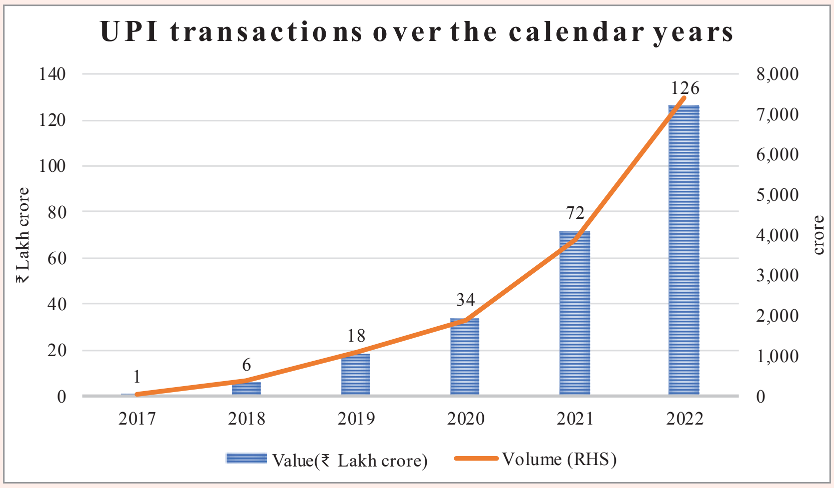
Shri Narendra Modi, Hon'ble PM

Unified Payments Interface (UPI) is a system that empowers and knits multiple bank accounts into a single mobile application (of any participating bank), merging several banking features, seamless fund routing and merchant payments into one hood. It also caters to the "Peer to Peer" collection request, which can be scheduled and paid as per requirement and convenience.

Introduced in 2016 to revolutionize the payment landscape through universal operability, single payment address, and low-cost mobile-first payment system, UPI has acted as a positive disruption towards enabling greater digital payments adoption in the country. UPI is a single mobile application for accessing different bank accounts. It can be accessed on all major platforms, such as Android and iOS. As the application is user-friendly and fast, consumers and merchants have displayed a great affinity to digital technology, leading to rapid growth in this digital payment infrastructure. The journey of UPI has been fascinating. The number of banks that became part of the real-time payment system increased from 35 in December 2017 to more than 380 in December 2022. Though pre-existing payment modes such as debit cards, credit cards, National Electronic Funds Transfer (NEFT) and Real-Time Gross Settlement (RTGS) have grown over time, UPI has shown a quantum jump comparatively to become one of the preferred modes of payment. In this sense, the progress of UPI has been remarkable.

In FY19, UPI accounted for 17 per cent of the country's total 3,100 crore digital transactions. The next fiscal year saw UPI's share rise to more than 27 per cent as it processed 1,250 crore transactions out of 4,600 crore digital transactions. In FY22, UPI accounted for 52 per cent of the total 8,840 crore financial digital transactions.

On average, between FY19-22 (calendar year), growth in UPI-based transactions in value and volume terms have been 121 per cent and 115 per cent, respectively. Recently, in Dec 2022, UPI touched its highest-ever mark with 782 crore transactions worth ₹12.8 lakh crore.



Source: NPCI

UPI also allows for multiple methods for integrating payments—QR based payments being the most popular. In just 5 years, over 23 crore UPI QRs have been deployed in the market for accepting merchant payments, from only 25 lakhs devices that were accepting merchant payments before this.

The benefits of UPI became evident during the Covid-19 pandemic when UPI served as a critical lifeline, especially for small and micro merchants. Further, UPI has processed 2,922 crore contactless merchants' transactions with a total value over ₹21.7 lakh crore in FY23 (till December 2022).

The success of UPI has not been restricted to India alone; NPCI, through its international arm NPCIL is pushing for acceptance of RuPay/UPI powered apps, cross-border remittance and UPI-Like deployment in international markets such as Singapore, UAE, France, the Netherlands among others.

Initiative towards the discussion on cross-border remittances will help reduce the cost incurred and procedures involved towards money transfer at present by the migrant workers. The smooth transfer of money will increase the total value of remittances, increasing their impact on economic development. NPCI has also succeeded in developing an exemplary robust payments system that is cost-effective, secure, convenient and instantaneous. Several nations have displayed an inclination towards establishing a 'real-time payment system' or 'domestic card scheme' inspired by the exemplary innovations by NPCI in the country.

Tech companies are increasingly leveraging the power of UPI to expand the digital ecosystem, which has led to a significant acceleration in the pace of financial inclusion. UPI has opened up many opportunities for start-ups and e-Commerce players to develop innovative solutions that elevate the customer experience. The open systems have enabled global players like Google, WhatsApp, Walmart, True Caller, Amazon, Uber etc., to provide UPI services.

