

RESERVE BANK OF INDIA
BULLETIN



APRIL 2023

VOLUME LXXVII NUMBER 4

Chair

Michael Debabrata Patra

Editorial Committee

Ajit R. Joshi

Deba Prasad Rath

Muneesh Kapur

Rekha Misra

Indranil Bhattacharya

Snehal Herwadkar

Pankaj Kumar

Tushar Baran Das

V. Dhanya

Shweta Kumari

Sujata Kundu

Editor

G. V Nadhanael

The Reserve Bank of India Bulletin is issued monthly by the Department of Economic and Policy Research, Reserve Bank of India, under the direction of the Editorial Committee.

The Central Board of the Bank is not responsible for interpretation and opinions expressed. In the case of signed articles, the responsibility is that of the author.

© Reserve Bank of India 2023

All rights reserved.

Reproduction is permitted provided an acknowledgment of the source is made.

For subscription to Bulletin, please refer to Section 'Recent Publications'

The Reserve Bank of India Bulletin can be accessed at <https://bulletin.rbi.org.in>

CONTENTS

Governor's Statement

Governor's Statement	1
----------------------	---

Monetary Policy Statement for 2023-24

Monetary Policy Statement, 2023-24 Resolution of the Monetary Policy Committee (MPC) April 3-6, 2023	7
--	---

Statement on Developmental and Regulatory Policies

Statement on Developmental and Regulatory Policies	11
--	----

Monetary Policy Report

Monetary Policy Report - April 2023	13
-------------------------------------	----

Speech

Financial Sector as an Enabler for Developed India M. Rajeshwar Rao	103
--	-----

Articles

State of the Economy	109
----------------------	-----

Recent Regime Reversal in Inflation: The Indian Experience	153
--	-----

Capital Outlay of Indian States: An Empirical Assessment of its Role and Determinants	163
---	-----

Industrial Relations Code and Labour Productivity: A Cross-Country Meta-Analysis	173
---	-----

A Composite Indicator of Realty Sector Activity in India	183
--	-----

Current Statistics

Recent Publications	248
----------------------------	------------

GOVERNOR'S STATEMENT

Governor's Statement

Governor's Statement*

Shaktikanta Das

The year 2023 began on a promising note as supply conditions were improving, economic activity remained resilient, financial markets exuded greater optimism and central banks were steering their economies towards a soft landing. In just a few weeks during March, this narrative has undergone a dramatic shift. The global economy is now witnessing a renewed phase of turbulence with fresh headwinds from the banking sector turmoil in some advanced economies. Bank failures and contagion risk have brought financial stability issues to the forefront. Given the stubbornness in inflation, central banks continue to tighten monetary policy, although at a reduced pace. Inflation globally has moderated in the recent months, but its descent to the target is proving to be long and arduous.

The former chairman of the US Federal Reserve Alan Greenspan had once said: "*Uncertainty is the defining characteristic of the monetary policy landscape.*"¹ This he was talking in an era of great moderation and in more normal times compared to today's situation. What we are witnessing today is unprecedented uncertainty in geopolitics, economic activity, price pressures and financial markets never seen before. One can imagine the magnitude of challenges central banks and other policy makers face in today's world.

Decisions and Deliberations of the Monetary Policy Committee (MPC)

The Monetary Policy Committee (MPC) met on 3rd, 5th and 6th April 2023 and assessed the macroeconomic situation and its outlook. It decided unanimously

to keep the policy repo rate unchanged at 6.50 per cent in this meeting with readiness to act, should the situation so warrant. Consequently, the standing deposit facility (SDF) rate will remain unchanged at 6.25 per cent and the marginal standing facility (MSF) rate and the Bank Rate at 6.75 per cent. The MPC also decided by a majority of 5 out of 6 members to remain focused on withdrawal of accommodation to ensure that inflation progressively aligns with the target, while supporting growth. Let me emphasise that the decision to pause on the repo rate is for this meeting only.

I would now like to explain the MPC's rationale for these decisions on the policy rate and the stance. While the recent high frequency indicators suggest some improvement in global economic activity, the outlook is now tempered by additional downside risks from financial stability concerns. Headline inflation is moderating but remains well above the targets of central banks. These developments have led to heightened volatility in global financial markets as reflected in sizeable two-way movements in bond yields, fall in equity markets and the US dollar shedding its gains from its peak of September 2022.

Amidst this volatility, the banking and non-banking financial service sectors in India remain healthy and financial markets have evolved in an orderly manner. Economic activity remains resilient and real GDP growth is expected to have been 7.0 per cent in 2022-23. Consumer price inflation, however, has increased since December 2022, driven by price pressures in cereals, milk and fruits. Core inflation remains elevated.

Looking ahead, headline inflation is projected to moderate in 2023-24. The monetary policy actions taken since May 2022 are still working through the system. Accordingly, the MPC decided to keep the policy rate unchanged to assess the progress made so far, while closely monitoring the evolving inflation

* Governor's Statement - April 6, 2023.

¹ "Monetary Policy under Uncertainty", Jackson Hole Symposium, Wyoming, August 29, 2003.

outlook. The MPC will not hesitate to take further action as may be required in its future meetings.

To recapitulate the actions taken so far, we have increased the policy repo rate cumulatively by 250 bps in the last 11 months starting May 2022. This was preceded by the introduction of the Standing Deposit Facility (SDF) at a rate 40 bps higher than the fixed rate reverse repo. Thus, the effective rate hike since April last year has been 290 bps. These increases have been fully transmitted to the overnight weighted average call money rate (WACR), the operating target of monetary policy, which has gone up from daily average of 3.32 per cent in March 2022 to 6.52 per cent in March 2023. It is now necessary to evaluate the cumulative impact of these rate hikes. Under these circumstances, we have to be extremely prudent in our actions. We have always been very watchful and have adopted a calibrated and balanced approach and will continue to do so.

When we started the rate cut cycle in February 2019 to provide support to growth, the CPI inflation was around 2 per cent² and the policy repo rate was 6.50 per cent. Now, the policy rate is 6.50 per cent but inflation is 6.4 per cent (February 2023). Overall, inflation is above the target and given its current level, the present policy rate can still be regarded as accommodative. Hence, the MPC decided to remain focused on withdrawal of accommodation.

Assessment of Growth and Inflation

Growth

As stated earlier, India's real gross domestic product (GDP) is expected to have recorded a growth of 7.0 per cent in 2022-23. Hence, economic activity remains resilient.

On the supply side, *rabi* foodgrains production is estimated to increase by 6.2 per cent in 2022-23.

² CPI inflation was 2.1 per cent in December 2018 and 2.0 per cent in January 2019.

PMI manufacturing remained robust at 56.4 in March, recording expansion for the 21st consecutive month due to favourable domestic demand. Services sector activity exhibited buoyancy. PMI services remained in expansion zone at 57.8 in March, driven by favourable demand conditions and new business gains.

Aggregate demand conditions were resilient in Q4 of 2022-23, even as private consumption showed some signs of slowdown. Urban demand indicators like passenger vehicle sales and credit cards spending registered robust growth in February, while consumer durables contracted in January. Rural demand indicators such as consumer non-durables, tractor and two wheeler sales registered healthy growth. Investment activity exhibited buoyancy on the back of government's thrust on infrastructure spending, high capacity utilisation and revival in corporate investment in certain key sectors.³ Non-food bank credit rose by 15.4 per cent (y-o-y) as on March 24, 2023. The total flow of resources to the commercial sector has increased by ₹26.0 lakh crore during 2022-23 as against ₹19.0 lakh crore a year ago. Merchandise exports and non-oil non-gold imports contracted in February. Services exports continued to register robust growth. Supply chains are returning to normalcy globally as well as domestically.

Looking ahead, the higher *rabi* production has brightened the prospects for agriculture sector and rural demand. The steady growth in contact-intensive services should be positive for urban demand. The government's focus on capital expenditure, capacity utilisation above long-period average and moderating commodity prices should bolster manufacturing and investment activity. The drag from net external demand may continue due to increased global headwinds. The protracted geopolitical tensions and global financial market volatility pose downside risks to the outlook.

³ Steel consumption and cement production rose by 12.5 per cent and 7.3 per cent, respectively, in February 2023. Capacity utilisation in the manufacturing sector in Q3:2022-23 was 74.3 per cent (74.1 per cent, seasonally adjusted), above the long-period average of 73.7 per cent.

Taking all these factors into consideration, real GDP growth for 2023-24 is projected at 6.5 per cent, with Q1 at 7.8 per cent; Q2 at 6.2 per cent; Q3 at 6.1 per cent; and Q4 at 5.9 per cent. The risks are evenly balanced.

Inflation

The softening in inflation during November-December 2022 turned out to be transitory with CPI headline inflation breaching the upper tolerance threshold during January-February 2023.⁴ A sharp turnaround in food inflation drove the pick-up in headline inflation as core inflation remained elevated across a range of goods and services.

Looking ahead, the expectation of a record *rabi* harvest bodes well for easing of food price pressures. There is already evidence of a correction in wheat prices in March on supply side interventions by the Government. The impact of the recent unseasonal rains in some parts of the country, however, needs to be watched. Global commodity prices have moderated significantly from their heightened levels a year ago. As our surveys point out, cost conditions have somewhat eased. Inflation expectations of households have also edged down. On the upside, adverse climatic conditions are a risk to the future inflation trajectory. Milk prices are also likely to remain firm going into the summer season due to tight demand-supply balance and fodder cost pressures. The rising uncertainty in international financial markets and imported inflation pressures need to be monitored closely. Taking into account these factors and assuming an annual average crude oil price (Indian basket) of US\$ 85 per barrel and a normal monsoon, CPI inflation is projected to moderate to 5.2 per cent for 2023-24; with Q1 at 5.1 per cent; Q2 at 5.4 per cent; Q3 at 5.4 per cent; and Q4 at 5.2 per cent. The risks are evenly balanced.

Let me now summarise what I have said so far. We are living in very volatile times. The sudden announcement of an output cut by OPEC+ a few days ago and the resultant jump in crude oil prices is yet another evidence of this volatility. The overall outlook thus remains dynamic and fast evolving. Our monetary policy in the recent period has aimed for a non-disruptive normalisation from the pandemic era stimulus measures. Even as monetary policy moved decisively to withdrawal of accommodation, financial conditions evolved in line with the productive requirements of the economy. Growth has since then become broad-based. Inflation has softened from its elevated levels a year ago; however, it still remains above the upper tolerance band. Projections for 2023-24 point to a softening in inflation, though the disinflation is likely to be gradual and protracted, given the rigidity in core or underlying inflation pressures. At this stage, we remain watchful of the evolving outlook and the impact of our actions during the past one year on the broader real economy. While we have kept the policy rate unchanged, it is important to bear in mind that that this decision was taken on the basis of our assessment of the macroeconomic and financial conditions with reference to the information available up to today. Our job is not yet finished and the war against inflation has to continue until we see a durable decline in inflation closer to the target. We stand ready to act appropriately and in time. We are confident that we are on the right track to bring down inflation to the target rate over the medium term. As we proceed towards this objective, I recall the wise counsel of *Kautilya* more than two thousand years ago: "*Be not slack before the whole job is finished.*"⁵

Financial Stability

With the fight against inflation far from over, the global economy is now confronted with serious

⁴ From a recent low of 5.7 per cent in December 2022, headline inflation increased by 80 bps to 6.5 per cent in January and 6.4 per cent in February 2023.

⁵ *Chanakya Neeti*, By B.K. Chaturvedi.

financial stability challenges from the recent banking sector developments in some advanced economies. This calls for a reappraisal of the responsibilities of the regulators and the regulated entities world over and their collective role in safeguarding the stability of the financial system. While regulators need to identify potential vulnerabilities and take proactive regulatory and supervisory measures, it is incumbent upon the regulated institutions to exercise due diligence in their risk management and corporate governance practices. They need to pay close attention to asset-liability mismatches and profile of their deposit base, while building up adequate capital buffers and conducting periodic stress tests.

It is in this context that we, in the Reserve Bank, have focused on macro-and micro-prudential measures in recent years to prevent build-up of financial vulnerabilities. We have adopted a prudent approach towards regulation and supervision and have taken several steps in these areas in recent years.⁶ Some of these regulatory measures are listed in the footnote of this statement.

Our supervisory systems have also been strengthened significantly in recent years. We have adopted a unified and harmonised supervisory approach for commercial banks, NBFCs and urban cooperative banks (UCBs).⁷ The focus is now more on identifying the root cause of vulnerabilities, rather than dealing with the symptoms alone. As a result, the Indian banking system remains sound and healthy,

⁶ These measures include implementation of leverage ratio, liquidity coverage ratio (LCR), net stable funding ratio (NSFR), large exposures framework (LEF), guidelines on governance in commercial banks, scale-based regulatory (SBR) framework for NBFCs, among others. To create a buffer to shield banks from adverse yield movements, the Reserve Bank had advised banks to create an investment fluctuation reserve (IFR) with a desirable floor of IFR at 2 per cent of the held-for-trading (HFT) and available for sale (AFS) portfolios. Moreover, the capital and liquidity requirements are uniformly applied to all banks, irrespective of their asset size and exposure.

⁷ Das, Shaktikanta (2023), "G20 for a Better Global Economic Order during India's Presidency", 17th K P Hormis Commemorative Lecture, March 17, available at https://www.rbi.org.in/Scripts/BS_SpeechesView.aspx?Id=1356

with strong capital and liquidity positions, improving asset quality, better provisioning coverage along with improved profitability.⁸

Nevertheless, we are keeping a close watch on the banking sector turmoil in some developed countries. In this context, let me once again recall Kautilya's wisdom, which remains relevant even for today's world: "*In the interests of the prosperity of the country,[we] should be diligent in foreseeing the possibility of calamities, try to avert them before they arise, overcome those which happen, remove all obstructions to economic activity*".⁹

Liquidity and Financial Market Conditions

The Reserve Bank will continue to adopt a nuanced and agile approach to liquidity management. Amidst large moderation in surplus liquidity, the Reserve Bank conducted 14-day variable rate repo (VRR) auctions (main operation) on February 10 and March 10 and a fine-tuning 5-day VRR auction on March 24, 2023. In the period ahead, the Reserve Bank will remain flexible in meeting the productive requirements of the economy through two-way operations, as may be necessary. We will also ensure the completion of the Government borrowing programme in a non-disruptive manner while maintaining orderly market conditions during 2023-24.

The Indian Rupee has moved in an orderly manner in the calendar year 2022 and continues to be so in 2023 also. This is reflective of the strength of domestic macroeconomic fundamentals and the resilience of the Indian economy to global spillovers. We remain watchful and focused on maintaining stability of the Indian rupee.

⁸ The Capital to Risk Weighted Asset Ratio (CRAR) for the banking system at 16.0 per cent as at end-December 2022 remained well above the required minimum of 9.0 per cent. The Liquidity Coverage Ratio (LCR) of SCBs remained at 145 per cent in February 2023, while the Net Stable Funding Ratio, the long-term measure for liquidity, of SCBs is well above the minimum regulatory requirement of 100 per cent. The net NPAs of the banking system were 1.2 per cent in December 2022.

⁹ Source: The Arthashastra, Kautilya, edited by L.N. Rangarajan

External Sector

The current account deficit (CAD) for the first three quarters of 2022-23 stood at 2.7 per cent of GDP. In Q3, CAD narrowed significantly to 2.2 per cent from 3.7 per cent in Q2 on account of lower merchandise trade deficit and robust growth in services exports. Strong software services export growth was witnessed across key verticals such as IT services, Business Process Management (BPM), and engineering research and design (ER&D), supported by a rise in global capability centres (GCCs).

The merchandise trade deficit further narrowed during January and February 2023 from its level in Q3:2022-23 on the back of a sustained decline in imports. Moreover, India's services exports continued to grow at a healthy pace in the first two months of 2023. Better growth prospects of the gulf cooperation council (GCC) countries are expected to keep remittances robust. In fact, inward gross remittances touched an all-time high of US\$ 107.5 billion during calendar year 2022. The CAD is expected to remain moderate in Q4:2022-23 and in the year 2023-24 at a level that is both viable and eminently manageable.

Overall, our external sector indicators have improved significantly. Foreign exchange reserves have rebounded from US\$ 524.5 billion on October 21, 2022 and now stand in excess of US\$ 600 billion taking into account our forward assets.

Additional Measures

I shall now announce certain additional measures.

Developing an Onshore Non-deliverable Derivative Market

Banks in India with IFSC Banking Units (IBUs) were earlier permitted to transact in Indian Rupee (INR) non-deliverable foreign exchange derivative contracts (NDDCs) with non-residents and with other eligible banks having IBUs. It is now proposed to permit banks with IBUs to offer NDDCs involving INR

to resident users in the onshore market. This measure will further deepen the forex market in India and provide enhanced flexibility to residents in meeting their hedging requirements.

Enhancing Efficiency of Regulatory Processes

At present, the processes for entities to make applications seeking license / authorisation or regulatory approvals from the Reserve Bank under various statutes / regulations take place in both online and off-line modes. To simplify and streamline such processes and in line with the Union Budget 2023-24 announcement, it has been decided to have a secured web based centralised portal named as 'PRAVAAH' (Platform for Regulatory Application, Validation And Authorisation) for such processes. The portal will show time limits for deciding on the applications/ approvals sought. This measure will bring greater efficiencies into regulatory processes and facilitate ease of doing business for the regulated entities of the Reserve Bank.

Development of Centralised Web Portal for the Public to Search Unclaimed Deposits

At present, the depositors or beneficiaries of unclaimed bank deposits of 10 years or more have to go through the websites of multiple banks to locate such deposits. Now, in order to improve and widen the access of depositors / beneficiaries to information on such unclaimed deposits, it has been decided to develop a web portal to enable search across multiple banks for possible unclaimed deposits. This will help depositors/beneficiaries in getting back unclaimed deposits.

Grievance Redress Mechanism relating to Credit Information Reporting by Credit Institutions and Credit information provided by Credit Information Companies

Recently, the Credit Information Companies (CICs) were brought under the purview of the Reserve

Bank Integrated Ombudsman Scheme (RB-IOS). It is now proposed to put in place the following measures: (i) a compensation mechanism for delayed updation/rectification of credit information reports; (ii) a provision for SMS/email alerts to customers whenever their credit information reports are accessed; (iii) a timeframe for inclusion of data received by CICs from Credit Institutions; and (iv) disclosures on customer complaints received by CICs. These measures will further enhance consumer protection.

Operation of Pre-Sanctioned Credit Lines at Banks through the UPI

The Unified Payments Interface (UPI) has transformed retail payments in India. UPI's robustness has been leveraged to develop new products and features from time to time. Recently, RuPay credit cards were permitted to be linked to UPI. This was in addition to the existing facility of linkage of UPI with deposit accounts. It is now proposed to expand the scope of UPI by permitting operation of pre-sanctioned credit lines at banks through the UPI. This initiative will further encourage innovation.

Conclusion

Since early 2020, the world is going through a period of extreme uncertainty. In this daunting

environment, India's financial sector remains resilient and stable. Overall, the broadening of economic activity; the expected moderation in inflation; the fiscal consolidation with focus on capital spending; the significant narrowing of the current account deficit to more sustainable levels; and the comfortable level of foreign exchange reserves are welcome developments which will further bolster India's macroeconomic stability. This allows monetary policy to remain unwaveringly focused on inflation. With unyielding core inflation, we remain firm and resolute in our pursuit of price stability which is the best guarantee for sustainable growth. The impact of our actions over the past 12 months is still playing out and would increasingly weigh on the future inflation trajectory. As I noted in my policy statement in April last year, our goals of price stability, sustained growth and financial stability are mutually reinforcing and we continue to be guided by this approach. We remain vigilant and ready to face the challenges with a firm commitment to price and financial stability. We are inspired by what Mahatma Gandhi had said: "...inexhaustible perseverance and patience... knows no defeat."¹⁰

Thank you. Namaskar.

¹⁰ Mahatma, Vol. 4., by D. G. Tendulkar

MONETARY POLICY STATEMENT FOR 2023-24

Resolution of the Monetary Policy Committee (MPC)
April 3-6, 2023

Monetary Policy Statement, 2023-24 Resolution of the Monetary Policy Committee (MPC)*

On the basis of an assessment of the current and evolving macroeconomic situation, the Monetary Policy Committee (MPC) at its meeting today (April 6, 2023) decided to:

- Keep the policy repo rate under the liquidity adjustment facility (LAF) unchanged at 6.50 per cent.

The standing deposit facility (SDF) rate remains unchanged at 6.25 per cent and the marginal standing facility (MSF) rate and the Bank Rate at 6.75 per cent.

- The MPC also decided to remain focused on withdrawal of accommodation to ensure that inflation progressively aligns with the target, while supporting growth.

These decisions are in consonance with the objective of achieving the medium-term target for consumer price index (CPI) inflation of 4 per cent within a band of +/- 2 per cent, while supporting growth.

The main considerations underlying the decision are set out in the statement below.

Assessment

Global Economy

2. Global economic activity remains resilient amidst the persistence of inflation at elevated levels, turmoil in the banking system in some advanced economies (AEs), tight financial conditions and lingering geopolitical hostilities. Recent financial stability concerns have triggered risk aversion, flights

to safety and heightened financial market volatility. Sovereign bond yields fell steeply in March on safe haven demand, reversing the sharp increase in February over aggressive monetary stances and communication. Equity markets have declined since the last MPC meeting and the US dollar has pared its gains. Weakening external demand, spillovers from the banking crisis in some AEs, volatile capital flows and debt distress in certain vulnerable economies weigh on growth prospects.

Domestic Economy

3. The second advance estimates (SAE) released by the National Statistical Office (NSO) on February 28, 2023 placed India's real gross domestic product (GDP) growth at 7.0 per cent in 2022-23. Private consumption and public investment were the major drivers of growth.

4. Economic activity remained resilient in Q4. Rabi foodgrains production is expected to increase by 6.2 per cent in 2022-23. The index of industrial production (IIP) expanded by 5.2 per cent in January while the output of eight core industries rose even faster by 8.9 per cent in January and 6.0 per cent in February, indicative of the strength of industrial activity. In the services sector, domestic air passenger traffic, port freight traffic, e-way bills and toll collections posted healthy growth in Q4, while railway freight traffic registered a modest growth. Purchasing managers' indices (PMIs) pointed towards sustained expansion in both manufacturing and services in March.

5. Amongst urban demand indicators, passenger vehicle sales recorded strong growth in February while consumer durables contracted in January. Among rural demand indicators, tractor and two-wheeler sales were robust in February. As regards investment activity, growth in steel consumption and cement output accelerated in February. Merchandise exports and non-oil non-gold imports contracted in February while the strong growth in services exports continued.

* Released on April 6, 2023.

6. CPI headline inflation rose from 5.7 per cent in December 2022 to 6.4 per cent in February 2023 on the back of higher inflation in cereals, milk and fruits and slower deflation in vegetables prices. Fuel inflation remained elevated, though some softening was witnessed in February due to a fall in kerosene (PDS) prices and favourable base effects. Core inflation (i.e., CPI excluding food and fuel) remained elevated and was above 6 per cent in January-February. The moderation observed in inflation in clothing and footwear, and transportation and communication was largely offset by a pick-up in inflation in personal care and effects and housing.

7. The average daily absorption under the LAF moderated to ₹1.4 lakh crore during February-March from an average of ₹1.6 lakh crore in December-January. During 2022-23, money supply (M3) expanded by 9.0 per cent and non-food bank credit rose by 15.4 per cent. India's foreign exchange reserves were placed at US\$ 578.4 billion as on March 31, 2023.

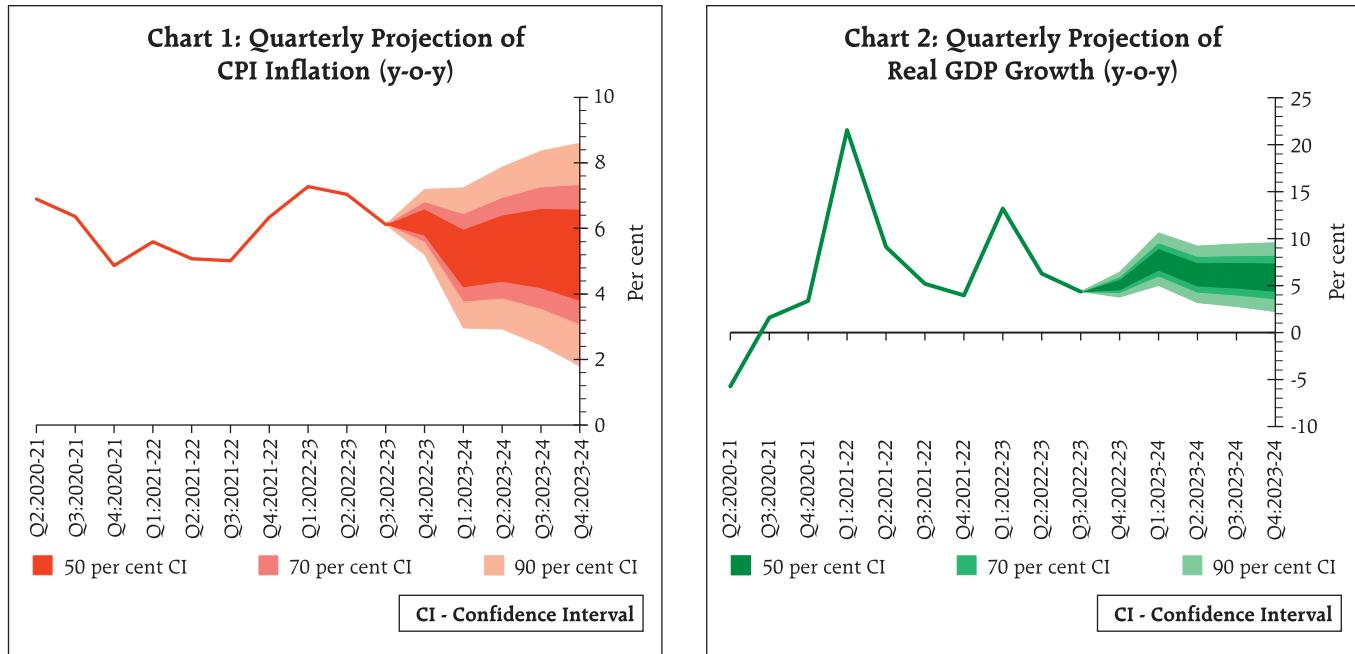
Outlook

8. The inflation trajectory for 2023-24 would be shaped by both domestic and global factors. The expectation of a record *rabi* foodgrains production bodes well for the food prices outlook. The impact of recent unseasonal rains and hailstorms, however, needs to be watched. Milk prices could remain firm due to high input costs and seasonal factors. Crude oil prices outlook is subject to high uncertainty. Global financial market volatility has surged, with potential upsides for imported inflation risks. Easing cost conditions are leading to some moderation in the pace of output price increases in manufacturing and services, as indicated by the Reserve Bank's enterprise surveys. The lagged pass-through of input costs could, however, keep core inflation elevated. Taking into account these factors and assuming an annual average crude oil price (Indian basket) of US\$ 85 per barrel and a normal monsoon, CPI inflation is projected at 5.2 per

cent for 2023-24, with Q1 at 5.1 per cent, Q2 at 5.4 per cent, Q3 at 5.4 per cent and Q4 at 5.2 per cent, and risks evenly balanced (Chart 1).

9. A good *rabi* crop should strengthen rural demand, while the sustained buoyancy in contact-intensive services should support urban demand. The government's thrust on capital expenditure, above trend capacity utilisation in manufacturing, double digit credit growth and the moderation in commodity prices are expected to bolster manufacturing and investment activity. According to the RBI's surveys, businesses and consumers are optimistic about the future outlook. The external demand drag could accentuate, given slowing global trade and output. Protracted geopolitical tensions, tight global financial conditions and global financial market volatility pose risks to the outlook. Taking all these factors into consideration, real GDP growth for 2023-24 is projected at 6.5 per cent with Q1:2023-24 at 7.8 per cent; Q2 at 6.2 per cent; Q3 at 6.1 per cent; and Q4 at 5.9 per cent, with risks evenly balanced (Chart 2).

10. With CPI headline inflation ruling persistently above the tolerance band, the MPC decided to remain resolutely focused on aligning inflation with the target. It is essential to rein in the generalisation of price pressures and anchor inflation expectations. An environment of low and stable prices is necessary for the resilience in domestic economic activity to be sustained. While the policy rate has been increased by a cumulative 250 basis points since May 2022, which is still working through the system, there can be no room for letting down the guard on price stability. Taking these factors into account, the MPC decided to keep the policy repo rate unchanged at 6.50 per cent in this meeting, with readiness to act, should the situation so warrant. The MPC will continue to keep a strong vigil on the evolving inflation and growth outlook and will not hesitate to take further action as may be required in its future meetings. The MPC also decided to remain focused on withdrawal of



accommodation to ensure that inflation progressively aligns with the target, while supporting growth.

11. All members of the MPC – Dr. Shashanka Bhide, Dr. Ashima Goyal, Prof. Jayanth R. Varma, Dr. Rajiv Ranjan, Dr. Michael Debabrata Patra and Shri Shaktikanta Das – unanimously voted to keep the policy repo rate unchanged at 6.50 per cent.

12. Dr. Shashanka Bhide, Dr. Ashima Goyal, Dr. Rajiv Ranjan, Dr. Michael Debabrata Patra and

Shri Shaktikanta Das voted to remain focused on withdrawal of accommodation to ensure that inflation progressively aligns with the target, while supporting growth. Prof. Jayanth R. Varma expressed reservations on this part of the resolution.

13. The minutes of the MPC's meeting will be published on April 20, 2023.

14. The next meeting of the MPC is scheduled during June 6-8, 2023.

STATEMENT ON DEVELOPMENTAL AND REGULATORY POLICIES

Statement on Developmental and Regulatory Policies

Statement on Developmental and Regulatory Policies

This Statement sets out various developmental and regulatory policy measures relating to (i) Financial Markets; (ii) Regulation and Supervision; and (iii) Payment and Settlement Systems.

I. Financial Markets

1. Developing an Onshore Non-deliverable Derivatives Market

Banks in India which operate International Financial Services Centre (IFSC) Banking Units (IBUs) were permitted to transact in INR Non-deliverable foreign exchange derivative contracts (NDDCs) with non-residents and with each other with effect from June 1, 2020. With a view to develop the onshore INR NDDC and to provide residents with the flexibility to efficiently design their hedging programmes, it has been decided to permit banks with IBUs to offer INR NDDCs to resident users in the onshore market. These banks will have the flexibility of settling their NDDC transactions with non-residents and with each other in foreign currency or in INR while transactions with residents will be mandatorily settled in INR. Related directions are being issued separately.

II. Regulation and Supervision

2. Enhancing Efficiency of Regulatory Processes

Various entities are required to obtain license / authorization to carry out activities regulated by RBI. Further, regulated entities are required to seek certain regulatory approvals from RBI under various statutes / regulations periodically. Currently, the application and approval processes for the same take place in varied on-line and off-line modes. The Union Budget for 2023-24 has announced the need to simplify, ease and reduce cost of compliance by financial sector regulators within laid down time limits to decide the applications under various regulations. It has, therefore, been decided to

develop a secured web based centralised portal named as 'PRAVAAH' (Platform for Regulatory Application, Validation And Authorisation) which will gradually extend to all types of applications made to RBI across all functions.

3. Development of Centralised Web portal for Public to Search Unclaimed Deposits

The deposits remaining unclaimed for 10 years in a bank are transferred to the "Depositor Education and Awareness" (DEA) Fund maintained by the Reserve Bank of India. Depositors' protection being an overarching objective, RBI has been taking various measures to ensure that newer deposits do not turn unclaimed and existing unclaimed deposits are returned to the rightful owners or beneficiaries after following due procedure. On the second aspect, banks display the list of unclaimed deposits on their website. In order to improve and widen the access of depositors / beneficiaries to such data, RBI has decided to develop a web portal to enable search across multiple banks for possible unclaimed deposits based on user inputs. The search results will be enhanced by use of certain AI tools.

4. Grievance Redress Mechanism relating to Credit Information Reporting by Credit Institutions and Credit information provided by Credit Information Companies

With the increase in customer complaints regarding credit information reporting and the functioning of credit information companies (CICs), it has been decided to put in place a comprehensive framework for strengthening and improving the efficacy of the grievance redress mechanism and customer service provided by the credit institutions (CIs) and CICs. For this purpose, the CICs have been brought under the aegis of the Reserve Bank Integrated Ombudsman Scheme (RB-IOS). In addition, it is also proposed to put in place the following measures: a compensation mechanism for delayed updation/rectification of

credit information; a provision for SMS/ email alerts to customers when their credit information are accessed from CICs; a timeframe for ingestion of data received by CICs from Credit Institutions; and disclosures relating to number and nature of customer complaints received on the website of CICs. Detailed guidelines in this regard would be issued shortly.

III. Payment and Settlement Systems

5. Operation of Pre-Sanctioned Credit Lines at Banks through the UPI

Unified Payments Interface (UPI) is a robust payments platform supporting an array of features. Presently it handles 75% of the retail digital payments volume in India. The UPI system has been leveraged

to develop products and features aligned to India's payments digitisation goals. Recently, RuPay credit cards were permitted to be linked to UPI. At present, UPI transactions are enabled between deposit accounts at banks, sometimes intermediated by pre-paid instruments including wallets. It is now proposed to expand the scope of UPI by enabling transfer to / from pre-sanctioned credit lines at banks, in addition to deposit accounts. In other words, UPI network will facilitate payments financed by credit from banks. This can reduce the cost of such offerings and help in development of unique products for Indian markets.

Detailed instructions in this regard will be issued separately.

MONETARY POLICY REPORT FOR 2023-24

Monetary Policy Report - April 2023

I. Macroeconomic Outlook

Domestic economic activity remains resilient in a slowing global economy. Inflation has persisted at elevated levels across the world and in India. Monetary policy remains focussed on progressively aligning inflation with the target. Geopolitical hostilities, volatile global financial markets and climate shocks are the key risks to the growth and the inflation outlook.

