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# CONTENTS

## **Speeches**

Inaugural Address at Payment System Operators (PSO) Conference Shaktikanta Das	1
G20 for a Better Global Economic Order during India's Presidency Shaktikanta Das	7
The Launch of Mission 'Har Payment Digital' Shaktikanta Das	13
The FinTech Revolution in India – Innovation, Inclusion and Regulation M K Jain	15
Self-Regulation in Financial Markets – Looking Back and Looking Ahead M. Rajeshwar Rao	21

## **Articles**

State of the Economy	31
Consumer Price Index: The Aggregation Method Matters	69
Financial Stocks and Flow of Funds of the Indian Economy 2020-21	83
Application of Growth-at-Risk (GaR) Framework for Indian GDP	101
Subnational Borrowings in India –Volatilities and Determinants of State Government Securities Spread	113

## **Current Statistics**

Recent Publications	129
---------------------	-----

Recent Publications	182
---------------------	-----



## SPEECHES

Inaugural Address at Payment System Operators (PSO) Conference  
Shaktikanta Das

G20 for a Better Global Economic Order during India's Presidency  
Shaktikanta Das

The Launch of Mission 'Har Payment Digital'  
Shaktikanta Das

The FinTech Revolution in India –  
Innovation, Inclusion and Regulation  
M K Jain

Self-Regulation in Financial Markets –  
Looking Back and Looking Ahead  
M. Rajeshwar Rao



# *Inaugural Address at Payment System Operators (PSO) Conference\**

*Shaktikanta Das*

I am delighted to be here at the first Payment System Operators' (PSO) Conference being organised by the Department of Payment & Settlement Systems (DPSS) of the RBI. It is indeed a matter of pride that the Indian payment systems have been globally recognised as best-in-class and future ready. It is the combined effort of all the PSOs, the Government and the Reserve Bank that has made India a shining star in global payments space. The Reserve Bank acknowledges the efforts put in by each one of the stakeholders for accomplishing this. Going by the theme of this conference (Payments Rendezvous – Reminisce, Revitalise), it is an opportune time to reminisce about this journey and identify the challenges and opportunities that lie ahead.

Over the years and guided by key initiatives of the Reserve Bank, the payments landscape in India has evolved into a state-of-the-art system that is affordable, accessible, convenient, fast, safe and secure. India's payment infrastructure caters to the needs of a diverse group of consumers. It comprises a wide array of payment options for executing large value payments, retail credit transfers, fast payments, cheque clearing, card payments, bulk repetitive payments, bill payments, toll collections, offline payments, etc. In India, there are about 114 crore mobile phone connections<sup>1</sup>, with urban and rural share being 55 per cent and 45 per cent, respectively. Widespread use of mobile phones, coupled with availability of internet

services, have provided thrust to digital payments. This has led to "anytime anywhere" banking which transcends traditional branch banking hours. About 1,050 crore retail digital payment transactions<sup>2</sup> worth ₹51 lakh crore processed in January 2023 stand as testimony to the size and efficiency of India's digital payments.

It is hard to believe today that there was a time when a card issued by a bank could be used only at ATMs of that bank. Since then, ATM networks have made interoperability the order of the day. Similarly, card networks have made it possible for us to pay for our purchases at any Point of Sale (PoS) terminal in India or abroad. The Clearing Corporation of India Ltd. (CCIL) and National Payments Corporation of India (NPCI) have set up world-class payment infrastructure for securities and retail segments, respectively. These two institutions have emerged as the bedrock of our payments innovations in wholesale and retail payments. A decade back, it would have been hard to imagine a mobile phone becoming such a powerful and broad-based medium of doing payment transactions. The launch of Unified Payments Interface (UPI) in 2016 has revolutionised the payments ecosystem with about 803 crore transactions<sup>3</sup> worth ₹13 lakh crore processed in January 2023 alone. For Indians, banking facilities are available at their fingertips today. We have moved far beyond doorstep banking. Further, given the importance of remittances received from Indian diaspora abroad, Money Transfer Service Scheme (MTSS) operators form a significant section of PSOs. Prepaid Payment Instrument (PPI) issuers have become a part of daily life for many Indians. The facility provided by White Label ATM Operators (WLAOs) and Instant Money Transfer (IMT) operator have helped in expanding the avenues for cash withdrawal. PSOs operating in niche segments like National Electronic Toll Collection (NETC), Bharat Bill Payment Operating Units (BBPOUs) and the newest

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\* Inaugural Address by Shri Shaktikanta Das, Governor, Reserve Bank of India at the Payment System Operators (PSO) Conference, Kochi, March 18, 2023

<sup>1</sup> Source: Telecom subscription data as on 31st December, 2022 ([https://www.trai.gov.in/sites/default/files/PR\\_No.13of2023\\_0.pdf](https://www.trai.gov.in/sites/default/files/PR_No.13of2023_0.pdf))

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<sup>2,3</sup> Source: RBI website (Payment System Indicators)

entrants – Payment Aggregators (PAs) – are bringing ease of living to the segments they cater to. Last but not the least, Trade Receivables Discounting System (TReDS) platforms have enabled factoring of MSME receivables in a transparent and competitive manner, thereby improving the liquidity position of MSMES. On an average 35,000 Factoring Units (FUs)<sup>4</sup> worth ₹7,200 crore are discounted or financed in TReDS every month.

The Reserve Bank has also taken a number of steps to increase safety and security of payment transactions as well as the ecosystem. Introduction of Additional Factor of Authentication (AFA) for card-based e-commerce and online transactions, which was later extended to other payment modes and channels, is a success story in Indian payment systems. Simple measures like provision of switch on / switch off facility for card transactions have positively impacted the trust of cardholders in digital payments. In all these initiatives, the Reserve Bank has kept customer convenience and safety as the prime objective. Other examples could be contactless card transactions, offline payments framework, e-mandate based transactions, Card-on-File Tokenisation (CoFT), etc.

During the pandemic, resilience of payment systems was severely tested. Movement of people running the operations of PSOs was restricted, and some of them also fell ill. In such a situation, a spurt in digital payments was observed. Suddenly, many more people started transacting digitally. PSOs rose to the occasion and showed remarkable tenacity. All our payment systems have proved their worth during the pandemic. Among other things, I remember the efforts taken to tag the payment systems and the stakeholders as 'essential services'. This was a single-most defining factor which enabled everyone to carry out various transactions unhindered.

Let me also highlight a few more major steps taken by the Reserve Bank in payments sphere in recent years. Since mid-December 2019, NEFT has been made available on 24x7 basis. The same was replicated in RTGS a year later. This development allowed inter-bank settlement of ancillary payment systems to happen in RTGS on 24x7x365 basis. It also facilitated additional settlement cycles to be run by the payment system operators. Presently around 90 multilateral net settlement batch files are posted in RTGS for effecting settlement of transactions during a particular day. This has reduced the attendant liquidity, credit and settlement risks.

In the card payments space, the Reserve Bank has issued instructions to restrict storage of card data only with card issuers and card networks. ATM cash withdrawal transactions can now be completed without the need for cards. Imagine how many card-related ATM frauds can now be mitigated.

In the realm of UPI, a number of steps have been taken recently. RuPay credit cards have been permitted as underlying instrument in UPI. UPI Lite has been introduced for offline payments. UPI123Pay was introduced to allow feature phone users to perform UPI transactions. In February 2023, "UPI One World" was launched to extend the UPI facility to inbound travellers from G20 countries. Further, inward payments have been permitted in Bharat Bill Payment System (BBPS) so that NRIs can seamlessly pay utility, education and other bills on behalf of their family members and friends. The scope, reach and utility of BBPS has thus been significantly enlarged.

The Reserve Bank has also permitted PPI issuers, card networks and WLA operators to participate in Centralised Payment Systems (*i.e.* RTGS and NEFT) as direct members, thereby enhancing accessibility of payments infrastructure and providing avenues for reducing intermediaries. Even in TReDS, many enhancements, like insurance facility, commencement

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<sup>4</sup> Source: RBI website.

of secondary market operations and modification in eligibility criteria to participate as financier, have been announced. These measures will empower the MSMEs to realise their dues faster and in a more cost-effective manner. Even in the Payment Aggregator (PA) space, the Reserve Bank has taken significant efforts to bolster transparency and keep the space regulated and, of course, to be directly supervised as well.

It is worth pointing out that the Reserve Bank has been transparent in terms of its data releases and in keeping the ecosystem informed of the actions taken. The intent behind all these efforts is to move towards a less-cash society while maintaining the health of Indian payment systems. The expectation is that PSOs would implement regulatory measures in an expeditious manner. Let us work together and make the entire payments ecosystem a win-win for all.

The fact that the Digital Payments Index (DPI), developed by the Reserve Bank, has gone up from 100 as the base in March 2018 to 377.46 as of September 2022 is testimony to the long way we have travelled. However, despite the progress made so far, would it be wise to rest on our past laurels? In my view, the answer is "No". It is often said that change is the only constant in life. There have been instances in the past when companies which dominated their market segment have failed to anticipate winds of change and did not innovate on products and processes. Consequently, they have become almost extinct. Not just companies, some of the countries which used to set the global agenda in previous centuries could not maintain their pole position, and other countries have become the guiding light. Therefore, while we take pride in our achievements, it is imperative to chart our way forward by identifying the challenges and opportunities that lie ahead.

You are aware of the efforts being taken by the Reserve Bank to increase awareness and upscale digital payment adoption in the country. The 'RBI Kehta

Hai' has become a popular phrase in the country. The Digital Payments Awareness Week (DPAW) was celebrated recently. I take great pride in participating in such programmes. I am aware of the popularity of each one of you and your institutions in the digital payments space. But, as they say, 'yeh dil maange more'.

I would now like to underscore some of the challenges that confront us and how we all can work together to resolve them. The Reserve Bank has constantly been engaged with the task of bringing more people within the digital payments' fold. While making multitude of payment methods available, we believe that for convincing more people to transact digitally, it is imperative to augment their awareness and trust in digital payment methods. Financial literacy is just the first step towards digital payments literacy. Having opened more than 48 crore Jan Dhan accounts<sup>5</sup>, it would augur well to leverage these accounts and help people realise the ease that digital payments can bring to their lives. PSOs have an important role to play here in creating awareness and countering misinformation.

Availability and affordability of an expeditious grievance redress mechanism is of utmost importance to ensure public trust in digital payments. While traditional bank branch model offers a physical place where customers can lodge their grievances, the same may not be the case in digital payments where users sometimes find it difficult to ascertain the appropriate forum for lodging their grievances. More the struggle undertaken by people in resolving their grievances, more unlikely it becomes that they would attempt digital payments in future. Prompt reconciliation of transactions by PSOs is an easy and expeditious method of addressing customer grievances. Latest technologies may also be leveraged to support rule-based resolution of grievances with

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<sup>5</sup> Source: <https://pmjdy.gov.in/home>

zero to minimal manual intervention. While there is wide appreciation of the Online Dispute Resolution (ODR) system conceived by RBI, how many PSOs have actually enabled it? Should not the entities embrace such initiatives upfront and enhance customer satisfaction? Afterall, PSOs deal with public money.

Increase in digital payments and its users also brings to the fore potential risks pertaining to cyber security, data privacy and operational resilience. PSOs must always be cognisant of the emerging threats and put in place suitable risk mitigation measures. A related area that requires focus is outsourcing arrangements of PSOs with their vendors. Service level agreements with vendors should meet minimum standards prescribed by the Reserve Bank. In all such agreements, PSOs' right to conduct audit of the service provider must always be ensured.

Since payment system operations are heavily dependent on technology, many new-age tech firms are entering the payments ecosystem. Some of them have come under the regulatory ambit of the Reserve Bank for the first time. At times, some PSOs display unwillingness to comply with regulatory instructions, citing various reasons like cost of carrying out system-level changes. In this digital age, there is a necessity to constantly upgrade the systems so as to remain relevant and increase efficiency. Legacy systems must be updated to bring them in line with changing realities. While any system may be presumed to be resilient and safe, a single bad experience of the customer with digital payments may drive him away to other channels or modes of payments. PSOs have a big responsibility here.

For long term success, the PSOs should specifically focus on (i) ensuring good governance and prudent risk management; (ii) maintaining robust IT infrastructure with cyber resilience; and (iii) putting in place responsive grievance redress mechanism. Efforts may also be made for ensuring wider participation in the

framework for offline payments. PSOs may also work on formation of Self-Regulatory Organisations (SROs) for greater good of all stakeholders.

Going forward, the achievements of payment systems in India present more exciting opportunities for us. Having successfully implemented so many payment systems domestically on such a large scale, time has come to expand our reach overseas. With the Indian economy getting increasingly integrated with the global system, cross-border payments have assumed greater significance. Our home-grown payment products, UPI and RuPay network, are enhancing their global footprint. Launch of UPI linkage with Singapore's PayNow is a major step forward. In future, such linkages with other countries will make cross-border payments simple, affordable and real-time. QR code-based merchant payments through UPI apps are already enabled in Bhutan, Singapore and UAE. All these would also help project India's soft power at the global level.

### **Conclusion**

To conclude, I would like to say that a lot has been achieved but a lot more can and should be done in the days ahead. Payments and settlements are serious businesses with potential downsides, should anything go wrong. Our effort should be to mitigate such downsides and capitalise on the upsides. This is something all market participants must recognise and constantly remind themselves. Every failed transaction, every fraud attempted or actually carried out, every complaint that is not satisfactorily addressed should be a cause of concern and must invite a detailed root cause analysis. It would do well to remember that like the batsman on the cricket field, you are only as good as the last ball faced.

We must together make sure that no one in the country is left behind in the digital payments journey. Under Reserve Bank's Payments Vision 2025, we

stand committed to the core theme of 'E-Payments for Everyone, Everywhere, Everytime' (4Es). We must seize every opportunity to internationalise our payment products. This will open up a new world of opportunities for our country. This is the year of Indian Presidency of the G20. Let us present the India story to the global audience. Let us work together;

let us innovate together. This PSO Conference will provide ample opportunities to deliberate on all these issues. With your active participation, I am sure we will achieve more and stride forward with greater conviction and responsibility. My best wishes to all the participants.

Thank you.



# *G20 for a Better Global Economic Order during India's Presidency\**

*Shaktikanta Das*

I am delighted to have been invited by Federal Bank to deliver the K P Hormis Commemorative Lecture today. Late Shri K P Hormis, the founder of the Federal Bank, was a great institution builder who recognised early the critical role of entrepreneurs in an economy, the importance of banks in providing finance, particularly to small scale entrepreneurs, and the need for prudence in banking business to preserve financial stability.

Despite the multiple and overlapping shocks to the global economy from COVID-19 pandemic, the war in Ukraine and synchronised monetary policy tightening by Central Banks across the world, the Indian economy remains resilient and is expected to be the fastest growing major economy in the world. Our financial sector remains stable; the worst of inflation is behind us; and the Indian Rupee has exhibited least volatility among its peer currencies.

As you are aware, India has assumed the G20 Presidency for 2023. In a world that is fractured in geopolitics, trade and supply chains, the Indian Presidency is driving home the philosophy of '*Vasudhaiva Kutumbakam*: One Earth · One Family · One Future'. The endeavor of the Indian Presidency is to realise the potential underlying this philosophy. I have, therefore, chosen the theme of "G20 for a Better Global Economic Order during India's Presidency" for my address today.

As I said a little while ago, India has assumed the leadership of G20 in an environment of formidable geo-economic shifts which have vitiated the global

macro-financial outlook. The capacity of the existing global economic order to manage the severe impact of the multiple shocks is under challenge. This has led to severe supply-demand imbalances in critical sectors and given rise to high inflation in almost all countries. Globalisation of inflation to multi-decadal high levels and subdued global growth and trade have posed complex policy challenges. As the premier forum for promoting cooperative and effective solutions to global problems, the task of the G20 is cut out, given the difficulties in building consensus and the uncertainty around the outlook on geopolitics.

The ongoing global crisis is both an opportunity and a major test for the G20 which represents 85 per cent of world GDP and 75 per cent of global trade. Following the East Asian financial crisis of 1997, the G20 was founded in 1999 as a forum for the Finance Ministers and Central Bank Governors to discuss global issues and policy options. After the global financial crisis of 2008, G20 was upgraded to the level of Heads of States/Governments in 2009. In an interconnected world, national policies alone may not be fully effective when the nature of the shocks is global and persistent.

Post COVID, the world economy was recovering gradually on the back of large policy stimulus and rising pace of vaccination when the war in Ukraine led to sharp increases in global food, energy and commodity prices. It also triggered renewed supply chain disruptions. Geopolitics has now been taken over by geoeconomics. According to the IMF<sup>1</sup>, the global economy is now experiencing a process of geo-economic fragmentation, operating through five key channels – trade, technology, capital flows, labour mobility and global governance. There are rising restrictions on trade and diffusion of technology, barriers to labour migration, reduced capital flows

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\* 17<sup>th</sup> K P Hormis Commemorative Lecture by Shri Shaktikanta Das, Governor, Reserve Bank of India, Kochi, March 17, 2023.

<sup>1</sup> "Geo-Economic Fragmentation and the Future of Multilateralism," IMF Staff Discussion Note 2023/001.

and increased uncertainty about global public goods. The interlinkage between geopolitics and economic prospects of nations has become stronger, with each influencing the other. There is now growing trend of friend-shoring and onshoring. The focus is now on ensuring food and energy security and on securing strategic minerals – lithium, rare earths, copper, zinc, chromium, graphite, etc. which are required for producing batteries, solar panels and wind turbines.

Actually, the backlash against globalisation had started even before the pandemic struck, as globalisation created both winners and losers. The international order could not provide cooperative solutions to make the process win-win for all. This indeed is the biggest challenge for G20 as a multilateral group. Globalisation must produce better and more equitable outcomes for all, including the global south.

Of the multiple risks facing the world community, the surge in inflation has posed a complex monetary policy dilemma in every economy between raising interest rates enough to tame inflation, and at the same time minimising the growth sacrifice to avoid a hard landing. The aggressive monetary policy tightening by systemic central banks since early 2022 and the consequent appreciation of the US Dollar have led to several economies, with a high share of external debt, becoming highly vulnerable to debt distress. According to the IMF<sup>2</sup>, 15 per cent of Low-Income Countries (LICs) are estimated to be already in debt distress, with an additional 45 per cent at high risk of debt distress. About 25 per cent of Emerging Market Economies (EMEs) are also at high risk. Further, capital outflows from Emerging Market and Developing Economies (EMDEs) due to continued tightening of financial conditions have led to reserve losses, sharp currency depreciations and spiraling imported inflation pressures. In such a

situation, addressing the deteriorating debt situation in low and middle-income countries and facilitating coordinated debt treatment by official bilateral and private creditors under a multilateral framework has assumed priority under our G20 presidency.

Despite the overwhelming concerns a few months back about an imminent recession, the global economy has in fact exhibited greater resilience, reducing the probability of a hard landing. Nonetheless, there is a trend decline in global growth. There is also considerable uncertainty about structural shifts taking place in the drivers of inflation, ranging from labour market dynamics to concentration of market power and less efficient supply chains. In parallel, global food, energy and other commodity prices have softened from respective peaks and the supply chains are normalising, which should help in achieving disinflation. Restoration of a more balanced world economic order is, therefore, at the forefront of the G20 discussions. India has stressed the importance of creating an inclusive agenda to restore stability and confidence in multilateralism while revitalising global growth.

A fragmented global governance regime, as it prevails today, has also led to under provisioning of global public goods and erosion of economic welfare. The recent examples are discriminatory access to vaccines during the pandemic and reluctance to ensure universal access to vaccines and technology for life saving medicines; inadequate provision of finance and access to technology to quicken the pace of green transition in EMEs; and lack of timely creditor cooperation to address the severe stress facing some of the debt-ridden developing economies. Recommitting to multilateralism is the need of the hour and the G20 has a major role in this regard.

It is also important that the G20 countries take due notice of people-centric transformative changes taking place in member countries and adopt them to

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<sup>2</sup> IMF World Economic Outlook Update – January 2023.

make the world a better place for all. Learning from each other's experience to enhance the quality of life for the common man must be a new dimension of the global economic order in the future. I would like to highlight two such key areas under our G20 presidency: first, digital public infrastructure for financial inclusion; and second, climate change and mitigation for achieving a more inclusive global economic order.

### **Digital public infrastructure for Financial Inclusion**

The G20, through the Global Partnership for Financial Inclusion (GFFI), is facilitating a dialogue on financial inclusion in the global forum. The focus is on unserved and underserved individuals and on micro, small and medium enterprises (MSMEs). India is sharing its experience in financial inclusion as well as in the use of digital public infrastructure for achieving the goals of poverty alleviation and economic empowerment of the vulnerable sections of the society. India has been one of the forerunners in addressing the issue of 'last-mile connectivity' by leveraging its world-class digital public infrastructure which includes the JAM (Jan-Dhan, Aadhaar, Mobile) trinity; the UPI; the Open Network for Digital Commerce (ONDC); and the account aggregators (AA) framework. We are also highlighting the importance of digital identity, digital payments and digital consent-based sharing of data in enabling a globally integrated financial inclusion ecosystem. India's rich and successful experience in this area offers fine guidance on pathways to improving the lives of the common man. Not surprisingly, India has been recently chosen as the co-chair of the Global Partnership for Financial Inclusion working group along with Italy.

### **Climate Change and Mitigation**

Climate change is no longer a distant threat. It is right here staring at us and is a growing danger with risks for millions of lives and livelihoods around the world. Extreme weather events world over, such as

floods, droughts, wildfires, cyclones, etc. can disrupt production and supply chains and create shortages of essential goods and services at anytime, anywhere. Such events can create sudden increase in prices leading to inflationary pressures. In addition, climate change can also affect the productivity of sectors that are heavily dependent on nature, such as agriculture. For instance, rising temperatures and changing rainfall patterns are causing lower crop yields and higher prices of foodgrains in recent years. The physical impact of climate change, such as rise in sea-level and increased frequency and intensity of extreme weather events, can damage infrastructure and property, leading to higher costs for businesses and households. All these factors can contribute to higher inflation and lower growth, which can erode the purchasing power of households and businesses. As we all know, such events are becoming more frequent in recent years. Therefore, it is essential that we take concerted climate action to safeguard the future of our planet and its inhabitants.

The G20 countries have a major responsibility in providing leadership for global action on climate change and provision of climate finance, together with transfer of technology, to take this agenda forward. In dealing with weather related disasters, India has made noteworthy progress in its green transition agenda and capacity creation for efficient disaster management. Sharing our experience with other G-20 countries could open up scope for collaboration, in pursuit of the common goal of a greener global economy.

It is noteworthy that India is the highest ranked G20 country according to the Climate Change Performance Index<sup>3</sup> 2023 and is also the 5<sup>th</sup> best performing country

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<sup>3</sup> The Climate Change Performance Index (CCPI), published annually since 2005, is an independent monitoring tool for tracking the climate protection performance of 59 countries and the EU, which together account for 92 per cent of the global greenhouse gas emissions. It is published by the Germanwatch, the New Climate Institute, and the Climate Action Network.

globally. Given that India is widely expected to remain as one of the fastest growing economies in the world, our energy demand could rise manifold. The challenge for us is twofold: one, to meet the projected increase in energy demand; and two, to rapidly transition from fossil fuel to renewables.

Climate proofing of our infrastructure has also been a priority, more so in view of the large investment in infrastructure in recent years. Through global forums such as the Coalition for Disaster Resilient Infrastructure (CDRI)<sup>4</sup>, India is providing leadership to global efforts for addressing these challenges.

We live in a world where the global macroeconomic and financial outlook may become increasingly uncertain because of climate events, and only a committed global response with a spirit of collaboration can help mitigate the impending risk. In this context, the need for scaling up climate finance for mitigation and adaptation efforts in a balanced manner is well recognised if we were to meet the ambitious net zero targets. In this endeavor, Multilateral Development Banks (MDBs) have an important role to play. They must evolve to meet the increasing demand for lending resources, provide knowledge support and catalyse private investment while continuing with their traditional roles of poverty reduction and achieving the Sustainable Development Goals (SDGs). To address these issues, the G20 has set up an expert group to deliberate on strengthening the MDBs.

As I proceed to conclude, let me state that recent developments in the US banking system have brought to the fore the criticality of banking sector regulation and supervision. These are areas which have significant impact on preserving financial stability of

every country. More specifically, these developments in the US drive home the importance of ensuring prudent asset liability management, robust risk management and sustainable growth in liabilities and assets; undertaking periodic stress tests; and building up capital buffers for any unanticipated future stress. They also bring out that crypto currencies/assets or the like, can be a real danger to banks, whether directly or indirectly. The Reserve Bank has taken necessary steps in all these areas. The regulation and supervision of the financial sector and the regulated entities have been suitably strengthened. The regulatory steps include, among other things, the implementation of leverage ratio (June 2019), large exposures framework (June 2019), guidelines on governance in commercial banks (April 2021), guidelines on securitisation of standard assets (September 2021), scale-based regulatory (SBR) framework for NBFCs (October 2021), revised regulatory framework for microfinance (April 2022), Revised regulatory framework (July 2022) for Urban Cooperative Banks (UCBs) and guidelines on digital lending (September 2022).

Simultaneously, RBI's supervisory systems have been strengthened significantly in recent years through measures which include a unified and harmonised supervisory approach for Commercial Banks, NBFCs and UCBs. The frequency and intensity of on-site supervisory engagement is now based on the size as well as riskiness of the institutions. Off-site supervision has also become more intense and frequent. We have strengthened our engagement with the Senior Management and Boards of the Supervised Entities. The focus is now more on identifying the root cause of vulnerabilities, rather than dealing with the symptoms alone. We have also issued revised guidelines on oversight and assurance functions of financial entities. Use of advanced data analytics is supplementing our supervisory process. To strengthen cyber resilience, a comprehensive cyber security framework for banks together with Digital Payment

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<sup>4</sup> Coalition for Disaster Resilient Infrastructure (CDRI) is a multi-stakeholder global partnership to support creation of new and to develop the resilience of existing infrastructure systems to climate and disaster risks to foster sustainable development. India is a founding member, and the organisation is headquartered at New Delhi.

Security Control Guidelines have been issued. We have also established the college of Supervisors and augmented the staff strength significantly in recent years. What we have in India today is a well regulated and well supervised banking sector. The same would apply to the NBFCs sector and other financial entities under RBI's domain.

### **Conclusion**

Let me now conclude by stating that India has assumed the G20 presidency at a time when it has once again emerged as the fastest growing major economy in the world. International confidence on India's capacity to contribute constructively to reshape

the global economic order is rising. The risk of a hard landing has dissipated world over, even as the pace of disinflation remains less than desirable. Before the cascading effects of geo-economic fragmentation further dampen the global outlook, rebuilding trust through cooperation and recommitting to multilateral frameworks for addressing critical global challenges has become essential. Every crisis can have a solution when powerful minds come together. As Swami Vivekananda had once said "...The powers of the mind are like rays of light dissipated; when they are concentrated, they illuminate<sup>5</sup>".

Thank you.

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<sup>5</sup> The Complete Works of Swami Vivekananda, Volume 1, Chapter I, Introductory. <https://advaitaashrama.org/cw/content.php>



## *The Launch of Mission 'Har Payment Digital'\**

*Shaktikanta Das*

The Launching of Mission '**Har Payment Digital**' today during the **Digital Payments Awareness Week (DPAW) 2023** reinforces RBI's commitment to deepen digital payments in the country.

I am happy to note that the Department of Payment and Settlement Systems (DPSS) of the RBI is celebrating its 18<sup>th</sup> anniversary (it was formed on March 7, 2005). Congratulations to team DPSS on this milestone. Over the years our payment systems have evolved and now we have multiple systems available round the clock facilitating instant payments. India's payment systems are talked about globally and several countries have shown interest to replicate India's success story.

It is a matter of pride that payment systems in India have witnessed over 1000 crore transactions every month since December 2022. This speaks volumes of the robustness of our payments ecosystem and acceptance by consumers. A recent pan-India digital payments survey (covering 90,000 respondents) revealed that 42 per cent of respondents have used digital payments.

Launched in 2016, UPI has emerged as the most popular and preferred payment mode in India pioneering Person to Person (P2P) as well as Person to Merchant (P2M) transactions in India accounting for 75 per cent of the total digital payments. The volume of UPI transactions has increased multifold from 0.45 crore in January 2017 to 804 crore in January 2023. The value of UPI transactions has increased from just ₹1,700 crore to ₹12.98 lakh crore during the same period. The Digital Payments Awareness Week (DPAW)

will further deepen the usage and footprint of digital payments across the country.

The payments ecosystem has variety of payment systems that have facilitated migration to digital. Unified Payments Interface (UPI) has facilitated digital payments to merchants such as retail outlets, kirana stores, street vendors, etc. across the country. Bharat Bill Payment System (BBPS) has ensured migration of bill payments from cash / cheques to digital mode with a hassle-free and streamlined digital bill payment experience. The National Electronic Toll Collection (NETC) System has helped in migration of the toll payments to digital mode with enhancing efficiency in terms of reduced waiting time at toll plazas. The National Automated Clearing House (NACH) system has also facilitated Government Direct Benefit Transfers (DBT) payments digitally and eliminating leakages in the system. The smooth release of DBT benefits by the Prime Minister to 8.34 crore farmers under the PM-KISAN Scheme is a testimony to the reliance and deliverability of our payment systems.

We have taken steps for internationalisation of our payment systems and cross border linkage of fast payment systems of India and Singapore i.e. UPI-PayNow. This linkage is in addition to the QR code based and UPI enabled P2M payments already happening in Bhutan, Singapore and UAE. Recently, we also enabled the visitors from G20 counties to be onboarded to UPI without having a bank account in India. Through this initiative, the G20 delegates had a first-hand experience of making merchant payments seamlessly through the UPI, during their stay in India.

The mission "Har Payment Digital" is aimed at reinforcing the ease and convenience of digital payments and facilitate onboarding of new consumers into the digital fold. Various campaigns highlighting the digital payment channels available are being planned by the banks and non-bank payment system operators. This will further encourage and support the

\* Shri Shaktikanta Das, Reserve Bank of India - March 06, 2023 - Digital Payments Awareness Week (March 6-12, 2023) Launch of Mission 'Har Payment Digital', Mumbai.

adoption of digital payments in the country. I am also happy to note that our Regional Offices will be taking up Jan Bhagidari activities to promote the acceptance and use of digital payments under the G20 theme of promoting digital public infrastructure during Indian presidency.

The message of "Digital Payment Apnao, Auron ko bhi Sikhaao" – "Adopt digital payments and Also teach others" – under the mission Har Payment Digital – is very relevant and expected to create greater awareness and usage among the people.

Once consumers are onboarded to the digital payments' ecosystem, its advantages – availability, convenience, speed and safety – would ensure customer satisfaction and lead to furthering digital payments. The message is in sync with the Payments Vision 2025 of the RBI, i.e. "*E-Payments for Everyone, Everywhere, Everytime*". Significantly, inclusion has

been identified as one of the anchors under the vision and various activities proposed now will help facilitate the same.

We have also decided to initiate a 75 Digital Villages programme through adoption of 75 villages and involvement of village level entrepreneurs. Under this programme and in observance of 75 years of independence, PSOs will adopt 75 villages across the country and convert them into digital payment enabled villages. They will conduct two camps in each of these villages to enhance awareness and onboard merchants in the village for digital payments.

I appeal to all the stakeholders like industry, payment system operators, media, digital payment users, and others to teach non-users about the merits of digital payments and fulfil the mission of "Har Payment Digital" with every person in the country becoming a digital payments user.

# *The FinTech Revolution in India – Innovation, Inclusion and Regulation\**

*M K Jain*

Shri Injeti Srinivas (Chairperson, IFSCA), Shri B. P. Kanungo (Director, CAFRAL), faculty members of IIM Ahmedabad and CAFRAL, and distinguished participants of this conference, a warm greeting to you all!

I am delighted to be present here at this International Research Conference on FinTech. The theme on '*Innovation, Inclusion, and Regulation*' in the context of the FinTech Revolution in India is indeed very topical and relevant to the times we live in.

New technology often reinvigorates and reshapes economies. In the last few decades or so, information technologies perhaps had the most transformative effect on the economy and particularly in financial services. The interlinkage of Finance and Information technology, which is now known as FinTech, has played significant role in the evolution of finance.

Over the years, technology has led to globalisation of financial services, initiated a tectonic shift in the efficiency and speed of these services and increased convenience as well as better experience to consumers.

## **What makes the ongoing FinTech revolution different?**

The current FinTech revolution, which started soon after the North Atlantic Financial Crisis of 2007-08 is unique in many ways. This revolution is defined by the increased computing power, use

of new technologies such as Artificial Intelligence and Machine Learning, APIs that leverage Big Data in providing financial services. Further, there is an emergence of new entrants and new business models.

Prior to current FinTech revolution, digitalisation of financial services allowed banks and financial institutions to have structured data on their consumers which was used to have better understanding of the customer's risk profile. However, with the emergence of Big Data analytics, even better insights on customer preferences and behaviour, can be obtained using alternate semi-structured and unstructured data. Moreover, the analytics, rather than being performed by the Financial Institution themselves is being outsourced to new age FinTechs. In fact, the financial sector is benefiting from this synergistic collaboration between the regulated entities and FinTechs with huge future potential.

## **Benefits from FinTech**

Technology has reduced entry barriers and allowed FinTechs to enter the financial services. More importantly, it has allowed the unbundling of financial services in a manner that is economically viable even at a lower scale of operations. In turn, consumers have benefited by better customer experience and convenience. Payment sector innovations in India is a typical example.

One of the key value propositions that FinTechs offered was providing the same financial services as regulated entities but at a lower cost. FinTech disruption in the Indian brokerage industry is a shining example of this.

Large technology companies, or Big Techs as they are popularly called, such as Alphabet, Meta, Amazon, etc. have also expanded into financial services. These companies leverage the data from their large existing user base coupled with network effects to provide contextualised or embedded financial products along with non-financial products. In many jurisdictions,

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\* Speech delivered by Shri M K Jain, Deputy Governor, Reserve Bank of India on March 10, 2023, at the International Research Conference on FinTech: Innovation, Inclusion, and Regulation jointly organised by the Indian Institute of Management (IIM), Ahmedabad and the Centre for Advanced Financial Research and Learning (CAFRAL) in Ahmedabad.

in addition to payment systems, Big Techs have successfully expanded into credit scoring and lending.

### Risks from FinTech

Irrespective of the type of player undertaking financial business or the type of technology underlying it, it is prone to a few fundamental sets of risks.

- a. For regulated entities or new entrants, depending on the business model, they face legal, reputational, governance, and operational risks in addition to the usual credit, market, and liquidity risks.
- b. From customers' perspective, key risks include mis-selling, discrimination, data privacy and security.
- c. From a regulator's perspective, there are risks associated with financial stability, market integrity and customer protection.

We monitor and calibrate our regulatory and supervisory response across these risk areas. However, new entrants and new technologies can further aggravate these risks. For example, FinTechs operating on lending side have spurred the availability of unsecured loans, globally. Such loans are often driven by machine learning models. However, effectiveness of these models for delinquency has not been fully established, especially during an economic downturn. Any significant failure of these models will not only be limited to new entrants but will also impact regulated entities with exposure to them.

Use of models also brings the question of fair treatment in the extension of credit. It is necessary that highly automated fintech business models for decision making take care of requirement of fairness through additional procedures, controls, and safeguards both in the development and deployment of models and also in the final decision making.

Risk of unreliability or vulnerability of technology is not limited to FinTechs. However, since their

business is heavily dependent upon automation, their vulnerability is also greater.

FinTechs need to be conscious of customer protection. Miss-selling, fraud, or misconduct by FinTechs may harm the very consumers they intended to serve. Careful management of this risk is significant for the sustainable development of the FinTech Sector. A loss of consumer trust may put an unrepairable dent on the sectors growth story. So, while regulators are always worried about customer protection, FinTechs should even be more aware, vigilant, and proactive in ensuring that the bedrock of their business remains protected.

### Financial Inclusion

A financial sector that does not prioritise financial inclusion cannot distribute the benefits of economic growth to all levels of society<sup>1</sup>. Financial inclusion entails providing access to avenues of savings and investments, and credit at an affordable cost. It benefits the economy and society as it is accompanied by increased economic growth and reduction in inequality. In countries that have large numbers of people who are "unbanked," financial innovation could help enhance financial inclusion, especially if they are paired with digital identifications systems.

With the use of alternative data, end-to-end digitalisation coupled with other technology interventions, FinTech can bridge the credit gap that exists due to various reasons such as absence of credit scores, cumbersome documentation, manual processes, etc.

The Reserve Bank Innovation Hub (RBIH) in association with RBI is piloting an end-to-end digitalisation of Kisan Credit Card (KCC) lending. The project envisages automation of various processes within banks and integration of their systems with

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<sup>1</sup> <https://www.imf.org/-/media/Files/Publications/WP/2021/English/wpiea2021221-print-pdf.ashx>

the service providers which will make granting of KCC loans more efficient and economical.

### Regulatory approaches

Any approach to regulate the FinTech sector will invariably be informed by five fundamental objectives—(i) financial stability, (ii) consumer protection, (iii) integrity of financial system, (iv) competition and (v) orderly development of sector concerned.

Under these overarching objectives, there are various approaches to regulation. At one end of the spectrum, there is a 'hands-off' approach that advocates allowing the sector to operate freely and develop without any regulatory intervention. While this allows for harnessing benefits of innovation, it risks the possibility of failing to protect the financial system and customers from adverse outcomes.

At the other end of the spectrum there is the 'status-quo' approach that aims to maintain the existing framework without any relaxation to cater for new developments. Under this approach, fintech product and services are regulated in the same way as the traditional financial product or service. From the perspective of controlling risks, it may appear to be the best approach as it applies tried and tested regulations. However, benefits of innovation may be lost.

In India, the RBI has endeavoured to find a middle ground trying to balance between the innovation brought by FinTech while addressing the unique risks they introduce.

The NBFC – Account Aggregator framework of 2016, NBFC -Peer to Peer lending guidelines of 2017 and recent Digital Lending Guidelines are examples of adaptive regulation intended to address emerging risks.

P2P regulations were introduced in the early stages allowing India to avoid failures witnessed in other jurisdiction, while at the same time enabling an

innovative mode of credit intermediation. Similarly, guidelines on Account Aggregator (AA) facilitate innovations related to open banking while building a robust data privacy regime. Last year's digital lending guidelines was a reiteration of two well established principles, namely, (i) lending business is regulated activity and (ii) onus of ensuring compliance in an outsourcing arrangement lies on the regulated entity.

The RBI introduced the regulatory sandbox framework in 2019 for live testing of innovative products or services in a controlled environment. The success stories emanating from the Regulatory Sandbox initiatives include the recently launched UPI123Pay which can enable more than 400 million feature phone mobile subscribers to make UPI payments even without an internet connection. Further, to extract the full benefit of regulatory sandbox, a framework for Inter-operable Regulatory Sandbox (IoRS) was also unveiled last year. This framework is to facilitate testing of innovative products/services falling within the regulatory ambit of more than one financial sector regulators.

In 2022, as part of its efforts to promote innovation in the financial sector, the RBI set up of the Reserve Bank Innovation Hub (RBIH). Within the RBI a new FinTech Department was established in 2022 to give focused attention to this evolving sector. Its objective is to not only promote innovation in the sector, but also identify the challenges and opportunities associated and address them in a timely manner.

Within the regulatory envelope, activity-based regulation as opposed to entity-based regulation is gaining traction. Entity-based regulatory requirements are prudential, conduct and governance related to the regulated entity rather than targeting at any activity. On the other hand, activity-based regulation focuses on the activity being undertaken attempting to apply uniform rules to the activity across all

regulated entities. For instance, the recent review of the regulatory framework for microfinance loans attempts to provide a uniform regulation for such lending across banks and NBFCs, by having a common definition of microfinance, same business conduct and fair practice requirements, etc.

### **FinTech Sector – the way forward**

India has the third largest FinTech eco-system in the world. While regulation can play a supporting role, FinTechs themselves have to ensure the balance between innovation and risks arising therefrom. Naturally, the resilience of such an ecosystem will also *inter alia* depend on self-monitoring of the conduct of the constituents. Therefore, from the FinTech sector perspective, self-regulation can be a useful tool for setting and enforcing rules and standards.

The sector should attempt to organise itself under a self-regulatory organisation which in turn can monitor the conduct of member FinTech entities. This approach can also help in the objective of protecting the interest of customer and promoting high level of governance standard in FinTech entities. Role of such an SRO can include setting the standards for conduct as well as acting as a bridge between the sector and regulators.

Regulation is merely a guardrail to keep the sector on the right path. However, beyond its ability to innovate, the development of this sector will largely depend on two critical elements. These two elements are (i) Customer Centricity and (ii) Governance. It is essential for the FinTechs to keep customers at the centre of their innovation and follow high standards of good governance as part of culture.

While developing their products and process, FinTech should ensure adherence to three basic principles from a customer protection perspective –

- i. Firstly, design robust customer-centric products that avoid fintech induced losses to

customers such as those from cybersecurity breaches, technical glitches, frauds, etc.

- ii. Secondly, ensure customer suitability and appropriateness. Refrain from mis-selling or imprudent lending.
- iii. Thirdly, ensure that any inherent biases in models are addressed in a fair manner.

As far as governance is concerned, the importance of adopting and adhering to good governance cannot be overemphasised. Mis-governance is at the root cause of several failures. For the sustainable development of the sector, it is essential that FinTechs inculcate the values of accountability, fairness, transparency, and independence. The Board of Directors should be sufficiently empowered to assert its role as the balancer of conflicting interests of various stakeholders. It should have adequate experience and independence.

### **Conclusion**

In conclusion, the FinTech revolution is well underway in India, and it presents us with a unique opportunity to drive financial inclusion, improve the efficiency of the financial sector, and create new economic opportunities for millions of people. The country has created a stack of open APIs and digital public goods which can be leveraged by the industry to innovate and promote financial and social inclusion.

The Reserve Bank's approach has been to balance innovation with regulation, without compromising on the principles of prudence. The FinTech Sector also needs to look into self-regulation and ensure that the issues relating to technology, ethics, customer protection and data privacy are addressed.

India has assumed the presidency of G20 this year, and the same gives the country an opportunity to showcase its leadership in the field of FinTech, particularly in digital payment systems. While India has made significant strides in developing its

domestic payments systems which are acknowledged globally, it can also contribute to innovations in cross-border payment systems. In this context, CBDC holds significant promise. With India already piloting its CBDC, it is well poised to steer the discussion on the need for cross-border interoperability of CBDCs and developing standards for effective interfacing, so as to realise the potential of cheaper, efficient and faster cross-border payments.

I am quite hopeful that a number of papers in this conference will dwell deeper into the opportunities and issues surrounding innovation, inclusion and regulation in the era of FinTech. I look forward to fruitful discussions which will push the debate forward and also provide some enlightening policy insights. I once again thank IIM Ahmedabad and CAFRAL for hosting this conference and giving me the opportunity to address it.



# *Self-Regulation in Financial Markets – Looking Back and Looking Ahead\**

*M. Rajeshwar Rao*

A very good morning to all of you. It is indeed a pleasure to be here amidst all of you today at the 17<sup>th</sup> annual conference of FEDAI. These annual events of FEDAI provide an excellent opportunity for the exchange of ideas and thoughts among the foreign exchange market participants and I am sure this one will be no exception.

Today, as I speak to the market veterans assembled here in Cairo, it strikes me that it is fitting perhaps that this conference is being held here in the year of India's G20 presidency, the year of the "Vasudhaiva Kutumbakam" or "One Earth · One Family · One Future". India and Egypt are arguably two of the world's oldest civilisations. Both share a glorious past.

India was one of the largest economies in the world for about two millennia starting around the end of the 1<sup>st</sup> millennium BC. Documented economic history suggests that for most of the period since the first century AD, the Indian economy was the largest in the world. At the beginning of the British rule in India, it accounted for close to a quarter share of global GDP. Since then, there has been an inexorable loss in India's share of global GDP. But we have not just arrested this decline, but indeed have been able to reverse it. India's GDP<sup>1</sup> is today the third-largest in the world in PPP terms and fifth largest in terms of market exchange rates. India is today considered as one of the fastest growing economies of the world with clear emphasis on strong macroeconomic fundamentals

and is recognised as one of the few bright spots amidst current challenges and uncertainties.

The signs of these changes have been quite apparent for some time now. In just over a decade, the country's nominal GDP has increased four-fold from ₹64 lakh crore for FY 2010 to ₹273 lakh crore for FY 2023<sup>2</sup>. Its external trade has also increased from ₹29 lakh crore to ₹137 lakh crore during the same period<sup>3</sup>. As a percentage of GDP, external trade has increased sharply in the last two decades from about 26 per cent at the turn of the century to about 45 per cent currently.<sup>4</sup> Equally noteworthy is the fact that the development has been inclusive with millions of people being lifted out of poverty. According to a recent United Nations Development Programme update, 415 million people were lifted out of poverty in the decade and a half leading up to the COVID-19 pandemic while the incidence of poverty has more than halved.<sup>5</sup> Concomitantly, the financial sector has expanded both in terms of depth and diversity with differentiated niche banks catering to the differing needs of the economy and society. A diverse set of NBFCs have also been operating, reaching the proverbial last mile to the individual customers and, in fact, traversing beyond that. Fintech has emerged as a potential force multiplier while India is today an acknowledged world leader in fast payment systems.

The transformation in the world of foreign exchange and more generally in financial markets over the years has been no less striking. As veterans in this audience would be aware, the journey of exchange control in India began with the framing of the Defence of India Rules, 1939 by the British

<sup>2</sup> Source: Ministry of Statistics and Programme Implementation

<sup>3</sup> Source: Ministry of Statistics and Programme Implementation, RBI Balance of Payment Statistics

<sup>4</sup> Source: World Bank (<https://data.worldbank.org/indicator/NE.TRD.GNFS.ZS?locations=IN>)

<sup>5</sup> Source: UNDP 2022 Multidimensional Poverty Index Report (Unpacking deprivation bundles to reduce multidimensional poverty (<https://www.undp.org/sites/g/files/zskgke326/files/2022-10/2022mpireportenpdf.pdf>)

\* Keynote address delivered by Shri M. Rajeshwar Rao, Deputy Governor, Reserve Bank of India on March 05, 2023 at the 17<sup>th</sup> FEDAI Annual Conference at Cairo. Inputs provided by Dimple Bhandia, G. Jaganmohan, Subhash Agarwal, Rituraj and Arun Kumar are gratefully acknowledged.

<sup>1</sup> Source: State of the Economy 2022-23: Recovery Complete (<https://www.indiabudget.gov.in/economicsurvey/doc/eschapter/echap01.pdf>)

Government as a temporary war time measure. These rules assumed statutory basis through the Foreign Exchange Regulation Act (FERA), 1947. In view of an acute shortage of foreign exchange reserves, FERA, 1947, was replaced by FERA, 1973 which sought to put in place stringent controls "....for the conservation of the foreign exchange resources of the country and the proper utilisation thereof....".<sup>6</sup> While this approach continued in the 1970s and 1980s, there was a paradigm shift in the approach to external sector management in the early 1990s, when the Rupee was made fully convertible on the current account and the *leitmotif* changed from conservation of foreign exchange to the management of foreign exchange through facilitation of external trade and payments as well as orderly development of foreign exchange markets. This change was formalised through the Foreign Exchange Management Act (FEMA) enacted in 1999. The subsequent two decades have seen a calibrated opening up of the capital account with significant liberalisation in the regulatory framework related to foreign direct investment (FDI), external commercial borrowing, foreign investment in domestic debt markets and overseas investments.

In the broader financial markets too, policy measures during the 1990s set the stage for the transition to market-determined interest and exchange rates and saw significant development in different market segments. Initial policy efforts were focussed on delivering a measured development of different market segments and supporting market infrastructure with a view to reaping the benefits of deeper and more liquid markets. As markets developed and lent confidence, the pace of reforms and liberalisation picked up and continued despite the myriad episodes of turmoil over the last decade and a half. With the policy priority of ensuring that financial markets are sufficiently developed to meet

the requirements of a growing economy and of users, both resident and non-resident, the reforms were reconfigured to deepen onshore financial markets, remove segmentation across market segments and increase the efficiency of price discovery, within a robust infrastructure and conduct framework.

Several analysts and economist have predicted that this decade will be India's decade and they have predicted that India's GDP will triple and per capita income will almost double by 2031, powered by manufacturing and export opportunities. India is all set to benefit from major global trends such as offshoring of manufacturing to friendlier countries (popularly called "friend shoring") because of its geopolitical alignments, technology-based services because of its adoption of increasing digitalisation and a young population which is eager to excel. The Honourable Prime Minister has set before all of us a goal of making India a developed nation by 2047 as one of the "*Panch Pran*" for the centenary of the country's independence. Against the aspirations, ambitions and opportunities, the theme of this year's FEDAI's conference— "India - Back to the Future: Better, Bolder and Benevolent" is very apt.

When fundamental transformations such as the one we are witnessing takes place, there are many moving parts which need to come together and move in sync. There are many actors who have critical roles to ensure that each of these parts move at the desired pace and efficiency. As stakeholders in financial markets, we all know that it has a critical role to play in funding our growth aspirations and in supporting an increasingly complex and inter-connected financial system. The key actors in financial market development include self-regulatory organisations such as FEDAI. Given that this is a FEDAI conference, let me focus today on the role of self-regulatory organisations (SROs) in market development and market conduct and also set out a few thoughts on the role played hitherto by FEDAI in the development

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<sup>6</sup> As stated in the preamble to the Act.

of foreign exchange markets as well as expectations from it going forward.

### **Self-Regulatory Organisations**

Let me first start with a look at the evolution of SROs around the world. The idea of self-regulation generally involves the members of a group coming together to establish rules of conduct and voluntarily committing to follow those rules. Self-regulation has a long history of existence in various professions as a means to encourage and promote appropriate conduct by the members of the profession. In the financial sector, elements of self-regulation by stock exchanges dates back more than two centuries with the London Stock Exchange adopting such a system in the eighteenth-century. In the United States, self-regulation by stock exchanges preceded the creation of the federal regulatory agency, *i.e.*, the Securities and Exchange Commission (SEC). In Canada, the Bond Market Association of the Toronto Board of Trade emerged as an SRO in 1920s. In recent times, SROs in the financial sector have been delegated authority, formally or informally, by public authorities to frame guidelines for appropriate conduct by its members and utilise tools such as voluntary agreements, standards, charters, byelaws, handbooks of market practices, etc., to ensure such appropriate conduct. Effective SROs complement the regulatory and supervisory efforts of public authorities.

In any sector, financial or otherwise, there could be four categories, in terms of rules that the players are subject to. The first category is the one where there are no rules, explicit or implicit. This is a rare situation and feasible only in narrow businesses where the sector imposes no or minimal externalities on the broader system. In the absence of rules, however, industries do not always act in broader public interest and their behaviour often tends to favour the powerful at the cost of equity, fairness, and overall social development. As a sector grows,

some form of rules become necessary and are often agreed upon by the players themselves, primarily in a bid to impose self-discipline among the members. An industry which operates only under self-regulation, however, may not also always act in public interest. These concerns assume greater importance as a sector / industry develops and starts to become systemically important. Here a role for an external, neutral body which performs the role of an umpire becomes necessary. Such an umpire in a business sector is typically a public or statutory authority in the form of a regulator or the government which sets the rules for an industry. The fourth category is one where self-regulation and state-imposed regulation co-exist with the regulator or state institution explicitly or implicitly recognising the SRO. The co-existence of a regulator and a SRO is, in fact, the most common framework or structure prevalent across the world in financial sector.

### **SROs – Roles and Responsibilities**

The roles of SROs vary across jurisdictions, markets, and sectors that they function in. Typically, in the financial sector, the broad objectives of SROs reflect those of the financial sector regulator, *viz.*, preservation of market and financial integrity and protection of customers / investors. Within these broad objectives, SROs typically work towards establishing minimum benchmarks as well as ethical and behavioural standards. With the guidance received from the regulator, they help instill professional market conduct amongst their members in order to ensure customer / investor protection. SROs often get involved in the documentation of operational guidelines that set out the rules of conduct and prescribe market conventions, standard procedures and documentation, master agreements, etc., to be followed by market participants. In some jurisdictions, they monitor adherence to codes of conduct and regulations issued by the regulator and are also empowered to take appropriate action

in case of violations. SROs also establish dispute resolution frameworks to facilitate early resolution of disputes. In their developmental role, SROs serve as the representative of their members in various fora including in interactions with the regulator. An integral part of SRO functioning is to impart training to the staff of their member organisations and to conduct awareness programmes. Thus, SROs in the current schema are expected to complement the regulatory / supervisory arrangements in financial sector.

### **Functioning of SROs: Hits and Misses**

The primary motivation for existence of SROs as an instrument of regulation in the financial sector is to enhance effectiveness in regulations by drawing upon the depth of technical expertise of practitioners. Involvement of market experts could also enhance effectiveness in regulations by highlighting various technical and practical aspects, nuances and trade-offs involved in regulatory policy. SROs are also likely to have closer informal and formal contacts in the industry and have their ears to the ground. They can, therefore, facilitate relatively more proactive, agile, and flexible responses to changing financial conditions. As pointed out by William O. Douglas, a former chairman of the Securities Exchange Commission, through developing code of ethics and conduct, self-regulation could be persuasive and effectively influence participants' conduct in the realms of morality and ethics compared to laws and governmental regulations<sup>7</sup>. SROs acting as watchdogs against unethical or dubious practices could foster greater confidence in the integrity of the whole ecosystem. SROs also facilitate resolution of disputes among members within the industry rather than taking recourse to an external body or the courts. SROs can thus complement the regulatory framework

and contribute to the effective functioning of the financial system.

Despite potential benefits, concerns related to self-regulation have also attracted widespread attention. Concerns arise from the fact that SROs largely comprise of industry members and are hence subject to conflicts of interest arising between latter's own commercial interests and former's expected public role. Such conflicts can lead to weakening of the regulatory structure and potentially harm the interests of the customers / investors. SROs could also find it hard to prevent collusive behaviour leading to inefficiencies and dissatisfaction among consumers. They may not be appropriately vigilant to issues around misconduct by their members. These risks could be further accentuated in cases where the impact of activities is not immediately apparent but could prove to be potentially harmful in the longer run. A case in point from an environmentally sensitive sector is one of an industry causing air or water pollution, the impact of which is not visible in the short run and may not invite consumer or societal activism. The concern is that SROs may not be able to adequately divest themselves from the interests of their members.

These aspects have come to light in various industries / sectors over the course of the years. Over past few decades, the financial sector, both at the global as well as domestic level has witnessed recurrent instances of unethical behaviour. The ability of financial sector intermediaries to uphold themselves to high moral standards came under the cloud in the wake of revelations about the irregular practices around LIBOR fixing. The reliance on self-regulation of hedge funds and the derivatives markets was criticised as contributing to the Global Financial Crisis. In fact, many of these events led to a rethink in the approach towards regulatory framework with greater reliance on regulations returning to public authorities.

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<sup>7</sup> Speech by SEC Staff (Lori Richards): Self-Regulation in the New Era, delivered at NRS Fall 2000 Compliance Conference at Scottsdale, Arizona on September 11, 2000.

For any SRO to remain relevant in this milieu, it is critical that it demonstrates unrelenting efforts towards ensuring fair practices by its members and is seen as contributing to the objectives of market integrity and customer protection. SROs must display their willingness and ability to address concerns beyond the interest of their membership, viz., to protect customers, participants, and other stakeholders in the ecosystem. They must remain neutral and be seen to maintain objectivity. Putting in place robust governance norms and internal controls, remaining abreast with market innovations, proactively identifying, and acting on breaches and misconduct, and continuously striving to keep in sight the big picture of balancing market innovation with market integrity are some of measures through which SROs can ensure their continuing credibility and relevance. History has shown us that an SRO is credible and its role significant only when it is backed by a long track record of responsible behavior under the oversight of public authorities.

With this background, let me share some thoughts on the experience in self-regulation in Indian financial markets, the evolution of FEDAI and the role played by it in the foreign exchange market in India.

### **Self-regulation in Indian Financial Markets**

In India, the history of self-regulation has developed over the years, though formal regulatory frameworks for SROs is of a relatively recent origin. In the foreign exchange market, FEDAI was formed in 1958 to lay down the terms and conditions for operations of Authorised Dealers in India. Similar to the developments in other jurisdictions, stock exchanges in India also have historically performed functions akin to SROs. In 2004, SEBI issued regulations on SROs providing guidelines on eligibility, recognition, functions, and responsibilities of SROs. In the payments and settlement space, RBI has recently (*i.e.*, in 2020) issued a framework for the recognition of self-regulatory organisations for payment system operators.

### **FEDAI: Evolution, Role, and a few Questions**

Under FERA, 1947, only a handful of the foreign banks were designated as Exchange Banks and were permitted to provide foreign exchange related services. These banks carried out their business as per the guidelines laid down by the then Exchange Bank's Association. As more and more banks were allowed to transact in foreign exchange, this structure was formalised with the establishment of the FEDAI on August 16, 1958. In the initial years of its formation, FEDAI's primary function was setting the basic ground rules for the computation of rates and settlements for inter-bank and customer transactions. Its primary objective was to bring about uniformity in the rates offered by different Authorised Dealers in a bid to avoid unhealthy competition and ensure uniform service to clients<sup>8</sup>.

As the foreign exchange markets developed, the roles and responsibilities of FEDAI also evolved. FEDAI has been instrumental in conceptualising detailed rules on the conduct of foreign exchange business among banks and its customers and has hence contributed to customer protection and fair treatment. It has effectively acted as a bridge between the market participants and the regulator and has contributed to the development of the foreign exchange regime in the country over the years. I do know that FEDAI has also been working towards the training and skill upgradations of professionals working in the foreign exchange arena. It has also been facilitating the implementation / adoption of the Global FX code which sets out principles that promote a robust, fair, liquid, open and appropriately transparent market, underpinned by high ethical standards. More recently, FEDAI took commendable measures during the Covid-19 pandemic to ease the difficulties faced by the Authorised Dealer banks and their customers in carrying out forex business.

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<sup>8</sup> Source: History of the Reserve Bank of India, Volume II (1951-1967)

But again, this is also a time to introspect and towards that end, let me flag a few questions / issues to ponder upon. While I would urge upon you to introspect on this fundamental issue concerning the neutrality of SROs, let me also outline a few other specific areas where we in the Reserve Bank would like to see more efforts by FEDAI.

One such issue is about fair pricing for the retail / smaller customers. We have had many occasions of customers of Authorised Dealers, especially from the MSME and retail segments, approaching us and expressing concerns about the "high" charges for foreign exchange transactions levied by Authorised Dealer banks. While large corporates are able to enjoy the benefits of tighter pricing warranted by the liquidity in our markets, charges recovered from smaller customers do not appear to be justified by higher cost of processing / warehousing small ticket transactions. The FX-Retail platform was introduced in a bid to shift price discovery to an automated platform. Banks do not, however, appear to have made efforts to encourage customers to use that platform. What is worrisome about the higher charges levied on the smaller customers, is the complete lack of transparency regarding the information on charges levied for such customers. We would definitely like to see concerted efforts by FEDAI and all banks in ensuring fair and transparent pricing for the less resourceful customers of the forex markets.

While the regulatory framework for financial markets and the broader foreign exchange system has been simplified and overhauled over the last few years, it would be required of you individually or collectively through FEDAI, to make sufficient efforts to ensure that the benefits of simplification, rationalisation and procedural ease reach every customer. An open issue is whether the changes in regulatory framework are being reflected in the conduct of inter-bank and customer transactions. There has been a continuous effort by the Reserve Bank to simplify the regulatory

framework for foreign exchange system. Most recently, "Regulations Review Authority 2.0" was constituted in April 2021 to review the regulations and compliance procedures with a view to streamline and rationalise them and making them more effective. But this endeavor is incomplete without the FEDAI also undertaking a similar assessment of its guidelines with a view to identifying and removing any frictions or impediments that hinder the fulfilment of regulatory objectives or impede efficient operations of foreign exchange markets. It would be pertinent here to refer to recent budget announcement regarding undertaking a comprehensive review of existing regulations by the financial sector regulators with a view to simplify, ease and reduce cost of compliance. While we would be doing what is expected from us, this endeavour should be forthcoming from the SROs as well.

The last few years has seen a proliferation of foreign exchange trading platforms offering services to individuals in the country. These platforms have been luring gullible people to undertake forex trading with promises of disproportionate/exorbitant returns. There have been reports of frauds committed by such unauthorised portals with reports of many residents losing money through such trading / schemes. The Reserve Bank has been making concerted efforts to warn and sensitise the general public about the pitfalls of undertaking transactions on such platforms, including issuing an alert list of un-authorised entities / entities promoting transactions on unauthorised platforms. It would be appropriate on the part of FEDAI to take a lead here to safeguard the customers of the industry they are an integral part of and sensitise public regarding entities which bring disrepute to the industry.

### **Random Thoughts – Imminent Threats, Emerging Opportunities**

Against the backdrop of the issues flagged above and the theme of the conference, let me also

dwell on a few select themes relating to the recent developments in the foreign exchange markets, the approach to foreign exchange management as well a few areas of potential future changes. A few random thoughts, so to say.

*From a rule-based regulatory regime to a principle-based framework*

First, as you will be aware, one of the most significant developments in the regulatory framework for foreign exchange management and foreign exchange markets has been a shift from a rule-based, prescriptive framework to a principle-based framework. Let me cite just a few examples. The regulations for hedging of currency risk have been simplified on a single principle – any entity, resident, or non-resident, which has an exposure to currency risk, should be able to hedge that risk using any product, subject only to an assessment of suitability and appropriateness. The foreign investment regulations have been rationalised subsuming two original and 91 amendment notifications while broadly keeping the regulations principle-based. The Overseas Investment Framework has also recently been reviewed comprehensively in consultation with the Central Government. The new regime has dispensed with most procedural approvals by adopting a principle-based approach and has significantly enhanced the ease of doing business by reducing the compliance burden and the associated transaction costs.

The case for this shift is evident. In a fast-changing world where ways of doing business, the technology used for doing business and the ways of financing business are constantly evolving, it is difficult for a rule-based regulatory regime to keep pace. This raises risks of stymying useful innovations on the one hand and leaving gaps which could add to risks to entities or the system, on the other. The case for simplifying regulations, removing fine prints associated with procedural prescriptions and elements of discretion are also important from the perspective of reducing

compliance burden and facilitating flexible and nimble footed responses by Authorised Dealers and stakeholders.

But for a principle-based regulatory framework to work and work effectively, there are certain "rules of the game". First, the shift presupposes that all participants including Authorised Dealers accept and adopt the change in letter and in spirit and ensure that the regulations are implemented in a fair and transparent manner and the benefits of the flexibility provided in the regulatory framework reaches the end users of the financial system. Second, there has to be trust. The regulator needs to be able to trust that regulated entities will not abuse the flexibility provided in the regulations. Third, the shift to a principle-based framework also entrusts a much higher level of responsibility on the Authorised Dealers. In fact, the more we move towards a principle-based framework, the greater will be the responsibility of the Authorised Dealers. For instance, under the new Overseas Investment regime, all transactions relating to ODI (or financial commitment) by an eligible resident entity in a foreign entity is required to be routed through the designated AD bank. The AD bank is not only responsible for ensuring bona fides of the transactions and compliance with KYC/ AML guidelines, but also compliance with FEMA provisions. We had earlier come across instances of AD banks permitting remittance towards overseas investment without receiving the requisite returns from the investor entity. Though, it was always implicit in terms of section 10(5) of FEMA, that such oversight by AD banks makes them liable for penal action under sections 11 and 13 of FEMA, the new directions have stated it unambiguously.

*New actors, new products, new markets - A new playing field*

The foreign exchange arena, in particular, the foreign exchange market, has in many ways been a sheltered playing field for Authorised Dealers. But this is changing and changing fast. As an Authorised Dealer,

till recently, you had to deal in a small suite of products. Simple. Easy to understand. Easy to price. Now that there is scope for Authorised Dealers to innovate and design new products, there are challenges. You need to think about whether a product is permissible. You need to understand the product. You need to be able to price it independently. You need to assess the client base to whom the product can be offered. And you need to be sure that the product is being offered in a manner which is both suitable and appropriate for the client to which it is being offered.

The flexibility embedded in regulations is easy appreciate. More products add to depth and liquidity in financial markets. More importantly, they enable more efficient hedging of risks. But there are risks on both sides of the spectrum. The introduction of new products can get limited by the ability of market participants to offer them. Our experience has been that only some of the Authorised Dealers are able to offer even marginally sophisticated structured products to their clients which results both in lower liquidity in products and incomplete markets, and in depriving segments of end-users of benefitting from the flexibility provided in the regulations. But again, there are risks of Authorised Dealers dealing in products which they do not understand or are not able to price independently or of offering them to customers who do not understand the product or where it is not suited for them. We are all aware of past such incidences that teach us about the pitfalls to avoid. Of course, our Directions on Market Makers in OTC derivatives seek to provide a principle-based regulatory framework to address these risks. Hence it is imperative that these regulations are adhered to in both letter and spirit.

There are also new players in the playing field. Traditionally, the foreign exchange market was characterised by a closed user group with banks being the only authorised dealers and a few domestic corporates being the primary clients. Exporters and importers with small hedging needs and individuals

with personal forex requirements were marginal players essentially accessing the market as price takers. The regulatory framework now permits non-residents to access the domestic foreign exchange market to hedge their risks and also, in case of non-deliverable derivatives, to access the market without the need for underlying exposures. Domestically, as the economy is opening up with increasing capital account convertibility and getting more and more integrated with the global economy, there are an increasing number of domestic entities getting exposed to foreign exchange risk and hence may need to access the foreign exchange market. Going forward, these trends are likely to accentuate. With different players, there will be diverse needs and Authorised Dealers will need to gear up to serve these needs. Illustratively, the hedging needs of an exporter or importer are very different from that of a corporate issuing foreign currency denominated bonds in offshore markets or setting up an overseas subsidiary.

As the economy grows and becomes more developed, the scope of participation in foreign exchange markets would change. Till recently, only contractual exposures could be hedged, the exception being hedging of exposures based on past performance. Now, the scope of participation in the foreign exchange markets has been expanded to include the hedging of anticipated exposures, of course subject to safeguards to prevent excessive speculation. With the increasing integration of the economy with the rest of the world, more and more entities are likely to, directly or indirectly, get exposed to foreign exchange risks. There are likely to be demands for permitting hedging of economic exposures. While this may be tricky given the current extent of capital account convertibility, the possibility of such hedging being permitted over a period of time as we progress further down the path of capital account convertibility needs to be carefully evaluated.

A whole new market with a new set of market participants has been opened up, with banks in India

allowed to participate in the offshore non-deliverable market for Rupee derivatives in a bid to integrate markets. This is a part of the overall effort towards greater convertibility. Results of these measures are already visible. For example, onshore-offshore spreads have substantially narrowed after allowing Indian banks to access the NDF market. The move has opened up a whole new opportunity for all of you assembled here today – an opportunity to make our markets larger, make them more efficient and to access an entire set of new participants. These opportunities have to be leveraged. It also needs to be ensured that the domestic market scales up its efficiency and ensures that this opening does not result in flows moving to the offshore market.

Further dynamics are likely to emerge as we progress down the path of internationalisation of the Rupee. It is now widely accepted that while internationalisation and a freer capital account comes with its own set of benefits, it is not without risks and that freer capital flows comes with their own set of challenges, the primary one being that of volatility and we need to gear up to manage that. We are seeing a good amount of interest in the Rupee trading arrangements that we have been endeavouring to put in place. If our efforts towards Rupee invoicing bear fruit, domestic exporters and importers will not need to hedge, but there will be other opportunities in the form of their non-resident counterparts who may need to hedge.

#### *New technologies, new frontiers*

Let me now talk a bit about how innovations in technology are influencing liquidity provisioning and price discovery in the FX markets and its implications. You all are aware that traditionally, counterparties in the FX market transacted with each other over phone calls ("voice") or through forex brokers. In the last couple of decades, however, several electronic trading venues have emerged, both as exchange venues as well as electronic trading platforms. Increasingly, OTC FX trades, globally as well as in India, are being executed

on these venues leading to increasing electronification of FX market trading. During the last decade, we are seeing some new forms of trading venues, such as single-bank platforms (SBPs). These venues are fundamentally different from traditional multi-bank platforms (MBPs) where the operator is typically a non-bank technology provider. Globally, SBPs are often referred to as "dark pools" since price and trade information are not disseminated on such platforms, unlike in the case of an MBP. The development is also leading to a dispersion of global FX liquidity across a wide range of trading platforms. In recent years, SBPs are also becoming visible in the Indian FX market with trading volumes rising on such venues. While it is heartening to note an increasing share of FX being transacted electronically, the same must not come at the cost of increased opaqueness in pricing. You must all make efforts to be transparent while pricing of instruments.

#### **Concluding Thoughts**

In a constantly evolving world where change is the only constant, the journey of the Indian foreign exchange market over the last few decades has been one of continuous development and innovation. The Reserve Bank remains committed to continuously move ahead at a steady pace in line with the changing macro-financial environment - globally and domestically. Going ahead, greater challenges will emerge as the markets become more developed and interconnected, and as the range of products expand. New frontiers will also emerge as Indian banks expand their presence in offshore markets, non-resident participation in domestic markets grows, and as technological changes continue to transform the manner in which markets function. Foreign exchange market participants will have to prepare themselves to manage the changes and the associated risks, and FEDAI will have to play a leading and constructive role in these endeavours.

I wish the conference every success.



## ARTICLES

State of the Economy

Consumer Price Index: The Aggregation Method Matters

Financial Stocks and Flow of Funds of the Indian Economy 2020-21

Application of Growth-at-Risk (GaR) Framework for Indian GDP

Subnational Borrowings in India –Volatilities and  
Determinants of State Government Securities Spread



## *State of the Economy\**

*Even as global growth is set to slow down or even enter a recession in 2023 as global financial markets waver, India has emerged from the pandemic years stronger than initially thought, with a steady gathering of momentum since the second quarter of the current financial year. On the supply side, agriculture is into a seasonal uptick, industry is emerging out of contraction and services have maintained momentum. Consumer price inflation remains high and core inflation continues to defy the distinct softening of input costs.*

### **Introduction**

This year marks the birth tercentenary of Adam Smith, widely regarded as the father of modern economics. While he is among the most cited in economic conversation, particularly the "invisible hand", his works are among the least read. Born in 1723 in Scotland, Adam Smith joined Glasgow University at the age of 14. His interests and ideas spanned philosophy, theology, astronomy, law, ethics and the political economy. Adam Smith wrote two books, "The Theory of Moral Sentiments" in 1759 and the celebrated "An Inquiry into the Nature and Causes of the Wealth of Nations" in 1776. To start with a few words from his book – "... wealth does not consist in money or in gold and silver, but in what money purchases".<sup>1</sup>

Global financial markets blinked and appear to be backing down from their bet that central banks would begin lowering policy rates later this year.

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\* This article has been prepared by G. V. Nadhanael, Yogesh, H. C., Kunal Priyadarshi, Garima Wahi, Ramesh Kumar Gupta, Pankaj Kumar, Harendra Behera, Rigzen Yangdol, Vijaya Agarwal, Anoop K Suresh, Jobin Sebastian, Shelja Bhatia, Kovuri Akash Yadav, Priyanka Sachdeva, Abhinandan Borad, Soumasree Tewari, Akshara Awasthi, Avnish Kumar, Jitendra Sokal, Sakshi Awasthy, Aloke Kumar Ghosh, Sreejith T B, Anjaly Maria Jose, Vineet Kumar Srivastava, Samir Ranjan Behera, Deba Prasad Rath and Michael Debabrata Patra. Views expressed in this article are those of the authors and do not represent the views of the Reserve Bank of India.

<sup>1</sup> Adam Smith (1776). *An Inquiry into the Nature and Causes of the Wealth of Nations*.

Despite rapid and front-loaded policy rate increases through 2022, the global economy is experiencing a fairly rapid pace of expansion as recent data releases for Advance Economies (AEs) on the labour market, wages and consumer spending suggest, in spite of some sequential slowing. The underlying strength of this expansion is evident in the persistence of elevated inflation. While the strength of the labour market has come as a surprise, it is actually reflecting compositional shifts: leisure, hospitality, retail and healthcare are hiring at levels completely offsetting the jobs shed by tech-heavy companies. This is fuelling wages inflation which has cooled a bit but is still above pre pandemic levels. Hence, central banks are talking tough and seem to be in no mood to let down their guard, with the terminal rate still not sighted.

Market-based indicators are starting to mirror the central forecasts of central banks. With equity prices and bond yields having priced in larger possible rate actions than earlier anticipated and the US dollar in retreat, the euphoria of markets that had gotten ahead of themselves has ebbed after the banking sector turmoil in the AEs. They are now bracing up for a completely different scenario – one in which central banks will force the global economy to land.

Bank collapses in the US in the first half of March 2023 are rippling through the global financial markets. While the direct impact of this meltdown on economic activity could be limited as it would appear at present, markets are bracing up for tighter financial conditions which could present a trade-off between financial stability concerns and the conduct of disinflationary monetary policy. Fear is creeping back; after remaining tepid for months, the VIX – Wall Street's fear gauge – surged by 17.7 per cent by March 17 over its level at the end of December 2022. Yield curves are in deep inversion and the future looks darker than it did just a few weeks ago in early February.

As market sentiments acquiesce with central bank speak, the rally that had lifted emerging market

economies' (EMEs') stocks and bonds in the beginning of the year appears to be running out of steam. The J P Morgan Emerging Bond Index has fallen by 3.5 per cent from its level in early February 2023 and the Morgan Stanley Capital International EM stock index has lost 9.6 per cent during 2023 from its peak on January 26, 2023.

Although the consensus in projections point to faster growth in the EME world relative to the AEs – 4.0 per cent versus 1.2 per cent, according to the International Monetary Fund (IMF) – they are highly vulnerable to spillovers from tightening policy actions by systemic central banks. Moreover, many of them are wilting under the burden of food and energy insecurity, and debt distress.

Yet, EMEs were first off in the battle against inflation and in many of them, it has begun to be brought down, but the beast is not vanquished yet. Risks to financial stability from currency depreciations and debt servicing may divert policy attention away from the elephant in the room. It will be harder for them to get policy right if inflation escapes and rises again. Looking ahead, the deepening geopolitical fault lines appear to be redrawing global value chains and shifting production bases of strategic and high-tech products in such a way that Asia may emerge as the new growth centre for both manufacturing and international trade.

Meanwhile, climate change has taken a turn for the worse. According to a report of the International Energy Agency released in March 2023, the world emitted more carbon dioxide ( $\text{CO}_2$ ) in 2022 – 36.8 gigatons – than in any other year since records began in 1900. These emissions continue to increase as we rebound from the pandemic with air travel and increased recourse to coal. It is hence no surprise that extreme weather events are intensifying. Climate scientists warn that a year of such emissions growth must be followed by cuts in emissions – not stasis

– to slow the dire consequences of global warming. Subsidising renewables, improving energy efficiency, electrification of industry and transportation, renewing carbon sinks in forests and reducing the use of fossils are now imperatives.

In this context, the historic High Seas Treaty reached in early March assumes significance. The high seas cover nearly two-thirds of the global ocean – almost half of the Earth's entire surface. The ocean as a whole takes up 90 per cent of the excess heat and around 25 per cent of the  $\text{CO}_2$  generated by humanity's burning of fossil fuels. The Treaty aims to place 30 per cent of the high seas into protected areas by 2030, limiting fishing, deep sea mining and the routing of shipping lanes. By safeguarding and recuperating marine life and the sea beds, the Treaty will contribute in its own way to climate action.

The first G20 Finance Ministers and Central Bank Governors (FMCBG) meeting under India's Presidency, held in Bengaluru during February 24-25, 2023 provided an avenue to reflect the need for global co-ordination in economic policies as well as environmental protection. India's priorities under the G20 Presidency which, *inter alia*, include cooperation in key global economic policies, strengthening multilateral development banks (MDBs) and global financial safety net, mitigating debt vulnerabilities, mobilising resources for climate action and Sustainable Development Goals (SDGs) as well as building smarter cities of tomorrow, and addressing risks and opportunities arising from rapid technological advancements in finance industry, were the focus of a fruitful dialogue.

Addressing the FMCBG virtually, the Prime Minister of India, Shri Narendra Modi encapsulated the theme of India's Presidency: '*Vasudhaiva Kutumbakam*: One Earth · One Family · One Future' as an embodiment of our collective conscience to create an inclusive agenda, restore macrofinancial stability and confidence in multilateralism while supporting the global recovery.

He also reminded of the significant challenges that we face collectively in terms of geo-political tensions, supply chain disruptions, persistent inflation, food and energy insecurity, debt distress, and erosion of trust in international financial institutions.

In view of the increasing interconnectedness of financial systems across geographies and prominence of - BigTech and FinTech, the FMCBG sought to manage third-party dependencies, cyber risks, and broaden the dialogue to gauge the macrofinancial implications of crypto-assets, and risks to the traditional financial architecture. The group supported a globally coordinated approach to managing these risks. India's rapid strides on developing a world-class digital payment infrastructure which also fosters financial inclusion was lauded as a model to emulate. The meeting was attended by 72 delegations and over 500 foreign delegates also echoed voices of the Global South represented by the invitees - Senegal, Morocco, Nepal, Oman, Nigeria, Mauritius, Egypt, and Bangladesh.

The Indian economy has remained resilient amidst high tides of uncertainty. The second advance estimates (SAE) of national income released by the National Statistical Office (NSO) on February 28, 2023 indicate that the recovery from the pandemic was stronger than earlier believed, led by private consumption and supported by a rebound in government consumption during 2021-22. The pick-up in export growth and a large easing of import growth reduced the drag from net exports. On the supply side, the improvement was more broad-based, led by services and followed by industry.

Turning to the current financial year, the positive momentum of real GDP that took hold in Q2 of 2022-23 was maintained in Q3. On the other hand, unfavourable statistical base effects inherent in year-on-year (y-o-y) growth calculations slowed the headline growth rate in Q3. The deceleration

in government final consumption expenditure counteracted the upside from the deceleration in imports. Private consumption also lost speed and so did fixed investment, although public spending on infrastructure provided a cushion. On the supply side, agriculture and services offered a silver lining against the backdrop of moderation in industry.

The Q3 data carry valuable information content for the rest of the year. Private consumption may edge down further, going by high frequency indicators, including and perhaps mainly due to elevated inflation. Investment must be regenerated from private sources alongside the public sector's push to consolidate and improve the quality of spending so as to provide the congenial habitat for the private effort. On the supply side, agriculture is into a seasonal uptick and industry is limping out of contraction. Services have maintained momentum. The Q4 data release will nevertheless need to be read with a pinch of salt because unfavourable base effects will be strong.

An EME like India typically runs a current account deficit (CAD) so that deficient national saving is supplemented by foreign resources to achieve desired levels of investment. During the pandemic, the gap between investment and saving reversed from a gap of 0.8 per cent of GDP in 2019-20 to a surplus of 1.0 per cent in 2020-21. It has again flipped to a gap of 1.2 per cent in 2021-22. If this is suggesting the beginning of a new trend as indicators for 2022-23 also point, India's growth prospects are poised to improve.

The NSO's data release of end February also revealed that India's per capita GDP grew by 14.7 per cent in nominal terms and by 5.9 per cent in real terms in 2022-23. Over the last decade, these growth rates were 9.5 per cent and 4.5 per cent, respectively, making for improvement in livelihoods. In US dollar terms, India's per capita GDP has crossed US\$ 2,450, which represents a stride towards becoming a middle-income economy.

According to the NSO's data release, consumer price inflation for February 2023 remains high. The prices of cereals and milk have been driving up recent inflation prints, although open market sales by the Food Corporation of India (FCI) have tempered the prices of wheat, which may continue into the March reading. The all-important question is: will the *rabi* harvest survive the heat wave or the untimely rains and hailstorms? On the other hand, core inflation continues to defy the distinct softening of input costs. Over the financial year ahead (2023-24), inflation is expected to range tightly between 5.0 and 5.6 per cent<sup>2</sup> if India survives an *El Nino* event adversely affecting the south west monsoon, given global uncertainties.

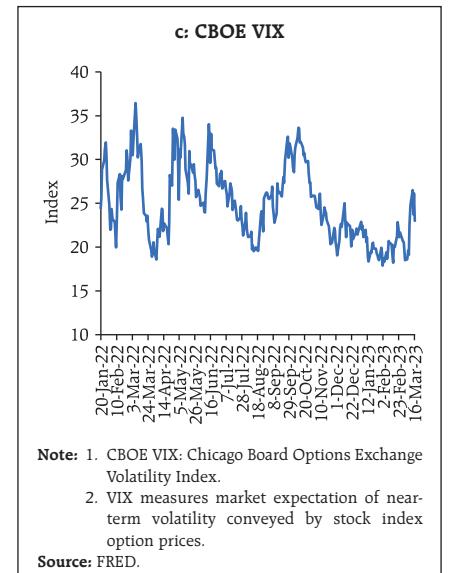
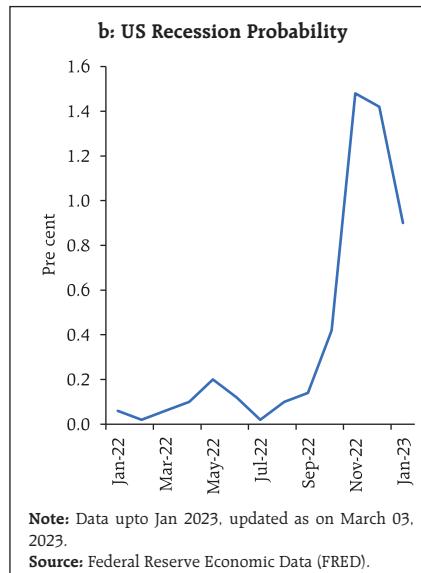
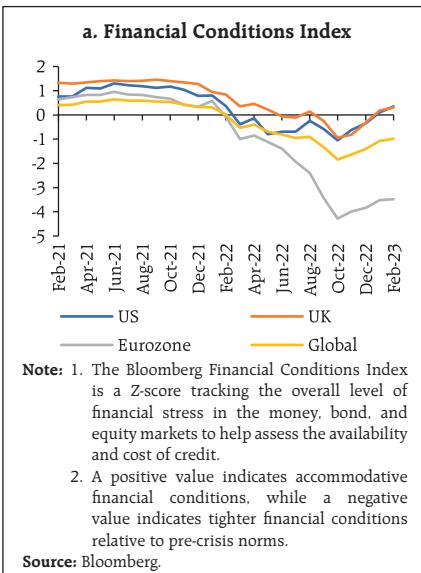
Set against this backdrop, the remainder of the article is structured into four sections. Section II captures the rapidly evolving developments in the global economy. An assessment of domestic macroeconomic conditions is presented in Section III. Section IV reviews financial conditions in India, while the last Section concludes the article.