It is envisioned that the journey of UPI will help accelerate the process of financial inclusion and digital adoption in India by creating a more prosperous and inclusive ecosystem that can accommodate larger sections of the population in times to come.

12.78 The introduction of GST, with its end-to-end digitisation of all processes, digitalisation of tax administration, and the faceless e–assessment scheme for Income Tax, have improved governance and formalisation of the economy. The seamless generations of e-way bills and electronic toll collections have further augmented better tax collections for the government. It has not just helped in curbing tax evasion but generated trust for small businesses through monitoring compliance.

12.79 The government has also taken initiatives towards empowering individuals with control over their data to access essential services related to finance, health, education, and skills digitally. The Account Aggregator (AA) is a global techno-legal framework that enables individuals to share their financial data quickly and securely, with their consent, with any regulated third-party financial institution of their choice. The AA framework is currently live across over 110 crore of bank accounts.

12.80 Adding to the journey, FY15 can be considered a turning point for the Indian start-up environment. The reforms led by our government, in addition to existing inherent advantages like demography, technological developments, entrepreneurial spirit, and market size, have changed the landscape of the start-up ecosystem in India. The year 2021 marked the completion of five years of the 'Stand-up India' scheme (launched in January 2016), and the numbers - with more than 84,000 recognized start-ups - tell the entire story. Start-ups have moved past the traditional territory of consumer products and services to much larger value-added services such as satellites.

12.81 India is also geared to strengthen the up-and-coming drone industry. Under Mission 'Drone Shakti', the drone start-ups and Drone-as-a-Service (DrAAS) are being promoted. Almost 90 per cent of the airspace has now been opened up as a green zone for flying drones up to 400 feet. A Production-Linked Incentive (PLI) scheme for drones and drone import policy have been notified. Also, the private equity investments in agri-tech space have skyrocketed over the past four years – witnessing an increase of more than 50 per cent per annum to aggregate approximately ₹6600 crore.

12.82 As our digital space widens to bring in newer services, the need for appropriate regulations also becomes paramount. Therefore, techno-smart regulations are the future for digital societies. In this regard, the governments worldwide have adopted or are introducing legislation to provide a foundation for robust data governance. Their policy goals can be complemented and advanced with the help of standard, open, and interoperable protocols that increase the choice of digital services available to a user and enhance user privacy, such as the Data Empowerment & Protection Architecture.

Conclusion/Outlook

12.83 Today, we are operating in the new normal where the global economy is still recovering from the setback due to pandemic, and geo-political conflicts persist. India could effectively steer through the situation owing to its dedicated support to infrastructure creation through increased capex and strong macroeconomic fundamentals. This underpinned economic growth when the private sector was cautious in investing due to its balance sheet problems and uncertain demand outlook stemming from global shocks.

12.84 The targeted increase in investment is seen across all infrastructure sectors. To help sustain the investment drive, NIP provided a forward-looking roadmap of investible projects. Further, PM GatiShakti has helped accelerate infrastructure development by integrating the seven engines (roads, railways, airports, ports, mass transport, waterways, and logistic infrastructure) of growth. While traditional infrastructure sectors such as roads and railways have received a renewed push in recent years, sectors such as inland water transport and civil aviation, which have significant untapped potential, are also being encouraged sufficiently. Parallelly, the focus is also on improving coordination among different stakeholders and ministries. This will help resolve compliance issues and increase the efficiency and effectiveness of investments.

12.85 Besides, the reforms being undertaken in energy and power sector will help fast-track India's progress in the next 25 years. With a population of nearly 140 crore, India has a massive demand for energy from all sectors including primary, secondary and tertiary. Affordable and reliable availability of power is critical for India's aspirations for the manufacturing sector to be fulfilled. Further, with the growing importance of clean energy, there has been a renewed push towards non-fossil fuel-based energy sources in the power sector. The government, along with the private sector, has progressively worked towards increasing the share of renewables. This will ensure a gradual but calibrated energy transition, meeting the country's sustainability targets and giving primacy to its national developmental requirements.

12.86 With the advent of new technologies, we are witnessing new regulatory challenges. Technology and innovation are, per se, neither constructive nor destructive. The use cases present the positive aspects of technology and innovation. The government is committed to keeping pace with the digital landscape developments including those related to legislations and frameworks. While the digital journey started with Aadhaar as a medium for service delivery at the doorstep, UPI strengthened the digital payment infrastructure. With other initiatives like Co-WIN, e-RUPI, TReDS, Account Aggregators, ONDC, etc. at different stages of implementation, India has developed a unique and cogent digital story to tell. The journey is ongoing and there is much untapped potential in India's digital public infrastructure space.

12.87 In sum, the synergy between physical and digital infrastructure will be one of the defining features of India's future growth story.