I.1 Key Developments since the September 2022 MPR

Since the release of the September 2022 Monetary Policy Report (MPR), the persistence of inflation at elevated levels across economies, continuing geopolitical uncertainties, and tightening financial conditions are taking their toll on global economic activity. Most central banks remain in tightening mode. Financial markets have turned volatile and highly sensitive to incoming information. Sovereign bond yields softened during November-December on hopes of a monetary policy pivot towards smaller rate hikes but hardened during February on stronger than anticipated economic activity and unrelenting price pressures. US short-term bond yields reached their highest levels in a decade and a half in early March. Equity markets recovered some lost ground. Crude oil and natural gas prices eased to their pre-war levels, but metal prices remain firm. Globally, supply conditions have improved in recent months. The banking turmoil in the US and Europe and the accompanying financial stability concerns rattled global financial markets in March. Increased risk aversion triggered flight to safety and the expectations of an early reversal of the monetary tightening cycle led to a sharp decline in sovereign bond yields across maturities, correction in equity prices and jump in market volatility indicators. The US dollar has retreated unevenly from its September 2022 highs.

Domestic economic activity exhibited resilience in H2:2022-23. The National Statistical Office's (NSO's)

second advance estimates placed real gross domestic product (GDP) growth at 7.0 per cent for 2022-23, driven by private consumption and investment. Real GDP growth in Q3 was 4.4 per cent (year-on-year, y-o-y), boosted by investment demand while private consumption slowed. On the supply side, activity was supported by agriculture and services sectors, while manufacturing was restrained under the pressure of high input costs.

Consumer price index (CPI) inflation persisted at elevated levels during 2022-23, impacted by a series of adverse supply shocks and the continuing pass-through of high input costs. Briefly edging into the tolerance band during November-December with the stronger than usual seasonal correction in food prices, it surged again to 6.4 per cent (y-o-y) in February as food inflation rose. The Monetary Policy Committee (MPC) increased the policy repo rate by 250 basis points (bps) during May 2022-February 2023 and monetary policy remains focussed on progressively aligning inflation with the target, while supporting growth.

Monetary Policy Committee: September 2022-March 2023

When the MPC met in September 2022, CPI headline inflation was at 7.0 per cent in August. Domestic economic activity was gaining traction ahead of the festival season with double digit GDP growth in Q1:2022-23. CPI headline inflation was projected to remain above the upper tolerance level of 6 per cent through the first three quarters of 2022-23¹. The MPC felt that further calibrated monetary policy action was necessary to keep inflation expectations anchored, restrain the broadening of price pressures and preempt second round effects. Accordingly, the MPC raised the policy repo rate by 50 bps to 5.9 per cent with

¹ The GDP growth forecast was revised downward by 20 bps to 7.0 per cent (relative to the August 2022 projections) while the inflation forecast was retained at 6.7 per cent for 2022-23. The GDP growth forecast was revised to 6.8 per cent in the December 2022 meeting and the inflation forecast to 6.5 per cent in the February 2023 meeting of the MPC.

a 5-1 vote. One member voted for a smaller increase of 35 bps. The MPC also decided by a majority of 5-1 to remain focused on withdrawal of accommodation to ensure that inflation remains within the target going forward, while supporting growth.

At the time of its December 2022 meeting², the MPC noted that the CPI inflation print in October was persisting above the tolerance band. Real GDP registered a growth of 6.3 per cent (y-o-y) in Q2:2022-23. The MPC observed that while headline inflation was likely to moderate in H1:2023-24, it would still be well above the target. Economic activity had held up well and was expected to remain resilient. The impact of monetary policy measures undertaken needed to be monitored carefully. Against this backdrop, the MPC increased the policy repo rate by 35 bps to 6.25 per cent with a 5-1 vote and continued with its stance of withdrawal of accommodation on a 4 to 2 majority vote.

In the run up to the February 2023 meeting, CPI headline inflation had eased to 5.7 per cent in December 2022, driven by strong deflation in vegetable prices even as inflationary pressures became accentuated across other food items and in the core category. Domestic economic activity was expected to be sustained by the focus on capital and infrastructure spending in the Union Budget 2023-24. Looking beyond the transitory respite in inflation due to the fall in vegetable prices, the MPC regarded inflation as a major risk to the outlook and observed that further calibrated monetary policy action was warranted to

Table I.1: Monetary Policy Committee Meetings and Policy Rate Voting Patterns

Country	Policy Meetings: October 2022 - March 2023			
	Total meetings	Meetings with full consensus	Meetings without full consensus	Change in policy rate (basis points)
Brazil	4	4	0	0
Chile	3	3	0	50
Colombia	4	2	2	300
Czech Republic	4	0	4	0
Hungary	5	5	0	0
India*	3	0	3	110
Japan	4	4	0	0
South Africa	3	0	3	150
Sweden	2	2	0	125
Thailand	3	3	0	75
UK	4	0	4	200
US	4	4	0	175

*: Including the meeting held on September 30, 2022.

Sources: Central bank websites.

keep inflation expectations anchored, break core inflation persistence and thereby strengthen medium-term growth prospects. Accordingly, the MPC increased the policy repo rate by 25 bps to 6.50 per cent and committed to continue withdrawal of accommodation with a 4-2 vote for both the rate action and the stance decision.

The MPC's voting pattern reflects the diversity in individual members' assessments, expectations and policy preferences, a characteristic also reflected in voting patterns of other central banks (Table I.1).

Macroeconomic Outlook

Chapters II and III analyse macroeconomic developments related to inflation and economic activity during H2:2022-23 (October 2022-March 2023). The evolution of key macroeconomic and financial variables over the past six months warrants revisions in the baseline assumptions (Table I.2).

² A separate meeting of the MPC was held on November 3, 2022 to discuss and draft the report to be sent to the Government by the Reserve Bank of India (RBI) under the provisions of Section 45ZN of the RBI Act, 1934 and Regulation 7 of the RBI MPC and Monetary Policy Process Regulations, 2016, consequent to inflation exceeding 6 per cent, the upper tolerance threshold around the target, for three successive quarters – Q4:2021-22 (6.3 per cent), Q1:2022-23 (7.3 per cent) and Q2 (7.0 per cent).

Table I.2: Baseline Assumptions for Projections

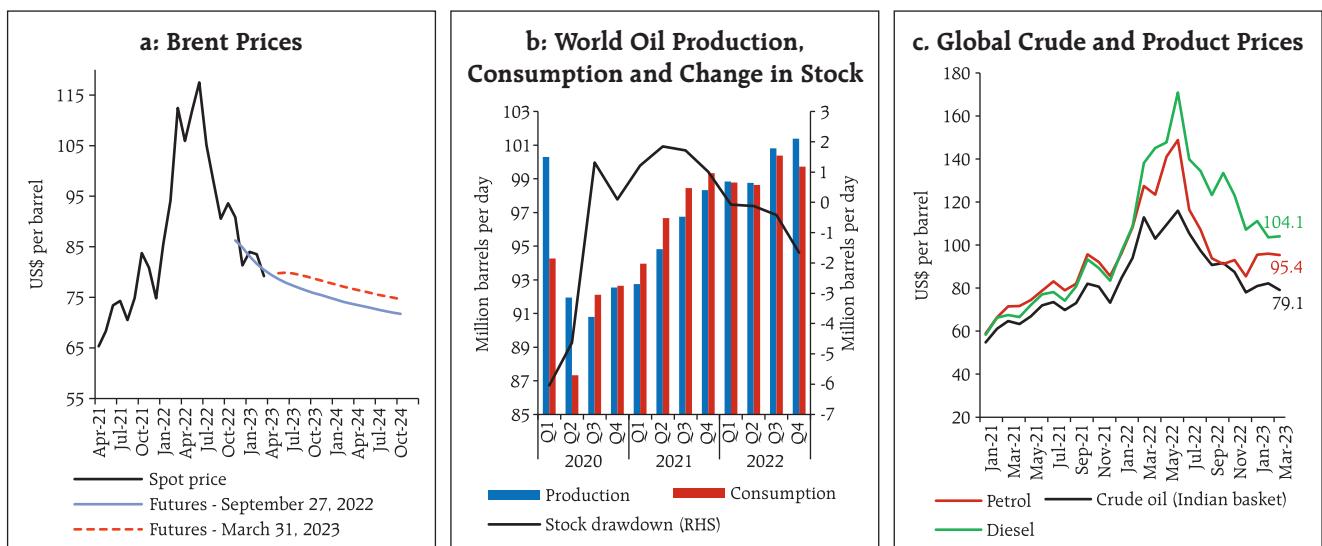
	MPR September 2022	MPR April 2023
Crude Oil (Indian basket)	US\$ 105 per barrel during H2:2022-23	US\$ 85 per barrel during 2023-24
Exchange rate	₹80/US\$ during H2:2022-23	₹82/US\$ during 2023-24
Monsoon	6 per cent above normal for 2022-23	Normal for 2023-24
Global growth	3.2 per cent in 2022 2.9 per cent in 2023	2.9 per cent in 2023 3.1 per cent in 2024
Fiscal deficit (per cent of GDP)	To remain within BE 2022-23 Centre: 6.4 Combined: 9.3	To remain within BE 2023-24 Centre: 5.9 Combined: 8.5
Domestic macroeconomic/ structural policies during the forecast period	No major change	No major change

- Notes:** 1. The Indian basket of crude oil represents a derived numeraire comprising sour grade (Oman and Dubai average) and sweet grade (Brent) crude oil.
2. The exchange rate path assumed here is for the purpose of generating the baseline projections and does not indicate any 'view' on the level of the exchange rate. The Reserve Bank is guided by the objective of containing excess volatility in the foreign exchange market and not by any specific level of and/or band around the exchange rate.
3. BE: Budget estimates.
4. Combined fiscal deficit refers to those of the Centre and States taken together.

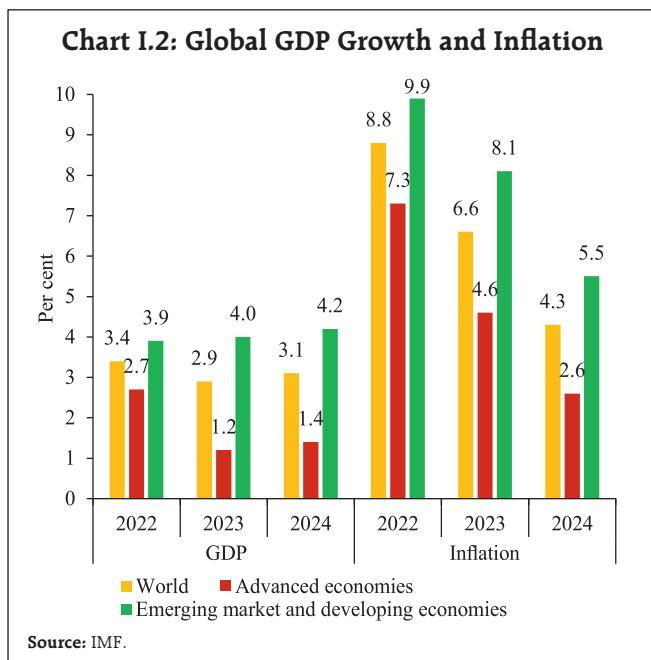
Sources: RBI estimates; Budget documents; and IMF.

First, international crude prices eased in H2 on slowing global growth and a milder than expected winter in Europe. Geopolitical tensions and output curtailment by the Organization of the Petroleum Exporting Countries plus (OPEC plus) impart significant uncertainty to the outlook (Chart I.1.a & Chart I.1.b). Global petrol and diesel prices, which are the key determinant of domestic product prices, are elevated in view of demand-supply refinery mismatches (Chart I.1.c). Taking into account these developments, crude prices (Indian basket) are assumed at US\$ 85 per barrel in the baseline as compared with US\$ 105 in the September MPR baseline.

Second, the nominal exchange rate of the Indian rupee or INR moved in a range of INR 81-83 per US dollar (USD) in H2. The INR was supported by a correction in the US dollar while risk-off sentiments towards emerging market economies (EME) assets and a widening current account deficit exerted downward pressures on the currency. Taking these developments into consideration, the exchange rate is assumed at INR 82 per US dollar in the baseline as against INR 80 in the September 2022 MPR.

Chart I.1: Crude Oil Prices

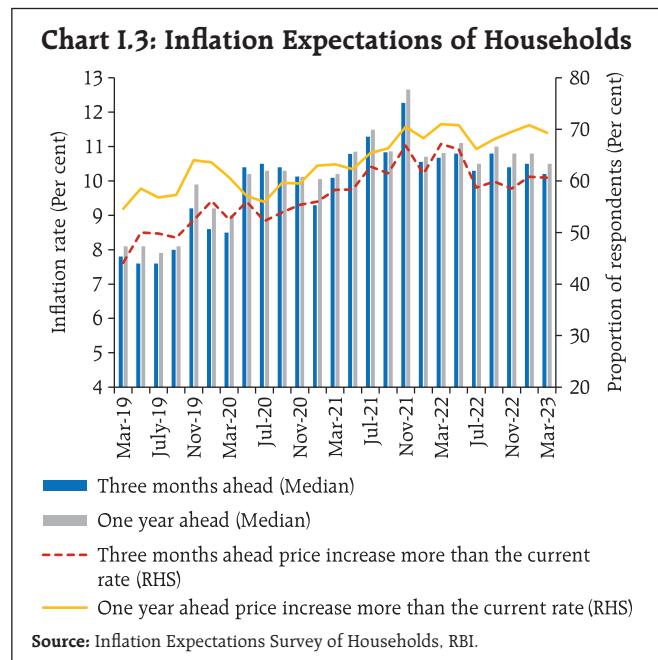
Sources: Bloomberg; US Energy Information Administration (EIA); and Petroleum Planning & Analysis Cell.



Third, while global economic prospects have improved modestly compared to a few months ago, the outlook is highly uncertain. The global composite purchasing managers index (PMI) moved into expansion mode in February after remaining in the contraction territory for six consecutive months during July 2022 - January 2023. According to the International Monetary Fund's (IMF's) January 2023 update of the *World Economic Outlook* (WEO), global growth is expected to moderate from 3.4 per cent in 2022 to 2.9 per cent in 2023, and 3.1 per cent in 2024, with a sharper deceleration projected for advanced economies (AEs) relative to emerging market and developing economies (EMDEs) (Chart I.2). Alongside, global trade is expected to decelerate in 2023.

I.2 The Outlook for Inflation

Adverse supply shocks and the pass-through of inputs costs to output prices imparted sustained upward pressures on CPI inflation in H2 (Chapter II). Looking ahead, the three months ahead and the one year ahead median inflation expectations of urban households fell by 30 bps each in the March 2023 round of the Reserve Bank's



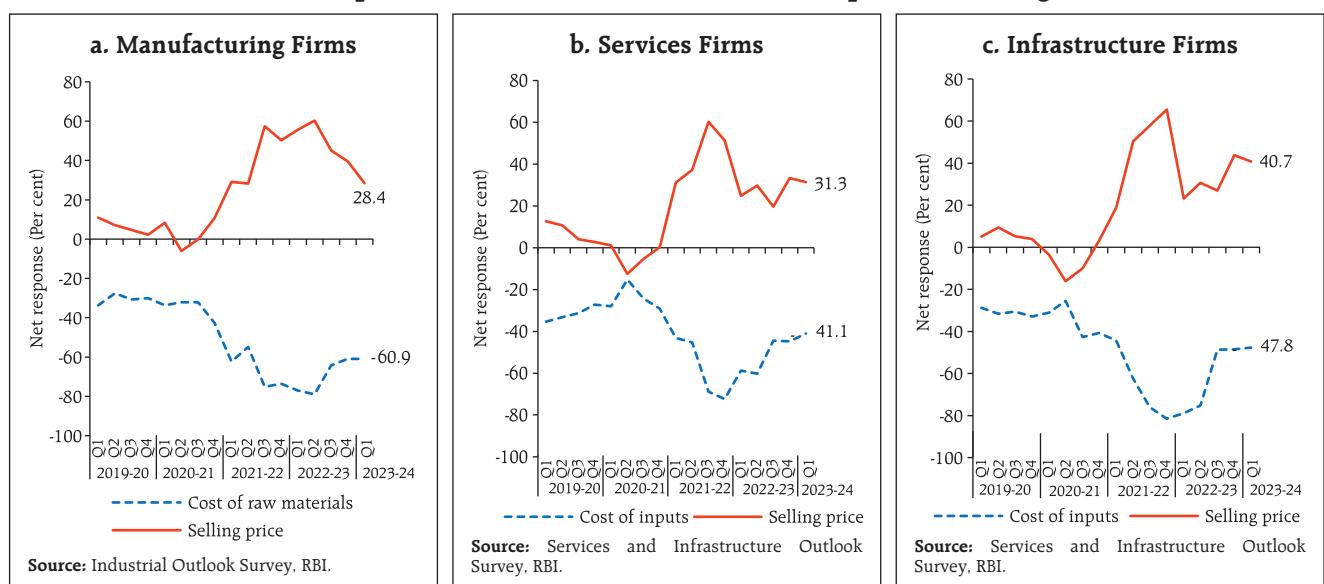
survey³. The proportion of respondents expecting the general price level to increase by more than the current rate decreased for both the horizons *vis-à-vis* the previous round (Chart I.3).

Manufacturing firms polled in the January-March 2023 round of the Reserve Bank's industrial outlook survey expected the pace of increase in cost of raw materials to remain steady and in selling prices to moderate in Q1:2023-24 (Chart I.4a).⁴ Services sector and infrastructure firms expected modest softening in the growth of input cost and selling prices in Q1:2023-24 (Charts I.4b and I.4c).⁵ In the PMI surveys, manufacturing and services firms reported lower input cost inflation but higher output price inflation in March compared to February 2023.

³ The Reserve Bank's inflation expectations survey of households is being conducted in 19 cities since March 2021 (18 cities in the previous rounds) and the results of the March 2023 round are based on responses from 6,075 households.

⁴ The results of the January-March 2023 round of the industrial outlook survey are based on responses from 1066 companies.

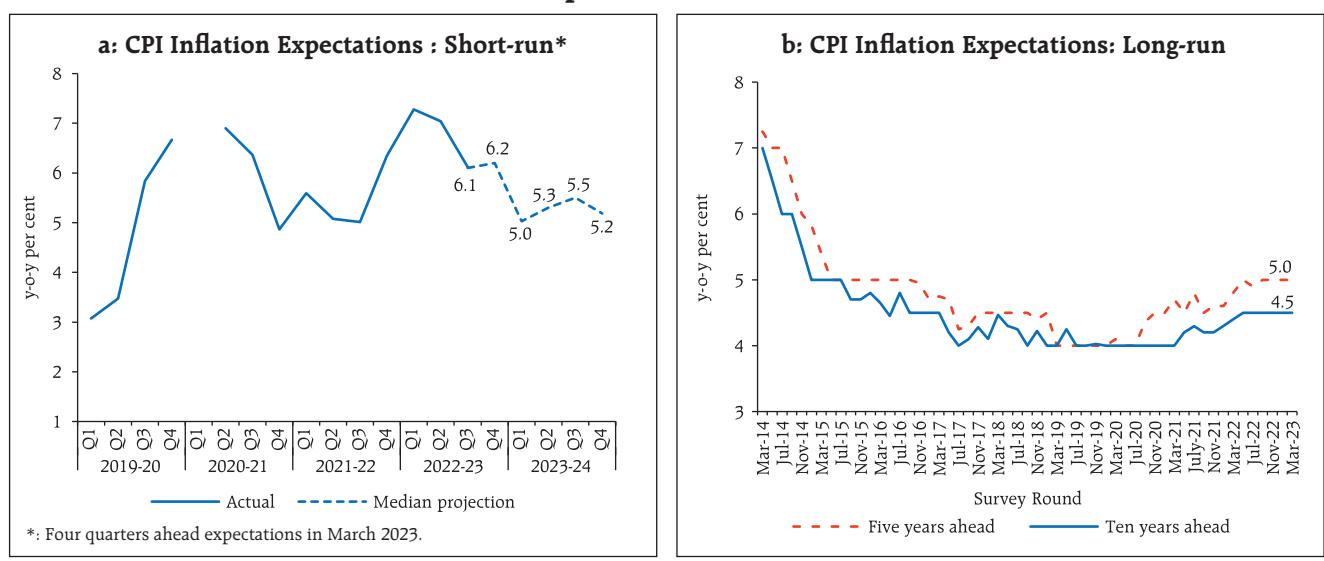
⁵ Based on 522 services companies and 116 infrastructure firms polled in the January-March 2023 round of the services and infrastructure outlook survey.

Chart I.4: Expectations for Cost of Raw Materials/Inputs and Selling Prices

Note: Net response is the difference between the share of respondents reporting optimism and those reporting pessimism. The range is -100 to 100. A positive/ negative value of net response is considered as optimistic/pessimistic from the view point of respondent firms. Therefore, higher positive values of selling prices indicate increase in output prices while lower values for the cost of raw materials/cost of inputs indicate higher input price pressures and vice versa.

Professional forecasters surveyed by the Reserve Bank in March 2023 expected CPI inflation to moderate from 6.2 per cent in Q4:2022-23 to 5.0 per cent in Q1:2023-24, 5.3 per cent in Q2, 5.5 per cent in Q3 and 5.2 per cent in Q4 (Chart I.5a and Table I.3).⁶ The

respondents expected CPI inflation excluding food and beverages, pan, tobacco and intoxicants, and fuel and light to move from 6.2 per cent in Q4:2022-23 to 5.4-5.6 per cent during 2023-24. Their 5- and 10-years ahead inflation expectations remained unchanged

Chart I.5: Inflation Expectations of Professional Forecasters

⁶ 41 panellists participated in the March 2023 round of the Reserve Bank's survey of professional forecasters.

Table I.3: Projections - Reserve Bank and Professional Forecasters

(Per cent)

	2022-23	2023-24	2024-25
Reserve Bank's Baseline Projections			
Inflation, Q4 (y-o-y)	6.2	5.2	4.4
Real GDP growth	7.0 [@]	6.5	6.5
Median Projections of Professional Forecasters			
Inflation, Q4 (y-o-y)	6.2	5.2	
Real GDP growth	7.0	6.0	
Gross domestic saving (per cent of GNDI)	29.2	29.7	
Gross capital formation (per cent of GDP)	31.1	30.8	
Credit growth of scheduled commercial banks	15.0	12.0	
Combined gross fiscal deficit (per cent of GDP)	9.5	8.9	
Central government gross fiscal deficit (per cent of GDP)	6.4	5.9	
Repo rate (end-period)	6.50	6.75	
Yield on 91-days treasury bills (end-period)	6.7	6.5	
Yield on 10-year central government securities (end-period)	7.4	7.2	
Overall balance of payments (US\$ billion)	-20.0	4.2	
Merchandise exports growth	4.1	-2.3	
Merchandise imports growth	16.0	-3.8	
Current account balance (per cent of GDP)	-2.6	-2.0	

Note: GNDI: Gross National Disposable Income.

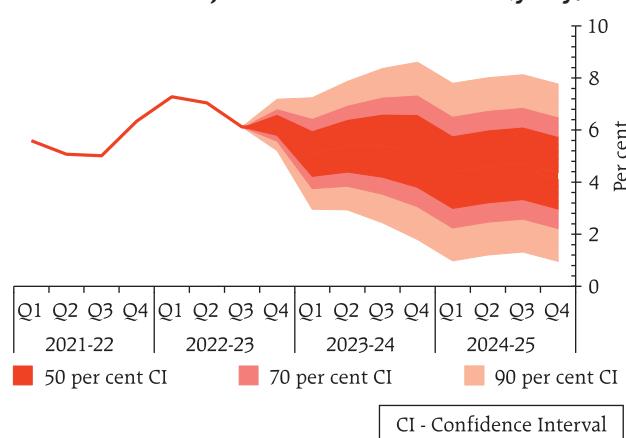
@: NSO Advance estimates.

Sources: NSO; RBI staff estimates; and Survey of Professional Forecasters (March 2023).

at 5.0 per cent and 4.5 per cent, respectively, in the March round (Chart I.5b).

Looking ahead, the inflation outlook will be conditioned by several factors, both global and domestic. While crude oil and commodity prices have corrected in recent months, their future trajectories remain uncertain, given the lingering geopolitical hostilities and likely demand rebound from countries reopening from pandemic-related lockdowns. Global financial markets are exhibiting volatility. Domestically, the expectations of a bumper *rabi* harvest augur well for the future trajectory of food inflation. On the other hand, adverse weather shocks are becoming more frequent and there is heightened uncertainty about the south-

Chart I.6: Projection of CPI Inflation (y-o-y)



Note: The fan chart depicts uncertainty around the baseline projection path. The baseline projections are conditioned upon the assumptions set out in Table I.2. The thick red shaded area represents 50 per cent confidence interval, implying that there is 50 per cent probability that the actual outcome will be within the range given by the thick red shaded area. Likewise, for 70 per cent and 90 per cent confidence intervals, there is 70 per cent and 90 per cent probability, respectively, that the actual outcomes will be in the range represented by the respective shaded areas.

Source: RBI staff estimates.

west monsoon rains. Taking into account the initial conditions, signals from forward-looking surveys and estimates from structural and other time-series models⁷, CPI inflation is projected to average 5.2 per cent in 2023-24 – 5.1 per cent in Q1:2023-24, 5.4 per cent in Q2 and Q3, and 5.2 per cent in Q4, with risks evenly balanced (Chart I.6). The 50 per cent and the 70 per cent confidence intervals for headline inflation in Q4:2023-24 are 3.8-6.6 per cent and 3.1-7.3 per cent, respectively. For 2024-25, assuming a normal monsoon, a progressive normalisation of supply chains, and no further exogenous or policy shocks, structural model estimates indicate that inflation will average 4.5 per cent. In Q4:2024-25, CPI inflation is projected at 4.4 per cent, with the 50 per cent and the 70 per cent confidence intervals at 3.0-5.8 per cent and 2.2-6.5 per cent, respectively.

⁷ John, Joice, Deepak Kumar, Asish Thomas George, Pratik Mitra, Muneeesh Kapur and Michael Debabrata Patra (2023), "A Recalibrated Quarterly Projection Model (QPM 2.0) for India", *Reserve Bank of India Bulletin*, February, Volume LXXVII(2), pp.59-77.

The baseline forecasts are subject to several upside and downside risks, given the volatile global environment and the cross-country experience

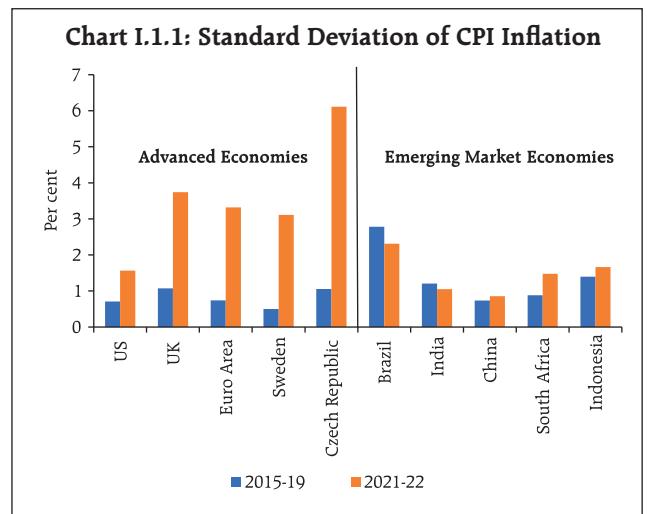
with large deviations of inflation from forecasts (Box I.1). Upside risks emanate from possible escalation of geopolitical conflicts, higher global crude

Box I.1: Inflation Forecast Accuracy Under High Volatility: Cross-Country Evidence

Since the pandemic, overlapping supply and demand shocks have led to inflation surging to its highest levels since the 1970s and 1980s, with increased volatility (Chart I.1.1). This has led to large inflation forecast errors by both central banks and market forecasters (Chahad et al., 2022; Reserve Bank of Australia, 2022). The Phillips curve framework – the workhorse model for inflation forecasting – appears to have broken down in the face of large shocks and non-linearities.

An analysis of inflation forecasts among a sample of eight central banks⁸ shows a deterioration in forecasting performance during the pandemic period. The forecast errors were higher for longer horizons and for the advanced economies. Forecast errors in India were the lowest in this cross-country comparison (Chart I.1.2).

Prior to the pandemic, forecast errors were statistically not different from zero (as suggested by the statistically insignificant constant term) and hence they can be

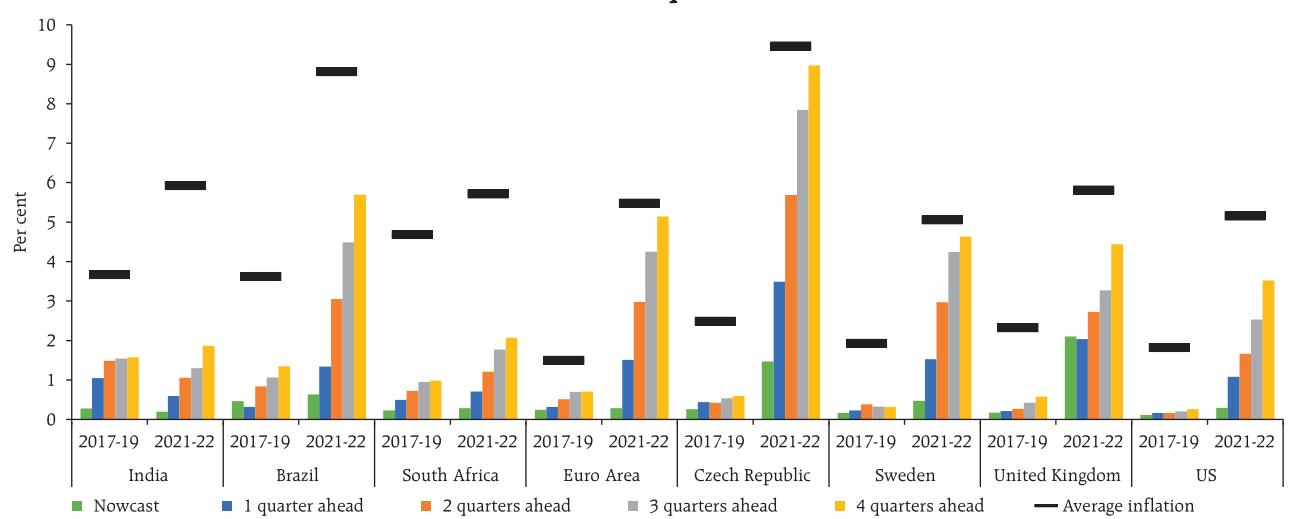


Note: Inflation is expressed as y-o-y percent change. Data for the US pertain to Personal Consumption Expenditure (PCE) inflation.

Sources: Bloomberg; RBI staff estimates.

regarded as unbiased. More recent forecasts have been biased, with actual outcomes systematically overshooting

Chart I.1.2: Root Mean Squared Forecast Error



Source: RBI staff estimates.

(Contd.)

⁸ These central banks are: Reserve Bank of India, Banco Central de Brasil, South African Reserve Bank, European Central Bank, Czech National Bank, Sveriges Riksbank Sweden, Bank of England and the US Federal Reserve.

Table I.1.1: Unbiasedness of Forecast Errors

	1 Quarter Ahead	2 Quarters Ahead	3 Quarters Ahead	4 Quarters Ahead
Pandemic Dummy (Q1:2021-Q4:2022)	0.602*** (0.001)	1.850*** (0.000)	3.280*** (0.000)	4.117*** (0.000)
Constant	-0.044 (0.667)	-0.115 (0.435)	-0.226 (0.197)	-0.265 (0.214)
Observations	165	162	161	153
Country fixed effects	Yes	Yes	Yes	Yes

Note: ***, **, * denote the level of significance at 1%, 5% and 10%, respectively. p-values are in parentheses. The sample period is Q1:2017-Q4:2022.

Source: RBI staff estimates.

forecasts significantly and more so as the horizon increases⁹ (Table I.1.1).

A dynamic panel data model estimated for a sample of seven countries covering the period Q1:2017-Q4:2022 by the Generalized Method of Moments (GMM) (Arellano and Bond, 1991) shows high persistence in forecast errors (Table I.1.2). The substantial increases in international energy and food prices, combined with currency depreciations, seem to be the key drivers of the forecast errors.

Overall, the global experience suggests that forecast errors can turn sizeable in the face of large supply shocks and complicate the conduct of forward-looking monetary policy. In such a dynamic and uncertain environment, there is a need to supplement baseline forecasts with alternate scenarios and modelling approaches for more precision.

References:

Arellano, M., and S. Bond (1991), "Some Tests of Specification for Panel Data: Monte Carlo Evidence and

Table I.1.2: Drivers of Forecast Errors - GMM Estimates

	1 Quarter Ahead	1 Quarter Ahead	4 Quarters Ahead	4 Quarters Ahead
Dependent variable, lag	0.789** (0.040)	0.748** (0.048)	1.080*** (0.000)	0.935*** (0.000)
Energy price inflation		0.009 (0.253)		0.007* (0.051)
Food price inflation		0.061* (0.053)		0.037** (0.011)
Currency Appreciation (+)/ Depreciation (-)		-0.041** (0.037)		-0.038** (0.013)
Constant	0.005 (0.945)	-0.142 (0.247)	0.191** (0.040)	-0.219 (0.118)
Observations	156	156	140	140
No of countries	7	7	7	7
AR1 (p-value)	0.0418	0.0481	0.301	0.151
AR2 (p-value)	0.273	0.238	0.0892	0.117
Hansen-J (p-value)	0.398	0.989	0.338	0.643

Note: ***, **, * denote the level of significance at 1%, 5% and 10%, respectively. p-values are in parentheses. For n-quarter ahead forecast error, growth in exogenous regressors viz., energy prices, food prices and currency for current quarter t is calculated as $\{(Q_t - Q_{t-n}) / Q_{t-n}\} * 100$. The sample period is Q1:2017-Q4:2022.

Source: RBI staff estimates.

an Application to Employment Equations", *The Review of Economic Studies*, Vol. 58, No.2, April.

Chahad M., A. Hofmann-Drahovsky, B. Meunier, A. Page and M. Tirpák (2022), "What Explains Recent Errors in the Inflation Projections of Eurosystem and ECB staff?", *ECB Economic Bulletin*, Issue 3/2022.

Reserve Bank of Australia (2022), "What Explains Recent Inflation Forecast Errors?", *Statement on Monetary Policy* – November 2022.

and commodity prices, accentuation of global financial market volatility amidst high inflation and financial stability concerns, renewed supply chain disruptions,

extreme weather conditions and deficient monsoon, and a larger pass-through of input cost pressures to output prices as demand strengthens. Downside risks could stem from an early resolution of geopolitical tensions, correction in global crude and commodity prices due to slowing global demand, and further improvement in supply conditions.