## II. Global Setting

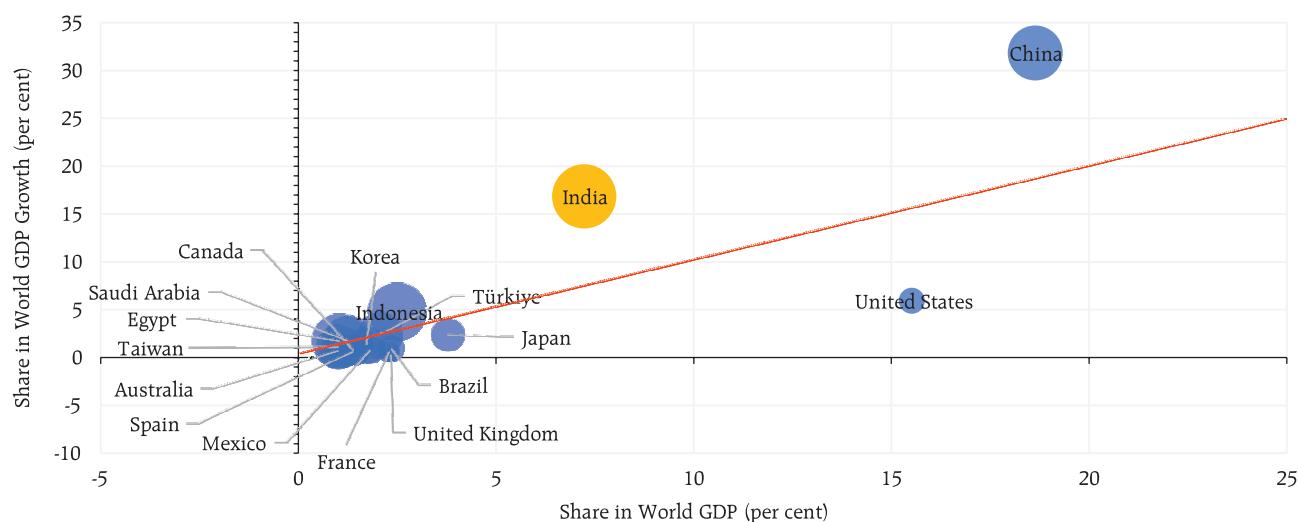
Global growth has turned out to be stronger than anticipated in spite of formidable headwinds. The Organization for Economic Cooperation and Development (OECD) in its *Interim Economic Outlook* report, released on March 17, 2023, revised up the global growth forecast for 2023 to 2.6 per cent from its November 2022 projection of 2.2 per cent, and for 2024 to 2.9 per cent from 2.7 per cent. Along with this, the probability of a 'hard landing' has also reduced (Chart 1). Elevated inflation, strong labour markets and hawkish central bank guidance have fuelled market expectations of higher interest rates for longer. The initial response was a hardening of sovereign bond yields, strengthening of the US dollar and shedding of gains by global equity markets in February. Just as markets were pricing in the possibility of further tightening of financial conditions, bouts of volatility have unsettled investor sentiments with the collapse of three banks in the US.

There has been a shift in the drivers of global growth in 2022. EMEs, led by India and China, are

**Chart 1: Market Sentiments**



<sup>2</sup> Monetary Policy Statement for 2022-23, Governor's Statement – February 8, 2023.

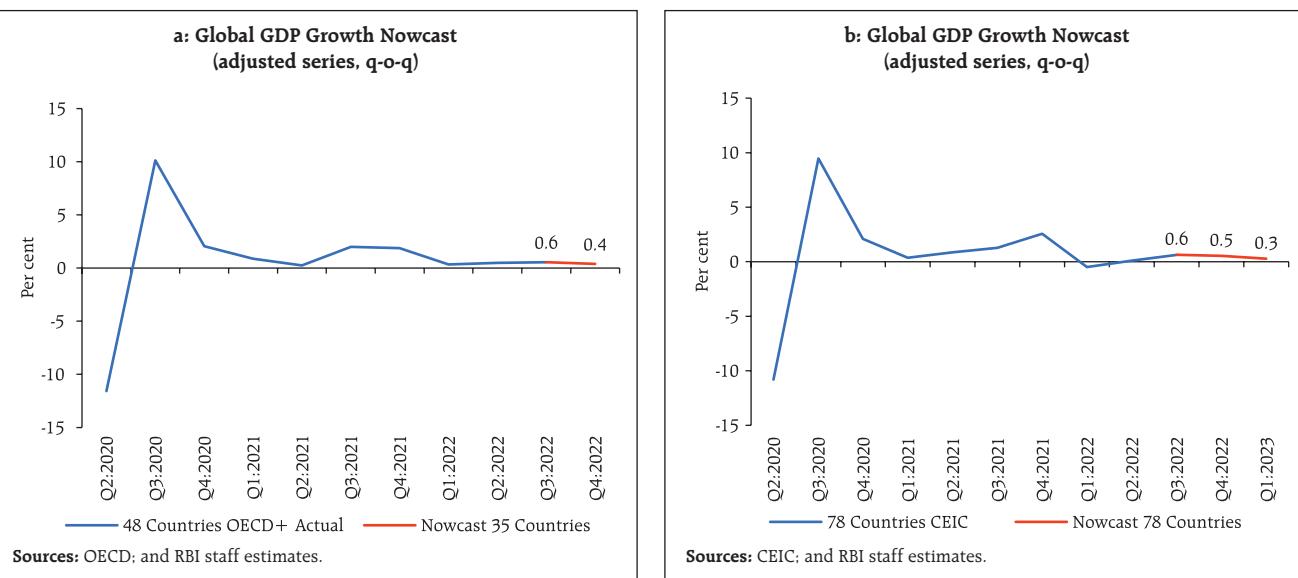
**Chart 2: Contributors to World Growth in 2023**

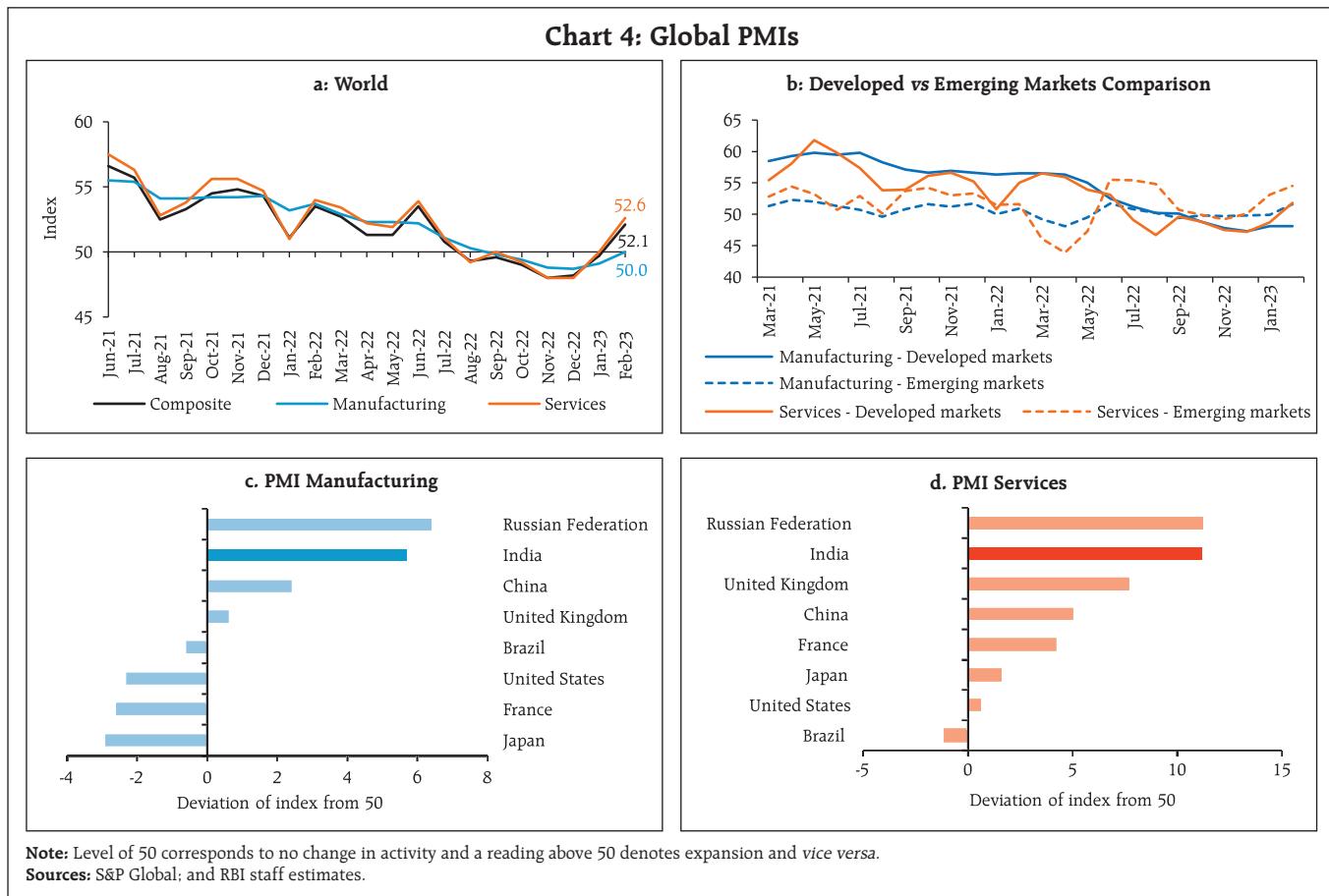
projected to account for about 80 per cent of global growth in 2023, with India contributing nearly 17 per cent (Chart 2). Our model based nowcast projects a positive global growth momentum of 0.3 per cent in Q1:2023 (Chart 3a and 3b).

Among high frequency indicators, the global composite purchasing managers' index (PMI) increased to 52.1 in February 2023, reflecting a broad-

based pick-up across geographies, and marking the first expansion in six months. This was primarily led by services with the first month of expansion of manufacturing since July 2022 as supply chain constraints eased and economic activity was released from the fetters of pandemic restrictions (Chart 4a).

In terms of global manufacturing PMIs, EMEs registered expansion while AEs remained in

**Chart 3: Global GDP Nowcasts**



contraction (Chart 4b). Services, on the other hand, recorded a more broad-based expansion (Chart 4c). India consolidated its position amongst the top performers of PMI expansion in both manufacturing and services (Chart 4d).

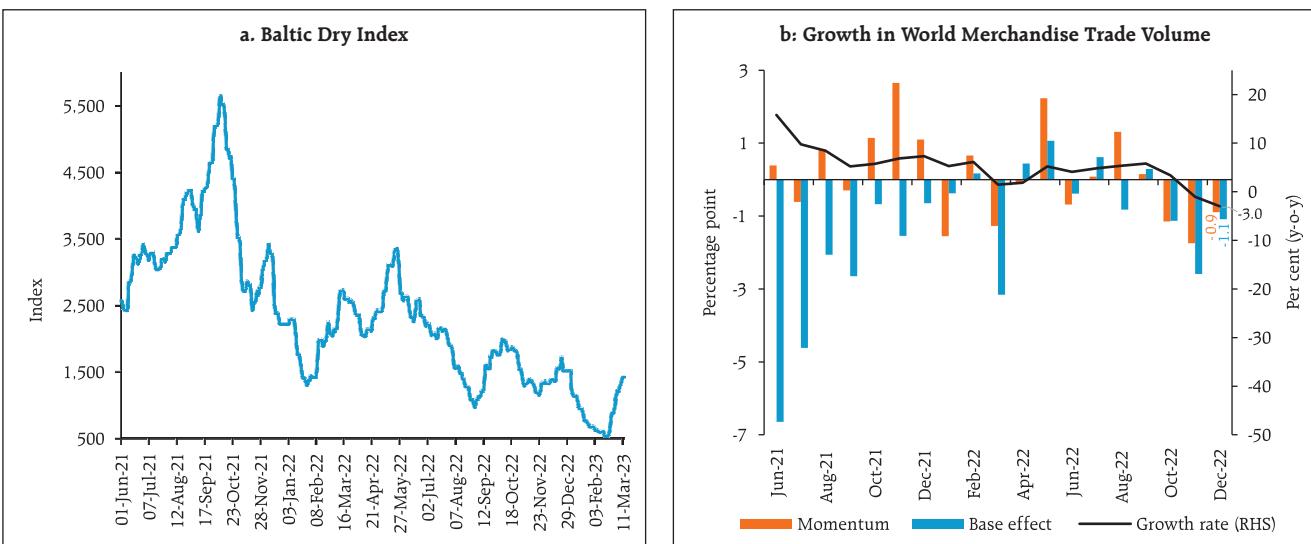
In terms of trade activity, the Baltic Dry Index – a measure of shipping charges for dry bulk commodities – shot up by 45 per cent in February, and rose further in early March, on the back of an increase in demand for capesize ships (Chart 5a). This points to a possible rebound in world trade that had contracted in December 2022 by 3.0 per cent (y-o-y) due to a steep negative momentum and an unfavourable base effect (Chart 5b).

Global commodity prices traded with a softening bias in February and early March as expectations of prolonged tightening of monetary policy in AEs damped the demand outlook (Chart 6a). Crude oil ruled at an average price of US\$ 82.7 per barrel in

February on demand concerns (Chart 6b). The outlook remains highly uncertain, given the tight demand supply balance. According to the International Energy Agency (IEA), global oil demand is set to rise by 2 million barrels per day (mb/d) in 2023, with most of it likely to originate from the Asia Pacific region. Global output, however, is expected to grow by only 1.2 mb/d in 2023.

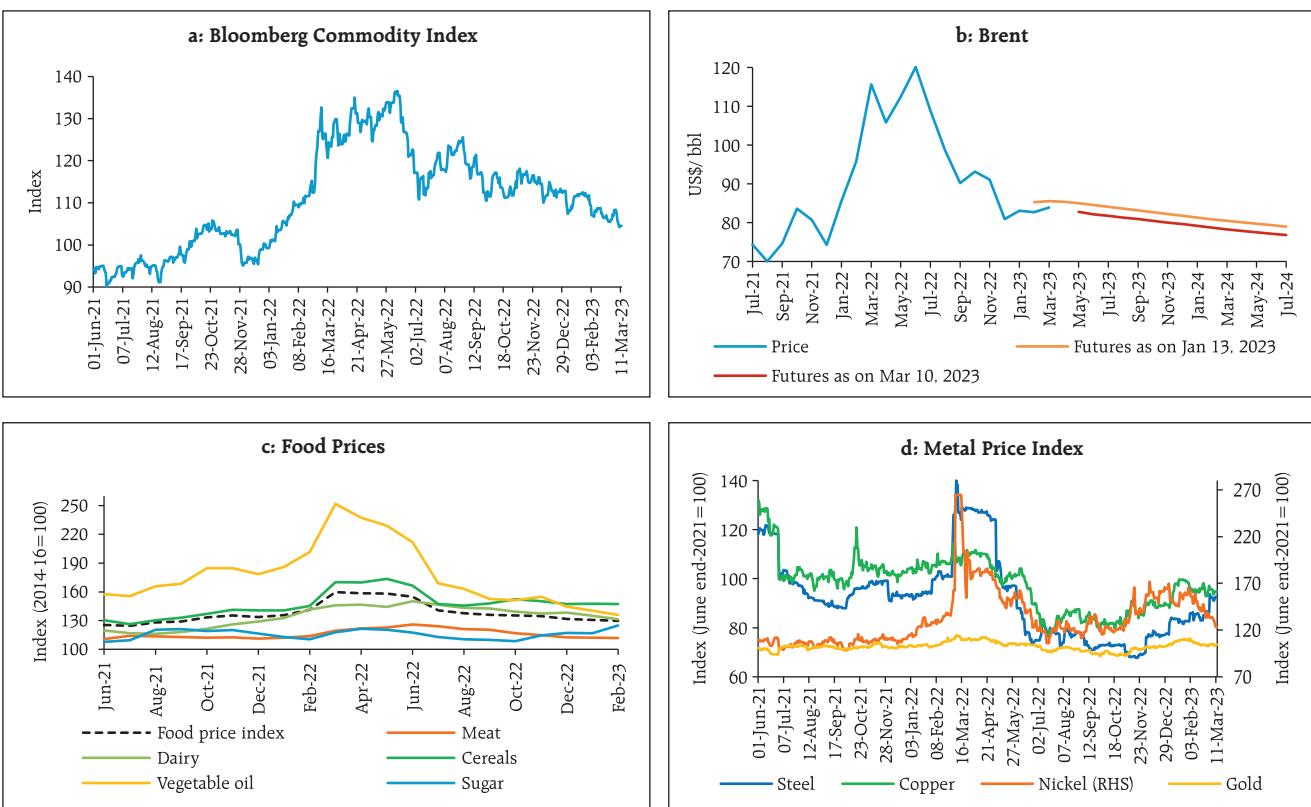
The food price index<sup>3</sup> of the Food and Agricultural Organization (FAO) declined marginally in February as significant drops in the prices of vegetable oils and dairy products more than offset the steep rise in sugar prices (Chart 6c). Fear of lower production in a few countries, including India, propelled sugar prices to a six-year high in February. Metal prices, except for steel, softened due to demand concerns resurfacing

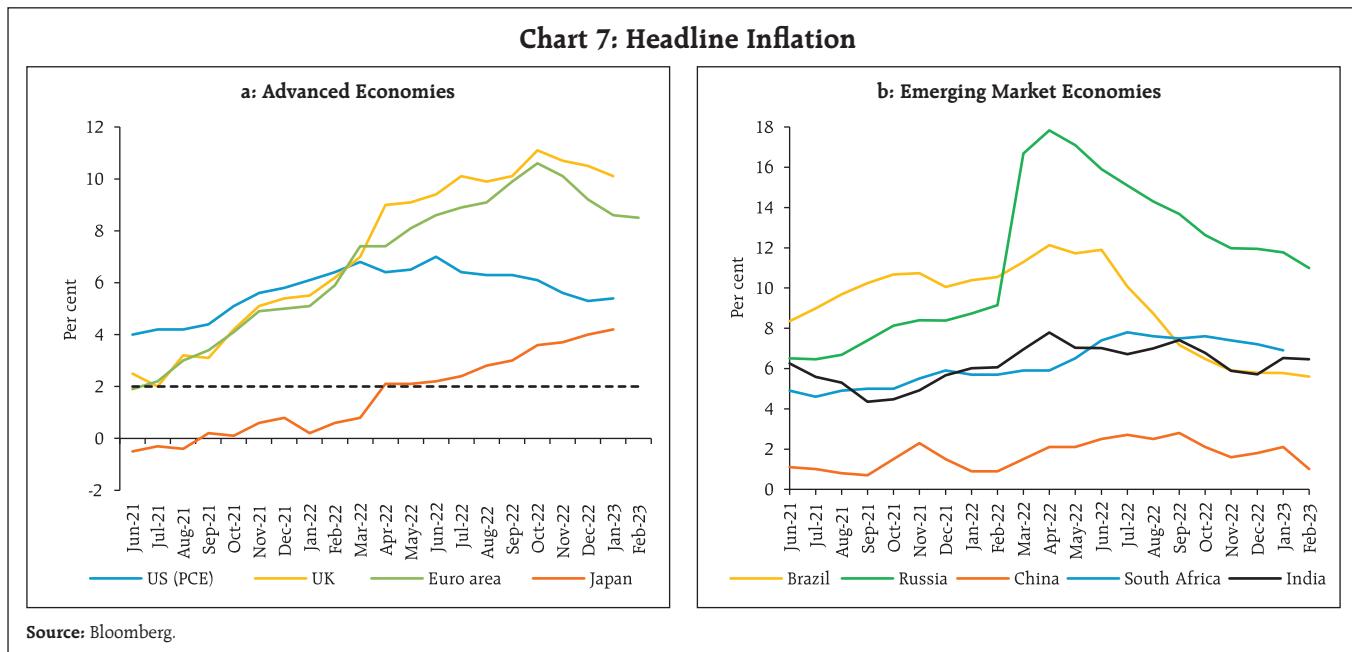
<sup>3</sup> Sub-indices include cereal, vegetable oil, dairy, meat and sugar price indices.

**Chart 5: World Trade and Shipping Costs**

(Chart 6d). Gold prices remained volatile in the wake of the strengthening US dollar, increased rate hike

expectations and market panic triggered by a few bank collapses in the US.

**Chart 6: Commodity and Food Prices**



Headline inflation eased across most AEs and EMEs; nonetheless, it remains elevated and well above targets in most economies. In the US, headline CPI inflation moderated to 6.0 per cent in February 2023 from 6.4 per cent a month ago in line with market expectations. Inflation based on the personal consumption expenditure (PCE) price index rose slightly to 5.4 per cent in January 2023 (Chart 7a). In the Euro Area and in the UK, inflation moderated to 8.5 per cent and 10.1 per cent in February and January 2023, respectively. In Japan, CPI (all items less fresh food) inflation rose to 4.2 per cent in January 2023, the highest in four decades. Elevated core inflation remains a major concern in most economies. Among the EMEs, inflation moderated in Brazil, Russia, Thailand and China during February 2023 (Chart 7b).

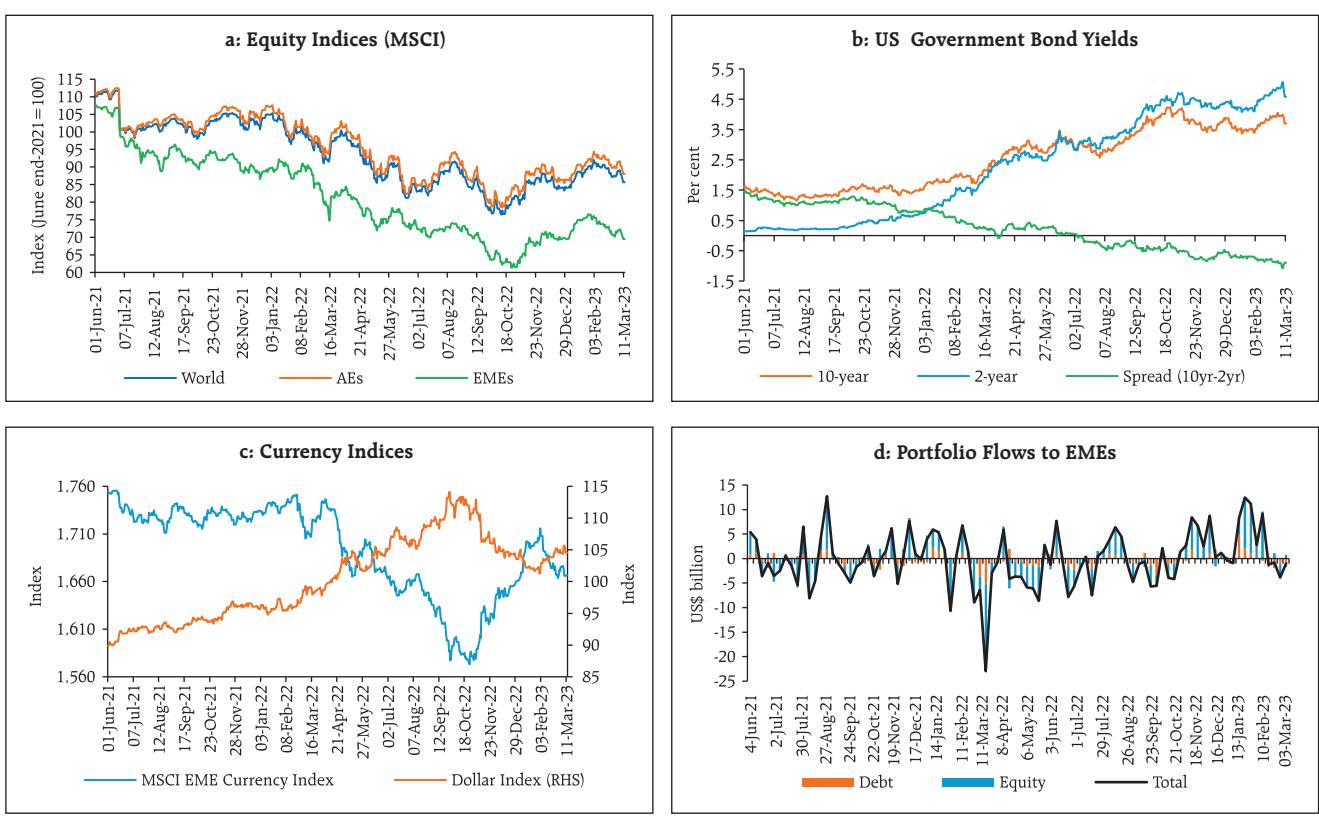
Global equity markets ended weaker in February, pricing in an increased possibility of further rate hikes. Equities shed gains to the tune of 3 per cent (m-o-m) in February mainly driven by EME stocks ending the month 6.5 per cent lower than the previous month while AE stock prices fell by 2.5 per cent (Chart 8a). The decline has continued into March so far (up to March 15) with markets shedding more than 2 per

cent, led by the AEs in the wake of turmoil in the US banking sector.

During February 2023, the 10-year G-sec yields hardened across major AEs, with higher rate increase expectations following the release of strong US data on retail sales and non-farm payrolls. The 10-year US treasury yield rose by 41 bps in February while the 2-year G-sec yield shot up by 61 bps, increasing the magnitude of yield curve inversion (Chart 8b). This has reversed in March as investors shifted towards safer assets amidst financial turbulence, causing a sharp fall in yields for both short and long-term maturities.

The US dollar rallied again, gaining 2.7 per cent during February (Chart 8c). Concomitantly, the MSCI currency index for EMEs shed 2.2 per cent in February on the back of capital outflows (Chart 8d). By early March, however, the US dollar weakened in the aftermath of the failure of two banks in the US.

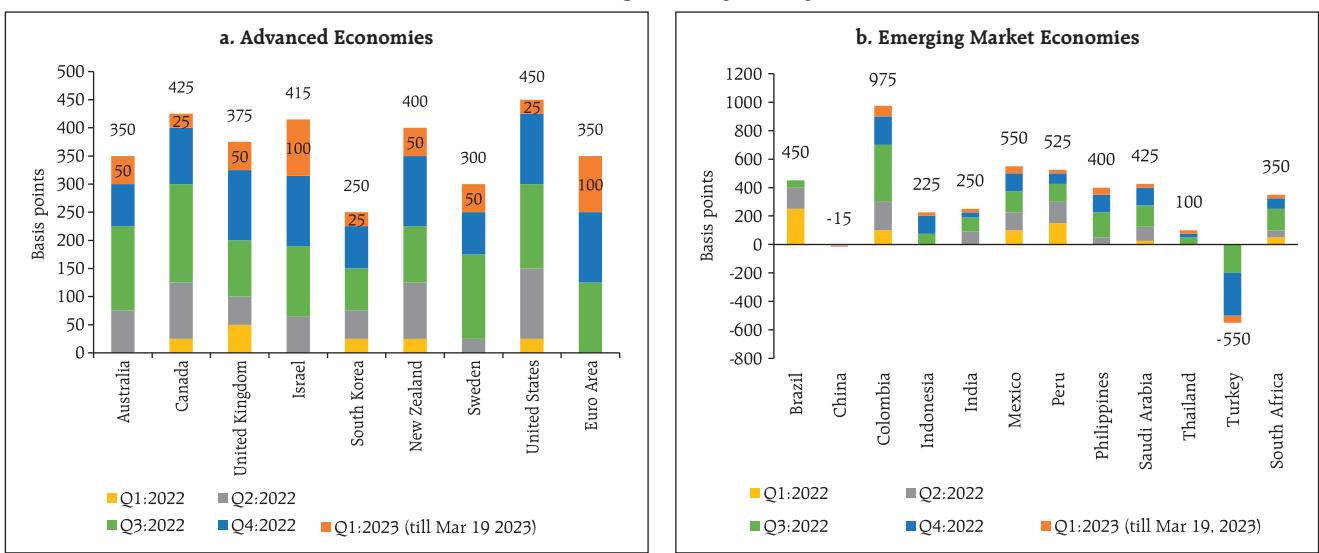
Central banks of most AEs and EMEs slowed the pace of tightening while a few have paused. The US Federal Reserve raised its benchmark interest rate by 25 bps in February whereas other central banks, including in the UK, Euro area, New Zealand and Israel, increased their policy rates by 50 bps each. The Euro

**Chart 8: Financial Markets**

Sources: Bloomberg; and IIF.

area and Australia increased its key rates by 50 bps and 25 bps, respectively, in March while South Korea and

Canada halted their rate hikes in February and March, respectively (Chart 9a). Japan, however, continued

**Chart 9: Change in Key Policy Rate**

Source: Bloomberg.

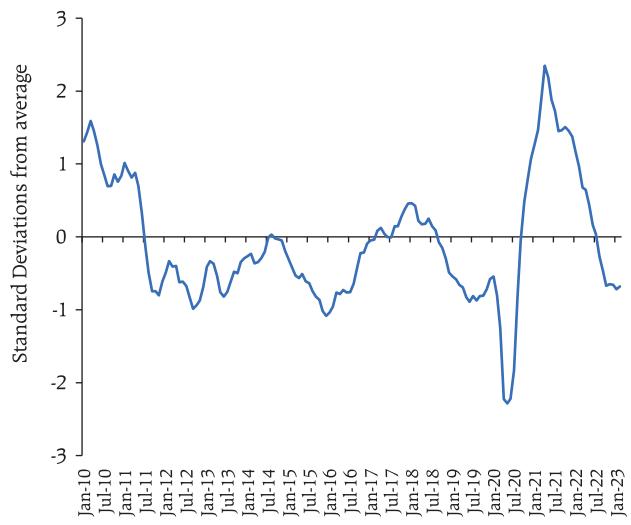
to diverge by maintaining an accommodative stance. Most EME central banks have paused, including Peru, Brazil, Chile, and Malaysia (Chart 9b). In contrast, China continued with monetary accommodation and Turkey cut its policy rate by 50 bps in February to support its economy battered by the catastrophic earthquake.

### III. Domestic Developments

The Indian economy is exhibiting resilience in an international environment shrouded with uncertainty. Growth impulses are getting further strengthened by easing of supply chain pressures and a rebound in services activity. Our index of supply chain pressure for India (ISPI) remained below its historical average, indicating sustained easing of pressures (Chart 10).

The economic activity index, which tracks the movements of a set of 27 high frequency indicators, showed that overall economic activity remained resilient despite some moderation in momentum

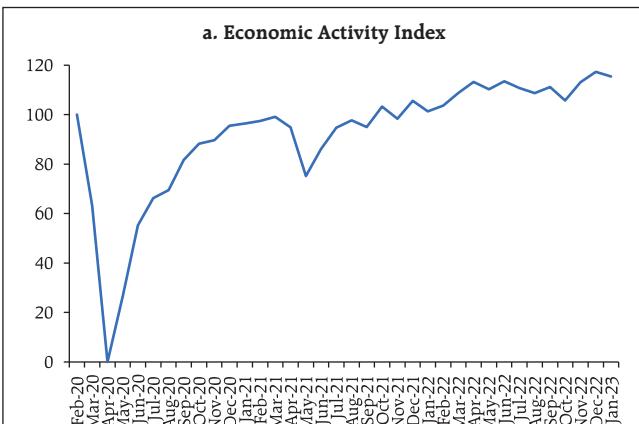
**Chart 10: Index of Supply Chain Pressure for India**



Source: RBI staff estimates.

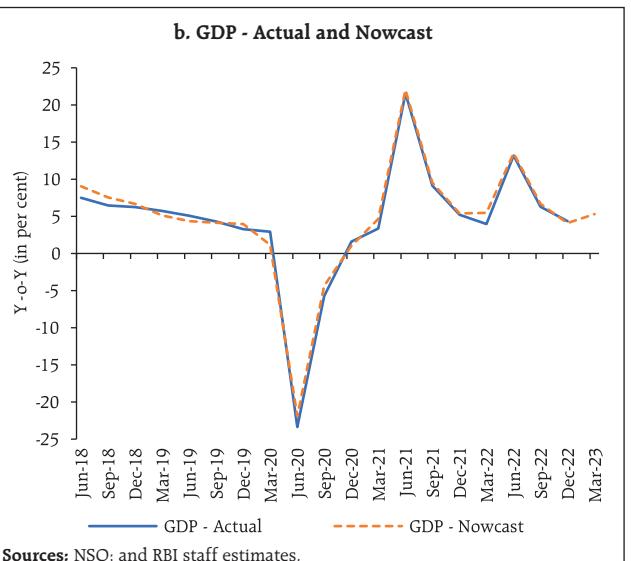
during January 2023 (Chart 11a). Our nowcast of real GDP growth for Q4:2022-23 is placed at 5.3 per cent (Chart 11b).

**Chart 11: Economic Activity and GDP Nowcast**



**Note:** The activity index is constructed by extracting the common trend underlying a set of high frequency indicators of economic activity using a Dynamic Factor Model (DFM). EAI is scaled to 100 in February 2020 and 0 in April 2020, the worst affected month due to mobility restrictions.

**Source:** RBI staff estimates.



## Aggregate Demand

The SAE of national income, released on February 28, 2023 by the NSO, placed the real GDP growth at 7.0 per cent for 2022-23 – the same as in the first advance estimates (FAE). During Q3:2022-23, the Indian economy grew at 4.4 per cent (Chart 12).

While private final consumption expenditure (PFCE) decelerated, gross fixed capital formation (GFCF) recorded a growth of 8.3 per cent, drawing strength from the Government's thrust on infrastructure. The contraction in government final consumption expenditure (GFCE) eased in Q3:2022-23 in relation to the previous quarter, continuing to reflect the effects of fiscal consolidation. The contribution of net exports to overall GDP growth was marginally negative as export growth surpassed that of imports. Both exports and imports registered double-digit growth in Q3:2022-23.

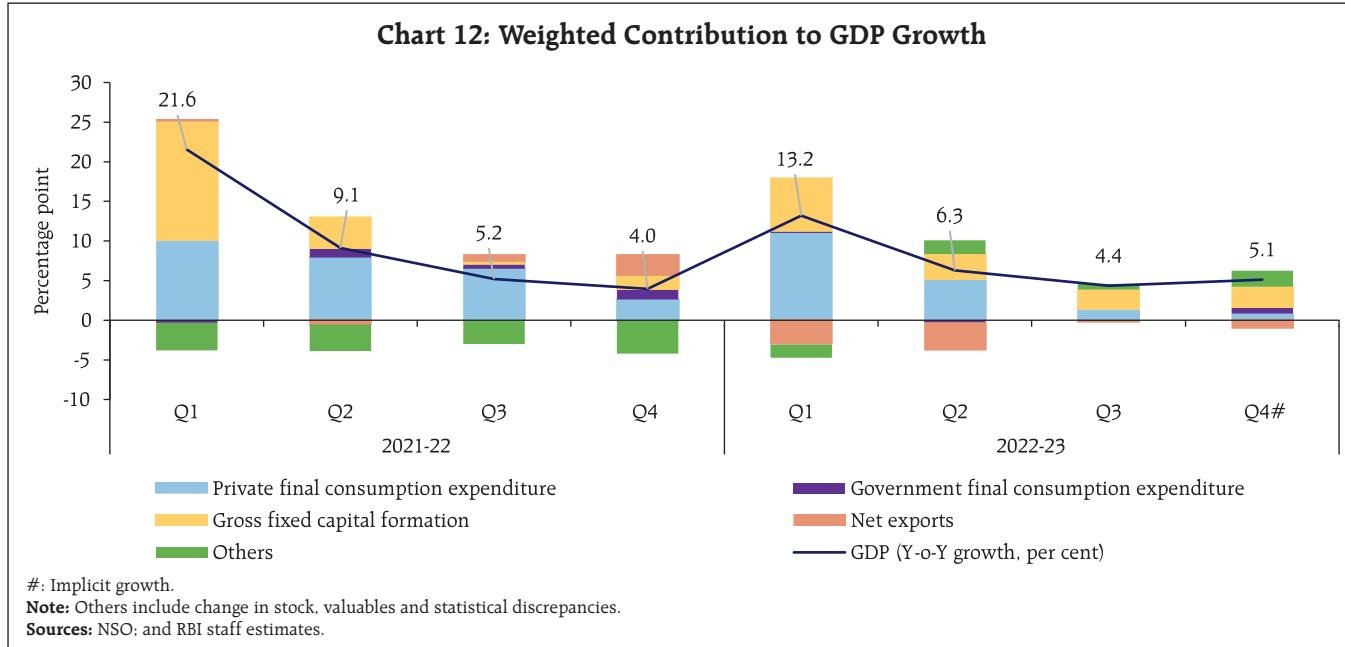
Turning to more recent developments, lead indicators point towards sustained momentum in economic activity. E-way bill volumes and toll

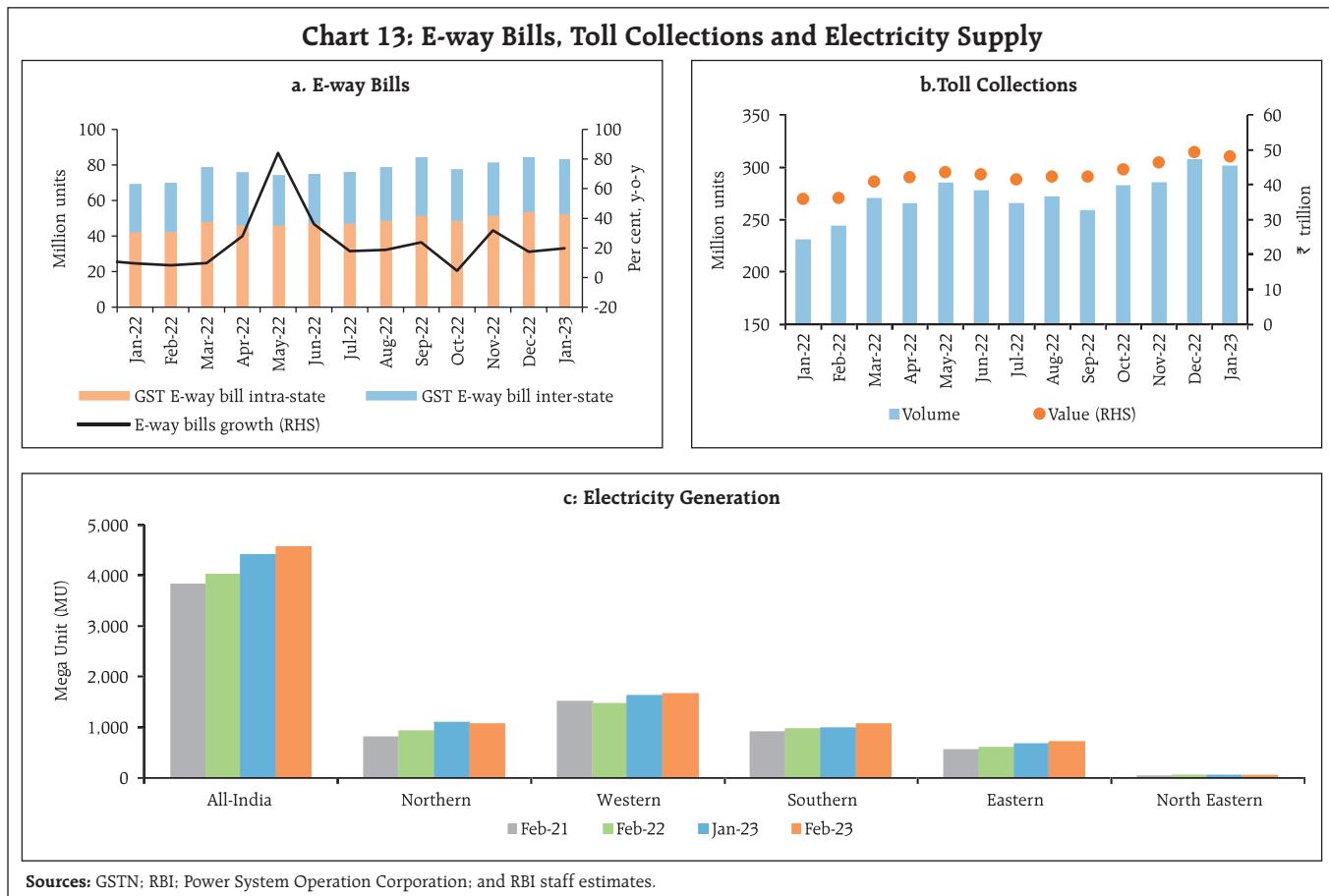
collections remained high even as calendar year effects were visible - February being the shortest month. Electricity generation recorded strong growth in February 2023 as peak demand increased due to a rise in the mean temperature (Chart 13).

Daily average consumption of fuel soared to its highest level in February 2023 (since the inception of the series in April 1998), with increased demand from industry and transport sectors (Chart 14a). Retail sales increased on a y-o-y basis, but the pace moderated sequentially, although for the calendar month of February, the sales was highest since 2019 (Chart 14b and 14c).

Two-wheeler sales went up by 8.8 per cent, with the electric vehicle (EV) segment maintaining the volumes recorded in the preceding two months. Better crop prices aided double digit tractor sales growth for the third consecutive month. Sales of motorcycle sales and three wheelers also picked up, with government schemes, subsidies and aggressive financing boosting sales (Chart 14d).

**Chart 12: Weighted Contribution to GDP Growth**





The share of EV sales in total vehicle retail sales rapidly increased to 6.0 per cent in February 2023 from 1.2 per cent in February 2021, with the sold units crossing the one million mark in Apr-Feb 2022-23 (Chart 15). EV penetration (*i.e.*, EV retail sales as a percentage of total vehicle retail sales) is the highest for the three wheeler segment, followed by two wheelers. The Union Budget 2023-24 has increased the outlay under the FAME scheme (Faster Adoption and Manufacturing of Hybrid and Electric Vehicles scheme) by 78 per cent to ₹ 5,172 crores.

In the tourism sector, average room rates<sup>4</sup> recorded a robust year-on-year (y-o-y) growth which

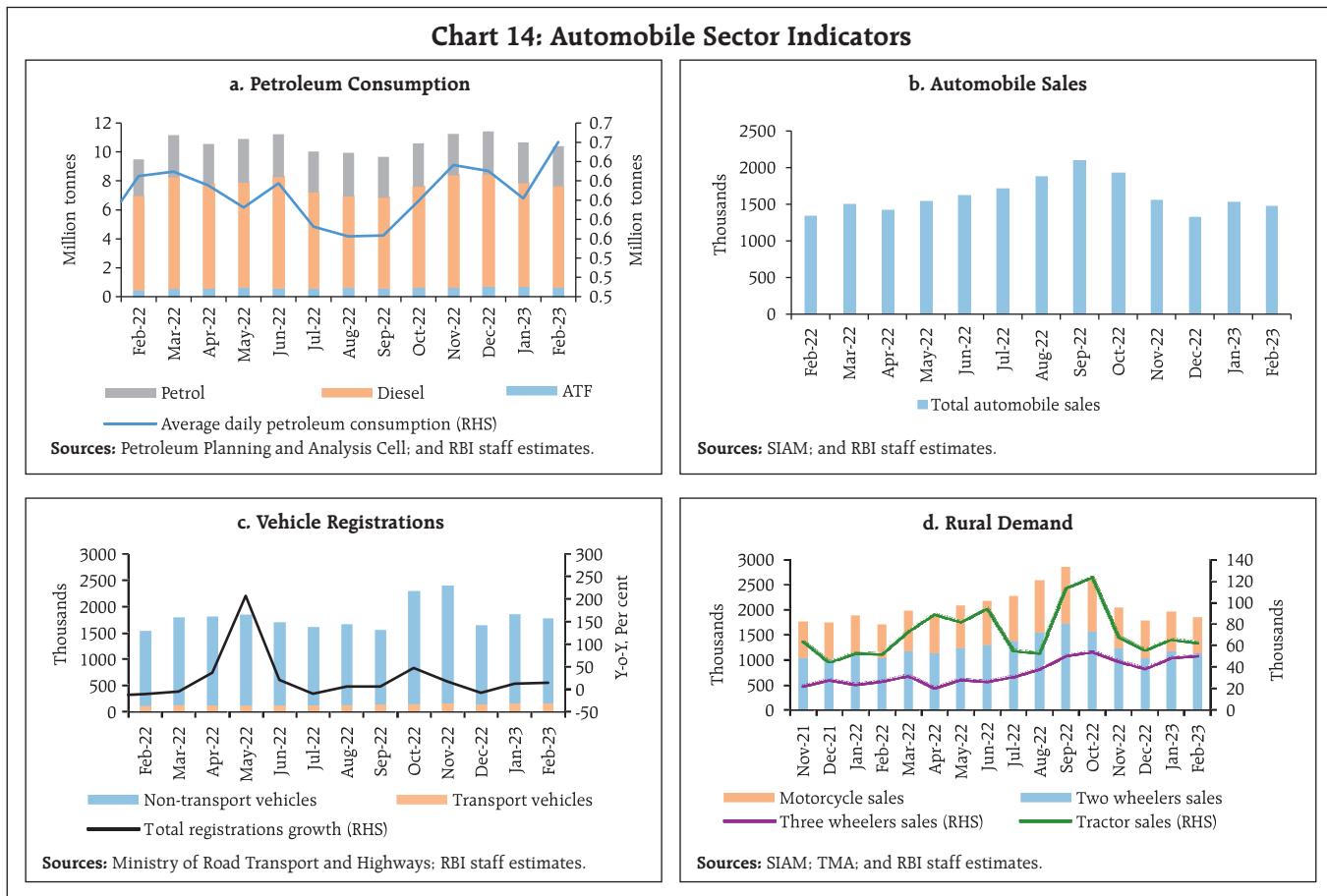
led to an increase in revenue per available room<sup>5</sup> (RevPAR) [Chart 16a]. The hotel occupancy rate, however, is yet to recover to its pre-pandemic levels (Chart 16b).

Demand for fast moving consumer goods (FMCG) goods increased in February as stores built up stocks to capitalise on summer demand. According to retail intelligence platform Bizom, signs of improvement are visible in rural demand, with expectations of a bumper wheat crop and higher grain prices.

As per the Centre for Monitoring Indian Economy (CMIE), the all India unemployment

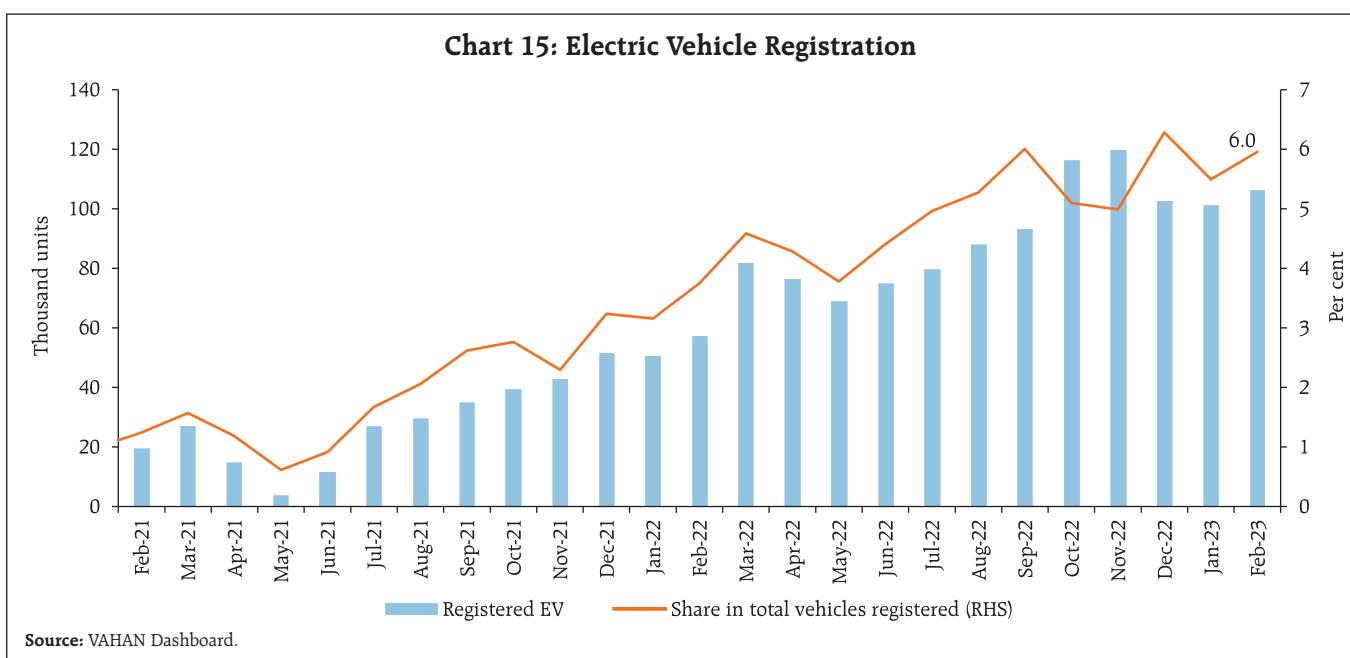
<sup>4</sup> Average room rate is the average price a room sold for in a hotel in a given period, calculated by the room revenue for that period divided by the number of rooms sold /occupied.

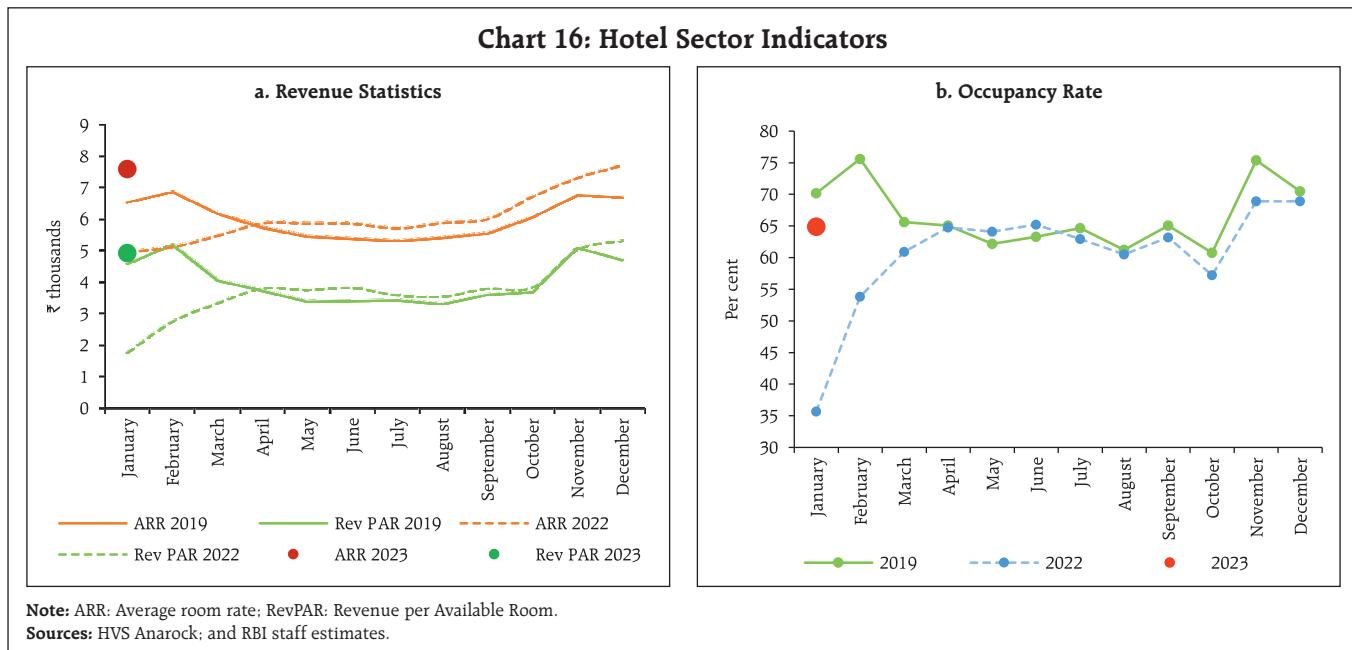
<sup>5</sup> Revenue per available room is a measure of the room revenue earned per hotel room derived by dividing the total Rooms Revenue by the number of rooms available in a given period.



rate was at 7.5 per cent in February 2023 as against 7.1 per cent a month ago (Chart 17a).

It edged down in urban areas while in rural areas, it rose marginally due to seasonal factors. The



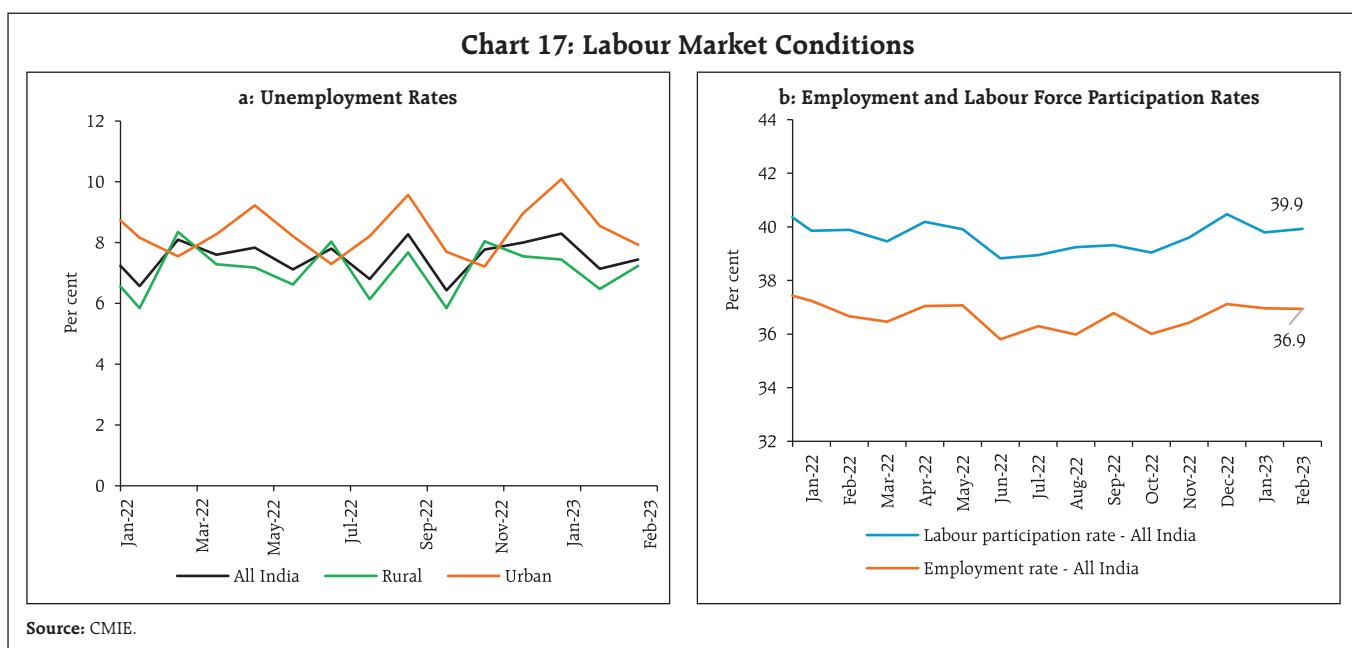


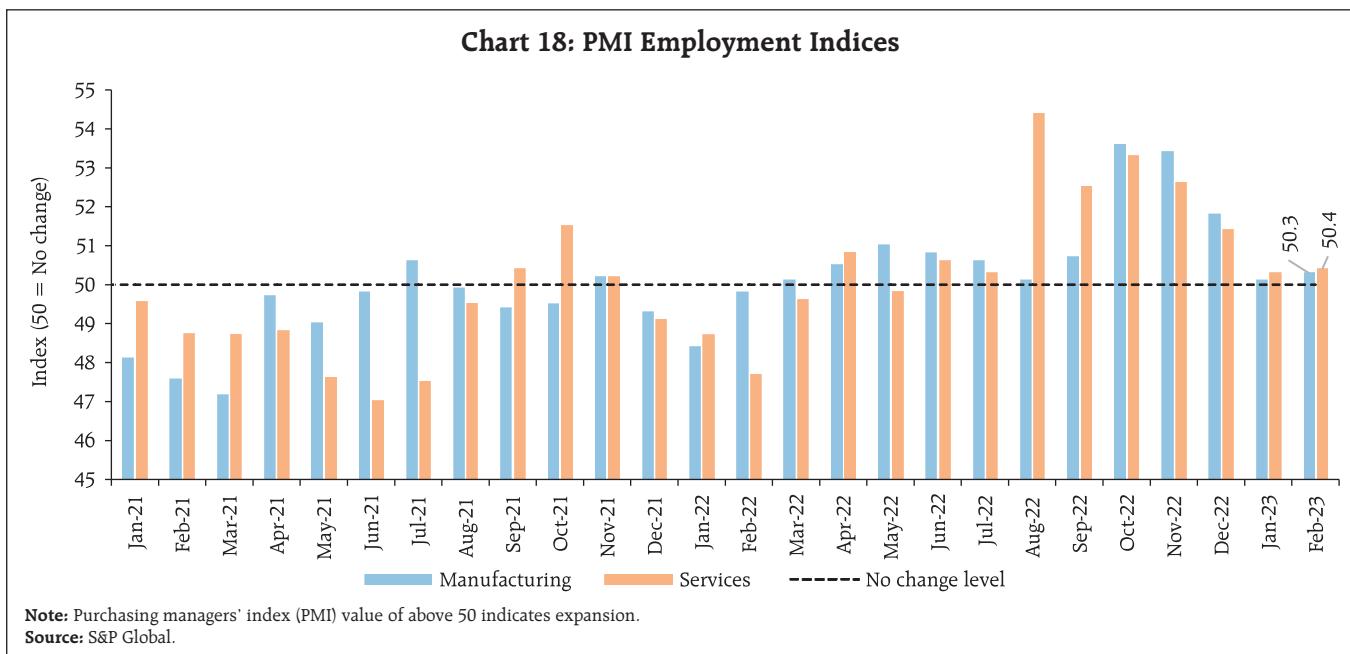
employment rate (ER) and the labour force participation rate (LFPR) remained largely unchanged (Chart 17b).

Hiring in the organised sector improved sequentially for both manufacturing and services in

February 2023 as reflected in the PMI employment sub-indices (Chart 18).

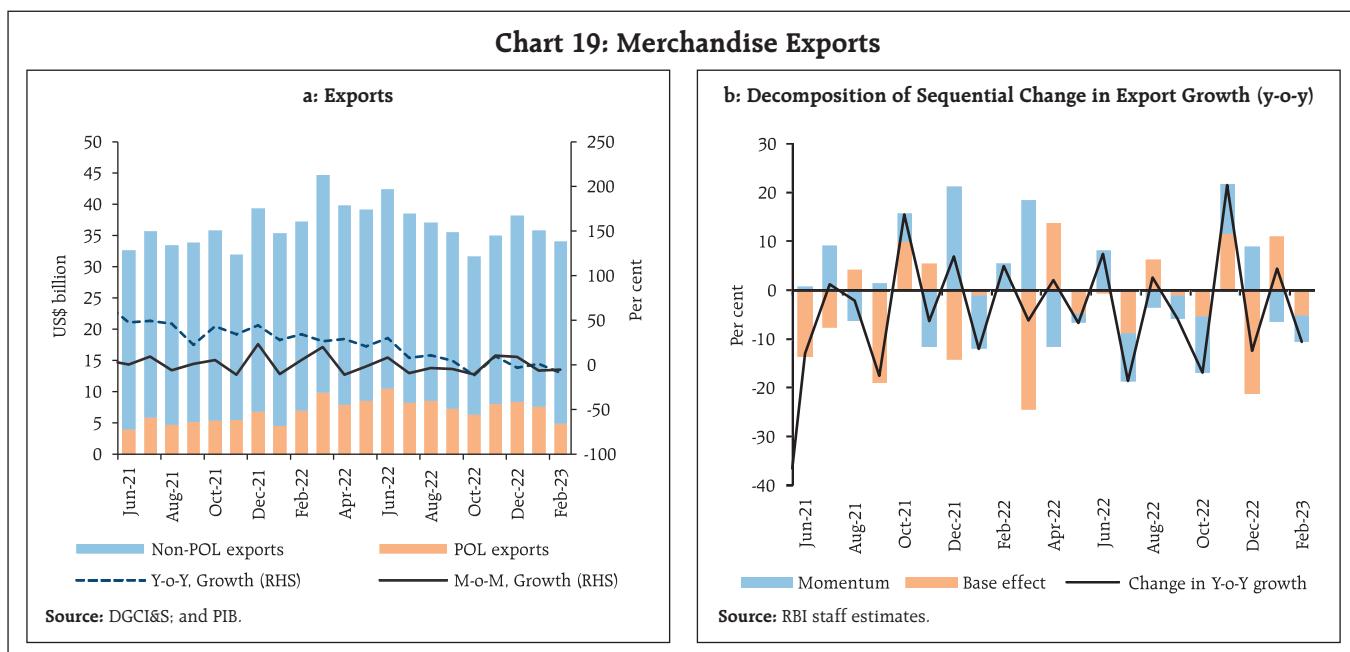
India's merchandise exports at US\$ 33.9 billion in February 2023 contracted y-o-y by 8.8 per cent and sequentially by 5.1 per cent, reflecting weakening



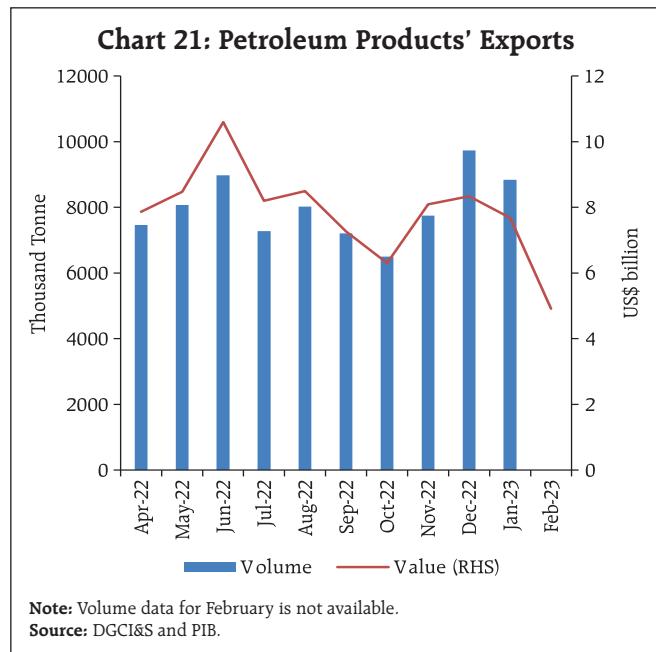
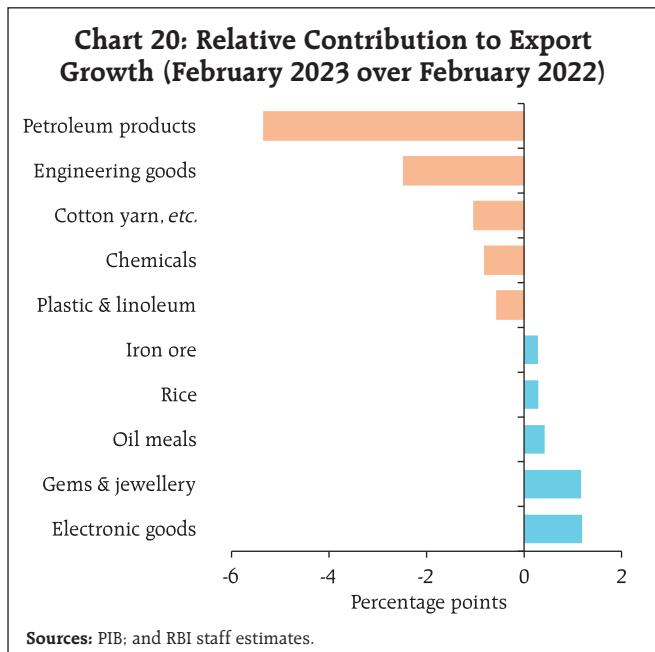


global demand (Chart 19).<sup>6</sup> Total merchandise exports during 2022-23 (April–February) at US\$ 405.9 billion were 7.6 per cent higher than in the corresponding period of the previous year and close to the annual target of US\$ 450 billion.

Non-oil exports, which account for 80 per cent of total exports, contracted by 4.3 per cent y-o-y in February 2023, weighed down by engineering goods, cotton yarn and fabrics, and chemicals (Chart 20).

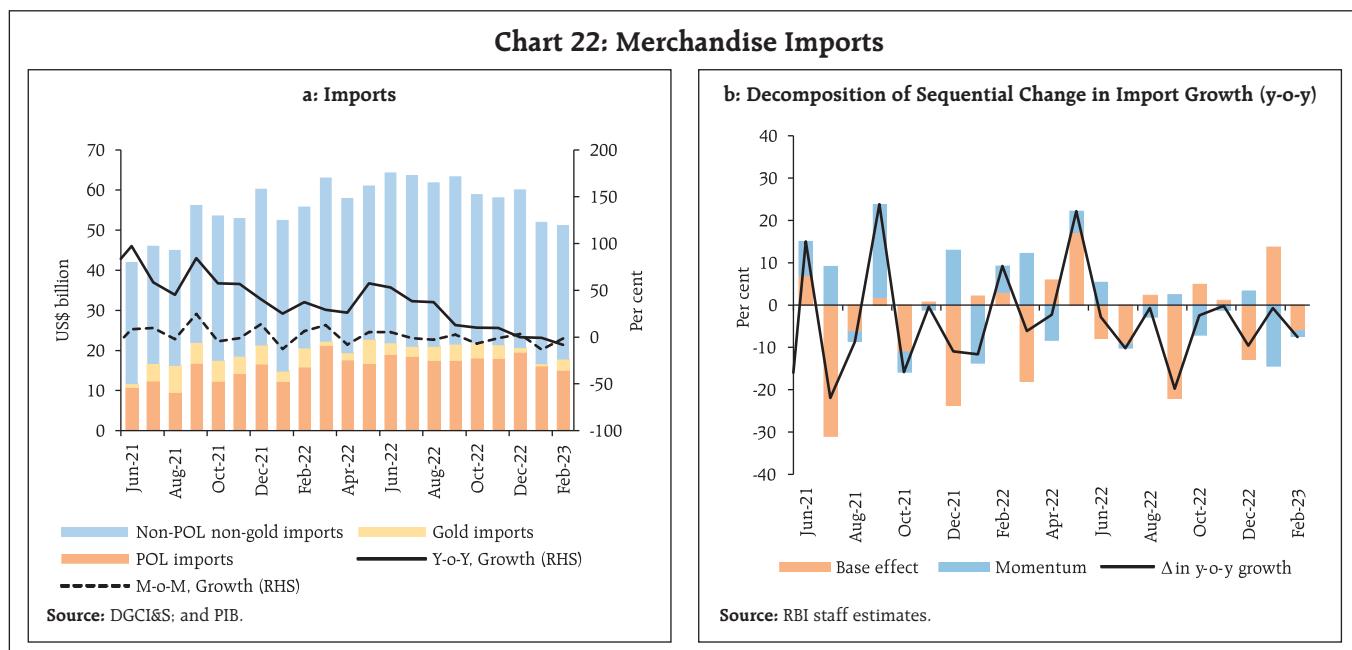


<sup>6</sup> The analysis of merchandise trade is as per the press release dated March 15, 2023, by Ministry of Commerce and Industry.



Exports of petroleum products at US\$ 4.9 billion in February 2023 declined by 28.8 per cent y-o-y and registered a sharper sequential decline of 36.0 per cent. The fall in exports was driven by diesel shipments (accounting for nearly half of total exports of petroleum products) due to waning European demand (Chart 21).

Easing commodity prices were reflected in the value of merchandise imports reaching an 18-month low of US\$ 51.3 billion in February 2023. They declined by 8.2 per cent y-o-y and by 1.4 per cent sequentially (Chart 22). Gold, fertilisers, electronic goods, and petroleum, oil and lubricants (POL) were the main items that dragged imports down, while



transport equipment, iron and steel, and coal, coke and briquettes were the commodities that contributed positively to import growth (Chart 23).

With Electric Vehicles (EVs) gaining traction in the Indian market, imports of lithium and lithium-ion at US\$ 2.3 billion during 2022-23 (up to January), grew by 56 per cent y-o-y (Chart 24). The recent discovery of 5.9 million tonnes of lithium reserves in Jammu and Kashmir will make India the seventh largest producer in the world, with a 5.8 per cent share in global reserves. This will help India in reducing its import dependence in this crucial mineral.

The merchandise trade deficit increased to US\$ 17.4 billion in February 2023 from a 17-month low of US\$ 16.3 billion in January 2023 as exports witnessed a larger sequential contraction in comparison with imports.

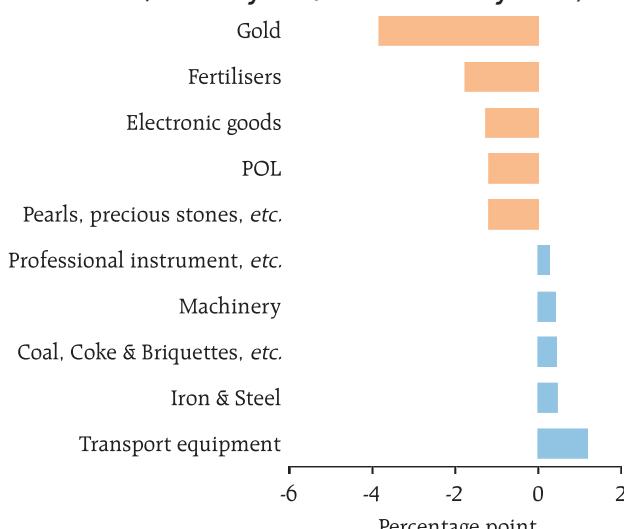
As per the latest data from the Controller General of Accounts (CGA), during April – January 2022-23, the gross fiscal deficit (GFD) of the central government

stood at 67.8 per cent of the revised estimates (RE), higher than in the corresponding period of the previous year (58.9 per cent) as expenditure growth outpaced revenue.

In terms of composition of expenditure, capital expenditure grew by 29 per cent (y-o-y) during this period on account of the thrust on capital spending by the Union Government (Chart 25a). Revenue expenditure, on the other hand, grew modestly by 9.7 per cent (y-o-y), leading to a marked improvement in the quality of spending during the period (Chart 25b). On March 13, 2023, the Government presented the second and last batch of Supplementary Demand for Grants for 2022-23 which proposed a net cash outgo of ₹1.48 lakh crore.

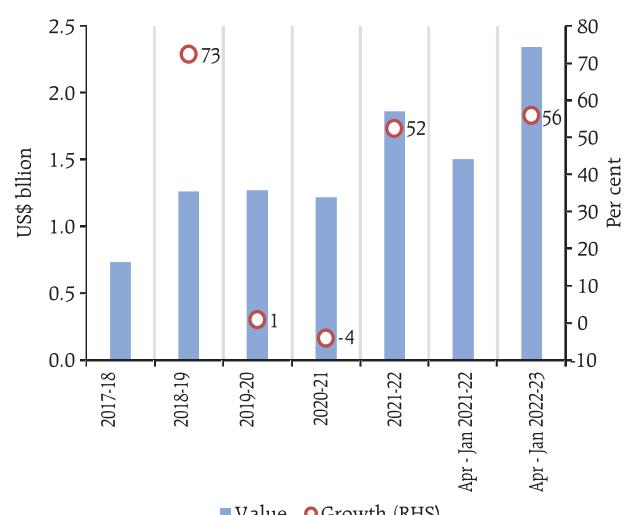
On the receipts side, gross tax revenue grew by 12.6 per cent (y-o-y), driven by an increase in collections under all major tax heads except excise duty (which is attributed to the cut in excise duty on petrol and diesel in May 2022). Direct and indirect

**Chart 23: Relative Contribution to Import Growth (February 2023 over February 2022)**

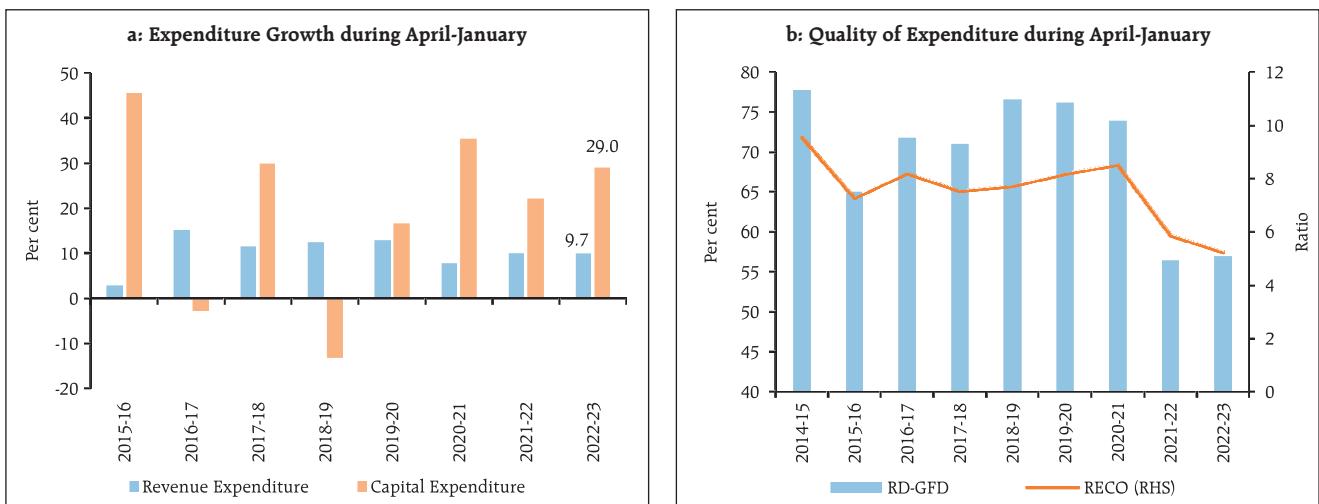


Sources: PIB; and RBI staff estimates.

**Chart 24: Lithium and Lithium-Ion Imports**



Source: DGCI&S.

**Chart 25: Expenditure Growth and Quality**

**Notes:** (1) RD-GFD is Revenue Deficit to Gross Fiscal Deficit expressed in per cent terms.

(2) RECO refers to the ratio of Revenue Expenditure to Capital Outlay.

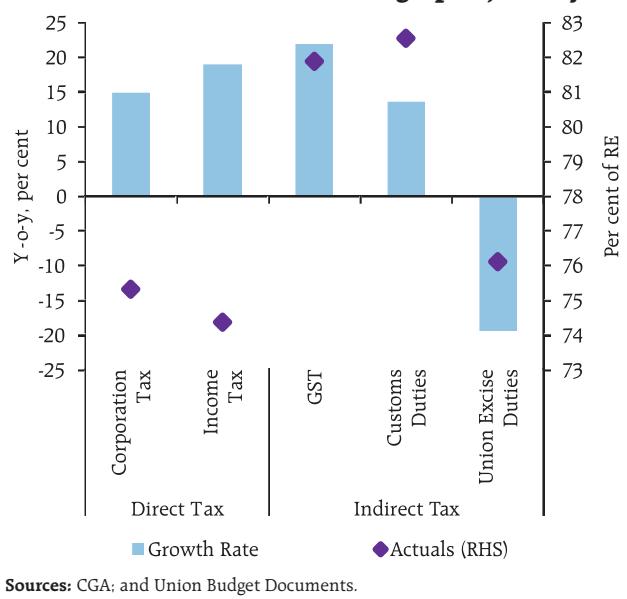
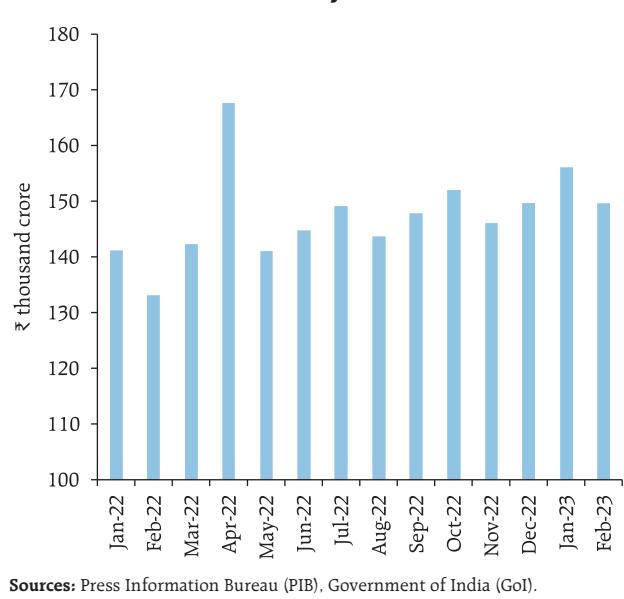
**Sources:** Controller General of Accounts (CGA); and Union Budget Documents.

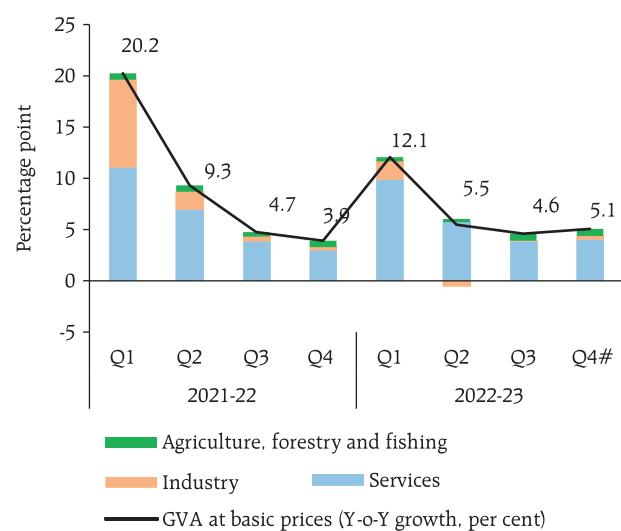
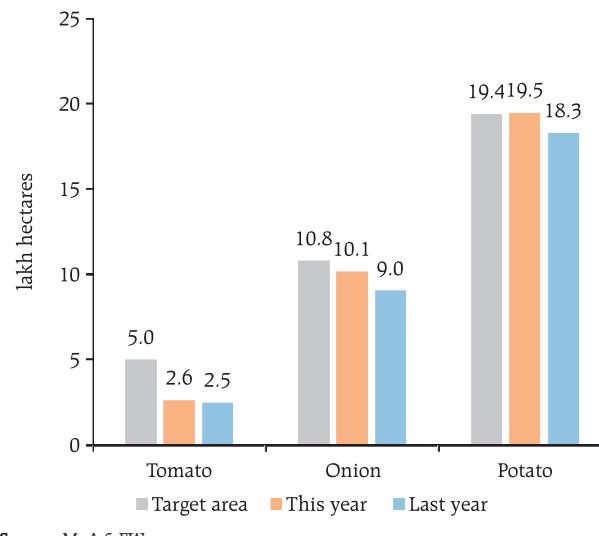
taxes grew by 16.5 per cent and 8.6 per cent (y-o-y), respectively (Chart 26).

The Goods and Services Tax (GST) collections (Centre *plus* States) in February 2023 at ₹1.49 lakh crore grew by 12.4 per cent (y-o-y) [Chart 27].

### Aggregate Supply

During 2022-23, aggregate supply as measured by the gross value added (GVA) at basic prices grew by 6.6 per cent as per the SAE (marginally lower than 6.7 per cent in the FAE). Overall GVA growth was driven by

**Chart 26: Tax Revenue during April-January****Chart 27: Monthly GST Revenue**

**Chart 28: Weighted Contribution to GVA Growth****Chart 29: Status of Rabi Vegetable Sowing (as on 03 March, 2023)**

services and agriculture sectors, while the industrial sector decelerated amidst intensification of input cost pressures (Chart 28).

As on March 03, 2023 the total summer crop<sup>7</sup> sown area stood at 28.3 lakh hectares, 1.8 per cent higher than a year ago. Planting is expected to gain momentum in the coming weeks, aided by ample soil moisture levels. The *rabi* sowing position for tomato, onion, and potato crops is likely to achieve the target (Chart 29).

The overall procurement of rice during the ongoing *kharif* marketing season (KMS) 2022-23 was marginally lower at 48.0 million tonnes (as on March 09, 2023) as compared with 49.0 million tonnes a year ago. *Mandi* arrivals of paddy in KMS 2022-23, however, stood higher at 32.94 million tonnes (as on March 09, 2023), surpassing last year's level by 37.0 per cent.

The stock of rice with the Food Corporation of India (FCI) was 6.0 times the quarterly buffer norms for January-March. Although the wheat stocks are

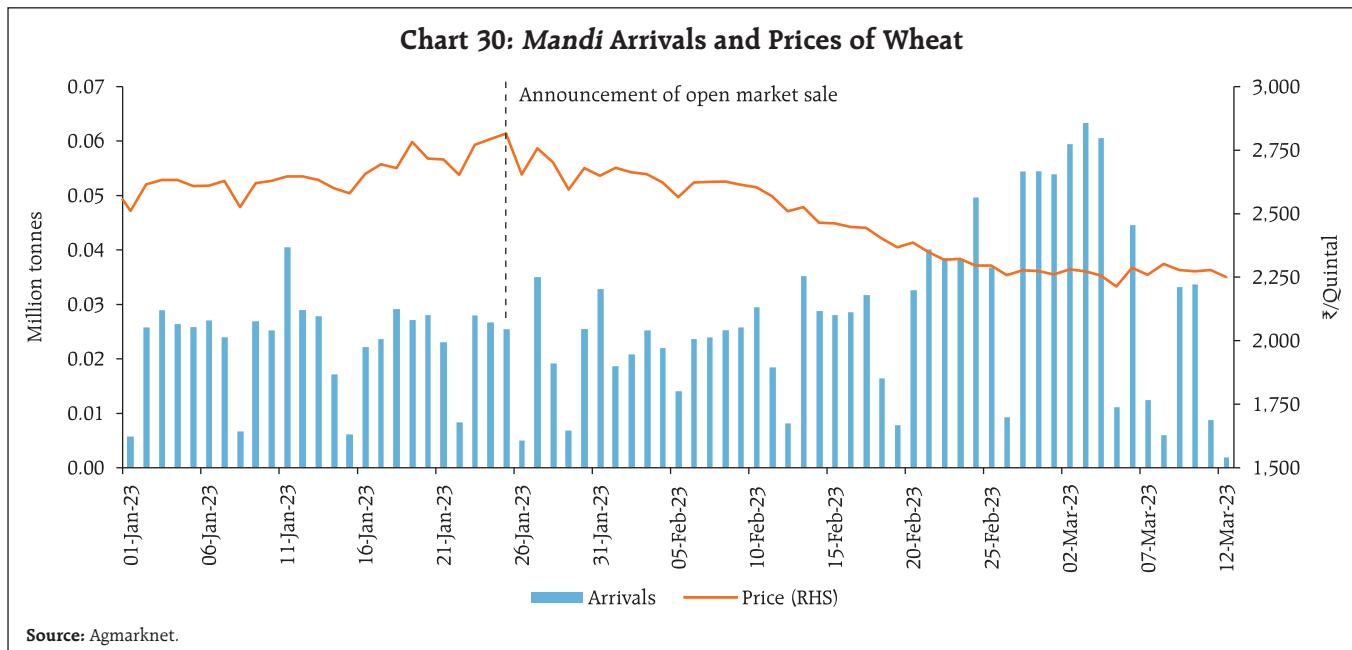
currently below the prescribed buffer norms, they are being further replenished by fresh procurements during the *rabi* season.