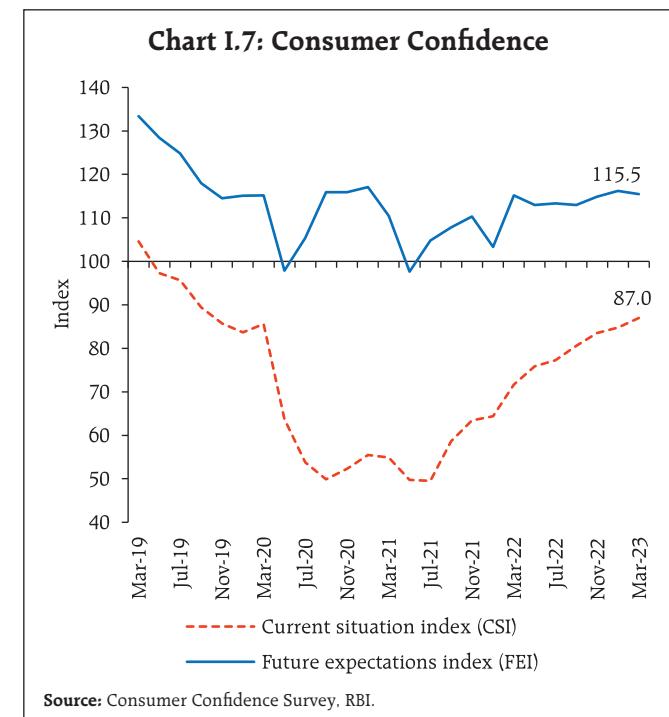
⁹ The unbiasedness of forecasts is evaluated by estimating the following equation: $FE_{it} = \alpha_i + \beta * PandemicDummy + \varepsilon_{it}$, where FE_{it} is the inflation forecast error at different horizons made by central banks and *PandemicDummy* captures the effect of the pandemic on the forecast error.

I.3 The Outlook for Growth

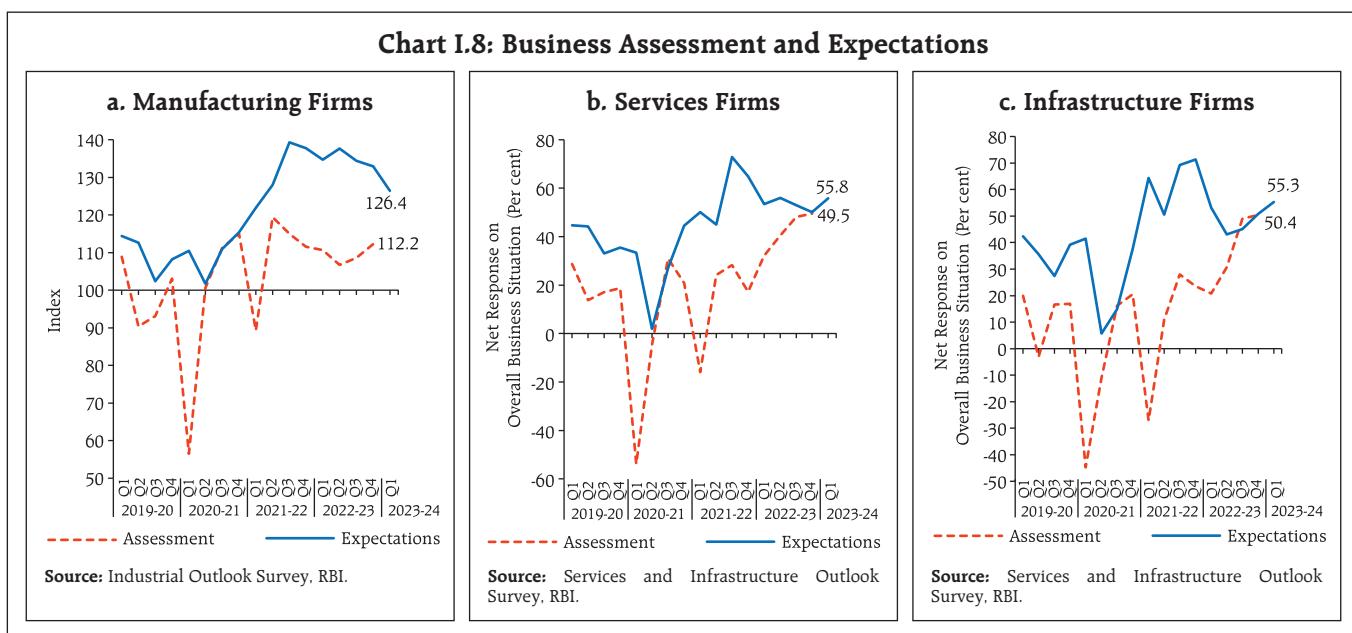
Domestic economic activity remains resilient, on the back of consecutive years of strong agricultural production, a post-pandemic rebound in contact-intensive services, buoyant growth in bank credit, a healthy banking and financial system¹⁰ and the government's capex push. Slowing global growth, geopolitical tensions, upsurge in financial market volatility and tightening global financial conditions, however, weigh heavily on the outlook.

Turning to the key messages from forward-looking surveys, consumer confidence (the current situation index) improved in the March 2023 survey round vis-à-vis the previous round on account of improved perceptions on general economic situation, employment and household income, though it remains in the pessimistic zone. Consumers' expectations for the year ahead continued in the optimistic territory, albeit with some moderation (Chart I.7).¹¹

The optimism of firms in the manufacturing sector ebbed for the quarter ahead relative to the previous round in the Reserve Bank's industrial



outlook survey (Chart I.8a). The expectations of services and infrastructure sector companies, on the other hand, improved in terms of the overall business situation (Charts I.8b and I.8c).



¹⁰ Das, Shaktikanta (2023), "G20 for a Better Global Economic Order during India's Presidency", 17th K P Hormis Commemorative Lecture, March 17, available at https://www.rbi.org.in/Scripts/BS_SpeechesView.aspx?Id=1356

¹¹ The Reserve Bank's consumer confidence survey is being conducted in 19 cities since March 2021 (13 cities in the previous rounds) and the results of the March 2023 round are based on responses from 6,075 respondents.

Table I.4: Business Expectations Surveys

Item	NCAER Business Confidence Index (January 2023)	FICCI Overall Business Confidence Index (January 2023)	Dun & Bradstreet Composite Business Optimism Index (January 2023)	CII Business Confidence Index (December 2022)
Current level of the index	126.6	61.0	77.3	67.6
Index as per previous survey	132.5	59.9	83.1	62.2
% change (q-o-q) sequential	-4.5	1.8	-7.0	8.7
% change (y-o-y)	1.8	-4.5	-14.0	1.2

Notes:

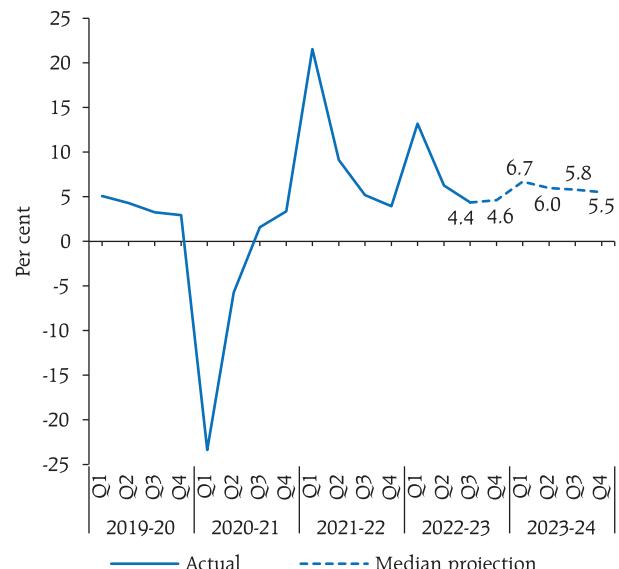
1. NCAER: National Council of Applied Economic Research.
2. FICCI: Federation of Indian Chambers of Commerce & Industry.
3. CII: Confederation of Indian Industry.
4. Dun & Bradstreet Composite Business Optimism Index is for Q4:2022-23 and data for the rest pertain to Q3:2022-23.

Sources: NCAER; FICCI; CII; and Dun & Bradstreet Information Services India Pvt. Ltd.

Recent surveys by other agencies indicate a mixed picture on business expectations relative to the previous round (Table I.4). Manufacturing and services firms in the PMI surveys for March 2023 exhibited optimism for the year ahead.

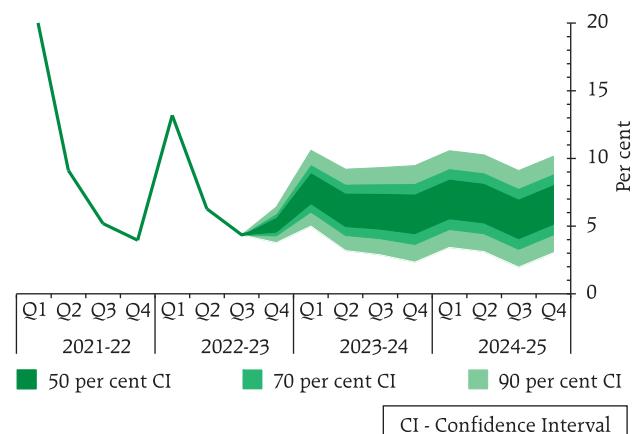
Professional forecasters polled in the March 2023 round of the Reserve Bank's survey expected real GDP growth at 4.6 per cent in Q4:2022-23, 6.7-6.0 per cent in H1:2023-24, and 5.8-5.5 per cent in H2 (Chart I.9 and Table I.3).

Taking into account the baseline assumptions, survey indicators and model forecasts, real GDP growth is expected at 6.5 per cent in 2023-24 – 7.8 per cent in Q1; 6.2 per cent in Q2; 6.1 per cent in Q3; and 5.9 per cent in Q4 – with risks evenly balanced around this baseline path (Chart I.10 and Table I.3). For 2024-25, assuming a normal monsoon and no major exogenous or policy shocks, the structural model estimates indicate real GDP growth at 6.5 per cent, with quarterly growth rates in the range of 5.5-7.0 per cent.

Chart I.9: Professional Forecasters' Projection of Real GDP Growth

Sources: Survey of Professional Forecasters, RBI; and NSO.

There are upside and downside risks to this baseline growth path. The upside risks emanate from a stronger-than-expected rebound in the contact-

Chart I.10: Projection of Growth in Real GDP (y-o-y)

Note: The fan chart depicts uncertainty around the baseline projection path. The baseline projections are conditioned upon the assumptions set out in Table I.2. The thick green shaded area represents 50 per cent confidence interval, implying that there is 50 per cent probability that the actual outcome will be within the range given by the thick green shaded area. Likewise, for 70 per cent and 90 per cent confidence intervals, there is 70 per cent and 90 per cent probability, respectively, that the actual outcomes will be in the range represented by the respective shaded areas.

Sources: RBI staff estimates.

intensive services as they emerge more fully from the pandemic; a restart of private investment activity boosted by the government's capex push, given healthier corporate balance sheets; a favourable terms of trade shock in the case of a sharper-than-anticipated correction in crude and commodity prices; a better-than-expected global growth prospects; and an early resolution of geopolitical conflicts. On the contrary, an escalation in geopolitical tensions, a further hardening of international crude oil and other commodity prices, sustained disruptions to supply chains, persistence of global financial market volatility, a sharper loss of momentum in global trade and demand and weather-related disruptions pose downside risks to the baseline growth path.

I.4 Balance of Risks

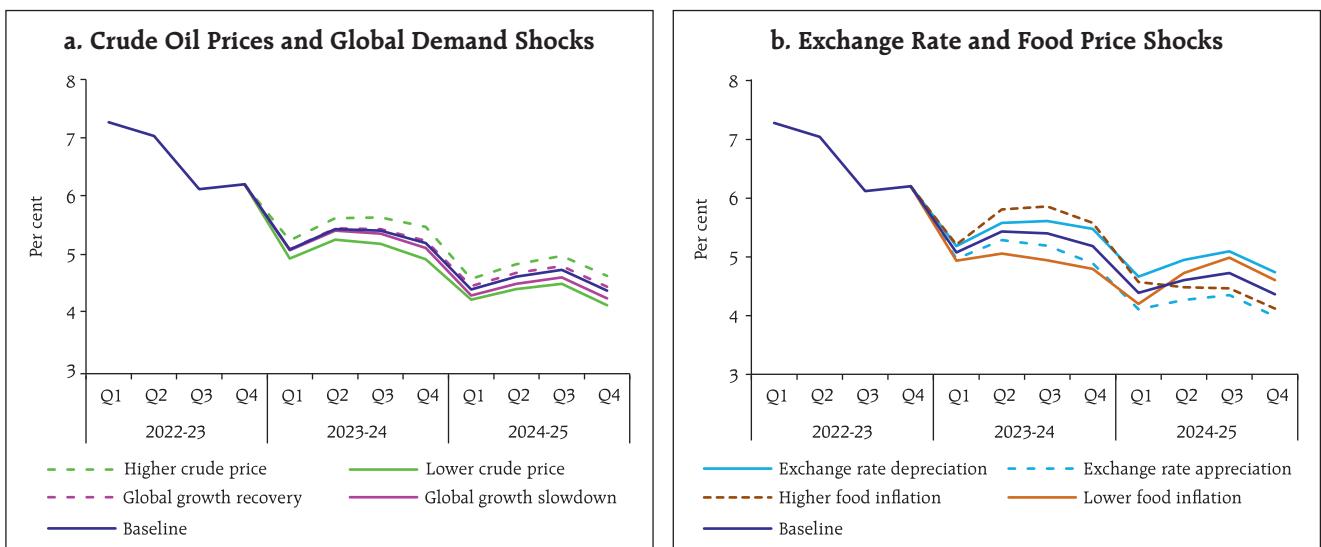
The baseline projections of growth and inflation in this chapter are *inter alia* conditional on assumptions of the future trajectory of key domestic and international macroeconomic variables set out in Table I.2. The uncertainties surrounding these assumptions have increased significantly due to protracted geopolitical tensions, upside inflation surprises globally, international financial market

volatility and recurrent adverse weather events. Against this backdrop, this section explores plausible alternative scenarios to assess the balance of risks around the baseline projections.

(i) Global Growth Uncertainties

Global growth is slowing with significant downside risks to the baseline outlook. Globally, inflation remains the key concern and more monetary tightening may be warranted to quell it. This could, however, push global interest rates higher for longer than currently anticipated. Debt servicing costs could escalate and add to financial stability risks. Moreover, geopolitical tensions could ratchet up further. In such a scenario, if global growth is 100 bps lower than the baseline, domestic growth and inflation could be around 30 bps and 15 bps, respectively, below the baseline trajectories. Conversely, if inflation in major economies retreats quickly and global financial conditions ease, geopolitical tensions ebb and global growth surprises on the upside by turning out to be higher by 50 bps, domestic growth and inflation could edge higher by around 15 bps and 7 bps, respectively (Charts I.11a and I.12a).

Chart I.11: Impact of Risk Scenarios on the Baseline Inflation Path



Source: RBI staff estimates.

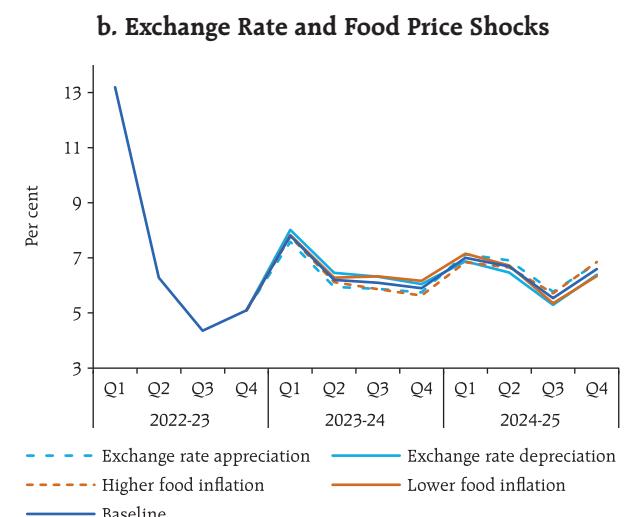
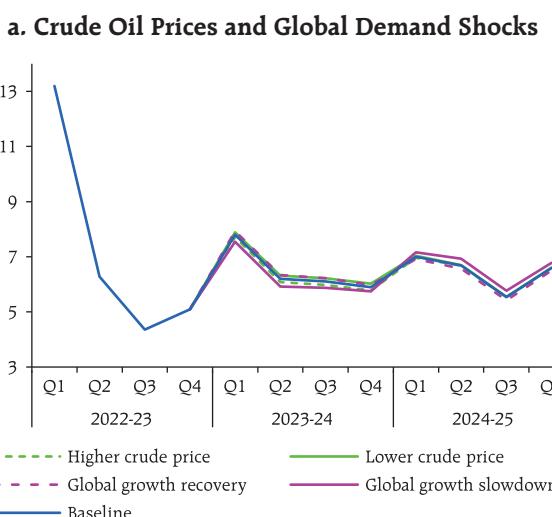
(ii) International Crude Oil Prices

International crude oil prices have eased since the last MPR but remain volatile. A stronger rebound in global demand, production cuts by OPEC *plus* countries and the escalation of geopolitical hostilities could push crude oil prices higher. Crack spreads could widen further, given global demand-supply mismatches. Assuming international crude oil prices to be 10 per cent above the baseline, domestic inflation and growth could be higher by 30 bps and weaker by around 15 bps, respectively. Conversely, an early de-escalation of geopolitical tensions and subdued global demand owing to aggressive monetary policy action may lead to a moderation in global crude oil prices below the baseline. If, as a result, the Indian basket of crude prices falls by 10 per cent and assuming full pass-through to domestic product prices, inflation could ease by around 30 bps with a boost of 15 bps to growth (Charts I.11a and I.12a).

(iii) Exchange Rate

The INR depreciated relative to the US\$ in H2:2022-23 amidst tightening global financial conditions, an uncertain global environment and portfolio outflows. The 'higher for longer' interest rate scenario and slowing global growth could keep risk aversion elevated and impinge upon capital flows to EMEs. Should the INR depreciate by 5 per cent below the baseline in such a scenario, inflation could edge up by around 35 bps while GDP growth could be higher by around 25 bps through the stimulus to exports. On the other hand, as India's growth performance and outlook is relatively better than peers, it could become attractive for foreign investors. Furthermore, with the current account deficit narrowing, the INR could appreciate relative to the baseline. With five per cent appreciation, inflation and GDP growth could moderate by around 35 bps and 25 bps, respectively (Charts I.11b and I.12b).

Chart I.12: Impact of Risk Scenarios on the Baseline Growth Path



Source: RBI staff estimates.

(iv) Food Inflation

Heat waves, large unseasonal rains, and deviations of the monsoon from its normal pattern are occurring with greater frequency and intensity. Such adverse weather events could lead to upward pressures on food prices which could raise headline inflation by around 50 bps (Charts I.11b and I.12b). On the other hand, the prospects of a bumper *rabi* harvest, adequate buffer stocks, effective supply management measures by the government, and an improving global food situation could exert downward pressures on food inflation and push headline inflation 50 bps below the baseline. The baseline headline inflation path and the balance of risk are strongly conditional on the evolving weather

situation and the temporal and spatial spread of the south-west monsoon rainfall.

I.5 Conclusion

The Indian economy is expected to be amongst the fastest growing major economies in 2023-24, backed by strong domestic drivers and strengthening macroeconomic fundamentals. The Indian financial sector remains stable. Headline inflation is expected to moderate from its prevailing elevated levels and move below the upper tolerance band during 2023-24. Monetary policy remains focused on progressively aligning inflation with the target. Geopolitical hostilities, stubborn global inflation, volatile global financial markets and climate shocks are the key risks to the growth and the inflation outlook.

II. Prices and Costs

The path of inflation in H2:2022-23 was buffeted by overlapping domestic food supply shocks which kept inflation above the upper tolerance band barring a transient softening in November-December 2022. Core inflation persisted at elevated levels in spite of input costs moderating with the softening in international commodity prices.

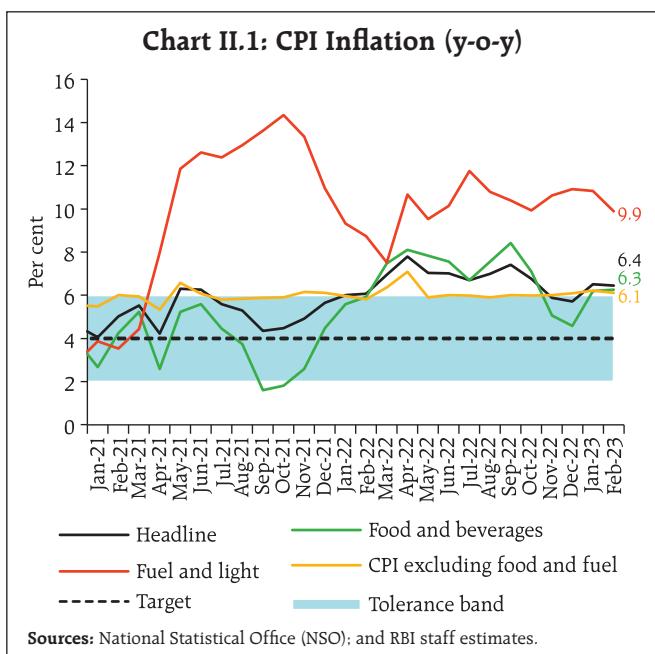
Since the September 2022 MPR, the headline CPI inflation¹ path has been impacted by domestic food supply shocks amidst weather vagaries and the pass-through of pent-up input costs. A transitory but more than anticipated seasonal correction in vegetable prices during November-December 2022 brought some relief but this reversed in January-February 2023 due to sustained price pressures from cereals and spices and a pick-up in protein-based food inflation. With improving domestic demand conditions, input costs were steadily passed on to retail prices of goods and services, imparting considerable stickiness to the already elevated core (CPI excluding food and fuel) inflation².

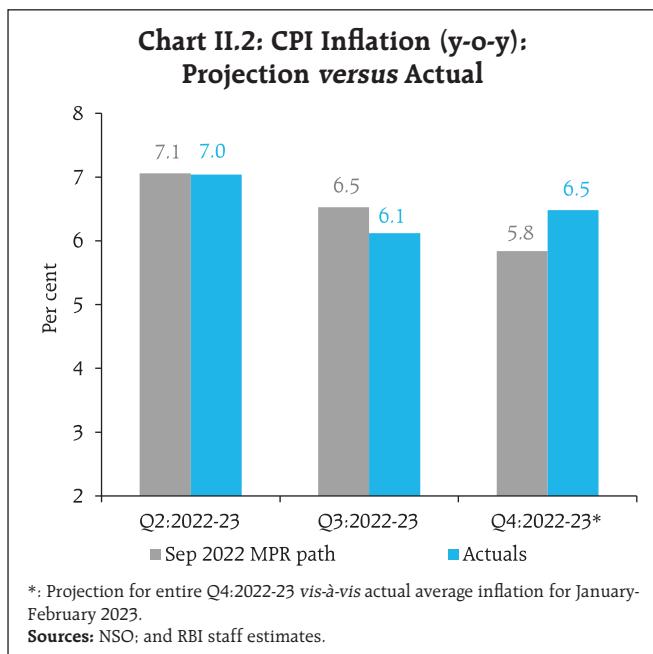
Reflecting these multiple shocks, headline inflation averaged 7.1 per cent (year-on-year, y-o-y) during September-October before a short-lived dip to 5.7 per cent by December. A resurgence of food price pressures pushed headline inflation to 6.5 per cent during January-February 2023. Core inflation hovered at or above 6 per cent throughout H2 (Chart II.1).

¹ Headline inflation is measured by year-on-year changes in the all-India consumer price index (CPI) produced by the National Statistical Office (NSO). The y-o-y inflation numbers for April and May 2021 have been calculated based on the imputed index for April and May 2020 released by NSO.

² Core CPI, i.e., CPI excluding food and fuel is worked out by eliminating the groups 'food and beverages' and 'fuel and light' from the headline CPI.

The Reserve Bank of India (RBI) Act enjoins the RBI to set out deviations of actual inflation outcomes from projections, if any, and to explain the underlying reasons thereof. The September 2022 MPR had projected inflation at 6.5 per cent for Q3:2022-23 and 5.8 per cent for Q4. Actual inflation trailed the projection by 40 bps in Q3 mainly due to the sharper than expected seasonal correction in vegetables prices that also commenced earlier than usual - the month-on-month (m-o-m) decline in prices of CPI vegetables at (-) 8.3 per cent in November 2022 was the highest in the current CPI (2012=100) series for the month of November (Chart II.2). This was followed by an even larger decline in vegetable prices in December. In fact, the cumulative price decline of around 20 per cent in November-December turned out to be the highest in the current CPI series. In Q4 (January-February 2023), the situation reversed, with higher than anticipated cereal price inflation catapulting inflation by around 70 bps above projections. Forecast errors in Q4 were also





attributable to the CPI aggregation methodology due to the redistribution of weights away from the freely distributed rice and wheat under the public distribution system (PDS) towards high market price cereal items³, and to the depreciation of the rupee *vis-à-vis* the US\$ relative to the September 2022 MPR baseline assumption.

II.1 Consumer Prices

Headline inflation dynamics in H2 reflected the interplay of volatile food price momentum and base effects⁴. The acceleration in headline inflation to 7.4 per cent in September 2022, an increase of around 40 bps from August, came from a broad-based

positive price momentum. In October, the headline inflation softened by around 60 bps to 6.8 per cent on account of strong favourable base effects across food, fuel and core categories, despite a further pick-up in the price momentum. Thereafter, headline CPI momentum registered a decline driven by lower food prices. This, along with favourable base effects, moderated headline inflation by close to 90 bps in November. A further sharp correction in headline momentum in December, despite an unfavourable base, led to a second consecutive month of softening in headline inflation. In January 2023, the positive price momentum in food and core categories and an adverse base effect pulled headline inflation up by 80 bps to 6.5 per cent. In February, the decline in food prices along with a favourable base effect led to a marginal softening in headline inflation to 6.4 per cent (Chart II.3).

The distribution of CPI during 2022-23 revealed a pattern distinct from the previous year. The mean of the distribution rose to 6.8 per cent in 2022-23 (April-February) from 5.5 per cent during 2021-22 while lower standard deviation and a lower positive skew pointed towards the generalisation of inflation pressures in the CPI basket (Chart II.4 and II.5).

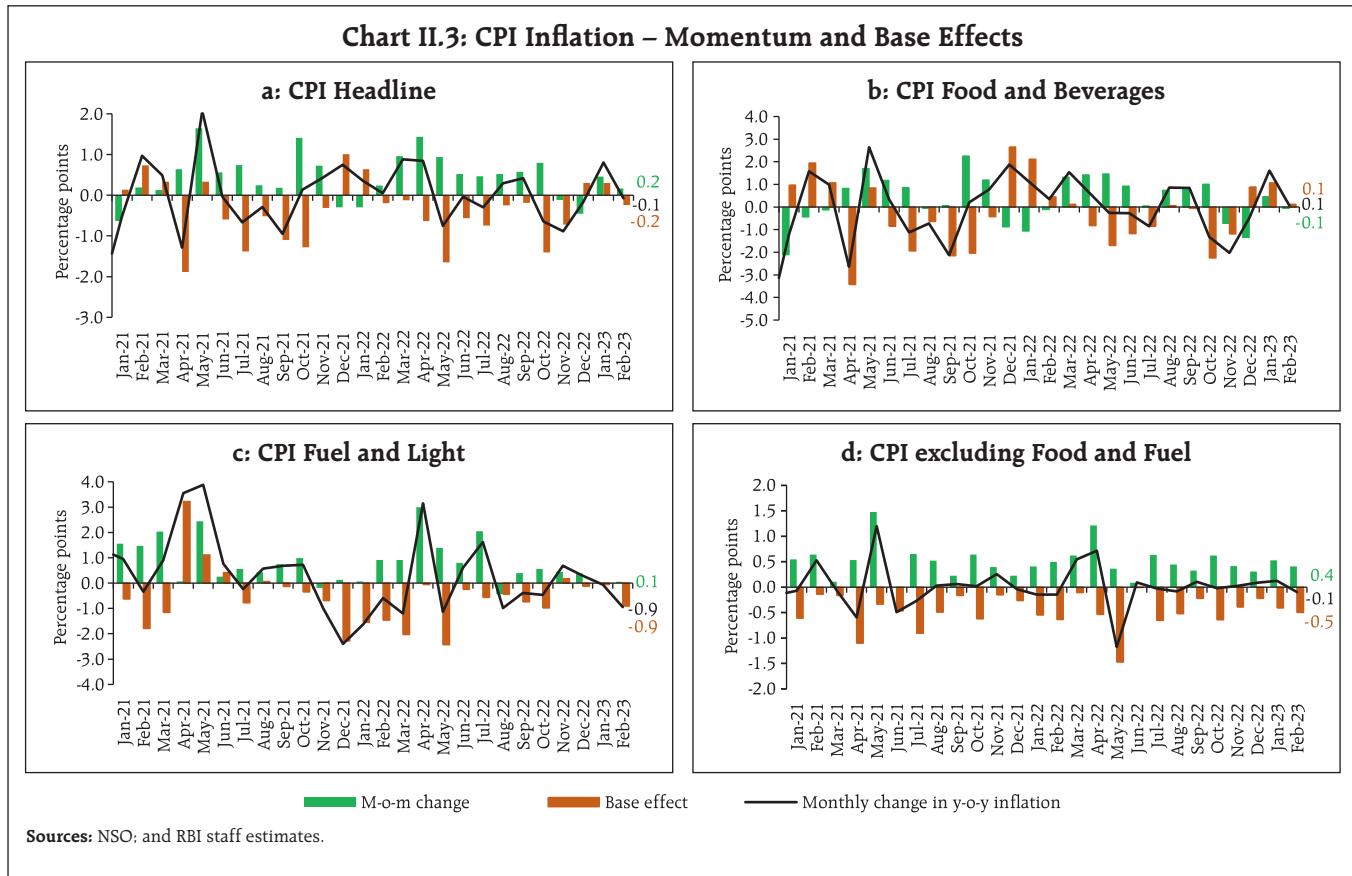
The broad-basing of price pressures was also visible in CPI diffusion indices (DIs)⁵, which increased during September 2022 to January 2023, driven by CPI goods, with some moderation in February (Chart II.6a). The threshold DI⁶ for

³ The zero price for PDS wheat and rice due to free distribution resulted in the transfer of their weights to other items in the cereals group (Das, Pragya and Asish Thomas George (2023), "Consumer Price Index: The Aggregation Method Matters", Reserve Bank of India Bulletin, March).

⁴ A change in CPI y-o-y inflation between any two months is the difference between the current m-o-m change in the price index (momentum) and the m-o-m change in the price index 12 months earlier (base effect). For more details, see Box I.1 of the MPR, September 2014.

⁵ The CPI diffusion index, a measure of dispersion of price changes, categorises items in the CPI basket according to whether their prices have risen, remained stagnant or fallen over the previous month. The higher the reading above 50, the broader is the expansion or generalisation of price increases; the further is the reading below 50, the broader is the price decline across items.

⁶ Threshold diffusion indices capture the dispersion of price increases in CPI basket beyond the specified saar thresholds of 4 per cent and 6 per cent.



price increases remained in excess of 6 per cent on a seasonally adjusted annualised rate (saar)

basis on an average during the last six months (Chart II.6b).

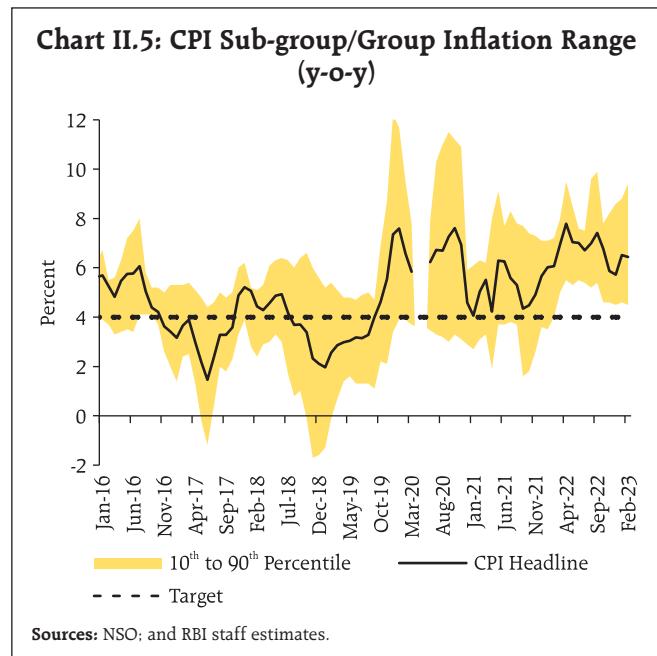
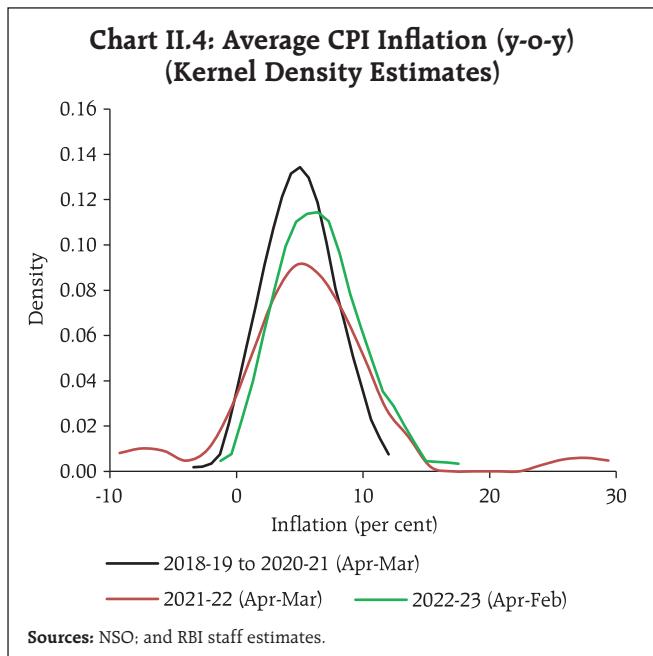
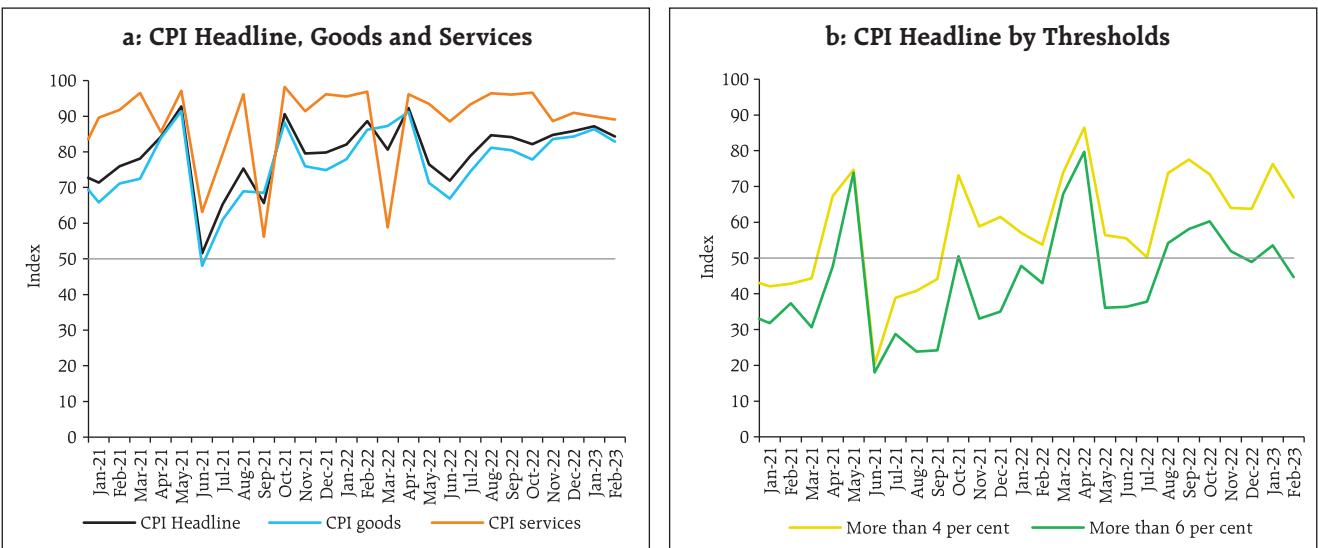


Chart II.6: CPI Diffusion Indices (M-o-M Seasonally Adjusted)

Sources: NSO; and RBI staff estimates.

II.2 Drivers of Inflation

A historical decomposition of inflation using a vector autoregression (VAR)⁷ model indicates that supply shocks drove the inflation trajectory in H2, while monetary actions and aggregate demand

conditions exerted downward pressure (Chart II.7a). An analysis of supply-side cost-push shocks suggests that while direct effects dominate in terms of their impact on headline CPI, indirect effects can also be significant (Box II.1).

Box II.1: Domestic Cost-push Price Shocks and CPI Inflation: An Assessment using Input-Output Tables

Elevated inflation and its persistence reflect a series of multiple supply side shocks. It has been observed that as the direct impact of the shocks wane, second-round effects can take hold, causing generalisation of price pressures. Moreover, some sectors are systemically more important than others in this propagation mechanism (Weber *et al.*, 2022). Direct and indirect effect of domestic cost-push shocks to various sectors of the economy can be analysed by using input-output tables (IOTs)⁸. The IOTs are mapped to CPI items/sub-groups to understand the

total impact in the CPI basket from a shock to each of the sectors. The impact of the sectoral shocks on headline inflation is estimated by using the *Leontief Inverse Matrix* (RBI, 2022), i.e.,

$$L = (I - A)^{-1} ; [e_{j,k}] = SHK \cdot L ; [C_j] = \sum_{k=1}^K e_{jk} ; [I_k] = \sum_{j=1}^J e_{jk}$$

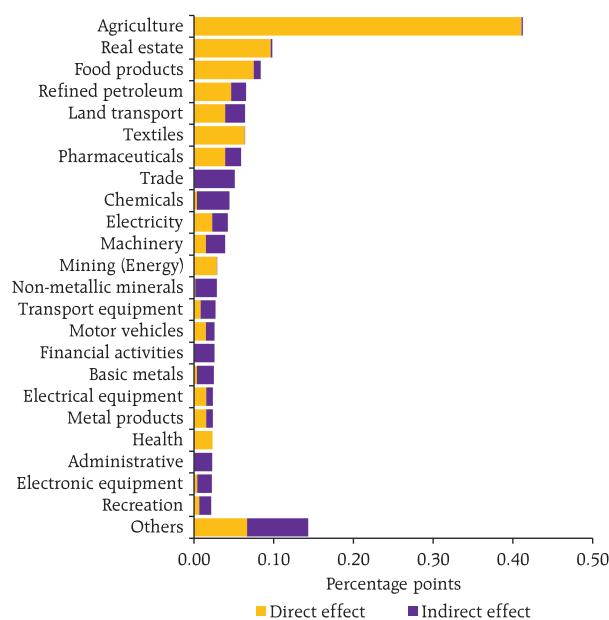
where L is the Leontief inverse, I is an identity matrix of dimension ($J^*K \times J^*K$), A is the technical coefficient matrix derived from the IOTs and J and K are the total number of economies and industries.

(Contd.)

⁷ Historical decomposition estimates the contribution of each shock to the movements in inflation over the sample period (Q4:2010-11 to Q4:2022-23) based on a vector autoregression (VAR) with the following variables (represented as the vector Y_t) – crude oil prices (US\$ per barrel); exchange rate (INR per US\$), asset price (BSE Sensex), CPI; the output gap; rural wages; the policy repo rate; and money supply (M_3). All variables other than policy repo rate are y-o-y growth rates. The VAR can be written in reduced form as: $Y_t = c + A Y_{t-1} + e_t$ where e_t represents a vector of shocks. Using Wold decomposition, Y_t can be represented as a function of its deterministic trend and sum of all the shocks e_t . This formulation facilitates decomposition of the deviation of inflation from its deterministic trend into the sum of contributions from various shocks.

⁸ The IOTs are based on the Inter-Country Input-Output (ICIO) tables (OECD, 2021) applied to Indian context.

Chart II.1.1: Impact on CPI Inflation of a 1 Percentage Point Domestic Secoral Shock



Source: RBI staff estimates.

The empirical analysis shows that a 1 percentage point shock to each of the sectors can raise CPI inflation by 1.46 percentage points, with an indirect impact of 46 basis points. Sector-wise, shocks to agriculture have

the maximum impact (41 bps) on headline inflation, followed by real estate (10 bps), food products (8 bps) and refined petroleum (7 bps) (Chart II.1.1). Direct effects, which depend on the size of the shock and weights of CPI items, dominate. The indirect effects on CPI inflation are relatively sizeable in the case of shocks to sectors like trade, chemicals, non-metallic minerals and financial activities, although these sectors have no direct impact as they are not part of the CPI basket. Sectors like refined petroleum, land transport, pharmaceuticals and electricity have both direct and indirect effects on CPI inflation. These findings can inform supply responses to recent inflation pressures.

References:

OECD (2021), Inter-Country Input-Output Tables.

RBI (2022), "Global Cost-Push Spillovers on Inflation: Insights from World Input-Output Tables", Box I.2, *Monetary Policy Report*, September.

Weber, I. M., Jauregui, J. L., Teixeira, L., & Nassif Pires, L. (2022), "Inflation in Times of Overlapping Emergencies: Systemically Significant Prices from an Input-output Perspective", University of Massachusetts, Economic Department Working Paper Series 340.

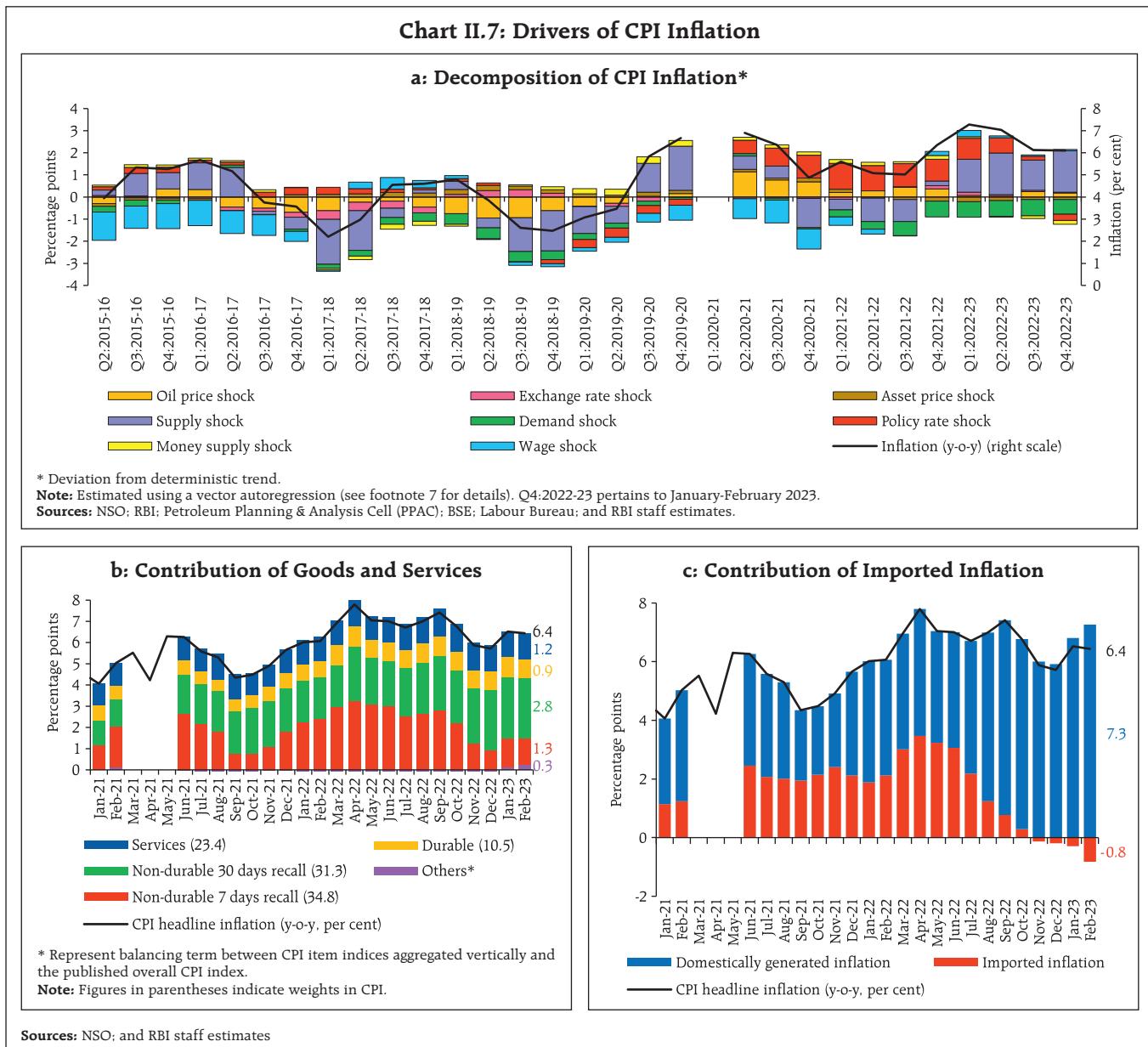
The contribution of goods (with a weight of 76.6 per cent in overall CPI) to headline inflation averaged 81 per cent during September 2022–February 2023 while that of services (weight of 23.4 per cent) averaged 19 per cent. (Chart II.7b). Within goods, semi-perishable goods (non-durable goods with a 30-day recall⁹), particularly petroleum products

(like kerosene, LPG and firewood and chips) and cereals, personal care items and medicines as well as durables (goods with a 365-day recall) like clothing and footwear items, motor cycle/scooter and gold were the main drivers. The contribution of perishable goods to overall inflation halved to 19 per cent in February 2023 from 38 per cent in September 2022.

The increase in global commodity prices following the Ukraine conflict contributed to a surge in the contribution of imported components¹⁰ during

⁹ The CPI weighting diagrams use the modified mixed reference period (MMRP) data based on the 2011-12 Consumer Expenditure Survey conducted by the National Sample Survey Office (NSSO). Under MMRP, data are collected on expenditures incurred for frequently purchased items – edible oil, eggs, fish, meat, vegetables, fruits, spices, beverages, processed foods, pan, tobacco and intoxicants – during the last seven days; for clothing, bedding, footwear, education, medical (institutional), durable goods, during the last 365 days; and for all other food, fuel and light, miscellaneous goods and services including non-institutional medical services, rents and taxes, data relate to the last 30 days.

¹⁰ Global commodities that drive domestic prices include petroleum products; coal; electronic goods; gold; silver; chemical products; metal products; textiles; cereals; milk products, and vegetables oils – these together have a weight of 36.4 per cent in the CPI basket.

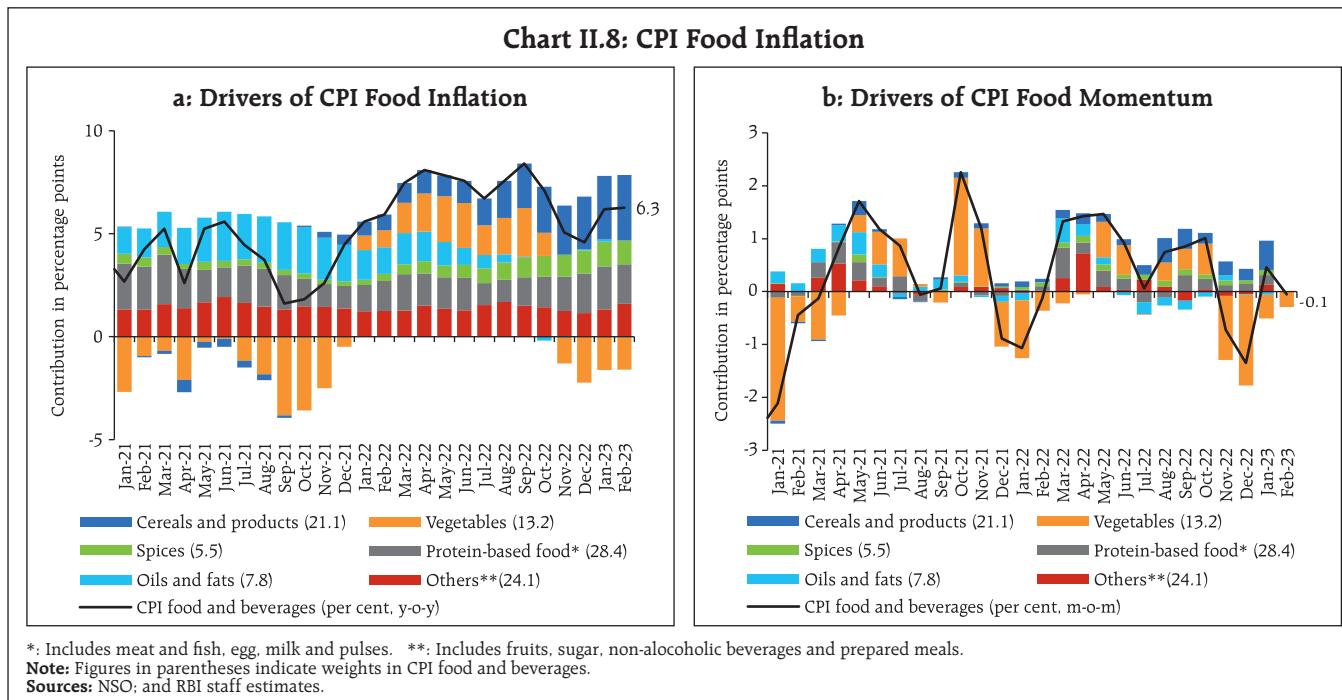


March-June 2022. Subsequently, with the decline in international commodity prices, the contribution of imported inflation moderated – it turned negative during November 2022–February 2023, driven down by the y-o-y fall in prices of edible oils, LPG, electronic goods parts, polymer, petrol and diesel (Chart II.7c).

CPI Food Group

Inflation in food and beverages (weight of 45.9 per cent in the CPI basket) moderated from 8.4 per cent in September 2022 to 4.6 per cent in December, on the

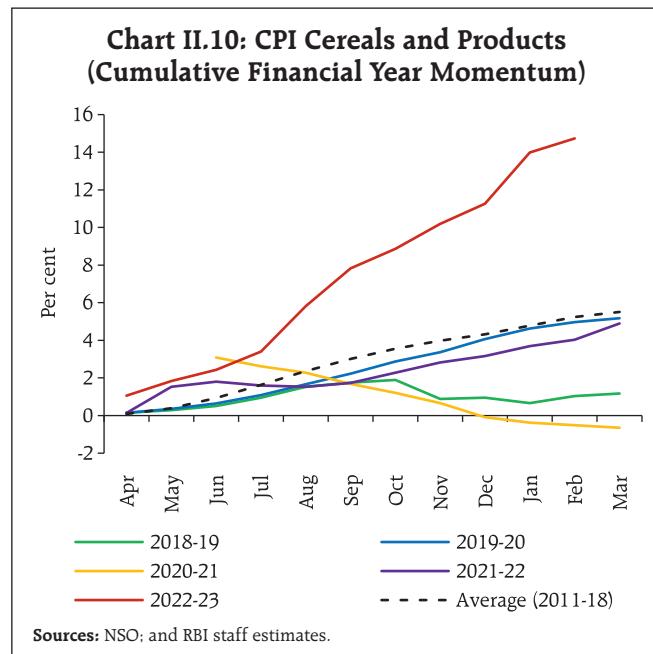
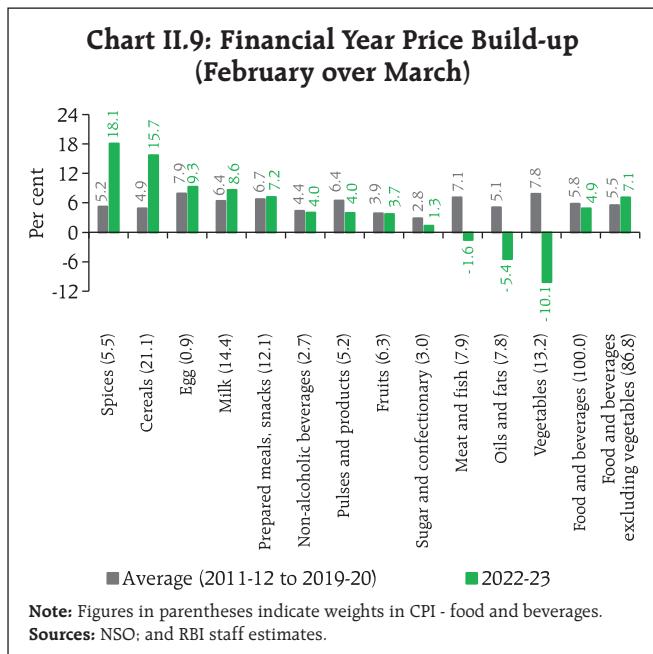
back of sharp correction in vegetable prices alluded to earlier. It, however, rose again to 6.3 percent by February 2023, as increases in prices of cereals and products, milk and spices outweighed the seasonal easing in vegetables prices. Lower *rabi* production of wheat and spices, lower *kharif* production of rice, higher fodder and feed costs, and a decline in wheat buffer stocks led to the hardening of prices of cereals, milk and spices (Chart II.8). Excluding vegetables, CPI food inflation rose from 7.0 per cent during September-October 2022 to 9.0 per cent in February.



While the overall food price build-up in 2022-23 was lower than the historical experience, the build-ups in respect of five of the twelve sub-groups – cereals; eggs; spices; milk; and prepared meals – were higher than their long-term averages (Chart II.9).

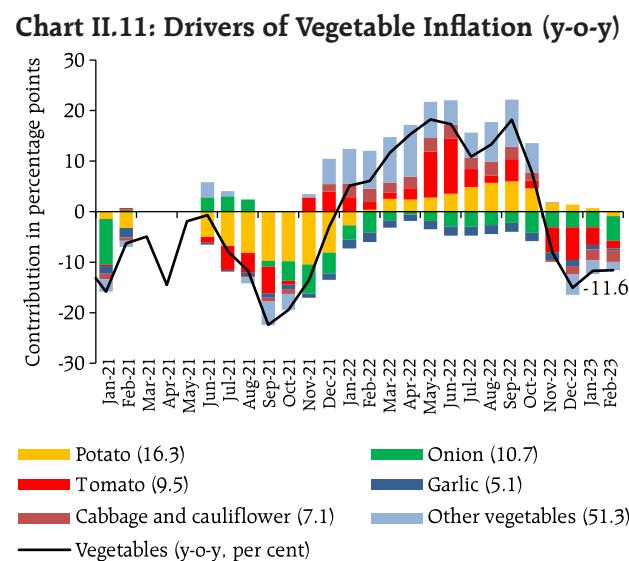
Inflation in cereals (weight of 9.7 per cent in the CPI and 21.1 per cent in the food and beverages

group) increased from less than 10 per cent in August 2022 to 16.7 per cent in February 2023, the highest in the current CPI series (Chart II.10). Wheat and rice were the primary drivers, recording double digit inflation since June and October 2022, respectively. Wheat prices hardened on the back of lower domestic production [(-) 1.7 per cent in 2021-22] due to the



heat wave in major wheat producing states, the dip in stocks and elevated global prices due to the conflict in Ukraine. The release of a cumulative 3.4 million tonnes of wheat in the open market by the Government, at a lower reserve price, along with the higher estimated *rabi* production in 2022-23 (an increase of 4.1 per cent), has led to a gradual ebbing of price pressures. The Government continued with restrictions on wheat exports since May 2022 and banning of exports of wheat flour from August 25, 2022 to improve domestic supplies and ease price pressures. Inflation in rice remained elevated due to decline in *kharif* production ((-) 2.6 per cent) in 2022-23. Further, exports also registered higher volumes (6.5 per cent y-o-y during April 2022-January 2023).

Inflation in vegetables prices (weight of 6.0 per cent in the CPI and 13.2 per cent in the food and beverages group) remained volatile during 2022-23. It moderated from a high of 18.2 per cent in September 2022 and entered into deflation in November on the back of an early onset of seasonal easing of price pressures, reaching (-)11.6 per cent in February 2023. Onion prices remained in deflation throughout 2022-23 on account of higher production in 2021-22 (an increase of 17.4 per cent), record procurement (buffer stock of 2.5 lakh metric tonnes in 2022-23) and better *rabi* crop prospects. Potato price inflation, however, generally remained high during the year on lower production in 2021-22 ((-) 5.0 per cent). With stock releases from cold storages and arrivals of the *kharif* crop, prices declined from November 2022 as per the seasonal pattern, leading inflation to turn negative in February 2023. Imports of potatoes from Bhutan till June 2023, without the need for any import license, also reined in price pressures. Tomato prices exhibited high volatility due to a setback to production from heat wave in major producing states, cyclone *Asani* in Andhra Pradesh and excess/unseasonal rains. Prices



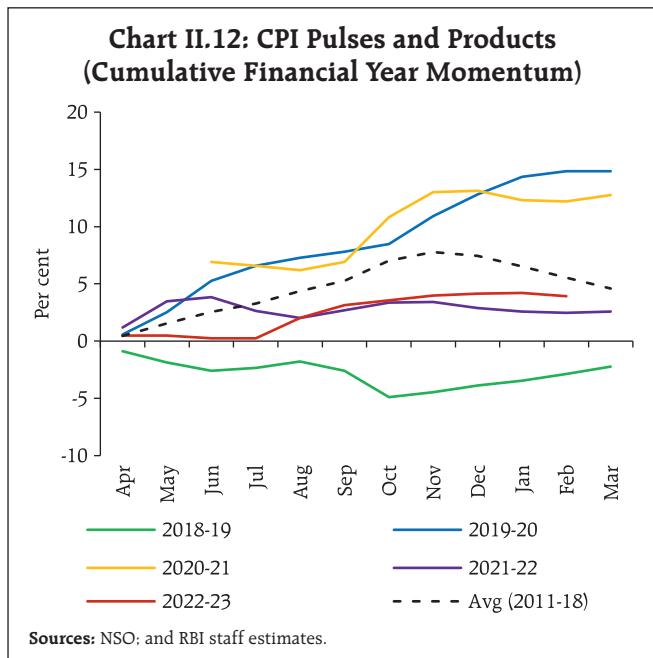
Note: Figures in parentheses indicate items' weights in CPI-vegetables. Item level data were not released by NSO for the months of March, April and May 2020.

Sources: NSO; and RBI staff estimates.

fell from November as per the seasonal pattern and on expectations of good production owing to increased sown area (Chart II.11).

Inflation in prices of fruits (weight of 2.9 per cent in the CPI and 6.3 per cent within the food and beverages group) was relatively subdued, averaging 4.5 per cent in 2022-23 (April-February). While prices of apples and coconuts (barring February) recorded deflation throughout, inflation in banana, oranges, papaya and other fresh fruits remained elevated.

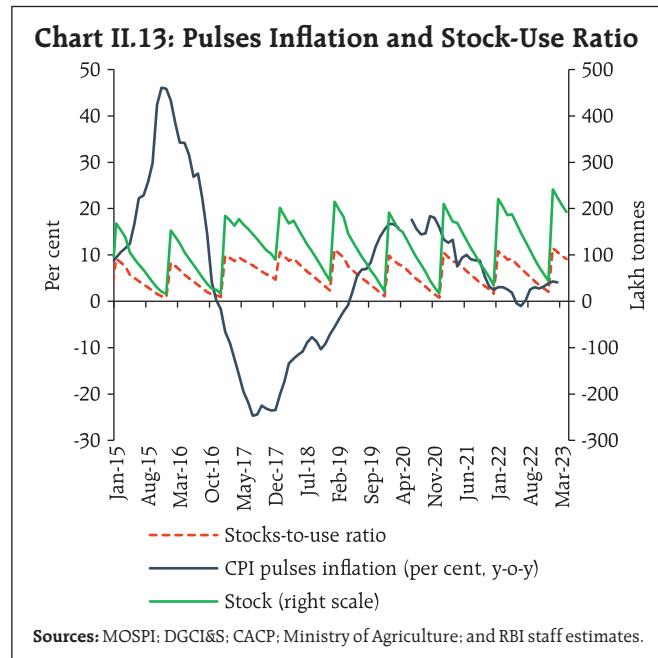
Inflation in prices of pulses (weight of 2.4 per cent in the CPI and 5.2 per cent in the food and beverages group), the primary source of plant-based protein, rose from 2.6 per cent in August 2022 to 4.1 per cent in February, driven by *tur* and *urad* on a decline in *kharif* production in 2022-23 (by 13.1 per cent and 1.0 per cent, respectively) (Chart II.12). To augment supplies and contain price pressures, the Government extended the period for free import of *tur* and *urad* to March 2024, increased the procurement ceiling under the Price Support Scheme (PSS) from 25 per cent to



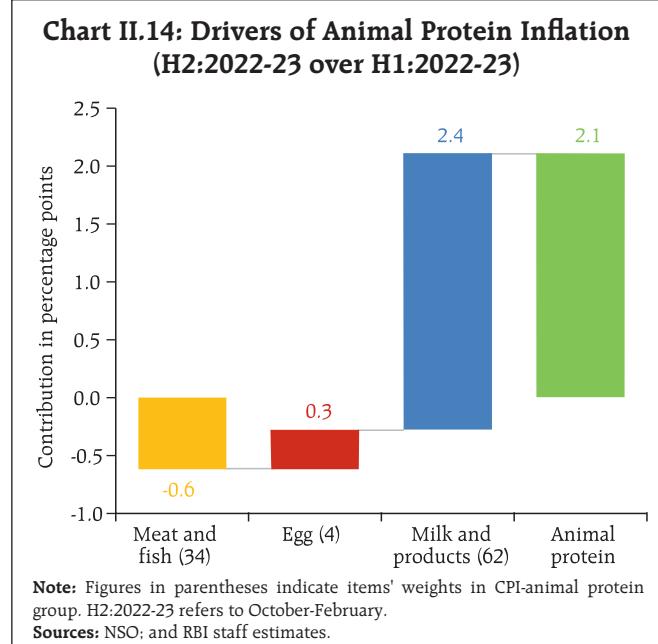
40 per cent for *tur*, *urad* and *masoor* and allowed disposal of *chana* to states at a discounted price under the PSS. Government has stepped up monitoring of stock disclosures and futures trading in *chana* has been banned.

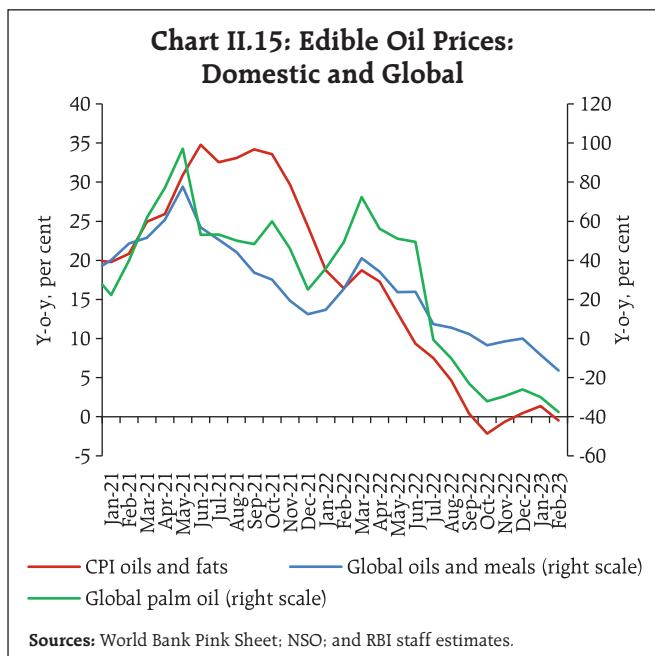
On the whole, record pulses production during 2022-23 at 278 lakh tonnes and a higher stock-to-use (STU) ratio augur well for domestic availability and effective price management (Chart II.13).

Inflation in animal-based protein items increased sharply in H2:2022-23 (October-February), driven mainly by milk and products (weight of 6.6 per cent in the CPI and 14.4 per cent within the food and beverages group) (Chart II.14). Major milk co-operatives like Amul and Mother Dairy raised retail prices by ₹2-3 per litre in two and three spells since September 2022, respectively, followed by other state cooperatives, attributed to increase in feedstock costs. Inflation in prices of eggs increased during November 2022-January 2023 due to high feed cost and a spurt in exports to Malaysia before easing to 4.3 per cent in February 2023. After remaining muted during July-



November 2022, inflation in meat and fish (weight of 3.6 per cent in CPI and 7.9 per cent within the food and beverages group) increased to 6.0 per cent in January 2023 before moderating sharply in February 2023 due to a correction in prices as well as a favourable base effect.





Inflation in prices of oils and fats (weight of 3.6 per cent in the CPI and 7.8 per cent within the food and beverages group), which was elevated in the initial months of 2022-23 due to increase in global prices in the aftermath of the conflict in Ukraine and an export ban on palm oil by Indonesia, eased considerably to (-)0.5 per cent in February 2023 (Chart II.15). This moderation was supported by easing global prices, supply-side measures by the Government (extension of reduction in basic customs duty on crude and refined oils and imposition of stock limits on edible oil and oil seeds) and higher estimated domestic production of oilseeds in 2022-23 (5.4 per cent).

Inflation in prices of sugar and confectionery (weight of 1.4 per cent in the CPI and 3.0 per cent in the food and beverages group) moderated sharply in September 2022 and remained muted in the subsequent months on the back of higher domestic production and export restrictions on sugar, effective

from June 1, 2022 which was extended till October 2023 to ensure ample domestic supplies.

Among other food items, inflation in prices of spices averaged 16.0 per cent during April 2022-February 2023, reflecting production shortfalls in key spices, especially dry chillies, cumin and coriander in 2021-22. Prepared meals prices rose due to the gradual pass-through of past increases in input costs from edible oils, LPG and transport costs.

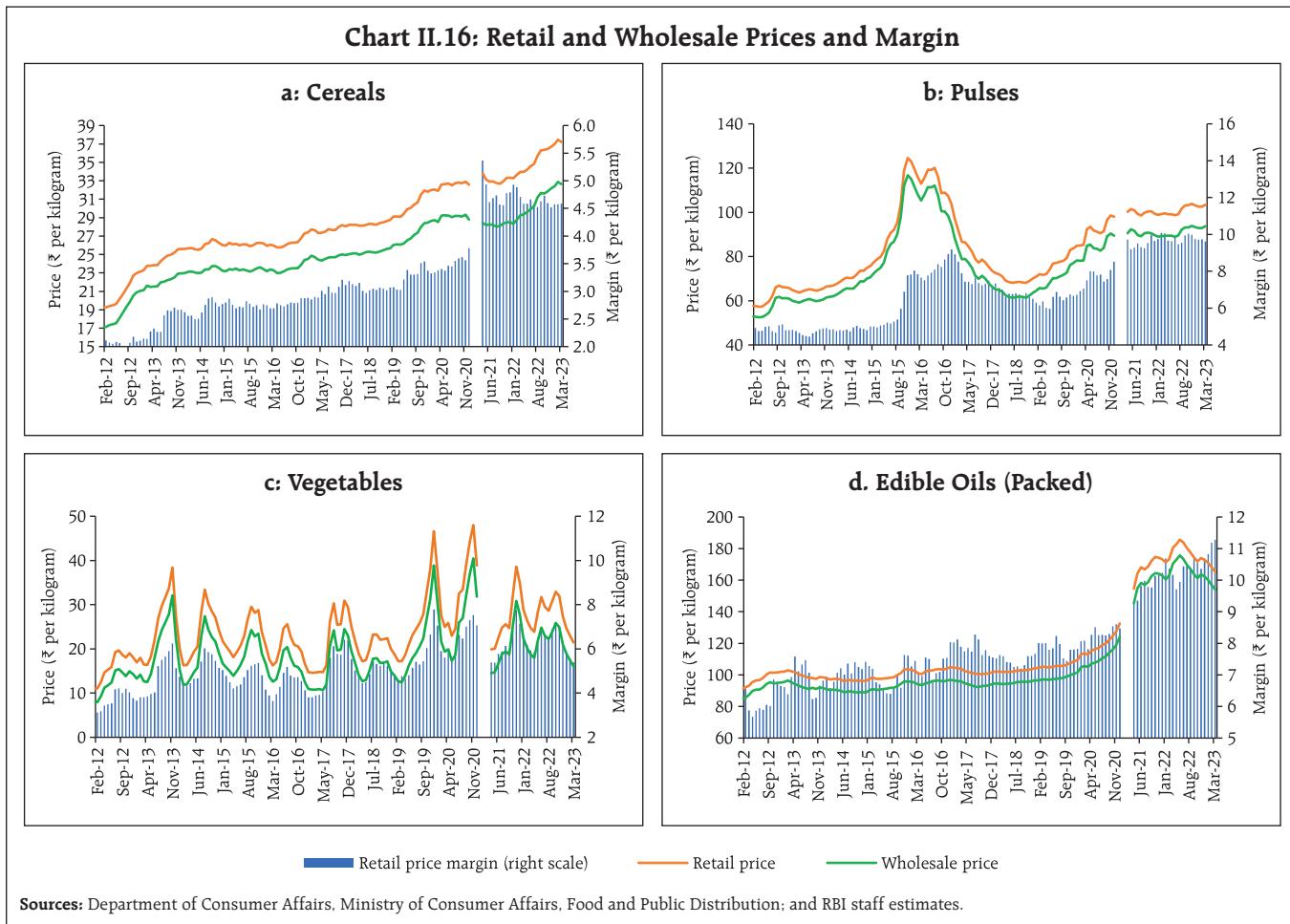
Retail Margins

Retail price margins – the difference of retail and wholesale prices¹¹ – for cereals and pulses remained elevated during 2022-23. Retail margins rose for edible oils as decline in retail prices (groundnut, soyabean, sunflower and mustard oil) was less than that in wholesale prices. Margins picked up in September-November 2022 in the case of vegetables, driven by all the three constituents, i.e., potatoes, tomatoes and onions. Subsequently, there was a sharp seasonal correction in prices and margins (Chart II.16).