Following the announcement of OMSS (D) on January 25, 2023, the daily *mandi* arrivals of wheat increased while prices moderated (Chart 30). The additional offtake under OMSS (D), along with the recently reduced reserve price of wheat, are expected to moderate inflationary pressures.<sup>8</sup>

In continuation with the previous announcement of offloading 3 million tonnes of wheat under Open Market Sale Scheme (Domestic) [OMSS (D)], the Government decided to offload an additional quantity of 2 million tonnes by open market sales through e-auctions to flour mills/private traders/bulk buyers/manufactures on February 21, 2023. So far (up to March 15, 2023), the FCI has conducted six e-auctions with a cumulative total of 3.38 million tonnes of wheat sold (against the overall allocation of 4.5 million tonnes).

<sup>7</sup> Summer or *zaid* season is a short intervening period between *rabi* and *kharif* prevailing during March to May.

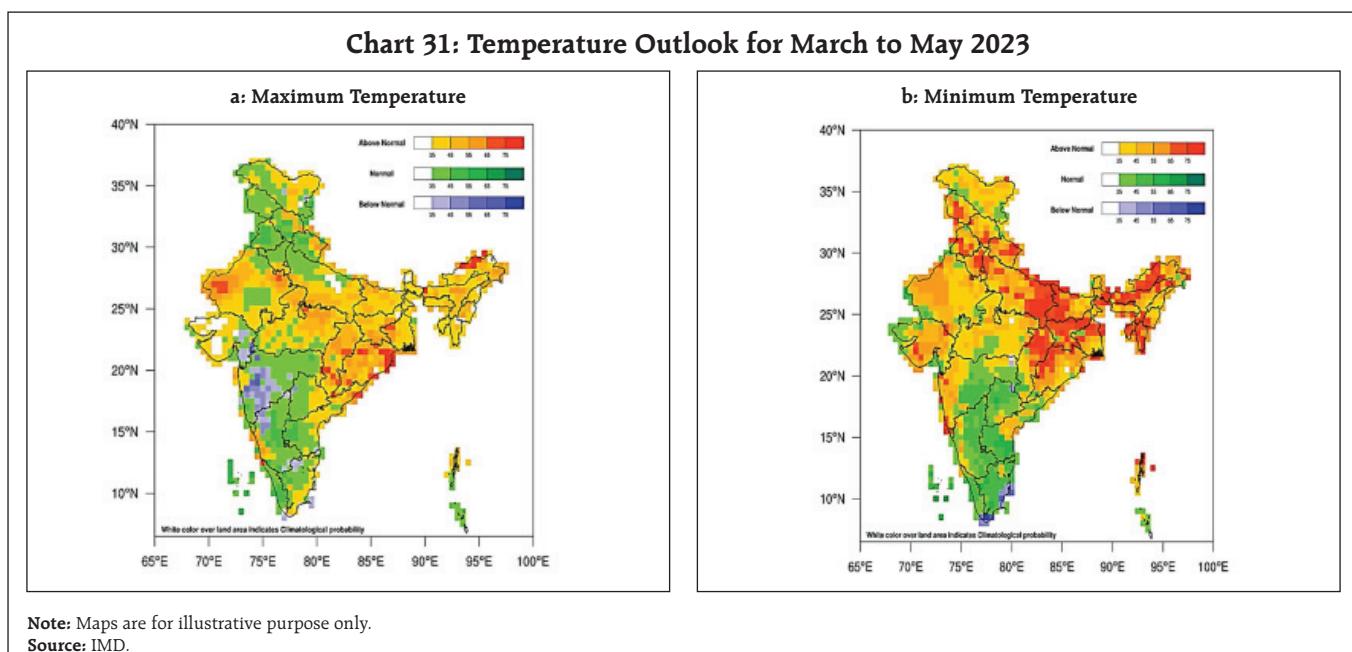
<sup>8</sup> Department of Food & Public Distribution, Ministry of Consumer Affairs decided on 17.02.2023 to further reduce reserve price up to March 31, 2023 to ₹2150/QtL (Pan India) for wheat (fair average quality, FAQ) and ₹2125 QtL (Pan India) for wheat (under relaxed specifications, URS) for sale of wheat to private parties and State Governments.

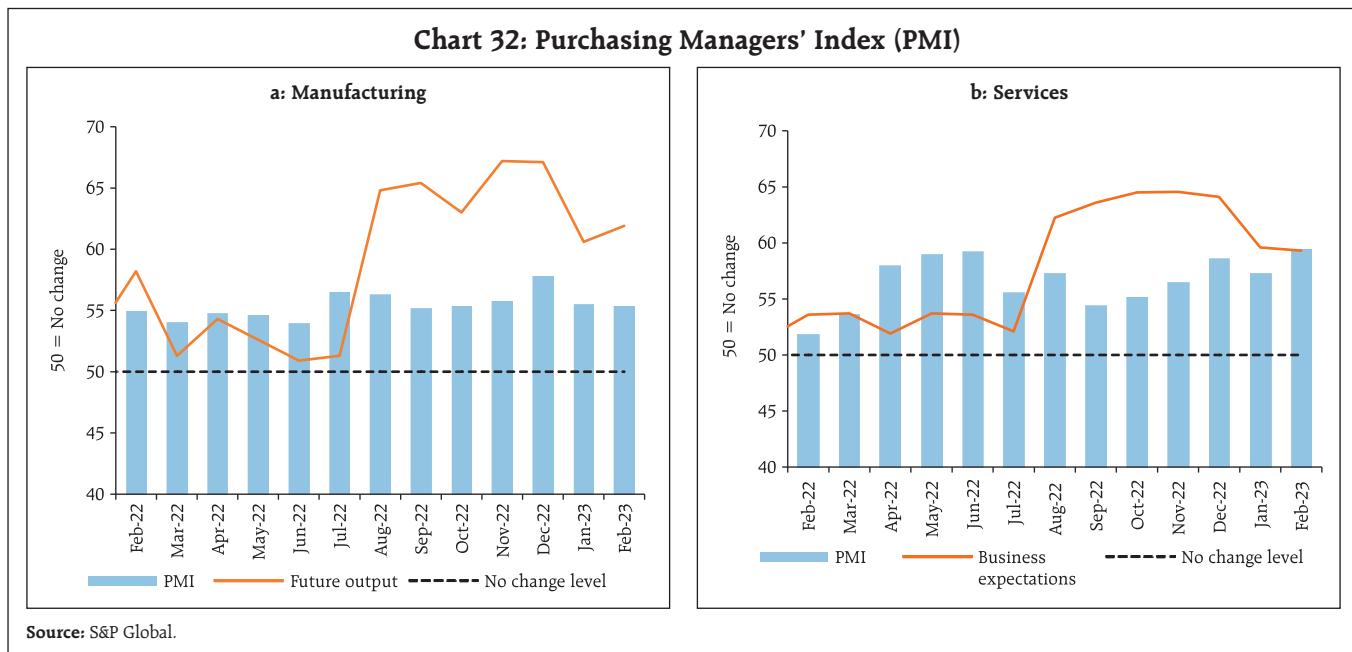


In 2023, India experienced its hottest February on record which raised concerns over *rabi* crop prospects, especially for wheat. The latest crop assessment report by the Department of Agriculture and Farmers' Welfare (DA&FW) indicates that crop conditions are normal in all the major wheat growing states, as more than 50 per cent of the current wheat sown area is comprised of terminal heat stress-tolerant varieties.

The Indian Meteorological Department (IMD) has, however, highlighted the enhanced probability of occurrence of heatwaves in the central and northwest regions of India for the current summer season (March-May) [Chart 31].

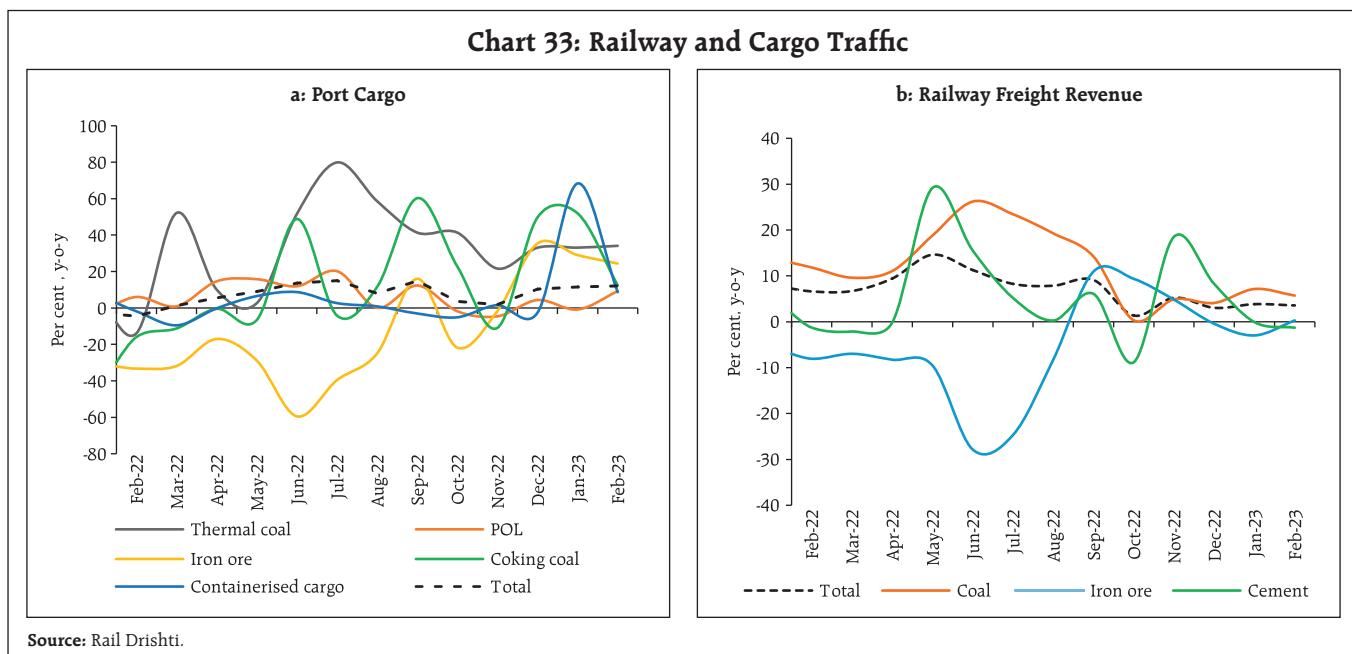
The headline PMI for manufacturing and services, at 55.3 and 59.4, respectively, remained

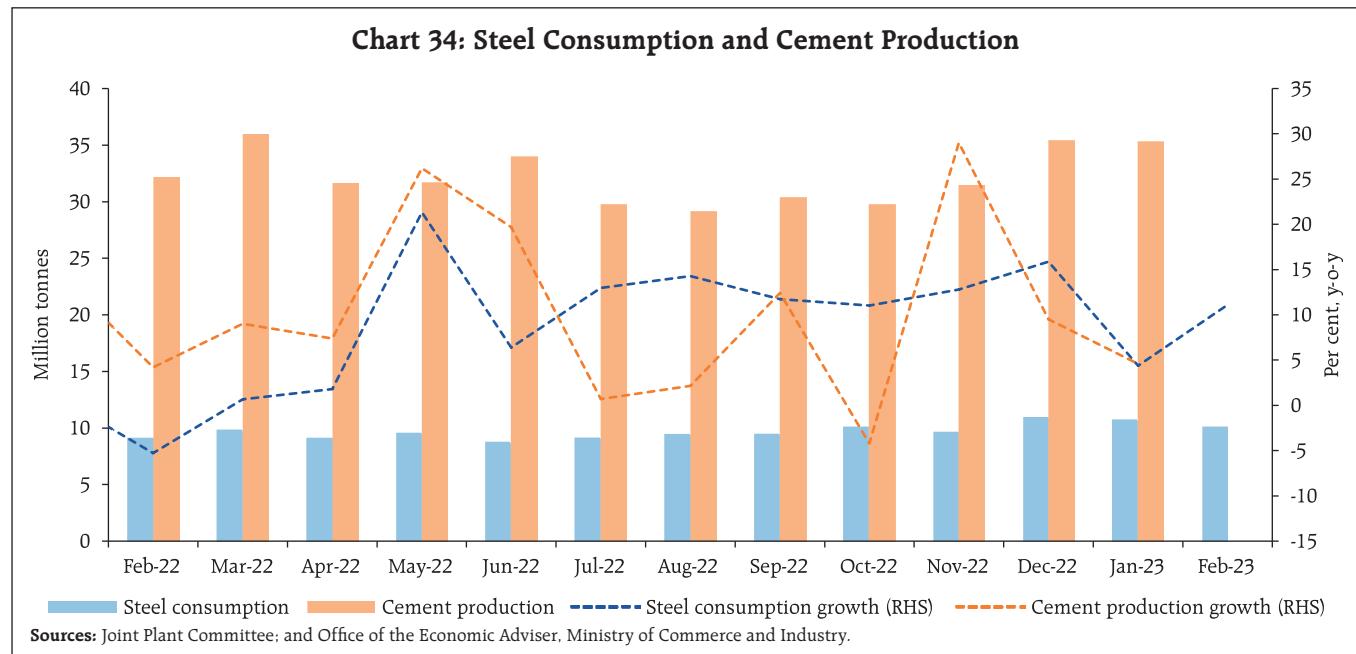




strongly in expansionary mode during February 2023 (Chart 32a and 32b). Domestic business growth fuelled the expansion in the manufacturing sector with robust growth in output and new orders. Output in the service sector expanded at the strongest rate in 12 years, aided by a moderation in cost pressures and favourable demand conditions.

In the services sector, transport indicators recorded a mixed picture in February 2023. Cargo traffic at major ports recorded double digit growth, aided by growth in carriage of thermal coal and iron ore as well as a low base last year (Chart 33a). Railway freight earnings, however, recorded a slight moderation (Chart 33b).





In the construction sector, activity remained robust with cement production and steel consumption sustaining growth (Chart 34).

High frequency indicators in the service sector exhibited strong y-o-y growth, partly on account of a low base (Table 1). Data for March 2023 so far

**Table 1: High Frequency Indicators – Services**

Growth (y-o-y, per cent)						
Sector	Indicator	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23
<b>Urban Demand</b>	Passenger Vehicles Sales	28.6	28.1	7.2	17.2	11.0
	Two-Wheeler Sales	2.3	17.7	3.9	5.0	7.6
<b>Rural Demand</b>	Three-Wheeler Sales	70.4	103.2	37.6	103.0	86.1
	Tractor Sales	6.8	6.5	25.6	24.4	20.0
<b>Trade, hotels, transport, communication</b>	Commercial Vehicles Sales		16.6			
	Railway Freight Traffic	1.4	5.2	3.1	3.8	3.6
	Port Cargo Traffic	3.1	1.8	10.3	11.5	12.1
	Domestic Air Cargo Traffic*	-8.0	3.7	-3.6	2.4	12.3
	International Air Cargo Traffic *	-18.7	-6.0	-7.4	-7.5	5.6
	Domestic Air Passenger Traffic *	30.4	12.6	14.6	96.8	5.1
	International Air Passenger Traffic *	115.0	97.5	85.9	121.9	-0.5
	GST E-way Bills (Total)	4.6	32.0	17.5	19.7	18.4
	GST E-way Bills (Intra State)	12.0	37.7	23.2	24.1	22.2
	GST E-way Bills (Inter State)	-5.9	23.1	8.6	12.8	12.4
	Tourist Arrivals	243.2	191.3	204.2		
<b>Construction</b>	Steel Consumption	11.0	12.8	15.9	4.4	11.1
	Cement Production	-4.2	29.0	9.5	4.6	
<b>PMI Index#</b>	Services	55.1	56.4	58.5	57.2	59.4

**Note:** \*: Data for aviation indicators for February 2023 are calculated using Directorate General of Civil Aviation (DGCA) statistics; #: Data in levels.

**Sources:** SIAM; Tractor Manufacturing Association; Indian Railways; India Port Association; Airports Authority of India; DGCA; GSTN; Ministry of Tourism; Joint Plant Committee; Ministry of Commerce & Industry; and IHS Markit.

(up to March 8), point to a mixed outlook for the aviation sector. While passenger footfalls improved, domestic cargo shipments remained weak during the month.

In terms of regional policy initiatives, Tamil Nadu unveiled a new EV policy to promote the growth of a strong EV ecosystem. Karnataka proposed to set up a state-of-the-art start-up park and to establish new industrial clusters through the Karnataka State Small Industries Development Corporation (KSSIDC). Odisha reduced the VAT on sale of aviation turbine fuel (ATF) to give a boost to regional connectivity. West Bengal has announced a '*Bhavishyat Credit Card*' scheme to provide financial assistance for setting up micro-enterprises targeting more than two lakh youths.

## Inflation

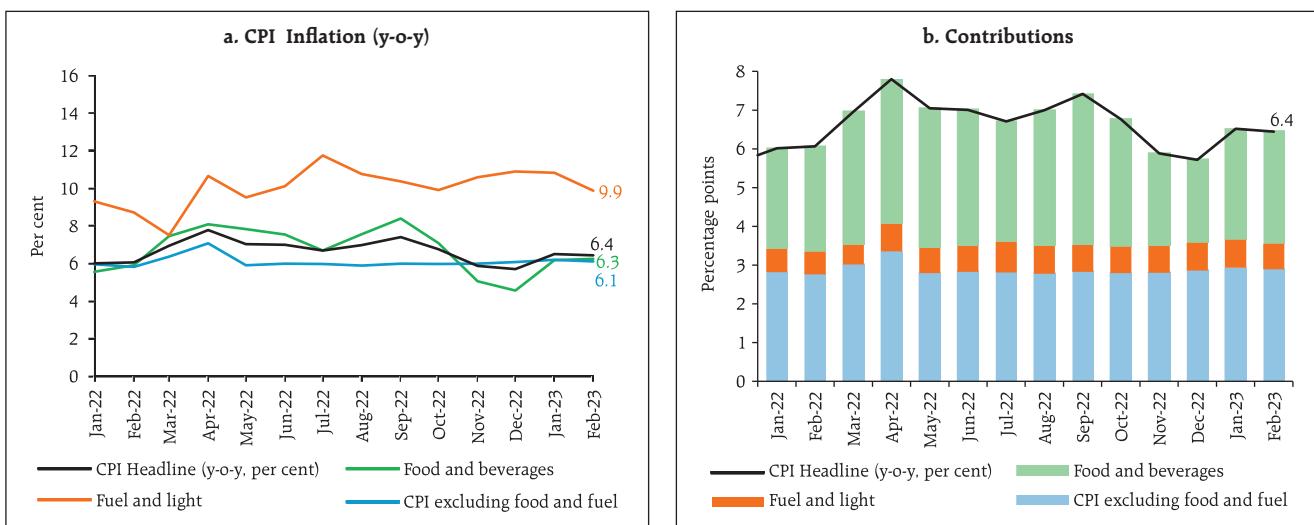
Headline inflation, as measured by y-o-y changes in all India Consumer Price Index (CPI)<sup>9</sup>, moderated

to 6.44 per cent in February 2023 from 6.52 per cent in January (Chart 35a). The moderation in headline inflation by 8 bps between January and February was driven by a favourable base effect of 24 bps, which more than offset the positive momentum of 17 bps.

During the month, prices increased month-on-month (m-o-m) by 41 bps in the core category and by 5 bps in the fuel group, whereas food and beverages group recorded a negative momentum of 6 bps. The marginal easing of headline inflation, however, was driven by moderation in y-o-y inflation within fuel, and core (excluding food and fuel) categories (Chart 35b).

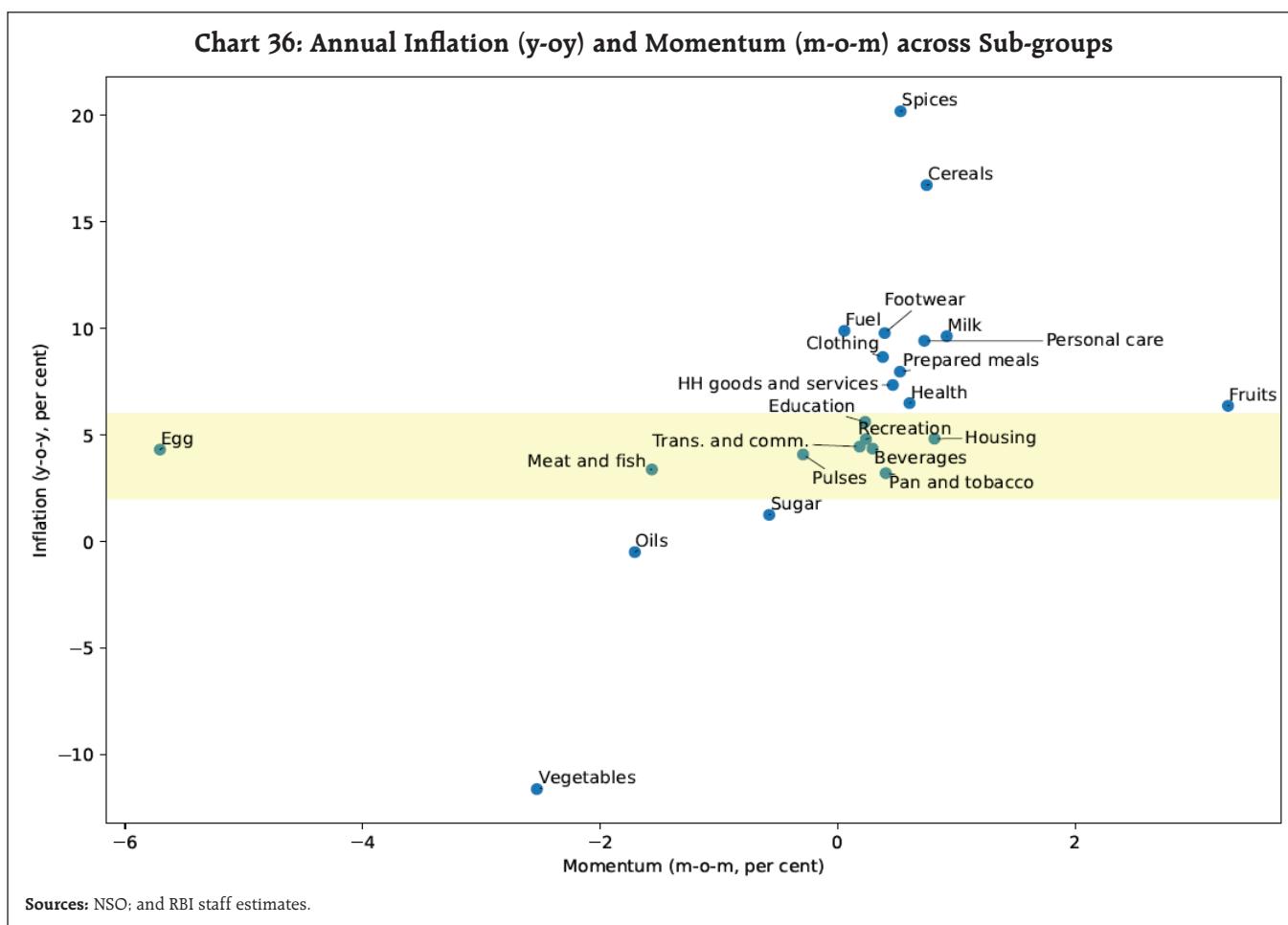
Food inflation (y-o-y) was marginally higher at 6.3 per cent in February over 6.2 per cent a month ago. Within the food group, prices rose by 16.7 per cent (the highest since June 2013) in cereals. Milk, fruits, sugar, non-alcoholic beverages and prepared meals were the other major sub-groups that recorded higher inflation.

**Chart 35: Trends and Drivers of CPI Inflation**



Note: CPI inflation for April-May 2021 was computed based on imputed CPI indices for April-May 2020.  
Sources: National Statistical Office (NSO); and RBI staff estimates.

<sup>9</sup> According to the provisional data released by the National Statistical Office (NSO) on March 13, 2023.



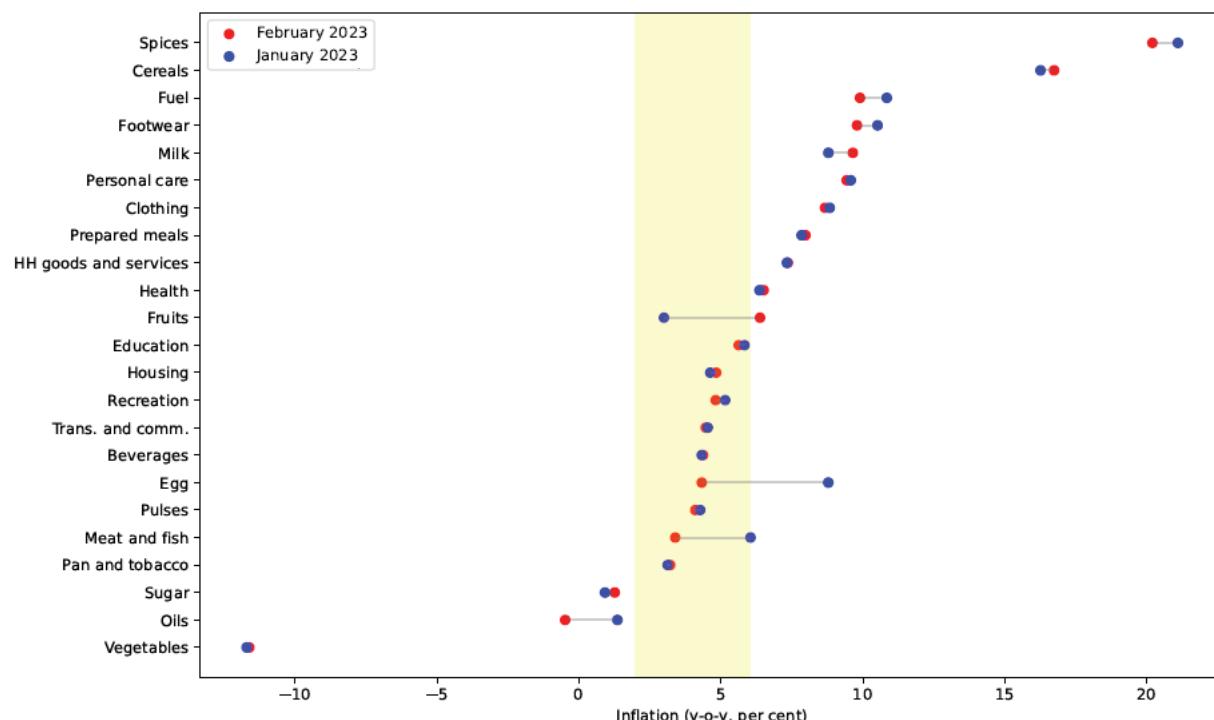
On the other hand, annual rate of price increases softened in respect of eggs (which recorded a negative momentum of 5.7 per cent), meat and fish, pulses and spices categories. Negative momentum drove prices of edible oils into deflation (Chart 36). The vegetables sub-group registered a marginally lower deflation in February.

Inflation in the fuel and light group declined to 9.9 per cent in February from 10.8 per cent in January, mainly owing to a softening in inflation in respect of kerosene and firewood and chips. CPI core inflation softened to 6.1 per cent in February from 6.2 per cent in January. Inflation in sub-groups such as recreation and amusement, clothing and footwear, education, and personal care and effects moderated, while higher inflation was seen in pan, tobacco and intoxicants,

housing, household goods and services, and health groups (Chart 37).

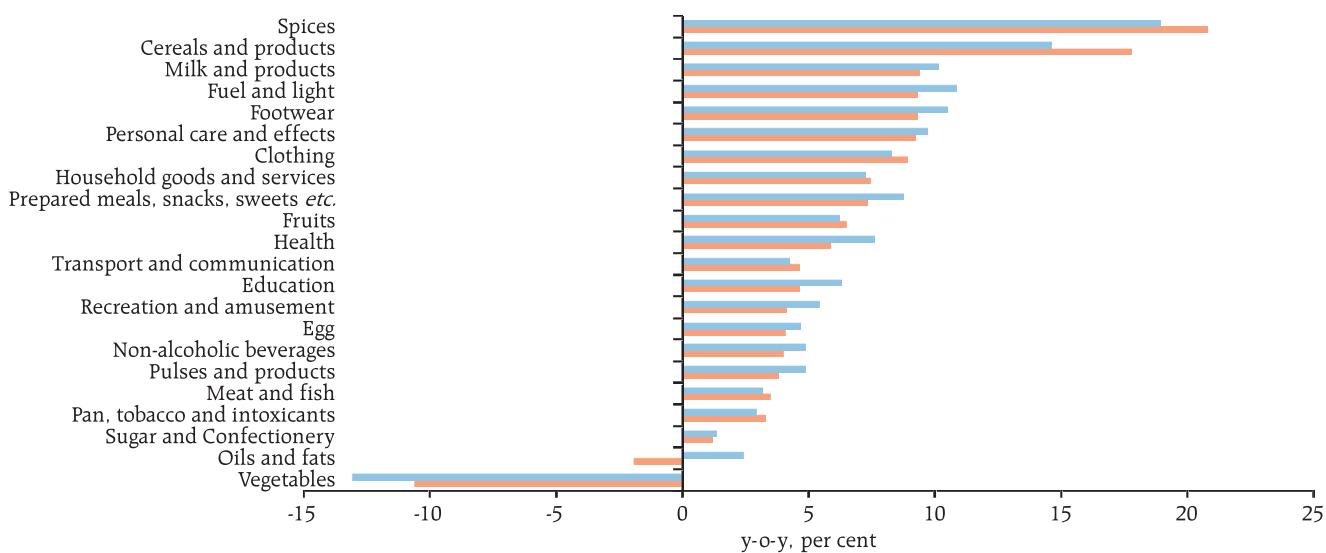
Along with a moderation in overall inflation, the wedge between rural and urban inflation narrowed to 62 bps in February 2023 from 85 bps a month ago, even though rural inflation at 6.72 per cent remained higher than urban inflation. Among sub-groups, spices, cereals, meat and fish and clothing were dearer in rural belts. Fuel and light, pulses and milk and products registered higher inflation in urban centres (Chart 38).

Among States, Andhra Pradesh and Telangana experienced higher inflation (excess of 8 per cent) whereas Chhattisgarh, Delhi, Goa, Himachal Pradesh and Manipur recorded lower inflation (below 4 per cent) [Chart 39].

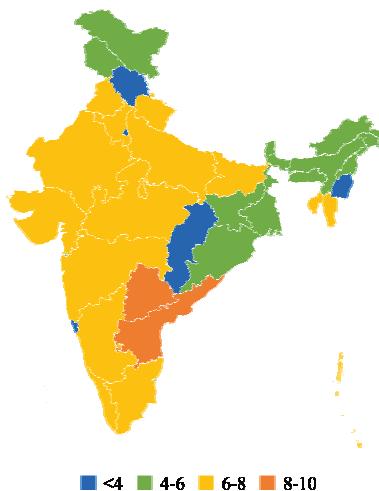
**Chart 37: Annual Inflation across Sub-groups (February 2023 vs January 2023)**

High frequency food price data for March so far (March 1-14) point to decline in prices of cereals (mainly wheat and *atta*), cereals and key vegetables.

Barring *masur* (red lentils), pulses registered an uptick in prices (Chart 40).

**Chart 38: Inflation in Select Items (Rural versus Urban)**

**Chart 39: Spatial Distribution of Inflation February 2023 (CPI- Combined, y-o-y)**



Note: Map is for illustrative purpose only.

Sources: NSO; and RBI staff estimates.

Retail selling prices of petrol and diesel in the four major metros remained steady in March so far.

**Table 2: Petroleum Products Prices**

Item	Unit	Domestic Prices			Month-over-month (per cent)	
		Mar-22	Feb-23	Mar-23 <sup>^</sup>	Feb-23	Mar-23 <sup>^</sup>
Petrol	₹/litre	109.98	102.92	102.92	0.0	0.0
Diesel	₹/litre	91.62	92.72	92.72	0.0	0.0
Kerosene (subsidised)	₹/litre	46.87	55.79	54.21	4.0	-2.8
LPG (non-subsidised)	₹/cylinder	926.25	1063.25	1113.25	0.0	4.7

<sup>^</sup> : For the period March 1-14, 2023.

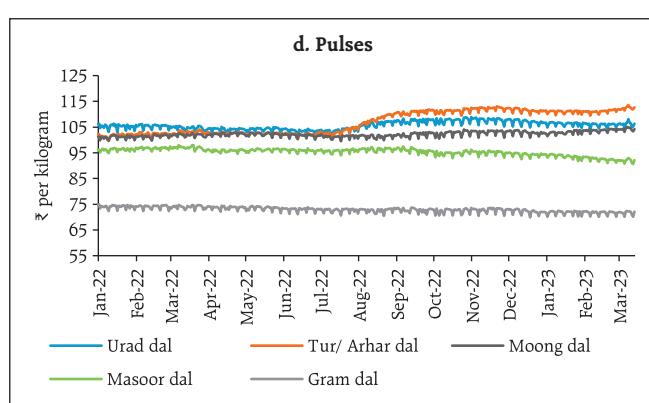
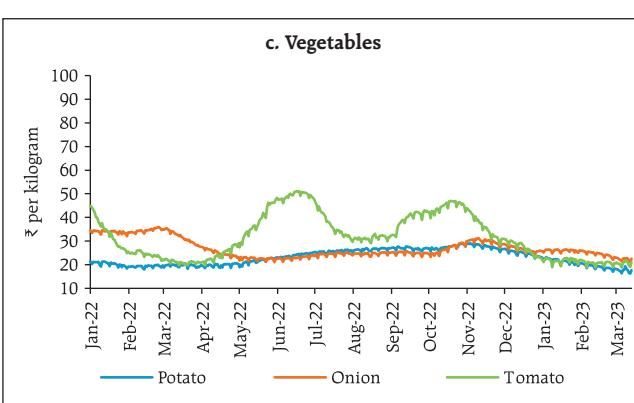
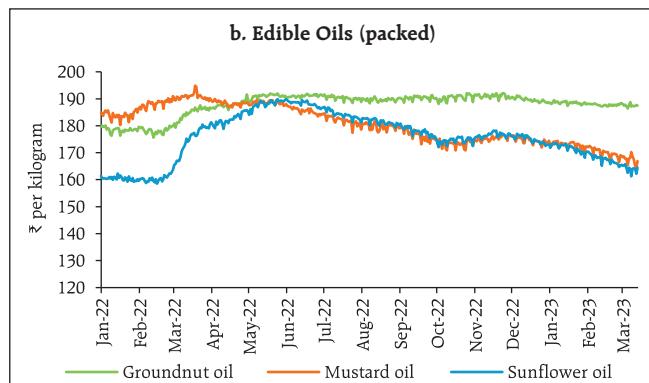
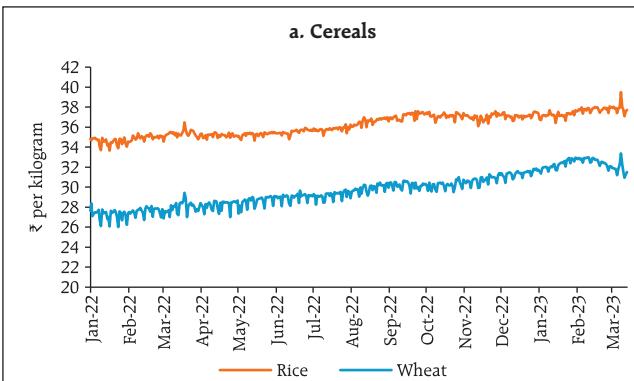
**Note:** 1. Other than kerosene, prices represent the average Indian Oil Corporation Limited (IOCL) prices in four major metros (Delhi, Kolkata, Mumbai and Chennai).

2. For kerosene, prices denote the average of the subsidised prices in Kolkata, Mumbai and Chennai.

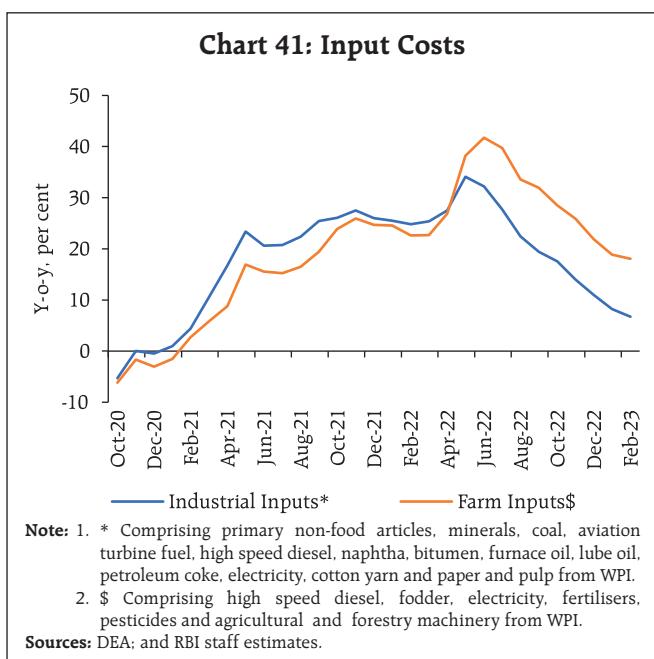
**Sources:** IOCL; Petroleum Planning and Analysis Cell (PPAC); and RBI staff estimates.

While kerosene prices declined after an increase in the previous month, LPG prices increased in March (Table 2).

**Chart 40: Essential Commodity Prices**



Sources: Department of Consumer Affairs, GoI; and RBI staff estimates.



Input cost inflation, as reflected in the wholesale price index (WPI), indicate significant moderation during the second half of 2022-23. The decline in input cost pressures has been greater for the industrial sector than for the farm sector (Chart 41).

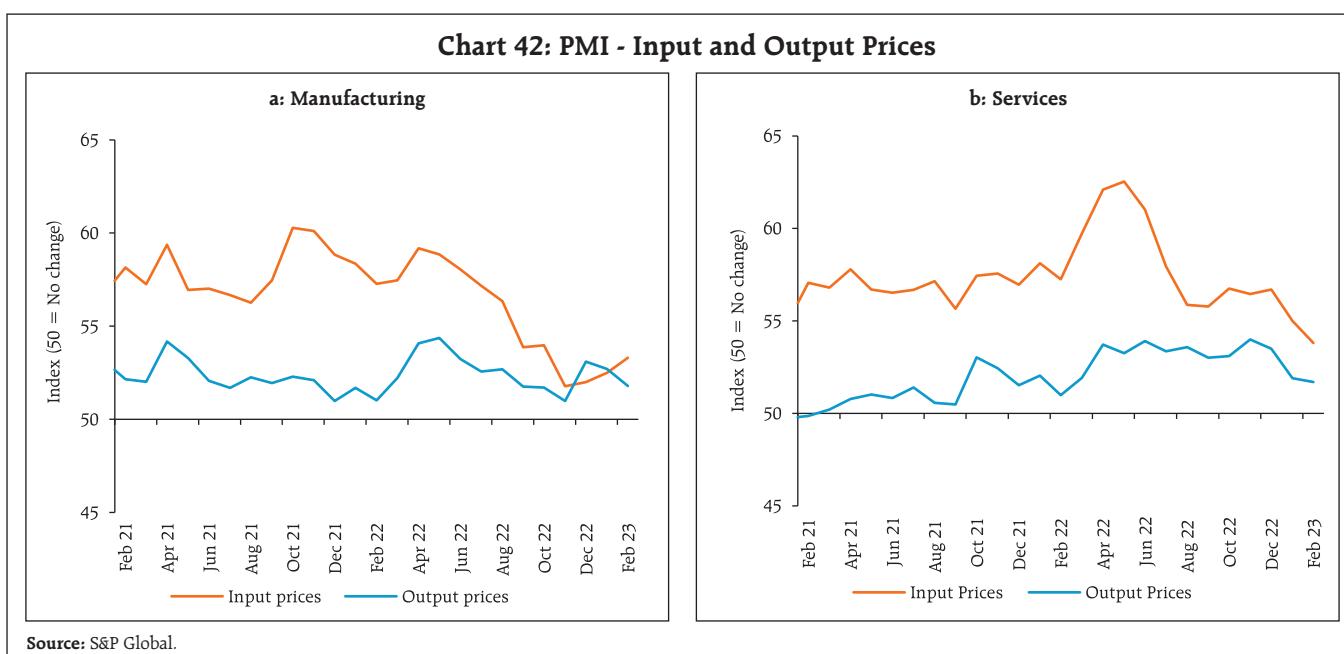
According to the PMI data, the rate of expansion in selling prices moderated in both manufacturing

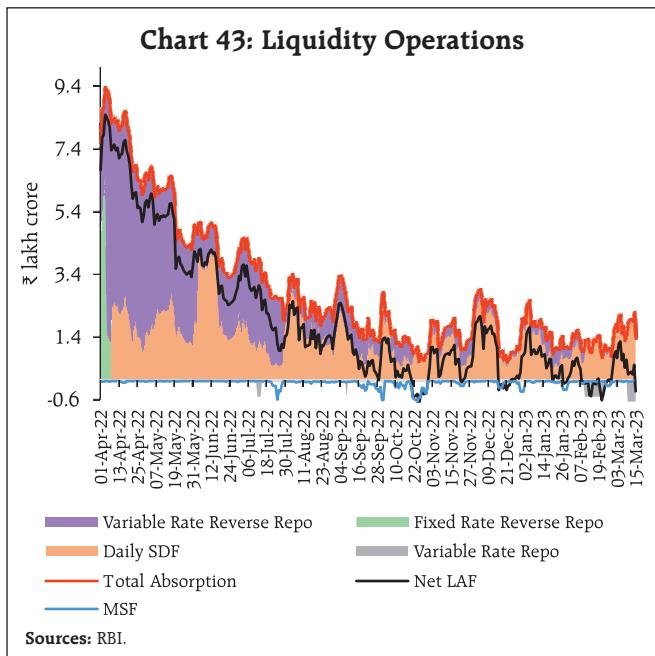
and services sector. Input costs for manufacturing sector, however, picked up pace sequentially (Chart 42a and 42b).

#### IV. Financial Conditions

Developments in liquidity conditions during the second half of February 2023 through March 15 were driven by movements in government spending. The banking system largely remained in deficit mode amidst outflows due to GST collections in the second half of February 2023. Liquidity conditions eased, thereafter, because of the usual government spending at the end of February and in the beginning of March. Overall, average daily absorptions under the liquidity adjustment facility (LAF) amounted to ₹1.5 lakh crore during February 16 through March 15, 2023 the bulk of which was absorbed under the standing deposit facility (SDF) [Chart 43].

The amount parked under the fortnightly variable rate reverse repo (VRRR) auction was lower at ₹0.13 lakh crore for the fortnight beginning February 24, 2023 as compared with ₹0.35 lakh crore in the previous auction. The Reserve Bank conducted another fortnightly variable rate repo (VRR) auction





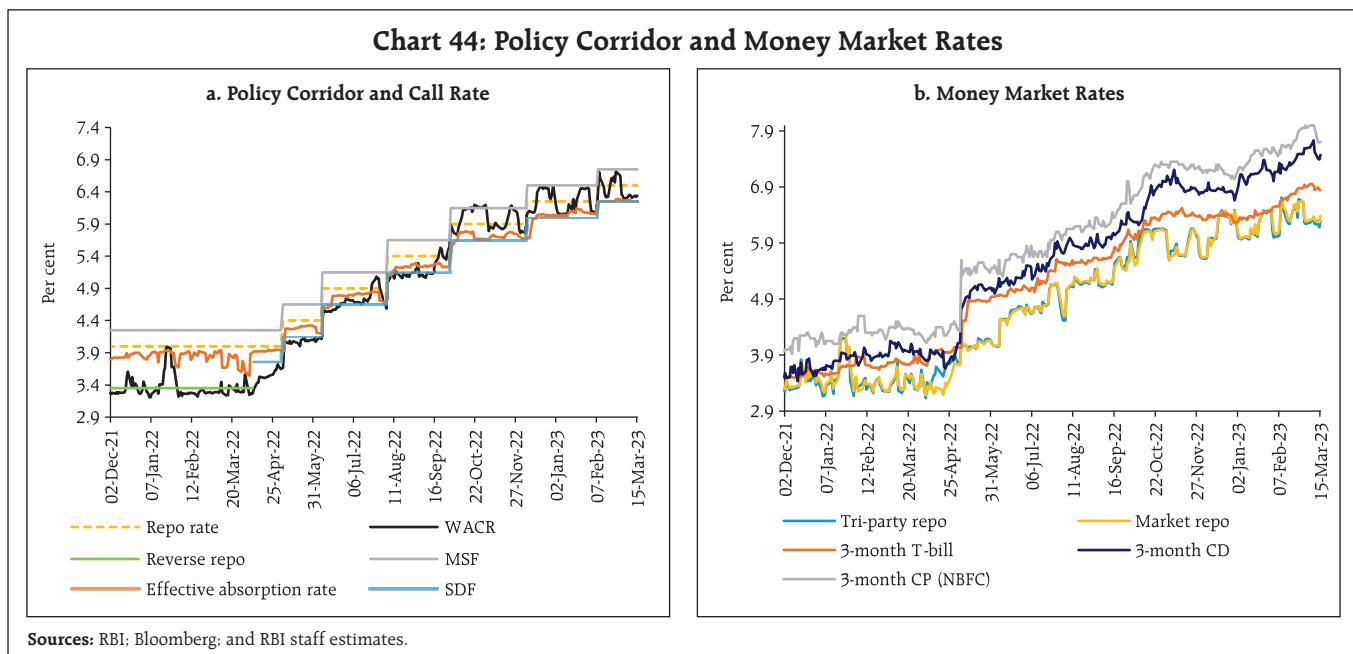
on March 10 injecting ₹0.8 lakh crore at a weighted average cut off rate of 6.53 per cent.

On a net basis (adjusted for injections through repo and MSF), average absorption was placed at ₹0.27 lakh crore during February 16 through March 15, 2023. The expected liquidity tightness in March due to (i) currency leakage; (ii) the scheduled maturity of

long-term repo operations (LTROs) and targeted long-term repo operations (TLTROs); and (iii) the usual year-end demand for funds is likely to be partially offset by an increase in government spending. The conduct of 14-day VRR auction reinforces the RBI's commitment to remain flexible and open to conducting two-sided operations as warranted by evolving liquidity conditions.

The weighted average call rate (WACR) – the operating target of monetary policy – traded (on an average) at 6.44 per cent – 6 bps below the policy repo rate during February 16 through March 15, 2023 (Chart 44a). Activity in the call market was steady, with average daily volume during February 16 through March 15, 2023 at ₹14,428 crore as compared with ₹14,219 crore during January 16 to February 15, 2023.

Rates in the collateralised segment also eased – the tri-party repo and market repo rates traded 13 bps and 9 bps, respectively, below the policy repo rate. Across the term money segment, however, rates firmed up with yields on 3-month treasury bills (T-bill), certificates of deposit (CDs) and commercial paper (CPs) for non-banking financial companies (NBFCs)



trading above the MSF rate reflecting moderation in surplus liquidity (Chart 44b).

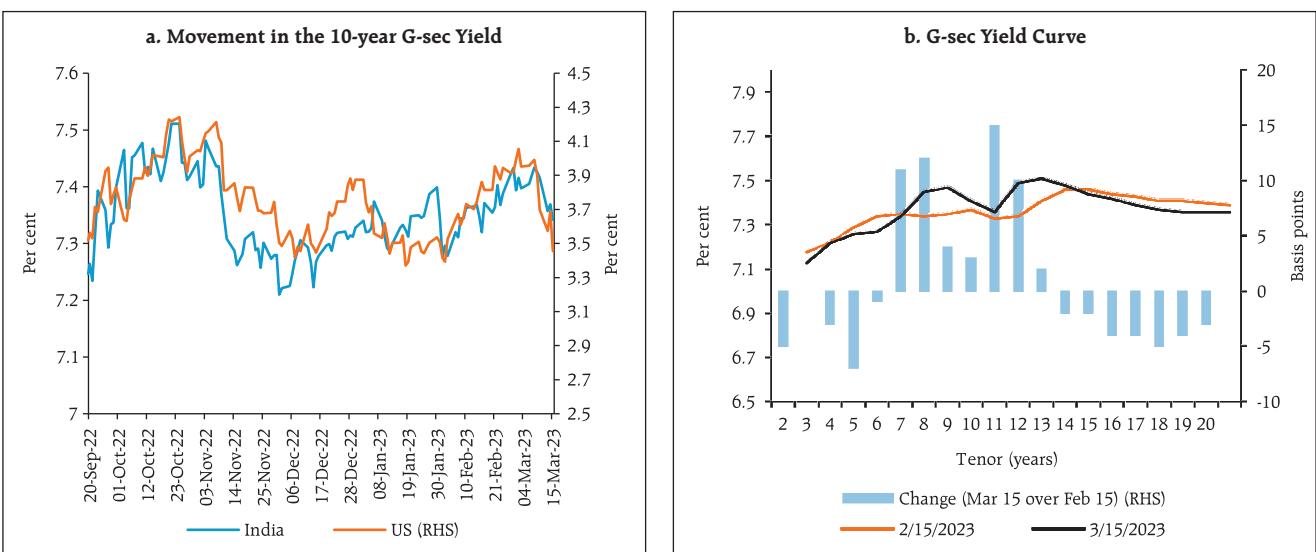
In the primary market, fund mobilisation through CD issuances was robust at ₹6.3 lakh crore during the financial year so far (up to March 10), higher than ₹2.0 lakh crore in the corresponding period last year reflecting banks' additional demand for funds on account of buoyant credit offtake. CP issuances, however, moderated significantly to ₹12.5 lakh crore during the financial year so far (up to February 28) from ₹19.0 lakh crore in the corresponding period last year, displaced by bank credit offtake. The average risk premium in the money market (3-month CP minus 91-day treasury bill) remained elevated at 98 bps.

The yield on the 10-year benchmark G-sec (7.26% GS 2033) tracked the movement in US treasury yields of corresponding tenor - the latter having surpassed the 4 per cent mark again in early March, similar to levels observed in October-November 2022.

Subsequently, the US treasury yields dropped sharply following the unravelling of the crisis in US-based Silicon Valley Bank (SVB) on March 10 (Chart 45a). The yield on US 10-year treasury slumped nearly 20 bps on March 10 and taking cues from it, the domestic yield on the 10-year benchmark softened closing at 7.34 per cent on March 15. Across the yield curve, G-sec yields hardened at the mid-end of the curve while longer term yields eased on March 15 compared to February 15, 2023 (Chart 45b).<sup>10</sup>

Corporate bond yields hardened across issuer categories and tenors, while spreads exhibited diverse movements (Table 3). Funds mobilised through corporate bond issuances were ₹0.66 lakh crore during January 2023, nearly half of ₹1.36 lakh crore in December 2022. The average risk premium in the bond market (5 year AAA minus 5 year G-sec) moderated to 43 bps during February 16 through March 15, 2023 from 50 bps during January 16 to February 15, 2023.

**Chart 45: Developments in the G-sec Market**



Sources: Bloomberg; CCIL; and RBI staff estimates.

<sup>10</sup> Long-term (10 year) G-sec yields are found to be significantly affected by global factors like US yields, suggesting their strong spillover impact on domestic financial markets (Abhilasha et al., RBI Bulletin, January 2023).

**Table 3: Financial Markets - Rates and Spread**

Instrument	Interest Rates (per cent)			Spread (basis points) (Over Corresponding Risk-free Rate)		
	Jan 16, 2023 – Feb 15, 2023	Feb 16, 2023 – Mar 15, 2023	Variation (in bps)	Jan 16, 2023 – Feb 15, 2023	Feb 16, 2023 – Mar 15, 2023	Variation (in bps)
1	2	3	(4 = 3-2)	5	6	(7 = 6-5)

**Corporate Bonds**

(i) AAA (1-year)	7.88	8.06	18	75	46	-29
(ii) AAA (3-year)	7.80	8.03	23	59	58	-1
(iii) AAA (5-year)	7.87	7.95	8	50	43	-7
(iv) AA (3-year)	8.50	8.75	25	129	130	1
(v) BBB-(3-year)	12.41	12.40	25	493	495	2

**Note:** Yields and spreads are computed as monthly averages.

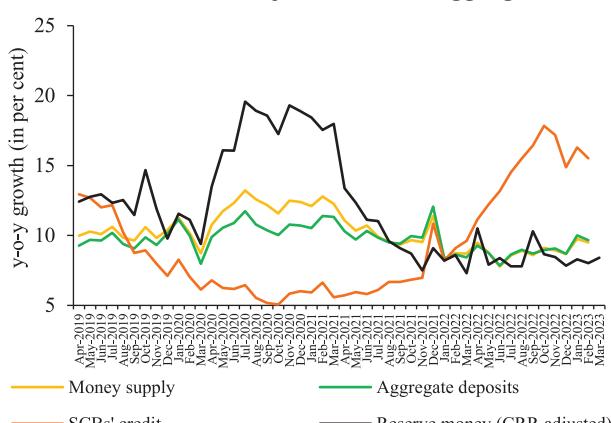
**Sources:** FIMMDA; and Bloomberg.

Reserve money (RM), excluding the first-round impact of changes in the cash reserve ratio (CRR), grew by 8.4 per cent on a y-o-y basis as on March 10, 2023 (8.9 per cent a year ago) [Chart 46]. Currency in circulation (CiC), the largest component of RM,

recorded a growth of 8.3 per cent (8.9 per cent a year ago). Money supply ( $M_3$ ) grew by 9.5 per cent as on February 24, 2023 (8.7 per cent a year ago), primarily driven by its largest component – aggregate deposits with banks – which went up by 9.7 per cent. The growth in scheduled commercial banks' (SCBs) credit stood at 15.5 per cent, as on February 24, 2023 down from a high of 17.8 per cent recorded in October 2022.

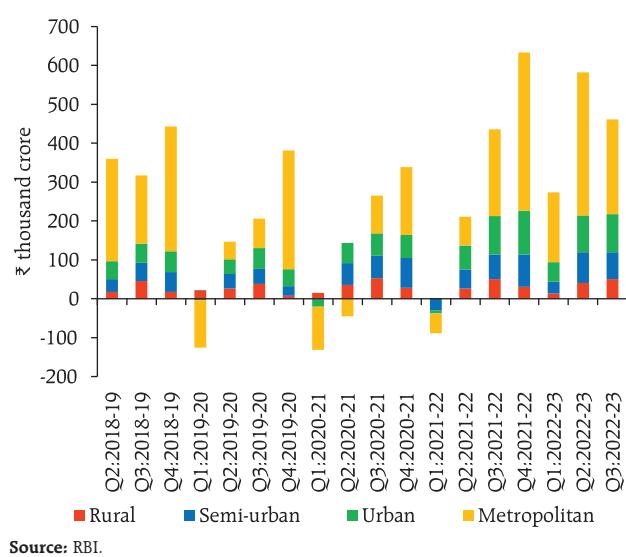
Despite some moderation in credit growth in recent months, the overall growth remains strong. In terms of geographical distribution, metropolitan branches of banks, which account for nearly 60 per cent of bank loans, led the lending expansion (Chart 47). Branches in the urban, semi-urban and rural areas also maintained double digit credit growth on a y-o-y basis.

Banks have revised their repo linked external benchmark-based lending rates (EBLRs) upwards by 250 bps in tandem with the increases in the policy repo rate since May 2022. SCBs have also increased their 1-year median marginal cost of funds-based lending rate (MCLR) by 135 bps during the period May

**Chart 46: Monetary and Credit Aggregates**

**Note:** 1. Data pertain to last reporting Friday of every month for money supply, aggregate deposits, and bank credit; and last Friday of every month for reserve money.  
2. Latest data for reserve money pertain to March 10, 2023; whereas for money supply as on February 24, 2023.

**Source:** RBI.

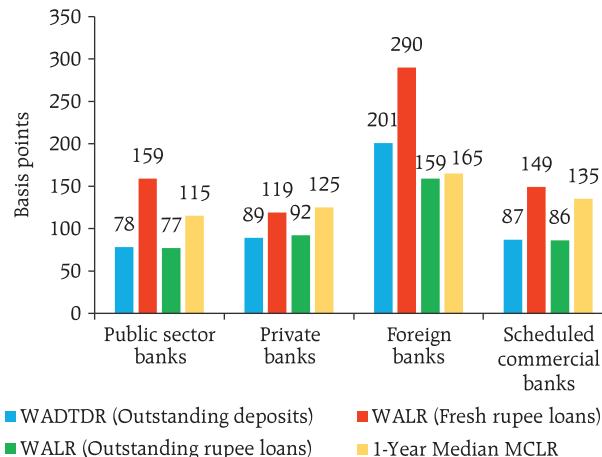
**Chart 47: Quarterly Incremental Credit according to Population Group**

2022 to February 2023. As a result of the increase in benchmark rates for pricing of loans, weighted average lending rates (WALRs) on fresh rupee loans of SCBs increased by 149 bps during May 2022 to January 2023. The increase in the share of EBLR linked loans, which accounts for a major share of outstanding floating rate rupee loans (47.6 per cent as at end-September 2022), has improved the pace of transmission to WALR on outstanding loans – the pass-through to WALR on outstanding rupee loans stood at 86 bps during May 2022 to January 2023.

Across bank groups, transmission to WALRs on fresh rupee loans of public sector banks (PSBs) has exceeded that of private sector banks (PVBs) in the current tightening period, *i.e.*, May 2022 to January 2023 (Chart 48). The WALR on fresh rupee loans of PSBs increased by 159 bps while that of PVBs increased by 119 bps. Lending rates of PSBs, however, remain lower than those of PVBs. The pass-through to WALR on outstanding loans was relatively better for PVBs than for PSBs.

Banks have also repriced their deposit rates higher in recent months to mobilise funds. The intensifying competition among banks to expand their deposit base may impel banks to increase deposit rates going ahead. The median term deposit rates (*i.e.*, average card rates

**Chart 48: Bank Group-wise Transmission to Lending and Deposit Rates (May 2022 - January 2023)**



Note: Data on 1-year median MCLR pertain to May 2022–February 2023 period.

Source: RBI staff estimates.

on retail deposits) on fresh deposits increased by 82 bps during May 2022 to February 2023 (Table 4).

As returns on fixed deposits improved and differentials with savings deposit rate increased in the recent period, the lion's share of bank deposits accrued to term deposits (Chart 49). On an annual (y-o-y) basis, term deposits recorded a growth of 13.2 per cent, whereas current and savings deposits increased at a moderate pace of 4.6 per cent and 7.3 per cent, respectively.

**Table 4: Transmission from the Repo Rate to Banks' Deposit and Lending Rates**

(Variation in basis points)

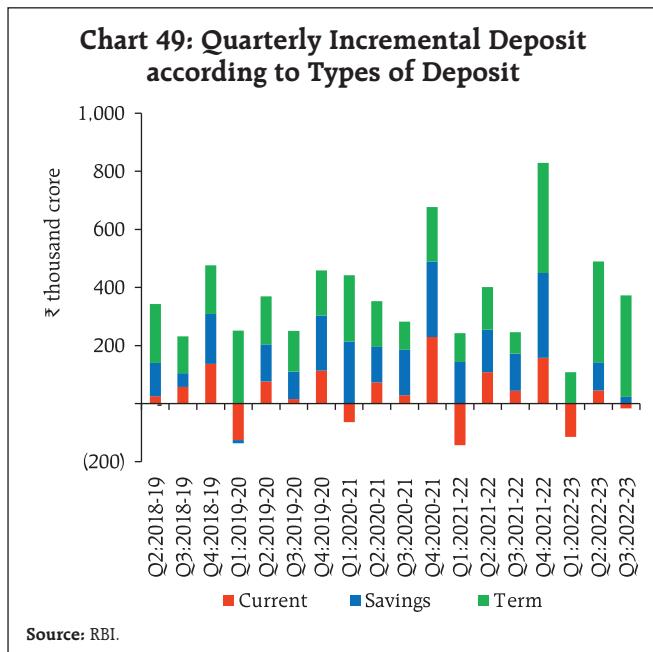
Period	Repo Rate (bps)	Term Deposit Rates		Lending Rates			
		Median Term Deposit Rate (Card Rates)	WADTDR-Outstanding Deposits	EBLR	1-Year MCLR (Median)	WALR - Fresh Rupee Loans	WALR-Outstanding Rupee Loans
		Retail Deposits	Retail and Bulk Deposits				
Easing Cycle Feb 2019 to Mar 2022	-250	-208	-188	-	-155	-232	-150
Tightening Period May 2022 to Feb 2023*	+250	82	87	250	135	149	86

Note: 1. Latest data on WALRs and WADTDRs pertain to January 2023.

2. 28 domestic banks have increased their EBLRs by 250 bps as at end-February 2023.

3. Acronyms: WALR: Weighted Average Lending Rate. WADTDR: Weighted Average Domestic Term Deposit Rate; MCLR: Marginal Cost of Funds-based Lending Rate; EBLR: External Benchmark based Lending Rate.

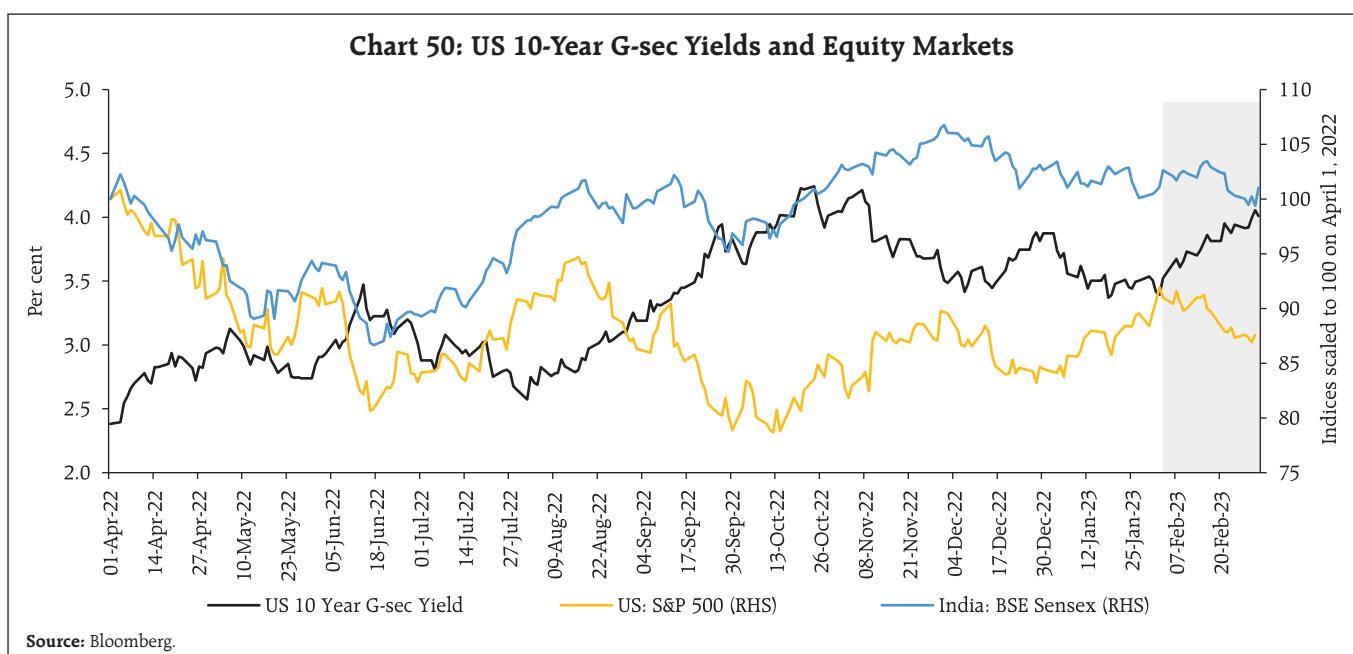
Source: RBI staff estimates.

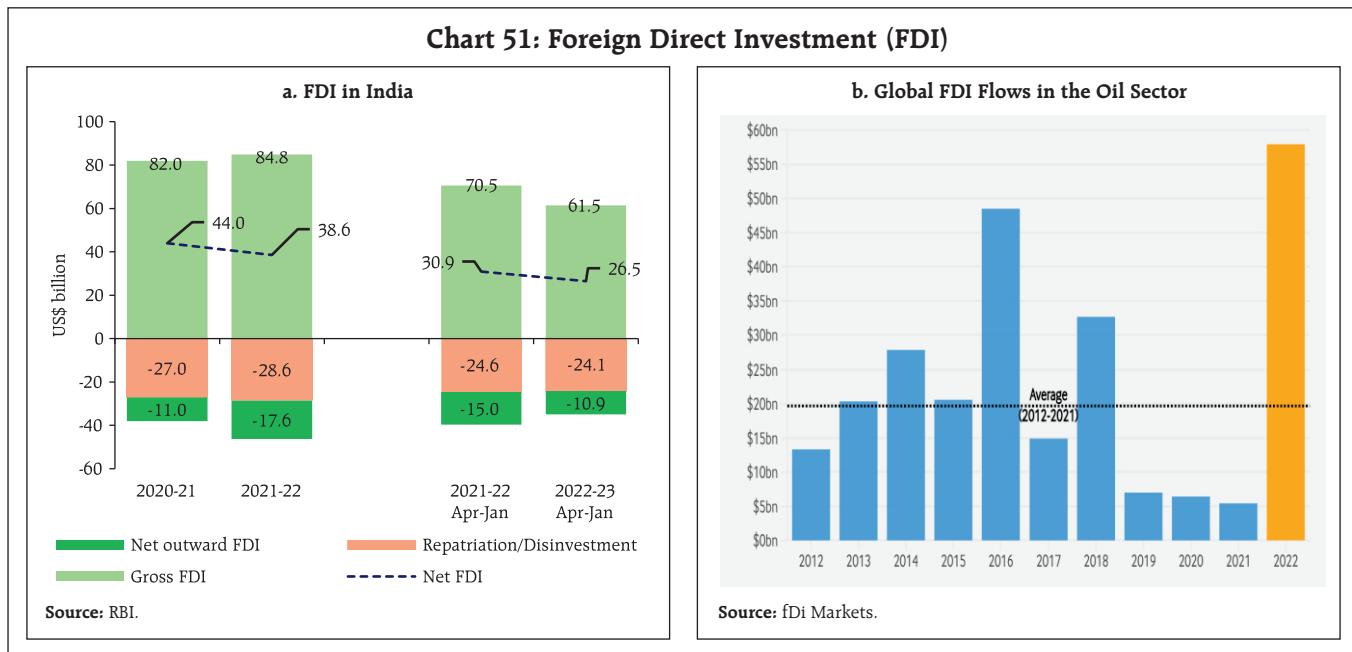


Hawkish minutes of the Federal Open Market Committee's (FOMC) meeting, a sharp rise in US treasury yields, and fresh geopolitical risks after Russia suspended its participation from the New Strategic Arms Reduction Treaty (START) dented positive sentiment in the Indian equity market during the second half of February 2023. Consequently, the

BSE Sensex reversed its earlier gains and registered a cumulative decline of 1 per cent during February 2023 (Chart 50). The BSE Sensex recovered its losses in early March 2023, aided by optimistic domestic and global economic data. Domestic equities, however, declined thereafter tracking the sell-off in global markets as the collapse of SVB and concerns over the financial health of a large European financial services provider dented investors' sentiments. Overall, the BSE Sensex declined by 1.6 per cent during the month so far to close at 57,990 on March 17, 2023.

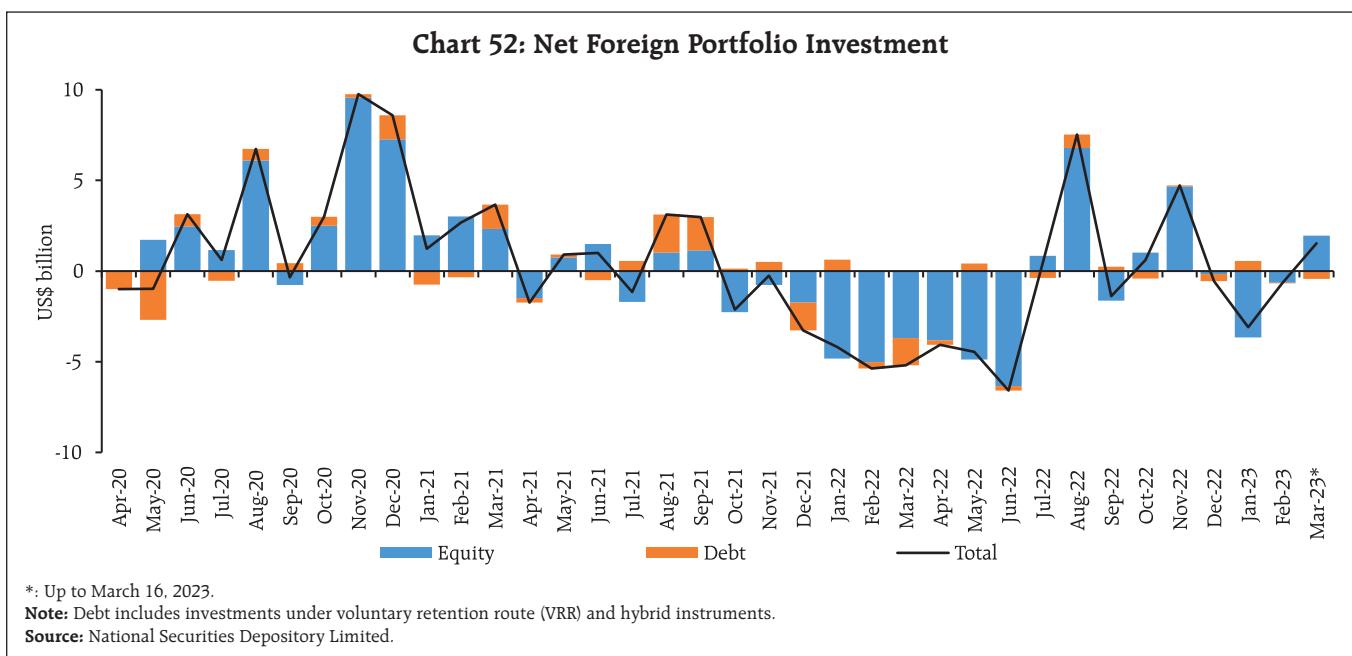
Gross inward foreign direct investment (FDI) moderated to US\$ 61.5 billion during 2022-23 (April-January) from US\$ 70.5 billion a year ago (Chart 51). Net FDI decreased to US\$ 26.5 billion during this period from US\$ 30.9 billion a year ago, mainly reflecting a decline in equity inflows. Manufacturing, financial services, computer services, retail and wholesale trade, and communication services received the bulk of FDI equity inflows during 2022-23 (April-January). Singapore, Mauritius, the US, the UAE and the Netherlands were the major source countries during this period. Globally, there has been an increase in the amount of FDI channelled towards the oil sector in 2022.

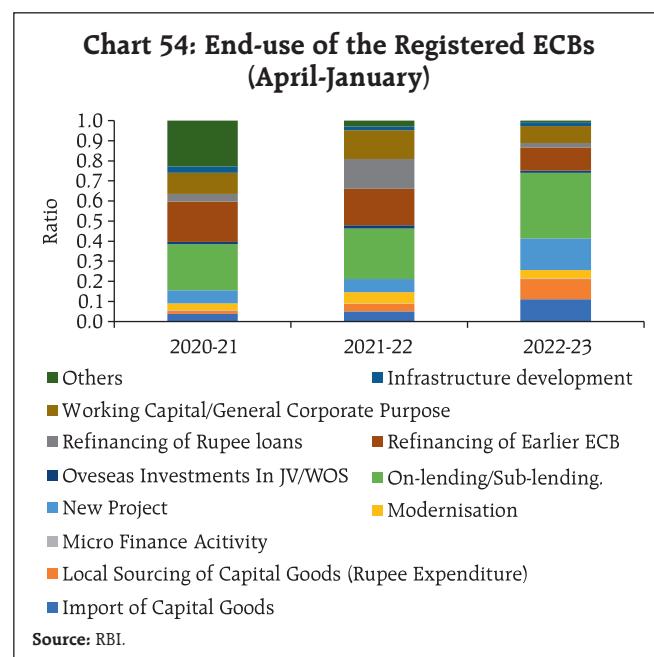
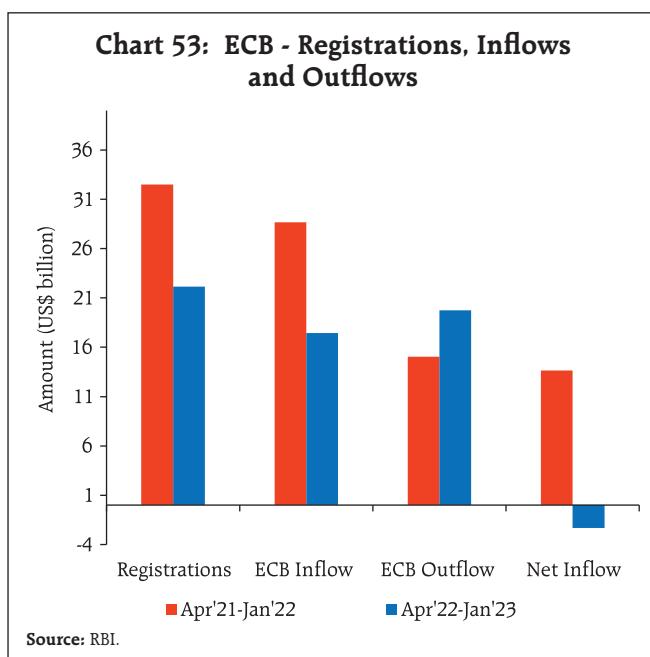




In March 2023 (up to March 16), foreign portfolio investments (FPIs) turned positive after three months since November 2022 and recorded inflows of US\$ 1.5 billion (Chart 52). Most of the outflows in February 2023 were from the equity segment. Among major sectors, automobiles,

consumer durables and financial services were the leading recipient sectors of FPI in equities during 2022-23 (April-February), whereas information technology, oil, gas and consumable fuels, and metals and mining sectors recorded the highest outflows.



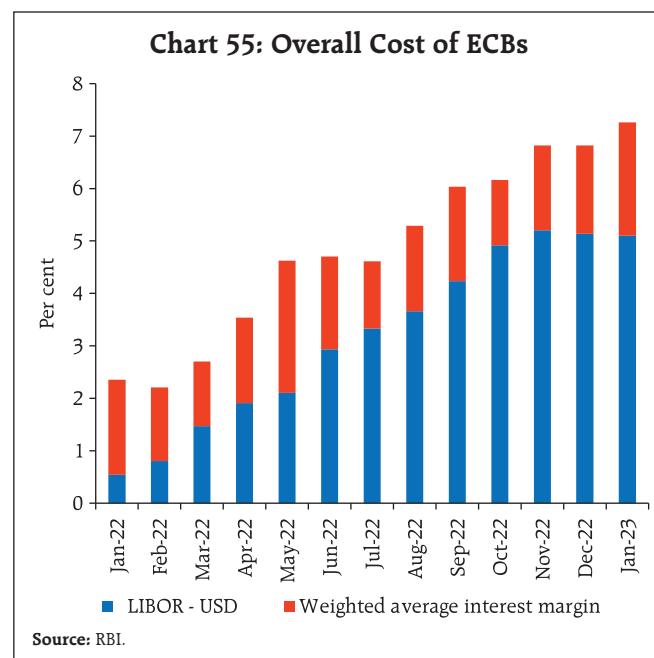


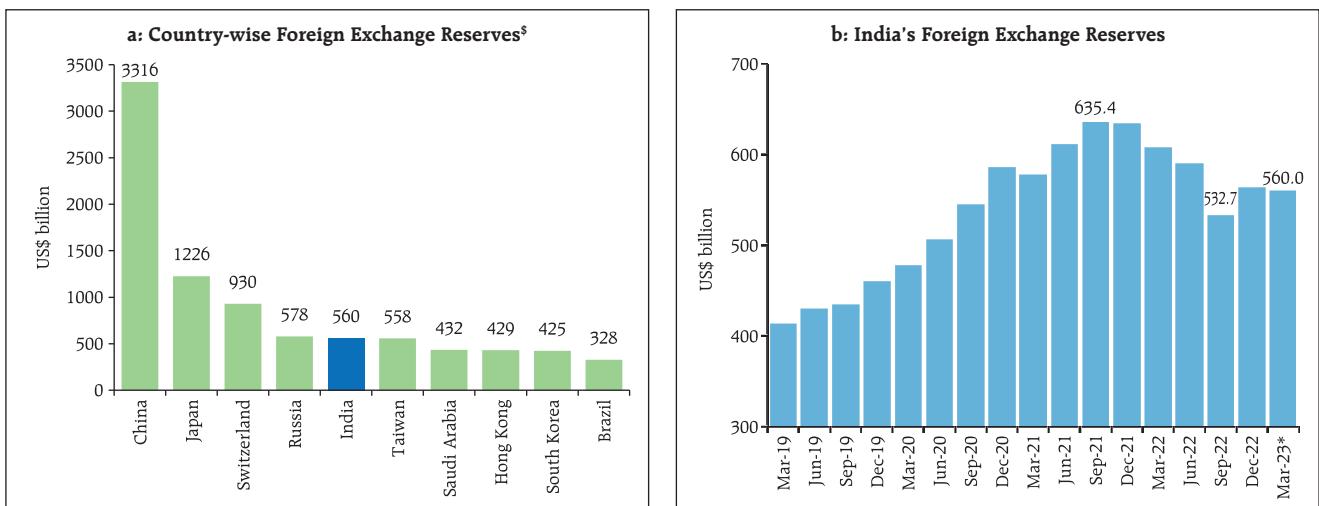
As compared with the corresponding period of the previous financial year, the amount of external commercial borrowings (ECBs) registrations and disbursements was lower by US\$ 10.4 billion and US\$ 11.2 billion, respectively, whereas principal repayments were higher during 2022-23 so far (up to January 2023). This resulted in net ECB outflows during the current financial year (Chart 53).

A substantial portion of newly registered ECBs are intended for domestic on-lending/sub-lending purposes, followed by borrowings for new projects, import of capital goods and refinancing of earlier ECBs (Chart 54).

During 2022-23 so far (up to January), major global benchmark rates, *viz.*, the London interbank offer rate (LIBOR) and the secured overnight financing rate (SOFR) rose by 319 basis points (bps) and 403 bps, respectively, in sync with the tightening of monetary policy in major economies. Combined with the movements in the weighted average interest margin (WAIM), the overall cost of ECB loans increased from 2.7 per cent in March 2022 to 7.3 per cent in January 2023 (Chart 55).

As of February 2023, India held the fifth largest foreign exchange reserves in the world (Chart 56a). India's foreign exchange reserves recorded a decline of US\$ 11.7 billion in February 2023 and stood at US\$ 560.0 billion as on March 10, 2023 (Chart 56b), covering more than nine months of imports projected for 2022-23. On a cumulative



**Chart 56: Foreign Exchange Reserves**

\$: Barring India (March 10, 2023), Russia (March 3, 2023), and Saudi Arabia and Switzerland (end-January 2023), for other countries foreign exchange reserves pertain to February 2023. \*: As on March 10, 2023.

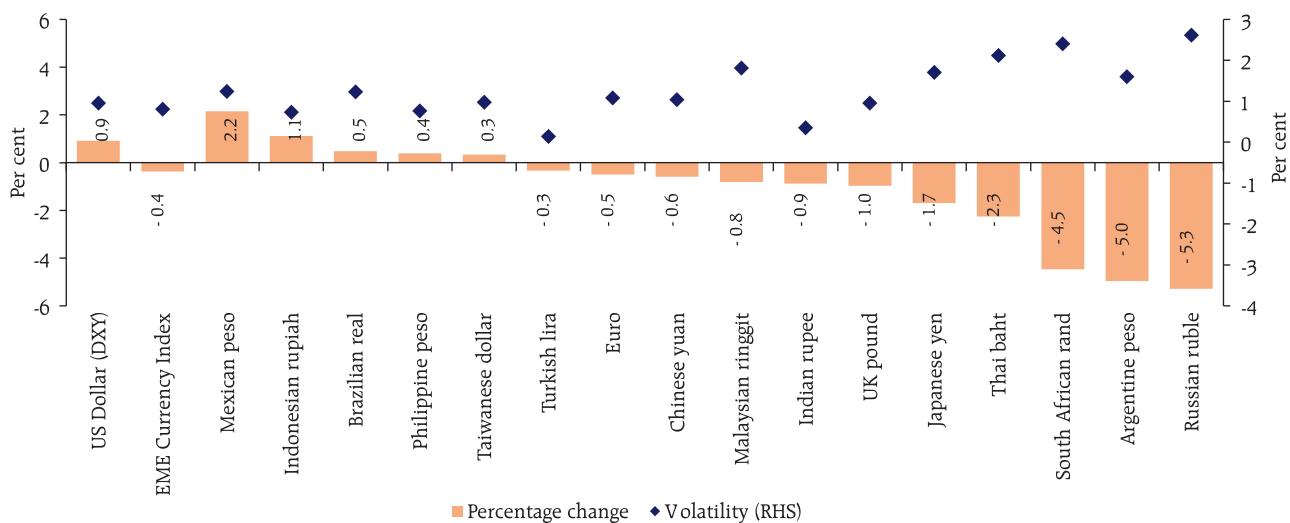
Sources: RBI; CEIC; and respective country websites.

basis, India's forex reserves increased by US\$ 27.3 billion since September 2022.