CPI Fuel Group

CPI fuel inflation during September 2022 to February 2023 was high and sticky in a range of 9.9 per cent to 10.9 per cent. While domestic LPG prices remained unchanged till February 2023, kerosene (PDS) prices fell after July 2022 in line with international prices. Kerosene prices inflation moderated from around 60 per cent in September 2022 to 30 per cent by February 2023. Electricity prices, on the other hand, moved out of deflation in November 2022 and have remained largely steady since then. Firewood

¹¹ Item level retail and wholesale prices are aggregated at respective sub-groups using item level CPI weights. Data for January-March 2021 have been excluded due to changes in price collection mechanism and item varieties by DCA.



and chips inflation pressures rose during Q3 before moderating in February (Chart II.17).

Core CPI (CPI excluding Food and Fuel)

Core inflation (CPI inflation excluding food and fuel) exhibited stickiness at or above 6 per cent in H2. Elevated inflation pressures were visible across all exclusion-based measures of core inflation (Table II.1).

In 2020-21, high core inflation was due to price pressures in select categories like transport and communication, and personal care and effects. Since 2021-22, however, it has become increasingly generalised and persistent (Chart II.18). During 2022-23 (April-February), core inflation averaged 6.1 per cent *vis-à-vis* 6.0 per cent in 2021-22. Between

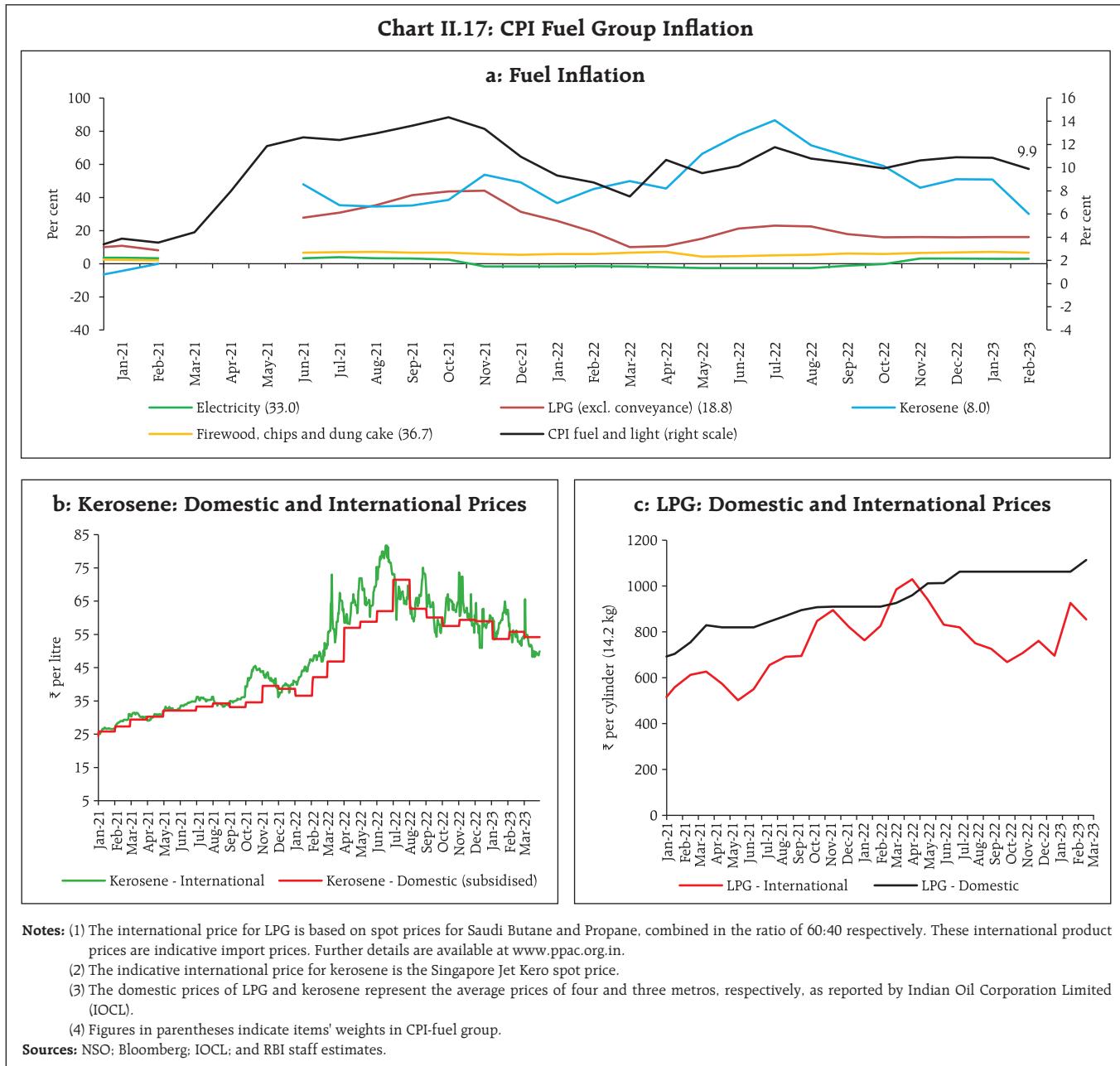
Table II.1: Exclusion-based Measures of CPI Inflation (y-o-y)

Month	CPI excluding food and fuel (47.3)	CPI excluding food, fuel, petrol and diesel (45.0)	CPI excluding food, fuel, petrol, diesel, gold and silver (43.8)
Mar-22	6.4	6.2	6.1
Apr-22	7.1	6.5	6.4
May-22	5.9	5.5	5.5
Jun-22	6.0	6.1	6.1
Jul-22	6.0	6.3	6.4
Aug-22	5.9	6.2	6.2
Sep-22	6.0	6.3	6.4
Oct-22	6.0	6.5	6.5
Nov-22	6.0	6.3	6.4
Dec-22	6.1	6.3	6.3
Jan-23	6.2	6.5	6.3
Feb-23	6.1	6.4	6.2

Note: (1) Figures in parentheses indicate weights in CPI.

(2) Derived as residual from headline CPI.

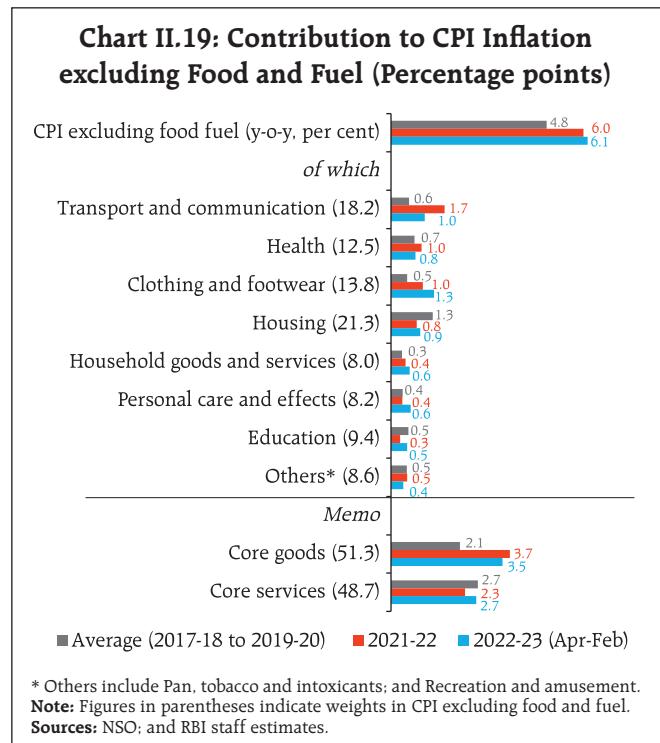
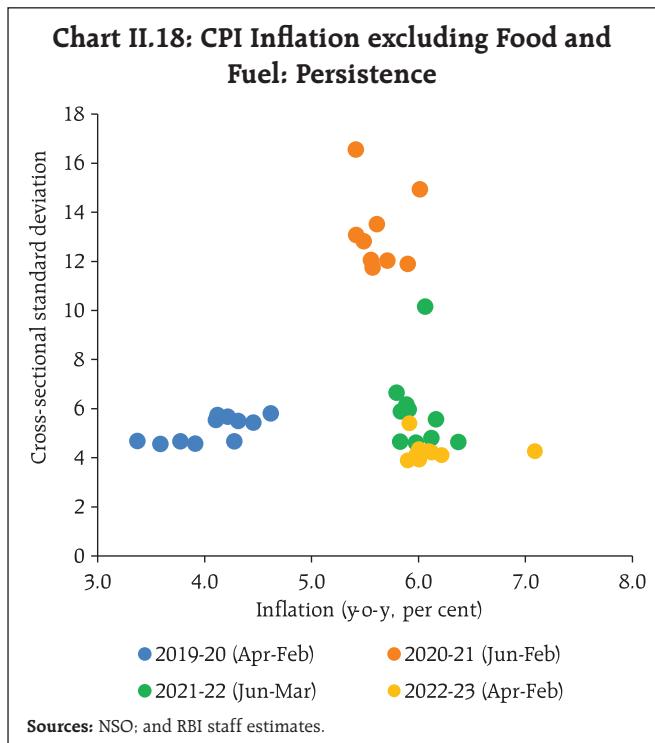
Sources: NSO; and RBI staff estimates.



2021-22 and 2022-23, the contribution of transport and communication, and health to overall core inflation saw a decline, but that of clothing and footwear edged up sharply along with an uptick in the contributions of household goods and services, personal care and effects, and education. The contribution of core services increased during 2022-23 while that of core goods fell (Chart II.19).

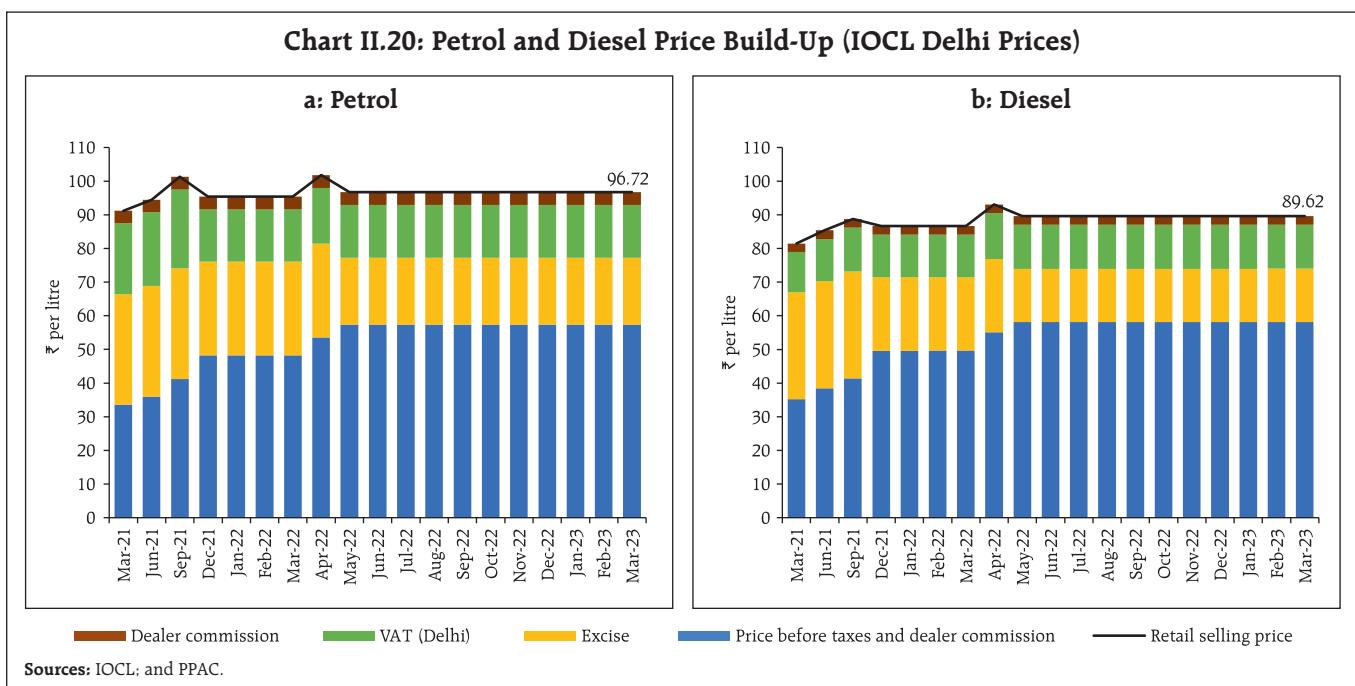
Retail selling prices of petrol and diesel remained unchanged during September 2022 to February 2023 (Chart II.20).

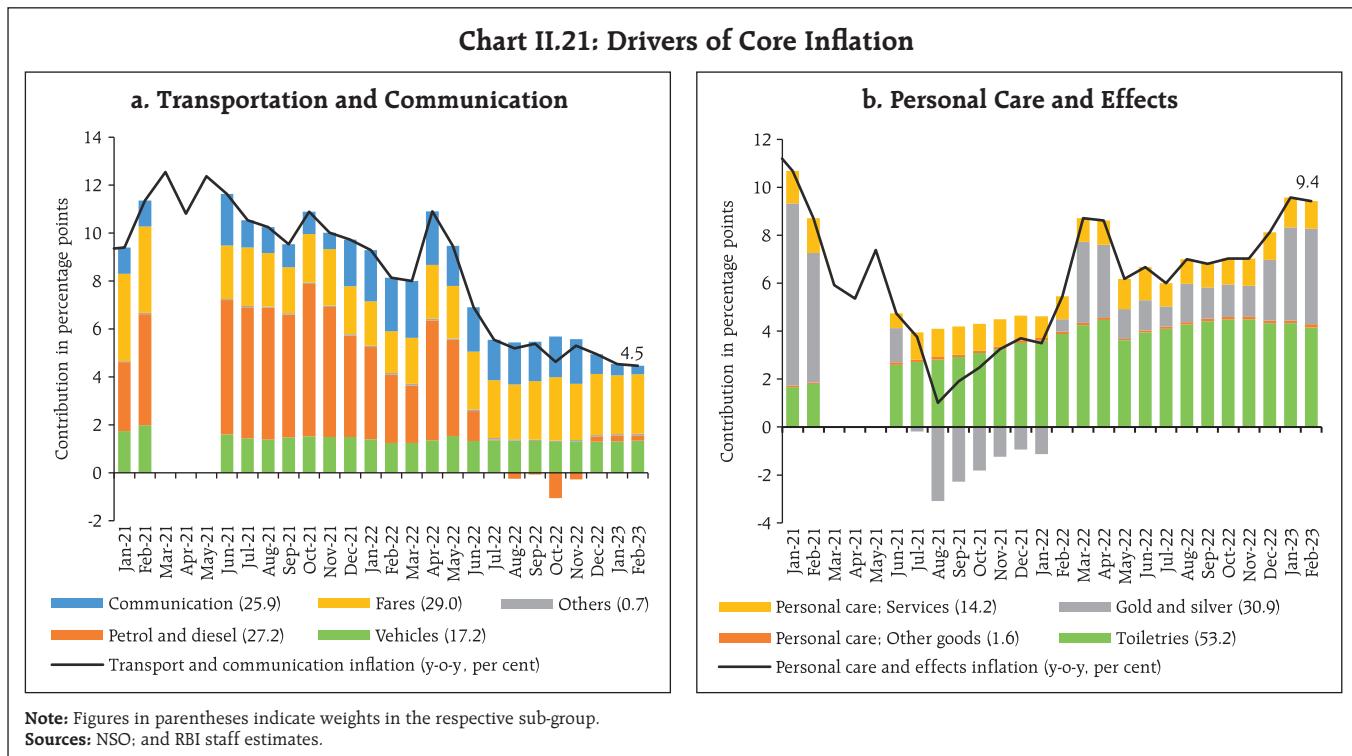
Petrol and diesel prices moved into deflation on a y-o-y basis during August-November 2022 and stood at 0.9 per cent in February, resulting in a significant drop in transport and communication inflation and its



contribution to CPI core inflation (Chart II.21). On the other hand, gold prices firmed up y-o-y, resulting in an

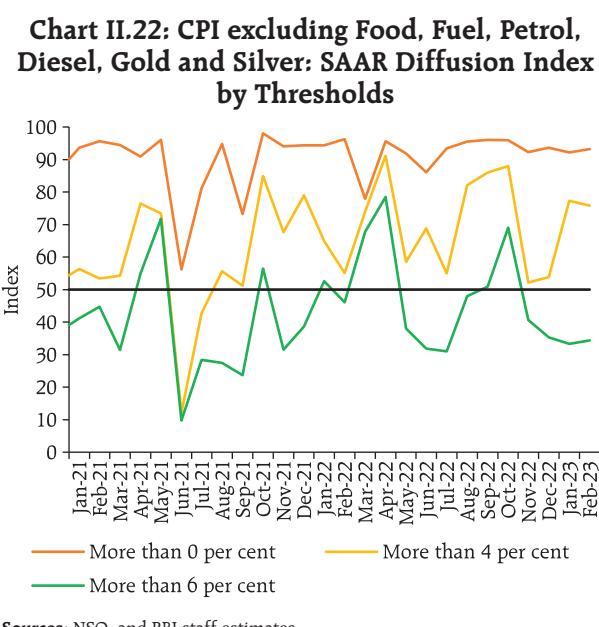
increase in personal care and effects inflation and its contribution to core inflation.





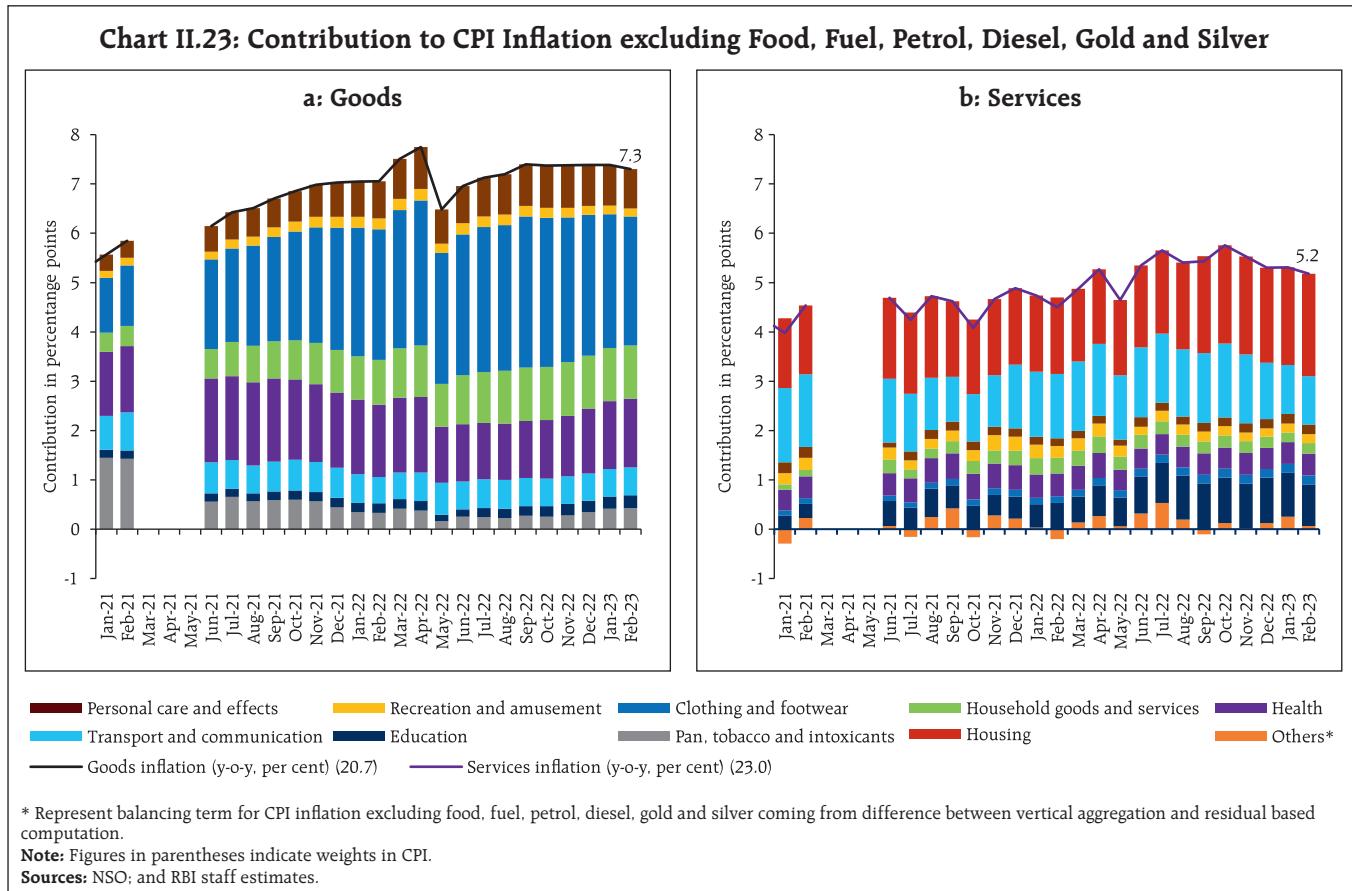
Threshold diffusion indices for CPI excluding food, fuel, petrol, diesel, gold and silver indicate a high number of items registering price increases in excess of 4 per cent during September-October 2022. Since November 2022, the diffusion index for items registering price increases in excess of 6 per cent (saar) has moved lower, suggesting easing in the intensity of price increases (Chart II.22).

A decomposition of CPI excluding food, fuel, petrol, diesel, gold and silver inflation into its goods (with a weight of 20.7 per cent in the headline CPI) and services (weight of 23.0 per cent) components shows that goods inflation averaged 7.4 per cent during September 2022 to February 2023, higher than services inflation of around 5.4 per cent. The key drivers of goods inflation were clothing and footwear, household goods and services, and health (Chart II.23a). In services inflation, housing (primarily house rental charges) was the largest



Sources: NSO; and RBI staff estimates.

contributor, followed by transport services (bus/tram/taxi fares; air fare), and education (tuition and other fees) (Chart II.23b).



Trimmed mean measures¹² also indicated elevated underlying inflation pressures, with the weighted median inflation rate at 6.8 per cent during December 2022–February 2023 (Table II.2).

Other Measures of Inflation

CPI inflation for agricultural labourers (CPI-AL) and rural labourers (CPI-RL) exceeded CPI headline inflation during September 2022 - February 2023, primarily on account of food inflation being higher in CPI-AL and CPI-RL. Inflation in terms of CPI for industrial workers (CPI-IW), on the other hand, was below the headline CPI during the same period due

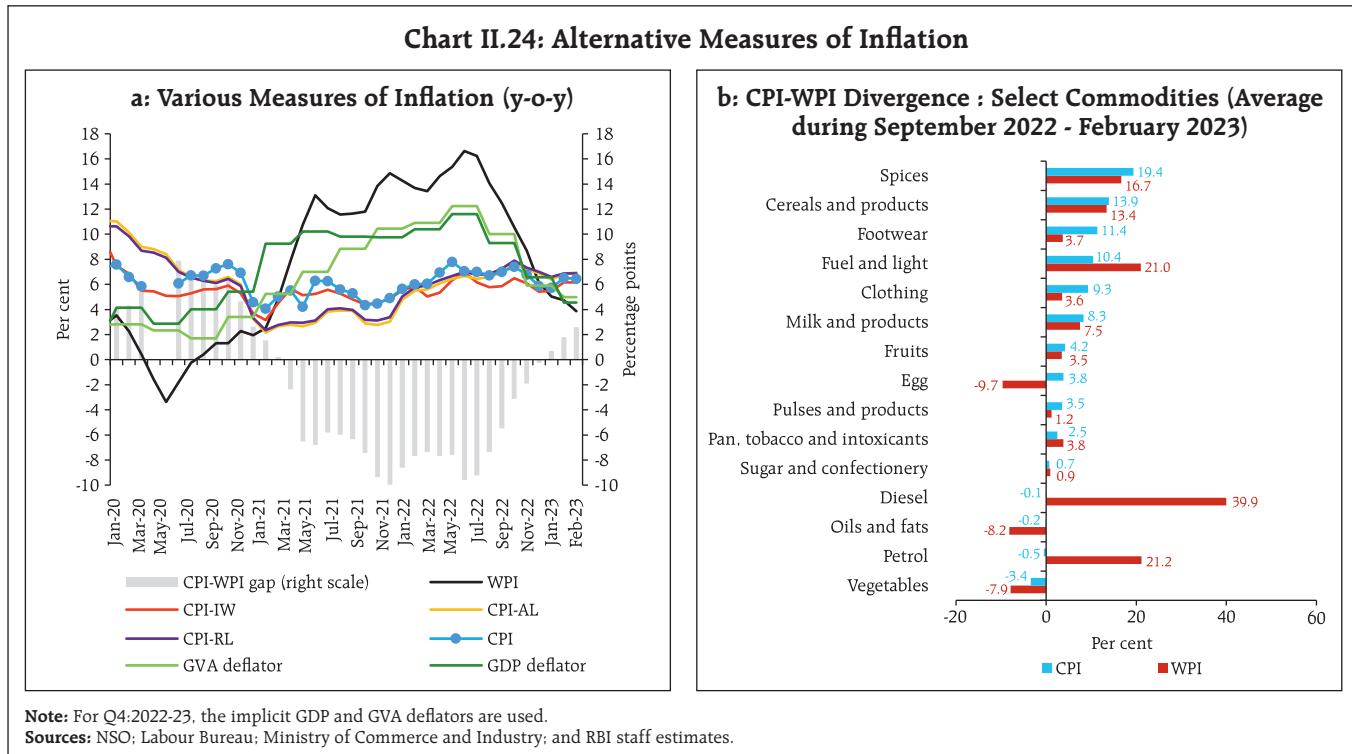
to lower inflation in food, clothing and footwear, housing as well as the miscellaneous categories in CPI-IW vis-à-vis headline CPI.

Table II.2: Trimmed Mean Measures of CPI Inflation (y-o-y)

Month	5% trimmed	10% trimmed	25% trimmed	Weighted Median
Mar-22	6.6	6.3	6.1	6.1
Apr-22	7.3	7.0	6.6	6.5
May-22	6.4	6.1	5.5	5.7
Jun-22	6.2	6.0	5.7	5.7
Jul-22	6.1	6.0	5.7	5.7
Aug-22	6.6	6.4	6.1	6.5
Sep-22	6.9	6.6	6.5	6.7
Oct-22	6.8	6.6	6.6	6.6
Nov-22	6.5	6.5	6.5	6.6
Dec-22	6.5	6.5	6.5	6.9
Jan-23	6.6	6.6	6.6	6.8
Feb-23	6.6	6.5	6.5	6.6

¹² While exclusion-based measures drop a fixed set of volatile items (for example, food and fuel) in each period, trimmed measures exclude items located in the tails of the inflation distribution - items displaying changes more than the specified threshold in prices each month are excluded, and the items dropped differ from month to month.

Sources: NSO; and RBI staff estimates.



After ruling in double digits between April 2021 and September 2022, wholesale price index (WPI) inflation moderated to 3.9 per cent in February 2023 on the back of a fall in international commodity prices and favourable base effects. The sharp moderation in WPI inflation pulled down inflation measured by the deflators for gross value added (GVA) and gross domestic product (GDP) in Q3:2022-23 (Chart II.24a).

While WPI inflation outpaced CPI inflation in the aftermath of COVID-19 pandemic and the conflict in Ukraine, it moved below CPI inflation since December 2022. During September 2022–February 2023, CPI inflation ruled above the corresponding WPI groups/sub-groups in respect of spices, fruits, protein-based goods (pulses, egg and milk), and clothing and footwear. Deflation in edible oil and vegetable prices was higher in the WPI than in the CPI. On the other

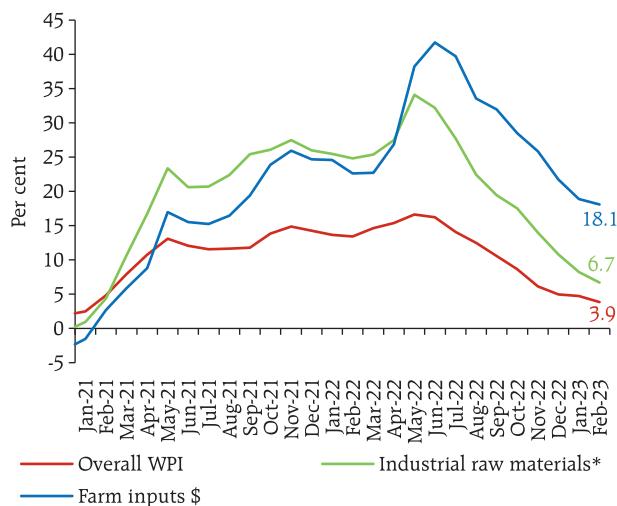
hand, inflation in fuel, petrol and diesel was higher in the former *vis-à-vis* the latter (Chart II.24b)¹³.

II.3 Costs

Costs, as measured by WPI inflation relating to industrial raw materials and farm inputs prices, moderated gradually during H2:2022-23 (Chart II.25). Inflation in the prices of industrial inputs – such as high-speed diesel (HSD); naphtha; aviation turbine fuel (ATF); bitumen; and furnace oil – eased, mirroring the correction in international crude oil prices. The prices of non-food primary articles, particularly raw cotton and oilseeds softened in tandem with international prices and expectations of higher domestic production.

¹³ The divergence in WPI and CPI petrol and diesel inflation emanated from the fact that while the cut in the central excise duties led to a fall in CPI petrol and diesel prices (on a y-o-y basis), WPI was not impacted as prices in WPI are computed net of domestic excise duty effects.

Chart II.25: Farm and Non-farm Input Cost Inflation (y-o-y)

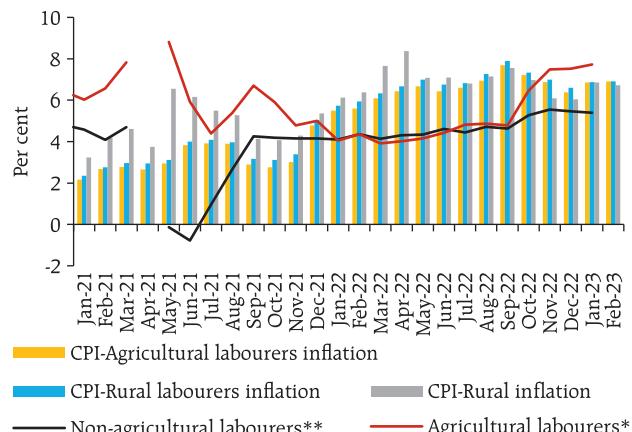


*: Comprise primary non-food articles, minerals, coal, aviation turbine fuel, high speed diesel, naphtha, bitumen, furnace oil, lube oil, petroleum coke, electricity, cotton yarn and paper and pulp from WPI.

\$: Comprise high speed diesel, fodder, electricity, fertilisers, pesticides, and agricultural and forestry machinery from WPI.

Sources: Ministry of Commerce and Industry; and RBI staff estimates.

Chart II.26: Wage Growth (y-o-y) and Inflation in Rural Areas (y-o-y)



*: comprise ploughing, sowing, harvesting, picking, horticulture workers, fishermen, fishermen costal, loggers and wood cutters, animal husbandry, packaging, general agriculture labourers, plant protection workers.

**: comprise carpenter, blacksmith, mason, weavers, beedi makers, bamboo-cane basket weavers, handicraft workers, plumbers, electrician, construction workers, LMV & tractor drivers, sweeping/cleaning workers and other non-agricultural labourers.

Note: Data for April-May 2021 were not released.

Sources: NSO; Labour Bureau; and RBI staff estimates.

Minerals price inflation moderated and turned to deflation from November 2022, driven by deflation in iron ore prices, and in copper concentrate prices from January 2023. Notwithstanding the easing in HSD prices, farm input price inflation remained elevated on account of high fodder price inflation. Inflation in price of WPI electricity – a key input in both industrial and farm inputs – persisted at elevated levels, reflecting higher input costs on the back of firmer international coal prices and increased domestic demand.

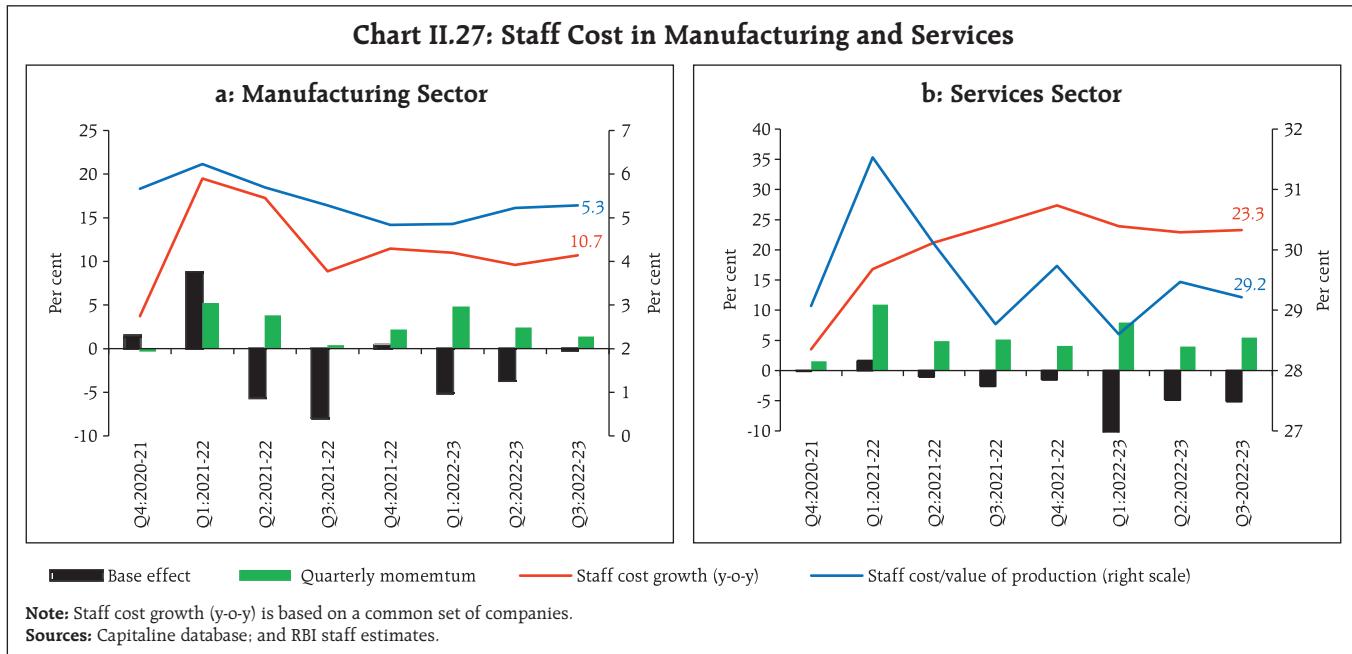
Nominal rural wage growth for both agricultural and non-agricultural labourers increased during October 2022-January 2023. While agricultural wage growth was broad-based across all occupations, the growth in non-agricultural wages was mainly driven by categories like beedi makers, blacksmiths, masons,

electricians, and light motor vehicle (LMV)/tractor drivers (Chart II.26).

In the organised sector, growth in overall staff cost (y-o-y basis) accelerated in Q3:2022-23 for both manufacturing and services sectors. The share of staff cost in the value of production for both manufacturing and services was broadly unchanged in Q3:2022-23 from its level in Q2:2022-23 (Chart II.27).

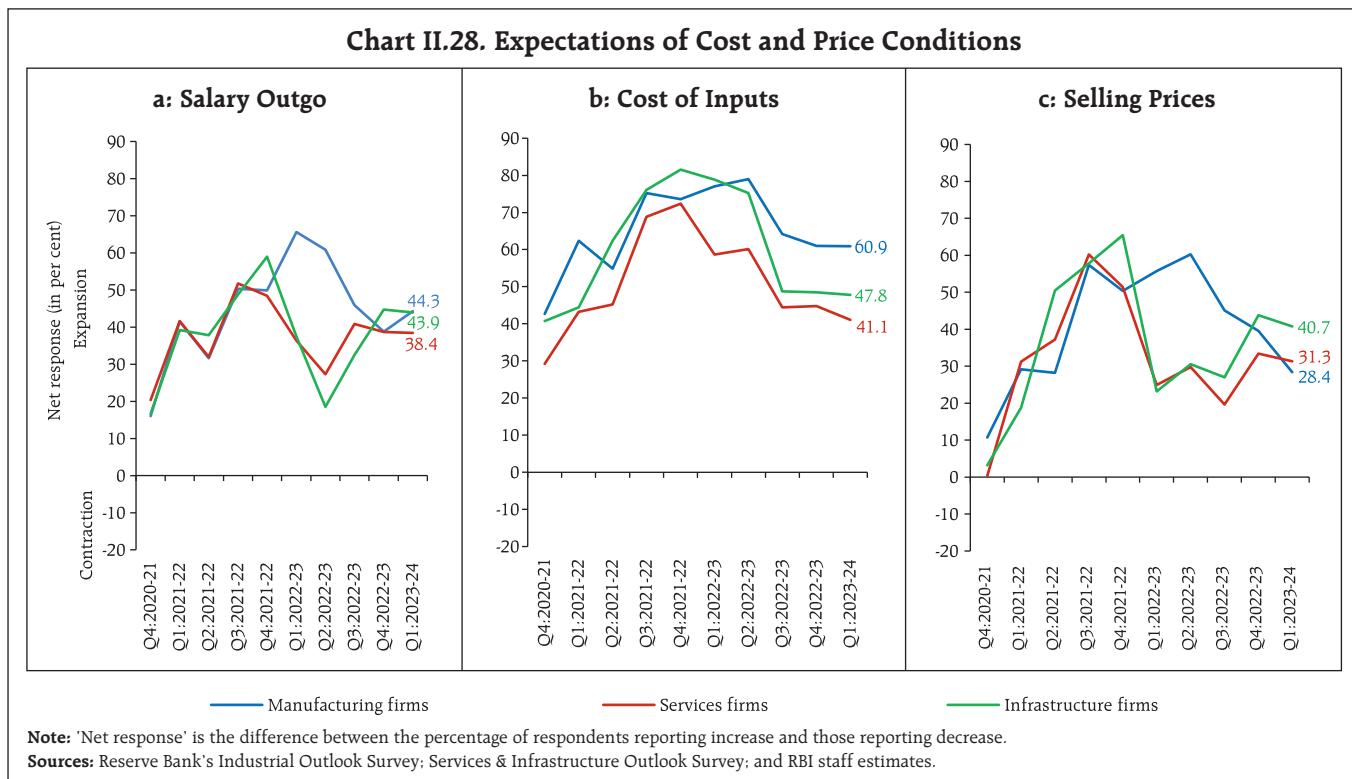
As per the firms polled in the Reserve Bank's enterprise surveys¹⁴, the pace of salary outgoes for the manufacturing, infrastructure and services sectors is expected to remain broadly stable in Q1:2023-24. Input cost pressures are likely to ease in Q1:2023-

¹⁴ Industrial Outlook Survey; and Services and Infrastructure Outlook Survey.

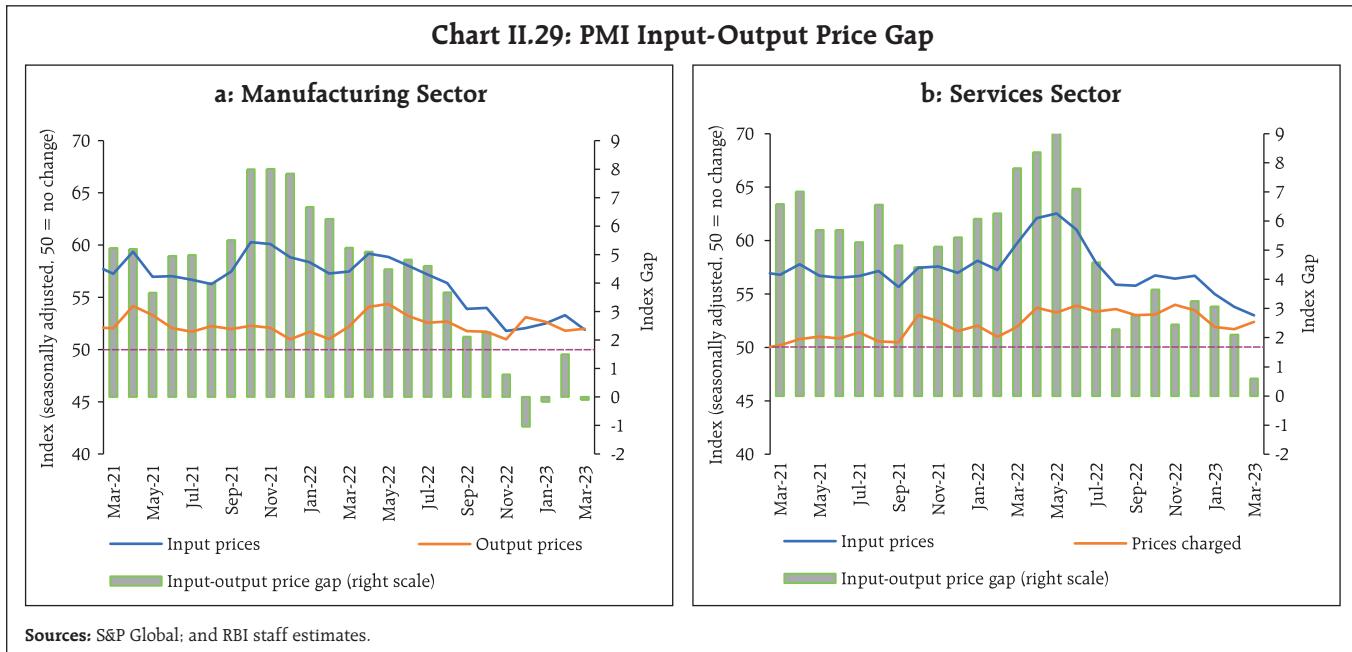


24 and the pace of increase in selling prices is also expected to edge down for all the three sectors in Q1:2023-24 (Chart II.28).

One year ahead business inflation expectations¹⁵ that had risen in January 2023, edged down during February 2023 reflecting moderation in cost pressures.



¹⁵ Based on the monthly Business Inflation Expectations Survey (BIES) of the Indian Institute of Management, Ahmedabad. The survey polls a panel of business leaders primarily from the manufacturing sector about their inflation expectations in the short and medium term.



As per manufacturing firms polled for the purchasing managers' index (PMI), input prices picked up during December–February and output prices in general moderated with the input-output price gap returning to positive territory by February. The month of March saw a reversal in this trend with the gap again turning negative as input prices fell (Chart II.29a). In PMI services, input as well as output prices momentum softened during December–February and the input-output price gap has been largely range-bound since August 2022. There was an uptick in prices charged in the month of March with softening in input prices, leading to narrowing of input output price gap (Chart II.29b).

II.4 Conclusion

A combination of adverse supply-side shocks and the pass-through of pending input costs to output

prices exerted sustained pressures on headline inflation during 2022–23. The outlook for 2023–24 is subject to uncertainties surrounding climate-related disturbances such as heat wave and unseasonal rains. Moreover, a resurgence in geopolitical tensions could lead to supply chain dislocations and commodity price pressures; *per contra*, an earlier resolution of geopolitical hostilities can soften price pressures. Global demand conditions are turning more uncertain amidst rising financial market turbulence and financial stability concerns, which could weigh in on commodity prices. Amidst these elevated uncertainties, monetary policy remains focussed on progressively aligning inflation with the target. Pro-active supply measures by the Government remain vital to address bottlenecks and shortages in critical areas to mitigate volatility in inflation and enable a sustained disinflation.

III. Demand and Output

Domestic demand remained resilient in H2:2022-23, with investment activity gaining ground but private consumption exhibiting sluggishness. On the supply side, a rebound in contact-intensive services compensated for manufacturing sector which was pulled down by elevated input cost pressures. Protracted geopolitical tensions, tighter global financial conditions, global financial market volatility and slowing external demand pose risks to the outlook.

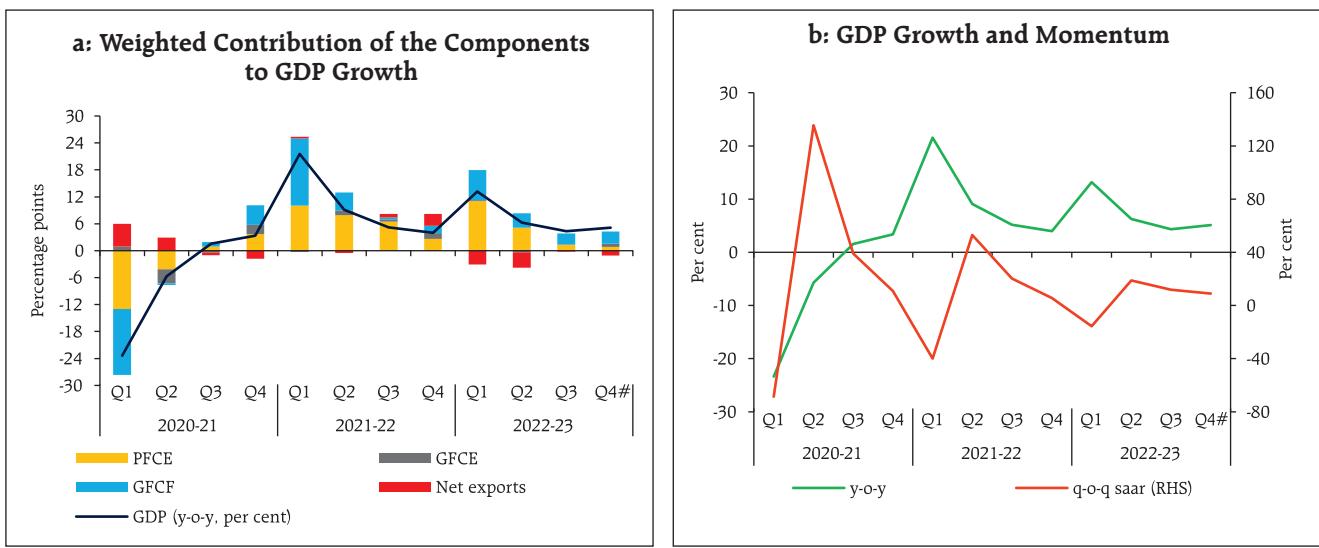
Domestic demand remained resilient in H2:2022-23, with investment activity gaining ground on the back of the government's continued thrust on capex. Private consumption exhibited sluggishness with normalisation of the pandemic induced pent-up demand and the dampening effect of inflationary pressures. Slowing global demand weighed on merchandise exports; however, with imports declining, the drag from net exports

moderated. Overall, real gross domestic product (GDP) rose by 4.8 per cent in H2:2022-23, up by 12.3 per cent over its pre-pandemic level. On the supply side, the rebound in contact-intensive services was sustained. The manufacturing sector was pulled down by elevated input cost pressures. Spillovers from protracted geopolitical tensions, tighter global financial conditions, global financial market volatility and slowing external demand pose risks to the outlook.

III.1 Aggregate Demand

Aggregate demand, measured by real GDP, expanded by 4.4 per cent (year-on-year, y-o-y) in Q3:2022-23 and by an estimated 5.1 per cent in Q4 (Chart III.1 and Table III.1). The momentum – the quarter-on-quarter (q-o-q) seasonally adjusted annualised growth rate (saar) – remained strong in Q3 and Q4. For the financial year 2022-23 as a whole, real GDP rose by 7.0 per cent on top of 9.1

Chart III.1: GDP Growth and its Constituents



Notes: #: Implicit growth. saar: Seasonally adjusted annualised rate.

Sources: National Statistical Office (NSO); Government of India (GoI); and RBI staff estimates.

Table III.1: Real GDP Growth

(y-o-y, per cent)

Item	2021-22	2022-23	Weighted Contribution*		2021-22				2022-23			
	(FRE)	(SAE)	2021-22	2022-23	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4#
Private final consumption expenditure	11.2 (5.4)	7.3 (13.2)	6.4	4.3	17.6 (-9.3)	14.2 (5.9)	10.8 (12.6)	4.7 (11.8)	20.0 (8.9)	8.8 (15.2)	2.1 (14.9)	1.5 (13.4)
Government final consumption expenditure	6.6 (5.6)	1.2 (6.9)	0.7	0.1	-2.1 (6.3)	11.7 (-17.6)	5.8 (0.9)	11.8 (38.0)	1.8 (8.3)	-4.1 (-20.9)	-0.8 (0.0)	6.1 (46.4)
Gross fixed capital formation	14.6 (6.2)	11.2 (18.1)	4.6	3.7	61.0 (-9.6)	12.4 (11.1)	1.2 (4.3)	4.9 (19.6)	20.6 (9.0)	9.7 (21.9)	8.3 (12.9)	7.8 (29.0)
Exports	29.3 (17.5)	11.5 (31.0)	5.5	2.5	46.1 (8.8)	25.1 (17.2)	27.8 (16.8)	22.4 (27.1)	19.7 (30.2)	12.3 (31.7)	11.3 (30.1)	3.9 (32.0)
Imports	21.8 (5.2)	18.8 (25.0)	4.6	4.4	44.8 (-14.6)	26.6 (4.2)	19.7 (13.6)	6.7 (19.5)	33.7 (14.1)	25.9 (31.2)	10.9 (25.9)	8.4 (29.5)
GDP at market prices	9.1 (2.7)	7.0 (9.9)	9.1	7.0	21.6 (-6.9)	9.1 (2.9)	5.2 (6.9)	4.0 (7.5)	13.2 (5.4)	6.3 (9.3)	4.4 (11.5)	5.1 (13.0)

Notes: *: Component-wise contributions do not add up to GDP growth because change in stocks, valuables and discrepancies are not included.

Figures in parentheses are growth rates over 2019-20. FRE: First revised estimates; SAE: Second advance estimates. #: Implicit.

Source: NSO.

per cent in the preceding year. India remained the fastest growing major economy in 2022-23 reflecting

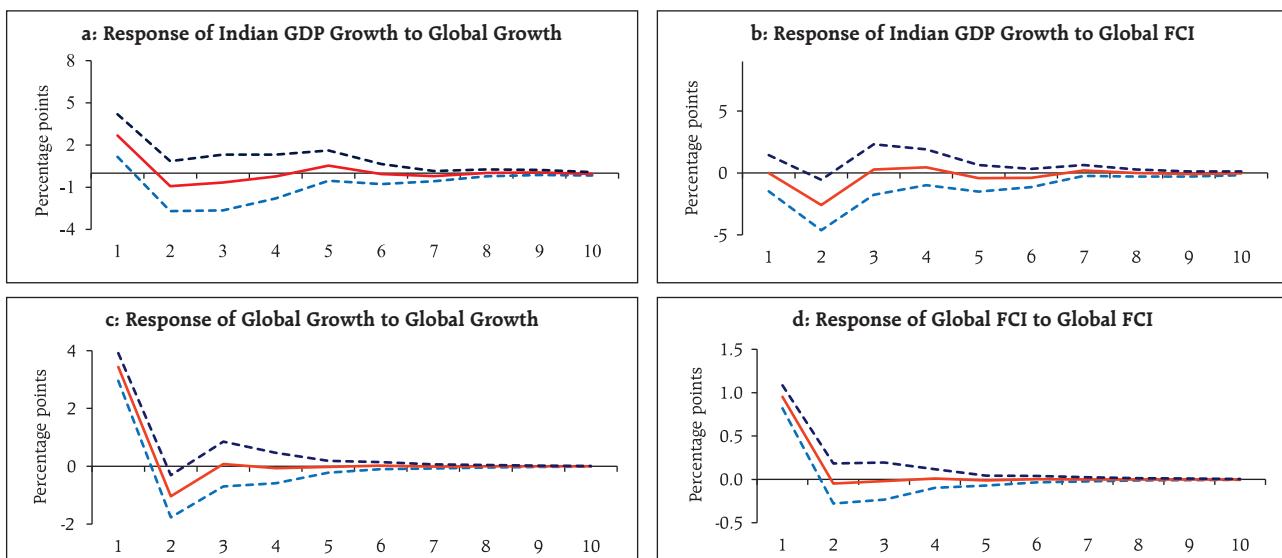
dominant role of domestic drivers in the growth process (Box III.1).

Box III.1: External Shocks and India's GDP Growth

To explore the dynamics of global spillovers on domestic economic activity, a structural vector auto regression (SVAR) is estimated with external and domestic variables

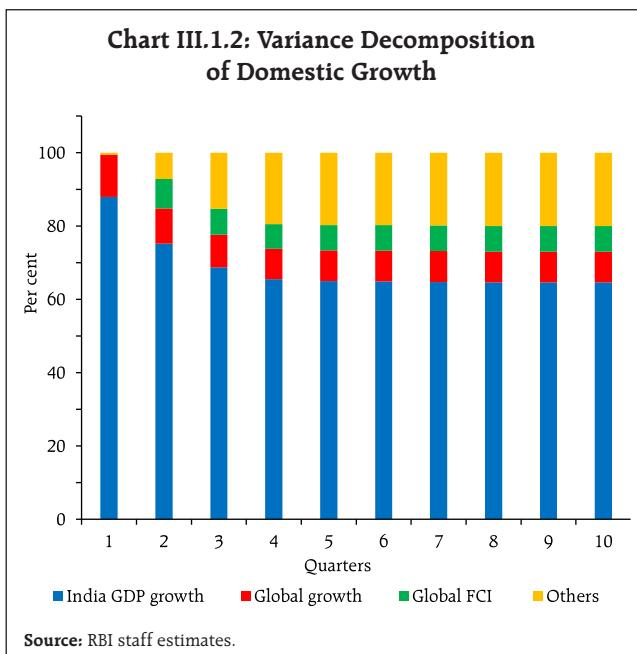
in the following order – global variables (GDP growth, CPI inflation and financial conditions); domestic GDP growth; domestic inflation (GDP deflator); and the short-term

Chart III.1.1: Impulse Response Functions



Notes: Impulse responses reflect responses to one standard deviation Cholesky innovations; Dotted lines are +/- 2 standard error bands. X-axes represent quarters.
Source: RBI staff estimates.

(Contd.)



interest rate (weighted average call money rate (WACMR)) adjusted for inflation¹. Quarterly data from Q1:1997-98

to Q3:2022-23 have been used in the estimation. The SVAR contains two lags based on the Schwarz information criterion (SIC).

The impulse responses indicate that a one standard deviation negative shock to global GDP growth (around 3.5 percentage points) reduces domestic growth by over 2 percentage points with a lag of a quarter (Chart III.1.1). The variance decomposition suggests that global factors explain only 17-18 per cent of the variability in India's GDP growth, reflecting dominance of domestic growth drivers (Chart III.1.2).

References:

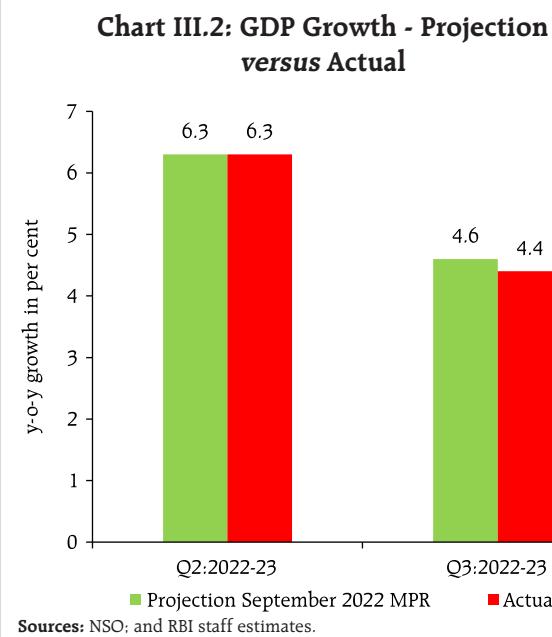
International Monetary Fund, (2014), "On the Receiving End? External Conditions and Emerging Market Growth Before, During, And After the Global Financial Crisis", *World Economic Outlook*, April.

World Bank Group, (2015), "Slowdown in Emerging Markets: Rough Patch or Prolonged Weakness?", Policy Research Note, December.

GDP Projections versus Actual Outcomes

The September 2022 Monetary Policy Report (MPR) projected real GDP growth at 6.3 per cent for Q2:2022-23, and 4.6 per cent each for Q3 and Q4. The actual growth rate at 6.3 per cent in Q2 turned out to be in line with the projection (Chart III.2). In Q3, the outturn undershot the projection by 20 basis points (bps) due to lower than expected growth in private consumption and government expenditure. Data for Q4:2022-23 are scheduled to be released by the NSO on May 31, 2023.

¹ Global GDP growth and global inflation are proxied by OECD countries, and global financial conditions by the financial conditions index (FCI) constructed by Bloomberg. Growth and inflation are q-o-q (saar), while global FCI is first differenced.



III.1.1 Private Final Consumption Expenditure

Growth in private final consumption expenditure (PFCE) – the mainstay of aggregate demand – decelerated from an above trend pace of 20.0 per cent in Q1:2022-23 to 8.8 per cent in Q2 and 2.1 per cent in Q3 due to the ebbing pandemic-related pent-up demand and high inflation.

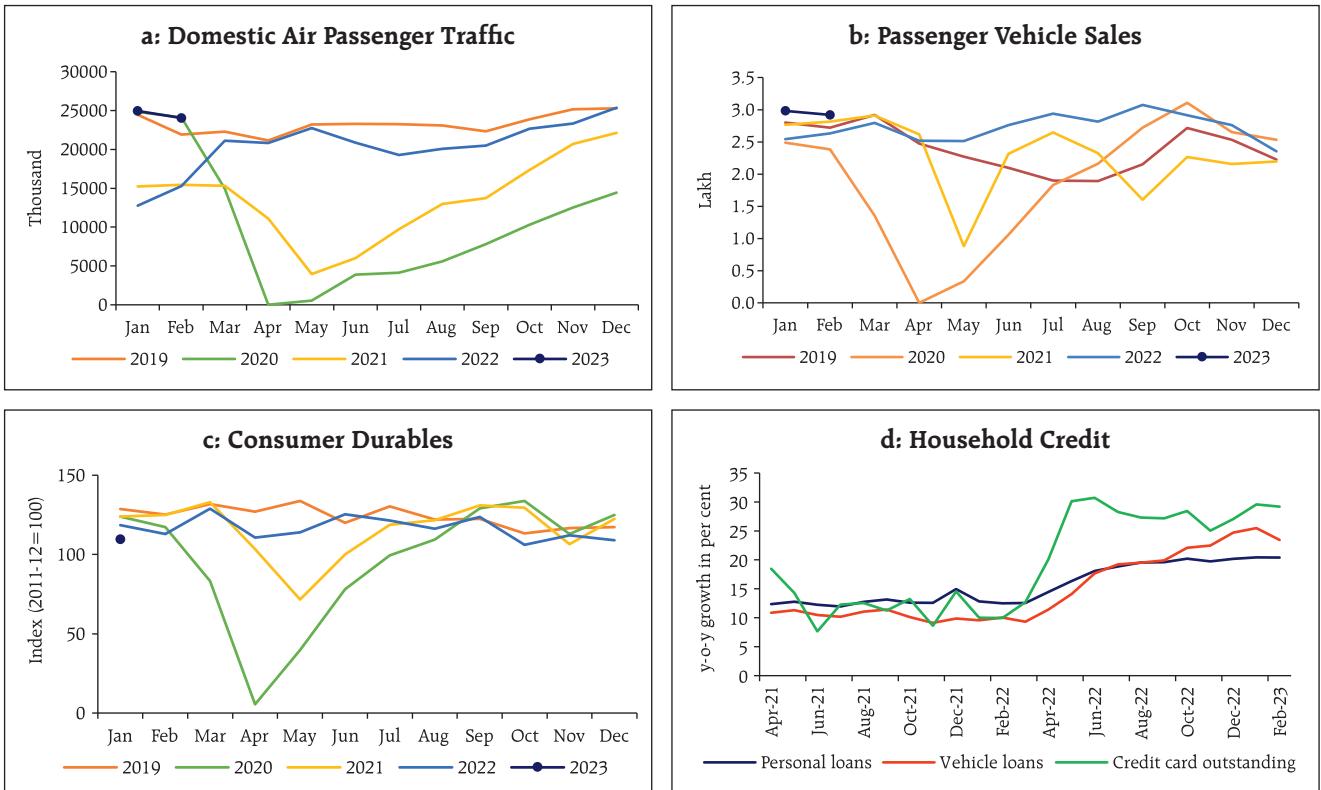
Amongst the high frequency indicators (HFIs) of urban demand, domestic air passenger traffic witnessed a sustained pick up from August 2022 and surpassed its pre-pandemic level in December 2022–February 2023 (Chart III.3). Passenger vehicle sales and household credit posted robust growth in H2. Consumer durables, on the other hand, contracted in Q3 and January 2023, partly reflecting a shift in households spending from goods to services with the receding pandemic.

Rural demand showed some signs of recovery in H2, albeit it is lagging urban demand. Amongst the

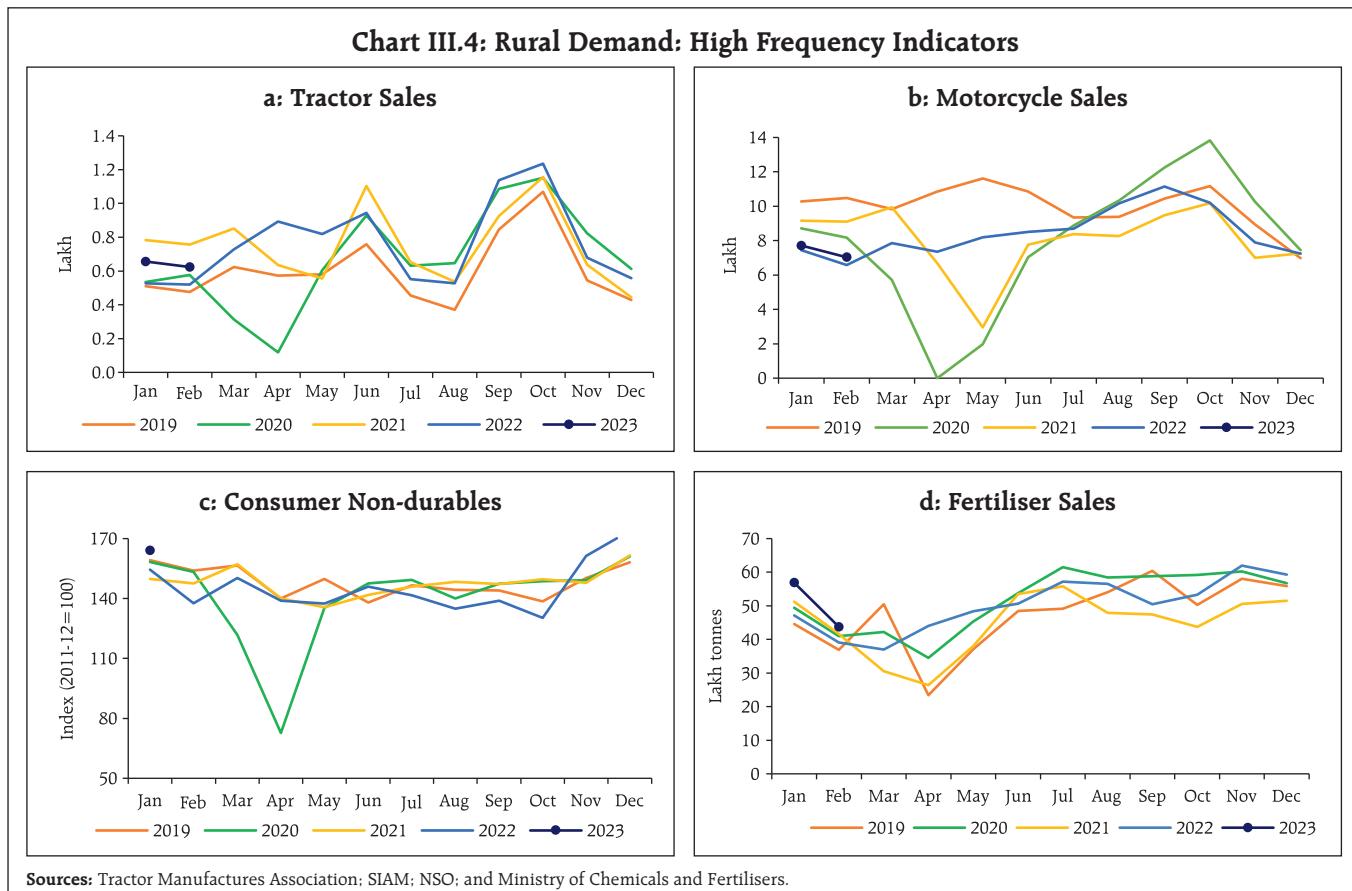
HFIs, tractor sales grew robustly in H2 while motorcycle sales growth returned to positive territory in January–February 2023 after a marginal contraction in December 2022. Consumer non-durables output expanded for the third consecutive month in January 2023, following a decline during July–October (Chart III.4). The demand for work under the *Mahatma Gandhi National Rural Employment Guarantee Act* (MGNREGA) moderated in Q3 and Q4 in tandem with the improving rural job market on the back of higher *rabi* sowing and recovery in informal sector employment.