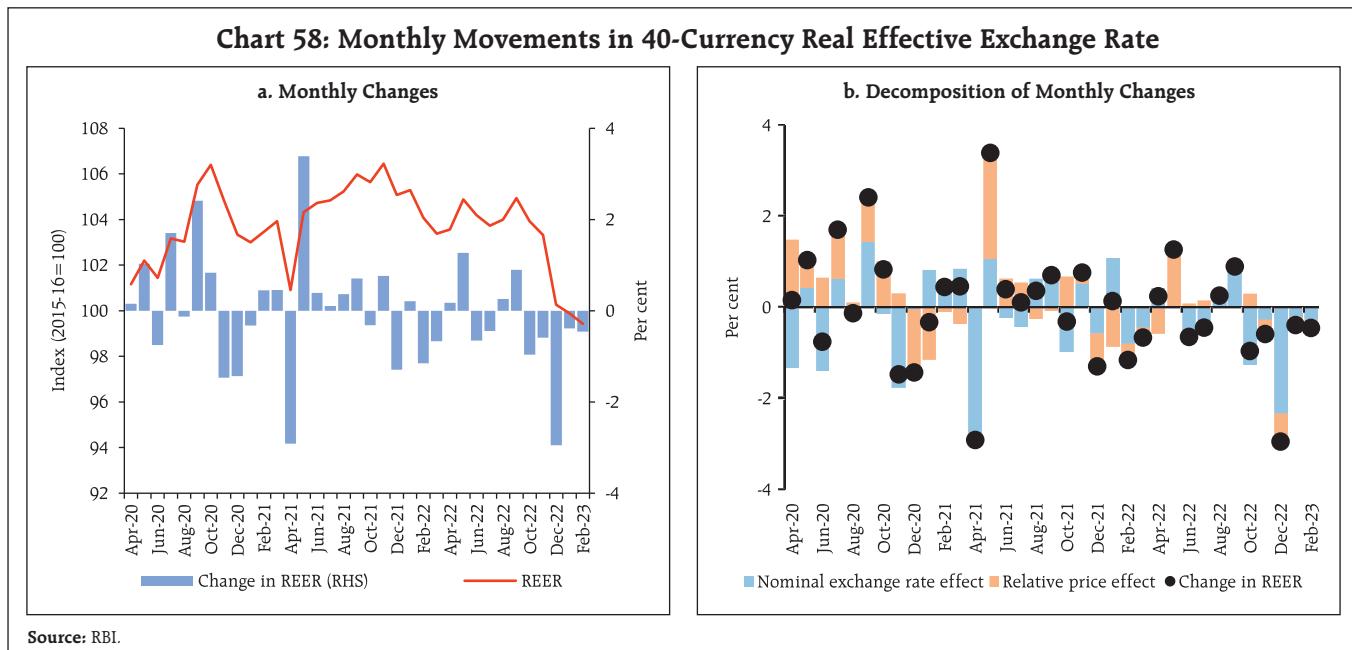
In the foreign exchange market, the Indian rupee (INR) depreciated *vis-à-vis* the US dollar (m-o-m) in February 2023 (Chart 57). The performance of the rupee was in line with many other EMEs and reserve currencies. Volatility in the movement of the INR, as

measured by the coefficient of variation was, however, lower than that of other currencies, except the Turkish lira in February.

In terms of the 40-currency real effective exchange rate (REER), the INR depreciated by 0.5 per cent in February 2023 (m-o-m) [Chart 58].

**Chart 57: Movements of Indian Rupee and Other Major Currencies against the US Dollar (February 2023, m-o-m)**

Sources: FBIL; Thomson Reuters; and RBI staff estimates.



## Payment Systems

Digital transactions through major payment modes maintained growth (y-o-y) in February 2023 (Table 5). The turnover in the National Automated Clearing House (NACH) recorded a strong uptick, buoyed by the disbursal of PM *Kisan Samman Nidhi* (PM-KISAN) installment of more than ₹16,800 crore in the month.<sup>11</sup> Under the Unified Payments Interface (UPI), peer-to-merchant (P2M) payments continued to gain in share over peer-to-peer (P2P) payments. With

the RuPay credit cards going live on the UPI platform<sup>12</sup>, merchant adoption is set to gain further traction. A marked expansion in e-commerce-based transactions kept credit card momentum upbeat for a year till February 2023, with the monthly spending of around ₹1 lakh crore.

In terms of cross-border digital payments, a landmark was achieved with the launch of the UPI linkage with Singapore's real-time payment system, PayNow, on February 21, 2023. In line with the growing

**Table 5: Growth in Select Payment Systems**

(y-o-y in per cent)

Payment System Indicators	Transaction Volume				Transaction Value			
	Jan-22	Jan-23	Feb-22	Feb-23	Jan-22	Jan-23	Feb-22	Feb-23
RTGS	15.7	12.6	14.3	11.2	13.9	20.1	14.1	16.7
NEFT	26.2	32.2	28.8	28.7	12.8	15.0	15.1	12.1
UPI	100.5	74.1	97.5	66.4	93.0	56.1	94.5	49.5
IMPS	27.0	7.8	32.0	6.4	34.1	23.4	39.7	21.9
NACH	28.8	-10.4	28.0	70.9	26.4	14.4	30.2	36.6
NETC	54.8	30.2	53.3	18.4	50.0	33.6	42.0	29.0
BBPS	130.2	59.8	121.2	54.1	148.8	66.6	136.2	63.4

Source: RBI.

<sup>11</sup> <https://pib.gov.in/PressReleasePage.aspx?PRID=1902564#:~:text=Under%20the%20Scheme%2C%20an%20amount,subject%20to%20certain%20exclusion%20criteria>.

<sup>12</sup> NPCI Press Release, February 2023.

popularity of the UPI, the Reserve Bank has extended the UPI facility to inbound travellers from the G20 nations for effecting local merchant transactions through the issuance of full-KYC prepaid payment instruments (PPIs). The Reserve Bank launched the second edition of the Global Hackathon – HARBINGER 2023 – with the theme 'Inclusive Digital Services'.<sup>13</sup> To further bolster digital adoption, the 'Har Payment Digital' mission has been initiated as a part of the Digital Payment Awareness Week (March 6 to 12, 2023). As a move to strengthen the oversight of crypto-based transactions, the government has brought trading, safe-keeping, and related financial services involving virtual digital assets (VDAs) within the purview of the Prevention of Money Laundering Act (PMLA), 2002.

### **Conclusion**

The NSO's end-February data release indicates that the Indian economy is intrinsically better positioned than many parts of the world to head into a challenging year ahead, mainly because of its demonstrated resilience and its reliance on domestic drivers. Even as global growth is set to slow down or even enter a recession in 2023 as global financial markets waver, India has emerged from the pandemic years stronger than initially thought, with a steady gathering of momentum since the second quarter of

the current financial year. Year-on-year growth rates do not reflect this pick-up of pace because by construction they are saddled with statistical base effects, and instead suggest a sequential slowing down through successive quarters of 2022-23 to an unsuspecting reader. Currently available forecasts of India's real GDP growth for 2023-24, including those of the RBI, settle between 6.0 and 6.5 per cent. But, as we wrote in last month's edition of the State of the Economy, what if at least 50 per cent of the ₹35,000 crore of tax relief proposed in the Union Budget is used by taxpayers for consumption and adds to private final consumption expenditure – a component of GDP? This is plausible because the proportion of an additional rupee of income that is spent on consumption by households in India is estimated at 0.54 (54 paise). And what if even a third of the additional allocation of ₹3.2 lakh crore budgeted for effective capital expenditure adds to gross fixed capital formation, another component of GDP? India's real GDP can go up from ₹159.7 lakh crore in 2022-23 to not just ₹169.7 lakh crore in 2023-24 as is currently being projected but to ₹170.9 lakh crore. This is simple arithmetic; hardly a hurray at half-time. Also, unlike the global economy, India would not slow down – it would maintain the pace of expansion achieved in 2022-23. We remain optimistic about India, whatever the odds.

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<sup>13</sup> The initiative invites proposals on digital banking services for the differently-abled, RegTech solutions for efficient compliance, use cases of Central Bank Digital Currency (CBDC), and the scalability of blockchain technology.



# **Consumer Price Index: The Aggregation Method Matters**

by Praggya Das and Asish Thomas George<sup>^</sup>

The present method of consumer price index (CPI) compilation in India encompasses aggregation of CPI across sectors (rural/urban) and States/Union Territories (UTs) for item level indices as well as for indices at sub-group/group and all-India level. This method of aggregation at times creates challenges for use of the index for monetary policy since the inflation based on it reflects, in addition to changes in retail prices of goods and services, data kinks that emanate from the aggregation methodology – the January and February 2023 CPI prints are the latest examples. This article discusses about its increasing incidence in the recent period and its quantification. It suggests that an alternate aggregation method in conformity with the international standards, proper treatment of zero prices and timely base revisions can address policy maker's concerns.

## **I. Introduction**

Consumer price index (CPI) measures changes in the prices of a representative basket of goods and services that households consume or acquire. CPI forms the basis of a national headline retail price inflation measurement and is one of the most extensively used indicator for public policy. For the central banks, inflation target mandates for the monetary policy are generally defined in terms of CPI and as such high quality CPIs are critical for effective monetary policy making. National statistical offices across globe, including India's National Statistical Office (NSO), place great importance on the quality and accuracy of national CPIs, as also their international comparability.

Following the release of the January 2023 provisional CPI print (on February 13, 2023) by NSO, there was considerable debate on the aggregation methodology followed in CPI as a result of large divergence in the headline CPI inflation published by the NSO over that of a derived overall CPI inflation that users computed from a weighted aggregation of the CPI item level data. The debate continued even after release of the February CPI data on March 13, 2023. In this context, the article attempts to draw light on the aggregation methodology used in CPI and its implications. Section II presents an overview of CPI and its compilation methodology. Section III deals with issues related to construction of CPI elementary indices, Section IV delves on the use of sectoral (rural/ urban) and State/Union Territory (UT)-level and item-level aggregation methodology and its impact on inflation computation. Section V discusses the policy maker's dilemma for analysing and forecasting inflation. Section VI provides recommendations for reconciling the divergences in future base revisions of CPI and concludes.

## **II. Consumer Price Index – An Overview of the Compilation Methodology**

Retail price indices in India have a long history, with the consumer price index for industrial workers (CPI-IW) being compiled since October 1946. The Government also compiled consumer price indices for agricultural labourers since September 1964. This was split into separate indices for agricultural labourers (CPI-AL) and rural labourers (CPI-RL) since November 1995. An economy wide gauge of consumer prices came into existence following the recommendations of the National Statistical Commission, 2001 (Chairman: Dr. C. Rangarajan). The all-India CPI series started from January 2011 with base 2010=100. The base was later revised to 2012 and the data for the new base series is available since January 2013.<sup>1</sup>

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<sup>^</sup> The authors are from the Monetary Policy Department, Reserve Bank of India. The authors are thankful to Dr. Rajiv Ranjan for his encouragement in preparing this article. Comments received from Shri Joice John and the editorial board are gratefully acknowledged. The views expressed in this article are those of the authors and do not represent the views of the Reserve Bank of India.

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<sup>1</sup> NSO also provided the back series starting January 2011 for the revised base year.

### *Scope of the All-India CPI*

The all-India CPI series is produced by the NSO<sup>2</sup> for three sectors – (i) rural (the series is called CPI-Rural), (ii) urban (CPI-Urban), and (iii) combined (rural + urban, called CPI-combined). The CPI-Combined index is produced separately for all-India and also for all States/UTs.

The CPI<sup>3</sup> series with base 2012 draws the weights of its basket of items from the NSS (National Sample Survey) 68<sup>th</sup> Round of Consumer Expenditure Survey (CES), 2011-12. These items are classified in CPI using the international standard COICOP (Classification of Individual Consumption of Items according to Purpose) to ensure international comparability while tailoring in some adjustments to fit appropriately to the Indian context.

### *Construct of the All-India CPI*

The CPI series uses geometric mean for compilation of elementary indices, the lowest level of aggregation and the lowest level of price indices, constructed primarily for products for which explicit expenditure weights are available within a COICOP class. To compute the elementary indices, NSO uses the ratio of geometric mean of prices, or the Jevons index, the most preferred metric in terms of its statistical properties (Verma, 2016). The details of the construction of elementary indices of CPI are discussed in Section III.

The elementary indices are combined to arrive at higher level indices using a Laspeyres index with consumer expenditure of the base year as weights. The Laspeyres formulation ( $P_L$ ) measures current prices weighted by base quantities divided by base prices weighted by base quantities.

$$P_L = \frac{\sum_{i=1}^n p_i^t q_i^b}{\sum_{i=1}^n p_i^b q_i^b} \quad \dots(1)$$

$$= \frac{\sum_{i=1}^n p_i^t q_i^b \times p_i^b q_i^b / p_i^b q_i^b}{\sum_{i=1}^n p_i^b q_i^b} \\ = \sum_{i=1}^n \frac{p_i^t}{p_i^b} \times w_i^b \quad \dots(2)$$

where  $w_i^b = \frac{p_i^b q_i^b}{\sum_{i=1}^n p_i^b q_i^b}$  is the weight of commodity  $i$  in the base period  $b$ , i.e., the share of the actual expenditure on commodity  $i$  in period  $b$ ,

$p_i^b$  is the price of item  $i$  in the base period  $b$ ,

$p_i^t$  is the price of item  $i$  in the period  $t$ , and

$q_i^b$  is the quantity of item  $i$  sold in the base period  $b$ .

Typically, a Laspeyres index has the base period  $b$  equal to 0 i.e., the reference period itself. As noted in the Practical Guide to Producing Consumer Price Index (PGPCPI) 2009, of United Nations Economic Commissions for Europe, et al., weights are usually derived from an earlier period, i.e.,  $b < 0$ . This is often the case because it may take a year or longer to compile the expenditure weights used in CPI from the consumption expenditure surveys. Thus, the equation used in the CPI is effectively a Young or a Lowe index or as a commonly used nomenclature, a Laspeyres-type index.

Most CPIs across globe adopt a Laspeyres-type formulation (PGPCPI, 2009) since for most price indices only base period weights are available.

Laspeyres index has the advantage that it is one of the more transparent of the formulae available and is more easily understood by the users. Since CPI is a weighted aggregation of un-weighted elementary indices, the key is the construction of elementary indices.

NSO covers 1181 rural and 1114 urban markets to collect prices and these markets are distributed equally across four weeks of a month to capture weekly price variations. The present CPI has a weight reference

<sup>2</sup> The erstwhile Central Statistics Organisation (CSO) and National Sample Survey Organisation (NSSO) were merged into a single entity called the National Statistical Organisation (NSO) in 2019.

<sup>3</sup> Unless otherwise indicated, CPI will mean the all India CPI-combined index.

year of July 2011-June 2012 (reference period of NSS 68<sup>th</sup> Round) and price reference year (base year) is the calendar year 2012.

The provisional CPI indices (sub-groups/groups/ headline) are released for all-India, rural and urban sectors as also for various States/UTs on the 12<sup>th</sup> of every month<sup>4</sup>. The all-India combined index at item-level is also released alongside. The index for a month is finalised along with the subsequent month's data release.

### III. The Elementary Indices

Elementary indices are the basic building blocks of consumer price indices and are aggregated on the base year weights to arrive at monthly indices (equation 2). These weights remain static unless the series is revised to a new base, which is why CPI is called a fixed base index. Since NSO uses Jevons index, in the price relative  $p_i^t/p_i^b$ , both  $p_i^b$  and  $p_i^t$  are geometric means of monthly prices collected from different markets for the  $i^{th}$  item in the base year  $b$  and in the corresponding current period  $t$ , respectively.

NSO fixes specification of items for which prices are collected after identification of popular markets and selection of shops/outlets for different commodities in these markets. Commodity specifications are defined under structured product description (SPD), which uniquely identifies the product by specifying its various features including brand, variety, unit and quality (CSO, 2014a).

#### *Seasonal and Missing Items: Cross Country Practices*

While computing price relatives, CPI compilers face several challenges – one of which is regarding treatment of seasonal products. Seasonal products are those products that are available during certain seasons and not available during rest of the year, e.g., fresh fruits.

The PGPCPI, 2009 and *Consumer Price Index Manual: Concepts and Methods*, 2020 by the multilateral agencies International Monetary Fund, et al., provide two alternate ways of dealing with seasonal items: the first one is a *fixed weight approach* that uses the annual weight for the seasonal product in all months using an imputed price in the out-of-season months. While the fixed weight approach is theoretically consistent with a fixed basket CPI, there are issues on choice of imputation method when the prices of the product are not available. The second method, which the PGPCPI suggests is seasonal or *variable weight approach* where a changing weight is attached to the product in various months.

The Harmonised Index of Consumer Prices (HICP) considers seasonal weights method wherein weights for out-of-season seasonal products are zero or set to zero – thus, when an individual product is out of season, its weight is zero and when a product is in season, its weight corresponds to the actually observed quantities (European Union, 2022).

Some countries impute price of an item that is out of season and unavailable based on changes observed in the prices of close substitutes or items in the same expenditure class (Australia, 2018 and Canada, 2023).

NSO uses the *variable weight approach*, whereby a zero weight is given to the item in months when it is out of season and product's original fixed weight is used when in season. However, if a non-seasonal item is temporarily out of stock and no price is reported, NSO uses *fixed weight approach* and imputes the current month price by multiplying price of the same item in the previous month with average price relative of current month prices to last month prices for rest of markets of the same item where both current and previous month prices are available. The imputation is done within town in case of CPI (Urban) and within State in case of CPI (Rural).

<sup>4</sup> Or the next working day if 12<sup>th</sup> is a holiday.

### *Subsidised Prices – The case of Zero Price: Cross Country Practices*

Other category of products, that require special mention are items covered under government's social protection services. Products covered under CPI are generally priced items on which final consumption expenditure is incurred by households. Zero price of a product are cases of free social transfers in kind that are usually excluded from the scope of CPIs. The *Consumer Price Index Manual: Concepts and Methods, 2020*, by the multilateral agencies discusses that "Social transfers cannot be ignored, however, when governments and non-profit institutions decide to introduce (or eliminate) charges for them ... increases in their prices to households from zero to some positive amount increase the cost of the basket and should be captured by a CPI ... if the price decreases from some positive amount to zero, this also must be reflected in the CPI. The question remains how to deal with the weight for that item. One option may be to use a zero price and adjust the weights during the next update. Another option may be to redistribute the weight to the other items within the class. Finally, it may be decided that the best approach would be to redistribute the weight broadly over all items."

The US Bureau of Labor Statistics (2020) also treats any changes to fees that the government charges for items, such as admission to a national park, as in-scope changes in price for compilation of CPI. If the subsidy is cut and the fare is raised, the CPI will reflect this as a price increase. Unusual price movements are reviewed carefully and checked for validity as per the US *CPI, Handbook of Methods*. The price index formula cannot handle a price of zero (or free), therefore, a zero price is adjusted to a very small insignificant non-zero price.

The services that were previously provided free and become chargeable subsequently, for example introduction of university fees in 1998 in the UK, create two-fold problems. One, there is no weight in the base period (expenditure is zero) and two, there is no base

period price with which to compare the new price to create a price relative. To address this, UK Office of National Statistics uses the standard formulation of the Laspeyres index in terms of quantities and price levels, rather than expenditure weights and price relatives. The new product is treated as if it were already included in an existing section (or item) index with zero price but with non-zero quantity equal to its consumption in the base period. The index is then adjusted from the point of introduction of the new price to take on the new expenditure (ONS, 2019). Their manual does not discuss the treatment when an existing non-zero price becomes zero.

Australian Bureau of Statistics (ABS) uses equally weighted GM as an elementary index formula. GM produces undesirable results if price of an item falls to zero, for example, as in the case if the government introduces a policy to subsidise fully a particular good or service. Where there is a likelihood of a zero price occurring in the sample and it is inappropriate to use the GM, then the ABS generally uses RAP (relative of average prices) formula, wherein prices are used instead of price relatives. The RAP formula uses the arithmetic mean of prices and not of the price relatives (ABS, 2018).

In India, prices of products distributed at discounted rates under government's public distribution system (PDS), covering wheat, rice, sugar, and kerosene, fall in this category. NSO collects prices of PDS items in respect of three groups of beneficiaries – above poverty line (APL), below poverty line (BPL) and *antyodaya anna yojana* (AAY) households<sup>5</sup> – and price relatives with respect to the base price of respective PDS item are worked out separately for these households. Weighted average of these price relatives is taken to arrive at PDS item index based on number of households having these cards from the

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<sup>5</sup> Since the CPI (2012=100) market survey was done before the introduction of National Food Security Act (NFS) 2013, the erstwhile PDS classification is used, as against the new classification of AAY, priority and non-priority households for PDS since the introduction of NFS.

data of CES, 2011-12 (CSO, 2014 and 2014a) as weights.

While NSO includes PDS items and values them at the subsidised price consumers pay for them, there are no explicit discussions on dealing with zero price in CSO's manuals on CPI (CSO 2014 and 2014a). The multilateral agencies' PGPCPI 2009 manual on which NSO's CPI methodology is broadly drawn also discusses the challenges faced by compilers to measure social security system and mentions that "The social security systems can also cause complications. The CPI compiler is advised to keep in close contact with their policy colleagues to obtain the information which is necessary in order to make informed decisions about which charges should be included in the index and how they should be measured, and also to gain access to relevant sources of data."

#### **IV. Aggregation in CPI**

Aggregation of price indices in CPI to arrive at headline all-India CPI published by NSO is done in two stages. In the first stage, price indices are calculated for elementary aggregates, which are known as item level indices. These elementary indices are the lowest level of aggregation where prices are combined into price indices and for which explicit expenditure weights are available. In the second stage, these elementary indices are aggregated to obtain higher level indices using consumption expenditure as weights in the Laspeyres index formula (see Section II). By using this vertical aggregation method, sub-group/group/general (or overall) indices for each State/UT are compiled by NSO, separately for rural and urban sectors. These sub-group, group and general indices are aggregated as weighted average, using share of the respective States (and UTs) in the total expenditure of that item to compile all-India sub-group, group and general indices respectively (CSO, 2014). In the case of the all-India item indices, each item index is arrived at by aggregating the items across the sectors and State/UTs using total item expenditure as weight. We call this

method of aggregation as horizontal aggregation (*i.e.*, across rural/urban and States/UTs) of price indices.

The discourse on geographic and national indices presented in the multilateral agencies' *Consumer Price Index Manual: Concepts and Methods, 2020*, and also in the manual's earlier vintages, mentions that CPIs are often calculated for individual geographic areas within a country and then aggregated to provide a national index based on the price movements in the individual areas. The aggregation approach includes preparation of elementary aggregates that are combined using weights for each item index in the geographic area to derive the all-items CPI for the area. The elementary item indices are then aggregated using their area weights to derive the national item index. The manual says that the same result is obtained if the national item indices are aggregated using the national item weights.

The Laspeyres-type index that NSO uses to prepare CPIs has a desirable property of consistency in aggregation. Accordingly, whether the indices are computed horizontally, *i.e.*, across sectors and across States/UTs for items/sub-group/group/overall; or alternately, vertically, *i.e.*, the sub-group/group/overall indices are derived taking weighted average of their constituent item indices, they should lead to the same index number. Thus, no matter in which order the elementary price indices are aggregated (first by geographical stratum and then by product class, or the reverse) the aggregate index results are the same (Statistics Canada, 2023).

The above assumes that the basket of products used to calculate the national CPI contains a sufficiently large sample of price and quantity observations belonging to different regions so that the same dataset can be used to calculate the regional and national CPI. In the case of India, NSO methodology and sample size ensures compliance with this requirement. This horizontal and vertical equality can also be algebraically established.

### *Occurrences of Divergence in Price Indices based on Aggregation Methods*

The present method of horizontal aggregation of CPI, across sectors and States/UTs for all-India item level indices as well as for indices at sub-group/group and overall, at times creates challenges for use of the index for monetary policy since the inflation based on it reflects, in addition to changes in prices of goods and services, data kinks that emanate from the aggregation methodology.

Divergence between price indices compiled by horizontal and vertical aggregation can arise mainly from two sources – missing prices (for seasonal or non-seasonal reasons) and treatment of zero price (as was seen in the January and February 2023 CPI prints). In the absence of missing prices and/or zero prices, whether across items and/or across regions, indices obtained by horizontal aggregation method or the vertical aggregation method will be identical, barring minor issues due to rounding off.

In the case of missing prices, NSO follows the internationally accepted procedures. As discussed in Section III, for seasonal products such as fruits/vegetables the weights are imputed using the *variable weight approach* suggested by PGPCPI as discussed earlier. For other seasonal items, such as clothing, and for non-seasonal items that are temporarily out of stock, prices are imputed using the *fixed weight approach*.

In situations when price becomes zero, such as when the government decides to fully subsidise a particular good or service that was hitherto charged nominal price, there is no explicit mention in the NSO manuals on its treatment. Such cases may be handled by weight imputation or price imputation as discussed in the previous paragraph. However, given that the price has actually been slashed to zero, weight imputation may be preferred. Lastly, zero price itself may be taken exactly as what it is – a zero price – and index could be computed accordingly.

The need to discuss the occurrence of missing and zero prices is crucial because in such case overall inflation derived through the vertical aggregation method by users can differ, and at times the divergence could be significant, from not only the published headline CPI inflation, but also for sub-group/group inflation.

### *Impact of the Aggregation Methodology*

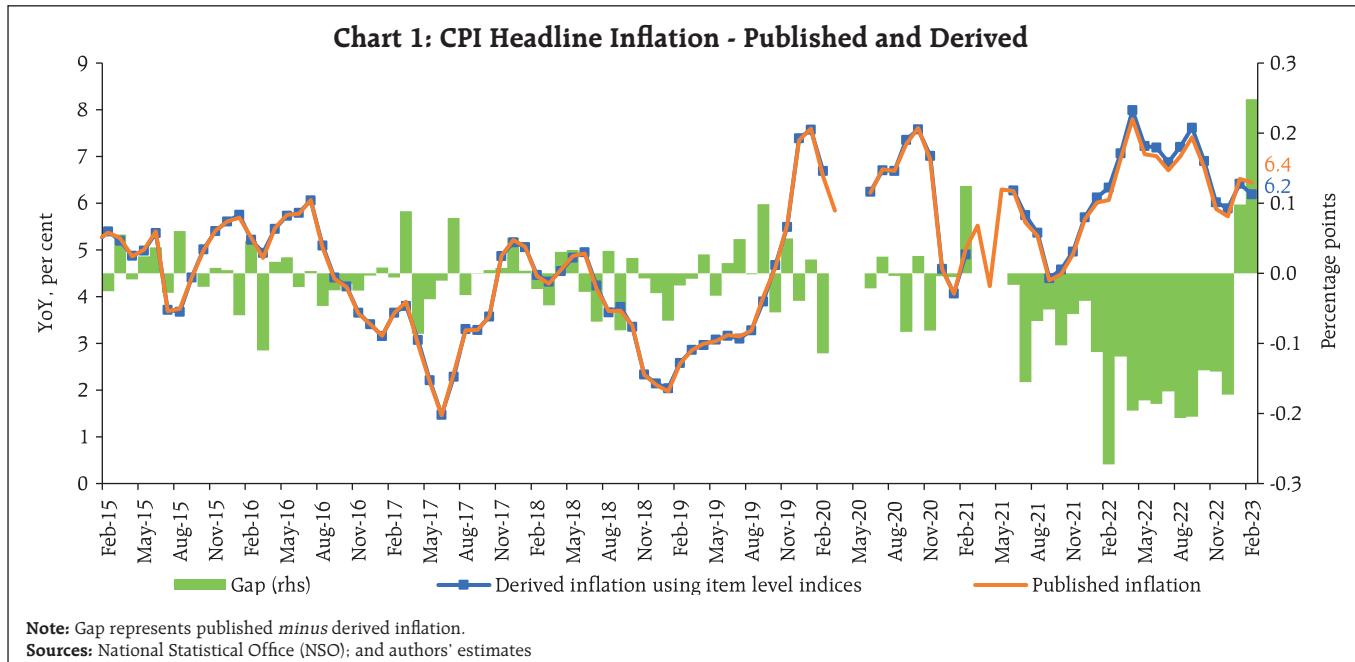
The existence of divergence in CPI index when the items are aggregated vertically from those obtained from horizontal (published) aggregation was discussed in Das and George (2017). It was noted that the method of horizontal aggregation was adopted for constructing CPI but not for WPI (wholesale price index), where the sub-groups/groups/headline indices are arrived by weighted aggregation of lower-level indices, ensuring vertical additivity.

A comparison of published CPI headline inflation (using horizontal aggregation of State/UT level data for rural and urban areas) with overall inflation derived using vertical aggregation of item level CPI data, for the period 2015 to 2023 (up to February), shows that, the divergence in inflation has been bidirectional (Chart 1) and on an average (-) 3 basis points (bps), in the range of (-) 27 bps to (+) 25 bps (Annex Table A1).<sup>6</sup> The bidirectionality of divergence in inflation rates was visible especially during pre-COVID period. Since 2021, however, the divergence between published and user derived headline inflation has become large (Chart 1).

As noted in Section II, one of the major sources for divergence in inflation due to the different aggregation methods could be missing prices. The sub-groups that face recurrent seasonal missing prices are the fruits and vegetables sub-groups. NSO, following the international best practices, in instances of seasonal non-availability of certain fruits/vegetables, imputes their weight among other items in the closest category.

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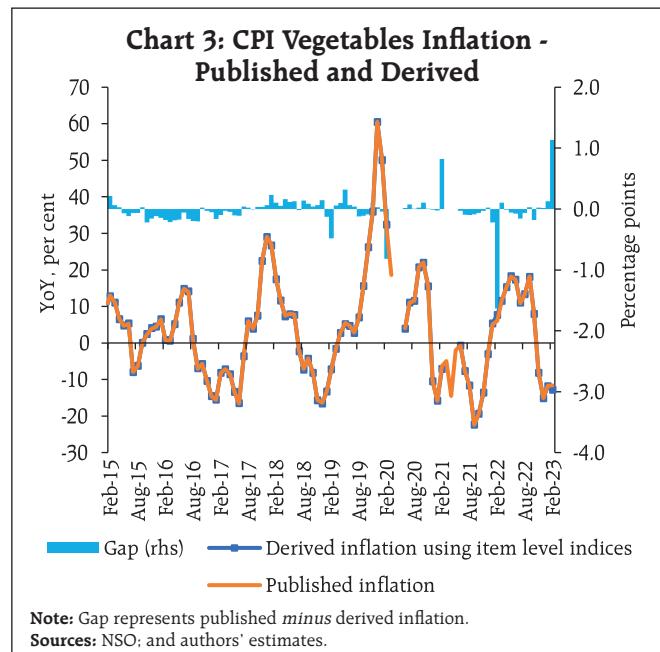
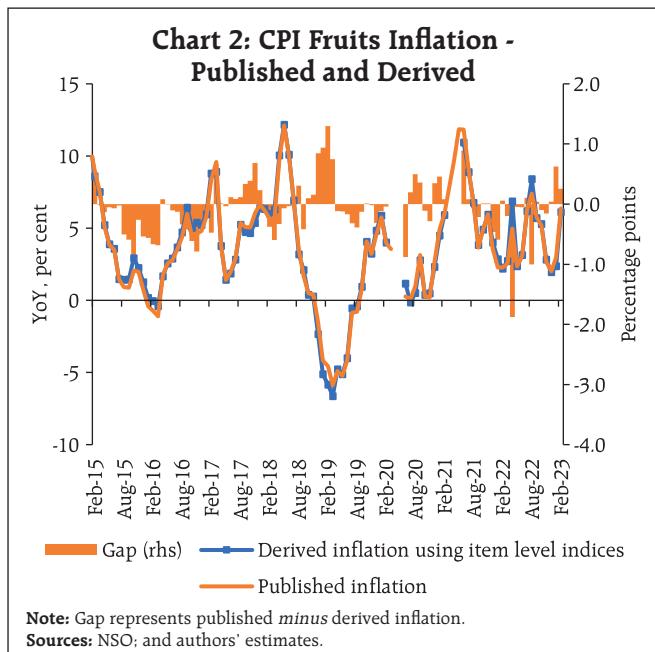
<sup>6</sup> The divergence in index between the published CPI and the user derived CPI was in the range of (+) 0.51 points and (-) 0.11 points (Annex Table A2).

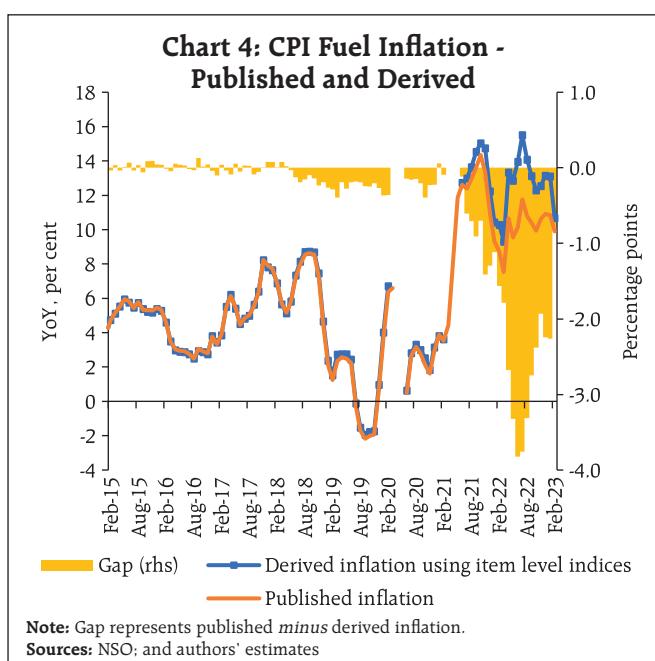


Hence, those sub-groups show divergence between published inflation and inflation based on derived indices; however, such divergence is bidirectional and non-systematic (Charts 2 and 3).

Since June 2021, the fuel group has been a source of large systematic unidirectional divergence between published inflation and derived inflation (Chart 4). In this case, the inflation obtained by vertical aggregation

of CPI fuel item indices far exceeded the published fuel group inflation figures. In the absence of the availability of detailed price-quote data, the exact reason for the divergence cannot be identified, but it could have come from the non-availability of price quotes of traditional cooking fuels (such as firewood, coal, cow dung cakes), that over the decade old base-year would have undergone behavioural shifts (the

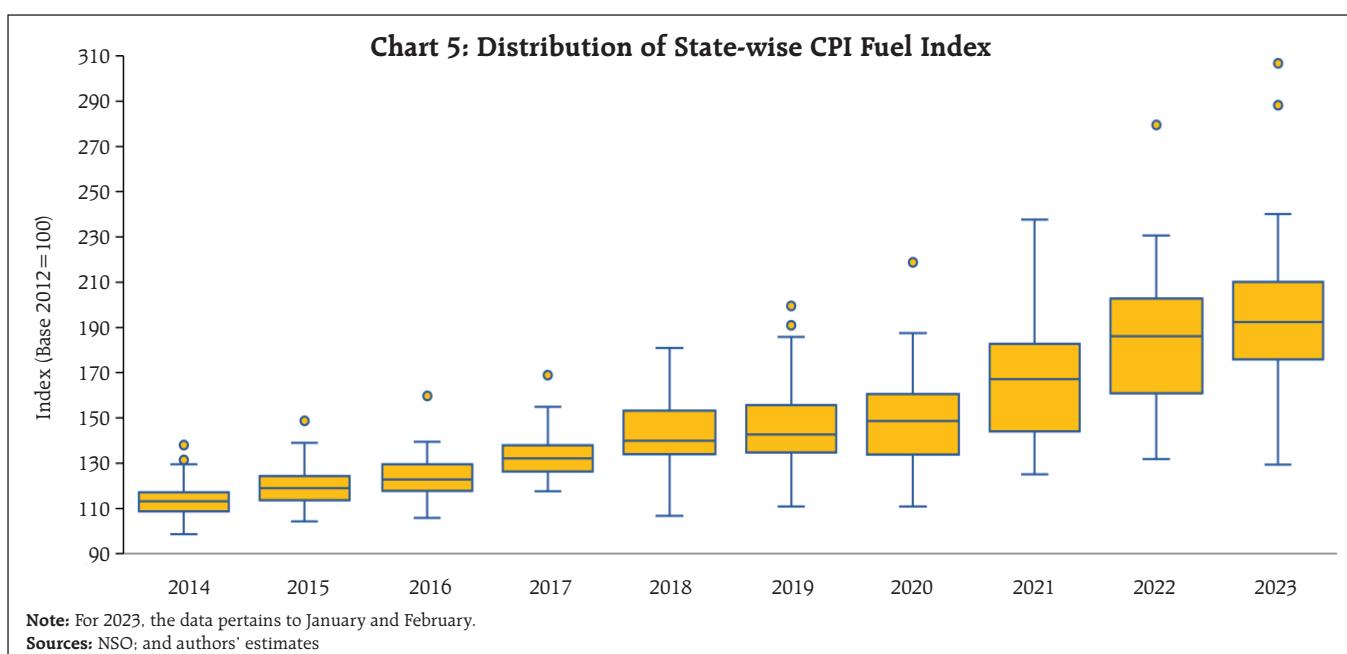


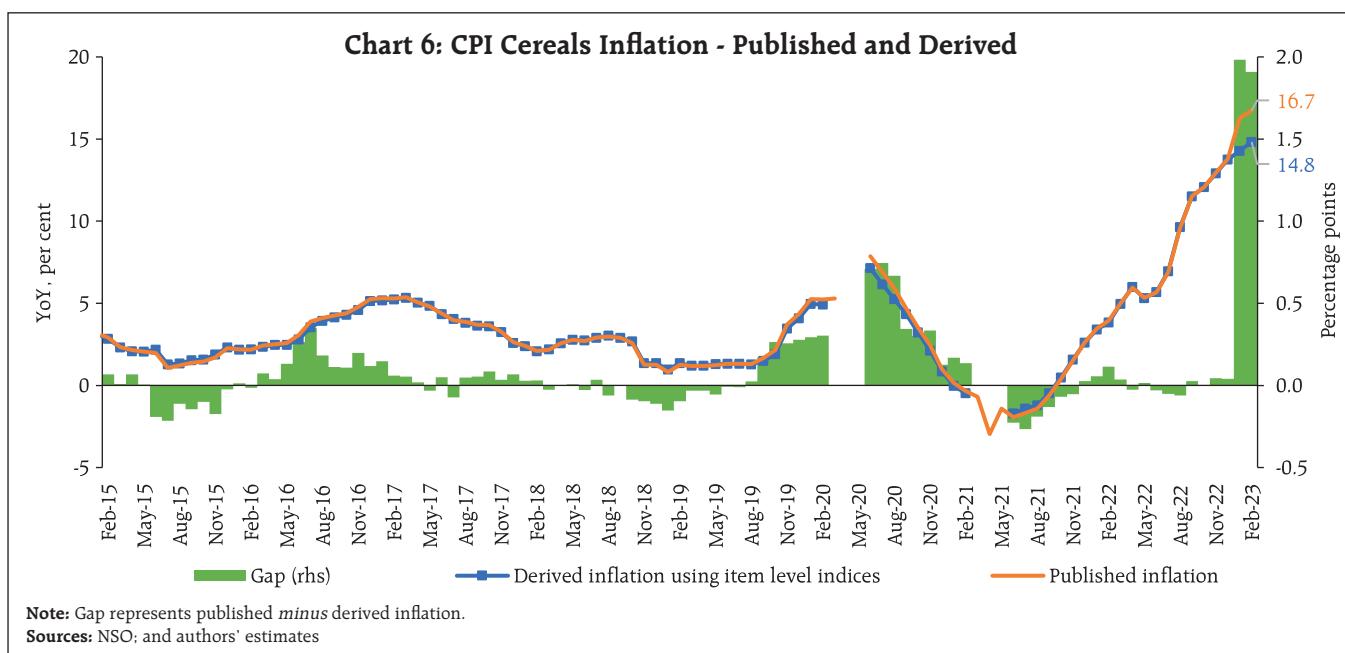


current weights are derived from the consumption expenditure survey of 2011-12), necessitating redistribution of weights in fuel group in those States/UTs. This is evidenced in the increase in variability of fuel index across States/UTs since 2021 (Chart 5). The coefficient of variation of annual average fuel index across States/UTs also rose from 6.6 per cent in 2013 to 15 per cent during 2020-2021 and to above 19 per cent in 2022-2023.

The substantial divergence observed in the January and February 2023 published CPI headline inflation with that derived by vertical aggregation of item level CPI data was due to a sharp divergence in inflation in the cereals sub-group. Following the extant methodology, when PDS wheat and rice prices were made available for free in certain States/UTs, the weights of such zero priced items were apparently redistributed across the closest category in CPI in those States, implying higher weightage to non-PDS or open market prices. In a scenario of sharp increase in open market wheat and rice prices, cereal inflation in those States/UTs may have got further accentuated. However, the item level indices were compiled by horizontal aggregation across States/UTs with weights for missing PDS prices in one State/UT redistributed to PDS items of other States/UTs, and not between weights of PDS and non-PDS items. As a result, when the States/UTs level overall CPI data were aggregated to arrive at the all-India headline overall index and inflation, it turned out to be substantially higher than what was obtained from a vertical aggregation of CPI item level data (Chart 6).

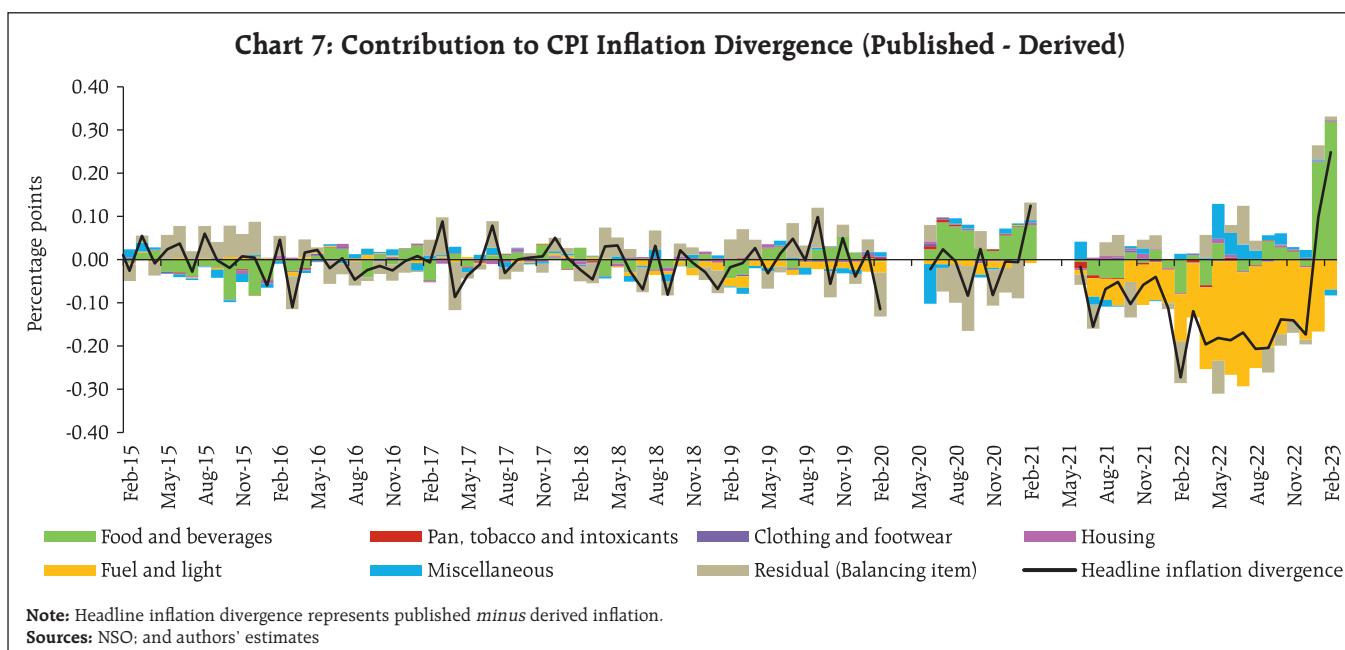
A decomposition of the inflation divergence between published headline CPI inflation and those





arrived at by vertical aggregations reveals that such divergences always existed primarily due to missing prices. In the pre-COVID period the divergence was coming from food, fuel and miscellaneous groups. However, it was bi-directional and relatively modest. Since 2021, the divergence has secularly widened, and the published headline inflation was systematically lower than the user derived inflation due to low

published fuel group inflation (compared to the derived fuel inflation). In January and February 2023, the divergence in CPI fuel group inflation persisted, but its impact was offset by substantially higher published cereal inflation (compared to the derived cereal inflation), resulting in higher overall published inflation than that derived by vertical aggregation of items (Chart 7).



A t-test of the inflation divergence for the null of zero mean divergence, cannot be rejected for headline CPI inflation for the pre-COVID period of January 2015 to February 2020. However, over the whole period (January 2015 to February 2023) the null hypothesis of zero mean divergence is rejected due to one sided large divergence emanating during the June 2020–February 2023 period, coming from the fuel group (Table 1).

Another aspect to highlight is that there is a non-trivial contribution to divergences between published

CPI and derived CPI inflation from the term 'Residual (Balancing Item)'. This component captures the divergence arising from the non-additivity of sub-group/group indices to the overall published index. Due to the methodology of horizontal aggregation of State/UT level indices to arrive at all-India rural, urban indices and headline CPI, vertical aggregation across groups/sub-groups (not CPI item level indices) would also lead to divergences with headline inflation prints. However, in the recent years, the divergences are larger for vertical aggregation of CPI items than those at sub-group/group level.<sup>7</sup>

#### V. The Policy Maker's dilemma

When the index is prepared by the national statistical office, why should the user reconstruct it? User derived indices matter since vertical aggregation using a bottom-up approach (from items/sub-groups/groups to overall inflation) is required first, to construct inflation measures that requires vertical aggregated sub-groups/groups/items as in the case of underlying or core inflation measures, and non-additivity oftentimes results in varying inflation rates and directional trends depending on the methodology adopted for construction of such underlying inflation measures. Secondly, it adds uncertainty to inflation forecasts.<sup>8</sup> The horizontal versus vertical aggregation issues primarily come to the fore while nowcasting inflation, which follows a highly disaggregated bottom-up approach. CPI for a month is usually released on the 12<sup>th</sup> of the following month. However, higher frequency information on prices of select food/fuel

(Ho: mean inflation divergence = 0)			
CPI-Major Groups	Pre-COVID Period (Jan-2015 to Feb-2020)	COVID and Post-COVID Period (Jun-2020 to Feb-2023)	Full Sample Period (Jan-2015 to Feb-2023)
<b>CPI-Food</b>			
t	-1.84	1.08	0.11
p-value	0.07	0.29	0.91
<b>CPI-Pan/Tobacco</b>			
t	0.90	-0.81	-0.29
p-value	0.37	0.43	0.77
<b>CPI-Clothing</b>			
t	0.00	1.40	0.89
p-value	1.00	0.17	0.38
<b>CPI-Fuel</b>			
t	-4.28*	-6.17*	-5.12*
p-value	0.00	0.00	0.00
<b>CPI-Housing</b>			
t	-0.62	1.51	0.34
p-value	0.54	0.14	0.73
<b>CPI-Miscellaneous</b>			
t	-0.28	1.09	0.85
p-value	0.78	0.28	0.40
<b>CPI-Overall</b>			
t	-0.74	-3.71*	-3.28*
p-value	0.46	0.00	0.00

\*: Denotes rejection of null hypothesis (mean inflation divergence = 0) at 1 per cent level of significance. t denotes the Student's t statistic.

Source: Authors' estimates.

<sup>7</sup> For constructing the national item indices, at the first stage, item indices are horizontally aggregated, and missing prices leads to horizontal re-weighting of the same item across States/UTs. In the case of State/UT level CPIs, there is at the first stage, vertical aggregation of item indices to sub-groups and further to groups for each State/UT and missing/zero prices results in vertical redistribution of weights across other items belonging to the same item-section composition. These State/UT level sub-group/group/overall indices are then horizontally aggregated across States/UTs to arrive at the corresponding national level indices. This same procedure is followed separately for rural and urban sectors.

<sup>8</sup> Details of the inflation forecasting process in RBI under FIT are available in the Report on Currency and Finance, 2020-21, RBI.

items are available on a daily basis, before the official CPI release. Based on these high frequency data, nowcasting involves assigning price momentum to items in CPI, especially food and fuel. These then are vertically aggregated to arrive at the food sub-groups and overall food/fuel inflation. However, considering the way in which CPI is constructed, there are bound to be differences between the headline inflation computed and published, even when at an item level forecasted indices and corresponding published indices largely tally – January and February 2023 CPI print was a recent example. This adds an additional layer of uncertainty to forecasters, especially on how much to account for the impact of missing data, redistribution of weights during shocks like COVID-19 and non-availability of priced items.

## **VI. Recommendations and Conclusion**

A study of the methods used by NSO for consumer price index shows that it is drawn from the international best practices including its design, product classification, market selection, price collection and data dissemination. However, to arrive at the all-India indices, the present two methods of aggregation of CPI for item level indices on the one hand and indices at sub-group/group and the all-India level on the other, at times makes assessment of prices and its forecast a challenge, especially when there is considerable time lag in base revisions. This paper discusses the size of such challenges and its increasing incidence in the recent period.

In case the NSO arrives at all-India item level indices through sector and State/UT level aggregation and thereafter proceeds with aggregation of the all-India item indices into higher level aggregates – i.e., the all-India groups with sub-groups and headline indices, the aggregation methodology can be reconciled between published sub-group/group level indices and the users' item level aggregation. This aggregation method will be in conformity with

the international standards for construction of CPI. A similar approach may be adopted to arrive at the all-India sectoral indices. The Technical Advisory Committee on Statistics of Prices and Cost of Living (TAC on SPCL) that guides NSO on preparation of CPI may consider the change in aggregation method so as to make the index more usable for policy analysis.

At present there is no guidance on proper treatment of zero prices – such as in the recent period when PDS prices were slashed to zero – in the NSO's CPI manual. Drawing from international practices, such cases may be considered as zero-prices and not missing prices.

Finally, the current CPI base of 2012 is derived from the consumption expenditure survey conducted during 2011-2012. The market survey to identify shops for collecting prices is even older. Efforts to conduct new CES for rebasing CPI to a recent period may be expedited to make the CPI consumption basket relevant of the present household consumption behaviour and prevent instances of missing/thin price quotes. Timely base revision with synchronous CES, price and market survey every five years can address policy maker's concerns.

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**Annex****Table A1: Difference between the Published CPI Headline, Groups and Sub-groups Inflation and Derived Inflation using Vertical Aggregation (of published item level indices): January 2015 to February 2023**

(Percentage points)

<b>Item Description</b>	<b>Maximum</b>	<b>Minimum</b>	<b>Average</b>
Cereals and products	1.98	-0.27	0.10
Meat and fish	0.16	-0.13	0.00
Egg	0.16	-0.16	0.00
Milk and products	0.12	-0.10	0.00
Oils and fats	0.13	-0.13	0.00
Fruits	1.30	-1.88	-0.07
Vegetables	1.13	-1.63	-0.03
Pulses and products	0.11	-0.12	0.00
Sugar and confectionery	0.59	-1.23	-0.14
Spices	0.11	-0.09	0.00
Non-alcoholic beverages	0.12	-0.14	0.00
Prepared meals, snacks, sweets etc.	0.14	-0.14	0.00
<b>Food &amp; beverages</b>	<b>0.65</b>	<b>-0.21</b>	<b>0.00</b>
<b>Pan, tobacco, intoxicants</b>	<b>0.27</b>	<b>-0.53</b>	<b>0.00</b>
Clothing	0.11	-0.08	0.00
Footwear	0.09	-0.14	0.00
<b>Clothing &amp; footwear</b>	<b>0.08</b>	<b>-0.09</b>	<b>0.00</b>
<b>Housing</b>	<b>0.11</b>	<b>-0.09</b>	<b>0.00</b>
<b>Fuel &amp; light</b>	<b>0.13</b>	<b>-3.82</b>	<b>-0.49</b>
Household goods/services	0.57	-0.70	0.01
Health	0.11	-0.13	0.00
Transport/communication	0.36	-0.46	0.00
Recreation/amusement	1.68	-1.03	0.07
Education	0.49	-0.12	0.01
Personal care/effects	0.54	-0.27	0.00
<b>Miscellaneous</b>	<b>0.30</b>	<b>-0.34</b>	<b>0.01</b>
<b>All Groups</b>	<b>0.25</b>	<b>-0.27</b>	<b>-0.03</b>

**Table A2: Difference between the Published CPI Headline, Groups and Sub-groups Indices and Derived Indices: January 2014 to February 2023**

Item Description	Maximum	Minimum	Average
Cereals and products	-0.17	-4.43	-0.84
Meat and fish	0.10	-0.21	0.00
Egg	0.00	-0.20	0.00
Milk and products	0.10	-0.09	0.00
Oils and fats	0.11	-0.10	0.00
Fruits	4.05	-0.33	1.15
Vegetables	3.48	-0.13	0.28
Pulses and products	0.11	-0.10	-0.01
Sugar and confectionery	1.61	-0.25	0.67
Spices	0.07	-0.10	0.01
Non-alcoholic beverages	0.18	-0.14	-0.01
Prepared meals, snacks, sweets etc.	0.21	-0.13	0.00
<b>Food &amp; beverages</b>	<b>0.39</b>	<b>-0.67</b>	<b>-0.04</b>
<b>Pan, tobacco, intoxicants</b>	<b>0.39</b>	<b>-0.55</b>	<b>-0.02</b>
Clothing	0.08	-0.13	-0.02
Footwear	0.11	-0.10	0.00
<b>Clothing &amp; footwear</b>	<b>0.09</b>	<b>-0.12</b>	<b>-0.01</b>
<b>Housing</b>	<b>0.07</b>	<b>-0.10</b>	<b>-0.01</b>
<b>Fuel &amp; light</b>	<b>7.93</b>	<b>-0.09</b>	<b>1.10</b>
Household goods/services	1.03	-0.08	0.03
Health	0.17	-0.10	0.01
Transport/communication	0.52	-0.16	-0.04
Recreation/amusement	1.66	-1.06	-0.10
Education	0.75	-0.10	0.00
Personal care/effects	0.84	-0.18	-0.03
<b>Miscellaneous</b>	<b>0.40</b>	<b>-0.15</b>	<b>-0.02</b>
<b>All Groups</b>	<b>0.51</b>	<b>-0.11</b>	<b>0.05</b>

**Note:** Difference in Index is the absolute difference between the derived index using vertical aggregation and the published index. While deriving the indices, the weights of the item for which index is not available has been adjusted.

# *Financial Stocks and Flow of Funds of the Indian Economy 2020-21*

by Anupam Prakash, Kaustav K Sarkar,  
Ishu Thakur and Sapna Goel<sup>^</sup>

*Overall domestic financial resource balance improved and turned marginally positive at 0.3 per cent of GDP in 2020-21, resulting in higher net financial wealth of the economy. Household financial savings spiked from its long-term trend reflecting in an elevated stock of both currency and deposits and increased savings in insurance products. Financial corporations (other than deposit-taking corporations) with excess inflows from households, and in view of reduced demand for bank credit, mostly invested in government securities. Non-financial corporations deleveraged their balance sheets, improving their net financial wealth after years of successive deterioration. Debt securities are primarily subscribed by other financial corporations, and the Reserve Bank – former having a higher share in G-sec, and the latter in foreign securities.*

## Introduction

The financial stocks and flow of funds (FSF) of the Indian economy for 2020-21 highlight certain idiosyncratic movements in economic and financial activities reflecting the impact of COVID-19 pandemic – one of the worst health crises that the world has seen in the last century. The *Great Lockdown* caused by quarantines and social distancing practices imposed across the globe in 2020 led to the worst economic downturn since the Great Depression, and

a far worse economic disruption than the Global Financial Crisis (GFC) (Gopinath, 2020). The financial resource balance<sup>1</sup> of the Indian economy turned positive in 2020-21 after improving in the preceding year, characterised by a general slowdown in the economy (Prakash et al., 2022).

Based on a holistic framework encompassing description of the financial accounts<sup>2</sup> of the institutional sectors<sup>3</sup> of the economy, along with instrument-wise breakdown, as categorised by the System of National Accounts (SNA), 2008, this edition of the article brings out insights on the Indian economy on a from-whom-to-whom (FWTW) basis. The detailed statements, following every annual compilation cycle in the series, are also being released as a part of India's G20 Data Gaps Initiative (DGI) commitment. Augmenting the present information on the contraction of gross domestic product (GDP) in 2020-21, the article deliberates in detail the implications of the cataclysmic impact of the pandemic and subsequent measures undertaken to save 'lives and livelihood' by both the Reserve Bank of India and the Government of India. The concomitant shifts in real economic operations get reflected on the financial counterparts and lead to associated changes in the interrelationships between sources and uses of financial funds.

Every crisis period underscores the need to have reliable data and key information to help policymakers better assess the fragility of the situation and

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<sup>1</sup> The financial resource balance is measured by the net acquisition of financial assets less net incurrence of liabilities.

<sup>2</sup> Financial accounts comprise financial assets and liabilities which do not include fixed assets, reserves and surplus, risk provisions and deferred tax.

<sup>3</sup> The institutional sectors include: (i) financial corporations (FCs); (ii) non-financial corporations (NFCs); (iii) general government (GG); (iv) households (HH) including (v) non-profit institutions serving households (NPISHs). Rest of the world (Row) is considered as a de facto sector because it only shows transactions of the domestic economy vis-a-vis non-residents and not all the economic activities taking place abroad.

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reformulate policies, as succinctly summarised by Borio (2013) – *"good information about the system as a whole and the individual institutions within it – that is, we need to see the forest as well as the trees within it"*. The DGI, launched in 2009 after the GFC, in its recommendation II.8<sup>4</sup> highlighted the relevance of flows and balance sheet data of the institutional sectors in assessing vulnerabilities, interconnections, and spillovers. The second phase of the initiative (DGI-2), which got delayed by six months due to COVID-19, was marked complete in June 2022<sup>5</sup>. Though the recommended data gaps are yet to be fully closed with respect to sectoral accounts, improved availability of statistics helped in better analysing of the risks and interconnectedness in financial and non-financial sectors in times of uncertainty, especially during the pandemic.

India as a G20 economy has been reporting the progress towards the compilation and expansion in coverage of its FSF accounts. Making use of the latest data sources for each sector and sub-sector, this edition publishes refined data series with broadened coverage and segregation (Annexure). Remaining article is structured into four sections. Section II illustrates the sectoral and instrument-wise financial structure of the economy. An assessment of the sectoral financial resource balance is presented in Section III. Section

IV delves deeper into the financial flows for various institutional sectors, while the last section concludes the article.

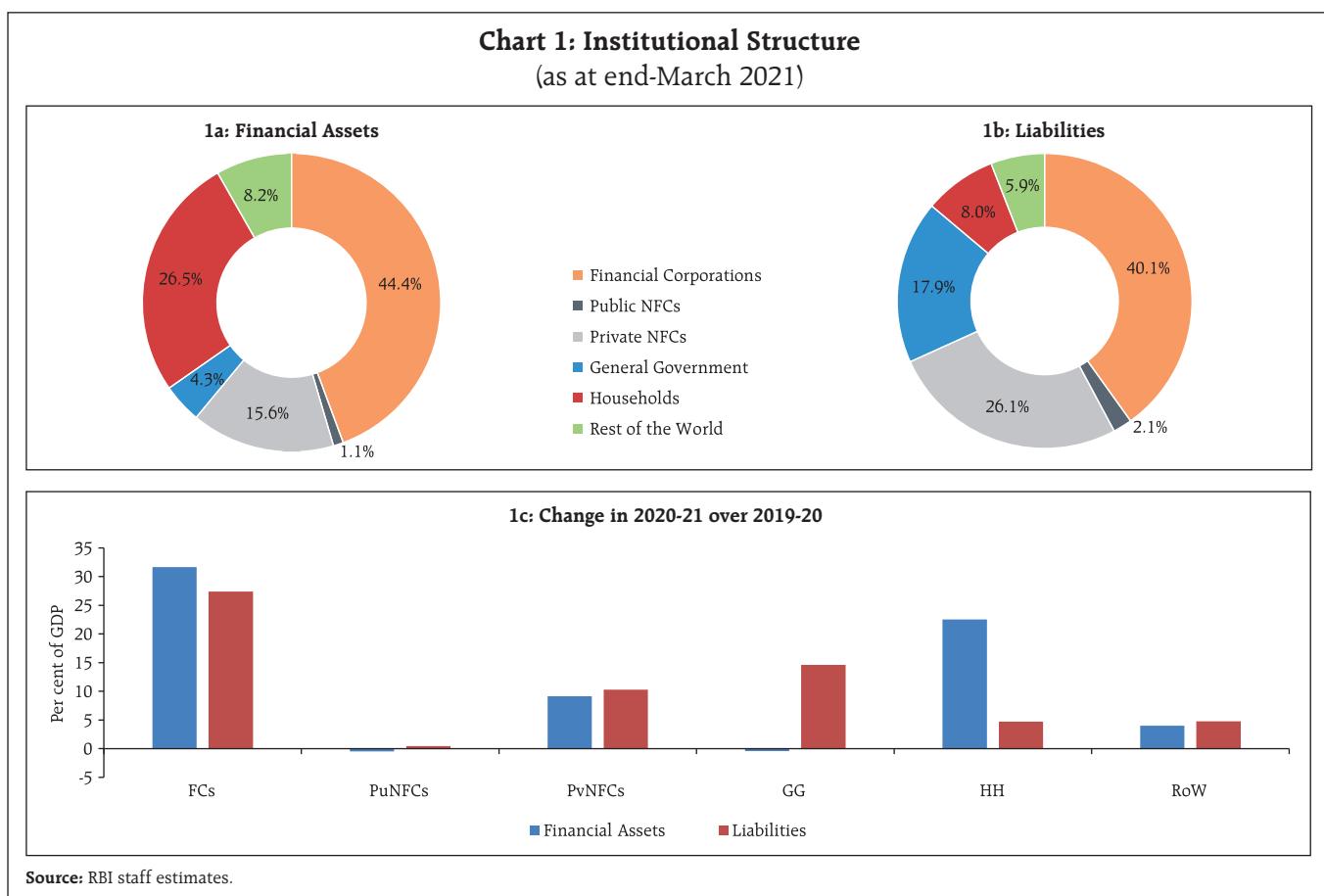
## **II. Financial Structure: Sector and Instrument-wise**

An incipient impact of the pandemic on the institutional financial accounts can be seen through the changes in stocks of financial assets and liabilities. Financial corporations (FCs), the dominant sector in the economy, constituting more than 40 per cent of the total stock of both financial assets and liabilities, saw a near symmetric increase in both during 2020-21, demonstrating their engagement in financial intermediation. The general government (GG) witnessed a substantial rise in liabilities on account of relief provided during the pandemic, raising its share to 17.9 per cent of total liabilities (17.2 per cent in 2019-20). Households, on the contrary, accumulated financial savings, raising their share in total financial assets to 26.5 per cent (25.4 per cent in 2019-20). Moreover, both an increase in liabilities and decrease in financial assets for rest of the world (RoW) in 2020-21 suggest a further tilt towards domestic resources relative to 2019-20 (Chart 1).

The preference for financial instruments across institutional sectors has remained stable over the years. As at end-March 2021, currency and deposits, loans and advances and debt securities remained the most preferred instruments in that order, accounting for more than three-fifths of the total assets and liabilities, both for deployment of resources as well as raising funds. FCs raised resources largely in the form of currency and deposits from the households and GG. Debt securities are primarily subscribed by FCs, particularly other financial corporations (OFCs) and the Reserve Bank – former having a higher share in G-sec, while the latter in foreign securities. While RoW

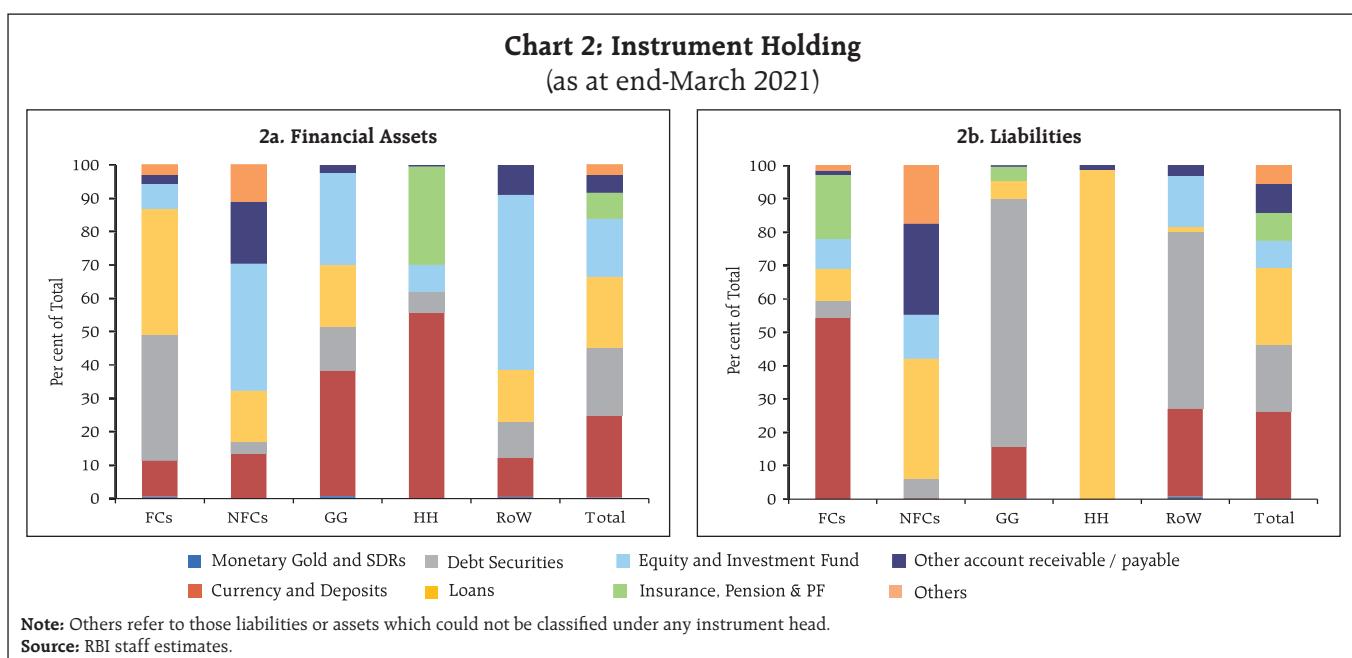
<sup>4</sup> Recommendation states – *"The G20 economies to compile and disseminate, on a quarterly and annual frequency, sectoral accounts flows and balance sheet data, based on the internationally agreed template, including data for the other (non-bank) financial corporation sector, and develop from-whom to-whom matrices for both transactions and stocks to support balance sheet analysis."*

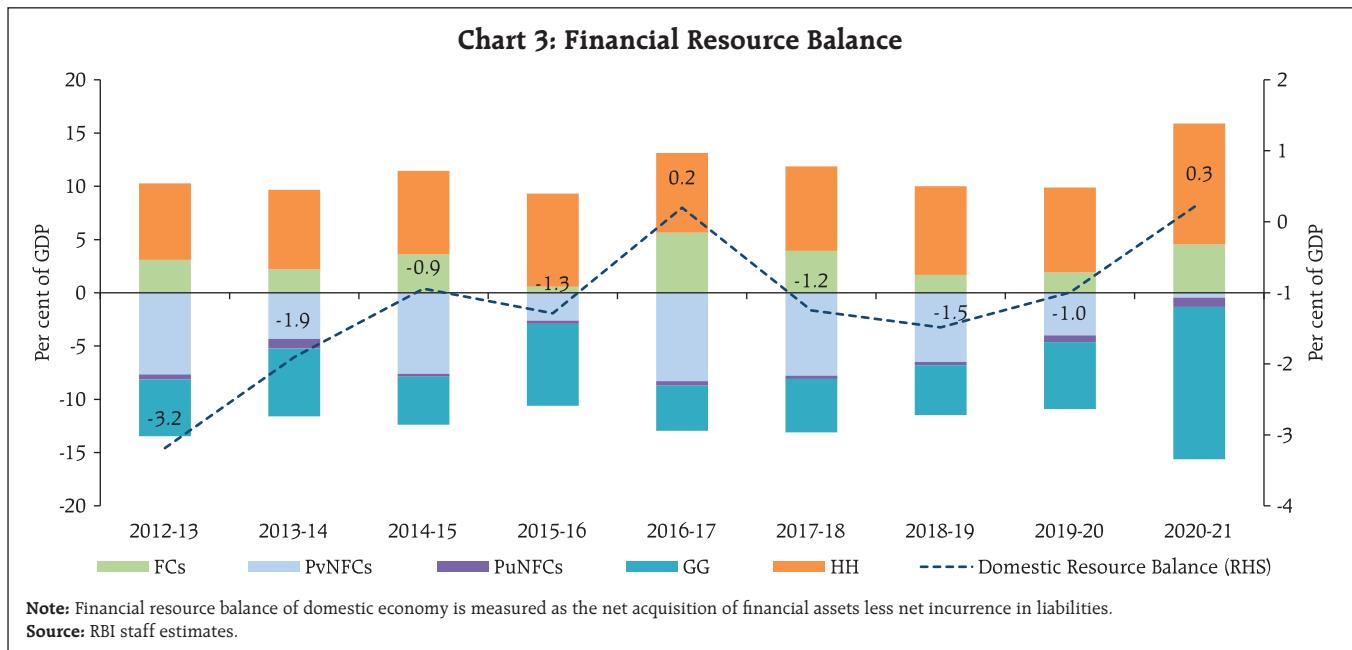
<sup>5</sup> G20 Data Gaps Initiative (DGI-2) Progress Achieved, Lessons Learned, and the Way Forward, June 2022. As per the report, impressive progress has been noted in the reporting of quarterly (14 G20 countries) and annual (16 G20 countries) financial accounts (FSB, 2022).



invests preferably via equity and investment funds, households prefer insurance, pension and provident

funds as their investment avenues after currency and deposits (Chart 2).





### III. Financial Resource Balance

In the calamitous year of pandemic, overall domestic financial resource balance improved and turned marginally positive at 0.3 per cent of GDP in 2020-21 (Chart 3). With compression in domestic demand, the economy turned into a net lender of funds with a lower dependence on external resources. Despite swelling up of deficit in GG, the surge in financial savings of the households due to lower discretionary spending and increase

in precautionary savings during the pandemic, led to an increase in domestic resource surplus, directly as well as indirectly via FCs<sup>6</sup>.

The net resources available for the corporate sector, *i.e.*, FCs and non-financial corporations (NFCs) can be estimated following the national saving and investment identity. The FSF sectoral resource balances can be used to compute the same, and both are found to be synchronous (Box 1).

#### Box 1: Financial Resources for the Corporate Sector – An Approach from FSF Accounts

In an open economy, supply of funds comes broadly from two sources, (*i*) private savings by the households and corporates (*S*); and (*ii*) foreign investors' resources, equivalent to trade deficit [ $(M-X)$  where *M* is imports and *X* is exports]. The financial resources are generally demanded by two sectors, *viz.*, for corporate sector investment (*I*), and the government borrowing [ $(G-T)$  where *G* is the government expenditure and *T* are the taxes collected]. Equating the demand and supply of financial resources, we get national saving and investment identity [Equation (1)].

$$\text{Supply of Funds} = \text{Demand for Funds}$$

$$S + (M - X) = I + (G - T) \quad \dots(1)$$

The above identity helps us determine the relationship between three balances of an economy – external/current account balance, private sector balance and government balance [Equation (2)].

$$\text{Private Sector Balance} = \text{External Balance} - \text{Government Balance}$$

$$(S - I) = (X - M) - (T - G) \quad \dots(2)$$

(Contd..)

<sup>6</sup> FSF accounts for the Indian economy are currently created on a non-consolidated basis.

**Table 1: Financial Resource Balance – Approximation**

(Per cent of GDP at current market prices)

Items	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
1. Current Account Balance (X-M)	-4.8	-1.7	-1.3	-1.0	-0.6	-1.8	-2.1	-0.9	0.9	-1.2
2. Combined Gross Fiscal Deficit (T-G)	-6.9	-6.7	-6.7	-6.9	-6.9	-5.8	-5.8	-7.2	-13.3	-9.7
3. Private Resource Balance (S-I) [1-2]	2.1	5.0	5.4	5.9	6.3	4.0	3.7	6.4	14.2	8.5
4. Household Financial Savings	7.4	7.4	7.1	8.1	7.4	7.6	7.9	7.7	11.5	7.6
5. Corporate Resource Balance (3-4)	-5.3	-2.4	-1.7	-2.2	-1.2	-3.6	-4.2	-1.4	2.7	0.8

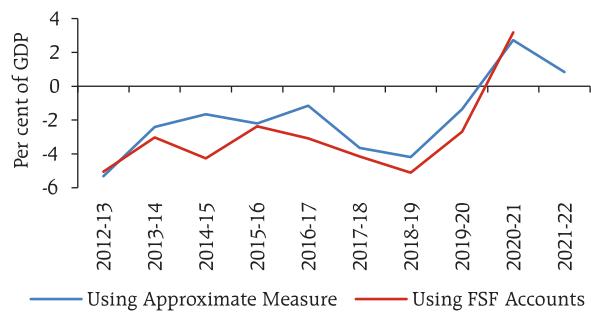
**Sources:** National Statistical Office (NSO); RBI; and RBI staff estimates.

Drawdown by GG ( $T - G$ ), when subtracted from the balance from RoW ( $X - M$ ) gives us the private sector balance, available with the households and corporates. Subtracting the household (HH) sector balance from  $S - I$  provides resource balance of the corporate sector (Table 1).

The resources available for the corporate sector, can also be derived from FSF sectoral resource balances by aggregating the net resource balances of FCs and NFCs (Table 2).

The financial resources for corporate sector worked out from the two datasets, *i.e.*, the approximate measure (Table 1), and the detailed FSF sectoral accounts (Table 2), have moved synchronously (Chart B). FSF accounts, *albeit* being estimated with a lag, provide an additional sectoral disaggregation of the corporate sector resource balance into FCs and NFCs and respective sub-sectors.

For the first time in the last decade (during 2020-21), corporate sector also contributed towards financing of the GG deficit apart from the HH. As per FSF compilation, the corporate sector turned a net lender (3.2 per cent of GDP

**Chart B: Net Lending/Borrowing by Corporate Sector**

**Source:** RBI staff estimates.

in 2020-21) from being a net borrower of funds [(-) 2.7 per cent of GDP in 2019-20], directionally similar to the trend visible in Table 1. Timely availability of the alternate measure of resource balance as per Table 1, however, gives a forward-looking perspective for the ensuing year as to how the resource availability will shape. Based on the estimate in Table 1, the corporate sector will continue to provide finances for GG in 2021-22 as well, though moderating to 0.8 per cent of GDP from 2.7 per cent of GDP in 2020-21.

**Table 2: Sectoral Financial Resource Balance from FSF**

(Per cent of GDP at current market prices)

Sectors	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
1 FCs	3.1	2.2	3.6	0.6	5.6	3.9	1.7	1.9	4.5
2 NFCs	-8.1	-5.2	-7.9	-2.9	-8.7	-8.1	-6.8	-4.6	-1.3
2.1 PuNFCs	-0.5	-0.9	-0.3	-0.3	-0.4	-0.3	-0.3	-0.6	-0.9
2.2 PvNFCs	-7.7	-4.3	-7.6	-2.6	-8.3	-7.8	-6.5	-4.0	-0.5
3 GG	-5.3	-6.4	-4.5	-7.7	-4.2	-5.0	-4.7	-6.3	-14.3
4 HH	7.2	7.5	7.8	8.8	7.5	7.9	8.3	8.0	11.4
5 Domestic Resource Balance (1+2+3+4)	-3.2	-1.9	-0.9	-1.3	0.2	-1.2	-1.5	-1.0	0.3
6 RoW (External Resources)	4.7	1.7	1.4	1.1	0.7	1.8	2.1	0.8	-0.9
7 Corporate Resource Balance (1+2)	-5.0	-3.0	-4.3	-2.4	-3.1	-4.1	-5.1	-2.7	3.2

**Source:** RBI staff estimates.

**Table 3: Sectoral Net Financial Wealth**

(Per cent of GDP at current market prices)

Sectors	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
1 FCs	27.8	28.4	28.3	28.9	28.1	30.2	31.7	31.4	33.5	37.8
2 NFCs	-17.1	-20.7	-21.5	-26.8	-26.1	-30.2	-35.1	-37.6	-39.5	-35.3
2.1 PuNFCs	-1.2	-1.4	-2.0	-2.0	-2.2	-2.3	-2.2	-2.3	-2.7	-3.6
2.2 PvNFCs	-15.9	-19.4	-19.6	-24.8	-23.9	-28.0	-32.9	-35.3	-36.8	-31.7
3 GG	-49.6	-48.9	-49.6	-49.2	-52.2	-50.9	-50.9	-50.7	-54.0	-69.0
4 HH	75.8	74.1	74.3	76.6	78.3	79.9	81.7	83.6	85.4	103.2
5 Total (1+2+3+4)	36.9	32.8	31.5	29.4	28.1	28.8	27.3	26.6	25.4	36.7
6 RoW	21.7	24.0	24.3	23.9	23.1	21.4	20.8	21.0	19.6	19.0

Source: RBI staff estimates.

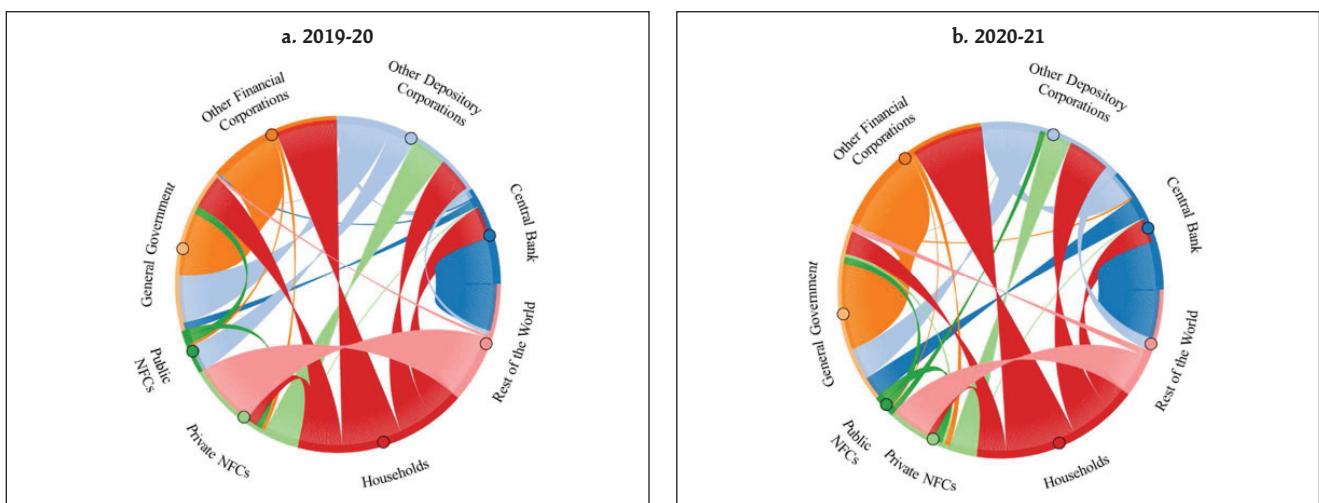
Improved financial health of the domestic economy can also be gauged from a significant rise in its net financial wealth (NFW)<sup>7</sup>, surging to 36.7 per cent of GDP as at end-March 2021 from 25.4 per cent as at end-March 2020. Deterioration in NFW of GG owing to various welfare measures to combat the pandemic was more than compensated by an increase in NFW of HH and FCs (Table 3).

#### IV. Financial Flows across Sectors

Mapping of sectoral financial flows provides a clear picture of the financial relationship between the institutional sectors and also residents and non-

residents, describing who finances whom, by what type of instrument, and in what amount.

Net flows (uses minus sources) across various sectors of the economy are depicted in a chord diagram (Chart 4). Households continued to remain prominent net lenders in 2020-21. Net flows from HH to OFCs and other depository corporations (ODCs) increased, indicating higher savings with the financial intermediaries, while those to GG and central bank reduced. OFCs with excess inflows from HH, and in view of reduced demand for bank credit in the pandemic year, mostly invested in government

**Chart 4: Sectoral Flows**

Note: Chords represent the inter-sectoral flows, and length of an arc represents involvement of the institutional sector in terms of the relative share of flows in total economy.

Source: RBI staff estimates.

<sup>7</sup> Net Financial Wealth (NFW) is the difference between total financial assets and total liabilities (excluding equity and investment fund shares).

securities which got reflected in higher flows from OFCs to GG compared with last year. In view of higher fund requirements of GG, the central bank flows to GG also increased. Public non-financial corporations (PuNFCs) turned net lenders to ODCs from being net borrowers. Net flows from ODCs to central bank and RoW increased. Also, there was a reduction in flows from RoW to PvNFCs compared with last year, on expected lines.

These interconnections and spillovers have been explained in detail in the following sub-sections:

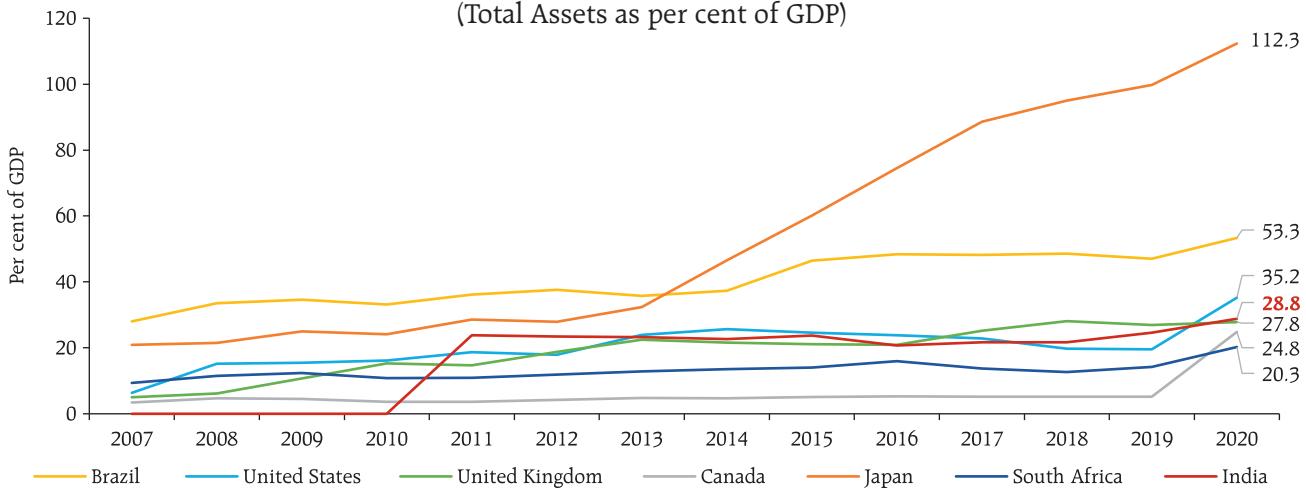
#### IV.1.1 Central Bank

In view of a severe contraction in economic activity since the pandemic, the Reserve Bank decisively slashed repo rate and remained accommodative as long as it was necessary to revive growth. This led to an expansion in the Bank's financial assets to 28.8 per cent of GDP in 2020-21 from 24.6 per cent of GDP in the preceding year<sup>8</sup>. It is generally observed during crisis times that central banks resort to monetary easing

measures (Bagehot's Dictum)<sup>9</sup> – both conventional and unconventional, with a view to attain traditional policy objectives of ensuring price and financial stability, as was observed during the GFC and more recently during COVID-19. When compared with several central banks in advanced economies (AEs) such as Canada, the US and Japan (Chart 5), expansion in the Reserve Bank's balance sheet was moderate, due to the Bank's targeted approach supported by innovative monetary policy measures.