The labour force participation rate, as per the Centre for Monitoring Indian Economy's (CMIE) Consumer Pyramid data, remained unchanged in Q4 and the unemployment rate moved lower across both urban and rural segments (Chart III.5a). Organised sector employment, as reflected in the Employees' Provident Fund Organisation (EPFO) payrolls data, strengthened considerably in Q3 and in January 2023

Chart III.3: Urban Demand: High Frequency Indicators

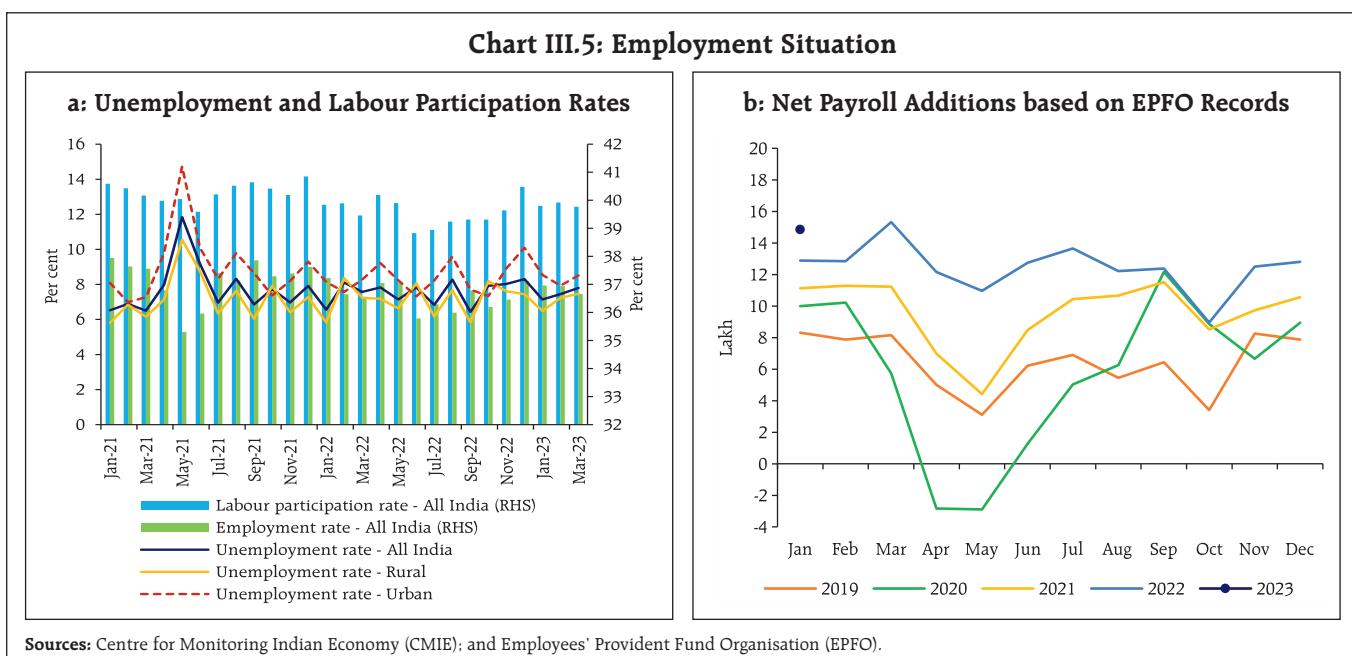


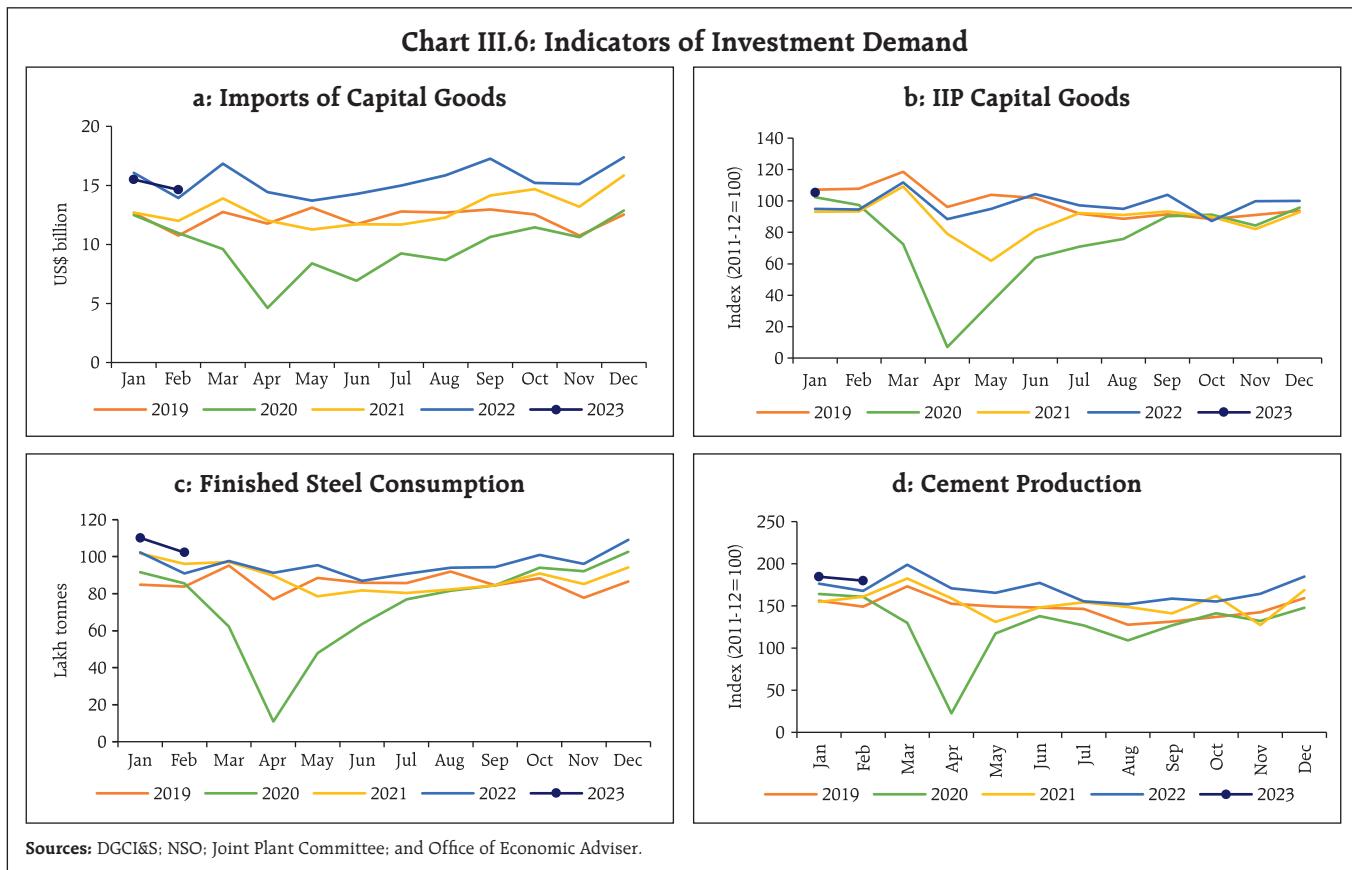
Sources: Directorate General of Civil Aviation (DGCA); Society of Indian Automobile Manufacturers (SIAM); NSO; and RBI.



as compared with the same period last year (Chart III.5b). According to *Naukri Jobspeak* data, increased

hiring was witnessed in insurance, hospitality, banking, financial services and real estate sectors.



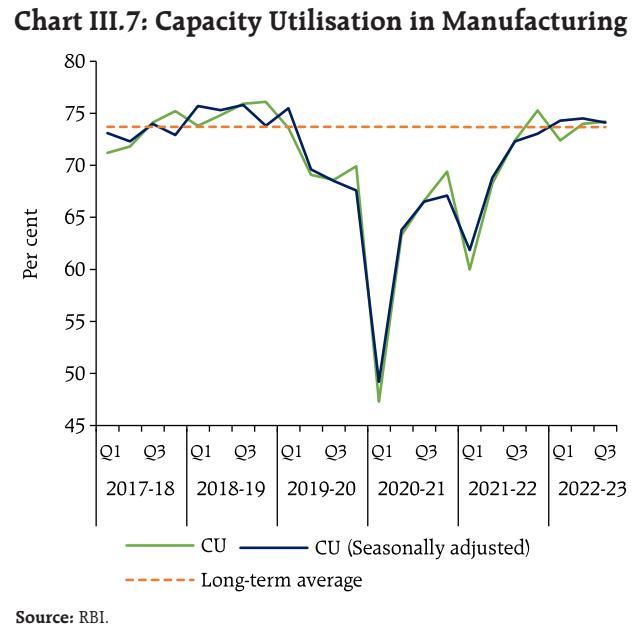


III.1.2 Gross Fixed Capital Formation

Gross fixed capital formation (GFCF) posted a growth of 8.3 per cent in Q3:2022-23 on top of 14.8 per cent growth in H1. Its share in GDP rose to 31.8 per cent in Q3 from 30.6 per cent a year ago. Construction activity gathered steam post-monsoon on the back of housing demand and the government's thrust on infrastructure spending. Cement production and steel consumption – indicators of fixed investment – grew strongly in Q3 and Q4. In the case of investment in machinery and equipment, production of capital goods stayed resilient in Q3 and January 2023; imports of capital goods were buoyant in Q3 and the pace of expansion decelerated during January–February 2023 (Chart III.6).

According to the RBI's survey², capacity utilisation (CU) in the manufacturing sector improved marginally

to 74.3 per cent in Q3:2022-23 from 74.0 per cent in the previous quarter. The seasonally adjusted CU,



² Survey of order books, inventories and capacity utilisation.

however, dropped to 74.1 per cent from 74.5 per cent over the period, although it remained above its long-period average (Chart III.7). The Union Budget 2023-24 has projected a growth of 37.4 per cent in capital expenditure over its revised estimates for 2022-23 and this is expected to crowd in private investment (Box III.2).

The interest coverage ratio (ICR)³ of listed private companies in the manufacturing and information technology (IT) sectors remained comfortable in

Q3:2022-23, indicating adequate debt servicing capacity (Chart III.8). The ICR of services sector (non-IT) improved in Q3 and crossed the threshold level of unity for the first time since Q1:2019-20.

The investment rate – the ratio of gross capital formation (GCF) to GDP at current prices – rose to 31.4 per cent in 2021-22 from 27.9 per cent in the preceding year. Over the same period, the gross domestic saving rate improved to 30.2 per cent of GDP from 28.8 per cent a year ago (Chart III.9), with lower

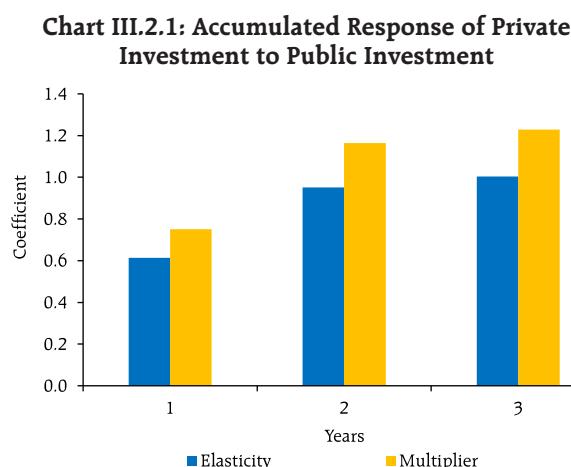
Box III.2: Does Public Investment Crowd in Private Investment?

In recent years, the government expanded capital expenditure to improve infrastructure, create additional capacity, enhance productivity and crowd in private investment. Public investment multipliers are higher in emerging market economies (EMEs) with a lower initial stock of public capital (Izquierdo, A. et al., 2019; Serven, 1999; Bahal et al., 2015; RBI, 2019). Against this backdrop, the effect of public investment on private investment is investigated in a SVAR framework for 1980-2019 period. Public investment, private investment, and GDP in real per capita are included in the model (all variables in growth rates), with global GDP growth as a control variable

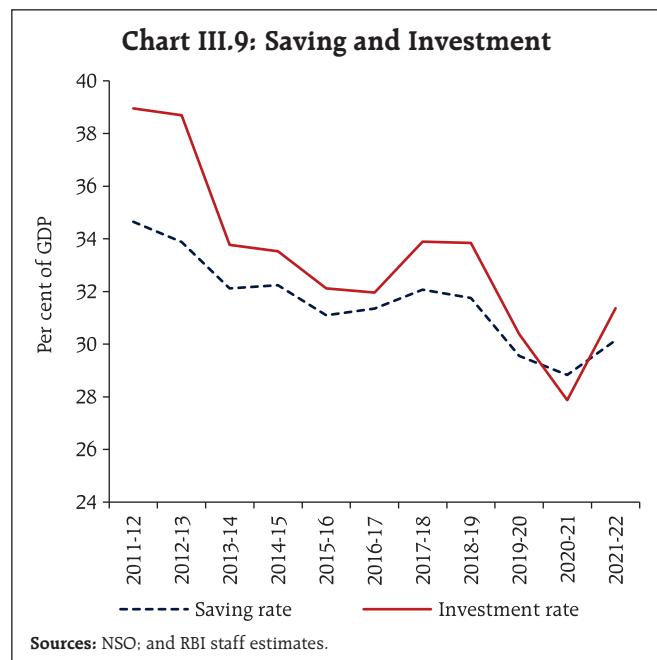
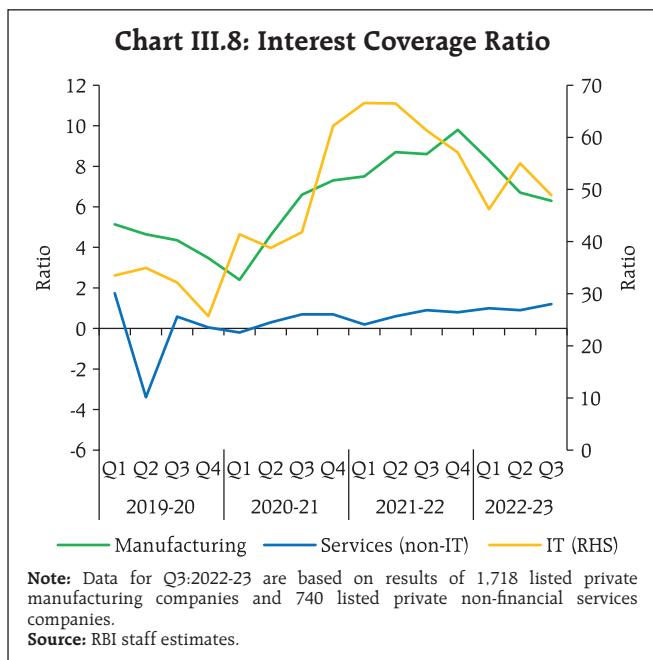
to account for external demand shocks. The impulse responses indicate that a 1 percentage point increase in public investment increases private investment by 0.6 percentage point in the first year and the cumulative impact over a 3-year period is over 1.0 percentage point (Chart III.2.1). The multiplier for public investment on private investment is 1.2 and on overall GDP is 1.7 over a three-year period, well over unity. Thus, the empirical analysis indicates that the government's focus on capital expenditure in the recent budgets, including the Union Budget 2023-24, could be effective in stimulating private investment and domestic demand with beneficial effects accruing over time.

References:

- Bahal, G., Raissi, M., & Tulin, V. (2018), "Crowding-out or Crowding-in? Public and Private Investment in India". *World Development*, 109, 323-333.
- Izquierdo, M. A., Lama, M. R., Medina, J. P., Puig, J., Riera-Crichton, D., Vegh, C., & Vuletin, G. J. (2019), "Is the Public Investment Multiplier Higher in Developing Countries? An Empirical Exploration". IMF Working Paper 289.
- Serven, L. (1996), "Does Public Capital Crowd Out Private Capital? Evidence from India". World Bank Policy Research Working Paper 1613.
- Reserve Bank of India (2019), "Monetary Policy Report", April.



³ Interest coverage ratio is the ratio of earnings before interest and taxes (EBIT) to interest expenses and measures a company's capacity to make interest payments on its debt. The minimum value for a viable ICR is 1.



dissaving of the public sector offsetting the drop in household saving. The net household financial saving – the source of funding for deficit sectors – moderated to 7.6 per cent of GDP in 2021-22 from 11.5 per cent in 2020-21, reflecting a surge in consumption and associated drawdown in precautionary saving. The net household financial saving is estimated to moderate further to 6.3-6.5 per cent of GDP during 2022-23, according to provisional estimates, reflecting an increase in households' credit demand.

III.1.3 Government Consumption

The government final consumption expenditure (GFCE) supported aggregate demand in H2:2022-23 after a contraction in H1 (Chart III.10). Despite a steep increase in subsidies outgo in 2022-23 (RE), the Central Government's total expenditure was contained at 15.4 per cent of GDP, lower than that in 2021-22 (Table III.2).

For 2023-24, the central government has budgeted gross fiscal deficit (GFD) at 5.9 per cent of GDP, down from 6.45 per cent in 2022-23 (RE). Fiscal consolidation will be pursued through containing revenue expenditure (especially subsidies) while boosting capital expenditure to 3.3 per cent of GDP

in 2023-24 from 2.7 per cent in the previous year. Revenue expenditure excluding interest payments and major subsidies is budgeted to decline to 6.8 per cent of GDP in 2023-24 (BE) from 7.3 per cent in 2022-23 (RE).

During 2022-23 (up to February 2023), the central government's gross tax revenues exhibited buoyancy and increased by 12.0 per cent y-o-y, with

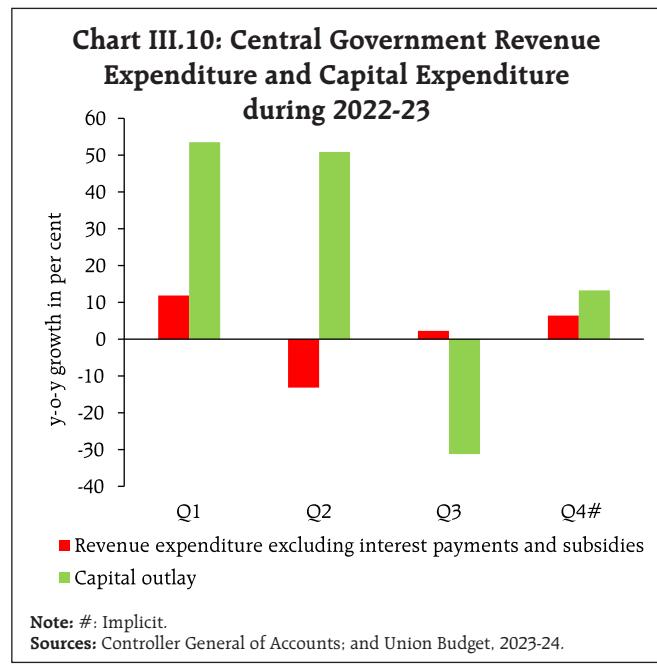


Table III.2: Central Government Finances

Indicator	Per cent to GDP			
	2020-21	2021-22	2022-23 (RE)	2023-24 (BE)
1. Revenue receipts	8.2	9.2	8.6	8.7
a. Tax revenue (Net)	7.2	7.7	7.7	7.7
b. Non-tax revenue	1.0	1.6	1.0	1.0
2. Non-debt capital receipts	0.3	0.2	0.3	0.3
3. Revenue expenditure	15.5	13.6	12.7	11.6
a. Interest payments	3.4	3.4	3.5	3.6
b. Major subsidies	3.6	1.9	1.9	1.2
4. Revenue expenditure excluding interest payments and subsidies	8.6	8.3	7.3	6.8
5. Capital expenditure	2.1	2.5	2.7	3.3
6. Capital outlay	1.6	2.3	2.3	2.8
7. Total expenditure	17.7	16.2	15.4	14.9
8. Gross fiscal deficit	9.2	6.8	6.5	5.9
9. Revenue deficit	7.3	4.4	4.1	2.9
10. Primary deficit	5.7	3.3	3.0	2.3

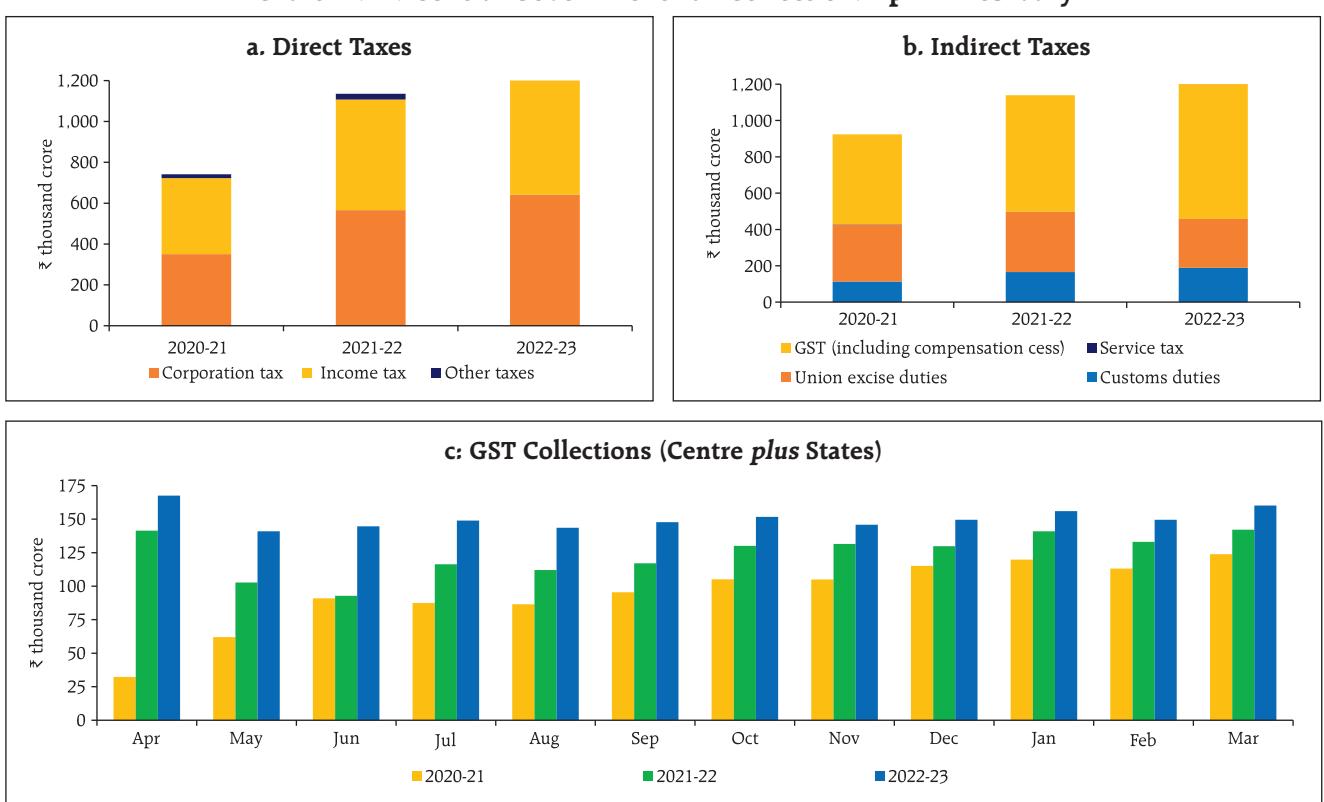
Notes: RE: Revised Estimates; BE: Budget Estimates.

Figures may vary from those published in the Union Budget due to revision in GDP.

Sources: Union Budget documents and RBI staff estimates.

a robust expansion in collections under all major taxes except excise duties. Direct and indirect taxes registered y-o-y growth of 15.9 per cent and 8.1 per cent, respectively. Within indirect taxes, Union excise duties contracted by 18.6 per cent mainly due to a reduction in excise duties on fuel in May 2022, while GST collections (*centre plus states*) rose by 21.9 per cent benefitting from resilient economic activity and improved tax compliance⁴ (Chart III.11). The central government's revenue expenditure excluding interest payments and subsidies and capital expenditure increased by 2.5 per cent and 21.7 per cent, respectively, during this period.

In 2022-23, state governments' consolidated GFD was budgeted at 3.4 per cent of GDP, with a thrust on capital spending (Table III.3). Available data for

Chart III.11: Central Government Tax Collection: April – February

⁴ Monthly GST collections averaged ₹1.51 lakh crore during 2022-23 as compared with ₹1.24 lakh crore during 2021-22.

Table III.3: State Government Finances – Key Fiscal Indicators

Item	(Per cent of GDP)			
	2020-21 (A)	2021-22 (BE)	2021-22 (PA)	2022-23 (BE)
Revenue deficit	1.9	0.5	0.4	0.3
Gross fiscal deficit	4.1	3.5	2.8	3.4
Primary deficit	2.1	1.6	1.1	1.6

Note: Data pertain to 31 states/UTs.

A: Accounts; BE: Budget Estimates; PA: Provisional Accounts.

Sources: Budget Documents of State Governments; and Comptroller and Auditor General (CAG) of India.

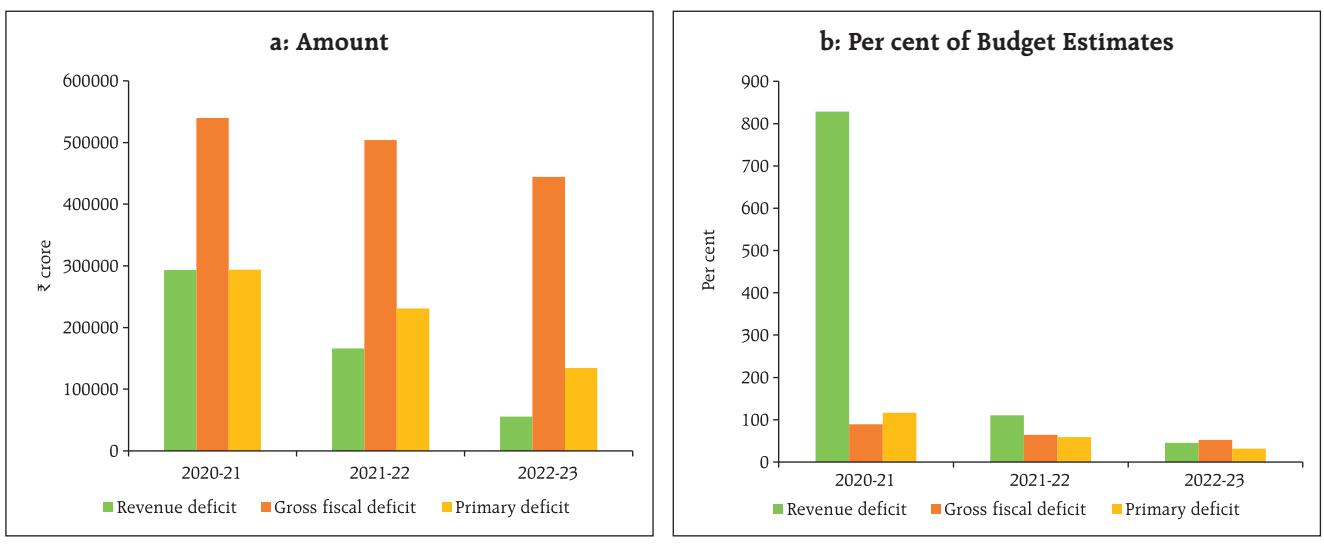
2022-23 (April-January)⁵ indicate that states' fiscal deficits declined in absolute terms as well as a proportion to budget estimates (BE) (Chart III.12).

States' revenue receipts remained buoyant across all sub-components (Chart III.13a). Capital expenditure grew by 12.5 per cent during April-January 2022-23 despite contracting in Q1 (Chart III.13b). The states have spent around 53 per cent of their budgeted capital expenditure during this period, in line with past trends. The Central Government released the fourteenth instalment of tax devolution

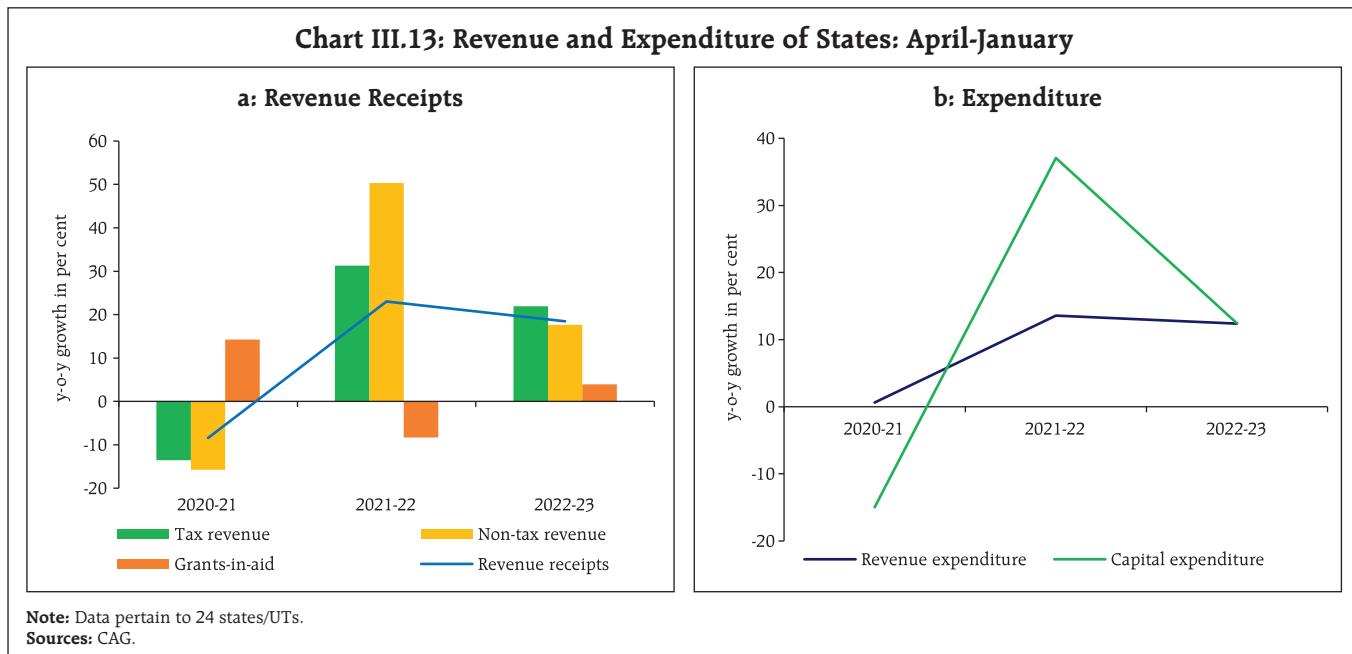
amounting to ₹1.4 lakh crore in March 2023 as against the usual monthly devolution of ₹0.7 lakh crore. The Central Government has also decided to continue with the Scheme for Special Assistance to States for Capital Expenditure with an enhanced allocation of ₹1.3 lakh crore in 2023-24 to incentivize higher capital expenditure by states. Considering the revenue and expenditure trends, states' GFD-GDP ratio in 2022-23 may remain lower than the BE.

In 2022-23, the centre's gross market borrowing stood at ₹14.21 lakh crore as against ₹14.37 lakh crore planned in the indicative calendars for H1 and H2. The Reserve Bank also conducted eleven switch auctions on behalf of the central government amounting to ₹1.05 lakh crore for debt consolidation. The weighted average cost of issuances during 2022-23 inched up to 7.3 per cent from 6.3 per cent during the previous year, with the weighted average maturity declining to 16.05 years from 17.0 years. States raised gross market borrowings of ₹7.58 lakh crore in 2022-23 as against the total sanctioned amount of ₹8.81 lakh crore.

Chart III.12: Key Fiscal Indicators of the States/UTs: April-January



⁵ Data for April-January period pertain to 24 States.



In the Union Budget 2023-24, gross and net market borrowings were placed at ₹15.43 lakh crore and ₹11.81 lakh crore, respectively, an increase of about 8.6 per cent and 6.6 per cent, respectively, over the previous year (Table III.4). In H1:2023-24, gross market borrowings of the central government through dated securities have been planned for about ₹8.9

lakh crore, constituting 57.6 per cent of total amount budgeted for the year. The Ways and Means Advances (WMA) limit for the central government for H1:2023-24 will be at ₹1.5 lakh crore for meeting temporary mismatches between receipts and payments. For states/union territories, the WMA limits have been fixed at ₹47,010 crore with effect from April 1, 2022, as recommended by the Advisory Committee on Ways and Means Advances to State Governments (Chairman: Shri Sudhir Shrivastava).

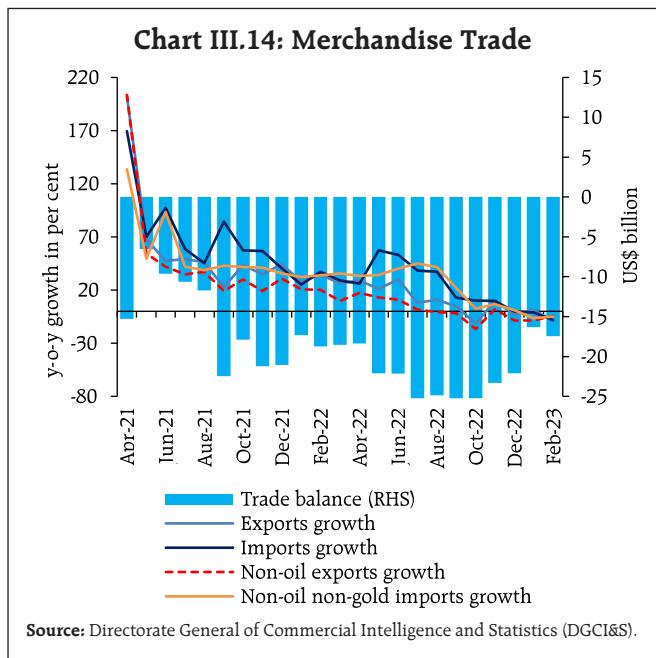
Table III.4: Centre's Borrowings
(₹ lakh crore)

Item	2020-21	2021-22	2022-23 (RE)	2023-24 (BE)
I Net borrowings (G-Sec)	10.4	7.4	7.8	11.8
Repayments	2.3	2.6	3.1	3.6
Gross borrowings (G-Sec)	12.6	10.0	10.9	15.4
II T-Bills/Cash management bills (Net)	2.0	0.8	1.0	0.5
III Net market borrowings (I+II)	12.4	8.1	8.8	12.3
IV Securities against small savings	4.8	5.5	4.4	4.7
V State provident fund	0.2	0.1	0.2	0.2
VI Other receipts	0.1	1.7	0.8	0.5
VII External debt	0.7	0.4	0.2	0.2
VIII Total debt (III to VII)	18.3	15.8	14.4	18.0
IX Drawdown on cash balances	-0.1	0.0	0.0	-0.1
X Total funding (VIII+IX)	18.2	15.8	17.6	17.9

Sources: GoI; and RBI staff estimates.

III.1.4 External Demand

Amidst protracted geopolitical frictions and slowing global demand, merchandise exports contracted during H2:2022-23. Merchandise imports registered a deceleration in growth during Q3 and contracted in Q4 (upto February) owing to a slowdown in export-related demand as well as a reduction in commodity prices (Chart III.14). The drag from net exports, however, declined in Q3 from the previous quarter, reflecting continued strength in services exports.