On the asset side, investment in debt securities – both domestic and foreign, increased to ₹10.42 lakh crore in 2020-21 from ₹2.42 lakh crore in the previous year. Investment in domestic securities surged because of pandemic-driven liquidity management operations conducted during the year. On the other hand, accumulated foreign exchange reserves (FER) were invested in securities instead of deposits, a drift from recent past years. Owing to the refinance facilities extended to the NABARD, SIDBI and NHB, extended line of credit to EXIM Bank to avail a US

**Chart 5: Central Bank Balance Sheets**  
(Total Assets as per cent of GDP)



**Note:** Data for India, Japan and South Africa pertain to financial years; data for the United Kingdom are as at February 28; and data for the remaining countries pertain to calendar year.

**Sources:** Various central bank websites; NSO; and World Bank.

<sup>8</sup> The Expert Committee to review the Extant Economic Capital Framework (ECF) of the Reserve Bank (Chairman: Dr Bimal Jalan), had recommended certain changes in August 2019, including change in the accounting year from 'July - June' to 'April - March' which got implemented from the year 2020-21.

<sup>9</sup> Bagehot's dictum as summarised by Paul Tucker, a British economist and a central banker – "to avert panic, central banks should lend early and freely (i.e., without limit), to solvent firms, against good collateral, and at high rates" (Tucker, 2009).

dollar swap facility, and enhanced collateralised liquidity support to primary dealers, the advances to OFCs posited a growth. Loans and advances to ODCs, however, turned negative reflecting repayment of long-term repo operations (LTRO), targeted LTRO (TLTRO) 1.0 and TLTRO 2.0 by banks during the year.<sup>10</sup>

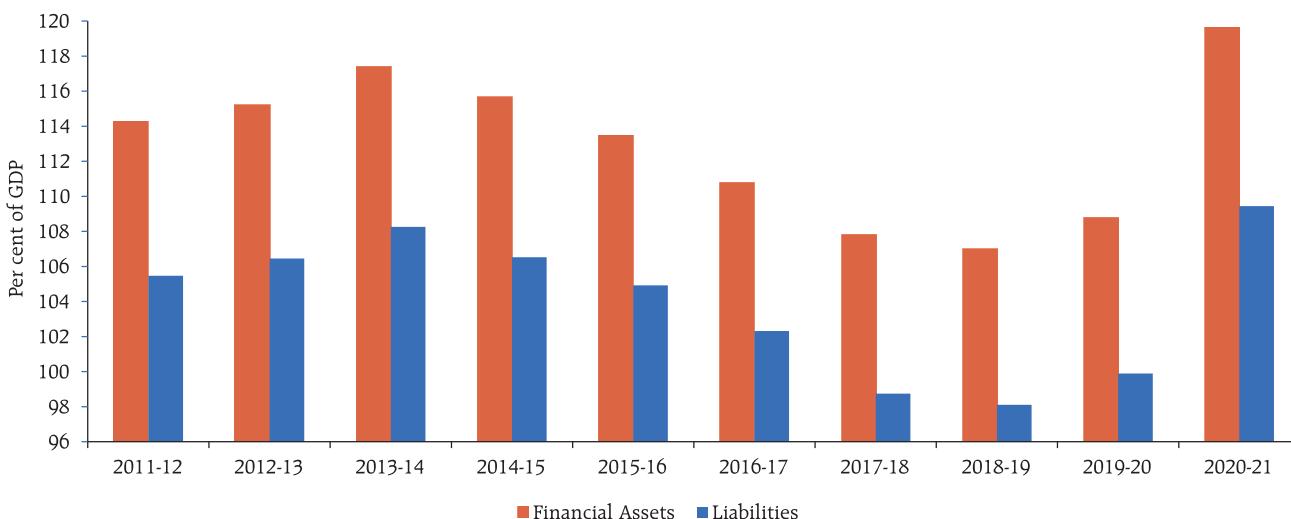
On a similar note, financial liabilities surged to 22.5 per cent of GDP in 2020-21 from 18.2 per cent in 2019-20 mainly due to increase in notes issued and deposits. Flow of currency by the Reserve Bank accelerated remarkably during 2020-21 as households and businesses made a dash for cash with the onset of COVID-19 led abrupt reversal in confidence channels, extreme risk aversion and stopping of income flows (RBI, 2021a). As a result, currency to GDP ratio surged to 14.3 per cent as at end-March 2021 – the highest in a decade, and much above its long-term average of 11 to 12 per cent. A contraction in nominal GDP in 2020-21 also contributed to escalation in the ratio.

In 2020-21, deposits with the Reserve Bank increased to ₹14.5 lakh crore from ₹11.1 lakh crore in 2019-20, primarily on account of phased restoration of cash reserve ratio (CRR) back to 3.5 per cent of net demand and time liabilities (NDTL) at end-March 2021<sup>11</sup>, as compared with CRR requirement of 3.0 per cent of NDTL as at end-March 2020. The Reserve Bank, which continued to be one of the major net lending sectors, witnessed a marginal decline in its NFW to 6.3 per cent of GDP in 2020-21 from 6.4 per cent a year ago.

#### IV.1.2 Other Depository Corporations

During the pandemic year, the Indian banking sector navigated the expected deterioration in asset quality of banks in view of the impaired loan servicing capacity among individuals and businesses, cushioned by various policy measures undertaken by the Reserve Bank and the Government (Chart 6).

**Chart 6: Financial Assets and Liabilities of ODCs**



<sup>10</sup> Banks reversed LTRO funds amounting to ₹1,23,572 crore out of the total of ₹1,25,117 crore and repaid TLTRO and TLTRO 2.0 funds amounting to ₹37,348 crore (RBI, 2021a).

<sup>11</sup> CRR was reduced to 3 per cent of the NDTL, effective beginning March 28, 2020 for a period of one year ending March 26, 2021. Gradually in a non-disruptive manner, CRR was restored in two phases, requiring banks to maintain CRR at 3.5 per cent of their NDTL, effective beginning March 27, 2021 followed by 4 per cent of their NDTL, effective beginning May 22, 2021.

Capital position of banks improved, aided by recapitalisation by the government as well as raising of funds from the market (RBI, 2021b). Sum of NFW and equity – a direct measure of bank capital (OECD, 2017), to total financial assets continued to strengthen in 2020-21 highlighting the increasing ability of ODCs to absorb losses under adverse scenarios (Chart 7a). The two prominent sources of funds for ODCs – deposits and loans and borrowings, act as substitutes. While deposits saw an influx of ₹17.5 lakh crore (growth of 11.1 per cent in 2020-21 over 8.1 per cent in the previous year), loans and borrowings contracted in 2020-21 (contraction of 6.9 per cent in 2020-21 over 5.2 per cent in the previous year) (Chart 7b). In the pandemic year, skyrocketing of households' saving rate as they cut down on their consumption expenditure, contributed 69.4 per cent to the increase in deposits, while corporates kept their savings in liquid bank deposits amidst the gloomy investment milieu, accounting for 24.3 per cent of the increase in deposits.

In contrast, on the asset side, credit offtake remained tepid during 2020-21 as loans to deposit

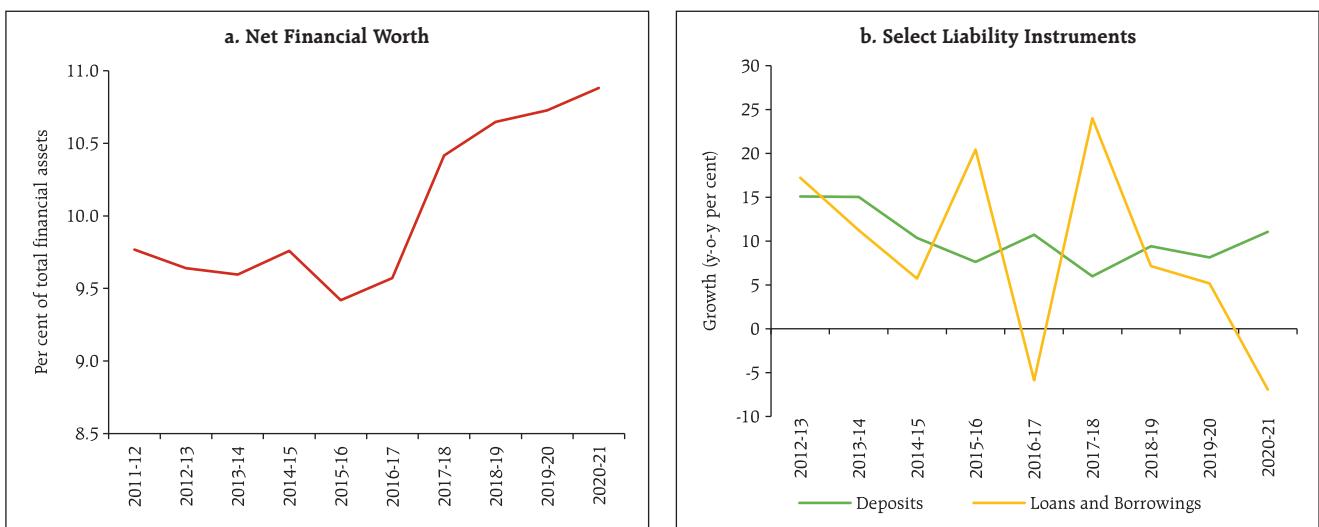
ratio fell to 77.2 per cent in 2020-21 from 81.5 per cent in 2019-20. The reduction in loans was offset by an escalation in debt securities of both central and state governments and deposits with both the Reserve Bank and RoW, as ODCs turned risk averse.

#### IV.1.3 Other Financial Corporations

Growth in financial assets and liabilities accelerated in 2020-21 after moderating in the previous year, with growth in liabilities outpacing that in assets. Despite mutual funds (MFs) and provident and pension funds weighing down on the share of insurance sector, insurance continues to dominate in terms of the total financial assets within OFCs over a decade long trend (Chart 8).

For insurance sector, 2020-21 was an extraordinary year. Indemnification of the pandemic dues along with digital advancements led to increased penetration of the life insurance<sup>12</sup> sector by 13.5 per cent during 2020-21 as compared with 2.8 per cent in 2019-20. Consequently, liabilities of insurance sector rose to 26.3 per cent of GDP in 2020-21, an increase of

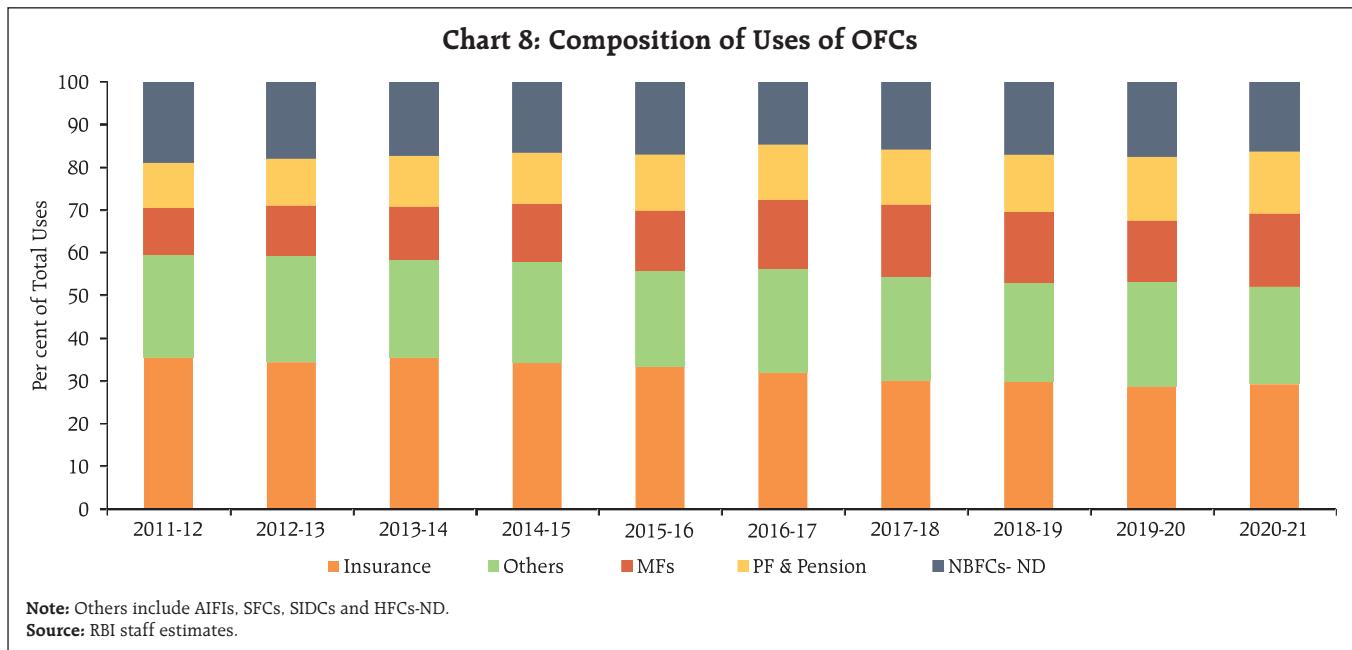
**Chart 7: Instrument-wise Liabilities of ODCs**



Note: Net Financial Worth is the difference between total financial assets and total liabilities.

Source: RBI staff estimates.

<sup>12</sup> Insurance penetration is measured as a ratio of premiums received by the life insurance sector to GDP.



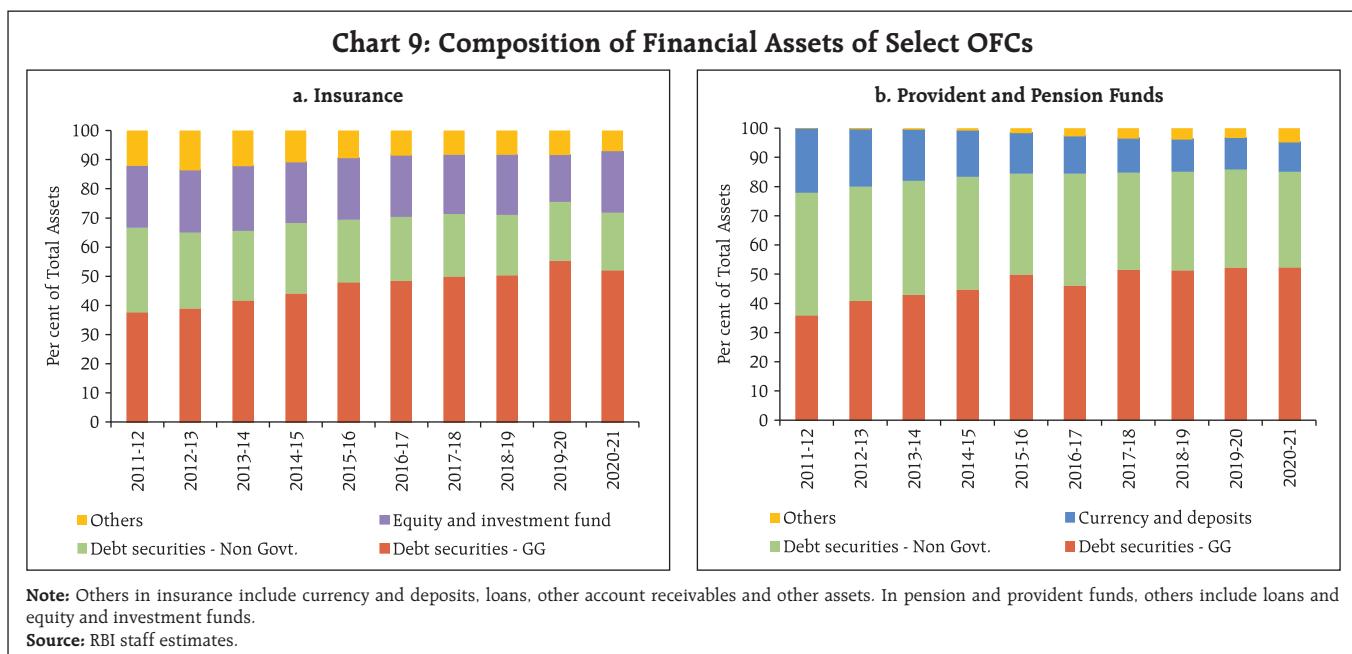
21.3 per cent as compared with previous year. Robust equity growth of previous year continued in 2020-21 as capital of ₹9,950 crore was infused specifically in public sector general and health insurers to improve their overall health (IRDAI, 2021). Growth in premiums during the year, surged financial assets of insurance sector by 21.7 per cent in 2020-21, which were invested in other MFs, equity and debt securities. Consequently, NFW of the insurance sector improved by 30 basis points to 1.4 per cent of GDP in 2020-21.

Amongst the sub-segments gaining traction, the assets under management (AUM) of MFs surged more than five folds in the last decade – to ₹31.4 lakh crore at end-March 2021 from ₹ 5.9 lakh crore at end-March 2012. As a result, share of MFs in total assets of OFCs increased to 17.8 per cent as at end-March 2021 from 11.1 per cent as at end-March 2012. Value of financial assets of MFs, after contracting in 2019-20 because of the pandemic induced stock market crash, recovered during 2020-21 (registering a growth of 41.2 per cent).

Despite lower gross mobilisation into MFs, net inflow jumped to ₹2.15 lakh crore (2.5 times of the net inflow during 2019-20) with an almost equal distribution between money market and other MFs.

Other expanding sector, the pension and provident funds, remained largely unscathed from the pandemic as it grew by 17.6 per cent in 2020-21 relative to 17.5 per cent in 2019-20. Government securities remained the preferred investment avenue, reaching 61.3 per cent of the total corpus of debt securities.

Both insurance and pension funds invest their respective premiums and contributions in various financial instruments. Half of their financial assets comprise government debt securities, share of which has been increasing over the last few years. While insurance firms have close to 20 per cent holdings in equity and investment fund shares, pension and provident funds tie up a meagre proportion of their funds in equity (Chart 9).



## IV.2 Non-Financial Corporations

NFCs went on a deleveraging spree during the pandemic – to have used lower demand and greater liquidity and fiscal support to strengthen their balance sheets (Gornicka *et al.*, 2021). Consequently, their NFW improved for the first time in 2020-21 after years of successive deterioration. Increase in corporate cash<sup>13</sup> holdings explain a part of the recovery in NFW as the corporate cash to GDP ratio surged to 15.6 per cent in 2020-21 from the pre-pandemic average of 13.7 per cent (2011-12 to 2019-20). This can be explained via substantial improvement in liquidity position of the firms because of an increase in corporate profitability, eased credit pressures due to six-month moratorium and risk aversion towards investment<sup>14</sup>.

<sup>13</sup> Corporate cash includes 'currency and deposits' and 'debt securities' on the asset side reflecting the preference of corporates for holding liquid and safe assets.

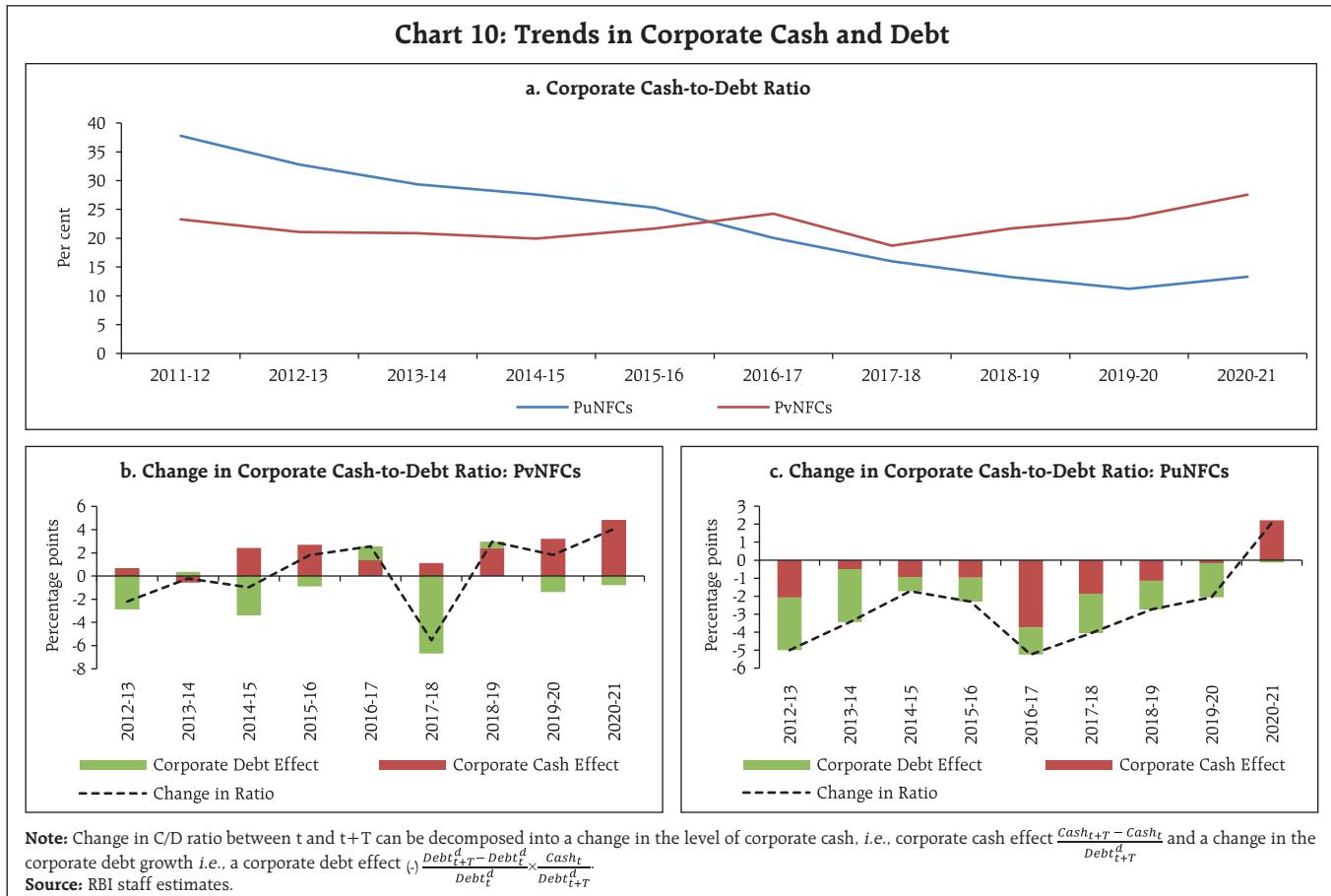
<sup>14</sup> Share of gross capital formation in GDP – a metric for gauging investment in the economy – fell to 27.9 per cent in 2020-21 from 30.4 per cent in 2019-20.

Owing to pandemic exigencies, borrowings of NFCs, particularly PuNFCs, increased for multiple reasons – to keep operations running as the economy slowed, and for investing in technology to support remote work and reconfigure workplaces to ensure social distancing. Corporate debt<sup>15</sup> of NFCs increased to 61.0 per cent of GDP in 2020-21 as compared with 58.3 per cent in the preceding year.

Akin to an exercise exploring the corporate cash-to-debt ratio for AEs (Hashimoto *et al.*, 2016), the ratio for Indian corporates increased during 2020-21 essentially due to cash accumulation, reversing a nearly stable trend for PvNFCs and a continuously declining trend for PuNFCs<sup>16</sup> (Chart 10).

<sup>15</sup> Debt comprises 'debt securities' and 'loans and borrowings'. Since Debt includes intercompany loans within NFC sector, this overestimates the true indebtedness of the sector.

<sup>16</sup> Despite variation in the past decade, share of PuNFCs' financial assets and liabilities in NFCs has been declining. PuNFCs' financial assets as a proportion of total NFCs' have reduced from 7.3 per cent in 2011-12 to 6.5 per cent in 2020-21, liabilities on the other hand have reduced from 7.8 to 7.4 per cent during the same period.



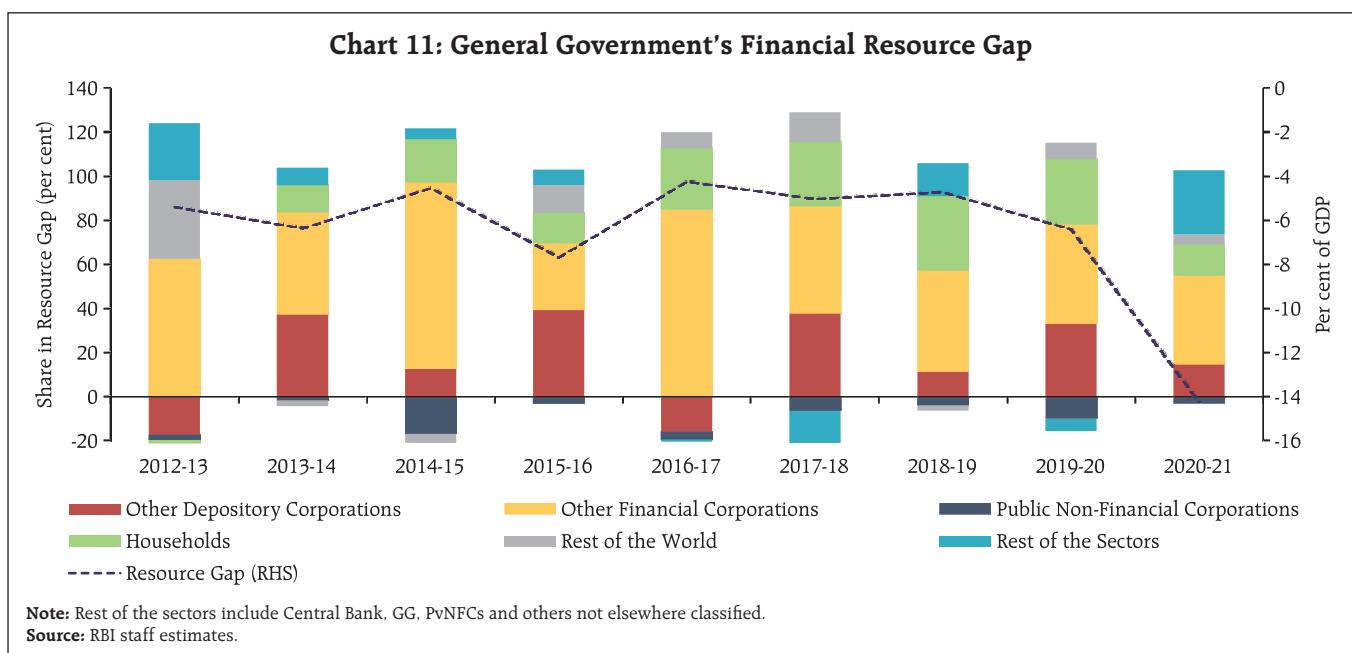
### IV.3 General Government

Fiscal deficits and debt levels spiked globally in 2020 reflecting a large erosion in revenues and increase in spending to provide stimulus of an unprecedented scale and scope. While gross fiscal deficit (GFD) of the Union Government increased sharply to 9.2 per cent of GDP<sup>17</sup> from 4.6 per cent in the previous year, that of state governments rose to 4.1 per cent of GDP from 2.6 per cent in the preceding year (GoI 2022 & RBI 2023). Resultantly, financial resource gap of GG aggravated (Chart 11) and debt levels escalated to 92.2 per cent of GDP in 2020-21 as compared with 77.7 per cent a year ago.

For CG, increase in liabilities by a whopping 18.3 per cent in 2020-21 as compared to its pre-pandemic average of 10.7 per cent (2012-13 to 2019-20), translated in an increase in issuance of treasury bills and special securities to ODCs and OFCs. Apart from this, government successfully channelised funds from households via national small savings fund (NSSF), sovereign gold bonds and gold monetisation scheme. The proportion of NSSF pool in outstanding liabilities of CG has been accelerating since 2016-17 (17.3 per cent of total liabilities in 2020-21 as compared to 15.2 per cent in 2016-17). Moreover, NSSF instrument preference<sup>18</sup> of the public has altered over the years

<sup>17</sup> Despite rolling-out of a massive vaccine programme and other relief measures, CG's GFD remained modest when compared with average overall deficit of 11.7 per cent for AEs.

<sup>18</sup> NSSF fund is raised through three broad instruments – Saving Deposits, Saving Certificates and Public Provident Funds.



with share of saving certificates reducing considerably to 13.7 per cent in 2020-21 from 26.5 per cent in 2011-12, and a commensurate rise in saving deposits.

Importance and activities of the Food Corporation of India (FCI)<sup>19</sup> increased during the crisis on account of distribution of free foodgrains to the migrants and poor under the *Pradhan Mantri Garib Kalyan Anna Yojana* (PM-GKAY). Amidst growing risk aversion during COVID-19, FCI raised ₹8,000 crore by private placement of government-backed bonds, subscribed by large banks. Furthermore, to reduce the debt and interest burden, CG sanctioned ₹4,62,737 crore subsidy to FCI in 2020-21 which facilitated on-budgeting of a large part of outstanding loans and repayment of the entire NSSF loan of FCI towards CG.

In case of state governments, reliance on debt securities for financing via state development loans, power bonds and Ujwal DISCOM Assurance Yojana (UDAY) bonds has been increasing. In 2020-21, while growth in other instruments slowed, subscription of

debt securities posted a growth of 14.1 per cent as compared with 10.8 per cent in the preceding year, taking the share of debt securities to 69.8 per cent of states' liabilities (68.7 per cent in 2019-20).

On assets side, despite deceleration in equity investments, holding of CG in statutory corporations (excluding FCI) and joint stock companies increased during 2020-21. Additionally, ₹1.33 lakh crore and ₹0.70 lakh crore of loans were advanced to state governments and PuNFCs (growth in outstanding loans by 73.4 per cent and 21.2 per cent), respectively.

#### IV.4 Households (including NPISHs)

During the pandemic, households' financial health improved worldwide. Indian households' NFW surged to 103.2 per cent of GDP in 2020-21 as compared with 85.4 per cent a year ago. In 2020-21, the decelerating growth of financial liabilities of households at 11.4 per cent (12.2 per cent during 2019-20), accompanied by a sharp uptick in growth of financial assets at 16.8 per cent (9.7 per cent during 2019-20), pulled up the NFW. Apart from the surge in savings following the pandemic related restrictions, precautionary motives and government transfers, NFW was also driven

<sup>19</sup> FCI which is fully owned by the central government and operates on a no-profit and no-loss basis is classified as a part of CG as per SNA 2008.

upwards, particularly, by the valuation changes due to the booming equity and housing prices.<sup>20</sup>

Despite slowing growth in loans borrowed from ODCs and OFCs, households' indebtedness<sup>21</sup> increased to 41.0 per cent of GDP in 2020-21 from 36.3 per cent in 2019-20. Corresponding to decomposition of household deleveraging as noted by Bouis (2021), household debt leveraging can occur through rise in actual debt levels, low economic growth or lower inflation. Since 2018-19, increase in debt to GDP ratio of the households has been particularly due to a positive nominal income growth effect on account of contraction in nominal GDP, with a stable net credit effect (Chart 12).

Regarding assets, as a natural response to the pandemic induced precariousness and scarcity in the employment opportunities, households held huge buffer of savings in the form of both currency and deposits, as a result of which, currency and deposits soared to 80.5 per cent of GDP in 2020-21 from 69.8

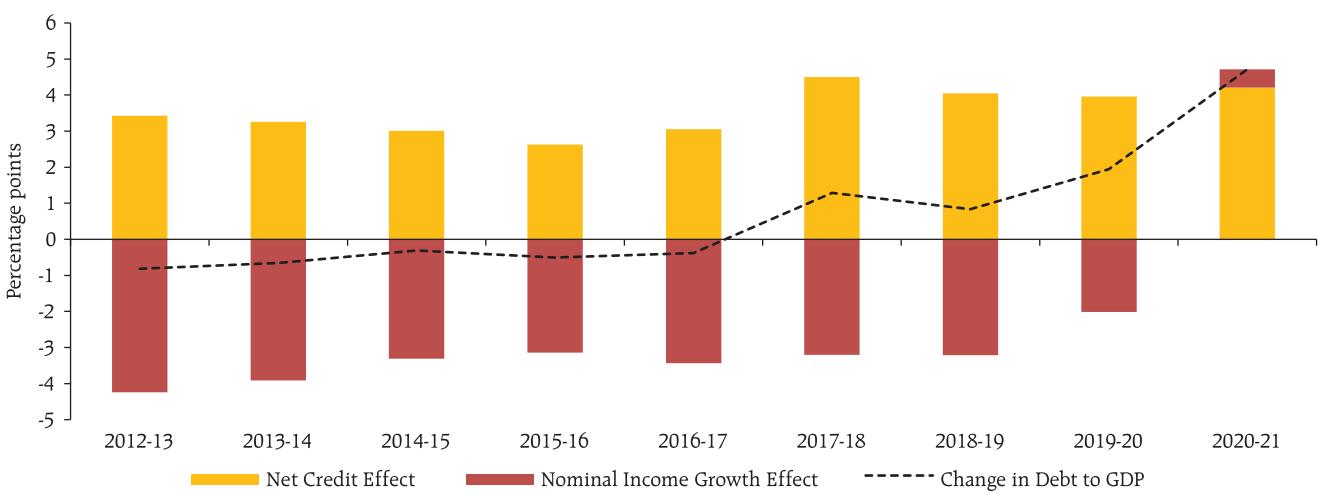
per cent in 2019-20. In addition, accentuated fears regarding health-related uncertainties and death events led to a robust demand for insurance, pension and provident funds, increasing the financial savings of households in insurance by 7.2 percentage points to 42.5 per cent of GDP in 2020-21.

#### IV.5 Rest of the World

Amidst the pandemic blues which witnessed foreign portfolio investment (FPI) outflows and reduced levels of dependency on foreign sources for financing, leading to large accretion to FER, growth in both financial assets and liabilities of RoW decelerated in 2020-21. This was also corroborated by a modest surplus in current account balance for 2020-21 (0.9 per cent of GDP), witnessed after 2003-04.

With a marginal increase in external debt by 0.4 per cent, the external debt to GDP ratio rose to 21.4 per cent as at end-March 2021 from 21.0 per cent a year ago. The increase was also contributed by valuation loss resulting from the depreciation of

**Chart 12: Decomposition of Change in Debt to GDP Ratio of the Households**

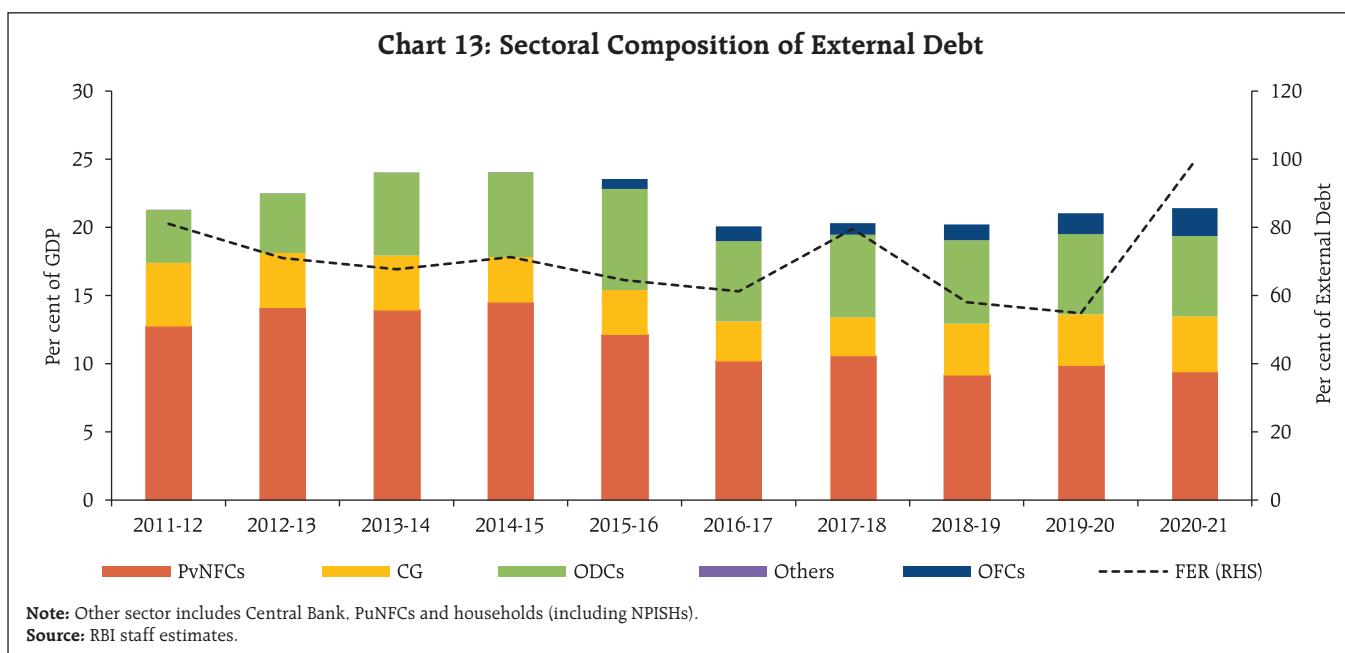


**Note:** Change in debt-to-income ratio between  $t$  and  $t+T$  can be decomposed into a change in the level of debt, i.e., net credit effect  $\frac{Debt_{t+T} - Debt_t}{Y_{t+T}^d}$  and a change in the nominal income growth, i.e., a nominal income growth effect  $(-) \frac{Y_{t+T}^d - Y_t^d}{Y_t^d} \times \frac{Debt_t}{Y_{t+T}^d}$ .

**Source:** RBI staff estimates.

<sup>20</sup> Cian Allen and Cyril Rebillard, The Unequal Covid Saving and Wealth Surge, IMF Blog, 2021.

<sup>21</sup> Household debt comprises loans and borrowings (98.7 per cent in 2020-21) and trade credit and advances and other accounts payable (1.3 per cent in 2020-21).



US dollar against Indian rupee and major currencies (euro, yen, and SDR) (RBI, 2021a). FER<sup>22</sup> to external debt ratio stood at 99.5 per cent as at end-March 2021, showing an increase of 14.2 percentage points over the previous year (Chart 13).

Despite initial headwinds, Indian equity market made a strong recovery in 2020-21 on the back of decisive monetary and fiscal policy responses, gradual easing of lockdowns, encouraging reports on development of coronavirus vaccine, increased foreign direct investment (FDI) limits in certain sectors and expectations of easing trade wars. Consequently, net FDI into India remained higher during the year despite global FDI flows collapsing and even the FPI flows improved as investors regained their risk-appetite (RBI, 2021a). In addition, a decline in short-term credit requirement by Indian corporates and repayments exceeding fresh credit availed via new agreements led to a net outflow of funds from PvNFCs whereas loans extended to CG by RoW registered an increase during the year.

## V. Conclusion

In 2020-21 as economy came to a standstill, the financial resource balance of the economy turned positive, after improving in the previous year. Households and financial corporations continued to remain major net lenders for deficit sectors. While PuNFCs turned net lenders to ODCs, PvNFCs received lower flows from RoW.

The balance sheet of the Reserve Bank swelled with a visible rise in financial assets due to increasing reliance on unconventional measures to ensure appropriate liquidity for smooth functioning of the economy during the pandemic. Depository corporations, mainly banks and non-banks, traversed the pandemic adversities by raising funds via government's recapitalisation bonds and market-based instruments. Balance sheets of other financial corporations emerged stronger. While insurance sector witnessed an increase in business with premiums flowing from households, AUM of mutual funds amplified in the last decade and pension and provident funds remained largely unaffected from the pandemic ramifications.

<sup>22</sup> FER comprises monetary gold, special drawing rights, reserve position in IMF, and other reserve assets (currency and deposits and securities) as per India's International Investment Position data release.

Non-financial corporations deleveraged their balance sheets in 2020-21 such that their net financial wealth improved after years of successive deterioration. Part of the recovery was because of accumulation of corporate cash on account of improvement in their liquidity position and an increase in corporate profitability.

Expansionary fiscal policy on account of providing relief to the poor, migrants and general public (through PM-GKAY, massive vaccine roll out, escalating investments for healthcare infrastructure, etc.) in the backdrop of pandemic escalated the liabilities of both centre and the states, widening the deficit of the general government. There was an increasing reliance on treasury bills and debt securities for servicing their fund requirements. With the effects of the pandemic fading away slowly, Government rolled out a roadmap for durable consumption-boosting and investment-driven recovery. Subsequent fiscal policy, with huge focus on a large capex budget, recovery of consumer sentiments, infrastructural developments and backward and forward linkages would bode well for the recovery of the Indian economy.

Pandemic instability and health apprehensions left households with an elevated stock of both currency and deposits and increased savings in insurance products such that household financial savings spiked significantly during 2020-21 from its long-term trend. As economic activities accelerated in 2021-22 and 2022-23, on expected lines, household financial savings began to normalise. Accumulated financial assets (mainly bank deposits, insurance, currency, mutual funds, pension and small savings) during pandemic could provide a buffer for households to dip in order to increase their consumption in subsequent revival period. Pandemic has provided impetus to digital transformation in India fuelling proliferation of digital modes of payment and propelling the country towards 'less-cash' alternatives.

With a relatively reduced dependence on external financing, particularly by Indian corporates, growth in both financial assets and liabilities of RoW decelerated in 2020-21. With disrupted global supply chains and chip shortages, the trade channels were severely impacted. Subsequently, with essential and timely policy measures, the Indian economy has shown resilience and invoked greater confidence amongst foreign investors which bodes well for ensuing inflow of investments. This, along with the growth drivers mentioned above, such as pick up in discretionary spending and turning around of the investment cycle on the back of digitisation and sustainable and green finance could contribute to faster realisation of the target of turning India into a \$5 trillion economy by 2026-27.

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**Annexure: Improvisations in Methodology and Data Sources**

Compilation of FSF, which involves a large variety of data sources is subject to certain limitations on account of missing information, measurement errors and incompatibilities. Consequently, statistical discrepancies emerge as a difference between aggregate sources and uses of funds notwithstanding efforts to minimise them. Nonetheless, timely compilation and availability of institutional statistics with instrument-wise details is the most significant prerequisite for minimising discrepancies. In this round of compilation, the major improvements introduced are as follows:

- Data for Port Trusts which are covered within the PuNFCs, have been re-compiled referring to the

detailed balance sheets of the respective ports (excluding the Kamarajar Port which is the only corporatised port in India and is registered as a company).

- Insurance sector's composition has been extended to include standalone health insurers and specialised health insurers (Export Credit Guarantee Corporation of India and Agriculture Insurance Company of India).
- All the computations and representations have been made as a per cent of GDP instead of net national income, as used in the earlier releases, for better international comparison.

# ***Application of Growth-at-Risk (GaR) Framework for Indian GDP\****

by Saurabh Ghosh<sup>^</sup>, Vidya Kamate<sup>^</sup> and Ria Sonpatki<sup>#</sup>

*This article analyses the role of domestic and international macro-financial conditions in influencing the future distribution of GDP growth for India using a Growth-at-Risk (GaR) framework. The GaR framework, by assessing the entire distribution of future GDP growth, helps in quantifying the likelihood of tail risk scenarios i.e. lower quantiles of GDP growth. GaR framework projections are not baseline forecasts of growth but shed light on low probability extreme events and are in the nature of stress tests that serve as a useful tool for monitoring risks to financial stability and macro-prudential policy implementation.*

## **Introduction**

Sustained and inclusive economic growth can lead to progress, creation of decent jobs for all, and improved per capita income levels. Therefore, it is unsurprising that growth rate of Gross Domestic Product (GDP) of an economy has increasingly become an important parameter to gauge a nation's economic well-being and its relative economic performance *vis-à-vis* the rest of the world. Globally, numerous inflation targeting central banks, routinely publish their forecasts of GDP growth rate in addition to the inflation rate. They usually provide point estimates for the conditional mean of economic variables or fan charts. However, with growing economic uncertainty and shocks, e.g. COVID-19 pandemic and Russia-Ukraine War etc., it has become increasingly

important to understand the entire distribution of target economic variables and minimise the downside risks. The Growth-at-Risk (GaR) concept addresses the questions relating to the worse outcome with certain probability. It was informally introduced in the April 2017 edition of Global Financial Stability Report (IMF 2017a) and its analytical underpinnings were provided in October 2017 (IMF 2017b). Both reports analysed how prevailing global financial conditions may affect tail risks to global economic activity. The GaR framework developed by Adrian et al. (2019) and the practical guidance on its implementation by Prasad et al. (2019). The Bank of England also computes GaR for its policy analysis<sup>1</sup>. Patra et al. (2022) draws on recent developments in the 'capital flows at risk' framework for India using a similar framework. In this backdrop, the article applies the GaR framework to India to understand and quantify the different dimensions of macro-financial risks to future GDP growth.

The opening up of Indian economy since 1991, bilateral trade with other countries, combined with financing from external markets made it vulnerable to global macroeconomic shocks such as the Global Financial Crisis of 2007-08. In a highly interconnected and increasingly synchronised global economy, not just domestic financial developments but international risk spillovers can generate downside risks to domestic economic growth (Ghosh et al., 2017; Kamate and Ghosh, 2022). The macroeconomic aftermath of global financial crisis was a vivid reminder of the significant consequences and highlight the need for early warnings that must be sent, and actions that must be taken to mitigate the associated tail risks (Aikman, 2019). In fact, policymakers in recent years have increased their focus on downside risks, especially in wake of recent global shocks such as the COVID-19 pandemic and Ukraine-Russia War. Most inflation-

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\* The views expressed in this article are those of the authors and do not represent the views of the Reserve Bank of India.

<sup>1</sup> <https://www.bankofengland.co.uk/working-paper/2019/credit-capital-and-crises-a-gdp-at-risk-approach>

targeting central banks release GDP and inflation distributions in addition to mean forecasts.

In this backdrop, this article attempts to apply the GaR framework to assess the tail risks to growth for India. The rest of the article is organised as follows. Section II provides a brief overview of the literature analysing tail risk estimation and some recent applications of GaR framework to other economies. Section III provides a detailed overview of the data and methodology used in the GaR analysis for India. Section IV highlights the main empirical results, and Section V concludes.

## **II. Review of Literature**

The concept of "tail risk" is a critical factor in modern risk management and financial regulation. Tail-based risk indicators have become the standard metrics for measuring risk, and their use is widespread in banking and insurance regulatory frameworks such as Basel III (BCBS 2016). Such risk measurements investigate the "tail" or "shortfall" of a risk at or below a given threshold. While most tail risk events relate to some aggregate macroeconomic shocks, tail real risks might also emanate from an interplay between microeconomic shocks and sectoral heterogeneity (Acemoglu *et al.*, 2017). While the entire distribution of GDP growth evolves over time, the left tail of the distribution was found to be positively correlated with slack in financial conditions (Adrian, *et al.* 2019). The conventional estimation of tail risk was based on Value-at-Risk (VaR) approaches, but these models underperformed in the face of extreme price movements which led to the emergence of expected shortfall measure (Artzner *et al.*, 1999). The conditional distribution of GDP growth as a function of financial conditions and macroeconomic vulnerabilities was first modelled in Adrian *et al.* (2019). It was found that the lower quantiles of GDP growth tended to vary with financial conditions, while the upper quantiles were more stable over time.

The practical guidance on GaR analysis that is implemented in the current article uses GaR tools that were subsequently developed by Prasad *et al.* (2019). Accordingly, this toolkit helps to estimate projections for both financial and macroprudential surveillance through presenting early indicators of potential problems. The GaR approach has been used to investigate growth distributions in various economies. Examples show that changes in macroeconomic conditions affect growth differently in various nations, and that changes over time are nonlinear. For instance, in Albania (IMF 2019a), economic circumstances in trade partners have the greatest short-run impact on growth; but, in Portugal, domestic financial conditions (including interest rates, leverage, and credit expansion) tend to be more important drivers of future GDP growth (IMF 2018b). Similarly, external financial circumstances, such as interest rates or currency rates, have the most explanatory power for Singapore's future GDP growth (IMF 2018a). Recently, one such analysis for India suggests that a negative credit shock increases downside risk to growth (MacDonald and Xu, 2022). Considering the heterogeneity of shocks on growth rate distribution, this article contributes to this growing strand of empirical literature, by applying this framework for an important emerging market economy, India.

## **III. Data and Methodology**

Using the financial market idea of Value-at-Risk as an inspiration, Growth at risk (GaR) strives to comprehend the worst-case scenario of GDP at a certain probability level *i.e.* the probability of future real GDP growth falling below a pre-specified threshold. Formally, GaR is defined using the equation below.

$$P_t[Y_t \leq GaR_t^y] = \alpha,$$

where  $y_t$  denotes the real GDP growth rate,  $GaR_t^y$  is implicitly defined as the threshold below which real

GDP growth occurs with probability  $\alpha$  conditional on the information set available at time  $t$ . GaR model is computed by firstly, categorising the financial and macroeconomic variables into relevant partitions. The partitions are then converted to indices using Principal Component Analysis (PCA) which helps to reduce parameter dimensionality and idiosyncratic noise. To comprehend the non-linear relationships between the chosen variables and GDP growth, quantile regression is estimated at 10<sup>th</sup>, 25<sup>th</sup>, 50<sup>th</sup>, 75<sup>th</sup> and 90<sup>th</sup> quantiles. This produces a baseline estimate of the entire GDP growth distribution. A *skewed-t-distribution* is then fitted, which contains four parameters – mean, variance, skewness, and shape. The GaR for a given threshold probability value is obtained by using this distribution. To understand forecasts of GaR over short, medium, and long-term, multiple horizon projections are estimated ranging from 4 to 16 quarters ahead, giving an insight on the differential temporal effects of the various variable partition groups. A stress testing exercise is also conducted to understand how shocks to individual or multiple partitions can cause deviation in the distribution of future GDP growth from baseline outlook. Quarterly data from 2001 Q3 to 2022 Q1 for GDP is obtained from CEIC, financial market data is obtained from Bloomberg, and credit related variables are obtained from the Reserve Bank's DBIE<sup>2</sup>. Variables influencing GDP growth from domestic as well as global sectors are considered. For some of the credit related variables whose data is released with a lag, we use their forecasted value<sup>3</sup> for the analysis.

Domestic variables such as credit and financial conditions have a direct beneficial impact on GDP growth and tend to provide information on risks to growth. Through effective and efficient capital mobilisation and allocation, credit market expansion has the potential to stimulate riskier investments in profitable channels (Mishra et al., 2009). Additionally,

the financial conditions index serves as a useful tool for predicting GDP growth especially in the short run at lower quantiles (Prasad et al., 2019). Domestic financial conditions represent the domestic price of risk, cost of domestic borrowing for individuals and corporations and in general, costs of financing investment projects in the local economy. The combination of financial market and credit cycle indicators provides information on the evolution of financial sector stress and financial stability threats. Thus, evaluating financial vulnerabilities yields considerable information on future growth concerns (Acharya et al., 2020). Lastly, in addition to domestic financial conditions, the crucial role of foreign vulnerabilities in determining downside risk to domestic growth is well documented (Lloyd et al., 2021). Foreign financial developments can influence domestic growth through multiple channels, e.g. cross-country co-movement of asset prices, influencing costs of foreign claims of domestic financial institutions and macro-economic channels such as demand for domestic exports. Keeping these factors in mind, variables suitable for explaining the dynamics of GDP growth were selected. These variables were divided into three broad groups that capture domestic financial conditions, leverage conditions and global conditions respectively (Table 1). Principal Component Analysis (PCA) was conducted on grouped variables to extract common trends from the large array of indicators<sup>4</sup>. Domestic Financial Conditions partition captures the domestic price of risk that comprises interbank spreads, term premiums, bond returns, bond returns volatility, equity returns, and equity returns volatility, and long-term costs of funding. Similarly, Leverage partition captures information on credit aggregates and banking sector stress. Finally, global conditions partition captures global supply chain disruptions, financial market stress and currency movements.

<sup>2</sup> Many of the important financial market rate variables are not available for periods prior to 2001 which constrained us to begin our sample in 2001.

<sup>3</sup> Random walk models are used to predict one-quarter ahead forecasts.

<sup>4</sup> The GaR framework performs a PCA analysis for reducing the dimensions of the data not for capturing a latent unobservable variable and, as such, assumes that all variance can be explained by the existing variables. Therefore, in this article we follow IMF(2019) methodology and use PCA instead of dynamic factor models.

**Table 1: Variable Partitions**

<b>Domestic Financial Conditions</b>	<b>Leverage</b>	<b>Global Conditions</b>
1 Call Spread (Call Rate – Repo Rate)	1 Credit Growth	1 Baltic Dry Index
2 Short Spread (3-month Commercial Paper Yield - 91-day T-bill Yield)	2 Credit-to-GDP Ratio	2 Change in Crude Oil Price
3 Market Spread (Market Repo Rate – Repo Rate)	3 Credit-to-GDP Gap	3 US VIX
4 Tri Party Spread (Tri Party Rate – Repo Rate)	4 Credit-to-Deposit Ratio	4 Real Effective Exchange Rate (REER)
5 Term Spread (10-year G-Sec Yield - 91 day T-bill Yield)	5 Net NPA's to Net Advances	
6 Inter Bank Spread (3M MIBOR - 91-day T-bill Yield)	6 Share of Non-Resident Liabilities to Deposits.	
7 10 Year Corporate Bond Spread (AAA 10-year Corporate Bond Yield - 10-year G-Sec Yield)		
8 5 Year Corporate Bond Spread (AAA 5-year Corporate Bond Yield - 5-year G-Sec Yield)		
9 10-year G-Sec Yield		
10 Total Stock Market Capitalization to Nominal GDP		
11 India VIX		
12 PE Ratio		
13 NSE Returns		

**Note:** MIBOR refers to the Mumbai Interbank Offer Rate.

#### IV. Empirical Results

The first crucial step in GaR analysis is selecting relevant variables and assembling partitions. Instead of considering variables individually, partitions are built based on their proclivity to co-move with one another, since they represent comparable underlying factors and aid in the extraction of common patterns. As mentioned in the previous section, PCA is done on the three selected partitions to turn a set of observations of potentially correlated variables into a set of values of linearly uncorrelated variables that will be utilised to conduct quantile regression.

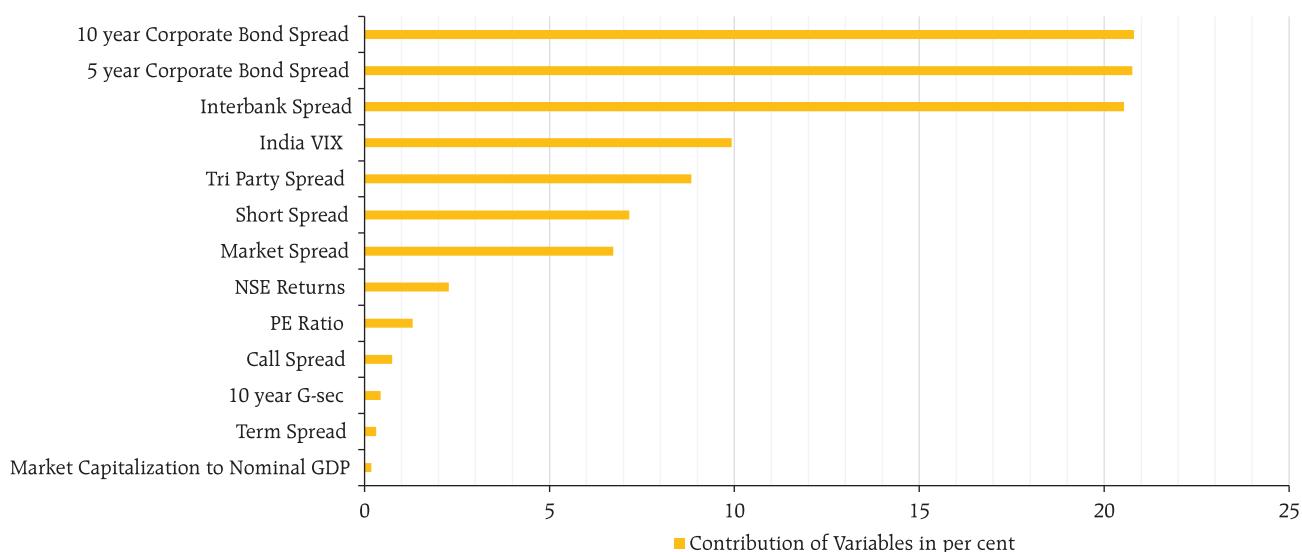
##### a) Factors that Matter: Principal Component Analysis

The first principal component for each partition is considered. PCA loadings that accompany each partition give information on the relative significance of variables examined under

each partition. Along the Domestic Financial Conditions Partition, Interbank Spread, 10-year and 5-year Corporate Bond Spread are the most influential drivers of domestic financial conditions as they explain almost 50 per cent of variation within the partition (Chart 1). A higher value of this partition implies a tightening of domestic financial conditions.

Leverage partition captures overall credit conditions in the economy. The significant contributors to this partition are credit-to-GDP ratio, credit-to-deposit ratio and non-resident liabilities that explain approximately 87 per cent variation in the partition (Chart 2).

Among the variables comprising Global Conditions partition, the Baltic Dry Index is the most significant, followed by US equity market volatility, oil price and REER for India.

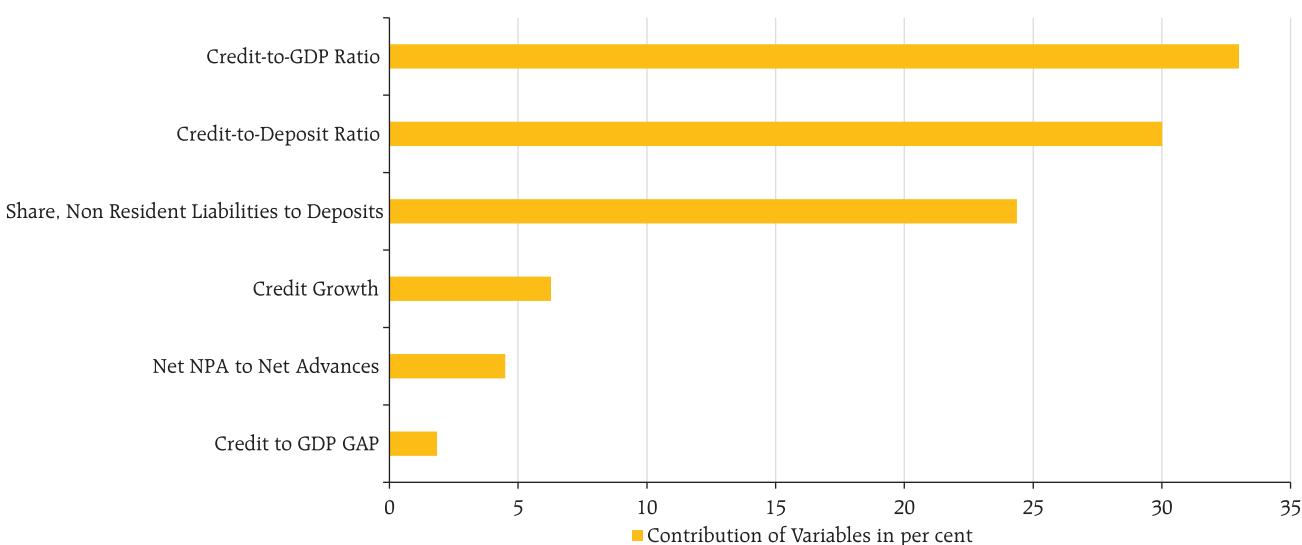
**Chart 1 : Contribution of Variables in Domestic Financial Conditions**

Source: Authors' Calculations

### b) Asymmetric Tail Risks: Quantile Analysis

Variables do not necessarily behave the same way at the extremes of the distribution as they do at the centre, where the entire distribution varies over time and not just the central tendency. Quantile regression aids in estimating

the non-linear connection and identifying the components that are crucial distribution drivers. For acknowledging non-linear relationship between financial conditions, macro-financial vulnerabilities quantile regressions are estimated at 10<sup>th</sup>, 25<sup>th</sup>, 50<sup>th</sup>, 75<sup>th</sup> and 90<sup>th</sup> quantiles of future

**Chart 2 : Contribution of Variables in Leverage Partition**

Source: Authors' Calculations

GDP growth and independent variables (3 partitions).

The quantile regression takes the following form:

$$Y_{t+h}^q = \alpha^q + \beta_1^q X_{1,t} + \beta_2^q X_{2,t} + \beta_3^q X_{3,t} + \gamma^q Y_t + \varepsilon_{t+h}^q \quad \dots(1)$$

where  $Y_{t+h}^q$  represents future growth  $h$  quarters ahead for quantile  $q$  and  $q \in \{0.1, 0.25, 0.5, 0.75, 0.9\}$ ;  $X_{1,t}$ ,  $X_{2,t}$ ,  $X_{3,t}$  represent three partitions (encompassing the domestic financial conditions, leverage and global conditions) with their associated coefficients,  $\beta_1^q$ ,  $\beta_2^q$ ,  $\beta_3^q$ .  $Y_t$ ,  $\alpha^q$  and  $\varepsilon_{t+h}^q$  denote lagged growth, constant term and the residual, respectively. The quantile regressions are estimated at different points of the distribution of  $Y_{t+h}^q$ , and each coefficient, for example,  $\beta_1^q$  represents the macro-financial linkage between the variable  $X_{1,t}$  and future growth, at different points of the future growth distribution.

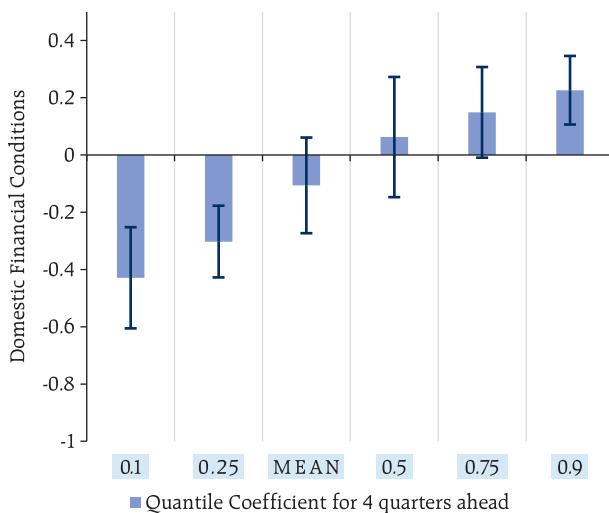
Domestic Financial Conditions are an excellent predictor of downside risks to India's GDP growth

over shorter horizon of 4 quarters. The projected impact of increased risk pricing appears to be strongest towards the tails of the GDP growth distribution rather than around the mean, confirming the assumption of asymmetries in the output response (Chart 3).

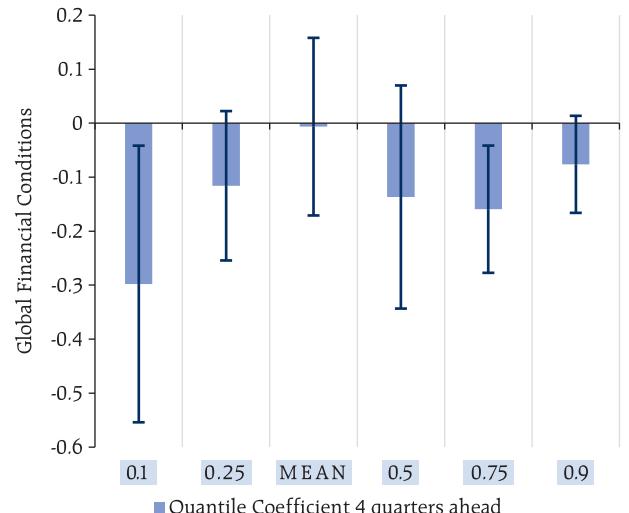
A tightening of financial conditions provides a considerable negative risk to growth at the lower quantiles (Chart 3). For brevity we haven't reported financial circumstances over the next eight to sixteen quarters, as our empirical findings indicate that they become uninformative signifying that financial conditions could only provide meaningful information for GDP growth in the short future.

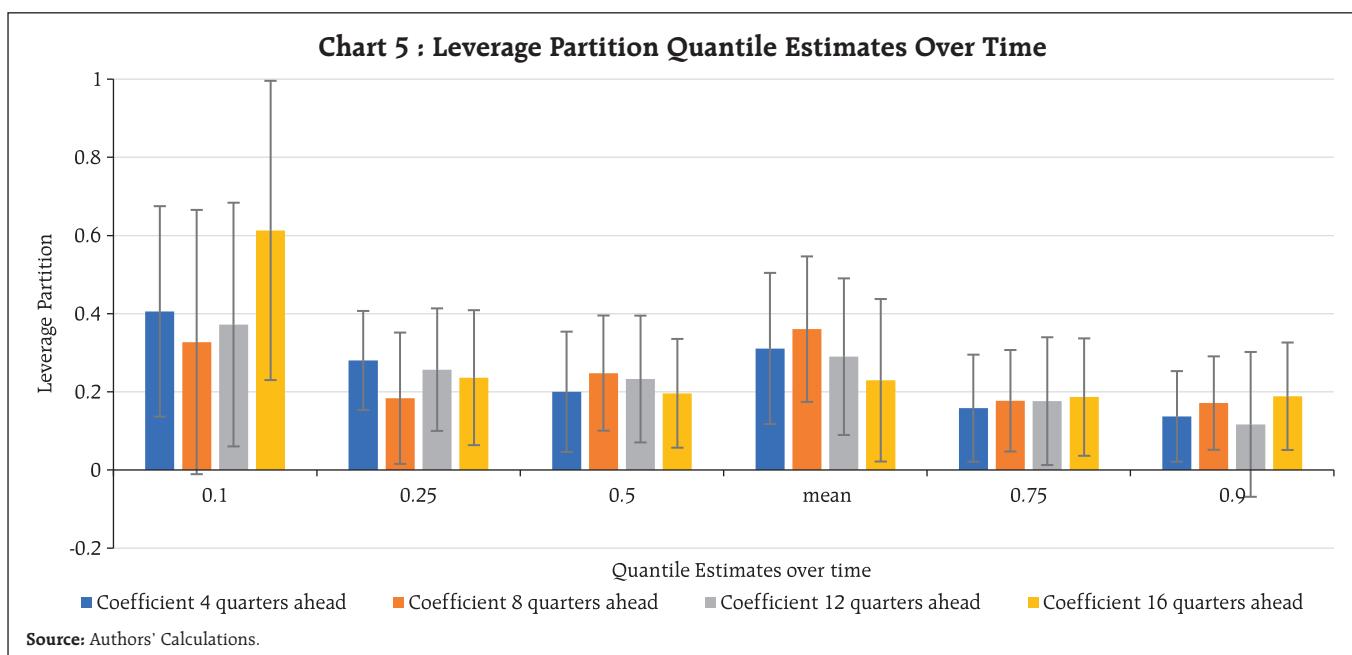
Quantile regression coefficients of Global conditions partition highlight the differentiated effects of global shocks on future GDP growth (Chart 4). For instance, a significant negative impact of Global conditions is observed at lower quantiles (10<sup>th</sup>) as well as at upper quantiles (75<sup>th</sup>). This result is consistent with the literature for

**Chart 3: Quantile Coefficients for Domestic Financial Conditions**



**Chart 4 : Quantile Coefficients for Global Conditions**





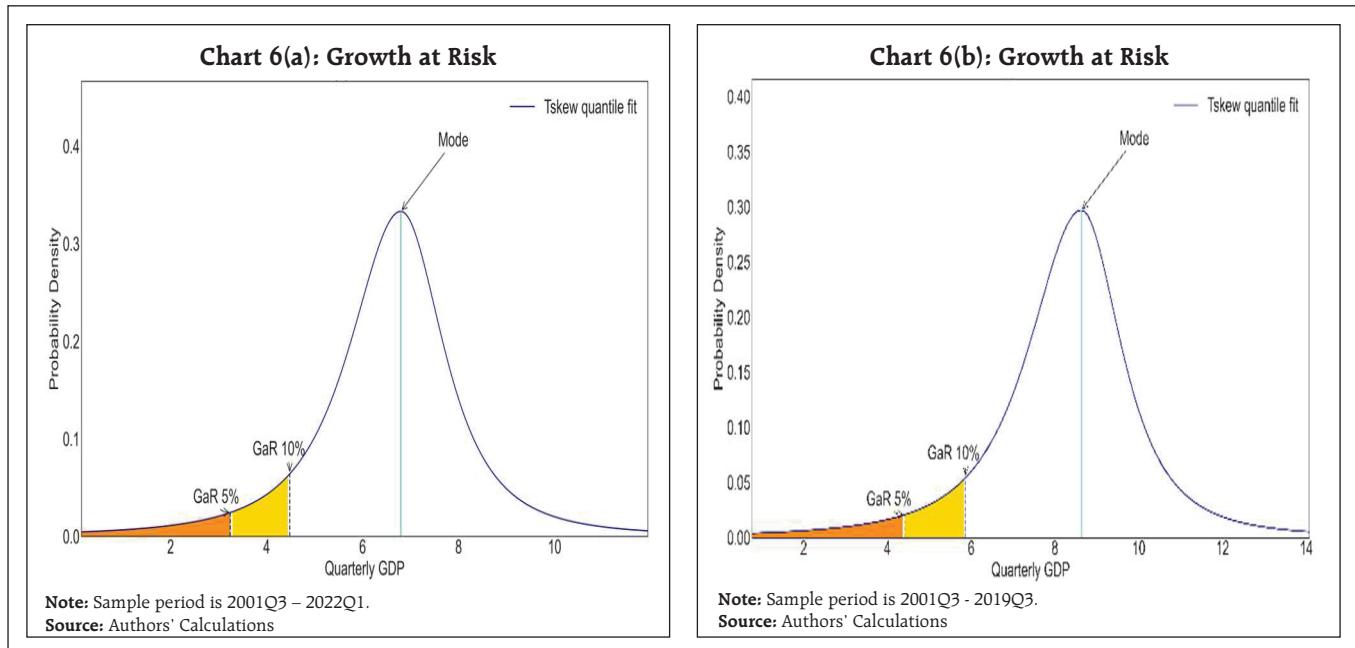
quantile regression. It may be noted that mean estimates are not significant, though upper and lower quantiles are. Therefore, this highlights that crucial information would be lost if this non-linearity is not appropriately uncovered via quantile regressions. It is observed that Global conditions while representing a downside risk to growth in the near term, pose an upside risk for 8 quarters ahead horizon. Leverage partition signals upside risks to GDP growth at horizons 4 to 16 quarters ahead (Chart 5). Given that India is an emerging market economy, growing credit aggregates, beyond a threshold (RCF 2022), indicate more upside risks to growth.

### c) Estimating GaR

A *skewed-t-distribution* is then fitted by interpolating between the estimated quantiles to smooth the quantile function and translate the empirical quantile distribution into an estimated conditional distribution of GDP growth (Patra *et al.*, 2022). The *skewed-t-distribution* is fully described by four parameters (location,

degree of freedom, scale, and skewness) and is therefore a concise yet comprehensive approach to synthesize variance (volatility), kurtosis and skewness. In comparison to the *t-distribution*, the *skewed-t-distribution* has a shape parameter that controls how much skewing influence it has on its probability distribution function.

The fitted skewed distribution allows the estimate of GaR that signifies the probability of future growth rate falling under an estimated GDP growth value (Chart 6.a). The density highlighted at 10 per cent can be utilised to construct a measure of risk to GDP growth associated with prevailing financial and macro-economic conditions. GaR at 10 per cent denotes that there is a 10 per cent probability that GDP growth 4 quarters ahead could be less than or equal to the threshold value. The conditional forecasts of GDP growth, based on the financial conditions and selected macro-financial vulnerabilities, are used by GaR model to quantify the impact of realisation of risk. Given that our dataset includes observations pertaining to the pandemic period, which was indeed a

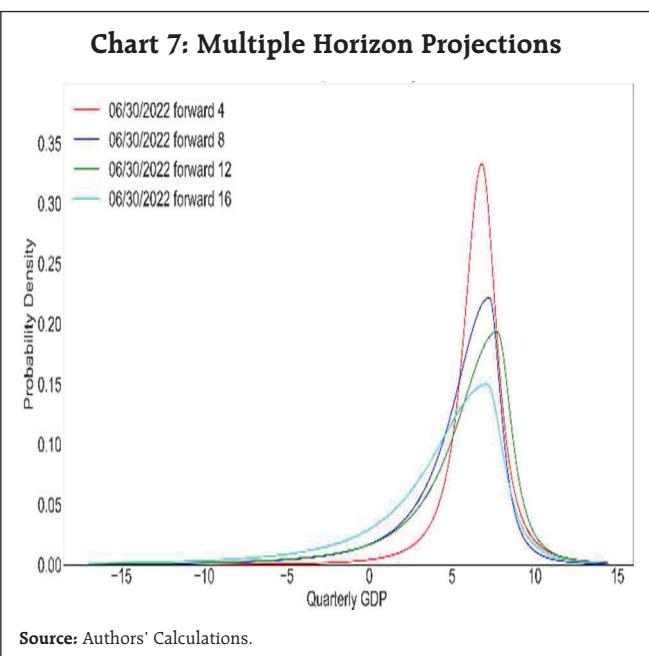


black swan event, academic interest prompted us to drop the pandemic time observations and re-compute GaR (Chart 6.b) to check how much would the Growth-at-risk numbers change for India by exclusion of this event. In line with our expectation, the entire distribution shifts to the right, indicating improvements in GaR at 10 per cent level and in the measures of central tendencies.

#### d) Multiple Horizon Projections and Stress Tests

The longer is the left tail of the distribution, the higher are the tail risks to the growth, which serves as an early warning indicator. To assess GaR at medium and longer term, future horizon projections are analysed. Accordingly, distributions of GDP growth are projected for 4,8,12,16 quarters ahead to give an understanding of the future growth of India (Chart 7). The 4 quarters ahead forecast scenario appears challenging especially during recovery phase of Covid-19, Russia-Ukraine crisis and a slowdown in World GDP growth. Deteriorations in domestic and global financial

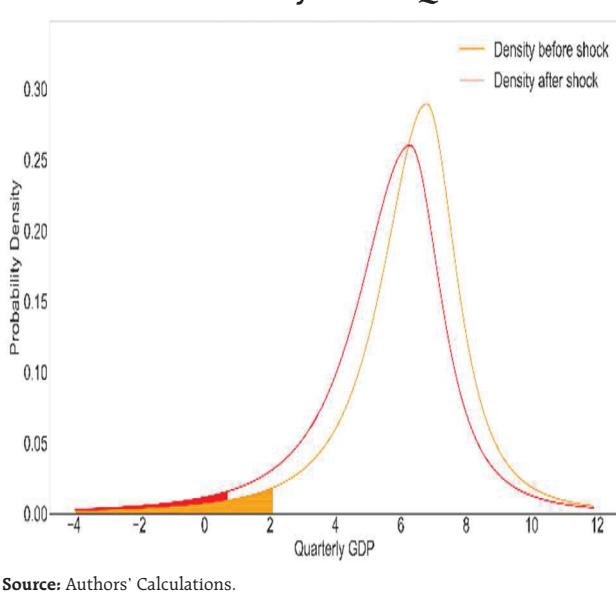
conditions coincide with declines in the mean and increases in the variance of the future GDP growth distribution, thus with the leftward shift of the distribution. When vulnerabilities develop, the likelihood of a more catastrophic situation increases and hence, a leftward shift indicates higher tail risks to growth.



Comparing the conditional density across the quarters, significant time variation in the density is observed, and this time variation is primarily due to the changes in the lower tail of the distribution.

The GaR model is used to lead a stress testing exercise for generating macro-financial scenarios. Given that the present GaR architecture is a lean reduced form forecasting system, the scenario analysis is based on comparative statics, which takes uncorrelated shocks into account without accounting for endogenous feedback. With the present global uncertainties caused by growing inflation, the Russia-Ukraine crisis etc., global conditions partition is shocked to estimate how the future GDP growth distribution may alter. This gives information on how the realisation of a risk influences the growth distribution in future periods. An adverse one standard deviation shock to global conditions diminishes average future growth (Chart 8). Furthermore, the growth distribution's shape has changed, altering the skewness, following the shock. After the shock, the distribution becomes more negatively skewed, with a longer and fatter left tail.

**Chart 8: Scenario Analysis for 4 Quarters ahead**



## V. Conclusion

The accessibility of forward-looking information is vital to the success of macroeconomic policies. GaR analysis offers an alternative baseline for evaluating the gravity of catastrophic situations because it can estimate the entire distribution of future GDP growth. The GaR technique offers the additional benefit of accounting for macro-financial vulnerabilities and serves as a warning signal in response to which macroprudential policies can be appropriately tweaked. In certain circumstances, assessments of both the baseline growth forecast and vulnerability from the tail events assumes importance in shaping pre-emptive and preventive policies. GaR framework provides an appropriate toolbox for monitoring such developments.

In light of its significance, we first make an effort to draw attention to the local and global factors that do, in fact, matter in the GaR framework. In the short-term, our research emphasises that financial conditions, global conditions, and leverage assume importance. But, in the medium term, domestic credit or leverage conditions tend to be the most significant determinant of future distribution of GDP growth. This outcome is in line with other empirical studies (IMF 2018b, IMF 2017) and the volatility paradox (Brunnermeier and Sannikov, 2014).

Secondly, this research includes analysis of financial conditions and macro-financial vulnerabilities exploiting potential non-linearities. In this connection, the relevance of using quantile regressions is illustrated by the fact that while the mean exhibits insignificance, the lower and upper quantiles of the dependent variable demonstrate the presence of potential growth risks for India. Therefore, if just measures of central tendency and not the complete range of economic outcomes were considered, this lesson could have been missed.

Further, based on selected macro-financial data, our GaR estimates highlight the significance of credit aggregates in a developing economy like India, which necessitate their close monitoring. Global financial market volatility is found to have negative impact on domestic GDP, and therefore geopolitical developments affecting GaR may require continuous vigil.

Our study lends itself to more informed policy decisions, because it explicitly links systemic risk indicators to economic outcomes. It may help stepping up supervision of financial markets in response to warning signals by increasing the rigor of stress testing or turning on pre-existing macro-prudential instruments to address systemic risk. Though current GaR forecasting system is still emerging, it shows great promise, and the GaR-related methods will remain a crucial futuristic tool for policymakers.

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# **Subnational Borrowings in India – Volatilities and Determinants of State Government Securities Spread\***

by Suraj S<sup>^</sup>, Amit Pawar<sup>^</sup> and Subrat Kumar Seet<sup>^</sup>

The study analyses the pricing dynamics of subnational market borrowings known as State Government Securities (SGS)<sup>1</sup> in India, especially when covid-crisis induced higher borrowings by the States. It examines the cointegration of SGS yield with benchmark G-sec yield and analyses the volatility dynamics to differentiate persistence of shocks vis-à-vis G-sec yields. Further, panel data analysis covering 26 states for the period 2015–2022, examines the driving factors of differential pricing of SGS in terms of their spreads over the benchmark G-sec. The findings highlight compelling need for states to follow measures addressing supply concerns of market by reducing pre-emptive over-borrowing and better cash management practices.

## **Introduction**

The deficit financing by governments is conducted through issuances of bonds. In India, the central and state governments finance their deficit through market borrowings. RBI plays a vital role in the development of sovereign debt market in India while discharging its duties as debt/cash manager for both governments within the broad objectives of cost minimisation, risk mitigation and market development (RBI, 2021).

Indian debt market is dominated by sovereign issuances *vis-à-vis* corporate debt issuances. The outstanding market borrowings to GDP ratio of central and state governments is 34 per cent and 19

per cent, respectively, as on end-March 2022 *vis-à-vis* 17 per cent for the domestic corporate debt which pre-empts a significant proportion of household financial savings for government consumption. The combined outstanding market borrowings of all three constituents has reached 70 per cent of GDP<sup>2</sup> as on end-March 2022. Therefore, fiscal prudence, fiscal marksmanship and consolidation of sovereign debt is critical. Further, previous studies (Bose *et al.* 2011, Saggar *et al.* 2017) have found that market disciplining of subnational borrowings through differential pricing among states is absent in India. The implicit sovereign guarantee associated with subnational issuances is highlighted as a major reason.

The subnational debt market in India is historically illiquid due to fragmented nature of issuances leading to large held to maturity (HTM) portfolios of market participants. The global experiences in the aftermath of COVID-19 outbreak show increasing acceptance of subnational debt instruments with the liquidity enhancement and asset purchase programmes of central banks. In India, pandemic had prompted governments to increase their deficit financing as emergency measure. RBI facilitated this through cost minimisation measures such as special open market operations (OMOs) and government securities acquisition programme (G-SAP) that included SGS for the first time.

In this context, the study attempts to consolidate the global experiences on the asset purchase of subnational bonds for drawing insights from such practices. Further, it attempts to study recent developments in the subnational borrowings in India including an empirical examination of pricing pattern of SGS, volatility thereof and determinants of comparative cost of borrowings of states in terms of yield spreads over the benchmark G-sec yield.

The study is categorised into four sections. Section II provides measures taken by various central banks

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\* The views expressed in this article are those of the authors and do not represent the views of the Reserve Bank of India.

<sup>1</sup> The nomenclature of the State Development Loan (SDL) has been changed to State Government Security (SGS) from July 2022 onwards.

<sup>2</sup> As per available budgetary and provisional estimates from National Statistical Office (NSO).

in the subnational bond market during the pandemic including measures taken in Indian subnational debt market. Section III examines the relationship of SGS with benchmark G-Sec yield, their respective volatilities and its persistence. Further, the section also discusses the pricing of SGS by analysing the determinants of SGS spread over the G-sec benchmark yield, while Section IV concludes.

## **II. Central bank policy responses in subnational debt markets during Covid-19 pandemic**

As part of the policy responses to enhance liquidity, central banks world-wide resorted to asset purchase programmes including the purchase of government bonds/bills, subnational bonds, corporate bonds, agency mortgage-backed securities, etc. Global experiences on the subnational asset purchases by central banks indicate that such interventions were to alleviate cash flow pressures on state and local governments, facilitate credit supply, safeguard the liquidity and efficiency of provincial government funding and to address any market dislocations. These measures thus intended to support the monetary policy transmission mechanism by aligning market interest rates with the policy objectives across the spectrum of instruments to minimise financial market dislocations.

Most central bank interventions in the subnational debt market were through secondary market purchases via bidding process. However, there were also instances of primary market interventions for direct lending as well. The details of the subnational asset purchase programmes by select central banks are in Annex I.

In most jurisdictions, the central banks made upfront announcement on the criteria followed for allocative equality of the subnational instruments. The allocative criteria varied in terms of population, revenue contribution to GDP, the size of outstanding subnational debt, credit rating, etc. It is also observed that the criterion of regional contributions to the national GDP was used for allocative equality for

a direct lending facility. Further, asset purchases were targeted across maturities as these subnational securities are active across the yield curve. However, in the US direct lending in the form of primary market intervention targeted the shorter maturity.

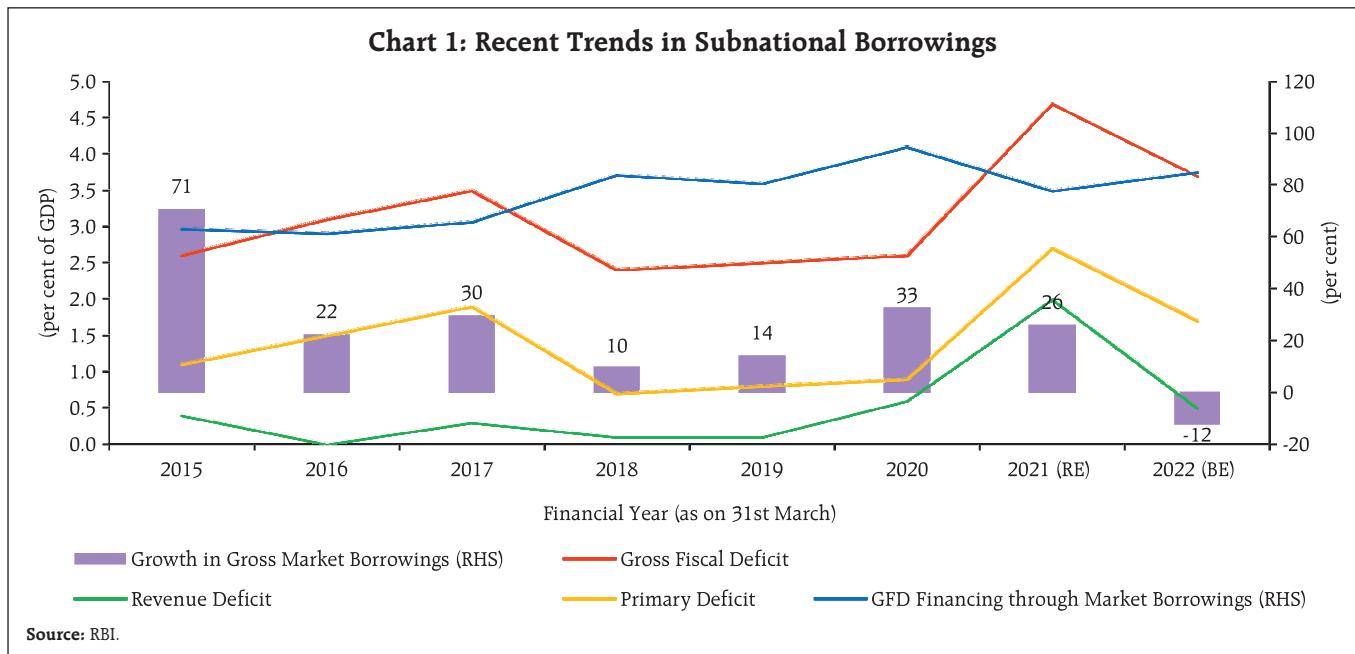
The global practice suggests that subnational assets/securities have the potential to become supplementary tool in the monetary policy toolkit of central banks to cope with recessionary shocks. In India, the Reserve Bank conducted asset purchase programmes in the form of Open Market Operations (OMO) and Government Securities Acquisition Programme (G-SAP) including unprecedented open market purchases of SGS. The global experiences of central bank interventions in the subnational debt markets supports the policy measures taken by the RBI in the aftermath of the Covid-19 pandemic outbreak.

### **Recent trends in market borrowing of states in India<sup>3</sup>**

The state governments' reliance on market borrowings for financing their gross fiscal deficit (GFD) has increased over time. Broad reasons driving the increase were states opting out of National Small Savings Fund (NSSF) financing facility as per the recommendation of 14<sup>th</sup> Finance Commission from 2016-17, considerable redemption pressure from past borrowings in the aftermath of Global Financial Crisis and the recent fiscal exigencies to minimise the economic impact of the Covid-19 pandemic. As a result, the share of market borrowings in financing the states' GFD increased from 63.1 per cent in 2014-15 to 85.1 per cent in 2021-22 (BE)<sup>4</sup>. The pandemic outbreak increased states' expenditure on the health sector and other social security schemes while the general economic activity and consumption declined, intensifying the budgetary stress (Jose et al., 2020). During 2020-21, GFD of states breached the targets under Fiscal Responsibility and Budget Management

<sup>3</sup> The data from January 2015 till March 2022 is used in this section for comparison. Pre-COVID-19 period wherever mentioned pertains to the period from January 2015 to February 2020 and COVID-19 period pertains to the period from March 2020 to March 2022.

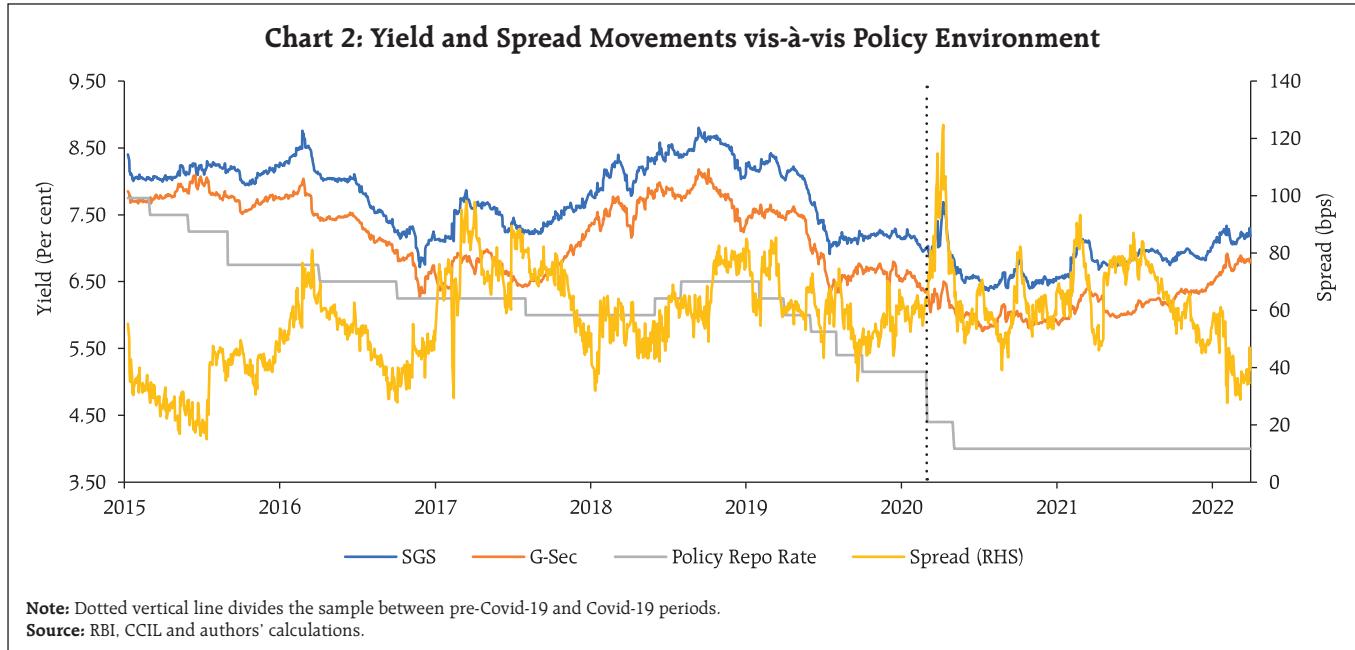
<sup>4</sup> As per RBI's Annual Reports 2015 to 2022.



(FRBM) Act under the impact of Covid-19, with spillovers in 2021-22 as well. Revenue generation capacity of states declined with the Covid-19 outbreak as the revenue deficit (RD) of the states, which was 0.1 per cent of GDP in 2018-19, reached 2.0 per cent of GDP in 2020-21<sup>5</sup> (Chart 1).

#### ***SGS yields and pandemic induced policy environment***

The weighted average yield on SGS softened to 6.98 per cent in FY 2021-22 from 8.58 per cent in FY 2014-15 (Chart 2), while it stood at 8.32 per cent in FY 2018-19 before the onset of the pandemic. The



<sup>5</sup> As per RBI's State Finances : A Study of Budgets various issues.

sharp uptick in the borrowing costs at the beginning of the pandemic was alleviated by the RBI through introduction of G-SAP in 2021-22 amounting to 2.2 lakh crores with an explicit SGS component. The weighted average spread of SGS yield over the 10-year benchmark G-sec averaged around 53 basis points during 2015-2022 while it was about 47 basis points during the last two fiscals with intermittent volatility, especially during the pandemic. Further, weighted average inter-state spread which is an indicator of the relative cost of borrowing of states on average remained low at 6 bps during FY 2014-15 to FY 2021-22 but increased to 10 basis points during FY 2020-21 amid pandemic uncertainty. A low and stable inter-state spread is evidence of non-discrimination by the market amongst states. However, it may also exhibit reluctance of market to enforce fiscal discipline through its pricing mechanisms.

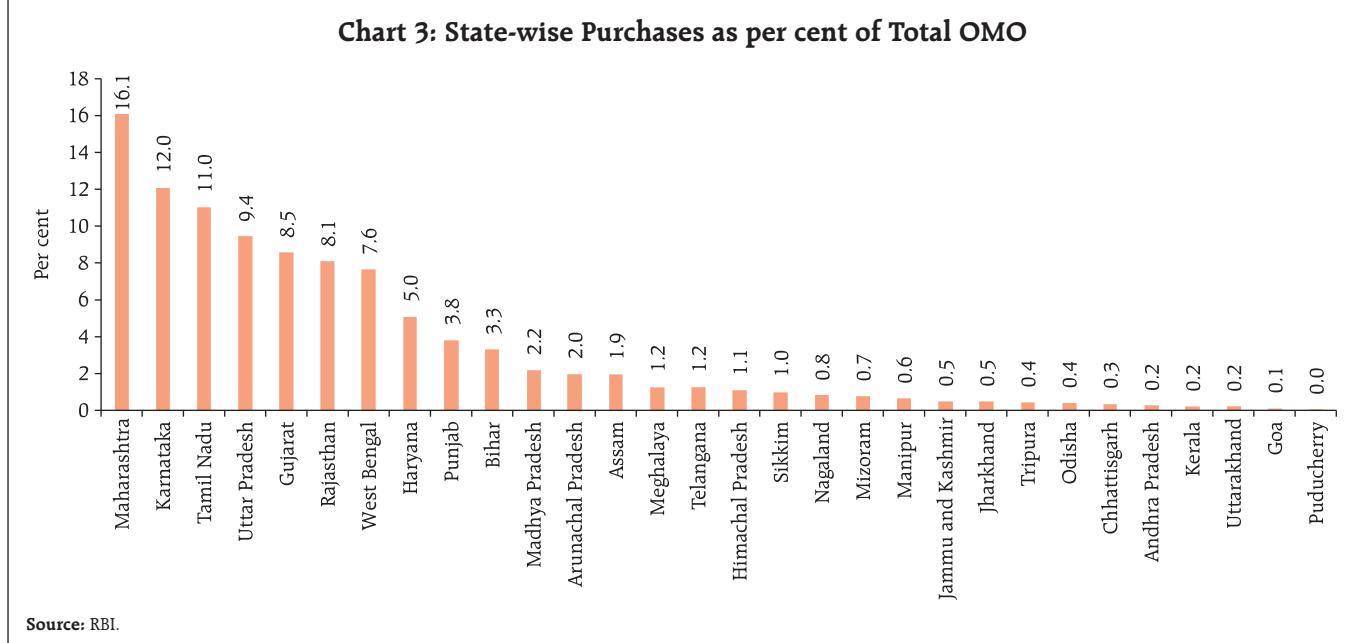
### **Open market operations in SGS**

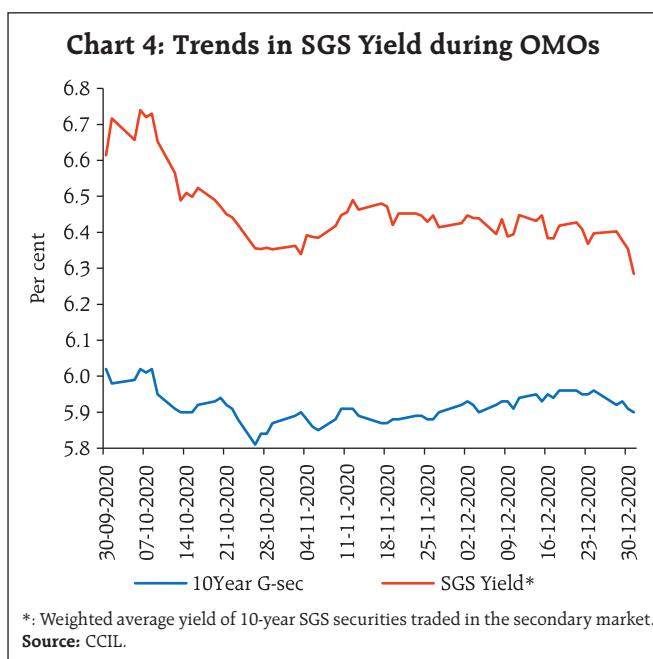
In an unprecedented policy response to outbreak of pandemic, the RBI in October 2020 announced to conduct OMOs in SGS as a special measure to improve liquidity, facilitate efficient pricing and instil

market confidence while facilitating monetary policy transmission. These OMOs were completed for a basket of SGS in three tranches amounting ₹10,000 crore each aggregating to ₹30,000 crore (Annex II). The purchases of SGS varied among states with Maharashtra scoring the highest with ₹4,818 crores while it was ₹25 crores for Goa (Chart 3).

RBI followed the OMOs of SGS through a multi-security auction using the multiple price method. The allocation criteria for the SGS OMOs conducted by the RBI were mostly aligned with outstanding stock of SGS to ensure equality among the subnational issuers and was comparable with the global practices. SGS OMOs were primarily confined to the residual maturity of eight, nine and ten-year securities targeting longer end yields of SGS as per international practice with the objective of stimulating growth. As a result of this timely intervention, the SGS yields stabilised during the period of announcement from October to December 2020 along with benchmark G-Sec yields (Chart 4). Thus, the Indian experience of OMOs in subnational bonds was largely in line with global experiences in terms of the purpose, instruments, target maturities and bidding process.

**Chart 3: State-wise Purchases as per cent of Total OMO**



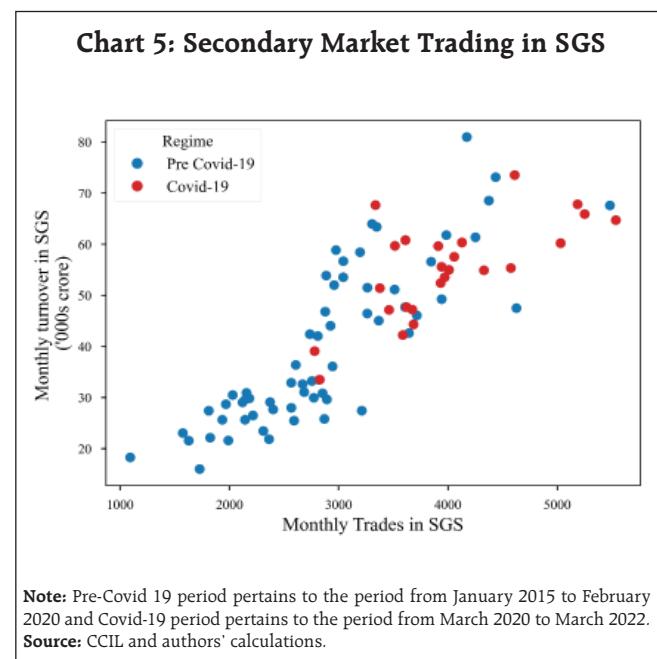


### Policy impact on trading, issuance pattern and ownership of SGS

Both the volume as well as turnover of SGS has increased during the Covid-19 period, signifying enhanced liquidity especially following the inclusion of SGS in the G-SAPs and the OMOs in SGS securities (Chart 5). Monthly average trades in the Covid-19 period increased by 38.9 per cent while the average monthly turnover increased by 38.0 per cent compared to the pre-covid period.

Further, the pandemic induced monetary policy environment of low interest rates enabled states to increase non-standard issuances<sup>6</sup>. These issuances as a percentage of the total rose to 59 per cent in Covid-19 period compared to 27 per cent during pre-Covid 19 period. Further, the average residual maturity of non-standard issuances has increased by around one year to 12.6, highlighting that states have issued non-standard securities with maturities more than 10

<sup>6</sup> Standard issuances refer to securities with 10-year maturity while non-standard issuances refer to securities with maturity other than 10 years.



years during Covid-19 period to capitalise on the low cost long-term borrowing conditions (Table 1).

The ownership pattern of SGS has also changed since the start of the pandemic. Chasing higher yields, corporates, financial institutions and provident funds, increased their ownership in SGS securities during Covid-19. In contrast, ownership of commercial banks and insurance companies has declined. These changes indicate the policy environment induced diversification of ownership pattern of SGS (Chart 6).

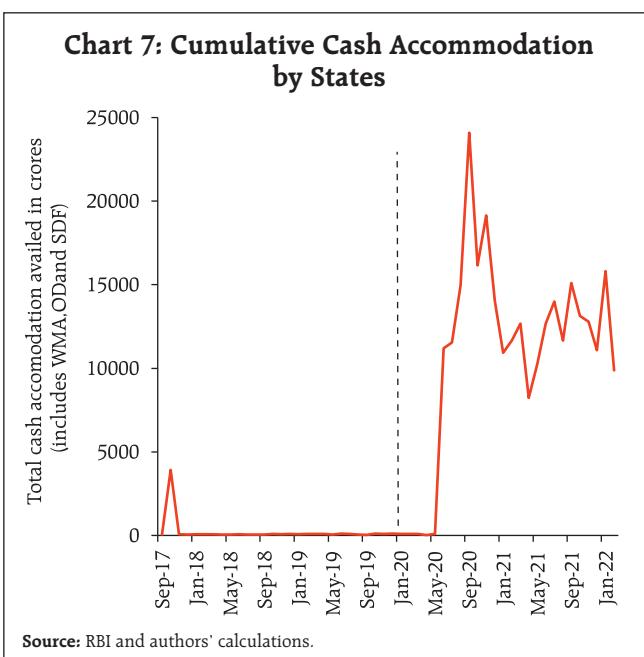
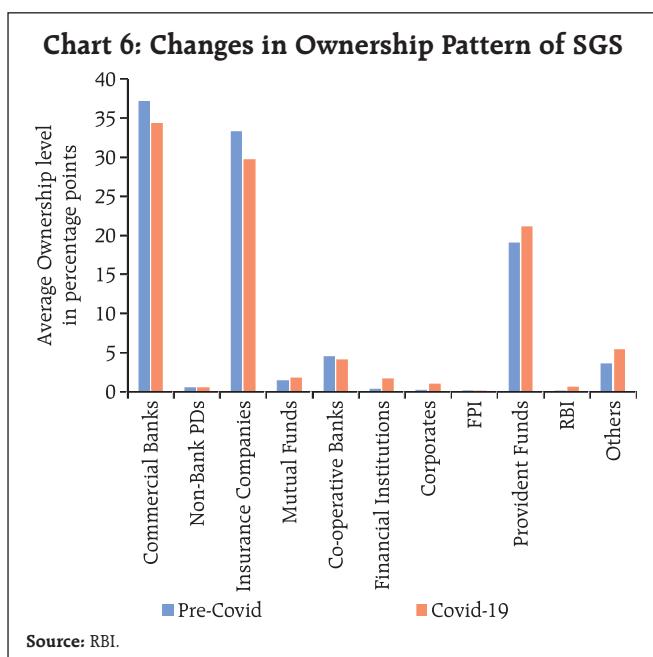
**Table 1: Standard and Non-standard Primary Issuances across periods<sup>7</sup>**

Type	Regime	Number of securities auctioned	Average Residual maturity
Non-Standard	Covid-19	735	12.6
	Pre-Covid-19	447	11.5
Standard	Covid-19	544	10
	Pre-Covid-19	1469	10

Source: RBI and authors' calculations.

<sup>7</sup> Pre-Covid period: January 2015 – February 2020.

Covid-19 period: March 2020 – March 2022.



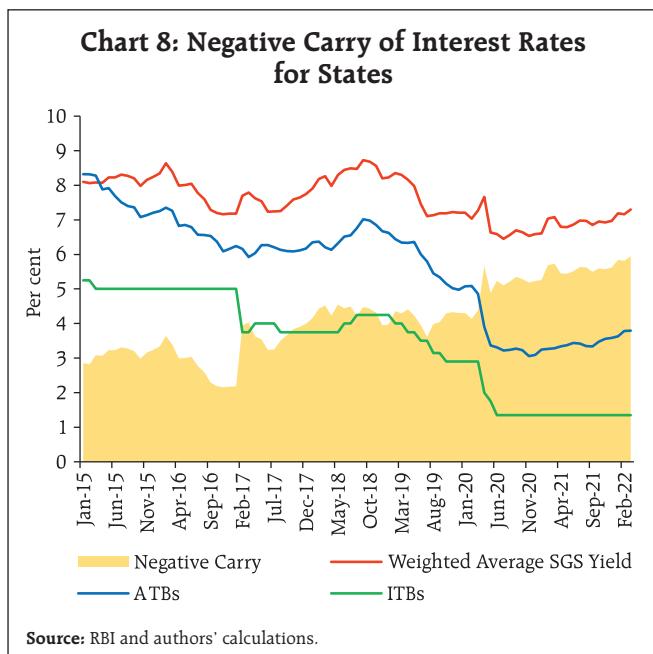
### Pandemic and RBI facilitated cash flow management of States

RBI provided enhanced cash accommodations to the states to cushion the impact of the pandemic via Ways and Means Advances (WMA) (increased by 60 per cent cumulatively), Overdraft (OD) (increased from 14 working days to 21 working days continuously) and the total days of accommodation was increased from 36 working days to 50 working days in a quarter) and Special Drawing Facility (SDF). The enhanced limits remained available till March 31, 2022<sup>8</sup>. Further, the scheme for constitution and administration of consolidated sinking fund (CSF)' was also reviewed and the rules governing withdrawal from CSF were relaxed, while ensuring that a sizeable corpus is retained in the Fund (RBI, 2021). The enhanced cash

accommodation facilities were utilised by the states in managing their cashflow mismatch during the pandemic period (Chart 7).

Poor cash management practices increase the effective costs of borrowings, add risks and complicate other financial policies (Williams, 2009). States can park their excess cash into intermediate treasury bills (ITBs) or auction treasury bills (ATBs) for which they earn interest that is lower than the interest outgo on market borrowings. This gives rise to negative carry - the difference between the SGS yields and returns on ITBs and ATBs investments. The crisis induced monetary policy scenario widened the negative carry of returns for the states (Chart 8). This warrants better fiscal marksmanship by states as pre-emptive over-borrowing has its associated negative carrying costs. Upgrading cash flow forecasts, recalibrating cash buffer levels and drawdown on reserve funds are some of the best cash management practices under fiscal stress (IMF, 2020).

<sup>8</sup> As per RBI's press release dated 01-04-2022 : [https://www.rbi.org.in/Scripts/BS\\_PressReleaseDisplay.aspx?prid=53499](https://www.rbi.org.in/Scripts/BS_PressReleaseDisplay.aspx?prid=53499)



**Table 2: Descriptive Statistics for SGS and G-sec Yield**

	SGS	G-Secs
Mean	7.50	7.08
Standard Deviation	0.67	0.65
Skewness	-0.12	-0.12
Excess Kurtosis	-1.30	-1.28

**Note:** Values pertain to 10-year securities and belong to the period from Jan 2015 to March 2022.

10-year G-Sec and SGS was obtained from CEIC and CCIL<sup>9</sup>, respectively for the period Jan 2015 - March 2022.

A sub-national debt instrument is priced relative to a sovereign instrument plus a spread. The average SGS yield is found to be higher than G-sec yield over the period indicating the presence of a spread. The standard deviation of SGS and G-Sec yield, however, is found to be similar (Table 2). The test proposed by Levene (1960) is used to test for the null of equal variances<sup>10</sup>. The test failed to reject the null hypothesis with a p-value of 0.14 indicating that the level of volatility is similar in both series underscoring the close association of SGS with G-Sec yield.

Further, cointegration tests are conducted to identify the long-term relationship between SGS and G-Sec secondary market yields and it is found that both yields are cointegrated (Table 3). The results

**Table 3: Unit Roots and Cointegration**

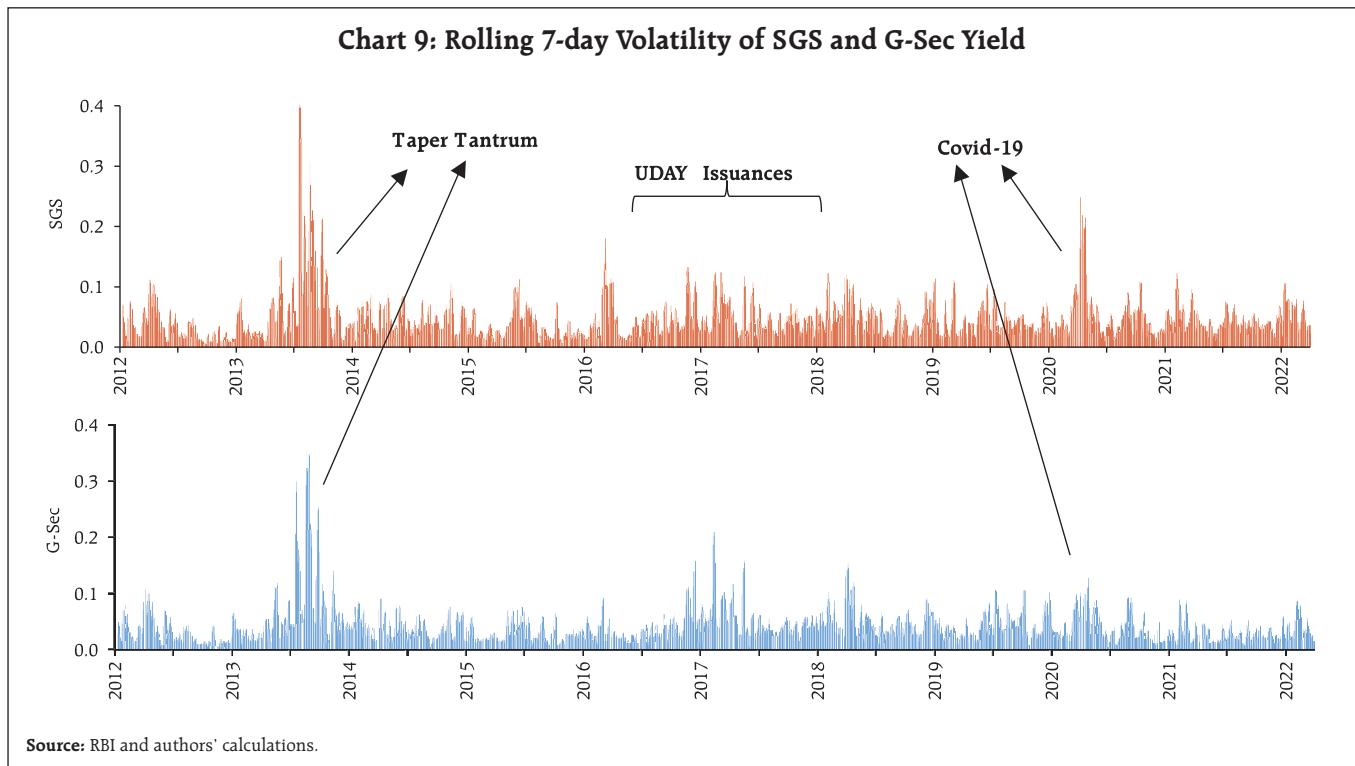
	Unit root tests (H <sub>0</sub> : Presence of Unit root)		Cointegration tests (H <sub>0</sub> : No Cointegration)	
	ADF test	Phillips-Perron test	Engle-Granger test	Phillips Ouliaris test
SGS	-1.70 (0.75)	-1.98 (0.61)		
G-Sec	-1.65 (0.77)	-1.77 (0.72)	-4.32* (0.011)	-8.34** (0.000)

\*: Significant at 5% level, \*\*: Significant at 1% level.

**Note:** Values in parenthesis are p-values.

<sup>9</sup> CCIL SDL Index provides daily yields of 14 most recently issued 10-year maturity securities of 14 States.

<sup>10</sup> Levene's test controls for non-normality of underlying distributions and both yields strongly reject the null of normality in D'Agostino and Pearson's test.



indicate that a common underlying trend drives both yields.

The rolling weekly volatility of SGS and G-Secs shows some time varying features with spikes during periods of economic stress (Chart 9). Therefore, in a scenario of volatility spikes, it is pertinent to know how quickly such shocks subside or do they persist and whether the level of persistence is same for both series.

A standard GARCH model was employed to study the volatility persistence. The conditional variance of SGS and G-Secs were estimated with a standard GARCH(1,1)<sup>11</sup> model where the mean of the process is modelled as a constant. The findings show that there is mean reversion in volatility as the estimated sum of  $\alpha$  and  $\beta$  is less than one indicating that volatility shocks eventually die out in the case of SGS as well

as benchmark G-sec (Table 4). Further, it shows that volatility shocks to G-Sec yield are marginally more persistent than SGS yield.

Additionally, following Borio and McCauley (1996) methodology, autoregressive models of order 1 were fitted for the historical rolling weekly volatility of the two yields. The results show that the persistence parameters for SGS and G-Sec yield are significant with values, 0.910 and 0.911, respectively<sup>12</sup>, indicating similar level of persistence and confirming the results

**Table 4: Volatility Dynamics**

Variable	G-Sec yield	Weighted-average SGS yield
$\omega$	0.000** (2.83)	0.000** (3.09)
$\alpha$	0.100** (3.15)	0.142** (4.69)
$\beta$	0.880** (23.85)	0.797** (21.26)

\*: Significant at 5% level, \*\*: Significant at 1% level.

Note: Values in parenthesis are t-statistics.

<sup>11</sup> GARCH(p, q) specification:

$$\Delta y_t = c + \epsilon_t \quad \epsilon_t = z_t \sigma_t \quad \sigma_t^2 = \omega + \sum_{i=1}^p \beta_i \sigma_{t-i}^2 + \sum_{j=1}^q \alpha_j \epsilon_{t-j}^2$$

<sup>12</sup> Standard errors were corrected using Newey-West methodology.

from the GARCH model. These findings imply that volatility shocks generate similar dynamics in SGS and G-sec. The marginal differences in the volatility shock persistence could be attributed to thin volumes of trades in SGS in the secondary market. The cointegration of SGS with the benchmark G-Sec and identical volatility shock dynamics highlight that any concerns on benchmark G-sec yield may also weigh on SGS yields.

### Determinants of SGS spreads

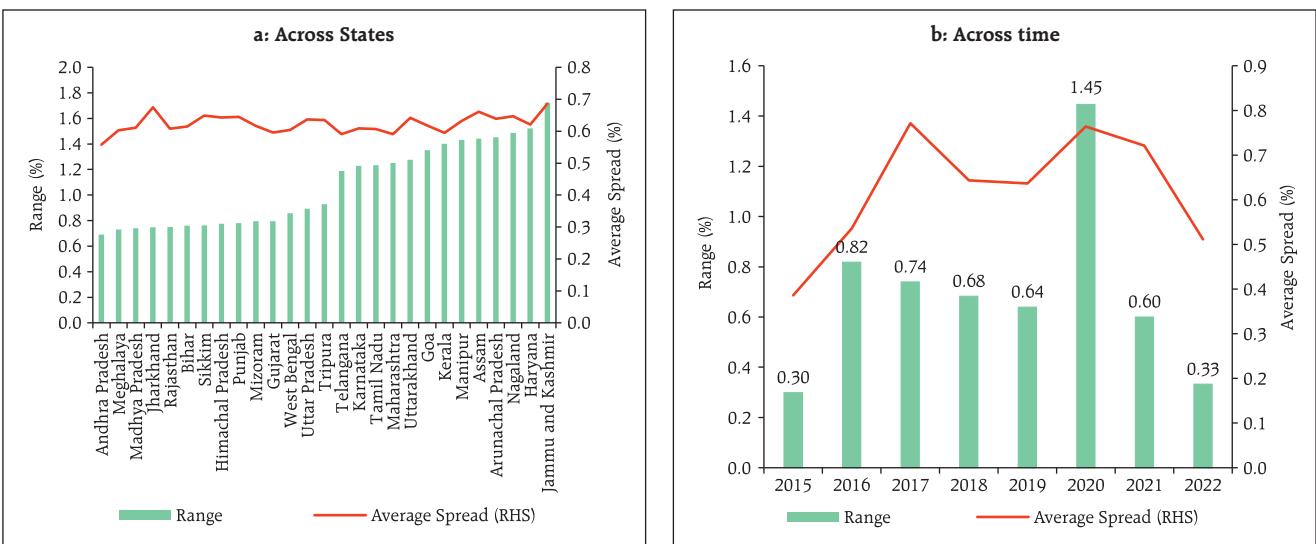
Preliminary analysis of the variation of spread<sup>13</sup> across states indicates marginal variation across states in terms of average spread<sup>14</sup> from January 2015 to March 2022 reflecting that the market is not differentiating much between states for pricing their debt. However, the range of spread calculated as the difference between the highest and lowest spread for a particular state over the sample period does show variation across states (Chart 10a). The average cumulative spread during the period 2015-2022 is

found to be 62 basis points. However, the average spread ranged between 39 and 77 basis points while the maximum variability was witnessed in calendar year 2020 highlighting volatile financial conditions driven by pandemic induced economic uncertainty (Chart 10b).

In general, other than state specific factors, various macroeconomic factors also affect the spread of sub-national debt securities. The study uncovers the determinants of SGS yield spreads across states in India through a panel data framework. Unlike previous studies on SGS spreads, this study utilises monthly data for the period from January 2015 to March 2022 to capture market dynamics in a higher frequency data framework.

The study follows the panel data methodology<sup>15</sup> using an unbalanced panel of 26 States. Taking cues from the literature on determinants of spread (YS) of SGS over the benchmark G-sec (Bose *et al.* (2011) and Saggar *et al.* (2017)), the study identifies the state

**Chart 10: Variation in SGS spreads**



Source: RBI.

<sup>13</sup> The difference between 10-year SGS yield and 10-year benchmark G-Sec yield.

<sup>14</sup> This is calculated as the average spread across the entire period for a particular state.

<sup>15</sup> All models and tests are run using 'plm' package in R.

specific variables such as the number of times a state participates in SGS auctions (NT) in a month and average borrowing size (SIZE) in the auctions which adds to the supply of bonds and hence expected to drive spreads upwards. Higher economic growth can lead to greater tax revenues and hence may reduce the cost of borrowing. The Index of Industrial Production (IIP) is used as a proxy for economic growth. The cash position of the states (INVS) is proxied by their investments in intermediate treasury bills (ITBs) while the market factors are captured through liquidity conditions (LAF) and short-term rate expectations (OIS1Y). Secondary market trading volumes can affect the illiquidity premium charged on a state's borrowings and to capture this effect, average trading size in a month (TRAD) is used while a crisis dummy variable (CRISIS) is added to control for any systemic impact caused by the pandemic (Table 5).

The panel unit root test for checking stationarity of variables is conducted using the Covariate Augmented Dickey-Fuller (CADF) test by Hansen (1995) as extended by Constantini and Lupi (2011) to account for the cross-sectional dependence in panel

**Table 5: Data description for the panel data model**

Variable name	Description
YS	Yield spread over G-Secs for SGS
NT	No. of auctions participated in by each state in the month
SIZE	Logarithm of monthly average size of auction for each state
IIP	IIP growth rate year-on-year
INVS	State government cash surplus investments in ITBs
LAF	Dummy variable signifying liquidity conditions, 1 for net LAF injection and 0 for net LAF absorption
OIS1Y	Rate on 1-year OIS contract
CRISIS	Dummy variable to capture the impact of pandemic
TRAD	Average trade size of a particular state's SGS in a month in secondary market

Source: RBI, Bloomberg and CEIC

<sup>16</sup> CADF test statistic: -23.92\*\*\* (0.000). \*\*\* at 1% significance. Values in parenthesis are p-values.  $H_0$ : All the series are I(1).

data, which finds no evidence of unit roots<sup>16</sup>. The estimates of the panel data models and the Hausman test<sup>17</sup> and F-test<sup>18</sup> conducted shows fixed effects model is an appropriate choice over other models. Residual diagnostics for fixed effects model indicate presence of heteroskedasticity, serial correlation and cross-sectional dependence (Table 6). The selected fixed effects model is thus corrected using Driscoll-Kraay standard errors (Table 7).<sup>19</sup>

The results highlight that the outbreak of the pandemic did impact the spread of SGS as seen from the positive and significant coefficient on CRISIS dummy variable. Further, the average auction size for a state is found to be significant with positive sign indicating that increased borrowings result in higher costs underscoring the supply concerns of the market. Also, cross-sectionally invariant variables signifying the economic growth scenario (IIP) and liquidity conditions (LAF\_dum) are found to be

**Table 6: Residual Diagnostic Tests**

	Breusch-Pagan Test $H_0$ : Homoskedasticity	Breusch-Godfrey/ Woolridge test for serial correlation $H_0$ : No serial correlation	Breusch-Pagan LM test $H_0$ : No cross sectional dependence
Test Statistic	370.68*** (0.000)	37.383*** (0.005)	5487.4*** (0.000)
Inference	Heteroskedasticity	Serial autocorrelation.	Cross-sectional dependence

Note: Values in parenthesis are p-values.

\*\*\* : 1% significance, \*\* : 5% significance, \* : 10% significance.

<sup>17</sup> Hausman Test statistic: 18.45\*\*\* (0.018); \*\*\*: 1% significance. Values in parenthesis are p-values;  $H_0$ : Random effects model is preferred.

<sup>18</sup> F-test for individual effects: 2.13\*\*\* (0.001); \*\*\*: 1% significance. Values in parenthesis are p-values;  $H_0$ : No individual effects or Pooled OLS model suffices.

<sup>19</sup> Erroneously ignoring cross-sectional correlation in the estimation of panel models can lead to severely biased statistical results. Hoechle (2007) uses Monte Carlo simulations to analyse statistical properties of various variance-covariance estimators *vis-à-vis* Driscoll-Kraay (DK) estimators which controls for cross-sectional dependence along with heteroskedasticity and serial correlation and found that DK standard errors are well calibrated when cross-sectional dependence is present.

**Table 7: Panel Data Estimations**

Variables	Dependent Variable: YS			
	Pooled OLS	Fixed Effects	Random Effects	Fixed Effects model corrected by D-K Standard Errors
NT	0.002 (0.007)	0.010 (0.007)	0.002 (0.007)	0.010 (0.008)
SIZE	0.008 (0.006)	<b>0.063***</b> (0.013)	0.009 (0.006)	<b>0.063***</b> (0.020)
IIP	<b>-0.289***</b> (0.042)	<b>-0.302***</b> (0.041)	<b>-0.289***</b> (0.042)	<b>-0.302*</b> (0.180)
INVS	-0.001 (0.001)	<b>0.002**</b> (0.001)	-0.001 (0.001)	<b>0.002**</b> (0.001)
LAF_dum	<b>-0.133***</b> (0.016)	<b>-0.119***</b> (0.016)	<b>-0.132***</b> (0.016)	<b>-0.119**</b> (0.047)
OIS1Y	<b>-0.016**</b> (0.007)	<b>-0.014**</b> (0.007)	<b>-0.016**</b> (0.007)	-0.014 (0.021)
TRAD	-0.009 (0.018)	-0.023 (0.019)	-0.009 (0.018)	-0.023 (0.021)
Crisis	<b>0.108***</b> (0.021)	<b>0.111***</b> (0.021)	<b>0.108***</b> (0.021)	<b>0.111*</b> (0.061)
Constant	<b>0.681***</b> (0.055)		<b>0.678***</b> (0.056)	
Observations	1,232	1,232	1,232	1,232
Adjusted R2	0.226	0.229	0.226	0.229

Note: Values in parenthesis are standard errors.

\*\*\* : 1% significance, \*\* : 5% significance, \* : 10% significance.

significant implying that the existing macroeconomic and financial conditions weigh on the SGS spreads. Interestingly, significant cash surpluses by states in terms of investments in ITBs (INVS) tend to result in higher spread reflecting that a premium is charged for poor fiscal marksmanship in cash management. As large cash surpluses have accompanying negative carry cost costs, therefore, states should try to limit pre-emptive over borrowings which can also ease supply concerns of the market.

#### IV. Conclusion

The global practices in the asset purchase programme of subnational securities suggests that subnational assets/securities have the potential to become supplementary tool in the monetary policy toolkit of central banks. The Reserve Bank's decision to include SGS in G-SAP was well calibrated and

was broadly in line with the global practices. The measures taken by the RBI with conducive monetary and financial conditions facilitated the higher market borrowings of states to cope with pandemic induced economic uncertainty.

The empirical findings of cointegration of SGS with the benchmark G-Sec and identical volatility shock dynamics highlight that any concerns on benchmark G-sec yield may eventually weigh on SGS yields. Further, panel data analysis reveals that increase in borrowings results in a higher spread of SGS underscoring the supply concerns of the market. The findings also highlight that pre-emptive over-borrowing resulting in larger investments in ITBs has its associated cost in terms of higher cost of borrowing as well as significant negative carry costs. This reflects the need for improved fiscal marksmanship by states. Following efficient cash management practices can reduce pre-emptive over-borrowing and the effective cost of borrowings while easing the supply concerns of the market.

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**Annex I: Subnational bond purchase programmes of select countries**

Country/ Jurisdiction	Programme/Objective	Eligible Instruments/ Mode of Purchase	Allocation Criteria	Additional Criteria
Euro Area	<ul style="list-style-type: none"> <li>• Public Sector Purchase Programme (PSPP)</li> <li>• Support the monetary policy transmission and accommodation.</li> </ul>	<ul style="list-style-type: none"> <li>• Euro-denominated marketable debt instruments viz., nominal and inflation-linked central government bonds, bonds issued by recognised agencies, regional and local governments, international organisations and multilateral development banks located in the euro area</li> <li>• Direct purchase and reverse auction in secondary market.</li> </ul>	Capital Key- according to the capital share of each member countries in ECB.	<ul style="list-style-type: none"> <li>• Credit rating</li> <li>• Minimum remaining maturity of two years and a maximum remaining maturity of 30 years</li> <li>• An aggregate limit of 33 % of an issuer's outstanding securities</li> </ul>
United States	<ul style="list-style-type: none"> <li>• Municipal Liquidity Facility (MLF).</li> <li>• Manage cash flow pressures of State and local governments</li> </ul>	<ul style="list-style-type: none"> <li>• Tax anticipation notes (TANs), tax and revenue anticipation notes (TRANs), bond anticipation notes (BANs), revenue anticipation notes (RANs), and other similar short-term notes issued by eligible issuers.</li> <li>• The SPV created purchases eligible notes directly from eligible issuers at the time of issuance (Primary market).</li> </ul>	Population thresholds/ at least two cities or counties eligible	<ul style="list-style-type: none"> <li>• Maturity not later than 36 months from the date of issuance.</li> <li>• Credit Rating.</li> <li>• Up to an aggregate amount of 20% of general revenue from own sources and utility revenue of applicable State, City, or County.</li> </ul> <p>Up to an aggregate amount of 20% of gross revenue of the Multi-State Entity or Designated revenue bond issuers, as reported in its audited financial statements.</p>

**Annex I: Subnational bond purchase programmes of select countries (Contd.)**

<b>Country/ Jurisdiction</b>	<b>Programme/Objective</b>	<b>Eligible Instruments/ Mode of Purchase</b>	<b>Allocation Criteria</b>	<b>Additional Criteria</b>
Sweden	<ul style="list-style-type: none"> <li>• Municipal bond purchases for monetary policy purposes</li> <li>• To keep general interest rates low, facilitate credit supply and to safeguard the monetary policy transmission</li> </ul>	<ul style="list-style-type: none"> <li>• Bonds issued by Swedish municipalities and regions and by Kommuninvest i Sverige AB</li> <li>• The purchase is done through monetary policy counter parties through a bidding process (secondary market)</li> </ul>	Equal treatment of issuers in terms of maturity and credit rating.	Credit rating
Canada	<p>Provincial Money Market Purchase Program (PMMP) Provincial Bond Purchase Program (PBPP)</p> <p>Support the liquidity and efficiency of provincial government funding markets</p>	<ul style="list-style-type: none"> <li>• PMMP- Money market securities-treasury bills and short-term promissory notes of all Canadian provinces</li> <li>• Primary Market purchase</li> <li>• PBPP- purchasing bonds through a tender offer process in the secondary market</li> </ul>	Share of the issuer's debt outstanding as well as the issuer's share of Canada's GDP	<ul style="list-style-type: none"> <li>• PMMP -40 per cent (initially) of each offering of directly issued provincial money market securities with terms to maturity of 12 months or less</li> <li>• PBPP -No purchases more than 20% of an issuer's eligible assets outstanding.</li> <li>• No minimum rating requirement</li> </ul>
Australia	<ul style="list-style-type: none"> <li>• Bond Purchase Programme of Government bonds</li> <li>• Monetary policy transmission- reduce the cost of borrowing quickly and sharply.</li> </ul>	<ul style="list-style-type: none"> <li>• Including securities issued by the state and territory central borrowing authorities.</li> <li>• Undertake multi-price auctions from the secondary market through eligible counter parties</li> </ul>	Allocation between semis is guided by the stock of debt outstanding and relative market pricing.	<ul style="list-style-type: none"> <li>• 80 per cent Australian Government Securities(AGS) and 20 per cent Semi-Government securities (semis).</li> <li>• With the residual maturity of around 10 years.</li> </ul>

**Annex I: Subnational bond purchase programmes of select countries (Contd.)**

Country/ Jurisdiction	Programme/Objective	Eligible Instruments/ Mode of Purchase	Allocation Criteria	Additional Criteria
New Zealand	<ul style="list-style-type: none"> <li>• Large-Scale Asset Purchase programme (LSAP) Extended.</li> <li>• To address illiquidity and market dislocations in Local Government Funding Agency (LGFA) market</li> </ul>	<ul style="list-style-type: none"> <li>• LSAP programme includes NZ Government Bonds, Local Government Funding Agency Bonds and NZ Government Inflation-Indexed Bonds.</li> <li>• Secondary market purchase through auctions from eligible counter parties.</li> </ul>	30 per cent of the total debt issuances of LGFA	1 to 13 years maturity as governed by LGFA bonds on issue

**Source:** Respective Central Banks web releases.

**Annex II: OMO Purchases of SGS by RBI**

(Amount in ₹ Crore)

Sl. No	State	OMO-I			OMO-II			OMO-III			Total Purchase	Total Purchase
		Offered	Accepted	Yield (%)	Offered	Accepted	Yield (%)	Offered	Accepted	Yield (%)	Accepted OMO	as % of total OMO
1	Andhra Pradesh	65	65	6.50							65	0.22
2	Arunachal Pradesh	585	585	6.56							585	1.95
3	Assam	700	570	6.57							570	1.90
4	Bihar	444	230	6.53				1021	750	6.51	980	3.27
5	Chhattisgarh	200	100	6.55							100	0.33
6	Goa	25	25	6.65							25	0.08
7	Gujarat	1287	1060	6.52				2368	1498	6.48	2558	8.53
8	Haryana	2279	1449	6.53				65	65	6.52	1514	5.05
9	Himachal Pradesh	428	315	6.57							315	1.05
10	Jammu and Kashmir	145	135	6.57							135	0.45
11	Jharkhand	136	135	6.60							135	0.45
12	Karnataka	4265	2335	6.49				1369	1279	6.43	3614	12.05
13	Kerala	255	55	6.55							55	0.18
14	Madhya Pradesh	1127	647	6.52							647	2.16
15	Maharashtra	3534	2294	6.50				2821	2524	6.51	4818	16.06
16	Manipur				184	184	6.44				184	0.61
17	Meghalaya				372	370	6.44				370	1.23
18	Mizoram				433	221	6.44				221	0.74
19	Nagaland				233	233	6.45				233	0.78
20	Odisha				175	110	6.43				110	0.37
21	Puducherry				49	3	6.36				3	0.01
22	Punjab				785	405	6.41	745	730	6.57	1135	3.78
23	Rajasthan				2181	1306	6.39	1854	1109	6.52	2415	8.05
24	Sikkim				380	290	6.43				290	0.97
25	Tamil Nadu				2916	2625	6.36	667	667	6.47	3292	10.97
26	Telangana				363	363	6.44				363	1.21
27	Tripura				128	121	6.55				121	0.40
28	Uttarakhand				79	52	6.43				52	0.17
29	Uttar Pradesh				3411	2396	6.42	577	422	6.51	2818	9.39
30	West Bengal				1331	1321	6.41	1086	956	6.53	2277	7.59
	<b>Total /Avg Yield</b>	<b>15475</b>	<b>10000</b>	<b>6.55</b>	<b>13020</b>	<b>10000</b>	<b>6.43</b>	<b>12573</b>	<b>10000</b>	<b>6.51</b>	<b>30000</b>	<b>100</b>

**Note:** Yield is calculated as the weighted average cut-off yield weighted by the amount accepted for each security in the auction.**Source:** RBI

# CURRENT STATISTICS

Select Economic Indicators

Reserve Bank of India

Money and Banking

Prices and Production

Government Accounts and Treasury Bills

Financial Markets

External Sector

Payment and Settlement Systems

Occasional Series



## Contents

No.	Title	Page
1	Select Economic Indicators	131
<b>Reserve Bank of India</b>		
2	RBI – Liabilities and Assets	132
3	Liquidity Operations by RBI	133
4	Sale/ Purchase of U.S. Dollar by the RBI	134
4A	Maturity Breakdown (by Residual Maturity) of Outstanding Forwards of RBI (US\$ Million)	135
5	RBI's Standing Facilities	135
<b>Money and Banking</b>		
6	Money Stock Measures	136
7	Sources of Money Stock ( $M_3$ )	137
8	Monetary Survey	138
9	Liquidity Aggregates	138
10	Reserve Bank of India Survey	139
11	Reserve Money – Components and Sources	139
12	Commercial Bank Survey	140
13	Scheduled Commercial Banks' Investments	140
14	Business in India – All Scheduled Banks and All Scheduled Commercial Banks	141
15	Deployment of Gross Bank Credit by Major Sectors	142
16	Industry-wise Deployment of Gross Bank Credit	143
17	State Co-operative Banks Maintaining Accounts with the Reserve Bank of India	144
<b>Prices and Production</b>		
18	Consumer Price Index (Base: 2012=100)	145
19	Other Consumer Price Indices	145
20	Monthly Average Price of Gold and Silver in Mumbai	145
21	Wholesale Price Index	146
22	Index of Industrial Production (Base: 2011-12=100)	150
<b>Government Accounts and Treasury Bills</b>		
23	Union Government Accounts at a Glance	150
24	Treasury Bills – Ownership Pattern	151
25	Auctions of Treasury Bills	151
<b>Financial Markets</b>		
26	Daily Call Money Rates	152
27	Certificates of Deposit	153
28	Commercial Paper	153
29	Average Daily Turnover in Select Financial Markets	153
30	New Capital Issues by Non-Government Public Limited Companies	154

No.	Title	Page
<b>External Sector</b>		
31	Foreign Trade	155
32	Foreign Exchange Reserves	155
33	Non-Resident Deposits	155
34	Foreign Investment Inflows	156
35	Outward Remittances under the Liberalised Remittance Scheme (LRS) for Resident Individuals	156
36	Indices of Nominal Effective Exchange Rate (NEER) and Real Effective Exchange Rate (REER) of the Indian Rupee	157
37	External Commercial Borrowings (ECBs) – Registrations	158
38	India's Overall Balance of Payments (US \$ Million)	159
39	India's Overall Balance of Payments (₹ Crore)	160
40	Standard Presentation of BoP in India as per BPM6 (US \$ Million)	161
41	Standard Presentation of BoP in India as per BPM6 (₹ Crore)	162
42	India's International Investment Position	163
<b>Payment and Settlement Systems</b>		
43	Payment System Indicators	164
<b>Occasional Series</b>		
44	Small Savings	166
45	Ownership Pattern of Central and State Governments Securities	167
46	Combined Receipts and Disbursements of the Central and State Governments	168
47	Financial Accommodation Availed by State Governments under various Facilities	169
48	Investments by State Governments	170
49	Market Borrowings of State Governments	171
50 (a)	Flow of Financial Assets and Liabilities of Households - Instrument-wise	172
50 (b)	Stocks of Financial Assets and Liabilities of Households- Select Indicators	175

**Notes:** .. = Not available.  
 – = Nil/Negligible.  
 P = Preliminary/Provisional. PR = Partially Revised.

## No. 1: Select Economic Indicators

Item	2021-22	2021-22		2022-23	
		Q2	Q3	Q2	Q3
		1	2	3	4
<b>1 Real Sector (% Change)</b>					
1.1 GVA at Basic Prices	8.8	9.3	4.7	5.5	4.6
1.1.1 Agriculture	3.5	4.8	2.3	2.4	3.7
1.1.2 Industry	10.5	7.3	2.2	-2.3	0.3
1.1.3 Services	9.6	11.0	6.5	9.0	6.5
1.1a Final Consumption Expenditure	10.5	13.9	10.2	7.0	1.7
1.1b Gross Fixed Capital Formation	14.6	12.4	1.2	9.7	8.3
	2021-22	2021		2022	
		Dec.	Jan.	Dec.	Jan.
	1	2	3	4	5
1.2 Index of Industrial Production	11.4	1.0	2.0	4.7	5.2
<b>2 Money and Banking (% Change)</b>					
2.1 Scheduled Commercial Banks					
2.1.1 Deposits	8.9	10.3	8.3	9.2	10.5
2.1.2 Credit #	9.6	9.3	8.2	14.9	16.3
2.1.2.1 Non-food Credit #	9.7	9.4	8.3	15.3	16.7
2.1.3 Investment in Govt. Securities	6.0	2.8	3.3	10.6	13.4
2.2 Money Stock Measures					
2.2.1 Reserve Money (M0)	13.0	14.7	13.5	10.3	10.8
2.2.2 Broad Money (M3)	8.8	11.4	8.4	8.7	9.8
<b>3 Ratios (%)</b>					
3.1 Cash Reserve Ratio	4.00	4.00	4.00	4.50	4.50
3.2 Statutory Liquidity Ratio	18.00	18.00	18.00	18.00	18.00
3.3 Cash-Deposit Ratio	4.7	5.0	4.8	5.3	5.2
3.4 Credit-Deposit Ratio	72.2	71.3	71.5	75.0	75.3
3.5 Incremental Credit-Deposit Ratio #	77.2	65.1	67.6	111.6	115.3
3.6 Investment-Deposit Ratio	28.7	28.4	28.6	28.7	29.3
3.7 Incremental Investment-Deposit Ratio	19.7	12.9	12.8	28.9	37.1
<b>4 Interest Rates (%)</b>					
4.1 Policy Repo Rate	4.00	4.00	4.00	6.25	6.25
4.2 Fixed Reverse Repo Rate	3.35	3.35	3.35	3.35	3.35
4.3 Standing Deposit Facility (SDF) Rate *	-	-	-	6.00	6.00
4.4 Marginal Standing Facility (MSF) Rate	4.25	4.25	4.25	6.50	6.50
4.5 Bank Rate	4.25	4.25	4.25	6.50	6.50
4.6 Base Rate	7.25/8.80	7.25/8.80	7.25/8.80	8.10/9.40	8.65/9.40
4.7 MCLR (Overnight)	6.45/7.00	6.50/7.00	6.45/7.00	7.30/8.15	7.30/8.40
4.8 Term Deposit Rate >1 Year	5.00/5.60	4.90/5.60	5.00/5.60	6.00/7.25	6.00/7.25
4.9 Savings Deposit Rate	2.70/3.00	2.70/3.00	2.70/3.00	2.70/3.00	2.70/3.00
4.10 Call Money Rate (Weighted Average)	3.34	3.32	3.72	6.38	6.44
4.11 91-Day Treasury Bill (Primary) Yield	3.84	3.66	3.71	6.31	6.47
4.12 182-Day Treasury Bill (Primary) Yield	4.27	3.97	4.18	6.74	6.87
4.13 364-Day Treasury Bill (Primary) Yield	4.58	4.27	4.51	6.89	6.90
4.14 10-Year G-Sec Par Yield (FBIL)	6.86	6.47	6.69	7.34	7.35
<b>5 Reference Rate and Forward Premium</b>					
5.1 INR-US\$ Spot Rate (Rs. Per Foreign Currency)	76.18	74.30	74.95	82.79	81.54
5.2 INR-Euro Spot Rate (Rs. Per Foreign Currency)	84.01	84.05	83.60	88.15	88.66
5.3 Forward Premium of US\$ 1-month (%)	5.67	3.96	3.84	2.17	1.77
3-month (%)	4.46	4.15	4.88	2.17	2.55
6-month (%)	4.10	4.71	4.66	2.22	2.44
<b>6 Inflation (%)</b>					
6.1 All India Consumer Price Index	5.51	5.7	6.0	5.7	6.5
6.2 Consumer Price Index for Industrial Workers	5.13	5.6	5.8	5.5	6.2
6.3 Wholesale Price Index	12.97	14.3	13.7	5.0	4.7
6.3.1 Primary Articles	10.25	13.8	15.6	2.7	3.9
6.3.2 Fuel and Power	32.50	38.1	34.4	18.1	15.2
6.3.3 Manufactured Products	11.10	10.7	9.5	3.4	3.0
<b>7 Foreign Trade (% Change)</b>					
7.1 Imports	55.43	40.5	25.1	-0.3	-1.0
7.2 Exports	44.62	44.3	27.9	-3.1	1.4

Note : Financial Benchmark India Pvt. Ltd. (FBIL) has commenced publication of the G-Sec benchmarks with effect from March 31, 2018 as per RBI circular FMRD.DIRD/7/14.03.025/2017-18 dated March 31, 2018. FBIL has started dissemination of reference rates w.e.f. July 10, 2018.

\*: As per Press Release No. 2022-2023/41 dated April 08, 2022

#: Bank credit growth and related ratios for all fortnights from December 3, 2021 to November 18, 2022 are adjusted for past reporting errors by select scheduled commercial banks (SCBs)

## Reserve Bank of India

## No. 2: RBI - Liabilities and Assets \*

Item	(₹ Crore)						
	As on the Last Friday/ Friday						
	2021-22	2022	2023				
		Feb.	Jan. 27	Feb. 3	Feb. 10	Feb. 17	Feb. 24
	1	2	3	4	5	6	7
<b>1 Issue Department</b>							
<b>1.1 Liabilities</b>							
1.1.1 Notes in Circulation	3107637	3052620	3261992	3267947	3294725	3300544	3301605
1.1.2 Notes Held in Banking Department	15	14	19	15	12	11	11
<b>1.1/1.2 Total Liabilities (Total Notes Issued) or Assets</b>	<b>3107652</b>	<b>3052634</b>	<b>3262010</b>	<b>3267962</b>	<b>3294737</b>	<b>3300555</b>	<b>3301616</b>
<b>1.2 Assets</b>							
1.2.1 Gold	128208	123775	135652	135423	133486	130440	130104
1.2.2 Foreign Securities	2978927	2928450	3125922	3132137	3160890	3169790	3171023
1.2.3 Rupee Coin	518	409	436	402	361	325	489
1.2.4 Government of India Rupee Securities	—	—	—	—	—	—	—
<b>2 Banking Department</b>							
<b>2.1 Liabilities</b>							
2.1.1 Deposits	1794574	1911791	1374659	1324991	1339872	1352798	1320222
2.1.1.1 Central Government	101	100	101	100	100	100	101
2.1.1.2 Market Stabilisation Scheme	42	43	42	42	43	42	43
2.1.1.3 State Governments	683437	664473	813573	835572	805398	831515	797986
2.1.1.4 Scheduled Commercial Banks	7123	6900	8592	7727	7811	7403	7320
2.1.1.5 Scheduled State Co-operative Banks	4121	3916	4337	4396	4424	4409	4419
2.1.1.6 Non-Scheduled State Co-operative Banks	37589	36947	44453	44740	44606	45373	45092
2.1.1.7 Other Banks	988819	1119484	429497	348542	385011	361104	357329
2.1.1.9 Financial Institution Outside India	73343	79928	74063	83872	92481	102852	107934
2.1.2 Other Liabilities	1359254	1333412	1543823	1586207	1547847	1518295	1509502
<b>2.1/2 Total Liabilities or Assets</b>	<b>3153828</b>	<b>3245202</b>	<b>2918482</b>	<b>2911198</b>	<b>2887719</b>	<b>2871092</b>	<b>2829724</b>
<b>2.2 Assets</b>							
2.2.1 Notes and Coins	15	14	19	15	12	11	11
2.2.2 Balances Held Abroad	1243853	1350827	1052101	1051471	997467	967730	960958
2.2.3 Loans and Advances							
2.2.3.1 Central Government	—	—	—	—	—	—	—
2.2.3.2 State Governments	670	186	16745	20732	2401	12425	9515
2.2.3.3 Scheduled Commercial Banks	94299	96123	121622	94976	145180	144760	109026
2.2.3.4 Scheduled State Co-op. Banks	—	—	—	—	—	—	—
2.2.3.5 Industrial Dev. Bank of India	—	—	—	—	—	—	—
2.2.3.6 NABARD	24927	24853	—	—	—	—	—
2.2.3.7 EXIM Bank	—	—	—	—	—	—	—
2.2.3.8 Others	8077	77	9175	9010	9787	9477	10466
2.2.3.9 Financial Institution Outside India	72741	64052	74372	84860	92401	102188	107037
2.2.4 Bills Purchased and Discounted							
2.2.4.1 Internal	—	—	—	—	—	—	—
2.2.4.2 Government Treasury Bills	—	—	—	—	—	—	—
2.2.5 Investments	1491042	1499600	1404238	1410237	1403188	1401310	1399711
2.2.6 Other Assets	218203	209471	240211	239895	237284	233191	233001
2.2.6.1 Gold	201354	196025	223290	222912	220142	215937	215380

\* Data are provisional

**No. 3: Liquidity Operations by RBI**

(₹ Crore)

Date	Liquidity Adjustment Facility						Standing Liquidity Facilities	OMO (Outright)		Net Injection (+)/ Absorption (-) (1+3+5+7+9-2-4-6-8)	
	Repo	Reverse Repo	Variable Rate Repo	Variable Rate Reverse Repo	MSF	SDF		Sale	Purchase		
								1	2	3	4
Jan. 1, 2023	-	-	-	-	330	4439	-	-	-	-	-4109
Jan. 2, 2023	-	-	-	-	5765	156759	-506	-	-	-	-151500
Jan. 3, 2023	-	-	-	-	234	210253	-922	-	-	-	-210941
Jan. 4, 2023	-	-	-	-	232	221208	-289	-	-	-	-221265
Jan. 5, 2023	-	-	-	-	281	231057	289	-	-	-	-230487
Jan. 6, 2023	-	-	-	-	2471	145762	-	-	-	-	-143291
Jan. 7, 2023	-	-	-	-	2723	14405	-	-	-	-	-11682
Jan. 8, 2023	-	-	-	-	19	5380	-	-	-	-	-5361
Jan. 9, 2023	-	-	-	-	423	146067	-4000	-	-	-	-149644
Jan. 10, 2023	-	-	-	-	780	148168	-5400	-	-	-	-152788
Jan. 11, 2023	-	-	-	-	378	161316	4	-	-	-	-160934
Jan. 12, 2023	-	-	-	-	274	170804	-5004	-	-	-	-175534
Jan. 13, 2023	-	-	-	52290	1685	114671	-289	400	-	-	-165965
Jan. 14, 2023	-	-	-	-	129	3612	-	-	-	-	-3483
Jan. 15, 2023	-	-	-	-	29	3671	-	-	-	-	-3642
Jan. 16, 2023	-	-	-	-	412	75675	-1000	305	-	-	-76568
Jan. 17, 2023	-	-	-	-	365	85866	-	-	-	-	-85501
Jan. 18, 2023	-	-	-	-	431	105597	245	380	-	-	-105301
Jan. 19, 2023	-	-	-	-	1090	104254	-	625	-	-	-103789
Jan. 20, 2023	-	-	-	-	2149	34184	2572	280	-	-	-29743
Jan. 21, 2023	-	-	-	-	2038	19728	-	-	-	-	-17690
Jan. 22, 2023	-	-	-	-	78	3217	-	-	-	-	-3139
Jan. 23, 2023	-	-	-	-	6423	51009	4606	-	-	-	-39980
Jan. 24, 2023	-	-	-	-	3417	47007	-	500	-	-	-44090
Jan. 25, 2023	-	-	-	-	4311	82397	-	545	-	-	-78631
Jan. 26, 2023	-	-	-	-	2299	9871	-	-	-	-	-7572
Jan. 27, 2023	-	-	-	35039	27370	69337	1100	615	-	-	-76521
Jan. 28, 2023	-	-	-	-	348	4195	-	-	-	-	-3847
Jan. 29, 2023	-	-	-	-	33	3082	-	-	-	-	-3049
Jan. 30, 2023	-	-	-	-	8514	70183	3150	-	-	-	-58519
Jan. 31, 2023	-	-	-	-	2797	69518	-	-	-	-	-66721

SDF: Standing Deposit Facility; MSF: Marginal Standing Facility.

#### **No. 4: Sale/ Purchase of U.S. Dollar by the RBI**

i) Operations in onshore / offshore OTC segment

## ii) Operations in currency futures segment

Item	2021-22	2022		2023
		Jan.	Dec.	Jan.
		1	2	3
1 Net Purchase/ Sale of Foreign Currency (US \$ Million) (1.1–1.2)	0	0	0	0
1.1 Purchase (+)	2370	0	0	150
1.2 Sale (-)	2370	0	0	150
2 Outstanding Net Currency Futures Sales (–)/ Purchase (+) at the end of month (US \$ Million)	0	0	(-)150	0

**No. 4 A : Maturity Breakdown (by Residual Maturity) of Outstanding  
Forwards of RBI (US \$ Million)**

Item	As on January 31, 2023		
	Long (+)	Short (-)	Net (1-2)
	1	2	3
1. Upto 1 month	3056	3697	-641
2. More than 1 month and upto 3 months	5118	0	5118
3. More than 3 months and upto 1 year	13363	1246	12117
4. More than 1 year	5135	0	5135
<b>Total (1+2+3+4)</b>	<b>26672</b>	<b>4943</b>	<b>21729</b>

**No. 5: RBI's Standing Facilities**

(₹ Crore)

Item	As on the Last Reporting Friday							
	2021-22	2022					2023	
		Feb. 25	Sep. 23	Oct. 21	Nov. 18	Dec. 30	Jan. 27	Feb. 24
	1	2	3	4	5	6	7	8
1 MSF	11	1858	9657	51134	3250	33224	27370	15233
2 Export Credit Refinance for Scheduled Banks								
2.1 Limit	-	-	-	-	-	-	-	-
2.2 Outstanding	-	-	-	-	-	-	-	-
3 Liquidity Facility for PDs								
3.1 Limit	4900	4900	4900	4900	4900	4900	4900	4900
3.2 Outstanding	-	0	910	1022	1801	2376	1675	2107
4 Others								
4.1 Limit	76000	76000	76000	76000	76000	76000	76000	76000
4.2 Outstanding	32401	24401	31039	20249	10850	15400	7500	8350
5 Total Outstanding (1+2.2+3.2+4.2)	32412	26259	41606	72405	15901	51000	36545	25690

Note :1.Special refinance facility to Others, i.e. to the EXIM Bank, is reopened since May 22, 2020

2.Refinance facility to Others, i.e. to the NABARD/SIDBI/NHB U/S 17(4H) of RBI ACT,1934, since, April 17, 2020.

# Money and Banking

## No. 6: Money Stock Measures

(₹ Crore)

Item	Outstanding as on March 31/last reporting Fridays of the month/reporting Fridays				
	2021-22	2022		2023	
		Jan. 28	Dec. 30	Jan. 13	Jan. 27
	1	2	3	4	5
1 Currency with the Public (1.1 + 1.2 + 1.3 – 1.4)	3035689	2931921	3122236	3163730	3169720
1.1 Notes in Circulation	3105703	3004604	3203037	3251946	3261863
1.2 Circulation of Rupee Coin	27270	27021	28857	28857	29048
1.3 Circulation of Small Coins	743	743	743	743	743
1.4 Cash on Hand with Banks	98028	100447	110416	117930	122062
2 Deposit Money of the Public	2271436	2103135	2404868	2278587	2360613
2.1 Demand Deposits with Banks	2212992	2050497	2341936	2216261	2296792
2.2 ‘Other’ Deposits with Reserve Bank	58444	52638	62932	62326	63821
<b>3 M<sub>1</sub> (1 + 2)</b>	<b>5307125</b>	<b>5035056</b>	<b>5527104</b>	<b>5442317</b>	<b>5530333</b>
4 Post Office Saving Bank Deposits	188433	180978	196440	196440	196440
<b>5 M<sub>2</sub> (3 + 4)</b>	<b>5495558</b>	<b>5216034</b>	<b>5723544</b>	<b>5638757</b>	<b>5726773</b>
6 Time Deposits with Banks	15186605	14912628	16332131	16400756	16364701
<b>7 M<sub>3</sub> (3 + 6)</b>	<b>20493729</b>	<b>19947684</b>	<b>21859235</b>	<b>21843074</b>	<b>21895034</b>
8 Total Post Office Deposits	1012241	980521	1088490	1088490	1088490
<b>9 M<sub>4</sub> (7 + 8)</b>	<b>21505970</b>	<b>20928205</b>	<b>22947725</b>	<b>22931564</b>	<b>22983524</b>

**No. 7: Sources of Money Stock (M<sub>3</sub>)**

(₹ Crore)

Sources	Outstanding as on March 31/last reporting Fridays of the month/reporting Fridays				
	2021-22	2022		2023	
		Jan. 28	Dec. 30	Jan. 13	Jan. 27
	1	2	3	4	5
<b>1 Net Bank Credit to Government</b>	<b>6477629</b>	<b>5934151</b>	<b>6565472</b>	<b>6753836</b>	<b>6657365</b>
1.1 RBI's net credit to Government (1.1.1–1.1.2)	1450596	1058706	1170253	1253932	1162729
1.1.1 Claims on Government	1490991	1496295	1412098	1427825	1419355
1.1.1.1 Central Government	1489324	1495578	1407648	1411136	1402610
1.1.1.2 State Governments	1667	716	4450	16688	16745
1.1.2 Government deposits with RBI	40394	437589	241845	173893	256626
1.1.2.1 Central Government	40352	437546	241802	173851	256584
1.1.2.2 State Governments	42	42	42	42	42
1.2 Other Banks' Credit to Government	5027033	4875445	5395219	5499904	5494636
<b>2 Bank Credit to Commercial Sector</b>	<b>12616520</b>	<b>12174904</b>	<b>14045877</b>	<b>14001984</b>	<b>14072457</b>
2.1 RBI's credit to commercial sector	16571	2874	19852	3724	11223
2.2 Other banks' credit to commercial sector	12599950	12172030	14026025	13998260	14061234
2.2.1 Bank credit by commercial banks	11891314	11468977	13305854	13276978	13337536
2.2.2 Bank credit by co-operative banks	690201	685155	702681	703892	706416
2.2.3 Investments by commercial and co-operative banks in other securities	18435	17898	17491	17390	17281
<b>3 Net Foreign Exchange Assets of Banking Sector (3.1 + 3.2)</b>	<b>4854063</b>	<b>4841390</b>	<b>4746428</b>	<b>4744878</b>	<b>4792608</b>
3.1 RBI's net foreign exchange assets (3.1.1–3.1.2)	4442479	4542534	4490835	4489285	4537015
3.1.1 Gross foreign assets	4442720	4542779	4491094	4489544	4537274
3.1.2 Foreign liabilities	241	245	259	259	259
3.2 Other banks' net foreign exchange assets	411583	298856	255593	255593	255593
<b>4 Government's Currency Liabilities to the Public</b>	<b>28013</b>	<b>27764</b>	<b>29600</b>	<b>29600</b>	<b>29791</b>
<b>5 Banking Sector's Net Non-monetary Liabilities</b>	<b>3482496</b>	<b>3030525</b>	<b>3528143</b>	<b>3687224</b>	<b>3657186</b>
5.1 Net non-monetary liabilities of RBI	1308500	1291916	1494789	1503013	1531460
5.2 Net non-monetary liabilities of other banks (residual)	2173996	1738609	2033355	2184211	2125727
<b>M<sub>3</sub> (1+2+3+4–5)</b>	<b>20493729</b>	<b>19947684</b>	<b>21859235</b>	<b>21843074</b>	<b>21895034</b>

**No. 8: Monetary Survey**

(₹ Crore)

Item	Outstanding as on March 31/last reporting Fridays of the month/reporting Fridays				
	2021-22	2022		2023	
		Jan. 28	Dec. 30	Jan. 13	Jan. 27
	1	2	3	4	5
<b>Monetary Aggregates</b>					
NM <sub>1</sub> (1.1 + 1.2.1+1.3)	5307125	5035056	5527104	5442317	5530143
NM <sub>2</sub> (NM <sub>1</sub> + 1.2.2.1)	12081049	11682863	12807909	12753803	12824268
NM <sub>3</sub> (NM <sub>2</sub> + 1.2.2.2 + 1.4 = 2.1 + 2.2 + 2.3 – 2.4 – 2.5)	20634885	20079548	22147115	22163057	22199079
<b>1 Components</b>					
1.1 Currency with the Public	3035689	2931921	3122236	3163730	3169530
1.2 Aggregate Deposits of Residents	17266157	16823402	18521503	18464008	18505959
1.2.1 Demand Deposits	2212992	2050497	2341936	2216261	2296792
1.2.2 Time Deposits of Residents	15053166	14772905	16179568	16247747	16209167
1.2.2.1 Short-term Time Deposits	6773925	6647807	7280805	7311486	7294125
1.2.2.1.1 Certificates of Deposit (CDs)	176718	100092	291491	290587	282706
1.2.2.2 Long-term Time Deposits	8279241	8125098	8898762	8936261	8915042
1.3 ‘Other’ Deposits with RBI	58444	52638	62932	62326	63821
1.4 Call/Term Funding from Financial Institutions	274594	271588	440444	472993	459769
<b>2 Sources</b>					
2.1 Domestic Credit	20080599	19107923	21705225	21868410	21861698
2.1.1 Net Bank Credit to the Government	6477629	5934151	6565472	6753836	6657365
2.1.1.1 Net RBI credit to the Government	1450596	1058706	1170253	1253932	1162729
2.1.1.2 Credit to the Government by the Banking System	5027033	4875445	5395219	5499904	5494636
2.1.2 Bank Credit to the Commercial Sector	13602969	13173772	15139752	15114575	15204333
2.1.2.1 RBI Credit to the Commercial Sector	39581	27644	19852	3724	11223
2.1.2.2 Credit to the Commercial Sector by the Banking System	13563389	13146128	15119900	15110850	15193109
2.1.2.2.1 Other Investments (Non-SLR Securities)	952181	964500	1073325	1089850	1111042
2.2 Government’s Currency Liabilities to the Public	28013	27764	29600	29600	29600
2.3 Net Foreign Exchange Assets of the Banking Sector	4705191	4770981	4595397	4498758	4628291
2.3.1 Net Foreign Exchange Assets of the RBI	4442479	4542534	4490835	4489285	4537015
2.3.2 Net Foreign Currency Assets of the Banking System	262711	228447	104562	9473	91276
2.4 Capital Account	3021858	3005712	3507288	3472398	3503011
2.5 Other items (net)	1157060	821408	675819	761313	817499

**No. 9: Liquidity Aggregates**

(₹ Crore)

Aggregates	2021-22	2022			2023
		Jan.	Nov.	Dec.	Jan.
	1	2	3	4	5
<b>1 NM<sub>3</sub></b>	<b>20630753</b>	<b>20079548</b>	<b>21732947</b>	<b>22199079</b>	<b>22408312</b>
2 Postal Deposits	596588	578806	594633	594633	594633
<b>3 L<sub>1</sub> (1 + 2)</b>	<b>21227341</b>	<b>20658354</b>	<b>22327580</b>	<b>22793712</b>	<b>23002945</b>
4 Liabilities of Financial Institutions	49578	27058	58400	65601	70232
4.1 Term Money Borrowings	1824	2138	1423	963	1133
4.2 Certificates of Deposit	39170	17560	49270	56570	61870
4.3 Term Deposits	8584	7360	7706	8069	7229
<b>5 L<sub>2</sub> (3 + 4)</b>	<b>21276919</b>	<b>20685412</b>	<b>22385979</b>	<b>22859314</b>	<b>23073177</b>
6 Public Deposits with Non-Banking Financial Companies	70564	..	..	78061	..
<b>7 L<sub>3</sub> (5 + 6)</b>	<b>21347483</b>	<b>..</b>	<b>..</b>	<b>22937375</b>	<b>..</b>

**Note :** 1. Figures in the columns might not add up to the total due to rounding off of numbers.

**No. 10: Reserve Bank of India Survey**

(₹ Crore)

Item	Outstanding as on March 31/last reporting Fridays of the month/reporting Fridays				
	2021-22	2022		2023	
		Jan. 28	Dec. 30	Jan. 13	Jan. 27
	1	2	3	4	5
<b>1 Components</b>					
1.1 Currency in Circulation	3133716	3032368	3232652	3281660	3291592
1.2 Bankers' Deposits with the RBI	876726	729343	899777	858519	870956
1.2.1 Scheduled Commercial Banks	823632	681336	841612	800904	813573
1.3 'Other' Deposits with the RBI	58444	52638	62932	62326	63821
Reserve Money (1.1 + 1.2 + 1.3 = 2.1 + 2.2 + 2.3 - 2.4 - 2.5)	4068887	3814348	4195361	4202505	4226369
<b>2 Sources</b>					
2.1 RBI's Domestic Credit	906895	535966	1169715	1186633	1191213
2.1.1 Net RBI credit to the Government	1450596	1058706	1170253	1253932	1162729
2.1.1.1 Net RBI credit to the Central Government (2.1.1.1 + 2.1.1.2 + 2.1.1.3 + 2.1.1.4 - 2.1.1.5)	1448972	1058032	1165846	1237286	1146027
2.1.1.1.1 Loans and Advances to the Central Government	-	-	-	-	-
2.1.1.1.2 Investments in Treasury Bills	-	-	-	-	-
2.1.1.1.3 Investments in dated Government Securities	1488816	1495081	1407281	1410639	1402174
2.1.1.1.3.1 Central Government Securities	1488816	1495081	1407281	1410639	1402174
2.1.1.1.4 Rupee Coins	508	498	367	497	436
2.1.1.1.5 Deposits of the Central Government	40352	437546	241802	173851	256584
2.1.1.2 Net RBI credit to State Governments	1624	674	4408	16646	16702
2.1.2 RBI's Claims on Banks	-583282	-550384	-20391	-71023	17261
2.1.2.1 Loans and Advances to Scheduled Commercial Banks	-560272	-525614	-20391	-71023	17261
2.1.3 RBI's Credit to Commercial Sector	39581	27644	19852	3724	11223
2.1.3.1 Loans and Advances to Primary Dealers	-	734	2376	652	1675
2.1.3.2 Loans and Advances to NABARD	23010	24770	-	-	-
2.2 Government's Currency Liabilities to the Public	28013	27764	29600	29600	29600
2.3 Net Foreign Exchange Assets of the RBI	4442479	4542534	4490835	4489285	4537015
2.3.1 Gold	322213	296461	341827	348887	358942
2.3.2 Foreign Currency Assets	4120283	4246090	4149026	4140416	4178090
2.4 Capital Account	1254092	1244373	1580164	1538038	1566409
2.5 Other Items (net)	54408	47542	-85375	-35025	-34950

**No. 11: Reserve Money - Components and Sources**

(₹ Crore)

Item	2021-22	Outstanding as on March 31/ last Fridays of the month/ Fridays					
		2022		2023			
		Jan. 28	Dec. 30	Jan. 6	Jan. 13	Jan. 20	Jan. 27
		1	2	3	4	5	7
Reserve Money (1.1 + 1.2 + 1.3 = 2.1 + 2.2 + 2.3 + 2.4 + 2.5 - 2.6)	4068887	3814348	4195361	4205433	4202505	4261569	4226559
<b>1 Components</b>							
1.1 Currency in Circulation	3133716	3032368	3232652	3254929	3281660	3278713	3291782
1.2 Bankers' Deposits with RBI	876726	729343	899777	888028	858519	919235	870956
1.3 'Other' Deposits with RBI	58444	52638	62932	62475	62326	63621	63821
<b>2 Sources</b>							
2.1 Net Reserve Bank Credit to Government	1450596	1058706	1170253	1237320	1253932	1230498	1162729
2.2 Reserve Bank Credit to Banks	-560272	-525614	-20391	-76123	-71023	9930	17261
2.3 Reserve Bank Credit to Commercial Sector	16571	2874	19852	18188	3724	5530	11223
2.4 Net Foreign Exchange Assets of RBI	4442479	4542534	4490835	4480669	4489285	4490966	4537015
2.5 Government's Currency Liabilities to the Public	28013	27764	29600	29600	29600	29600	29791
2.6 Net Non- Monetary Liabilities of RBI	1308500	1291916	1494789	1484222	1503013	1504954	1531460

**No. 12: Commercial Bank Survey**

(₹ Crore)

Item	Outstanding as on last reporting Fridays of the month/ reporting Fridays of the month				
	2021-22	2022		2023	
		Jan. 28	Dec. 30	Jan. 13	Jan. 27
	1	2	3	4	5
<b>1 Components</b>					
1.1 Aggregate Deposits of Residents	16331874	15892803	17581221	17521760	17563894
1.1.1 Demand Deposits	2072747	1912237	2201751	2075619	2156747
1.1.2 Time Deposits of Residents	14259128	13980566	15379470	15446141	15407147
1.1.2.1 Short-term Time Deposits	6416607	6291255	6920761	6950764	6933216
1.1.2.1.1 Certificates of Deposits (CDs)	176718	100092	291491	290587	282706
1.1.2.2 Long-term Time Deposits	7842520	7689311	8458708	8495378	8473931
1.2 Call/Term Funding from Financial Institutions	274594	271588	440444	472993	459769
<b>2 Sources</b>					
2.1 Domestic Credit	17575002	17015052	19487073	19581341	19655333
2.1.1 Credit to the Government	4728179	4579446	5095190	5199618	5193768
2.1.2 Credit to the Commercial Sector	12846823	12435606	14391883	14381723	14461566
2.1.2.1 Bank Credit	11891314	11468977	13305854	13276978	13337536
2.1.2.1.1 Non-food Credit	11836304	11386587	13251881	13224324	13287371
2.1.2.2 Net Credit to Primary Dealers	11522	9861	20813	23004	21097
2.1.2.3 Investments in Other Approved Securities	769	1231	854	853	853
2.1.2.4 Other Investments (in non-SLR Securities)	943218	955537	1064363	1080888	1102079
2.2 Net Foreign Currency Assets of Commercial Banks (2.2.1–2.2.2–2.2.3)	262711	228447	104562	9473	91276
2.2.1 Foreign Currency Assets	465464	443146	332964	315964	318413
2.2.2 Non-resident Foreign Currency Repatriable Fixed Deposits	133439	139724	152563	153010	155534
2.2.3 Overseas Foreign Currency Borrowings	69314	74975	75839	153481	71602
2.3 Net Bank Reserves (2.3.1+2.3.2–2.3.3)	1268887	1295769	960618	978145	906743
2.3.1 Balances with the RBI	683437	681336	841612	800904	813573
2.3.2 Cash in Hand	85926	88818	98615	106218	110431
2.3.3 Loans and Advances from the RBI	-499524	-525614	-20391	-71023	17261
2.4 Capital Account	1743595	1737168	1902953	1910189	1912431
2.5 Other items (net) (2.1+2.2+2.3–2.4–1.1–1.2)	756537	637710	627636	664017	717259
2.5.1 Other Demand and Time Liabilities (net of 2.2.3)	571535	530834	676799	525662	660098
2.5.2 Net Inter-Bank Liabilities (other than to PDs)	26533	35577	29580	22888	32462

**No. 13: Scheduled Commercial Banks' Investments**

(₹ Crore)

Item	As on March 25, 2022	2022		2023	
		Jan. 28	Dec. 30	Jan. 13	Jan. 27
				1	2
1 SLR Securities	4728948	4580677	5096044	5200471	5194621
2 Other Government Securities (Non-SLR)	-	-	182263	170090	186648
3 Commercial Paper	55315	51659	54045	52824	52392
4 Shares issued by					
4.1 PSUs	7642	8411	9402	10079	10063
4.2 Private Corporate Sector	73814	73112	70997	70580	70612
4.3 Others	5152	5020	4881	4799	5071
5 Bonds/Debentures issued by					
5.1 PSUs	117860	113382	90235	100609	102065
5.2 Private Corporate Sector	326188	338728	326708	325366	326723
5.3 Others	148753	147862	98924	97463	97975
6 Instruments issued by					
6.1 Mutual funds	34404	49961	36748	59738	58938
6.2 Financial institutions	174090	167402	190633	189340	191592

Note: Data against column Nos. (1), (2) &amp; (3) are Final and for column Nos. (4) &amp; (5) data are Provisional.

'-' Data are not available.

**No. 14: Business in India - All Scheduled Banks and All Scheduled Commercial Banks**

(₹ Crore)

Item	As on the Last Reporting Friday (in case of March)/ Last Friday							
	All Scheduled Banks			All Scheduled Commercial Banks				
	2021-22	2022		2023	2021-22	2022		2023
		Jan.	Dec.	Jan.		Jan.	Dec.	Jan.
	1	2	3	4	5	6	7	8
Number of Reporting Banks	212	211	212	212	136	136	137	137
<b>1 Liabilities to the Banking System</b>	<b>262674</b>	<b>270636</b>	<b>329579</b>	<b>329409</b>	<b>258649</b>	<b>266584</b>	<b>326294</b>	<b>326191</b>
1.1 Demand and Time Deposits from Banks	194143	189586	220832	210725	190570	186194	218463	208480
1.2 Borrowings from Banks	38369	56311	51597	63049	38317	56015	51284	62698
1.3 Other Demand and Time Liabilities	30162	24738	57150	55635	29762	24375	56548	55013
<b>2 Liabilities to Others</b>	<b>17832517</b>	<b>17345575</b>	<b>19369545</b>	<b>19353623</b>	<b>17380755</b>	<b>16909923</b>	<b>18926865</b>	<b>18910898</b>
2.1 Aggregate Deposits	16899634	16452976	18157728	18145380	16465313	16032526	17733784	17719428
2.1.1 Demand	2117513	1954716	2245942	2201145	2072747	1912237	2201751	2156747
2.1.2 Time	14782121	14498260	15911786	15944235	14392567	14120289	15532033	15562681
2.2 Borrowings	278985	275943	445126	464367	274594	271588	440444	459769
2.3 Other Demand and Time Liabilities	653898	616656	766691	743875	640848	605809	752638	731701
<b>3 Borrowings from Reserve Bank</b>	<b>94299</b>	<b>94286</b>	<b>127472</b>	<b>121622</b>	<b>94299</b>	<b>94286</b>	<b>127472</b>	<b>121622</b>
3.1 Against Usance Bills /Promissory Notes	—	—	—	—	—	—	—	—
3.2 Others	94299	94286	127472	121622	94299	94286	127472	121622
<b>4 Cash in Hand and Balances with Reserve Bank</b>	<b>788725</b>	<b>789710</b>	<b>962643</b>	<b>945678</b>	<b>769363</b>	<b>770154</b>	<b>940227</b>	<b>924004</b>
4.1 Cash in Hand	88732	91151	101119	112766	85926	88818	98615	110431
4.2 Balances with Reserve Bank	699993	698559	861524	832912	683437	681336	841612	813573
<b>5 Assets with the Banking System</b>	<b>315282</b>	<b>304523</b>	<b>381952</b>	<b>376084</b>	<b>243637</b>	<b>240868</b>	<b>316528</b>	<b>314826</b>
5.1 Balances with Other Banks	199434	205822	231028	227036	164240	169574	190298	190072
5.1.1 In Current Account	19733	33438	23689	24610	16691	30638	19998	21710
5.1.2 In Other Accounts	179701	172384	207339	202426	147549	138936	170301	168362
5.2 Money at Call and Short Notice	36905	30424	38715	40285	6982	8759	18843	21711
5.3 Advances to Banks	39340	33965	46616	43544	35802	31166	44875	40586
5.4 Other Assets	39603	34312	65594	65218	36613	31369	62511	62457
<b>6 Investment</b>	<b>4874070</b>	<b>4722004</b>	<b>5241307</b>	<b>5340520</b>	<b>4728948</b>	<b>4580677</b>	<b>5096044</b>	<b>5194621</b>
6.1 Government Securities	4867102	4714808	5234518	5333941	4728179	4579446	5095190	5193768
6.2 Other Approved Securities	6968	7196	6789	6579	769	1231	854	853
<b>7 Bank Credit</b>	<b>12259048</b>	<b>11822445</b>	<b>13697649</b>	<b>13735127</b>	<b>11891314</b>	<b>11468977</b>	<b>13306853</b>	<b>13337536</b>
7a Food Credit	90827	118206	99690	95913	55011	82390	53972	50165
7.1 Loans, Cash-credits and Overdrafts	12016486	11600090	13456163	13501092	11651337	11248917	13068326	13106520
7.2 Inland Bills-Purchased	36070	34140	35326	34384	36055	34127	35310	34366
7.3 Inland Bills-Discounted	155796	137848	159217	153963	154212	136504	156955	151575
7.4 Foreign Bills-Purchased	19537	19331	18911	17315	19157	18954	18727	17142
7.5 Foreign Bills-Discounted	31160	31036	28033	28373	30554	30476	27535	27933

**Note:** Data in column Nos. (4) & (8) are Provisional.

### No. 15: Deployment of Gross Bank Credit by Major Sectors

Sector	Outstanding as on					(₹ Crore)	
	Mar.25, 2022	2022		2023	Financial year so far	Y-o-Y	
		Jan.28	Dec.30	Jan.27	2022-23	2023	
	1	2	3	4	%	%	
I. Bank Credit (II+III)	11891314	11468977	13304393	13341662	12.2	16.3	
II. Food Credit	55011	82390	53972	50165	-8.8	-39.1	
III. Non-food Credit	11836304	11386587	13250421	13291496	12.3	16.7	
1. Agriculture & Allied Activities	1461719	1431992	1630871	1638079	12.1	14.4	
2. Industry (Micro and Small, Medium and Large )	3156067	3024185	3289497	3288720	4.2	8.7	
2.1 Micro and Small	532792	502516	579070	578976	8.7	15.2	
2.2 Medium	213996	199075	237564	235162	9.9	18.1	
2.3 Large	2409279	2322594	2472863	2474582	2.7	6.5	
3. Services	3011975	2862868	3496605	3477752	15.5	21.5	
3.1 Transport Operators	155352	147641	164451	166550	7.2	12.8	
3.2 Computer Software	20899	20516	22404	21071	0.8	2.7	
3.3 Tourism, Hotels & Restaurants	64378	63571	64551	64909	0.8	2.1	
3.4 Shipping	8436	7210	7307	7259	-14.0	0.7	
3.5 Aviation	23979	24212	28930	27824	16.0	14.9	
3.6 Professional Services	116742	108561	126739	127711	9.4	17.6	
3.7 Trade	696301	665677	769244	777832	11.7	16.8	
3.7.1 Wholesale Trade	351213	340021	376968	381139	8.5	12.1	
3.7.2 Retail Trade	345088	325656	392276	396692	15.0	21.8	
3.8 Commercial Real Estate	291168	291336	309031	313440	7.6	7.6	
3.9 Non-Banking Financial Companies (NBFCs) <sup>1</sup> of which,	1022399	983457	1310200	1287906	26.0	31.0	
3.9.1 Housing Finance Companies (HFCs)	282048	271849	311071	309755	9.8	13.9	
3.9.2 Public Financial Institutions (PFIs)	137084	132626	181330	181803	32.6	37.1	
3.10 Other Services <sup>2</sup>	612320	550688	693750	683251	11.6	24.1	
4. Personal Loans	3386982	3287408	3935144	3958874	16.9	20.4	
4.1 Consumer Durables	27628	25707	36640	36910	33.6	43.6	
4.2 Housing	1684424	1636091	1898411	1888144	12.1	15.4	
4.3 Advances against Fixed Deposits	83379	84263	109937	109749	31.6	30.2	
4.4 Advances to Individuals against share & bonds	6261	6149	6806	6858	9.5	11.5	
4.5 Credit Card Outstanding	148416	144162	180090	186783	25.9	29.6	
4.6 Education	82723	82302	92754	95226	15.1	15.7	
4.7 Vehicle Loans	402689	395803	484747	496662	23.3	25.5	
4.8 Loan against gold jewellery	73960	74779	84256	85928	16.2	14.9	
4.9 Other Personal Loans	877503	838150	1041502	1052614	20.0	25.6	
5. Priority Sector (Memo)							
(i) Agriculture & Allied Activities <sup>3</sup>	1484923	1438373	1673097	1656599	11.6	15.2	
(ii) Micro & Small Enterprises <sup>4</sup>	1377848	1331451	1526256	1534099	11.3	15.2	
(iii) Medium Enterprises <sup>5</sup>	351900	335174	386473	393252	11.8	17.3	
(iv) Housing	616814	600300	617924	614829	-0.3	2.4	
(v) Education Loans	58118	59045	58998	59250	1.9	0.3	
(vi) Renewable Energy	3842	2259	4782	4617	20.2	104.3	
(vii) Social Infrastructure	2483	2523	2473	2499	0.6	-1.0	
(viii) Export Credit	23681	24546	15673	14390	-39.2	-41.4	
(ix) Others	37159	39770	52093	48680	31.0	22.4	
(x) Weaker Sections including net PSLC- SF/MF	1180928	1072268	1381194	1365708	15.6	27.4	

Note 1: Data are provisional. Bank credit, Food credit and Non-food credit data are based on Section-42 return, which covers all scheduled commercial banks (SCBs), while sectoral non-food credit data are based on sector-wise and industry-wise bank credit (SIBC) return, which covers select banks accounting for about 93 per cent of total non-food credit extended by all SCBs.

Note 2: With effect from January 2019, sectoral credit data are based on revised format due to which values and growth rates of some of the existing components published earlier have undergone changes.

Note 3: Credit data are adjusted for past reporting errors by select SCBs from December 2021 onwards.

1 NBFCs include HFCs, PFIs, Microfinance Institutions (MFIs), NBFCs engaged in gold loan and others.

2 "Other Services" include Mutual Fund (MFs), Banking and Finance other than NBFCs and MFs and other services which are not indicated elsewhere under services.

3 "Agriculture and Allied Activities" under the priority sector also include priority sector lending certificates (PSLCs).

4 "Micro and Small Enterprises" under the priority sector include credit to micro and small enterprises in industry and services sectors and also include PSLCs.

5 "Medium Enterprises" under the priority sector include credit to medium enterprises in industry and services sectors.

**No. 16: Industry-wise Deployment of Gross Bank Credit**

(₹ Crore)

Industry	Outstanding as on				Growth (%)	
	Mar. 25, 2022	2022		2023	Financial year so far	Y-o-Y
		Jan. 28	Dec. 30	Jan. 27	2022-23	2023
	1	2	3	4	%	%
<b>2 Industries (2.1 to 2.19)</b>	3156067	3024185	3289497	3288720	4.2	8.7
2.1 Mining & Quarrying (incl. Coal)	49135	44732	53331	56354	14.7	26.0
2.2 Food Processing	173246	165921	174703	173768	0.3	4.7
2.2.1 Sugar	26307	22007	17882	18911	-28.1	-14.1
2.2.2 Edible Oils & Vanaspati	18246	16942	18806	18941	3.8	11.8
2.2.3 Tea	5728	5441	5419	5080	-11.3	-6.6
2.2.4 Others	122965	121531	132596	130836	6.4	7.7
2.3 Beverage & Tobacco	18176	17385	19974	20612	13.4	18.6
2.4 Textiles	224026	218016	217966	219820	-1.9	0.8
2.4.1 Cotton Textiles	90384	88629	84820	86588	-4.2	-2.3
2.4.2 Jute Textiles	3509	2865	3864	3848	9.7	34.3
2.4.3 Man-Made Textiles	38371	37620	39737	39630	3.3	5.3
2.4.4 Other Textiles	91761	88902	89544	89753	-2.2	1.0
2.5 Leather & Leather Products	11573	11118	11629	11494	-0.7	3.4
2.6 Wood & Wood Products	16294	15794	18418	18790	15.3	19.0
2.7 Paper & Paper Products	40565	39959	42468	42674	5.2	6.8
2.8 Petroleum, Coal Products & Nuclear Fuels	107333	90661	163677	150285	40.0	65.8
2.9 Chemicals & Chemical Products	196363	182861	217102	215056	9.5	17.6
2.9.1 Fertiliser	33160	27366	33761	35009	5.6	27.9
2.9.2 Drugs & Pharmaceuticals	61093	57517	66499	66403	8.7	15.4
2.9.3 Petro Chemicals	19622	20696	21087	20878	6.4	0.9
2.9.4 Others	82486	77281	95755	92767	12.5	20.0
2.10 Rubber, Plastic & their Products	72013	68695	77626	77560	7.7	12.9
2.11 Glass & Glassware	5952	5839	7117	7763	30.4	33.0
2.12 Cement & Cement Products	47910	47062	53224	52846	10.3	12.3
2.13 Basic Metal & Metal Product	288531	275858	329646	336682	16.7	22.0
2.13.1 Iron & Steel	187584	177780	223934	229716	22.5	29.2
2.13.2 Other Metal & Metal Product	100946	98078	105712	106966	6.0	9.1
2.14 All Engineering	167966	160086	172177	170022	1.2	6.2
2.14.1 Electronics	38179	37922	39743	40644	6.5	7.2
2.14.2 Others	129787	122165	132434	129378	-0.3	5.9
2.15 Vehicles, Vehicle Parts & Transport Equipment	89896	86900	96797	96844	7.7	11.4
2.16 Gems & Jewellery	80512	77790	77604	75160	-6.6	-3.4
2.17 Construction	117724	117160	117229	116511	-1.0	-0.6
2.18 Infrastructure	1195027	1158616	1197696	1185454	-0.8	2.3
2.18.1 Power	611410	589311	609091	605986	-0.9	2.8
2.18.2 Telecommunications	130318	126683	114852	110506	-15.2	-12.8
2.18.3 Roads	270395	261852	284203	284739	5.3	8.7
2.18.4 Airports	6646	6463	9395	9217	38.7	42.6
2.18.5 Ports	8886	8854	7834	7860	-11.5	-11.2
2.18.6 Railways	10512	10176	11201	10851	3.2	6.6
2.18.7 Other Infrastructure	156860	155277	161119	156294	-0.4	0.7
2.19 Other Industries	253823	239731	241112	261025	2.8	8.9

**Note :** With effect from January 2019, sectoral credit data are based on revised format due to which values and growth rates of some of the existing components published earlier have undergone some changes.

**No. 17: State Co-operative Banks Maintaining Accounts with the Reserve Bank of India**

(₹ Crore)

Item	Last Reporting Friday (in case of March)/Last Friday/ Reporting Friday									
	2020-21	2021		2022						
		Dec, 31	Oct, 28	Nov, 04	Nov, 18	Nov, 25	Dec, 02	Dec, 16	Dec, 30	
		1	2	3	4	5	6	7	8	9
Number of Reporting Banks		32	33	33	33	33	33	33	33	
<b>1 Aggregate Deposits (2.1.1.2+2.2.1.2)</b>	<b>125859.6</b>	<b>125717.1</b>	<b>126637.1</b>	<b>126360.6</b>	<b>126894.1</b>	<b>127382.3</b>	<b>127292.9</b>	<b>128339.4</b>	<b>130835.1</b>	
2 Demand and Time Liabilities										
<b>2.1 Demand Liabilities</b>	<b>23736.9</b>	<b>25194.1</b>	<b>25889.7</b>	<b>25512.5</b>	<b>25577.6</b>	<b>24931.7</b>	<b>25574.4</b>	<b>26161.0</b>	<b>28819.3</b>	
2.1.1 Deposits										
2.1.1.1 Inter-Bank	4896.9	4992.8	6211.1	5886.2	5568.0	5197.9	5822.7	5522.9	5201.5	
2.1.1.2 Others	13,899.4	13529.3	14276.2	14104.1	14228.8	14221.3	14281.6	14807.4	15609.5	
2.1.2 Borrowings from Banks	0.0	30.0	399.7	399.9	404.9	624.7	544.7	624.7	50.0	
2.1.3 Other Demand Liabilities	4940.6	6642.1	5002.6	5122.2	5376.0	4887.9	4925.4	5206.1	7958.3	
<b>2.2 Time Liabilities</b>	<b>179957.5</b>	<b>175645.6</b>	<b>171886.4</b>	<b>171587.7</b>	<b>171549.2</b>	<b>172191.9</b>	<b>171447.3</b>	<b>172012.1</b>	<b>174159.8</b>	
2.2.1 Deposits										
2.2.1.1 Inter-Bank	65333.7	60369.4	55727.0	54916.2	54040.1	54088.1	54278.4	54295.2	55395.7	
2.2.1.2 Others	111960.2	112187.8	112360.9	112256.5	112665.3	113161.0	113011.3	113532.1	115225.6	
2.2.2 Borrowings from Banks	630.0	879.7	1441.3	2016.3	2433.3	2519.3	1715.3	1734.4	1074.3	
2.2.3 Other Time Liabilities	2033.7	2208.6	2357.3	2398.6	2410.4	2423.5	2442.3	2450.5	2464.2	
3 Borrowing from Reserve Bank	0.0	0.0	35.0	35.0	35.0	35.0	35.0	35.0	0.0	
4 Borrowings from a notified bank / Government	63559.8	65323.6	76583.1	75852.3	73458.8	73686.9	74853.3	74975.2	79539.1	
4.1 Demand	15691.8	12617.5	15999.9	15799.9	15528.3	15498.3	15914.2	15783.7	17875.0	
4.2 Time	47868.0	52706.1	60583.2	60052.4	57930.5	58188.6	58939.1	59191.5	61664.2	
<b>5 Cash in Hand and Balances with Reserve Bank</b>	<b>8151.1</b>	<b>9710.1</b>	<b>10490.1</b>	<b>10600.3</b>	<b>10229.6</b>	<b>10166.0</b>	<b>10547.0</b>	<b>10820.3</b>	<b>11342.1</b>	
5.1 Cash in Hand	570.3	706.3	814.7	802.1	867.6	777.6	846.0	856.4	893.9	
5.2 Balance with Reserve Bank	7580.8	9003.8	9675.4	9798.1	9362.0	9388.3	9701.0	9963.9	10448.2	
<b>6 Balances with Other Banks in Current Account</b>	<b>1148.1</b>	<b>1419.1</b>	<b>1407.8</b>	<b>1364.8</b>	<b>1560.4</b>	<b>1557.2</b>	<b>1561.1</b>	<b>1555.0</b>	<b>1676.2</b>	
<b>7 Investments in Government Securities</b>	<b>64455.2</b>	<b>71870.3</b>	<b>74182.9</b>	<b>73637.4</b>	<b>73166.1</b>	<b>72325.9</b>	<b>72326.1</b>	<b>72684.3</b>	<b>72306.1</b>	
<b>8 Money at Call and Short Notice</b>	<b>28835.7</b>	<b>24601.8</b>	<b>21439.7</b>	<b>21003.3</b>	<b>17899.7</b>	<b>18018.5</b>	<b>17284.9</b>	<b>17449.4</b>	<b>23466.4</b>	
<b>9 Bank Credit (10.1+11)</b>	<b>114631.6</b>	<b>109318.7</b>	<b>120927.0</b>	<b>120809.3</b>	<b>120186.2</b>	<b>120652.2</b>	<b>120965.0</b>	<b>121585.0</b>	<b>121588.2</b>	
10 Advances										
<b>10.1 Loans, Cash-Credits and Overdrafts</b>	<b>114612.1</b>	<b>109298.1</b>	<b>120906.9</b>	<b>120769.5</b>	<b>120147.3</b>	<b>120612.7</b>	<b>120925.5</b>	<b>121543.5</b>	<b>121546.4</b>	
10.2 Due from Banks	89429.1	103321.6	117333.9	117079.2	117456.0	117682.0	117687.7	118828.7	122854.5	
11 Bills Purchased and Discounted	19.5	20.6	20.1	39.7	38.8	39.5	39.5	41.5	41.7	

## Prices and Production

### No. 18: Consumer Price Index (Base: 2012=100)

Group/Sub group	2021-22			Rural			Urban			Combined		
	Rural	Urban	Combined	Jan.22	Dec.22	Jan.23(P)	Jan.22	Dec.22	Jan.23(P)	Jan.22	Dec.22	Jan.23(P)
	1	2	3	4	5	6	7	8	9	10	11	12
<b>1 Food and beverages</b>	<b>162.8</b>	<b>168.7</b>	<b>165.0</b>	<b>164.1</b>	<b>174.4</b>	<b>175.0</b>	<b>170.3</b>	<b>178.6</b>	<b>179.5</b>	<b>166.4</b>	<b>175.9</b>	<b>176.7</b>
1.1 Cereals and products	146.4	150.4	147.6	148.3	168.8	173.8	152.2	170.2	173.2	149.5	169.2	173.6
1.2 Meat and fish	200.4	206.5	202.6	196.9	206.9	208.3	202.1	212.9	215.0	198.7	209.0	210.7
1.3 Egg	173.3	176.0	174.4	178.0	189.1	193.0	180.1	191.9	197.0	178.8	190.2	194.5
1.4 Milk and products	158.3	159.0	158.6	160.5	173.4	174.3	160.4	173.9	175.2	160.5	173.6	174.6
1.5 Oils and fats	192.2	172.4	184.9	192.6	193.9	192.7	171.0	179.1	178.0	184.7	188.5	187.3
1.6 Fruits	155.3	163.5	159.2	151.2	156.7	156.3	156.5	159.5	160.4	153.7	158.0	158.2
1.7 Vegetables	156.1	192.8	168.5	159.2	150.2	142.9	203.6	178.7	175.2	174.3	159.9	153.9
1.8 Pulses and products	164.1	164.4	164.2	164.0	170.5	170.7	163.8	171.3	171.2	163.9	170.8	170.9
1.9 Sugar and confectionery	117.4	119.1	118.0	119.3	121.2	120.3	121.3	123.1	122.7	120.0	121.8	121.1
1.10 Spices	171.2	167.5	170.0	173.3	207.5	210.5	169.8	200.5	204.3	172.1	205.2	208.4
1.11 Non-alcoholic beverages	167.8	154.7	162.3	169.8	176.8	177.0	156.6	162.8	163.7	164.3	171.0	171.4
1.12 Prepared meals, snacks, sweets	173.0	175.8	174.3	175.8	187.7	188.4	179.0	193.3	194.2	177.3	190.3	191.1
<b>2 Pan, tobacco and intoxicants</b>	<b>190.3</b>	<b>196.5</b>	<b>191.9</b>	<b>190.7</b>	<b>195.9</b>	<b>196.8</b>	<b>196.4</b>	<b>201.1</b>	<b>201.6</b>	<b>192.2</b>	<b>197.3</b>	<b>198.1</b>
<b>3 Clothing and footwear</b>	<b>168.2</b>	<b>158.4</b>	<b>164.3</b>	<b>172.7</b>	<b>187.8</b>	<b>188.6</b>	<b>162.2</b>	<b>175.7</b>	<b>176.6</b>	<b>168.5</b>	<b>183.0</b>	<b>183.8</b>
3.1 Clothing	168.8	160.9	165.7	173.2	188.1	189.0	164.7	177.7	178.6	169.9	184.0	184.9
3.2 Footwear	164.5	144.7	156.3	169.3	185.9	186.3	148.5	164.5	165.3	160.7	177.0	177.6
<b>4 Housing</b>	--	<b>163.0</b>	<b>163.0</b>	--	--	--	<b>164.5</b>	<b>170.7</b>	<b>172.1</b>	<b>164.5</b>	<b>170.7</b>	<b>172.1</b>
<b>5 Fuel and light</b>	<b>164.0</b>	<b>159.8</b>	<b>162.4</b>	<b>165.8</b>	<b>182.8</b>	<b>183.2</b>	<b>161.6</b>	<b>180.6</b>	<b>180.1</b>	<b>164.2</b>	<b>182.0</b>	<b>182.0</b>
<b>6 Miscellaneous</b>	<b>164.1</b>	<b>156.1</b>	<b>160.2</b>	<b>166.6</b>	<b>175.5</b>	<b>176.5</b>	<b>158.6</b>	<b>168.2</b>	<b>168.9</b>	<b>162.7</b>	<b>172.0</b>	<b>172.8</b>
6.1 Household goods and services	161.8	153.5	157.9	164.9	176.4	177.2	156.8	167.3	167.8	161.1	172.1	172.8
6.2 Health	172.0	163.3	168.6	174.7	183.5	184.7	166.1	177.2	178.5	171.4	181.1	182.3
6.3 Transport and communication	157.9	150.0	153.7	160.8	167.8	168.2	152.7	159.4	159.5	156.5	163.4	163.6
6.4 Recreation and amusement	162.7	154.8	158.2	164.9	171.2	171.8	158.4	167.1	167.8	161.2	168.9	169.5
6.5 Education	168.4	160.1	163.5	169.9	177.3	177.8	161.0	171.8	171.8	164.7	174.1	174.3
6.6 Personal care and effects	161.3	160.8	161.1	163.2	175.7	178.4	162.8	176.0	178.8	163.0	175.8	178.6
<b>General Index (All Groups)</b>	<b>164.5</b>	<b>163.1</b>	<b>163.8</b>	<b>166.4</b>	<b>177.1</b>	<b>177.8</b>	<b>165.0</b>	<b>174.1</b>	<b>174.9</b>	<b>165.7</b>	<b>175.7</b>	<b>176.5</b>

Source: National Statistical Office, Ministry of Statistics and Programme Implementation, Government of India.  
P: Provisional.

### No. 19: Other Consumer Price Indices

Item	Base Year	Linking Factor	2021-22		2022		2023	
			Jan.	Dec.	Jan.	Dec.	Jan.	Dec.
	1	2	3	4	5	6		
1 Consumer Price Index for Industrial Workers	2016	2.88	123.6	125.1	132.3	132.8		
2 Consumer Price Index for Agricultural Labourers	1986-87	5.89	1075	1095	1167	1170		
3 Consumer Price Index for Rural Labourers	1986-87	—	1084	1105	1179	1181		

Source: Labour Bureau, Ministry of Labour and Employment, Government of India.

### No. 20: Monthly Average Price of Gold and Silver in Mumbai

Item	2021-22		2022		2023	
			Jan.	Dec.	Jan.	Dec.
	1	2	3	4	5	6
1 Standard Gold (₹ per 10 grams)	47999		47960		53941	
2 Silver (₹ per kilogram)		65426		62038		66698
						68305

Source: India Bullion & Jewellers Association Ltd., Mumbai for Gold and Silver prices in Mumbai.

**No. 21: Wholesale Price Index**  
(Base: 2011-12 = 100)

Commodities	Weight	2021-22	2022			2023
			Jan.	Nov.	Dec. (P)	Jan. (P)
			1	2	3	4
<b>1 ALL COMMODITIES</b>	<b>100.000</b>	<b>139.4</b>	<b>143.8</b>	<b>152.5</b>	<b>150.4</b>	<b>150.6</b>
<b>1.1 PRIMARY ARTICLES</b>	<b>22.618</b>	<b>160.7</b>	<b>167.5</b>	<b>178.4</b>	<b>172.4</b>	<b>174.0</b>
<b>1.1.1 FOOD ARTICLES</b>	<b>15.256</b>	<b>167.3</b>	<b>172.0</b>	<b>181.0</b>	<b>174.5</b>	<b>176.1</b>
1.1.1.1 Food Grains (Cereals+Pulses)	3.462	163.5	165.5	181.9	184.2	187.0
1.1.1.2 Fruits & Vegetables	3.475	187.6	201.8	205.4	173.4	171.2
1.1.1.3 Milk	4.440	156.9	157.4	167.3	168.3	171.5
1.1.1.4 Eggs, Meat & Fish	2.402	164.0	165.6	166.8	166.9	169.3
1.1.1.5 Condiments & Spices	0.529	159.8	168.5	192.9	191.5	195.7
1.1.1.6 Other Food Articles	0.948	168.3	172.6	182.5	181.3	181.9
<b>1.1.2 NON-FOOD ARTICLES</b>	<b>4.119</b>	<b>158.1</b>	<b>165.9</b>	<b>168.8</b>	<b>170.7</b>	<b>173.4</b>
1.1.2.1 Fibres	0.839	158.4	177.4	192.7	188.1	185.3
1.1.2.2 Oil Seeds	1.115	214.4	210.8	199.7	200.0	201.9
1.1.2.3 Other non-food Articles	1.960	119.9	122.3	132.8	134.4	136.6
1.1.2.4 Floriculture	0.204	217.0	292.2	247.6	288.6	321.8
<b>1.1.3 MINERALS</b>	<b>0.833</b>	<b>197.2</b>	<b>224.7</b>	<b>198.5</b>	<b>198.7</b>	<b>203.9</b>
1.1.3.1 Metallic Minerals	0.648	193.3	226.6	183.4	183.5	190.2
1.1.3.2 Other Minerals	0.185	211.0	218.0	251.5	252.0	251.8
<b>1.1.4 CRUDE PETROLEUM &amp; NATURAL GAS</b>	<b>2.410</b>	<b>110.3</b>	<b>122.3</b>	<b>171.2</b>	<b>152.7</b>	<b>151.4</b>
<b>1.2 FUEL &amp; POWER</b>	<b>13.152</b>	<b>124.6</b>	<b>135.3</b>	<b>162.8</b>	<b>158.0</b>	<b>155.8</b>
<b>1.2.1 COAL</b>	<b>2.138</b>	<b>129.0</b>	<b>130.9</b>	<b>134.3</b>	<b>134.3</b>	<b>134.3</b>
1.2.1.1 Coking Coal	0.647	143.0	143.4	143.4	143.4	143.4
1.2.1.2 Non-Coking Coal	1.401	119.8	119.8	119.8	119.8	119.8
1.2.1.3 Lignite	0.090	170.5	212.6	294.3	294.3	294.3
<b>1.2.2 MINERAL OILS</b>	<b>7.950</b>	<b>126.2</b>	<b>136.5</b>	<b>172.4</b>	<b>164.4</b>	<b>160.9</b>
<b>1.2.3 ELECTRICITY</b>	<b>3.064</b>	<b>117.4</b>	<b>135.3</b>	<b>157.9</b>	<b>157.7</b>	<b>157.7</b>
<b>1.3 MANUFACTURED PRODUCTS</b>	<b>64.231</b>	<b>135.0</b>	<b>137.2</b>	<b>141.3</b>	<b>141.1</b>	<b>141.3</b>
<b>1.3.1 MANUFACTURE OF FOOD PRODUCTS</b>	<b>9.122</b>	<b>157.9</b>	<b>156.9</b>	<b>164.6</b>	<b>163.3</b>	<b>163.1</b>
1.3.1.1 Processing and Preserving of meat	0.134	142.8	142.3	140.4	142.5	142.7
1.3.1.2 Processing and Preserving of fish, Crustaceans, Molluscs and products thereof	0.204	144.1	146.3	140.8	142.7	146.8
1.3.1.3 Processing and Preserving of fruit and Vegetables	0.138	122.3	122.5	128.0	127.5	126.9
1.3.1.4 Vegetable and Animal oils and Fats	2.643	187.2	180.8	174.7	169.2	166.7
1.3.1.5 Dairy products	1.165	149.4	149.3	168.6	169.6	171.9
1.3.1.6 Grain mill products	2.010	145.6	147.1	166.1	167.4	169.6
1.3.1.7 Starches and Starch products	0.110	133.3	142.0	160.5	158.1	159.2
1.3.1.8 Bakery products	0.215	146.2	150.8	164.7	166.1	165.7
1.3.1.9 Sugar, Molasses & honey	1.163	122.9	124.7	128.1	127.7	127.2
1.3.1.10 Cocoa, Chocolate and Sugar confectionery	0.175	130.5	132.8	136.4	138.3	137.9
1.3.1.11 Macaroni, Noodles, Couscous and Similar farinaceous products	0.026	136.7	142.3	145.2	148.7	154.6
1.3.1.12 Tea & Coffee products	0.371	171.1	168.1	176.8	172.7	167.3
1.3.1.13 Processed condiments & salt	0.163	157.5	163.8	181.6	181.8	181.8
1.3.1.14 Processed ready to eat food	0.024	137.0	137.1	140.2	140.4	141.5
1.3.1.15 Health supplements	0.225	153.5	152.5	182.2	181.8	181.0
1.3.1.16 Prepared animal feeds	0.356	200.9	199.7	212.1	208.8	208.9
<b>1.3.2 MANUFACTURE OF BEVERAGES</b>	<b>0.909</b>	<b>126.8</b>	<b>127.3</b>	<b>129.1</b>	<b>129.5</b>	<b>130.0</b>
1.3.2.1 Wines & spirits	0.408	123.6	124.1	130.7	131.4	131.5
1.3.2.2 Malt liquors and Malt	0.225	130.5	131.8	133.9	134.3	134.9
1.3.2.3 Soft drinks; Production of mineral waters and Other bottled waters	0.275	128.6	128.4	122.7	122.9	123.7
<b>1.3.3 MANUFACTURE OF TOBACCO PRODUCTS</b>	<b>0.514</b>	<b>160.2</b>	<b>160.7</b>	<b>163.9</b>	<b>164.3</b>	<b>166.4</b>
1.3.3.1 Tobacco products	0.514	160.2	160.7	163.9	164.3	166.4

**No. 21: Wholesale Price Index (Contd.)**  
 (Base: 2011-12 = 100)

Commodities	Weight	2021-22	2022			2023
			Jan.	Nov.	Dec. (P)	Jan. (P)
<b>1.3.4 MANUFACTURE OF TEXTILES</b>	<b>4.881</b>	<b>135.2</b>	<b>140.2</b>	<b>139.2</b>	<b>138.4</b>	<b>137.2</b>
1.3.4.1 Preparation and Spinning of textile fibres	2.582	128.2	135.2	126.6	125.5	123.7
1.3.4.2 Weaving & Finishing of textiles	1.509	146.8	149.7	159.2	158.9	158.9
1.3.4.3 Knitted and Crocheted fabrics	0.193	125.5	130.3	129.9	127.6	124.1
1.3.4.4 Made-up textile articles, Except apparel	0.299	138.7	141.7	154.2	153.2	152.7
1.3.4.5 Cordage, Rope, Twine and Netting	0.098	168.5	167.6	151.7	151.7	149.3
1.3.4.6 Other textiles	0.201	126.2	128.8	130.4	131.5	131.8
<b>1.3.5 MANUFACTURE OF WEARING APPAREL</b>	<b>0.814</b>	<b>143.1</b>	<b>144.7</b>	<b>150.0</b>	<b>149.9</b>	<b>149.5</b>
1.3.5.1 Manufacture of Wearing Apparel (woven), Except fur Apparel	0.593	142.0	143.3	148.6	148.6	147.9
1.3.5.2 Knitted and Crocheted apparel	0.221	145.8	148.3	153.8	153.6	153.9
<b>1.3.6 MANUFACTURE OF LEATHER AND RELATED PRODUCTS</b>	<b>0.535</b>	<b>119.2</b>	<b>120.9</b>	<b>122.4</b>	<b>121.7</b>	<b>122.0</b>
1.3.6.1 Tanning and Dressing of leather; Dressing and Dyeing of fur	0.142	103.4	105.6	104.8	104.0	104.7
1.3.6.2 Luggage, Handbags, Saddlery and Harness	0.075	141.5	143.7	140.3	141.0	140.3
1.3.6.3 Footwear	0.318	121.0	122.4	126.0	125.1	125.4
<b>1.3.7 MANUFACTURE OF WOOD AND PRODUCTS OF WOOD AND CORK</b>	<b>0.772</b>	<b>141.0</b>	<b>141.9</b>	<b>143.0</b>	<b>143.7</b>	<b>143.3</b>
1.3.7.1 Saw milling and Planing of wood	0.124	128.8	132.1	136.9	139.3	139.2
1.3.7.2 Veneer sheets; Manufacture of plywood, Laminboard, Particle board and Other panels and Boards	0.493	141.9	142.6	141.3	141.3	141.3
1.3.7.3 Builder's carpentry and Joinery	0.036	193.9	194.6	206.6	206.6	204.5
1.3.7.4 Wooden containers	0.119	134.1	133.2	137.0	139.2	137.6
<b>1.3.8 MANUFACTURE OF PAPER AND PAPER PRODUCTS</b>	<b>1.113</b>	<b>137.5</b>	<b>142.1</b>	<b>150.9</b>	<b>148.2</b>	<b>147.9</b>
1.3.8.1 Pulp, Paper and Paperboard	0.493	141.4	145.1	158.5	156.6	156.3
1.3.8.2 Corrugated paper and Paperboard and Containers of paper and Paperboard	0.314	137.8	141.1	148.2	145.3	145.2
1.3.8.3 Other articles of paper and Paperboard	0.306	131.0	138.5	141.5	137.8	136.9
<b>1.3.9 PRINTING AND REPRODUCTION OF RECORDED MEDIA</b>	<b>0.676</b>	<b>157.8</b>	<b>162.6</b>	<b>174.5</b>	<b>176.8</b>	<b>177.8</b>
1.3.9.1 Printing	0.676	157.8	162.6	174.5	176.8	177.8
<b>1.3.10 MANUFACTURE OF CHEMICALS AND CHEMICAL PRODUCTS</b>	<b>6.465</b>	<b>133.5</b>	<b>137.5</b>	<b>145.2</b>	<b>144.2</b>	<b>143.2</b>
1.3.10.1 Basic chemicals	1.433	143.8	150.9	158.1	156.2	152.6
1.3.10.2 Fertilizers and Nitrogen compounds	1.485	129.6	133.4	147.9	147.6	146.2
1.3.10.3 Plastic and Synthetic rubber in primary form	1.001	140.3	140.8	137.3	136.0	138.6
1.3.10.4 Pesticides and Other agrochemical products	0.454	132.1	136.2	144.5	143.5	142.0
1.3.10.5 Paints, Varnishes and Similar coatings, Printing ink and Mastics	0.491	130.4	137.8	145.9	146.0	146.2
1.3.10.6 Soap and Detergents, Cleaning and Polishing preparations, Perfumes and Toilet preparations	0.612	128.1	126.9	142.8	142.3	141.8
1.3.10.7 Other chemical products	0.692	130.3	136.3	142.0	141.1	140.1
1.3.10.8 Man-made fibres	0.296	106.6	109.0	106.8	105.7	105.6
<b>1.3.11 MANUFACTURE OF PHARMACEUTICALS, MEDICINAL CHEMICAL AND BOTANICAL PRODUCTS</b>	<b>1.993</b>	<b>135.9</b>	<b>137.1</b>	<b>141.5</b>	<b>141.7</b>	<b>141.8</b>
1.3.11.1 Pharmaceuticals, Medicinal chemical and Botanical products	1.993	135.9	137.1	141.5	141.7	141.8
<b>1.3.12 MANUFACTURE OF RUBBER AND PLASTICS PRODUCTS</b>	<b>2.299</b>	<b>124.8</b>	<b>127.3</b>	<b>128.1</b>	<b>128.5</b>	<b>128.3</b>
1.3.12.1 Rubber Tyres and Tubes; Retreading and Rebuilding of Rubber Tyres	0.609	104.3	106.5	113.1	113.6	113.3
1.3.12.2 Other Rubber Products	0.272	101.9	104.4	105.9	105.9	105.8
1.3.12.3 Plastics products	1.418	138.0	140.7	138.8	139.2	139.1
<b>1.3.13 MANUFACTURE OF OTHER NON-METALLIC MINERAL PRODUCTS</b>	<b>3.202</b>	<b>123.7</b>	<b>125.8</b>	<b>134.3</b>	<b>134.7</b>	<b>134.6</b>
1.3.13.1 Glass and Glass products	0.295	139.1	144.7	159.9	163.4	164.8
1.3.13.2 Refractory products	0.223	115.6	119.1	119.2	118.9	118.6
1.3.13.3 Clay Building Materials	0.121	119.3	131.3	139.3	137.5	132.9
1.3.13.4 Other Porcelain and Ceramic Products	0.222	112.9	116.3	118.5	118.5	118.7
1.3.13.5 Cement, Lime and Plaster	1.645	126.4	127.0	137.3	137.6	137.6

**No. 21: Wholesale Price Index (Contd.)**

(Base: 2011-12 = 100)

Commodities	Weight	2021-22	2022			2023
			Jan.	Nov.	Dec. (P)	Jan. (P)
1.3.13.6 Articles of Concrete, Cement and Plaster	0.292	129.2	129.8	134.9	134.9	134.5
1.3.13.7 Cutting, Shaping and Finishing of Stone	0.234	122.2	121.5	126.8	127.1	126.8
1.3.13.8 Other Non-Metallic Mineral Products	0.169	90.6	99.0	106.6	106.6	107.4
<b>1.3.14 MANUFACTURE OF BASIC METALS</b>	<b>9.646</b>	<b>140.1</b>	<b>143.1</b>	<b>143.2</b>	<b>143.0</b>	<b>145.0</b>
1.3.14.1 Inputs into steel making	1.411	150.8	153.9	151.9	150.4	150.8
1.3.14.2 Metallic Iron	0.653	147.7	149.2	157.6	157.6	160.8
1.3.14.3 Mild Steel - Semi Finished Steel	1.274	119.1	120.6	123.2	122.1	124.4
1.3.14.4 Mild Steel -Long Products	1.081	137.4	139.9	144.9	145.7	147.8
1.3.14.5 Mild Steel - Flat products	1.144	157.5	157.1	146.4	143.9	143.5
1.3.14.6 Alloy steel other than Stainless Steel- Shapes	0.067	133.7	136.6	143.5	141.4	143.6
1.3.14.7 Stainless Steel - Semi Finished	0.924	141.7	145.5	142.7	142.0	147.8
1.3.14.8 Pipes & tubes	0.205	155.9	163.8	173.6	171.7	174.3
1.3.14.9 Non-ferrous metals incl. precious metals	1.693	139.7	145.6	140.6	141.9	145.4
1.3.14.10 Castings	0.925	118.9	121.6	131.2	132.6	133.7
1.3.14.11 Forgings of steel	0.271	159.0	165.1	172.6	175.7	174.3
<b>1.3.15 MANUFACTURE OF FABRICATED METAL PRODUCTS, EXCEPT MACHINERY AND EQUIPMENT</b>	<b>3.155</b>	<b>130.5</b>	<b>133.2</b>	<b>137.8</b>	<b>137.9</b>	<b>137.7</b>
1.3.15.1 Structural Metal Products	1.031	123.9	124.6	132.1	132.7	131.4
1.3.15.2 Tanks, Reservoirs and Containers of Metal	0.660	156.2	160.0	156.8	156.3	155.6
1.3.15.3 Steam generators, Except Central Heating Hot Water Boilers	0.145	96.1	92.3	102.9	98.7	103.8
1.3.15.4 Forging, Pressing, Stamping and Roll-Forming of Metal; Powder Metallurgy	0.383	117.5	125.2	134.1	134.7	135.6
1.3.15.5 Cutlery, Hand Tools and General Hardware	0.208	108.2	109.5	113.3	113.3	110.8
1.3.15.6 Other Fabricated Metal Products	0.728	136.5	140.3	144.4	144.9	145.9
<b>1.3.16 MANUFACTURE OF COMPUTER, ELECTRONIC AND OPTICAL PRODUCTS</b>	<b>2.009</b>	<b>113.7</b>	<b>115.6</b>	<b>116.5</b>	<b>117.1</b>	<b>117.6</b>
1.3.16.1 Electronic Components	0.402	106.0	110.5	115.1	115.1	115.5
1.3.16.2 Computers and Peripheral Equipment	0.336	134.7	134.8	134.9	135.0	135.0
1.3.16.3 Communication Equipment	0.310	121.7	128.6	129.6	130.7	130.7
1.3.16.4 Consumer Electronics	0.641	102.1	101.4	98.6	100.2	101.8
1.3.16.5 Measuring, Testing, Navigating and Control equipment	0.181	108.4	109.2	113.5	112.5	112.9
1.3.16.6 Watches and Clocks	0.076	145.6	147.6	151.9	151.3	151.5
1.3.16.7 Irradiation, Electromedical and Electrotherapeutic equipment	0.055	106.1	106.2	112.3	112.2	108.0
1.3.16.8 Optical instruments and Photographic equipment	0.008	98.3	99.6	101.7	101.7	100.4
<b>1.3.17 MANUFACTURE OF ELECTRICAL EQUIPMENT</b>	<b>2.930</b>	<b>122.3</b>	<b>124.8</b>	<b>128.9</b>	<b>129.5</b>	<b>130.0</b>
1.3.17.1 Electric motors, Generators, Transformers and Electricity distribution and Control apparatus	1.298	119.7	121.6	126.7	127.7	129.2
1.3.17.2 Batteries and Accumulators	0.236	121.8	125.6	133.2	133.5	131.5
1.3.17.3 Fibre optic cables for data transmission or live transmission of images	0.133	103.1	106.0	120.4	118.5	119.3
1.3.17.4 Other electronic and Electric wires and Cables	0.428	140.7	144.7	142.9	144.0	145.5
1.3.17.5 Wiring devices, Electric lighting & display equipment	0.263	114.5	115.3	118.0	117.8	116.7
1.3.17.6 Domestic appliances	0.366	128.4	131.3	134.5	133.9	133.7
1.3.17.7 Other electrical equipment	0.206	113.2	115.6	118.0	119.7	119.1
<b>1.3.18 MANUFACTURE OF MACHINERY AND EQUIPMENT</b>	<b>4.789</b>	<b>120.0</b>	<b>121.6</b>	<b>126.7</b>	<b>126.7</b>	<b>126.8</b>
1.3.18.1 Engines and Turbines, Except aircraft, Vehicle and Two wheeler engines	0.638	119.2	119.4	126.6	125.7	126.3
1.3.18.2 Fluid power equipment	0.162	122.1	123.7	128.5	129.2	129.9
1.3.18.3 Other pumps, Compressors, Taps and Valves	0.552	115.1	115.9	117.2	117.5	117.5
1.3.18.4 Bearings, Gears, Gearing and Driving elements	0.340	118.1	120.6	123.9	124.5	125.0
1.3.18.5 Ovens, Furnaces and Furnace burners	0.008	74.2	74.8	81.0	81.2	82.3
1.3.18.6 Lifting and Handling equipment	0.285	120.0	123.0	126.3	126.4	127.0

**No. 21: Wholesale Price Index (Concl.)**

(Base: 2011-12 = 100)

Commodities	Weight	2021-22	2022			2023
			Jan.	Nov.	Dec. (P)	Jan. (P)
1.3.18.7 Office machinery and Equipment	0.006	130.2	130.2	130.2	130.2	130.2
1.3.18.8 Other general-purpose machinery	0.437	133.4	133.5	141.6	142.5	144.2
1.3.18.9 Agricultural and Forestry machinery	0.833	128.4	131.9	139.0	138.6	138.2
1.3.18.10 Metal-forming machinery and Machine tools	0.224	114.2	114.6	121.1	121.1	121.2
1.3.18.11 Machinery for mining, Quarrying and Construction	0.371	78.2	79.4	86.7	86.5	85.5
1.3.18.12 Machinery for food, Beverage and Tobacco processing	0.228	130.1	130.7	125.5	125.3	124.7
1.3.18.13 Machinery for textile, Apparel and Leather production	0.192	125.3	128.0	133.4	133.6	131.0
1.3.18.14 Other special-purpose machinery	0.468	134.7	136.4	142.1	142.2	142.8
1.3.18.15 Renewable electricity generating equipment	0.046	66.6	66.9	70.1	69.7	69.4
<b>1.3.19 MANUFACTURE OF MOTOR VEHICLES, TRAILERS AND SEMI-TRAILERS</b>	<b>4.969</b>	<b>122.7</b>	<b>125.3</b>	<b>127.7</b>	<b>127.5</b>	<b>127.7</b>
1.3.19.1 Motor vehicles	2.600	122.6	125.7	125.9	125.7	126.6
1.3.19.2 Parts and Accessories for motor vehicles	2.368	122.7	124.8	129.7	129.4	128.8
<b>1.3.20 MANUFACTURE OF OTHER TRANSPORT EQUIPMENT</b>	<b>1.648</b>	<b>131.7</b>	<b>133.4</b>	<b>137.5</b>	<b>137.9</b>	<b>138.4</b>
1.3.20.1 Building of ships and Floating structures	0.117	158.9	158.9	163.6	163.6	163.6
1.3.20.2 Railway locomotives and Rolling stock	0.110	104.4	105.3	104.5	104.4	104.3
1.3.20.3 Motor cycles	1.302	131.0	133.1	137.6	138.3	139.0
1.3.20.4 Bicycles and Invalid carriages	0.117	137.2	138.2	140.2	139.2	138.8
1.3.20.5 Other transport equipment	0.002	135.9	138.6	156.9	157.7	157.2
<b>1.3.21 MANUFACTURE OF FURNITURE</b>	<b>0.727</b>	<b>150.1</b>	<b>153.3</b>	<b>155.9</b>	<b>157.2</b>	<b>157.9</b>
1.3.21.1 Furniture	0.727	150.1	153.3	155.9	157.2	157.9
<b>1.3.22 OTHER MANUFACTURING</b>	<b>1.064</b>	<b>137.9</b>	<b>138.3</b>	<b>146.9</b>	<b>152.5</b>	<b>151.1</b>
1.3.22.1 Jewellery and Related articles	0.996	136.0	136.5	145.7	151.7	150.2
1.3.22.2 Musical instruments	0.001	192.3	195.0	193.9	182.7	185.6
1.3.22.3 Sports goods	0.012	140.4	143.8	152.0	151.9	151.7
1.3.22.4 Games and Toys	0.005	150.9	152.7	159.3	159.3	158.7
1.3.22.5 Medical and Dental instruments and Supplies	0.049	171.8	170.8	168.0	168.0	167.2
<b>2 FOOD INDEX</b>	<b>24.378</b>	<b>163.8</b>	<b>166.3</b>	<b>174.9</b>	<b>170.3</b>	<b>171.2</b>

**Source:** Office of the Economic Adviser, Ministry of Commerce and Industry, Government of India.

**No. 22: Index of Industrial Production (Base:2011-12=100)**

Industry	Weight	2020-21	2021-22	April-December		December	
				2021-22	2022-23	2021	2022
	1	2	3	4	5	6	7
<b>General Index</b>	100.00	118.1	131.6	128.8	135.7	138.8	144.7
<b>1 Sectoral Classification</b>							
1.1 Mining	14.37	101.0	113.3	107.4	113.2	120.4	132.2
1.2 Manufacturing	77.63	117.2	131.0	128.6	134.8	139.8	143.5
1.3 Electricity	7.99	157.6	170.1	169.3	186.0	162.5	179.4
<b>2 Use-Based Classification</b>							
2.1 Primary Goods	34.05	118.1	129.5	125.9	135.7	133.7	144.8
2.2 Capital Goods	8.22	75.9	88.7	84.9	96.9	92.9	100.0
2.3 Intermediate Goods	17.22	124.7	143.9	141.4	147.7	151.8	151.3
2.4 Infrastructure/ Construction Goods	12.34	124.7	148.2	144.2	155.2	154.0	166.6
2.5 Consumer Durables	12.84	101.2	113.8	111.7	115.5	122.5	109.7
2.6 Consumer Non-Durables	15.33	142.1	146.7	146.5	144.7	161.6	173.2

Source : Central Statistics Office, Ministry of Statistics and Programme Implementation, Government of India.

**Government Accounts and Treasury Bills****No. 23: Union Government Accounts at a Glance**

(₹ Crore)

Item	Financial Year 2022-23 (Revised Estimates)	April - January			
		2022-23 (Actuals)	2021-22 (Actuals)	Percentage to Revised Estimates	
				2022-23	2021-22
	1	2	3	4	5
<b>1 Revenue Receipts</b>	<b>2348413</b>	<b>1919649</b>	<b>1838921</b>	<b>81.7</b>	<b>88.5</b>
1.1 Tax Revenue (Net)	2086662	1688710	1547436	80.9	87.7
1.2 Non-Tax Revenue	261751	230939	291485	88.2	92.9
<b>2 Non-Debt Capital Receipt</b>	<b>83500</b>	<b>57194</b>	<b>32595</b>	<b>68.5</b>	<b>32.6</b>
2.1 Recovery of Loans	23500	18523	20527	78.8	93.4
2.2 Other Receipts	60000	38671	12068	64.5	15.5
<b>3 Total Receipts (excluding borrowings) (1+2)</b>	<b>2431913</b>	<b>1976843</b>	<b>1871516</b>	<b>81.3</b>	<b>85.9</b>
4 Revenue Expenditure <i>of which:</i>	3458959	2597756	2367698	75.1	74.8
4.1 Interest Payments	940651	738658	616076	78.5	75.7
5 Capital Expenditure	728274	569892	441686	78.3	73.3
<b>6 Total Expenditure (4+5)</b>	<b>4187232</b>	<b>3167648</b>	<b>2809384</b>	<b>75.7</b>	<b>74.5</b>
<b>7 Revenue Deficit (4-1)</b>	<b>1110546</b>	<b>678107</b>	<b>528777</b>	<b>61.1</b>	<b>48.6</b>
<b>8 Fiscal Deficit (6-3)</b>	<b>1755319</b>	<b>1190805</b>	<b>937868</b>	<b>67.8</b>	<b>58.9</b>
<b>9 Gross Primary Deficit (8-4.1)</b>	<b>814668</b>	<b>452147</b>	<b>321792</b>	<b>55.5</b>	<b>41.4</b>

Source: Controller General of Accounts (CGA), Ministry of Finance, Government of India and Union Budget 2023-24.

**No. 24: Treasury Bills – Ownership Pattern**

(₹ Crore)

Item	2021-22	2022			2023			
		Jan. 28	Dec. 23	Dec. 30	Jan. 6	Jan. 13	Jan. 20	Jan. 27
		1	2	3	4	5	6	7
<b>1 91-day</b>								
1.1 Banks	5310	4606	14138	14180	13971	12711	12822	11152
1.2 Primary Dealers	16705	23278	19208	15538	15897	18281	16909	18178
1.3 State Governments	31320	89751	45431	47131	46201	39840	44463	44263
1.4 Others	72109	92332	112385	117108	113953	110382	108660	105059
<b>2 182-day</b>								
2.1 Banks	70130	53165	63319	62858	66219	65360	68470	68345
2.2 Primary Dealers	63669	46518	51974	45722	41255	43825	49675	56129
2.3 State Governments	15763	4026	23513	22513	12013	11868	12568	12568
2.4 Others	69259	32920	65133	68212	74602	79541	76449	75749
<b>3 364-day</b>								
3.1 Banks	112386	112628	100142	108294	106770	99775	103244	103202
3.2 Primary Dealers	160461	127319	187924	187403	180548	185854	176369	179052
3.3 State Governments	22836	23136	46500	42776	42257	43507	46607	45637
3.4 Others	118392	106626	135026	130815	130795	130749	135272	131829
<b>4 14-day Intermediate</b>								
4.1 Banks								
4.2 Primary Dealers								
4.3 State Governments	289362	224416	185087	188391	158464	161789	147808	161017
4.4 Others	659	724	455	1019	1088	1067	1045	1211
<b>Total Treasury Bills (Excluding 14 day Intermediate T Bills) #</b>	758339	716307	864693	862547	844481	841695	851509	851164

# 14D intermediate T-Bills are non-marketable unlike 91D, 182D and 364D T-Bills. These bills are ‘intermediate’ by nature as these are liquidated to replenish shortfall in the daily minimum cash balances of State Governments

**Note:** Primary Dealers (PDs) include banks undertaking PD business.

**No. 25: Auctions of Treasury Bills**

(Amount in ₹ Crore)

Date of Auction	Notified Amount	Bids Received			Bids Accepted			Total Issue (6+7)	Cut-off Price	Implicit Yield at Cut-off Price (per cent)			
		Number	Total Face Value		Number	Total Face Value							
			Competitive	Non-Competitive		Competitive	Non-Competitive						
		1	2	3	4	5	6	7	8	9			
91-day Treasury Bills													
<b>2022-23</b>													
Dec. 28	10000	129	47976	3245	15	9955	3245	13200	98.45	6.3099			
Jan. 4	7000	81	31836	53	24	6947	53	7000	98.44	6.3571			
Jan. 11	7000	67	18465	44	33	6956	44	7000	98.43	6.3890			
Jan. 18	7000	70	21926	7986	28	6838	7986	14823	98.42	6.4238			
Jan. 25	7000	68	17705	49	38	6951	49	7000	98.41	6.4731			
182-day Treasury Bills													
<b>2022-23</b>													
Dec. 28	6000	119	19738	32	17	5968	32	6000	96.75	6.7400			
Jan. 4	13000	184	33171	24	105	12976	24	13000	96.73	6.7801			
Jan. 11	13000	145	29950	46	76	12979	46	13025	96.73	6.7784			
Jan. 18	13000	147	26536	733	105	12967	733	13700	96.71	6.8204			
Jan. 25	12000	135	21704	44	101	11956	44	12000	96.69	6.8693			
364-day Treasury Bills													
<b>2022-23</b>													
Dec. 28	6000	161	23890	90	22	5986	90	6076	93.57	6.8907			
Jan. 4	10000	186	25608	21	104	9984	21	10005	93.54	6.9249			
Jan. 11	10000	174	36260	1273	39	9977	1273	11250	93.57	6.8950			
Jan. 18	10000	161	30477	3113	59	9987	3113	13100	93.55	6.9099			
Jan. 25	10000	180	34542	144	19	9986	144	10130	93.56	6.9048			

## Financial Markets

### No. 26: Daily Call Money Rates

(Per cent per annum)

As on		Range of Rates	Weighted Average Rates
		Borrowings/ Lendings	Borrowings/ Lendings
		1	2
January	2, 2023	4.30-6.25	6.16
January	3, 2023	4.30-6.15	6.08
January	4, 2023	4.30-6.25	6.06
January	5, 2023	4.30-6.10	6.06
January	6, 2023	4.30-6.10	6.05
January	7, 2023	5.15-6.05	5.74
January	9, 2023	4.40-6.12	6.06
January	10, 2023	4.55-6.12	6.06
January	11, 2023	4.55-6.12	6.06
January	12, 2023	4.55-6.15	6.06
January	13, 2023	4.55-6.30	6.21
January	16, 2023	4.55-6.20	6.12
January	17, 2023	4.55-6.40	6.29
January	18, 2023	4.55-6.25	6.20
January	19, 2023	4.55-6.20	6.08
January	20, 2023	4.55-6.50	6.26
January	21, 2023	5.15-6.00	5.92
January	23, 2023	4.55-6.55	6.43
January	24, 2023	4.55-6.55	6.45
January	25, 2023	4.55-6.55	6.45
January	27, 2023	4.55-6.60	6.44
January	30, 2023	4.55-6.60	6.47
January	31, 2023	4.55-6.55	6.44
February	1, 2023	4.55-6.35	6.26
February	2, 2023	4.60-6.15	6.09
February	3, 2023	4.75-6.17	6.10
February	4, 2023	5.15-6.00	5.70
February	6, 2023	4.75-6.15	6.08
February	7, 2023	4.70-6.17	6.11
February	8, 2023	4.55-6.80	6.39
February	9, 2023	4.55-6.80	6.71
February	10, 2023	4.55-6.70	6.61
February	13, 2023	4.55-6.60	6.48
February	14, 2023	4.55-6.45	6.38
February	15, 2023	4.55-6.60	6.32

**Note:** Includes Notice Money.

**No. 27: Certificates of Deposit**

Item	2022			2023	
	Jan. 28	Dec. 16	Dec. 30	Jan. 13	Jan. 27
	1	2	3	4	5
1 Amount Outstanding (₹ Crore)	99706.14	272570.90	293983.09	292289.01	279788.46
1.1 Issued during the fortnight (₹ Crore)	2343.76	31706.05	35845.62	28381.24	17509.69
2 Rate of Interest (per cent)	3.78-5.09	6.71-7.59	6.65-7.88	6.74-7.85	6.82-7.30

**No. 28: Commercial Paper**

Item	2022			2023	
	Jan. 31	Dec. 15	Dec. 31	Jan. 15	Jan. 31
	1	2	3	4	5
1 Amount Outstanding (₹ Crore)	395881.00	363736.15	359673.30	381154.85	363889.15
1.1 Reported during the fortnight (₹ Crore)	71201.95	65701.70	54575.60	45026.90	51481.60
2 Rate of Interest (per cent)	3.47-12.32	6.34-13.75	6.58-13.75	6.37-12.75	6.56-13.10

**No. 29: Average Daily Turnover in Select Financial Markets**

(₹ Crore)

Item	2021-22	2022			2023			
		Jan. 28	Dec. 23	Dec. 30	Jan. 6	Jan. 13	Jan. 20	Jan. 27
		1	2	3	4	5	6	7
1 Call Money	14515	13113	18447	19107	14915	17562	22692	24030
2 Notice Money	2122	4614	164	4418	4169	258	5976	244
3 Term Money	515	376	717	867	541	562	800	317
4 Triparty Repo	618526	800727	684319	790750	650009	613936	750771	636660
5 Market Repo	383844	420810	502373	600368	400496	435193	532332	450512
6 Repo in Corporate Bond	4373	389	2006	208	275	256	3205	8260
7 Forex (US \$ million)	67793	87352	80619	75159	70610	85815	87392	97941
8 Govt. of India Dated Securities	51300	34980	43412	33290	45546	75177	70669	60310
9 State Govt. Securities	5570	6719	4207	3177	3737	3463	3684	6547
10 Treasury Bills								
10.1 91-Day	4690	1941	3669	2219	4252	2129	4784	1535
10.2 182-Day	3440	1733	3493	2854	7678	5245	3075	2134
10.3 364-Day	3530	3642	2998	2836	4649	2622	2712	1422
10.4 Cash Management Bills								
11 Total Govt. Securities (8+9+10)	68530	49015	57779	44376	65863	88636	84923	71947
11.1 RBI	-	155	1036	34	8	450	781	674

**No. 30: New Capital Issues by Non-Government Public Limited Companies**

(Amount in ₹ Crore)

Security & Type of Issue	2021-22		2021-22 (Apr.-Jan.)		2022-23 (Apr.-Jan.) *		Jan. 2022		Jan. 2023 *	
	No. of Issues	Amount	No. of Issues	Amount	No. of Issues	Amount	No. of Issues	Amount	No. of Issues	Amount
	1	2	3	4	5	6	7	8	9	10
<b>1 Equity Shares</b>	<b>164</b>	<b>138894</b>	<b>135</b>	<b>130897</b>	<b>183</b>	<b>41631</b>	<b>11</b>	<b>814</b>	<b>21</b>	<b>1122</b>
1A Premium	154	136893	127	129017	168	39148	10	728	18	978
1.1 Public	121	112567	102	105561	134	37435	6	715	12	478
1.1.1 Premium	119	111314	101	104372	131	36172	6	670	12	435
1.2 Rights	43	26327	33	25335	49	4196	5	99	9	644
1.2.1 Premium	35	25580	26	24645	37	2976	4	58	6	543
<b>2 Preference Shares</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>
2.1 Public	—	—	—	—	—	—	—	—	—	—
2.2 Rights	—	—	—	—	—	—	—	—	—	—
<b>3 Bonds &amp; Debentures</b>	<b>28</b>	<b>11589</b>	<b>26</b>	<b>11307</b>	<b>31</b>	<b>8735</b>	<b>2</b>	<b>591</b>	<b>7</b>	<b>1863</b>
3.1 Convertible	—	—	—	—	—	—	—	—	—	—
3.1.1 Public	—	—	—	—	—	—	—	—	—	—
3.1.2 Rights	—	—	—	—	—	—	—	—	—	—
3.2 Non-Convertible	28	11589	26	11307	31	8735	2	591	7	1863
3.2.1 Public	28	11589	26	11307	31	8735	2	591	7	1863
3.2.2 Rights	—	—	—	—	—	—	—	—	—	—
<b>4 Total(1+2+3)</b>	<b>192</b>	<b>150484</b>	<b>161</b>	<b>142204</b>	<b>214</b>	<b>50366</b>	<b>13</b>	<b>1405</b>	<b>28</b>	<b>2985</b>
4.1 Public	149	124157	128	116869	165	46170	8	1305	19	2341
4.2 Rights	43	26327	33	25335	49	4196	5	99	9	644

Note : 1. Since April 2020, monthly data on equity issues is compiled on the basis of their listing date.

2. Figures in the columns might not add up to the total due to rounding off numbers.

Source : Securities and Exchange Board of India.

\* : Data is Provisional

## External Sector

### No. 31: Foreign Trade

Item	Unit	2021-22	2022					2023
			Jan.	Sep.	Oct.	Nov.	Dec.	Jan.
		1	2	3	4	5	6	7
1 Exports	₹ Crore	3147021	262280	283946	260213	285450	313935	292474
	US \$ Million	422004	35233	35391	31602	34892	38069	35711
1.1 Oil	₹ Crore	503850	34092	58296	51863	66154	68779	62880
	US \$ Million	67472	4580	7266	6299	8086	8341	7678
1.2 Non-oil	₹ Crore	2643171	228189	225650	208350	219296	245155	229594
	US \$ Million	354533	30653	28125	25304	26805	29729	28034
2 Imports	₹ Crore	4572775	391315	508918	485588	476252	496157	426333
	US \$ Million	613052	52567	63431	58973	58214	60166	52056
2.1 Oil	₹ Crore	1207803	91971	141316	149463	147700	160344	130700
	US \$ Million	161810	12355	17614	18152	18054	19444	15959
2.2 Non-oil	₹ Crore	3364972	299345	367602	336125	328552	335813	295632
	US \$ Million	451242	40212	45818	40822	40160	40722	36097
3 Trade Balance	₹ Crore	-1425753	-129035	-224972	-225375	-190802	-182223	-133859
	US \$ Million	-191048	-17334	-28040	-27371	-23322	-22097	-16344
3.1 Oil	₹ Crore	-703953	-57879	-83020	-97600	-81547	-91565	-67821
	US \$ Million	-94339	-7775	-10348	-11853	-9968	-11104	-8281
3.2 Non-oil	₹ Crore	-721800	-71156	-141952	-127775	-109256	-90658	-66039
	US \$ Million	-96709	-9559	-17693	-15518	-13355	-10994	-8063

Source: DGCI&S and Ministry of Commerce & Industry.

### No. 32: Foreign Exchange Reserves

Item	Unit	2022		2023				
		Feb. 25	Jan. 20	Jan. 27	Feb. 3	Feb. 10	Feb. 17	Feb. 24
		1	2	3	4	5	6	7
1 Total Reserves	₹ Crore	4755726	4654872	4702189	4708587	4677525	4649018	4641716
	US \$ Million	631527	573727	576761	575267	566948	561267	560942
1.1 Foreign Currency Assets	₹ Crore	4253494	4108235	4149889	4155330	4129985	4109014	4103554
	US \$ Million	564832	506358	509018	507695	500587	496072	495906
1.2 Gold	₹ Crore	319800	354646	358942	358335	353627	346376	345484
	US \$ Million	42467	43712	44027	43781	42862	41817	41751
1.3 SDRs	Volume (Metric Tonnes)	757.96	787.37	787.37	787.37	788.3	790.16	790.16
	SDRs Million	13657	13662	13662	13662	13662	13667	13667
1.4 Reserve Tranche Position in IMF	₹ Crore	143381	149543	150649	151777	151425	151307	150492
	US \$ Million	19040	18432	18478	18544	18354	18267	18187

\* Difference, if any, is due to rounding off.

### No. 33: Non-Resident Deposits

(US\$ Million)

Scheme	Outstanding					Flows	
	2021-22	2022		2023		2021-22	2022-23
		Jan.	Dec.	Jan.	Apr.-Jan.	Apr.-Jan.	
	1	2	3	4	5	6	
<b>1 NRI Deposits</b>	<b>139022</b>	<b>140485</b>	<b>134485</b>	<b>136812</b>	<b>2720</b>	<b>5956</b>	
1.1 FCNR(B)	16918	18089	17558	18199	-2384	1281	
1.2 NR(E)RA	100801	101543	94469	95490	2440	1398	
1.3 NRO	21303	20852	22458	23123	2664	3276	

**No. 34: Foreign Investment Inflows**

(US\$ Million)

Item	2021-22	2021-22	2022-23	2022		2023
		Apr.-Jan.	Apr.-Jan.	Jan.	Dec.	Jan.
	1	2	3	4	5	6
<b>1.1 Net Foreign Direct Investment (1.1.1–1.1.2)</b>	<b>38587</b>	<b>30877</b>	<b>26469</b>	<b>6067</b>	<b>1951</b>	<b>4133</b>
<b>1.1.1 Direct Investment to India (1.1.1.1–1.1.2)</b>	<b>56231</b>	<b>45916</b>	<b>37360</b>	<b>6939</b>	<b>3637</b>	<b>4868</b>
<b>1.1.1.1 Gross Inflows/Gross Investments</b>	<b>84835</b>	<b>70503</b>	<b>61451</b>	<b>8949</b>	<b>6514</b>	<b>6177</b>
1.1.1.1.1 Equity	59684	50308	41855	6470	4491	4138
1.1.1.1.1.1 Government (SIA/FIPB)	1698	1620	682	45	90	29
1.1.1.1.1.2 RBI	42932	35340	33083	4694	3988	3434
1.1.1.1.1.3 Acquisition of shares	14143	12602	7037	1649	333	592
1.1.1.1.1.4 Equity capital of unincorporated bodies	910	746	1053	82	80	82
1.1.1.1.2 Reinvested earnings	19347	15861	15858	1743	1691	1743
1.1.1.1.3 Other capital	5805	4334	3738	736	332	296
<b>1.1.1.2 Repatriation/Disinvestment</b>	<b>28605</b>	<b>24586</b>	<b>24092</b>	<b>2009</b>	<b>2877</b>	<b>1309</b>
1.1.1.2.1 Equity	27189	23738	22058	1726	2439	1244
1.1.1.2.2 Other capital	1416	849	2033	284	437	64
<b>1.1.2 Foreign Direct Investment by India (1.1.2.1+1.1.2.2+1.1.2.3–1.1.2.4)</b>	<b>17644</b>	<b>15039</b>	<b>10891</b>	<b>872</b>	<b>1686</b>	<b>735</b>
1.1.2.1 Equity capital	10061	8741	7098	812	1274	571
1.1.2.2 Reinvested Earnings	3379	2816	2856	282	282	282
1.1.2.3 Other Capital	7604	6139	3844	151	343	142
1.1.2.4 Repatriation/Disinvestment	3400	2657	2906	372	214	259
<b>1.2 Net Portfolio Investment (1.2.1+1.2.2+1.2.3–1.2.4)</b>	<b>-16777</b>	<b>-5996</b>	<b>-6276</b>	<b>-4434</b>	<b>-436</b>	<b>-3038</b>
1.2.1 GDRs/ADRs	—	—	—	—	—	—
1.2.2 FIIs	-14071	-3907	-6081	-4125	-554	-3103
1.2.3 Offshore funds and others	—	—	—	—	—	—
1.2.4 Portfolio investment by India	2706	2089	195	309	-119	-65
<b>1 Foreign Investment Inflows</b>	<b>21809</b>	<b>24881</b>	<b>20193</b>	<b>1633</b>	<b>1516</b>	<b>1095</b>

**No. 35: Outward Remittances under the Liberalised Remittance Scheme (LRS) for Resident Individuals**

(US\$ Million)

Item	2021-22	2022			2023
		Jan.	Nov.	Dec.	Jan.
	1	2	3	4	5
<b>1 Outward Remittances under the LRS</b>	<b>19610.77</b>	<b>2018.31</b>	<b>1992.70</b>	<b>2068.26</b>	<b>2728.17</b>
1.1 Deposit	830.05	66.27	60.72	60.49	73.14
1.2 Purchase of immovable property	112.90	8.58	17.17	13.26	14.98
1.3 Investment in equity/debt	746.57	73.53	86.58	119.58	160.05
1.4 Gift	2336.29	200.23	220.90	202.76	223.22
1.5 Donations	16.55	1.53	0.98	0.87	0.66
1.6 Travel	6909.04	989.05	1030.64	1137.93	1493.17
1.7 Maintenance of close relatives	3302.37	315.61	305.35	274.79	342.47
1.8 Medical Treatment	37.79	3.77	4.76	4.36	6.27
1.9 Studies Abroad	5165.33	345.76	211.65	237.65	395.87
1.10 Others	153.88	13.98	53.95	16.59	18.34

**No. 36: Indices of Nominal Effective Exchange Rate (NEER) and  
Real Effective Exchange Rate (REER) of the Indian Rupee**

Item	2020-21	2021-22	2022		2023	
			February	January	February	May
	1	2	3	4	5	
<b>40-Currency Basket (Base: 2015-16=100)</b>						
1 Trade-weighted						
1.1 NEER	93.92	93.13	93.16	89.08	88.83	
1.2 REER	103.46	104.64	104.01	99.88	99.43	
2 Export-weighted						
2.1 NEER	93.59	93.55	93.90	91.04	90.76	
2.2 REER	102.96	103.46	102.83	98.33	97.74	
<b>6-Currency Basket (Trade-weighted)</b>						
1 Base: 2015-16 = 100						
1.1 NEER	88.45	87.03	86.91	83.17	82.83	
1.2 REER	101.84	102.27	101.60	98.77	98.32	
2 Base: 2020-21 = 100						
2.1 NEER	100.00	98.39	98.25	94.03	93.64	
2.2 REER	100.00	100.42	99.77	96.99	96.55	

**No. 37: External Commercial Borrowings (ECBs) – Registrations**

(Amount in US\$ Million)

Item	2021-22	2022		2023
		Jan	Dec	Jan
		1	2	3
1 Automatic Route				
1.1 Number	1086	81	99	74
1.2 Amount	28851	3879	2768	777
2 Approval Route				
2.1 Number	18	4	0	1
2.2 Amount	11035	4100	0	1000
3 Total (1+2)				
3.1 Number	1104	85	99	75
3.2 Amount	39886	7979	2768	1777
4 Weighted Average Maturity (in years)				
5 Interest Rate (per cent)				
5.1 Weighted Average Margin over 6-month LIBOR or reference rate for Floating Rate Loans	1.71	1.81	1.68	2.16
5.2 Interest rate range for Fixed Rate Loans	0.00-10.50	0.00-11.20	0.00-10.35	0.00-11.30
<b>Borrower Category</b>				
I. Corporate Manufacturing	12244	5783	522	291
II. Corporate-Infrastructure	17023	843	28	192
a.) Transport	1597	0	0	0
b.) Energy	8215	708	6	2
c.) Water and Sanitation	10	5	0	0
d.) Communication	1,258	0	22	0
e.) Social and Commercial Infrastructure	0	0	0	0
f.) Exploration,Mining and Refinery	4691	130	0	150
g.) Other Sub-Sectors	1252	0	0	40
III. Corporate Service-Sector	1570	34	36	236
IV. Other Entities	609	0	0	1000
a.) units in SEZ	9	0	0	0
b.) SIDBI			0	0
c.) Exim Bank	600	0	0	1000
V. Banks	100	0	0	0
VI. Financial Institution (Other than NBFC )	4	0	0	0
VII. NBFCs	7995	1315	2148	35
a). NBFC- IFC/AFC	5621	1225	1418	0
b). NBFC-MFI	93	0	3	35
c). NBFC-Others	2282	90	727	0
VIII. Non-Government Organization (NGO)	0	0	0	0
IX. Micro Finance Institution (MFI)	0	0	0	0
X. Others	341	4	34	23

**No. 38: India's Overall Balance of Payments**

(US\$ Million)

Item	Jul-Sep 2021			Jul-Sep 2022(P)		
	Credit	Debit	Net	Credit	Debit	Net
	1	2	3	4	5	6
<b>Overall Balance of Payments(1+2+3)</b>	<b>405412</b>	<b>374223</b>	<b>31189</b>	<b>378470</b>	<b>408849</b>	<b>-30379</b>
<b>1 CURRENT ACCOUNT (1.1+ 1.2)</b>	<b>194262</b>	<b>203996</b>	<b>-9734</b>	<b>225210</b>	<b>261601</b>	<b>-36391</b>
<b>1.1 MERCHANDISE</b>	<b>104769</b>	<b>149280</b>	<b>-44511</b>	<b>111973</b>	<b>195519</b>	<b>-83546</b>
<b>1.2 INVISIBLES (1.2.1+1.2.2+1.2.3)</b>	<b>89494</b>	<b>54717</b>	<b>34777</b>	<b>113237</b>	<b>66082</b>	<b>47155</b>
1.2.1 Services	61418	35839	25579	79986	45554	34432
1.2.1.1 Travel	2147	3919	-1772	5775	7539	-1764
1.2.1.2 Transportation	7581	8181	-600	9533	11337	-1804
1.2.1.3 Insurance	795	575	220	756	586	170
1.2.1.4 G.n.i.e.	217	198	19	183	219	-36
1.2.1.5 Miscellaneous	50678	22965	27713	63738	25872	37866
1.2.1.5.1 Software Services	29965	3184	26781	36228	3546	32681
1.2.1.5.2 Business Services	13858	12457	1401	19141	13964	5178
1.2.1.5.3 Financial Services	1303	1463	-160	2113	1600	514
1.2.1.5.4 Communication Services	766	275	491	803	399	403
1.2.2 Transfers	21154	2163	18991	27462	2711	24751
1.2.2.1 Official	18	239	-221	52	292	-240
1.2.2.2 Private	21135	1924	19212	27410	2419	24991
1.2.3 Income	6922	16714	-9792	5789	17817	-12028
1.2.3.1 Investment Income	5425	15960	-10535	4159	16962	-12803
1.2.3.2 Compensation of Employees	1497	754	743	1630	854	775
<b>2 CAPITAL ACCOUNT (2.1+2.2+2.3+2.4+2.5)</b>	<b>209849</b>	<b>170227</b>	<b>39622</b>	<b>153260</b>	<b>146342</b>	<b>6918</b>
<b>2.1 Foreign Investment (2.1.1+2.1.2)</b>	<b>132472</b>	<b>119898</b>	<b>12575</b>	<b>99726</b>	<b>86757</b>	<b>12969</b>
2.1.1 Foreign Direct Investment	20541	11844	8697	18048	11611	6437
2.1.1.1 In India	19375	6475	12900	16844	7803	9041
2.1.1.1.1 Equity	13806	6259	7548	10699	7111	3588
2.1.1.1.2 Reinvested Earnings	4668		4668	4667		4667
2.1.1.1.3 Other Capital	900	216	684	1478	692	786
2.1.1.2 Abroad	1167	5369	-4203	1204	3808	-2603
2.1.1.2.1 Equity	1167	2824	-1658	1204	1782	-577
2.1.1.2.2 Reinvested Earnings	0	845	-845	0	865	-865
2.1.1.2.3 Other Capital	0	1700	-1700	0	1161	-1161
2.1.2 Portfolio Investment	111931	108054	3877	81678	75146	6532
2.1.2.1 In India	110448	105904	4544	81375	74473	6901
2.1.2.1.1 FIIs	110448	105904	4544	81375	74473	6901
2.1.2.1.1.1 Equity	95335	94718	618	72212	66210	6003
2.1.2.1.1.2 Debt	15112	11186	3926	9163	8264	899
2.1.2.1.2 ADR/GDRs	0	0	0	0	0	0
2.1.2.2 Abroad	1483	2150	-666	303	673	-370
<b>2.2 Loans (2.2.1+2.2.2+2.2.3)</b>	<b>25723</b>	<b>17888</b>	<b>7834</b>	<b>27520</b>	<b>22027</b>	<b>5493</b>
2.2.1 External Assistance	2418	1290	1129	2020	1523	497
2.2.1.1 By India	13	16	-3	11	22	-11
2.2.1.2 To India	2406	1273	1132	2009	1501	508
2.2.2 Commercial Borrowings	9283	4941	4342	5351	5463	-112
2.2.2.1 By India	282	249	33	359	100	258
2.2.2.2 To India	9001	4692	4309	4993	5363	-370
2.2.3 Short Term to India	14021	11658	2364	20149	15041	5108
2.2.3.1 Buyers' credit & Suppliers' Credit >180 days	9615	11658	-2043	17152	15041	2111
2.2.3.2 Suppliers' Credit up to 180 days	4407	0	4407	2997	0	2997
<b>2.3 Banking Capital (2.3.1+2.3.2)</b>	<b>20817</b>	<b>20457</b>	<b>360</b>	<b>15567</b>	<b>24013</b>	<b>-8447</b>
2.3.1 Commercial Banks	20473	20457	17	15567	24012	-8445
2.3.1.1 Assets	10097	9858	239	134	10646	-10512
2.3.1.2 Liabilities	10376	10598	-222	15433	13366	2067
2.3.1.2.1 Non-Resident Deposits	8574	9357	-783	13993	11504	2490
2.3.2 Others	344	0	344	0	2	-2
<b>2.4 Rupee Debt Service</b>	<b>0</b>	<b>2</b>	<b>-2</b>	<b>0</b>	<b>1</b>	<b>-1</b>
<b>2.5 Other Capital</b>	<b>30837</b>	<b>11983</b>	<b>18855</b>	<b>10447</b>	<b>13543</b>	<b>-3096</b>
<b>3 Errors &amp; Omissions</b>	<b>1301</b>	<b>0</b>	<b>1301</b>	<b>0</b>	<b>906</b>	<b>-906</b>
<b>4 Monetary Movements (4.1+ 4.2)</b>	<b>0</b>	<b>31189</b>	<b>-31189</b>	<b>30379</b>	<b>0</b>	<b>30379</b>
4.1 I.M.F.	0	0	0	0	0	0
4.2 Foreign Exchange Reserves (Increase - / Decrease +)		31189	-31189	30379	0	30379

Note : P : Preliminary

**No. 39: India's Overall Balance of Payments**

Item	Jul-Sep 2021			Jul-Sep 2022(P)			(₹ Crore)
	Credit	Debit	Net	Credit	Debit	Net	
	1	2	3	4	5	6	
<b>Overall Balance of Payments(1+2+3)</b>	<b>3003766</b>	<b>2772683</b>	<b>231083</b>	<b>3020039</b>	<b>3262450</b>	<b>-242411</b>	
<b>1 CURRENT ACCOUNT (1.1+ 1.2)</b>	<b>1439323</b>	<b>1511443</b>	<b>-72120</b>	<b>1797085</b>	<b>2087469</b>	<b>-290384</b>	
<b>1.1 MERCHANDISE</b>	<b>776248</b>	<b>1106039</b>	<b>-329791</b>	<b>893502</b>	<b>1560163</b>	<b>-666661</b>	
<b>1.2 INVISIBLES (1.2.1+1.2.2+1.2.3)</b>	<b>663075</b>	<b>405404</b>	<b>257671</b>	<b>903583</b>	<b>527306</b>	<b>376277</b>	
1.2.1 Services	455057	265535	189522	638258	363505	274753	
1.2.1.1 Travel	15905	29037	-13132	46081	60160	-14079	
1.2.1.2 Transportation	56168	60613	-4445	76071	90467	-14396	
1.2.1.3 Insurance	5894	4263	1631	6035	4676	1360	
1.2.1.4 G.n.i.e.	1607	1467	141	1463	1751	-288	
1.2.1.5 Miscellaneous	375483	170154	205328	508608	206451	302156	
1.2.1.5.1 Software Services	222016	23589	198426	289082	28298	260784	
1.2.1.5.2 Business Services	102675	92295	10380	152740	111423	41317	
1.2.1.5.3 Financial Services	9652	10836	-1184	16862	12764	4098	
1.2.1.5.4 Communication Services	5676	2035	3641	6405	3185	3219	
1.2.2 Transfers	156732	16028	140704	219132	21632	197501	
1.2.2.1 Official	137	1774	-1638	413	2327	-1914	
1.2.2.2 Private	156596	14254	142342	218719	19305	199414	
1.2.3 Income	51286	123840	-72554	46193	142170	-95977	
1.2.3.1 Investment Income	40194	118251	-78057	33190	135354	-102164	
1.2.3.2 Compensation of Employees	11092	5589	5503	13003	6816	6187	
<b>2 CAPITAL ACCOUNT (2.1+2.2+2.3+2.4+2.5)</b>	<b>1554807</b>	<b>1261241</b>	<b>293567</b>	<b>1222954</b>	<b>1167748</b>	<b>55206</b>	
<b>2.1 Foreign Investment (2.1.1+2.1.2)</b>	<b>981510</b>	<b>888342</b>	<b>93168</b>	<b>795775</b>	<b>692288</b>	<b>103487</b>	
2.1.1 Foreign Direct Investment	152195	87755	64439	144014	92649	51365	
2.1.1.1 In India	143550	47973	95577	134406	62266	72140	
2.1.1.1.1 Equity	102293	46371	55922	85373	56743	28630	
2.1.1.1.2 Reinvested Earnings	34589	0	34589	37239	0	37239	
2.1.1.1.3 Other Capital	6668	1602	5066	11795	5523	6271	
2.1.1.2 Abroad	8645	39782	-31137	9608	30382	-20774	
2.1.1.2.1 Equity	8645	20927	-12282	9608	14216	-4608	
2.1.1.2.2 Reinvested Earnings	0	6259	-6259	0	6900	-6900	
2.1.1.2.3 Other Capital	0	12596	-12596	0	9267	-9267	
2.1.2 Portfolio Investment	829315	800587	28729	651761	599639	52122	
2.1.2.1 In India	818325	784660	33664	649339	594268	55071	
2.1.2.1.1 FIIs	818325	784660	33664	649339	594268	55071	
2.1.2.1.1.1 Equity	706356	701779	4577	576224	528326	47898	
2.1.2.1.1.2 Debt	111968	82881	29087	73116	65943	7173	
2.1.2.1.2 ADR/GDRs	0	0	0	0	0	0	
2.1.2.2 Abroad	10991	15927	-4936	2422	5371	-2949	
<b>2.2 Loans (2.2.1+2.2.2+2.2.3)</b>	<b>190583</b>	<b>132537</b>	<b>58046</b>	<b>219602</b>	<b>175768</b>	<b>43834</b>	
2.2.1 External Assistance	17919	9554	8364	16119	12152	3968	
2.2.1.1 By India	95	120	-26	87	177	-89	
2.2.1.2 To India	17824	9434	8390	16032	11975	4057	
2.2.2 Commercial Borrowings	68777	36608	32169	42702	43593	-891	
2.2.2.1 By India	2087	1844	242	2861	799	2062	
2.2.2.2 To India	66691	34764	31927	39841	42795	-2953	
2.2.3 Short Term to India	103887	86375	17512	160781	120023	40757	
2.2.3.1 Buyers' credit & Suppliers' Credit >180 days	71239	86375	-15136	136866	120023	16843	
2.2.3.2 Suppliers' Credit up to 180 days	32649	0	32649	23914	0	23914	
<b>2.3 Banking Capital (2.3.1+2.3.2)</b>	<b>154236</b>	<b>151566</b>	<b>2670</b>	<b>124217</b>	<b>191617</b>	<b>-67400</b>	
2.3.1 Commercial Banks	151690	151566	124	124217	191604	-67387	
2.3.1.1 Assets	74810	73041	1769	1070	84951	-83881	
2.3.1.2 Liabilities	76881	78525	-1645	123147	106652	16494	
2.3.1.2.1 Non-Resident Deposits	63530	69328	-5798	111661	91794	19867	
2.3.2 Others	2545	0	2545	0	13	-13	
<b>2.4 Rupee Debt Service</b>	0	15	-15	0	10	-10	
<b>2.5 Other Capital</b>	228478	88781	139697	83360	108064	-24704	
<b>3 Errors &amp; Omissions</b>	<b>9636</b>	<b>0</b>	<b>9636</b>	<b>0</b>	<b>7233</b>	<b>-7233</b>	
<b>4 Monetary Movements (4.1+ 4.2)</b>	0	<b>231083</b>	<b>-231083</b>	<b>242411</b>	0	<b>242411</b>	
4.1 I.M.F.	0	0	0	0	0	0	
4.2 Foreign Exchange Reserves (Increase - / Decrease +)	0	231083	-231083	242411	0	242411	

Note : P: Preliminary

## No. 40: Standard Presentation of BoP in India as per BPM6

Item	(US\$ Million)					
	Jul-Sep 2021			Jul-Sep 2022(P)		
	Credit 1	Debit 2	Net 3	Credit 4	Debit 5	Net 6
<b>1 Current Account (1.A+1.B+1.C)</b>						
<b>1.A Goods and Services (1.A.a+1.A.b)</b>						
<b>1.A.a Goods (1.A.a.1 to 1.A.a.3)</b>						
1.A.a.1 General merchandise on a BOP basis	194262	203974	-9712	225206	261577	-36371
1.A.a.2 Net exports of goods under merchanting	166187	185119	-18932	191959	241073	-49114
1.A.a.3 Nonmonetary gold	104769	149280	-44511	111973	195519	-83546
1.A.a.4 Other goods	104254	133258	-29004	111660	185742	-74082
1.A.a.5 Special drawing rights	515	0	515	313	0	313
1.A.a.6 Other services			16022	-16022	9777	-9777
<b>1.A.b Services (1.A.b.1 to 1.A.b.13)</b>	<b>61418</b>	<b>35839</b>	<b>25579</b>	<b>79986</b>	<b>45554</b>	<b>34432</b>
1.A.b.1 Manufacturing services on physical inputs owned by others	75	16	59	311	28	283
1.A.b.2 Maintenance and repair services n.i.e.	74	418	-345	50	542	-492
1.A.b.3 Transport	7581	8181	-600	9533	11337	-1804
1.A.b.4 Travel	2147	3919	-1772	5775	7539	-1764
1.A.b.5 Construction	716	715	0	858	833	26
1.A.b.6 Insurance and pension services	795	575	220	756	586	170
1.A.b.7 Financial services	1303	1463	-160	2113	1600	514
1.A.b.8 Charges for the use of intellectual property n.i.e.	202	2189	-1987	324	2224	-1900
1.A.b.9 Telecommunications, computer, and information services	30823	3651	27172	37111	4140	32971
1.A.b.10 Other business services	13858	12457	1401	19141	13964	5178
1.A.b.11 Personal, cultural, and recreational services	713	1243	-530	917	1654	-737
1.A.b.12 Government goods and services n.i.e.	217	198	19	183	219	-36
1.A.b.13 Others n.i.e.	2915	813	2102	2913	889	2024
<b>1.B Primary Income (1.B.1 to 1.B.3)</b>	<b>6922</b>	<b>16714</b>	<b>-9792</b>	<b>5789</b>	<b>17817</b>	<b>-12028</b>
1.B.1 Compensation of employees	1497	754	743	1630	854	775
1.B.2 Investment income	4413	15740	-11328	3321	16856	-13535
1.B.2.1 Direct investment	2046	9816	-7770	1907	9939	-8032
1.B.2.2 Portfolio investment	111	2859	-2748	55	2917	-2862
1.B.2.3 Other investment	62	3064	-3002	146	3954	-3808
1.B.2.4 Reserve assets	2193	1	2193	1213	46	1167
1.B.3 Other primary income	1012	220	792	838	106	732
<b>1.C Secondary Income (1.C.1+1.C.2)</b>	<b>21153</b>	<b>2141</b>	<b>19012</b>	<b>27458</b>	<b>2688</b>	<b>24770</b>
1.C.1 Financial corporations, nonfinancial corporations, households, and NPISHs	21135	1924	19212	27410	2419	24991
1.C.1.1 Personal transfers (Current transfers between resident and/ non-resident households)	20237	1356	18881	26686	1750	24935
1.C.1.2 Other current transfers	899	568	331	724	669	55
1.C.2 General government	18	217	-199	48	268	-220
<b>2 Capital Account (2.1+2.2)</b>	<b>189</b>	<b>202</b>	<b>-13</b>	<b>136</b>	<b>122</b>	<b>15</b>
2.1 Gross acquisitions (DR.)/disposals (CR.) of non-produced nonfinancial assets	62	132	-71	6	36	-30
2.2 Capital transfers	128	70	58	130	85	45
<b>3 Financial Account (3.1 to 3.5)</b>	<b>209660</b>	<b>201236</b>	<b>8424</b>	<b>183506</b>	<b>146243</b>	<b>37263</b>
<b>3.1 Direct Investment (3.1A+3.1B)</b>	<b>20541</b>	<b>11844</b>	<b>8697</b>	<b>18048</b>	<b>11611</b>	<b>6437</b>
3.1.A Direct Investment in India						
3.1.A.1 Equity and investment fund shares	19375	6475	12900	16844	7803	9041
3.1.A.1.1 Equity other than reinvestment of earnings	18475	6259	12216	15366	7111	8255
3.1.A.1.2 Reinvestment of earnings	4668	6259	7548	10699	7111	3588
3.1.A.2 Debt instruments	900	216	684	4667	4667	
3.1.A.2.1 Direct investor in direct investment enterprises	900	216	684	1478	692	786
3.1.B Direct Investment by India	1167	5369	-4203	1204	3808	-2603
3.1.B.1 Equity and investment fund shares	1167	3669	-2502	1204	2646	-1442
3.1.B.1.1 Equity other than reinvestment of earnings	1167	2824	-1658	1204	1782	-577
3.1.B.1.2 Reinvestment of earnings	845	845	-845		865	-865
3.1.B.2 Debt instruments	0	1700	-1700	0	1161	-1161
3.1.B.2.1 Direct investor in direct investment enterprises	1700	1700	-1700		1161	-1161
<b>3.2 Portfolio Investment</b>	<b>111931</b>	<b>108054</b>	<b>3877</b>	<b>81678</b>	<b>75146</b>	<b>6532</b>
3.2.A Portfolio Investment in India	110448	105904	4544	81375	74473	6901
3.2.A.1 Equity and investment fund shares	95335	94718	618	72212	66210	6003
3.2.A.2 Debt securities	15112	11186	3926	9163	8264	899
3.2.B Portfolio Investment by India	1483	2150	-666	303	673	-370
<b>3.3 Financial derivatives (other than reserves) and employee stock options</b>	<b>5367</b>	<b>5806</b>	<b>-439</b>	<b>7454</b>	<b>7308</b>	<b>145</b>
<b>3.4 Other investment</b>	<b>71821</b>	<b>44344</b>	<b>27478</b>	<b>45948</b>	<b>52178</b>	<b>-6230</b>
3.4.1 Other equity (ADRs/GDRs)	0	0	0	0	0	0
3.4.2 Currency and deposits	8918	9357	-439	13993	11505	2488
3.4.2.1 Central bank (Rupee Debt Movements; NRG)	344	0	344	0	2	-2
3.4.2.2 Deposit-taking corporations, except the central bank (NRI Deposits)	8574	9357	-783	13993	11504	2490
3.4.2.3 General government			0		0	
3.4.2.4 Other sectors			0		0	
3.4.3 Loans (External Assistance, ECBs and Banking Capital)	23600	17330	6270	8945	19494	-10549
3.4.3.A Loans to India	23306	17065	6241	8576	19372	-10796
3.4.3.B Loans by India	294	265	29	369	122	247
3.4.4 Insurance, pension, and standardized guarantee schemes	55	13	42	59	1	59
3.4.5 Trade credit and advances	14021	11658	2364	20149	15041	5108
3.4.6 Other accounts receivable/payable - other	7365	5986	1379	2801	6137	-3335
3.4.7 Special drawing rights	17862		17862	0	0	
<b>3.5 Reserve assets</b>	<b>0</b>	<b>31189</b>	<b>-31189</b>	<b>30379</b>	<b>0</b>	<b>30379</b>
3.5.1 Monetary gold			0		0	0
3.5.2 Special drawing rights n.a.			17862	-17862	0	0
3.5.3 Reserve position in the IMF n.a.			0	0	0	0
3.5.4 Other reserve assets (Foreign Currency Assets)	0	13326	-13326	30379	0	30379
<b>4 Total assets/liabilities</b>	<b>209660</b>	<b>201236</b>	<b>8424</b>	<b>183506</b>	<b>146243</b>	<b>37263</b>
4.1 Equity and investment fund shares	121882	112614	9267	96598	83949	12649
4.2 Debt instruments	62552	51447	11104	53728	56158	-2430
4.3 Other financial assets and liabilities	25227	37175	-11947	33180	6137	27043
<b>5 Net errors and omissions</b>	<b>1301</b>		<b>1301</b>		<b>906</b>	<b>-906</b>

Note : P : Preliminary

## No. 41: Standard Presentation of BoP in India as per BPM6

(₹ Crore)

Item	Jul-Sep 2021			Jul-Sep 2022(P)		
	Credit 1	Debit 2	Net 3	Credit 4	Debit 5	Net 6
<b>1 Current Account (1.A+1.B+1.C)</b>						
<b>1.A Goods and Services (1.A.a+1.A.b)</b>						
<b>1.A.a Goods (1.A.a.1 to 1.A.a.3)</b>						
1.A.a.1 General merchandise on a BOP basis	1439319	1511278	-71958	1797054	2087284	-290229
1.A.a.2 Net exports of goods under merchanting	1231305	1371574	-140270	1531760	1923668	-391908
1.A.a.3 Nonmonetary gold	776248	1106039	-329791	893502	1560163	-666661
<b>1.A.b Services (1.A.b.1 to 1.A.b.13)</b>						
1.A.b.1 Manufacturing services on physical inputs owned by others	772435	987331	-214896	891001	1482147	-591146
1.A.b.2 Maintenance and repair services n.i.e.	3812	0	3812	2501	0	2501
1.A.b.3 Transport	0	118708	-118708	0	78016	-78016
1.A.b.4 Travel	455057	265535	189522	638258	363505	274753
1.A.b.5 Construction	558	118	440	2480	223	2256
1.A.b.6 Insurance and pension services	546	3100	-2554	396	4323	-3927
1.A.b.7 Financial services	56168	60613	-4445	76071	90467	-14396
1.A.b.8 Charges for the use of intellectual property n.i.e.	15905	29037	-13132	46081	60160	-14079
1.A.b.9 Telecommunications, computer, and information services	5302	5299	3	6848	6643	205
1.A.b.10 Other business services	5894	4263	1631	6035	4676	1360
1.A.b.11 Personal, cultural, and recreational services	9652	10836	-1184	16862	12764	4098
1.A.b.12 Government goods and services n.i.e.	1499	16220	-14721	2589	17749	-15161
1.A.b.13 Others n.i.e.	228370	27051	201318	296127	33035	263092
<b>1.B Primary Income (1.B.1 to 1.B.3)</b>						
1.B.1 Compensation of employees	102675	92295	10380	152740	111423	41317
1.B.2 Investment income	11092	5589	5503	13003	6816	6187
1.B.2.1 Direct investment	32694	116622	-83928	26500	134507	-108007
1.B.2.2 Portfolio investment	15161	72730	-57569	15219	79312	-64093
1.B.2.3 Other investment	820	21184	-20364	442	23280	-22838
1.B.2.4 Reserve assets	461	22703	-22242	1162	31551	-30389
1.B.3 Other primary income	16251	5	16246	9677	364	9313
<b>1.C Secondary Income (1.C.1+1.C.2)</b>						
1.C.1 Financial corporations, nonfinancial corporations, households, and NPISHs	7500	1629	5871	6690	846	5843
1.C.1.1 Personal transfers (Current transfers between resident and/ non-resident households)	156729	15863	140865	219101	21446	197656
1.C.1.2 Other current transfers	149936	10045	139891	212941	13968	198973
1.C.2 General government	6659	4209	2451	5779	5337	442
<b>2 Capital Account (2.1+2.2)</b>						
2.1 Gross acquisitions (DR.)/disposals (CR.) of non-produced nonfinancial assets	1402	1497	-95	1089	971	118
2.2 Capital transfers	457	981	-524	50	289	-239
<b>3 Financial Account (3.1 to 3.5)</b>						
<b>3.1 Direct Investment (3.1A+3.1B)</b>						
3.1.A Direct Investment in India	1553408	1490992	62417	1464307	1166962	297345
3.1.A.1 Equity and investment fund shares	152195	87755	64439	144014	92649	51365
3.1.A.1.1 Equity other than reinvestment of earnings	143550	47973	95577	134406	62266	72140
3.1.A.1.2 Reinvestment of earnings	136882	46371	90511	122612	56743	65869
3.1.A.2 Debt instruments	102293	46371	55922	85373	56743	28630
3.1.A.2.1 Direct investor in direct investment enterprises	34589	0	34589	37239	0	37239
3.1.A.2.1 Direct investor in direct investment enterprises	6668	1602	5066	11795	5523	6271
3.1.B Direct Investment by India	8645	39782	-31137	9608	30382	-20774
3.1.B.1 Equity and investment fund shares	8645	27186	-18541	9608	21116	-11508
3.1.B.1.1 Equity other than reinvestment of earnings	8645	20927	-12282	9608	14216	-4608
3.1.B.1.2 Reinvestment of earnings	0	6259	-6259	0	6900	-6900
3.1.B.2 Debt instruments	0	12596	-12596	0	9267	-9267
3.1.B.2.1 Direct investor in direct investment enterprises	0	12596	-12596	0	9267	-9267
<b>3.2 Portfolio Investment</b>						
3.2.A Portfolio Investment in India	829315	800587	28729	651761	599639	52122
3.2.A.1 Equity and investment fund shares	818325	784660	33664	649339	594268	55071
3.2.A.2 Debt securities	706356	701779	4577	576224	528326	47898
3.2.B Portfolio Investment by India	111968	82881	29087	73116	65943	7173
3.2.B.1 Equity and investment fund shares	10991	15927	-4936	2422	5371	-2949
3.2.B.2 Debt instruments	39762	43017	-3256	59477	58316	1161
<b>3.3 Financial derivatives (other than reserves) and employee stock options</b>						
<b>3.4 Other investment</b>						
3.4.1 Other equity (ADRs/GDRs)	532137	328550	203587	366643	416358	-49714
3.4.2 Currency and deposits	0	0	0	0	0	0
3.4.2.1 Central bank (Rupee Debt Movements; NRG)	66075	69328	-3253	111661	91807	19854
3.4.2.2 Deposit-taking corporations, except the central bank (NRI Deposits)	2545	0	2545	0	13	-13
3.4.2.3 General government	63530	69328	-5798	111661	91794	19867
3.4.2.4 Other sectors	0	0	0	0	0	0
3.4.3 Loans (External Assistance, ECBs and Banking Capital)	174857	128400	46456	71377	155555	-84177
3.4.3.A Loans to India	172675	126436	46239	68430	154579	-86150
3.4.3.B Loans by India	2181	1964	217	2948	975	1973
3.4.4 Insurance, pension, and standardized guarantee schemes	405	97	308	471	4	467
3.4.5 Trade credit and advances	103887	86375	17512	160781	120023	40757
3.4.6 Other accounts receivable/payable - other	54566	44349	10217	22353	48968	-26615
3.4.7 Special drawing rights	132346	0	132346	0	0	0
<b>3.5 Reserve assets</b>						
3.5.1 Monetary gold	0	231083	-231083	242411	0	242411
3.5.2 Special drawing rights n.a.	0	0	0	0	0	0
3.5.3 Reserve position in the IMF n.a.	0	132346	-132346	0	0	0
3.5.4 Other reserve assets (Foreign Currency Assets)	0	98737	-98737	242411	0	242411
<b>4 Total assets/liabilities</b>						
4.1 Equity and investment fund shares	1553408	1490992	62417	1464307	1166962	297345
4.2 Debt instruments	903041	834377	68664	770814	669876	100938
4.3 Other financial assets and liabilities	463455	381183	82272	428729	448118	-19389
<b>5 Net errors and omissions</b>						
Note : P: Preliminary	9636	0	9636	0	7233	-7233

**No. 42: India's International Investment Position**

(US\$ Million)

Item	As on Financial Year /Quarter End							
	2021-22		2021		2022			
			Sep.		Jun.		Sep.	
	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
	1	2	3	4	5	6	7	8
1. Direct investment Abroad/in India	211573	521647	203814	506710	214230	517254	216834	510106
1.1 Equity Capital *	132765	493987	128062	480743	134357	489548	135799	481956
1.2 Other Capital	78807	27660	75752	25967	79873	27706	81034	28150
2. Portfolio investment	10642	270425	8578	291215	10614	246342	10983	245720
2.1 Equity	1110	156381	4590	177034	8153	135476	6312	137013
2.2 Debt	9533	114043	3988	114181	2461	110866	4671	108707
3. Other investment	90974	486588	84498	469430	77434	483115	86995	481281
3.1 Trade credit	18561	118145	11815	104418	21146	123184	24753	128323
3.2 Loan	10474	195245	10816	192116	6543	191557	8084	188488
3.3 Currency and Deposits	42081	140994	42302	142904	30242	137445	33528	135621
3.4 Other Assets/Liabilities	19858	32203	19565	29991	19504	30929	20630	28850
4. Reserves	607309		635363		589155		532664	
5. Total Assets/Liabilities	920498	1278660	932253	1267355	891433	1246712	847475	1237108
6. Net IIP (Assets - Liabilities)	-358162		-335102		-355279		-389633	

**Note:** \* Equity capital includes share of investment funds and reinvested earnings.

# Payment and Settlement Systems

## No.43: Payment System Indicators

### PART I - Payment System Indicators - Payment & Settlement System Statistics

System	Volume (Lakh )				Value (₹ Crore)			
	FY 2021-22	2022		2023	FY 2021-22	2022		2023
		Jan.	Dec.	Jan.		Jan.	Dec.	Jan.
	1	2	3	4	5	6	7	8
<b>A. Settlement Systems</b>								
<b>Financial Market Infrastructures (FMIs)</b>								
<b>1 CCIL Operated Systems (1.1 to 1.3)</b>	33.01	2.54	3.42	3.66	206873112	17839802	22326077	21571346
1.1 Govt. Securities Clearing (1.1.1 to 1.1.3)	12.22	0.93	1.19	1.17	142072939	12892869	15144169	14383734
1.1.1 Outright	6.22	0.40	0.60	0.60	8793301	569722	711065	785714
1.1.2 Repo	3.08	0.26	0.36	0.35	51015712	4348558	6125370	5556922
1.1.3 Tri-party Repo	2.92	0.28	0.23	0.21	82263926	7974589	8307734	8041098
1.2 Forex Clearing	19.91	1.52	2.16	2.40	59775826	4470518	6670289	6553596
1.3 Rupee Derivatives @	0.88	0.09	0.07	0.10	5024347	476415	511620	634016
<b>B. Payment Systems</b>								
<b>I Financial Market Infrastructures (FMIs)</b>								
<b>1 Credit Transfers - RTGS (1.1 to 1.2)</b>	-	-	-	-	-	-	-	-
1.1 Customer Transactions	2078.39	181.29	215.03	204.18	128657516	10449109	13736057	12546467
1.2 Interbank Transactions	2063.73	180.08	213.80	202.99	113319292	9285159	12180091	11028450
<b>II Retail</b>								
<b>2 Credit Transfers - Retail (2.1 to 2.6)</b>	577934.74	57367.30	90675.95	92396.07	42728006	3806628	4928331	4738328
2.1 AePS (Fund Transfers) @	9.76	0.55	0.32	0.32	575	29	21	23
2.2 APBS \$	12573.33	1111.28	1157.66	1112.35	133345	18101	20670	19956
2.3 IMPS	46625.25	4401.73	4858.37	4745.08	4171037	387007	486552	477491
2.4 NACH Cr \$	18757.82	2053.15	1515.84	1354.13	1281685	126812	157435	131620
2.5 NEFT	40407.29	3629.03	4854.81	4798.31	28725463	2442686	2981681	2810180
2.6 UPI @	459561.30	46171.56	78288.95	80385.88	8415900	831993	1281971	1299059
2.6.1 of which USSD @	11.99	0.81	1.92	1.79	177	11	21	19
<b>3 Debit Transfers and Direct Debits (3.1 to 3.3)</b>	12189.49	1059.01	1357.72	1360.36	1034444	91554	116425	115658
3.1 BHIM Aadhaar Pay @	227.73	24.47	12.71	13.01	6113	728	446	468
3.2 NACH Dr \$	10754.74	934.07	1198.55	1202.79	1026641	90703	115737	114953
3.3 NETC (linked to bank account) @	1207.02	100.47	146.46	144.56	1689	123	242	236
<b>4 Card Payments (4.1 to 4.2)</b>	61782.93	5151.05	5223.57	5103.61	1701851	147794	185150	183460
4.1 Credit Cards (4.1.1 to 4.1.2)	22398.82	1958.05	2556.47	2593.52	971638	87769	126524	127682
4.1.1 PoS based \$	11124.59	960.63	1405.79	1409.19	380643	32735	48611	48934
4.1.2 Others \$	11274.23	997.43	1150.68	1184.33	590994	55034	77913	78748
4.2 Debit Cards (4.2.1 to 4.2.1)	39384.11	3193.00	2667.10	2510.09	730213	60025	58626	55778
4.2.1 PoS based \$	22967.10	1924.51	1859.33	1742.51	451550	37274	39574	37520
4.2.2 Others \$	16417.00	1268.48	807.77	767.59	278663	22752	19052	18258
<b>5 Prepaid Payment Instruments (5.1 to 5.2)</b>	65782.75	5807.67	6354.65	6129.40	279416	24796	22648	22193
5.1 Wallets	53013.86	4613.76	5012.71	4873.96	220183	19789	18400	17899
<b>5.2 Cards (5.2.1 to 5.2.2)</b>	12768.89	1193.91	1341.94	1255.44	59233	5007	4248	4294
5.2.1 PoS based \$	1116.16	117.57	61.58	64.59	19546	2368	722	774
5.2.2 Others \$	11652.73	1076.35	1280.37	1190.86	39687	2639	3527	3520
<b>6 Paper-based Instruments (6.1 to 6.2)</b>	6999.12	596.99	608.13	573.17	6650333	557721	621387	570639
6.1 CTS (NPCI Managed)	6999.12	596.99	608.13	573.17	6650333	557721	621387	570639
6.2 Others	0.00	-	-	-	-	-	-	-
<b>Total - Retail Payments (2+3+4+5+6)</b>	724689.03	69982.02	104220.02	105562.61	52394049	4628493	5873941	5630279
<b>Total Payments (1+2+3+4+5+6)</b>	726767.42	70163.31	104435.05	105766.79	181051565	15077603	19609998	18176745
<b>Total Digital Payments (1+2+3+4+5)</b>	719768.30	69566.32	103826.92	105193.62	174401233	14519881	18988611	17606106

### PART II - Payment Modes and Channels

System	Volume (Lakh )				Value (₹ Crore)			
	FY 2021-22	2022		2023	FY 2021-22	2022		2023
		Jan.	Dec.	Jan.		Jan.	Dec.	Jan.
	1	2	3	4	5	6	7	8
<b>A. Other Payment Channels</b>								
<b>1 Mobile Payments (mobile app based) (1.1 to 1.2)</b>	506842.31	49905.88	84929.10	86637.16	14961371	1418856	2134123	2104799
1.1 Intra-bank \$	40805.69	3879.91	5560.77	4881.88	2726363	250455	375775	345047
1.2 Inter-bank \$	466036.62	46025.97	79368.33	81755.28	12235007	1168401	1758348	1759752
<b>2 Internet Payments (Netbanking / Internet Browser Based) @ (2.1 to 2.2)</b>	40825.85	3564.14	3663.63	3538.64	83255958	7413832	8592320	7348674
2.1 Intra-bank @	9576.46	833.10	949.86	889.79	52139336	4718914	4925141	4089462
2.2 Inter-bank @	31249.39	2731.05	2713.77	2648.85	31116622	2694918	3667179	3259212
<b>B. ATMs</b>								
<b>3 Cash Withdrawal at ATMs \$ (3.1 to 3.3)</b>	65240.43	5554.51	5891.49	5752.56	3111946	262384	280461	272247
3.1 Using Credit Cards \$	62.37	5.49	8.13	8.13	3130	269	392	385
3.2 Using Debit Cards \$	64851.61	5519.66	5850.04	5711.67	3097739	261124	278923	270700
3.3 Using Pre-paid Cards \$	326.45	29.36	33.33	32.76	11076	990	1146	1161
<b>4 Cash Withdrawal at PoS \$ (4.1 to 4.2)</b>	91.17	2.13	2.38	2.44	728	20	24	25
4.1 Using Debit Cards \$	79.42	2.08	2.37	2.43	557	20	24	25
4.2 Using Pre-paid Cards \$	11.75	0.05	0.02	0.02	171	0	0	0
<b>5 Cash Withdrawal at Micro ATMs @</b>	11126.04	1125.54	934.53	963.46	299776	28582	25484	26203
5.1 AePS @	11126.04	1125.54	934.53	963.46	299776	28582	25484	26203

### PART III - Payment Infrastructures (Lakh)

System	As on March 2022	2022		2023	
		Jan.	Dec.	Jan.	
		1	2	3	4
<b>Payment System Infrastructures</b>					
<b>1 Number of Cards (1.1 to 1.2)</b>	9912.93	10111.81	10206.53	10280.33	
1.1 Credit Cards	736.27	702.52	811.87	824.52	
1.2 Debit Cards	9176.66	9409.29	9394.66	9455.81	
<b>2 Number of PPIs @ (2.1 to 2.2)</b>	15553.69	15389.63	16234.69	16029.29	
2.1 Wallets @	12787.93	12722.56	13346.64	13244.34	
2.2 Cards @	2765.76	2667.07	2888.05	2784.95	
<b>3 Number of ATMs (3.1 to 3.2)</b>	2.52	2.46	2.57	2.58	
3.1 Bank owned ATMs \$	2.20	2.16	2.20	2.21	
3.2 White Label ATMs \$	0.31	0.30	0.37	0.37	
<b>4 Number of Micro ATMs @</b>	9.16	7.78	14.19	14.75	
<b>5 Number of PoS Terminals</b>	60.70	56.20	75.50	76.57	
<b>6 Bharat QR @</b>	49.72	46.97	49.59	50.57	
<b>7 UPI QR *</b>	1727.34	1521.05	2361.82	2442.34	

@: New inclusion w.e.f. November 2019

#: Data reported by Co-operative Banks, LABs and RRBs included with effect from December 2021.

\$ : Inclusion separately initiated from November 2019 - would have been part of other items hitherto.

\*: New inclusion w.e.f. September 2020; Includes only static UPI QR Code

**Note :** 1. Data is provisional.

2. ECS (Debit and Credit) has been merged with NACH with effect from January 31, 2020.

3. The data from November 2019 onwards for card payments (Debit/Credit cards) and Prepaid Payment Instruments (PPIs) may not be comparable with earlier months/ periods, as more granular data is being published along with revision in data definitions.

4. Only domestic financial transactions are considered. The new format captures e-commerce transactions; transactions using FASTags, digital bill payments and card-to-card transfer through ATMs, etc.. Also, failed transactions, chargebacks, reversals, expired cards/ wallets, are excluded.

# Occasional Series

## No. 44: Small Savings

(₹ Crore)

Scheme		2020-21	2021		2022			
			Feb.	Dec.	Jan.	Feb.		
			1	2	3	4	5	
<b>1 Small Savings</b>			<b>Receipts</b>	<b>181237</b>	<b>14405</b>	<b>18175</b>	<b>14893</b>	<b>13932</b>
			<b>Outstanding</b>	<b>1259585</b>	<b>1224772</b>	<b>1397878</b>	<b>1412766</b>	<b>1426737</b>
<b>1.1 Total Deposits</b>			<b>Receipts</b>	<b>132687</b>	<b>10143</b>	<b>13855</b>	<b>10676</b>	<b>9753</b>
1.1.1 Post Office Saving Bank Deposits			<b>Outstanding</b>	<b>867494</b>	<b>847119</b>	<b>969847</b>	<b>980523</b>	<b>990274</b>
			Receipts	39748	2252	4475	3018	3568
			Outstanding	205888	194738	226701	229719	233287
1.1.2 MGNREG			Receipts					
			Outstanding					
1.1.3 National Saving Scheme, 1987			Receipts	276	-23	-366	-15	-20
			Outstanding	3419	3037	3200	3185	3165
1.1.4 National Saving Scheme, 1992			Receipts	166	57	2	-1	-777
			Outstanding	175	40	150	149	-628
1.1.5 Monthly Income Scheme			Receipts	12211	1135	1228	1146	933
			Outstanding	221379	220277	232747	233892	234825
1.1.6 Senior Citizen Scheme 2004			Receipts	21009	1950	1929	1615	1490
			Outstanding	97051	94750	114134	115749	117239
1.1.7 Post Office Time Deposits			Receipts	41470	3798	3926	3438	3217
			Outstanding	207557	203597	241034	244474	247690
1.1.7.1 1 year Time Deposits			Outstanding	108205	107099	116043	116819	117578
1.1.7.2 2 year Time Deposits			Outstanding	7473	7418	7931	7967	7996
1.1.7.3 3 year Time Deposits			Outstanding	7227	7267	6983	6964	6944
1.1.7.4 5 year Time Deposits			Outstanding	84652	81813	110077	112724	115172
1.1.8 Post Office Recurring Deposits			Receipts	17807	974	2662	1475	1338
			Outstanding	132029	130683	151885	153359	154697
1.1.9 Post Office Cumulative Time Deposits			Receipts	0	0	-1	0	4
			Outstanding	-25	-24	-25	-25	-22
1.1.10 Other Deposits			Receipts	0	0	0	0	0
			Outstanding	21	21	21	21	21
<b>1.2 Saving Certificates</b>			<b>Receipts</b>	<b>34860</b>	<b>3647</b>	<b>3978</b>	<b>3691</b>	<b>3583</b>
			<b>Outstanding</b>	<b>286863</b>	<b>282483</b>	<b>321027</b>	<b>324713</b>	<b>328337</b>
1.2.1 National Savings Certificate VIII issue			Receipts	17361	1843	1860	1626	1585
			Outstanding	135348	133016	150513	152139	153724
1.2.2 Indira Vikas Patras			Receipts	-3	0	0	0	0
			Outstanding	159	157	158	158	158
1.2.3 Kisan Vikas Patras			Receipts	-7911	-470	-426	-193	940
			Outstanding	-6776	-6194	-8455	-8648	-7708
1.2.4 Kisan Vikas Patras - 2014			Receipts	25340	2274	2544	2258	1019
			Outstanding	147942	145422	168720	170978	171996
1.2.5 National Saving Certificate VI issue			Receipts	41	0	0	0	23
			Outstanding	-114	-147	-114	-114	-90
1.2.6 National Saving Certificate VII issue			Receipts	32	0	0	0	16
			Outstanding	-74	-103	-74	-74	-58
1.2.7 Other Certificates			Outstanding	10378	10332	10279	10274	10315
<b>1.3 Public Provident Fund</b>			<b>Receipts</b>	<b>13690</b>	<b>615</b>	<b>342</b>	<b>526</b>	<b>596</b>
			<b>Outstanding</b>	<b>105228</b>	<b>95170</b>	<b>107004</b>	<b>107530</b>	<b>108126</b>

**Note :** Data on receipts from April 2017 are net receipts, i.e., gross receipt minus gross payment.

**Source:** Accountant General, Post and Telegraphs.

**No. 45 : Ownership Pattern of Central and State Governments Securities**

(Per cent)

Category	Central Government Dated Securities				
	2021		2022		
	Dec.	Mar.	Jun.	Sep.	Dec.
	1	2	3	4	5
<b>(A) Total (in ₹. Crore)</b>	<b>8439811</b>	<b>8529036</b>	<b>8784931</b>	<b>9098788</b>	<b>9373372</b>
1 Commercial Banks	35.40	35.93	36.16	36.44	36.13
2 Non-Bank PDs	0.27	0.29	0.33	0.38	0.44
3 Insurance Companies	25.74	25.89	26.34	25.94	26.14
4 Mutual Funds	3.08	2.91	2.32	2.58	2.87
5 Co-operative Banks	1.82	1.81	1.84	1.80	1.70
6 Financial Institutions	1.69	0.94	1.09	0.98	1.07
7 Corporates	1.37	1.47	1.52	1.58	1.57
8 Foreign Portfolio Investors	1.66	1.56	1.43	1.38	1.31
9 Provident Funds	4.33	4.60	4.77	4.66	4.67
10 RBI	16.92	16.62	16.06	15.28	14.73
11. Others	7.73	7.97	8.18	8.98	9.37
11.1 State Governments	1.69	1.82	1.84	1.83	1.88

Category	State Governments Securities				
	2021		2022		
	Dec.	Mar.	Jun.	Sep.	Dec.
	1	2	3	4	5
<b>(B) Total (in ₹. Crore)</b>	<b>4257578</b>	<b>4410250</b>	<b>4472011</b>	<b>4589128</b>	<b>4712902</b>
1 Commercial Banks	34.41	34.39	34.22	34.37	34.34
2 Non-Bank PDs	0.40	0.38	0.41	0.36	0.44
3 Insurance Companies	28.85	28.42	28.39	27.71	27.42
4 Mutual Funds	1.91	1.82	1.89	2.08	2.02
5 Co-operative Banks	4.07	4.04	4.06	3.89	3.80
6 Financial Institutions	1.73	1.72	1.73	1.71	1.77
7 Corporates	1.70	1.82	1.98	1.85	1.94
8 Foreign Portfolio Investors	0.02	0.02	0.02	0.02	0.02
9 Provident Funds	20.66	20.79	20.52	20.18	20.31
10 RBI	0.83	0.80	0.79	0.79	0.75
11. Others	5.40	5.81	5.99	7.05	7.19
11.1 State Governments	0.19	0.20	0.21	0.21	0.24

Category	Treasury Bills				
	2021		2022		
	Dec.	Mar.	Jun.	Sep.	Dec.
	1	2	3	4	5
<b>(C) Total (in ₹. Crore)</b>	<b>692869</b>	<b>757198</b>	<b>1022053</b>	<b>920205</b>	<b>839931</b>
1 Commercial Banks	47.01	49.04	51.37	50.91	49.15
2 Non-Bank PDs	1.53	4.20	2.49	2.12	2.17
3 Insurance Companies	6.29	6.58	5.34	5.46	5.81
4 Mutual Funds	13.72	14.01	14.86	11.98	14.23
5 Co-operative Banks	1.49	1.79	1.34	1.48	1.27
6 Financial Institutions	2.36	3.53	3.73	4.17	4.52
7 Corporates	3.13	3.47	4.27	3.86	3.59
8 Foreign Portfolio Investors	0.72	0.49	0.40	0.53	0.50
9 Provident Funds	0.85	0.21	1.70	3.21	1.37
10 RBI	0.00	0.00	0.00	0.00	0.00
11. Others	22.89	16.69	14.50	16.27	17.39
11.1 State Governments	18.92	11.54	10.99	12.27	13.38

**No. 46: Combined Receipts and Disbursements of the Central and State Governments**

(₹ Crore)

Item	2017-18	2018-19	2019-20	2020-21	2021-22 RE	2022-23 BE
	1	2	3	4	5	6
<b>1 Total Disbursements</b>	<b>4515946</b>	<b>5040747</b>	<b>5410887</b>	<b>6353359</b>	<b>7453320</b>	<b>8008684</b>
1.1 Developmental	2635110	2882758	3074492	3823423	4489442	4761567
1.1.1 Revenue	2029044	2224367	2446605	3150221	3444624	3536719
1.1.2 Capital	519356	596774	588233	550358	963856	1144725
1.1.3 Loans	86710	61617	39654	122844	80962	80123
1.2 Non-Developmental	1812455	2078276	2253027	2442941	2864084	3140466
1.2.1 Revenue	1741432	1965907	2109629	2271637	2653832	2928102
1.2.1.1 Interest Payments	814757	894520	955801	1060602	1244104	1408929
1.2.2 Capital	69370	111029	141457	169155	178038	209892
1.2.3 Loans	1654	1340	1941	2148	32214	2472
1.3 Others	68381	79713	83368	86995	99794	106652
<b>2 Total Receipts</b>	<b>4528422</b>	<b>5023352</b>	<b>5734166</b>	<b>6397162</b>	<b>7193029</b>	<b>7944834</b>
2.1 Revenue Receipts	3376416	3797731	3851563	3688030	4894050	5497245
2.1.1 Tax Receipts	2978134	3278947	3231582	3193390	4026487	4551271
2.1.1.1 Taxes on commodities and services	1853859	2030050	2012578	2076013	2608666	2904479
2.1.1.2 Taxes on Income and Property	1121189	1246083	1216203	1114805	1414088	1642678
2.1.1.3 Taxes of Union Territories (Without Legislature)	3086	2814	2800	2572	3732	4115
2.1.2 Non-Tax Receipts	398282	518783	619981	494640	867564	945974
2.1.2.1 Interest Receipts	34224	36273	31137	33448	40481	46552
2.2 Non-debt Capital Receipts	142433	140287	110094	64994	117937	90824
2.2.1 Recovery of Loans & Advances	42213	44667	59515	16951	33188	19835
2.2.2 Disinvestment proceeds	100219	95621	50578	48044	84748	70989
<b>3 Gross Fiscal Deficit [ 1 - ( 2.1 + 2.2 ) ]</b>	<b>997097</b>	<b>1102729</b>	<b>1449230</b>	<b>2600335</b>	<b>2441333</b>	<b>2420614</b>
<b>3A Sources of Financing: Institution-wise</b>						
3A.1 Domestic Financing	989167	1097210	1440548	2530155	2421587	2401363
3A.1.1 Net Bank Credit to Government	144792	387091	571872	890012	627255	-----
3A.1.1.1 Net RBI Credit to Government	-144847	325987	190241	107493	350911	-----
3A.1.2 Non-Bank Credit to Government	844375	710119	868676	1640143	1794332	2401363
3A.2 External Financing	7931	5519	8682	70180	19746	19251
<b>3B Sources of Financing: Instrument-wise</b>						
3B.1 Domestic Financing	989167	1097210	1440548	2530155	2421587	2401363
3B.1.1 Market Borrowings (net)	794856	795845	971378	1696012	1377060	1808401
3B.1.2 Small Savings (net)	71222	88961	209232	458801	565522	398870
3B.1.3 State Provident Funds (net)	42351	51004	38280	41273	45133	44731
3B.1.4 Reserve Funds	18423	-18298	10411	4545	-1675	5824
3B.1.5 Deposits and Advances	25138	66289	-14227	25682	32945	34029
3B.1.6 Cash Balances	-12476	17395	-323279	-43802	260291	63850
3B.1.7 Others	49653	96014	548753	347643	142310	45659
3B.2 External Financing	7931	5519	8682	70180	19746	19251
<b>4 Total Disbursements as per cent of GDP</b>	<b>26.4</b>	<b>26.7</b>	<b>27.0</b>	<b>32.1</b>	<b>31.5</b>	<b>31.0</b>
<b>5 Total Receipts as per cent of GDP</b>	<b>26.5</b>	<b>26.6</b>	<b>28.6</b>	<b>32.3</b>	<b>30.4</b>	<b>30.8</b>
<b>6 Revenue Receipts as per cent of GDP</b>	<b>19.8</b>	<b>20.1</b>	<b>19.2</b>	<b>18.6</b>	<b>20.7</b>	<b>21.3</b>
<b>7 Tax Receipts as per cent of GDP</b>	<b>17.4</b>	<b>17.3</b>	<b>16.1</b>	<b>16.1</b>	<b>17.0</b>	<b>17.6</b>
<b>8 Gross Fiscal Deficit as per cent of GDP</b>	<b>5.8</b>	<b>5.8</b>	<b>7.2</b>	<b>13.1</b>	<b>10.3</b>	<b>9.4</b>

...: Not available. RE: Revised Estimates; BE: Budget Estimates

Source : Budget Documents of Central and State Governments.

**No. 47: Financial Accommodation Availed by State Governments under various Facilities**

(₹ Crore)

Sr. No	State/Union Territory	During January-2023					
		Special Drawing Facility (SDF)		Ways and Means Advances (WMA)		Overdraft (OD)	
		Average amount availed	Number of days availed	Average amount availed	Number of days availed	Average amount availed	Number of days availed
1	2	3	4	5	6	7	
1	Andhra Pradesh	447.49	31	2035.72	31	2135.24	14
2	Arunachal Pradesh	-	-	-	-	-	-
3	Assam	-	-	-	-	-	-
4	Bihar	-	-	-	-	-	-
5	Chhattisgarh	336.09	1	-	-	-	-
6	Goa	-	-	-	-	-	-
7	Gujarat	-	-	-	-	-	-
8	Haryana	379.16	18	229.26	9	-	-
9	Himachal Pradesh	-	-	-	-	-	-
10	Jammu & Kashmir UT	-	-	919.56	29	501.35	22
11	Jharkhand	-	-	-	-	-	-
12	Karnataka	-	-	-	-	-	-
13	Kerala	72.40	4	405.78	4	-	-
14	Madhya Pradesh	-	-	-	-	-	-
15	Maharashtra	-	-	-	-	-	-
16	Manipur	-	-	206.60	30	79.37	20
17	Meghalaya	96.68	15	78.74	11	-	-
18	Mizoram	-	-	51.53	19	-	-
19	Nagaland	-	-	128.25	16	-	-
20	Odisha	-	-	-	-	-	-
21	Puducherry	-	-	-	-	-	-
22	Punjab	2632.61	29	-	-	-	-
23	Rajasthan	5614.13	31	-	-	-	-
24	Tamil Nadu	-	-	-	-	-	-
25	Telangana	703.91	29	1534.52	28	1077.52	16
26	Tripura	-	-	-	-	-	-
27	Uttar Pradesh	-	-	-	-	-	-
28	Uttarakhand	190.53	10	333.60	7	-	-
29	West Bengal	-	-	-	-	-	-

**Notes:** 1. SDF is availed by State Governments against the collateral of Consolidated Sinking Fund (CSF), Guarantee Redemption Fund (GRF) & Auction Treasury Bills (ATBs) balances and other investments in government securities.

2. WMA is advance by Reserve Bank of India to State Governments for meeting temporary cash mismatches.

3. OD is advanced to State Governments beyond their WMA limits.

4. Average Availed is the total accommodation (SDF/WMA/OD) availed divided by number of days for which accommodation was extended during the month.

5. - : Nil.

**Source:** Reserve Bank of India.

**No. 48: Investments by State Governments**

(₹ Crore)

Sr. No	State/Union Territory	As on end of January 2023			
		Consolidated Sinking Fund (CSF)	Guarantee Redemption Fund (GRF)	Government Securities	Auction Treasury Bills (ATBs)
1	2	3	4	5	
1	Andhra Pradesh	9969	983	0	0
2	Arunachal Pradesh	2206	3	0	1800
3	Assam	4707	75	0	0
4	Bihar	8067	-	0	0
5	Chhattisgarh	6147	-	1	4008
6	Goa	820	394	0	0
7	Gujarat	9724	575	0	0
8	Haryana	1467	1462	0	0
9	Himachal Pradesh	-	-	0	0
10	Jammu & Kashmir UT	-	-	0	0
11	Jharkhand	1035	-	0	0
12	Karnataka	13062	312	0	24134
13	Kerala	2577	-	0	0
14	Madhya Pradesh	-	1102	0	0
15	Maharashtra	57616	1211	0	22000
16	Manipur	60	121	0	0
17	Meghalaya	941	66	8	0
18	Mizoram	350	66	0	0
19	Nagaland	1536	40	0	0
20	Odisha	15688	1765	102	37930
21	Puducherry	455	-	0	500
22	Punjab	6368	0	0	0
23	Rajasthan	-	-	129	7900
24	Tamil Nadu	8047	-	18	3373
25	Telangana	6804	1485	0	0
26	Tripura	834	16	0	825
27	Uttarakhand	4239	173	0	0
28	Uttar Pradesh	4729	-	116	0
29	West Bengal	10925	798	239	0
	<b>Total</b>	<b>178371</b>	<b>10646</b>	<b>612</b>	<b>102469</b>

**Notes:** 1. CSF and GRF are reserve funds maintained by some State Governments with the Reserve Bank of India.

2. ATBs include Treasury bills of 91 days, 182 days and 364 days invested by State Governments in the primary market.

3. - : Not Applicable (not a member of the scheme).

## No. 49: Market Borrowings of State Governments

(₹ Crore)

Sr. No.	State	2020-21		2021-22		2022-23						Total amount raised, so far in 2022-23	
						November		December		January			
		Gross Amount Raised	Net Amount Raised	Gross	Net								
1	2	3	4	5	6	7	8	9	10	11	12	13	
1	Andhra Pradesh	50896	40498	46443	36103	2913	2038	-	-437	3000	1834	48303	39555
2	Arunachal Pradesh	767	767	563	530	-	-	559	559	-	-	559	489
3	Assam	15030	14230	12753	10753	2400	2400	800	800	800	800	13700	13400
4	Bihar	27285	24685	28489	24334	6000	3750	6000	5000	-	-1300	25000	19622
5	Chhattisgarh	13000	10500	4000	913	-	-	-	-	-	-2000	-	-2000
6	Goa	3354	3054	2000	1450	150	-	300	300	300	150	1350	700
7	Gujarat	44780	33280	31054	13554	3000	700	2000	1000	2500	1000	28500	14800
8	Haryana	30000	25550	30500	20683	3500	2950	1500	950	2500	1360	30500	19780
9	Himachal Pradesh	6000	3755	4000	1875	2000	2000	1000	1000	1500	1500	9500	7940
10	Jammu & Kashmir UT	9328	6020	8562	5373	500	500	1495	895	700	200	6245	4506
11	Jharkhand	9400	8900	5000	3191	1000	1000	2000	1500	-	-	3000	1500
12	Karnataka	69000	61900	59000	49000	16000	14000	16000	13500	4000	4000	36000	28000
13	Kerala	28566	23066	27000	18120	4000	2364	1500	650	4103	1603	21039	9053
14	Madhya Pradesh	45573	38773	22000	13900	2000	2000	-	-	-	-	-2000	12000
15	Maharashtra	69000	50022	68750	40790	-	-1000	-	-1563	5000	4063	50000	27815
16	Manipur	1302	1044	1476	1326	-	-	122	122	150	150	1022	747
17	Meghalaya	1777	1587	1608	1298	413	263	440	440	-	-80	1753	1423
18	Mizoram	944	677	747	447	100	100	150	150	100	100	1090	975
19	Nagaland	1721	1366	1727	1222	146	-54	300	300	193	193	1515	1065
20	Odisha	3000	500	0	-6473	-	-500	-	-	-	-500	-	-5000
21	Puducherry	1390	790	1374	841	-	-	300	200	-	-302	700	198
22	Punjab	32995	23467	25814	12428	5300	4800	2245	1745	500	-	32400	22546
23	Rajasthan	57359	44273	51149	38243	1000	-500	1251	751	1500	500	30751	19669
24	Sikkim	1292	1292	1511	1471	277	277	-	-	-	-	877	807
25	Tamil Nadu	87977	76796	87000	72500	4000	3000	6000	4850	10000	8000	59000	42003
26	Telangana	43784	38782	45716	39256	2500	1875	2500	2187	3500	2666	31500	25248
27	Tripura	1916	1631	300	0	-	-90	-	-100	-	-	-	-315
28	Uttar Pradesh	75500	59185	62500	42355	-	-	-	-78	7000	7000	21000	9213
29	Uttarakhand	6200	5208	3200	1800	-	-	-	-650	500	500	1000	350
30	West Bengal	59680	50180	67390	45199	-	-2500	7000	5000	4000	3200	41000	23700
	Grand Total	798816	651777	701626	492483	57199	39373	53462	39071	51846	32637	509304	335289

- : Nil.

**Note:** The State of J&K has ceased to exist constitutionally from October 31, 2019 and the liabilities of the State continue to remain as liabilities of the new UT of Jammu and Kashmir.

**Source:** Reserve Bank of India.

**No. 50 (a): Flow of Financial Assets and Liabilities of Households - Instrument-wise**

(Amount in ₹ Crore)

Item	2019-20				
	Q1	Q2	Q3	Q4	Annual
<b>Net Financial Assets (I-II)</b>	<b>238613.6</b>	<b>476724.8</b>	<b>386450.4</b>	<b>530769.8</b>	<b>1632558.5</b>
<i>Per cent of GDP</i>	4.8	9.8	7.5	10.3	8.1
<b>I. Financial Assets</b>	<b>398076.7</b>	<b>567753.2</b>	<b>517351.0</b>	<b>924069.3</b>	<b>2407250.2</b>
<i>Per cent of GDP</i>	8.1	11.7	10.1	18.0	12.0
of which:					
1. Total Deposits (a+b)	12239.0	296625.6	124015.7	451698.3	884578.5
(a) Bank Deposits	-10550.9	278124.4	116211.9	444044.6	827830.0
i. Commercial Banks	-13293.8	269475.4	66666.7	446006.7	768855.0
ii. Co-operative Banks	2742.9	8649.0	49545.2	-1962.1	58975.0
(b) Non-Bank Deposits	22789.9	18501.2	7803.7	7653.7	56748.5
2. Life Insurance Funds	117873.1	108209.1	110373.8	37714.2	374170.2
3. Provident and Pension Funds (including PPF)	104681.1	98426.3	103356.1	193739.0	500202.5
4. Currency	61244.1	-26104.8	86832.6	160690.2	282662.1
5. Investments	43936.8	43018.8	22655.1	-11953.8	97656.9
of which:					
(a) Mutual Funds	23303.5	38382.2	19191.1	-19191.1	61685.7
(b) Equity	18648.2	2172.4	936.2	4981.0	26737.8
6. Small Savings (excluding PPF)	57038.5	46514.1	69053.6	91117.2	263723.4
<b>II. Financial Liabilities</b>	<b>159463.1</b>	<b>91028.5</b>	<b>130900.6</b>	<b>393299.5</b>	<b>774691.7</b>
<i>Per cent of GDP</i>	3.2	1.9	2.6	7.7	3.9
Loans (Borrowings) from					
1. Financial Corporations (a+b)	159429.6	90994.9	130867.1	393266.0	774557.6
(a) Banking Sector	140261.4	58074.4	114905.9	196581.1	509822.8
of which:					
Commercial Banks	135754.1	57135.0	87377.4	202214.2	482480.6
(b) Other Financial Institutions	19168.2	32920.5	15961.2	196684.8	264734.8
i. Non-Banking Financial Companies	-519.7	22976.7	29930.7	198264.3	250652.0
ii. Housing Finance Companies	17033.0	8093.1	-15710.4	-3093.1	6322.6
iii. Insurance Companies	2655.0	1850.8	1740.9	1513.6	7760.2
2. Non-Financial Corporations (Private Corporate Business)	33.8	33.8	33.8	33.8	135.1
3. General Government	-0.3	-0.3	-0.3	-0.3	-1.0

**No. 50 (a): Flow of Financial Assets and Liabilities of Households - Instrument-wise (Contd.)**

(Amount in ₹ Crore)

Item	2020-21				
	Q1	Q2	Q3	Q4	Annual
<b>Net Financial Assets (I-II)</b>	<b>600422.5</b>	<b>573643.2</b>	<b>481433.5</b>	<b>719844.5</b>	<b>2375343.7</b>
<i>Per cent of GDP</i>	15.5	12.1	8.8	12.5	12.0
<b>I. Financial Assets</b>	<b>805869.5</b>	<b>612224.3</b>	<b>651241.3</b>	<b>1092617.4</b>	<b>3161952.5</b>
<i>Per cent of GDP</i>	20.8	13.0	12.0	19.0	16.0
of which:					
1. Total Deposits (a+b)	297412.4	278631.7	158172.2	525550.7	1259767.1
(a) Bank Deposits	281191.3	264565.3	147096.0	527056.7	1219909.2
i. Commercial Banks	279010.5	262033.7	143558.6	471730.9	1156333.7
ii. Co-operative Banks	2180.8	2531.6	3537.3	55325.8	63575.6
(b) Non-Bank Deposits	16221.1	14066.4	11076.3	-1506.0	39857.9
2. Life Insurance Funds	123291.4	142365.7	156438.6	141120.0	563215.8
3. Provident and Pension Funds (including PPF)	119666.9	110916.6	108512.2	207604.5	546700.1
4. Currency	202432.7	21286.9	91456.0	66800.5	381976.1
5. Investments	6249.8	-12956.4	67659.3	63624.0	124576.7
of which:					
(a) Mutual Funds	-16021.0	-28837.7	57675.4	51267.0	64083.8
(b) Equity	18599.4	8291.5	5307.1	6333.3	38531.2
6. Small Savings (excluding PPF)	55760.7	70924.2	67947.4	86862.2	281494.6
<b>II. Financial Liabilities</b>	<b>205447.0</b>	<b>38581.1</b>	<b>169807.8</b>	<b>372772.9</b>	<b>786608.8</b>
<i>Per cent of GDP</i>	5.3	0.8	3.1	6.5	4.0
Loans (Borrowings) from					
1. Financial Corporations (a+b)	205490.3	38624.3	169851.0	372816.9	786782.5
(a) Banking Sector	211058.8	13213.0	139622.0	284732.6	648626.4
of which:					
Commercial Banks	211259.3	13213.8	140514.3	242476.0	607463.5
(b) Other Financial Institutions	-5568.6	25411.3	30229.0	88084.4	138156.1
i. Non-Banking Financial Companies	-15450.4	21627.1	15921.2	61326.1	83424.0
ii. Housing Finance Companies	10516.6	2875.1	13048.5	25336.1	51776.2
iii. Insurance Companies	-634.8	909.2	1259.3	1422.2	2955.9
2. Non-Financial Corporations (Private Corporate Business)	33.8	33.8	33.8	33.0	134.4
3. General Government	-77.0	-77.0	-77.0	-77.0	-308.0

**No. 50 (a): Flow of Financial Assets and Liabilities of Households - Instrument-wise (Concl.)**

(Amount in ₹ Crore)

Item	2021-22				
	Q1	Q2	Q3	Q4	Annual
<b>Net Financial Assets (I-II)</b>	<b>519781.2</b>	<b>358325.2</b>	<b>453302.7</b>	<b>636259.8</b>	<b>1967668.9</b>
<i>Per cent of GDP</i>	10.1	6.4	7.2	9.6	8.3
<b>I. Financial Assets</b>	<b>382780.7</b>	<b>547346.2</b>	<b>834009.6</b>	<b>796341.7</b>	<b>2560478.2</b>
<i>Per cent of GDP</i>	7.5	9.7	13.2	12.0	10.8
of which:					
1. Total Deposits (a+b)	-84377.1	202652.1	425821.4	151374.9	695471.4
(a) Bank Deposits	-106507.3	197301.2	422819.5	140297.2	653910.7
i. Commercial Banks	-108037.7	195617.4	418642.9	145510.5	651733.1
ii. Co-operative Banks	1530.4	1683.8	4176.7	-5213.3	2177.6
(b) Non-Bank Deposits	22130.2	5350.9	3001.9	11077.7	41560.7
2. Life Insurance Funds	114617.8	127356.0	103154.9	95681.7	440810.4
3. Provident and Pension Funds (including PPF)	126469.7	108777.0	91543.9	254877.2	581667.9
4. Currency	128660.2	-68631.2	62793.3	146845.0	269667.4
5. Investments	24929.6	82305.4	69760.9	50980.8	227976.7
of which:					
(a) Mutual Funds	14573.0	63151.3	37912.2	44963.7	160600.1
(b) Equity	4502.5	13218.5	27808.2	3084.1	48613.3
6. Small Savings (excluding PPF)	71423.1	93829.6	79877.9	95524.7	340655.3
<b>II. Financial Liabilities</b>	<b>-137000.5</b>	<b>189021.0</b>	<b>380706.9</b>	<b>160081.8</b>	<b>592809.2</b>
<i>Per cent of GDP</i>	-2.7	3.4	6.0	2.4	2.5
Loans (Borrowings) from					
1. Financial Corporations (a+b)	-137021.8	188999.7	380685.6	160060.6	592724.1
(a) Banking Sector	-113662.5	134166.1	320160.2	153323.3	493987.0
of which:					
Commercial Banks	-108061.2	135728.8	317452.5	152364.2	497484.4
(b) Other Financial Institutions	-23359.3	54833.7	60525.5	6737.3	98737.1
i. Non-Banking Financial Companies	-31118.4	28880.1	29479.8	-31016.3	-3774.8
ii. Housing Finance Companies	7132.0	24403.8	29494.8	37436.2	98466.8
iii. Insurance Companies	627.1	1549.8	1550.9	317.4	4045.2
2. Non-Financial Corporations (Private Corporate Business)	33.8	33.8	33.8	33.8	135.1
3. General Government	-12.5	-12.5	-12.5	-12.5	-50.0

**Notes:** 1. Net Financial Savings of households refer to the flow of net financial assets, which represents change in financial assets held by households minus change in their financial liabilities.

2. Revisions in small savings and PPF are mainly on account of quarterly figures being derived from monthly receipts data sourced from Controller General of Accounts, Government of India.

3. Revisions in bank deposits for 2021-22 are attributed to the lower share of households in total deposits as per BSR-2.

4. Data as ratios to GDP have been calculated based on the Provisional Estimates of National Income 2021-22 released on May 31, 2022.

5. Figures in the columns may not add up to the total due to rounding off.

**No. 50 (b): Stocks of Financial Assets and Liabilities of Households- Select Indicators**

(Amount in ₹ Crore)

Item	Jun-2019	Sep-2019	Dec-2019	Mar-2020
<b>Financial Assets (a+b+c+d)</b>	<b>16315506.3</b>	<b>16632816.5</b>	<b>17010694.5</b>	<b>17180616.2</b>
<i>Per cent of GDP</i>	84.7	85.4	86.2	85.6
(a) Bank Deposits (i+ii)	8858293.4	9136417.9	9252629.8	9696674.3
i. Commercial Banks	8131543.2	8401018.6	8467685.3	8913692.0
ii. Co-operative Banks	726750.2	735399.2	784944.4	782982.3
(b) Life Insurance Funds	3883609.7	3930727.6	4049902.5	3884771.5
(c) Currency	2010842.9	1984738.1	2071570.7	2232261.0
(d) Mutual Funds	1404631.5	1412654.1	1468727.6	1197092.9
<b>Financial Liabilities (a+b)</b>	<b>6370092.6</b>	<b>6461087.5</b>	<b>6591954.6</b>	<b>6985220.6</b>
<i>Per cent of GDP</i>	33.1	33.2	33.4	34.8
Loans (Borrowings) from				
(a) Banking Sector	5148115.0	5206189.4	5321095.3	5517676.4
of which:				
i. Commercial Banks	4668496.4	4725631.3	4813008.7	5015222.9
ii. Co-operative Banks	478956.2	479656.9	506946.6	501074.8
(b) Other Financial Institutions	1221977.5	1254898.1	1270859.3	1467544.1
of which:				
i. Non-Banking Financial Companies	451922.3	474899.0	504829.7	703094.0
ii. Housing Finance Companies	673312.1	681405.2	665694.8	662601.7

**No. 50 (b): Stocks of Financial Assets and Liabilities of Households- Select Indicators (Contd.)**

(Amount in ₹ Crore)

Item	Jun-2020	Sep-2020	Dec-2020	Mar-2021
<b>Financial Assets (a+b+c+d)</b>	<b>18039169.4</b>	<b>18606364.4</b>	<b>19333484.1</b>	<b>20168953.3</b>
<i>Per cent of GDP</i>	94.9	98.6	100.8	101.9
(a) Bank Deposits (i+ii)	9977865.6	10242430.9	10389526.9	10916583.6
i. Commercial Banks	9192702.5	9454736.2	9598294.8	10070025.7
ii. Co-operative Banks	785163.1	787694.7	791232.1	846557.9
(b) Life Insurance Funds	4102000.7	4274424.9	4551882.0	4718718.2
(c) Currency	2434693.7	2455980.6	2547436.6	2614237.0
(d) Mutual Funds	1343752.0	1443784.4	1648999.0	1730461.0
<b>Financial Liabilities (a+b)</b>	<b>7190710.8</b>	<b>7229335.1</b>	<b>7399186.1</b>	<b>7772003.0</b>
<i>Per cent of GDP</i>	37.8	38.3	38.6	39.3
Loans (Borrowings) from				
(a) Banking Sector	5728735.3	5741948.3	5881570.2	6166302.8
of which:				
i. Commercial Banks	5226482.2	5239696.0	5380210.4	5622686.4
ii. Co-operative Banks	500870.2	500865.3	499968.8	542221.2
(b) Other Financial Institutions	1461975.5	1487386.9	1517615.9	1605700.3
of which:				
i. Non-Banking Financial Companies	687643.6	709270.7	725191.9	786518.0
ii. Housing Finance Companies	673118.3	675993.4	689041.8	714377.9

**No. 50 (b): Stocks of Financial Assets and Liabilities of Households- Select Indicators (Concl.)**

(Amount in ₹ Crore)

Item	Jun-2021	Sep-2021	Dec-2021	Mar-2022
<b>Financial Assets (a+b+c+d)</b>	<b>20508115.7</b>	<b>21057343.4</b>	<b>21673261.7</b>	<b>22104312.7</b>
<i>Per cent of GDP</i>	97.4	95.9	95.0	93.4
(a) Bank Deposits (i+ii)	10810076.3	11007377.6	11430197.1	11570494.3
i. Commercial Banks	9961988.0	10157605.4	10576248.3	10721758.8
ii. Co-operative Banks	848088.3	849772.1	853948.8	848735.5
(b) Life Insurance Funds	4894238.5	5105262.1	5175997.5	5287980.3
(c) Currency	2742897.3	2674266.1	2737059.4	2883904.4
(d) Mutual Funds	1855000.1	2064363.5	2126112.0	2152140.5
<b>Financial Liabilities (a+b)</b>	<b>7634981.2</b>	<b>7823980.9</b>	<b>8204666.6</b>	<b>8364727.1</b>
<i>Per cent of GDP</i>	36.3	35.6	36.0	35.3
Loans (Borrowings) from				
(a) Banking Sector	6052640.2	6186806.3	6506966.5	6660289.7
of which:				
i. Commercial Banks	5514625.2	5650354.1	5967806.6	6120170.8
ii. Co-operative Banks	536604.9	535027.3	537720.1	538664.3
(b) Other Financial Institutions	1582341.0	1637174.6	1697700.1	1704437.4
of which:				
i. Non-Banking Financial Companies	755399.6	784279.7	813759.5	782743.2
ii. Housing Finance Companies	721510.0	745913.7	775408.5	812844.7

**Notes:** 1. Data have been compiled for select financial instruments only (loans from Banking Sector, NBFCs and HFCs) for which data are available.

2. Data as ratios to GDP have been calculated based on the Provisional Estimates of National Income 2021-22 released on May 31, 2022.

3. Figures in the columns may not add up to the total due to rounding off.

**Explanatory Notes to the Current Statistics**

**Table No. 1**

- 1.2& 6: Annual data are average of months.  
3.5 & 3.7: Relate to ratios of increments over financial year so far.  
4.1 to 4.4, 4.8, 4.9 & 5: Relate to the last Friday of the month/financial year.  
4.5, 4.6 & 4.7: Relate to five major banks on the last Friday of the month/financial year.  
4.10 to 4.12: Relate to the last auction day of the month/financial year.  
4.13: Relate to last day of the month/ financial year  
7.1&7.2: Relate to Foreign trade in US Dollar.

**Table No. 2**

- 2.1.2: Include paid-up capital, reserve fund and Long-Term Operations Funds.  
2.2.2: Include cash, fixed deposits and short-term securities/bonds, e.g., issued by IIFC (UK).

**Table No. 4**

Maturity-wise position of outstanding forward contracts is available at <http://nsdp.rbi.org.in> under "Reserves Template".

**Table No. 5**

Special refinance facility to Others, i.e. to the EXIM Bank, is closed since March 31, 2013.

**Table No. 6**

- For scheduled banks, March-end data pertain to the last reporting Friday.  
2.2: Exclude balances held in IMF Account No.1, RBI employees' provident fund, pension fund, gratuity and superannuation fund.

**Table Nos. 7 & 11**

3.1 in Table 7 and 2.4 in Table 11: Include foreign currency denominated bonds issued by IIFC (UK).

**Table No. 8**

- NM<sub>2</sub> and NM<sub>3</sub> do not include FCNR (B) deposits.  
2.4: Consist of paid-up capital and reserves.  
2.5: includes other demand and time liabilities of the banking system.

**Table No. 9**

- Financial institutions comprise EXIM Bank, SIDBI, NABARD and NHB.  
L<sub>1</sub> and L<sub>2</sub> are compiled monthly and L<sub>3</sub> quarterly.  
Wherever data are not available, the last available data have been repeated.

**Table No. 13**

Data against column Nos. (1), (2) & (3) are Final and for column Nos. (4) & (5) data are Provisional.

**Table No. 14**

Data in column Nos. (4) & (8) are Provisional.

**Table No. 17**

2.1.1: Exclude reserve fund maintained by co-operative societies with State Co-operative Banks

2.1.2: Exclude borrowings from RBI, SBI, IDBI, NABARD, notified banks and State Governments.

4: Include borrowings from IDBI and NABARD.

**Table No. 24**

Primary Dealers (PDs) include banks undertaking PD business.

**Table No. 30**

Exclude private placement and offer for sale.

1: Exclude bonus shares.

2: Include cumulative convertible preference shares and equi-preference shares.

**Table No. 32**

Exclude investment in foreign currency denominated bonds issued by IIFC (UK), SDRs transferred by Government of India to RBI and foreign currency received under SAARC SWAP arrangement. Foreign currency assets in US dollar take into account appreciation/depreciation of non-US currencies (such as Euro, Sterling, Yen and Australian Dollar) held in reserves. Foreign exchange holdings are converted into rupees at rupee-US dollar RBI holding rates.

**Table No. 34**

1.1.1.1.2 & 1.1.1.1.4: Estimates.

1.1.1.2: Estimates for latest months.

'Other capital' pertains to debt transactions between parent and subsidiaries/branches of FDI enterprises.

Data may not tally with the BoP data due to lag in reporting.

**Table No. 35**

1.10: Include items such as subscription to journals, maintenance of investment abroad, student loan repayments and credit card payments.

**Table No. 36**

Increase in indices indicates appreciation of rupee and vice versa. For 6-Currency index, base year 2020-21 is a moving one, which gets updated every year. REER figures are based on Consumer Price Index (combined). The details on methodology used for compilation of NEER/REER indices are available in December 2005, April 2014 and January 2021 issues of the RBI Bulletin.

**Table No. 37**

Based on applications for ECB/Foreign Currency Convertible Bonds (FCCBs) which have been allotted loan registration number during the period.

**Table Nos. 38, 39, 40 & 41**

Explanatory notes on these tables are available in December issue of RBI Bulletin, 2012.

**Table No. 43**

## Part I-A. Settlement systems

1.1.3: Tri- party Repo under the securities segment has been operationalised from November 05, 2018.

## Part I-B. Payments systems

4.1.2: 'Others' includes e-commerce transactions and digital bill payments through ATMs, etc.

4.2.2: 'Others' includes e-commerce transactions, card to card transfers and digital bill payments through ATMs, etc.

5: Available from December 2010.

5.1: includes purchase of goods and services and fund transfer through wallets.

5.2.2: includes usage of PPI Cards for online transactions and other transactions.

6.1: Pertain to three grids – Mumbai, New Delhi and Chennai.

6.2: 'Others' comprises of Non-MICR transactions which pertains to clearing houses managed by 21 banks.

## Part II-A. Other payment channels

1: Mobile Payments –

- Include transactions done through mobile apps of banks and UPI apps.
- The data from July 2017 includes only individual payments and corporate payments initiated, processed, and authorised using mobile device. Other corporate payments which are not initiated, processed, and authorised using mobile device are excluded.

2: Internet Payments – includes only e-commerce transactions through 'netbanking' and any financial transaction using internet banking website of the bank.

## Part II-B. ATMs

3.3 and 4.2: only relates to transactions using bank issued PPIs.

## Part III. Payment systems infrastructure

3: Includes ATMs deployed by Scheduled Commercial Banks (SCBs) and White Label ATM Operators (WLAs). WLAs are included from April 2014 onwards.

**Table No. 45**

(-): represents nil or negligible

The revised table format since June 2016, incorporates the ownership pattern of State Governments Securities and Treasury Bills along with the Central Government Securities.

State Government Securities include special bonds issued under Ujwal DISCOM Assurance Yojana (UDAY) scheme. Bank PDs are clubbed under Commercial Banks. However, they form very small fraction of total outstanding securities.

The category 'Others' comprises State Governments, Pension Funds, PSUs, Trusts, HUF/Individuals etc.

**Table No. 46**

GDP data is based on 2011-12 base. GDP for 2022-23 is from Union Budget 2022-23.

Data pertains to all States and Union Territories.

1 & 2: Data are net of repayments of the Central Government (including repayments to the NSSF) and State Governments.

1.3: Represents compensation and assignments by States to local bodies and Panchayati Raj institutions.

2: Data are net of variation in cash balances of the Central and State Governments and includes borrowing receipts of the Central and State Governments.

3A.1.1: Data as per RBI records.

3B.1.1: Borrowings through dated securities.

3B.1.2: Represent net investment in Central and State Governments' special securities by the National Small Savings Fund (NSSF).

This data may vary from previous publications due to adjustments across components with availability of new data.

3B.1.6: Include Ways and Means Advances by the Centre to the State Governments.

3B.1.7: Include Treasury Bills, loans from financial institutions, insurance and pension funds, remittances, cash balance investment account.

**Table No. 47**

SDF is availed by State Governments against the collateral of Consolidated Sinking Fund (CSF), Guarantee Redemption Fund (GRF) & Auction Treasury Bills (ATBs) balances and other investments in government securities.

WMA is advance by Reserve Bank of India to State Governments for meeting temporary cash mismatches.

OD is advanced to State Governments beyond their WMA limits.

Average amount Availed is the total accommodation (SDF/WMA/OD) availed divided by number of days for which accommodation was extended during the month.

- : Nil.

**Table No. 48**

CSF and GRF are reserve funds maintained by some State Governments with the Reserve Bank of India.

ATBs include Treasury bills of 91 days, 182 days and 364 days invested by State Governments in the primary market.

--: Not Applicable (not a member of the scheme).

The concepts and methodologies for Current Statistics are available in Comprehensive Guide for Current Statistics of the RBI Monthly Bulletin (<https://rbi.org.in/Scripts/PublicationsView.aspx?id=17618>)

Time series data of 'Current Statistics' is available at <https://dbie.rbi.org.in>.

Detailed explanatory notes are available in the relevant press releases issued by RBI and other publications/releases of the Bank such as **Handbook of Statistics on the Indian Economy**.

### Recent Publications of the Reserve Bank of India

<b>Name of Publication</b>	<b>Price</b>	
	<b>India</b>	<b>Abroad</b>
1. Reserve Bank of India Bulletin 2023	₹350 per copy ₹250 per copy (concessional rate*) ₹4,000 (one year subscription) ₹3,000 (one year concessional rate*)	US\$ 15 per copy US\$ 150 (one-year subscription) (inclusive of air mail courier charges)
2. Handbook of Statistics on the Indian States 2021-22	₹550 (Normal) ₹600 (inclusive of postage)	US\$ 24 (inclusive of air mail courier charges)
3. Handbook of Statistics on the Indian Economy 2021-22	₹600 (Normal) ₹650 (inclusive of postage) ₹450 (concessional) ₹500 (concessional with postage)	US\$ 50 (inclusive of air mail courier charges)
4. State Finances - A Study of Budgets of 2022-23	₹600 per copy (over the counter) ₹650 per copy (inclusive of postal charges)	US\$ 24 per copy (inclusive of air mail courier charges)
5. Report on Currency and Finance 2021-22	₹575 per copy (over the counter) ₹625 per copy (inclusive of postal charges)	US\$ 22 per copy (inclusive of air mail courier charges)
6. Report of the committee on Fuller Capital account Convertibility (Tarapore Committee Report II)	₹140 per copy (over the counter) ₹170 per copy (inclusive of postal charges)	US\$ 25 per copy (inclusive of air mail courier charges)
7. Banking Glossary (2012)	₹80 per copy (over the counter) ₹120 per copy (inclusive of postal charges)	
8. Anuvad Ke Vividh Aayam (Hindi)	₹165 per copy (over the counter) ₹205 per copy (inclusive of postal charges)	
9. Bank Me Rajbhasha Niti Ka Karyanvayan: Dasha Aur Disha (Hindi)	₹150 per copy (over the counter) ₹200 per copy (inclusive of postal charges)	
10. Reserve Bank of India Occasional Papers Vol. 43, No. 1, 2022	₹200 per copy (over the counter) ₹250 per copy (inclusive of postal charges)	US\$ 18 per copy (inclusive of air mail courier charges)
11. Reserve Bank of India Occasional Papers Vol. 42, No. 2, 2021	₹200 per copy (over the counter) ₹250 per copy (inclusive of postal charges)	US\$ 18 per copy (inclusive of air mail courier charges)
12. Perspectives on Central Banking Governors Speak (1935-2010) Platinum Jubilee	₹1400 per copy (over the counter)	US\$ 50 per copy (inclusive of air mail courier charges)
13. Report on Municipal Finances	₹300 per copy (over the counter) ₹350 per copy (inclusive of postal charges)	US\$ 16 per copy (inclusive of air mail courier charges)

**Notes**

1. Many of the above publications are available at the RBI website ([www.rbi.org.in](http://www.rbi.org.in)).
2. Time Series data are available at the Database on Indian Economy (<http://dbie.rbi.org.in>).
3. The Reserve Bank of India History 1935-1997 (4 Volumes), Challenges to Central Banking in the Context of Financial Crisis and the Regional Economy of India: Growth and Finance are available at leading book stores in India.
- \* Concession is available for students, teachers/lecturers, academic/education institutions, public libraries and Booksellers in India provided the proof of eligibility is submitted.

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