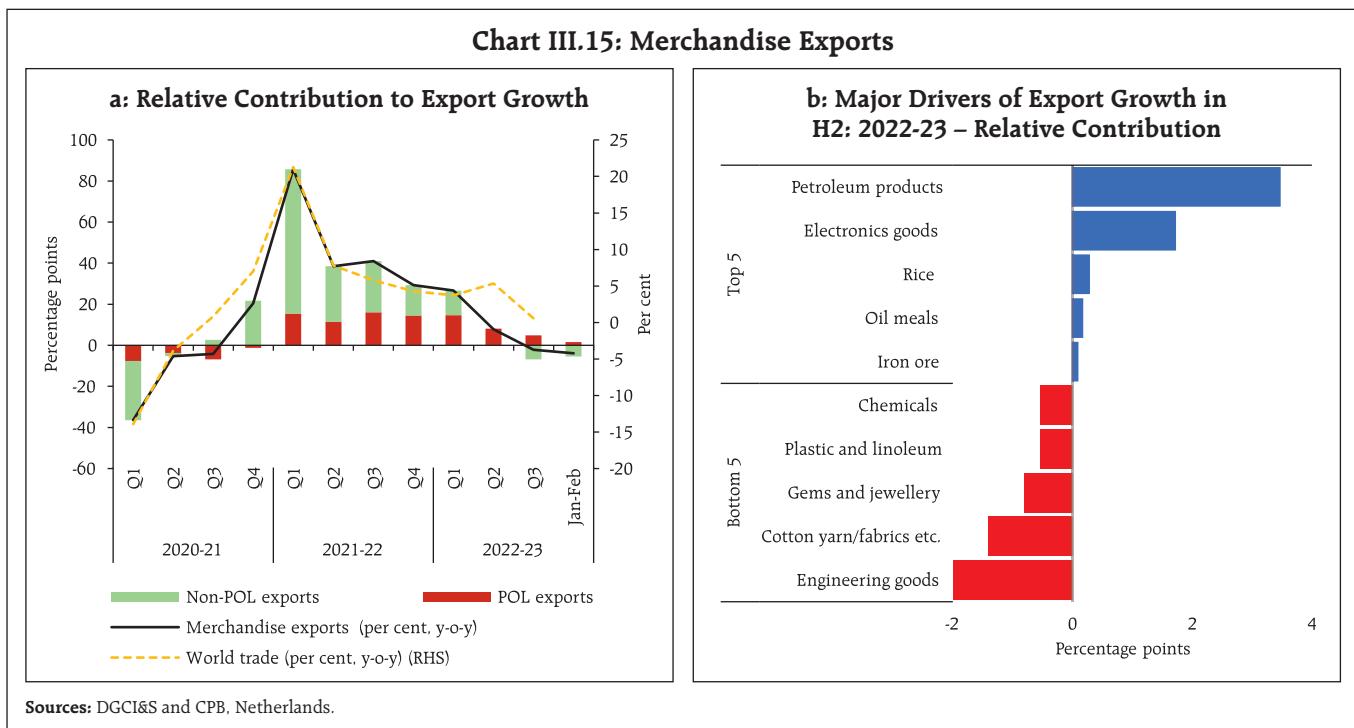


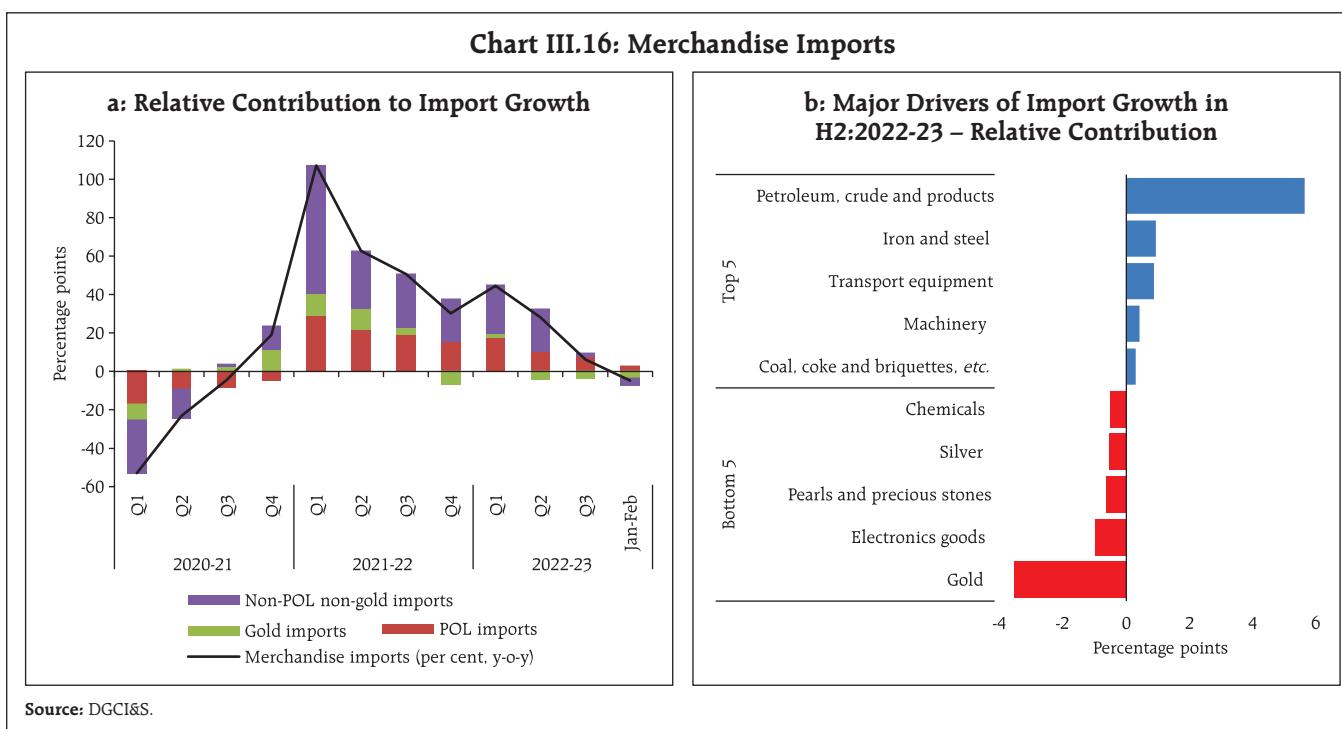
During H2:2022-23 (October-February), exports of engineering goods, cotton yarn, gems and jewellery, plastic and linoleum, and chemicals declined, while petroleum products, electronics, rice, oil meals and iron ore contributed positively to overall merchandise

exports growth (Chart III.15). The share of petroleum products in total merchandise exports rose to 20.3 per cent during H2:2022-23 (October-February) from 16.2 per cent in the corresponding period of the previous year.

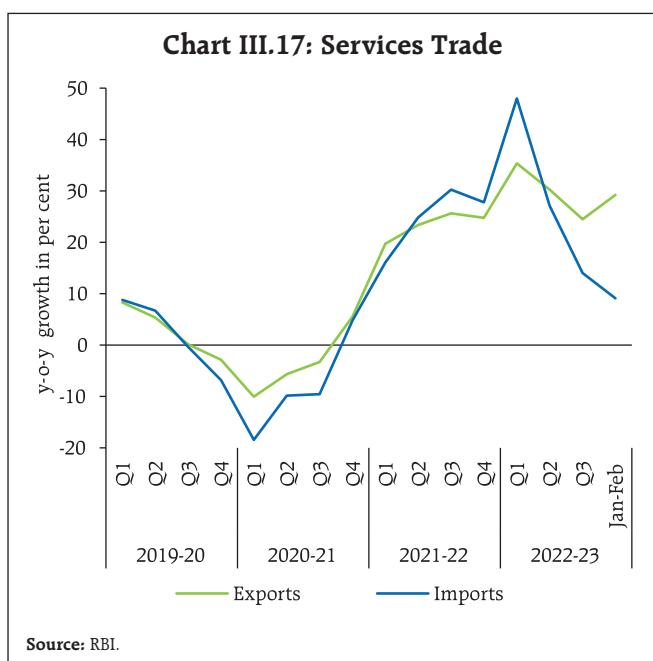
Merchandise import growth moderated to 1.9 per cent in H2:2022-23 (October-February) to reach US\$ 280.7 billion. Oil imports rose while gold imports declined as retail demand remained sluggish amidst higher prices. The deceleration in non-oil non-gold imports was driven by electronics goods, pearls and precious stones, chemicals and silver (Chart III.16). The merchandise trade deficit in H2 (October-February) widened to US\$ 106.6 billion from US\$ 96.3 billion during the corresponding period of the previous year.

Services sector trade sustained its post-pandemic buoyancy reflecting strong global demand for Indian services (Chart III.17). Services exports grew by 24.5 per cent in Q3 and 29.2 per cent in Q4 (up to February) on top of 30.2 per cent growth in Q2, propelled by software, business, financial and travel services.





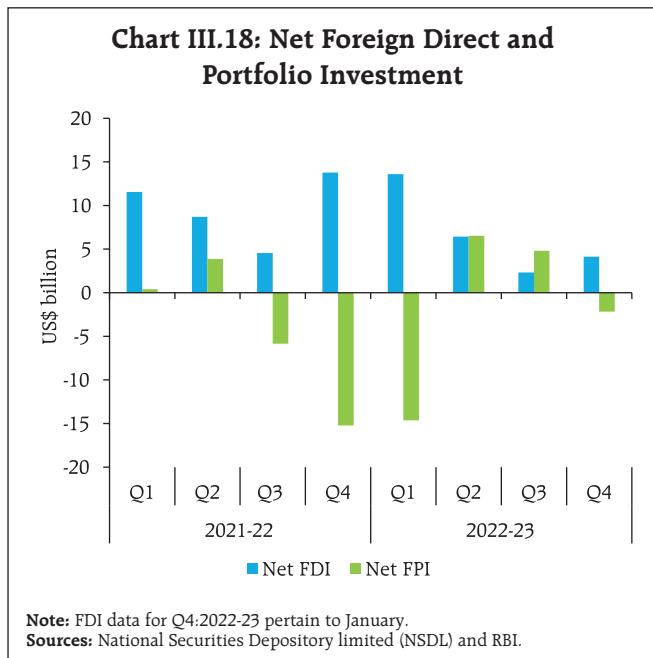
Inward remittances exhibited resilience with a y-o-y growth of 31.7 per cent to reach US\$ 30.8 billion in Q3. The current account deficit narrowed to 2.2 per cent of GDP in Q3 from 3.7 per cent in Q2, mirroring the trend in merchandise trade deficit.



Turning to the financial account, capital flows ebbed in H2:2022-23. Net FDI dropped to US\$ 2.1 billion in Q3 from US\$ 4.6 billion a year ago, owing to lower inflows and higher outward FDI (Chart III.18). During April-January 2022-23, manufacturing, financial services and computer services together accounted for more than half of total FDI inflows. The top sources for FDI inflows were Singapore, Mauritius, USA and UAE.

Foreign portfolio investors (FPIs) turned optimistic in Q3, with net purchases of US\$ 4.5 billion. They were net sellers during Q4 with net outflows of US\$ 2.2 billion, mainly on account of equity segment following heightened uncertainty over monetary policy spillovers and geopolitical concerns.

External commercial borrowings (ECBs) recorded net outflows of US\$ 6.4 billion during 2022-23 (up to February 2023) due to lower inflows and higher principal repayments. ECBs amounting to US\$ 22.8 billion were approved during 2022-23 (April-February) for *inter alia* on-lending/sub-lending, new projects,



refinancing of earlier ECBs, sourcing of capital goods (local and imports) and working capital. Net inflows under non-resident deposit accounts rose to US\$ 6.0

billion during April-January 2022-23 from US\$ 2.7 billion during the same period last year, aided by the RBI's July 2022 measures to attract such flows. As on March 31, 2023, India's foreign exchange reserves stood at USD 578.4 billion, equivalent to 9.8 months of projected merchandise imports in 2022-23 or 94.4 per cent of outstanding external debt at end-December 2022.

III.2 Aggregate Supply

Aggregate supply – measured by real gross value added (GVA) at basic prices – expanded by 4.6 per cent (y-o-y) in Q3:2022-23 (4.7 per cent a year ago), surpassing its pre-pandemic level of Q3:2019-20 by 12.6 per cent (Table III.5). While agriculture and services sectors remained resilient, the manufacturing sector contracted amidst sustained input cost pressures. The momentum of overall GVA, measured by q-o-q saar, recorded double digit growth in Q3 (Chart III.19).

Table III.5: Real GVA Growth

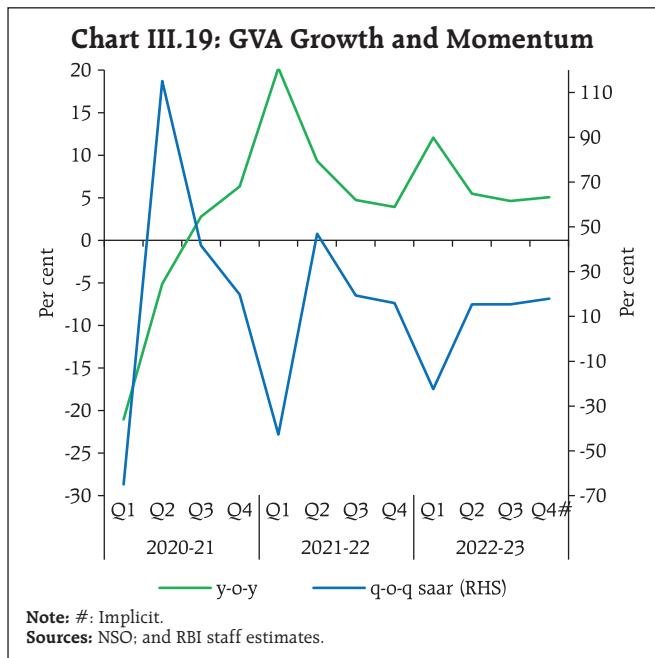
(y-o-y, per cent)

Sector	2021-22 (FRE)	2022-23 (SAE)	Weighted Contribution		2021-22				2022-23			
			2021-22	2022-23	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4#
Agriculture, forestry and fishing	3.5 (7.8)	3.3 (11.4)	0.6	0.5	3.4 (7.4)	4.8 (9.4)	2.3 (7.2)	4.1 (7.6)	2.5 (10.1)	2.4 (12.0)	3.7 (11.1)	4.3 (12.3)
Industry	10.5 (11.5)	1.7 (13.4)	2.4	0.4	42.1 (3.9)	7.3 (13.8)	2.2 (11.9)	1.3 (16.4)	7.6 (11.7)	-2.3 (11.1)	0.3 (12.2)	1.5 (18.2)
Mining and quarrying	7.1 (-2.1)	3.4 (1.2)	0.2	0.1	12.2 (-7.5)	10.6 (1.7)	5.4 (-0.3)	2.3 (-1.5)	9.3 (1.1)	-0.4 (1.3)	3.7 (3.4)	0.9 (-0.6)
Manufacturing	11.1 (14.3)	0.6 (14.9)	2.0	0.1	51.5 (6.3)	6.6 (16.2)	1.3 (14.3)	0.6 (20.2)	6.4 (13.1)	-3.6 (12.0)	-1.1 (13.0)	0.9 (21.3)
Electricity, gas, water supply and other utilities	9.9 (5.1)	9.2 (14.7)	0.2	0.2	16.3 (-1.6)	10.8 (6.4)	6.0 (6.7)	6.7 (9.4)	14.9 (13.1)	6.0 (12.8)	8.2 (15.5)	7.6 (17.8)
Services	9.6 (0.9)	9.3 (10.3)	5.8	5.7	17.9 (-10.8)	11.0 (-0.5)	6.5 (6.3)	4.9 (9.1)	16.3 (3.8)	9.0 (8.4)	6.5 (13.2)	6.6 (16.3)
Construction	14.8 (8.2)	9.1 (18.1)	1.1	0.7	77.0 (-8.7)	10.8 (5.3)	0.2 (8.6)	4.9 (26.0)	16.2 (6.2)	5.8 (11.5)	8.4 (17.7)	7.3 (35.2)
Trade, hotels, transport, communication	13.8 (-8.7)	14.2 (4.3)	2.3	2.5	41.4 (-28.6)	13.1 (-7.7)	9.2 (-1.2)	5.0 (1.8)	25.7 (-10.2)	15.6 (6.7)	9.7 (8.3)	9.7 (11.6)
Financial, real estate and professional services	4.7 (6.9)	6.9 (14.2)	1.1	1.5	2.8 (1.9)	7.0 (1.6)	4.3 (14.4)	4.6 (13.2)	8.6 (10.7)	7.1 (8.9)	5.8 (21.0)	5.6 (19.5)
Public administration, defence and other services	9.7 (1.3)	7.1 (8.5)	1.2	0.9	6.5 (-7.9)	16.8 (2.5)	10.6 (5.1)	5.2 (4.5)	21.3 (11.6)	5.6 (8.2)	2.0 (7.2)	2.9 (7.5)
GVA at basic prices	8.8 (4.2)	6.6 (11.2)	8.8	6.6	20.2 (-5.1)	9.3 (3.7)	4.7 (7.7)	3.9 (10.5)	12.1 (6.4)	5.5 (9.4)	4.6 (12.6)	5.1 (16.1)

Notes: FRE: First revised estimates; SAE: Second advance estimates; #: Implicit.

Figures in parentheses are growth rates over 2019-20.

Source: NSO.

**Table III.6: Agricultural Production in 2022-23**

(Lakh tonnes)

Crop	2021-22		2022-23		Variation in 2022-23 (Per cent)		
	SAE	Final	Target	SAE	Over SAE 2021-22	Over Final 2021-22	Over Target
Foodgrains	3,160.6	3,156.2	3,280.0	3,235.5	2.4	2.5	-1.4
Kharif	1,535.4	1,553.6	1,631.5	1,534.3	-0.1	-1.2	-6.0
Rabi	1,625.3	1,602.5	1,648.5	1,701.2	4.7	6.2	3.2
Rice	1,279.3	1,294.7	1,305.0	1,308.4	2.3	1.1	0.3
Wheat	1,113.2	1,077.4	1,120.0	1,121.8	0.8	4.1	0.2
Pulses	269.6	273.0	295.5	278.1	3.2	1.9	-5.9
Oilseeds	371.5	379.6	413.5	400.0	7.7	5.4	-3.3
Sugarcane	4,140.4	4,394.3	4,150.0	4,687.9	13.2	6.7	13.0
Cotton #	340.6	311.2	370.0	337.2	-1.0	8.4	-8.9
Jute & Mesta ##	95.7	101.5	105.0	100.5	5.0	-1.0	-4.3

Notes: #: Lakh bales of 170 kgs each; ##: Lakh bales of 180 kgs each.

SAE: Second Advance Estimates.

Source: Ministry of Agriculture and Farmers' Welfare, GoI.

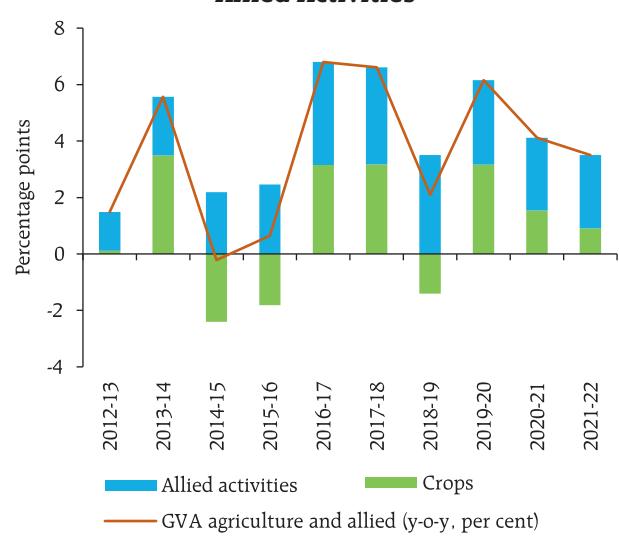
III.2.1 Agriculture

GVA in agriculture, forestry and fishing posted a growth of 4.0 per cent in H2:2022-23 (3.1 per cent a year ago), even as *kharif* production was dented by below normal rainfall in key rice producing states and excess rains during the harvesting stage. Replenished reservoir levels and improved soil moisture helped *rabi* acreage to increase by 3.3 per cent in 2022-23 over the previous year.

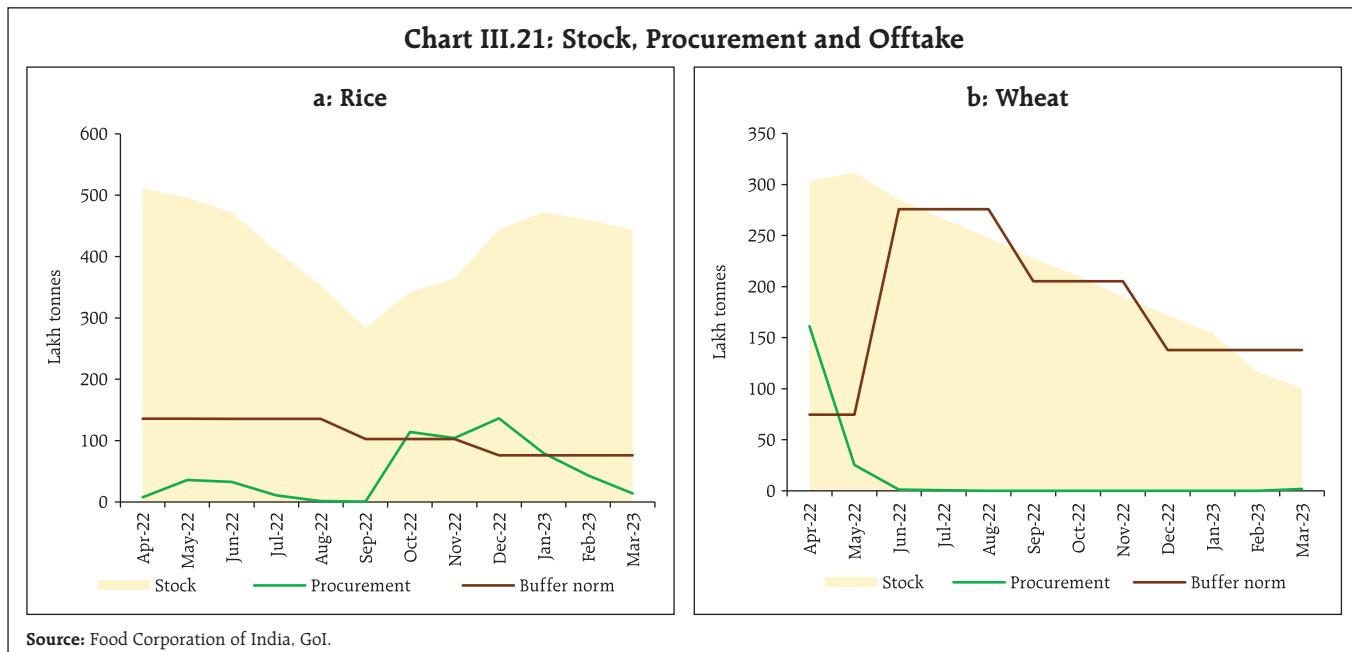
Foodgrains production touched a new record in 2022-23. The production of pulses rose by 1.9 per cent in 2022-23, primarily on account of gram, moong and other *rabi* pulses. Among commercial crops, oilseeds and sugarcane achieved record production levels in 2022-23 (Table III.6).

Allied activities – livestock, forestry and fishing – with a share of about 45 per cent of the agricultural GVA – contributed almost three-fourth of agricultural GVA growth in 2021-22 (Chart III.20).

The overall procurement of rice at 492.2 lakh tonnes during *kharif* marketing season 2022-23 was 2.2 per cent lower than that in the previous year. Foodgrains buffer stocks were 443.2 lakh tonnes for

Chart III.20: Contribution of Crops and Allied Activities

Sources: NSO; and RBI staff estimates.



rice (5.8 times the norm) and 100.6 lakh tonnes for wheat (0.7 times the norm) as on March 16, 2023. A total offtake of 82.6 lakh tonnes of cereals (October–December 2022) was done under the extended *Pradhan Mantri Garib Kalyan Anna Yojana* (PMGKAY) (Chart III.21).

The high frequency indicators such as tractor sales, two-wheeler sales, fertiliser sales, agricultural credit growth and MGNREGA jobs demand suggest a recovery in rural activity during H2 (Table III.7).

Table III.7: Rural Economy - High Frequency Indicators

Item	Unit	H1 (Apr-Sep)				H2 (Oct-Feb)			
		2019-20	2020-21	2021-22	2022-23	2019-20	2020-21	2021-22	2022-23
Tractor sales	Number (in lakh)	3.6	4.0	4.4	4.9	3.2	4.1	3.3	3.8
Two-wheeler sales	Number (in lakh)	97.0	59.9	65.5	83.8	68.5	76.4	58.2	61.7
Fertiliser sales	Lakh tonnes	272.6	312.4	269.1	307.2	254.6	268.9	232.0	275.2
Demand for employment (MGNREGA)	Crore households	11.8	17.6	16.7	16.7	8.6	12.9	11.2	9.7
Agriculture and allied sector exports*	USD billion	17.1	17.9	22.7	26.4	11.9	18.5	17.7	16.4
Agriculture credit growth	y-o-y	6.5	10.9	10.6	13.4	9.8	8.8	10.3	14.9
Rice stock to buffer norm#	Ratio	2.9	2.4	3.4	2.8	6.6	6.7	7.5	5.8
Wheat stock to buffer norm#	Ratio	2.0	2.1	2.3	1.1	1.9	2.1	1.5	0.7

Notes: *upto January; #as on March 16 during H2.

Sources: Tractor Manufacturers Association; SIAM; Ministry of Chemicals and Fertilisers; Ministry of Rural Development; CMIE; RBI; and Food Corporation of India.

III.2.2 Industry

Industrial activity remained sluggish in Q3, driven by the contraction in manufacturing sector GVA for the second consecutive quarter *albeit* at a decelerated pace (Chart III.22). Mining activity got a boost from coal production, which outweighed the decline in crude oil and natural gas production. Industrial activity improved in Q4. Electricity, gas, water supply and other utility services recorded a growth of 7.9 per cent y-o-y in H2.

The index of industrial production (IIP) grew by 2.6 per cent in Q3:2022-23 and 5.2 per cent in January as compared with 1.6 per cent in Q2, supported by electricity and mining. It was weighed down by manufacturing sector activity, which expanded by 1.1 per cent in Q3 and 3.7 per cent in January. The labour-intensive sectors such as textiles, wearing apparel, leather and related products, and electrical equipment contracted in

Q3, while basic metals, motor vehicles, trailers and semi-trailers, machinery and equipment, and other non-metallic mineral products recorded expansion. In terms of the use-based classification, capital goods and infrastructure/construction goods expanded at a healthy pace during Q3 and January, while consumer durables output contracted (Chart III.23). Growth in core infrastructure output accelerated from 4.5 per cent in Q3 to 7.5 per cent in Q4 (upto February).

Electricity generation rose by 7.9 per cent (y-o-y) in Q3:2022-23 (18.2 per cent above the pre-pandemic level). Thermal power generation increased by 7.3 per cent in Q3 and contributed 75.8 per cent of total generation. Renewable energy sources (share of 11.5 per cent in total generation) expanded by 22.9 per cent. In Q4 (up to February), electricity generation growth accelerated to 10.1 per cent (Chart III.24a). Region-wise, the northern and western regions were the drivers of electricity demand (Chart III.24b).

Chart III.22: Industrial Growth

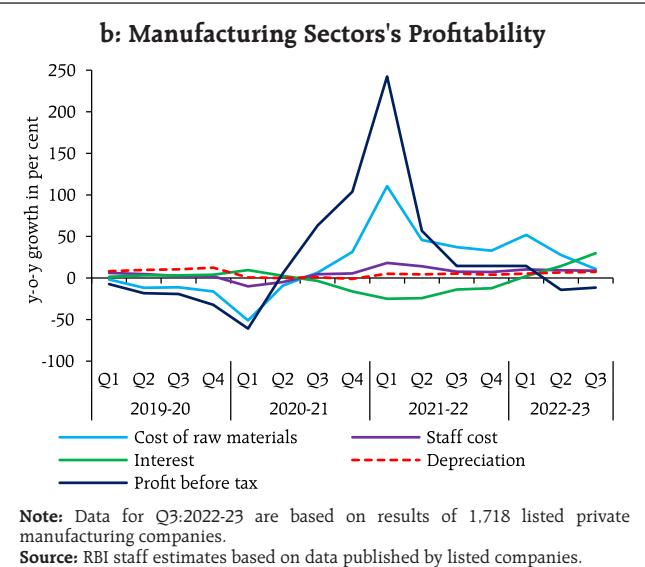
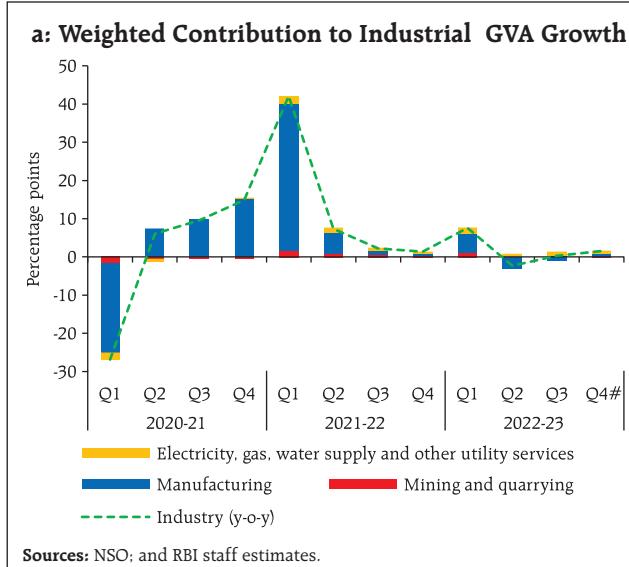
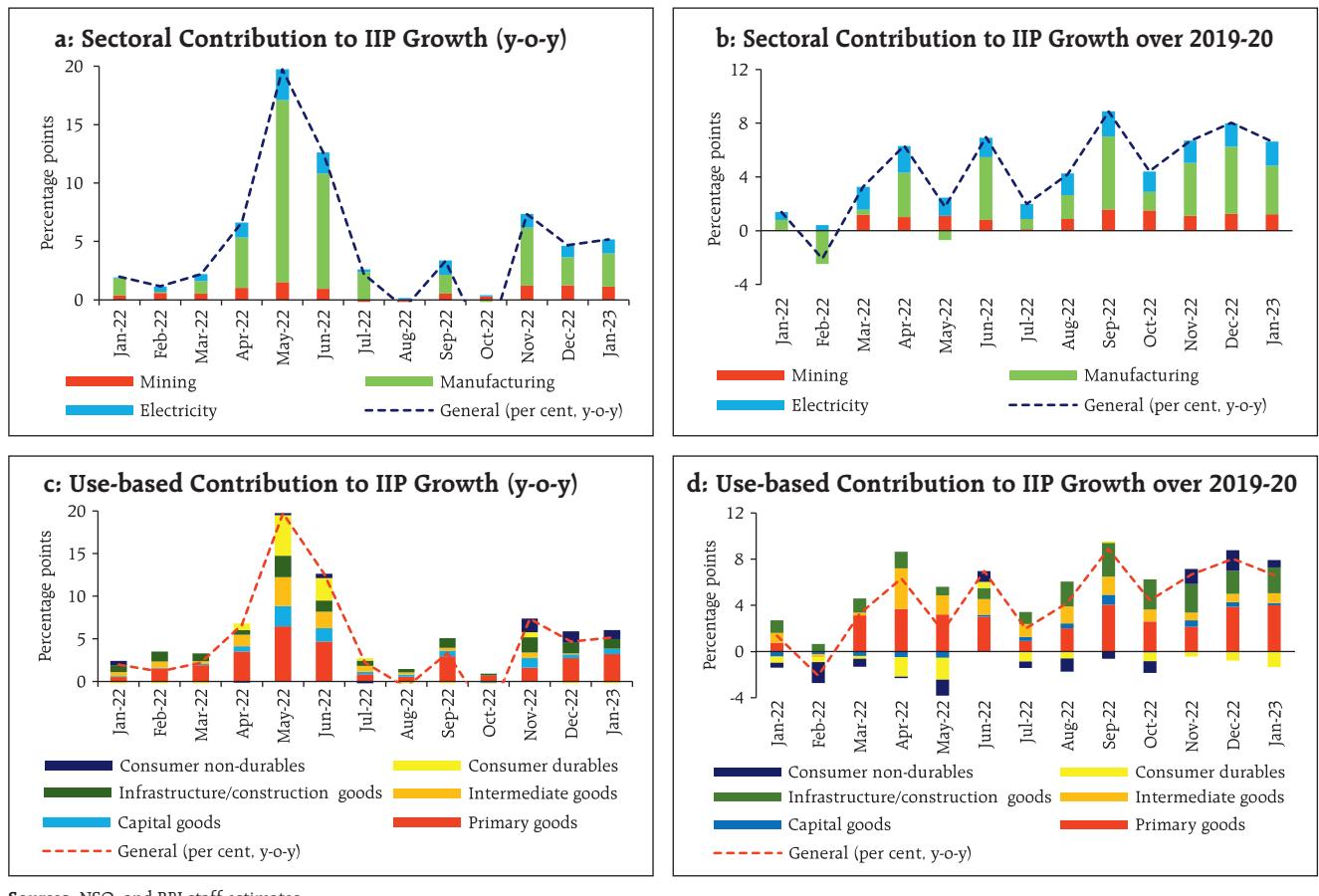
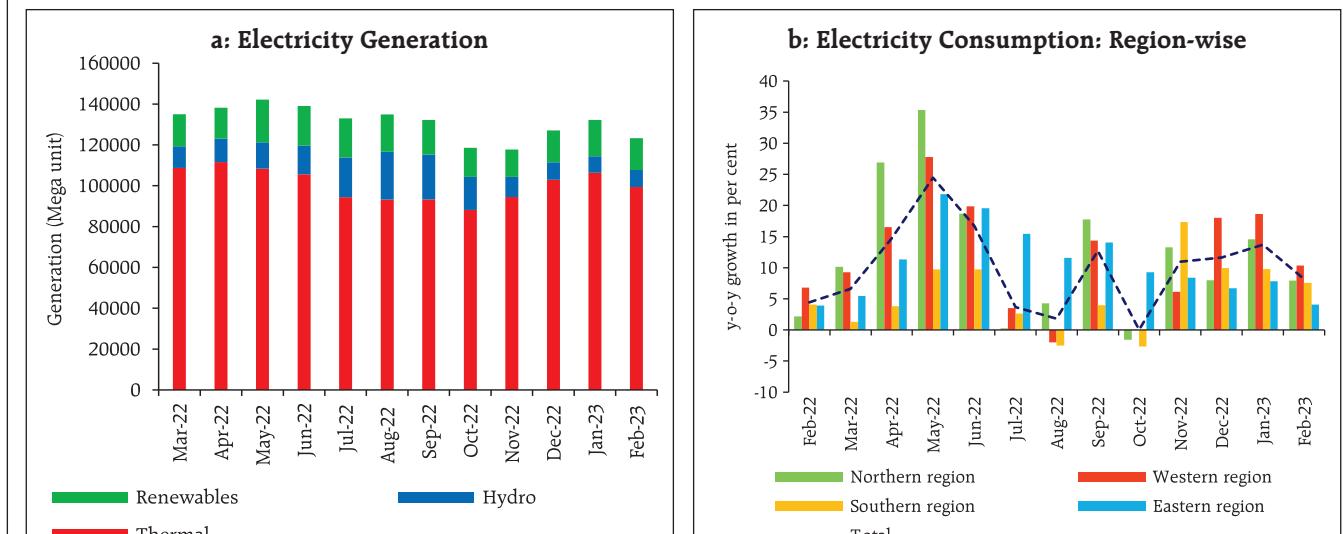


Chart III.23: Index of Industrial Production (IIP)

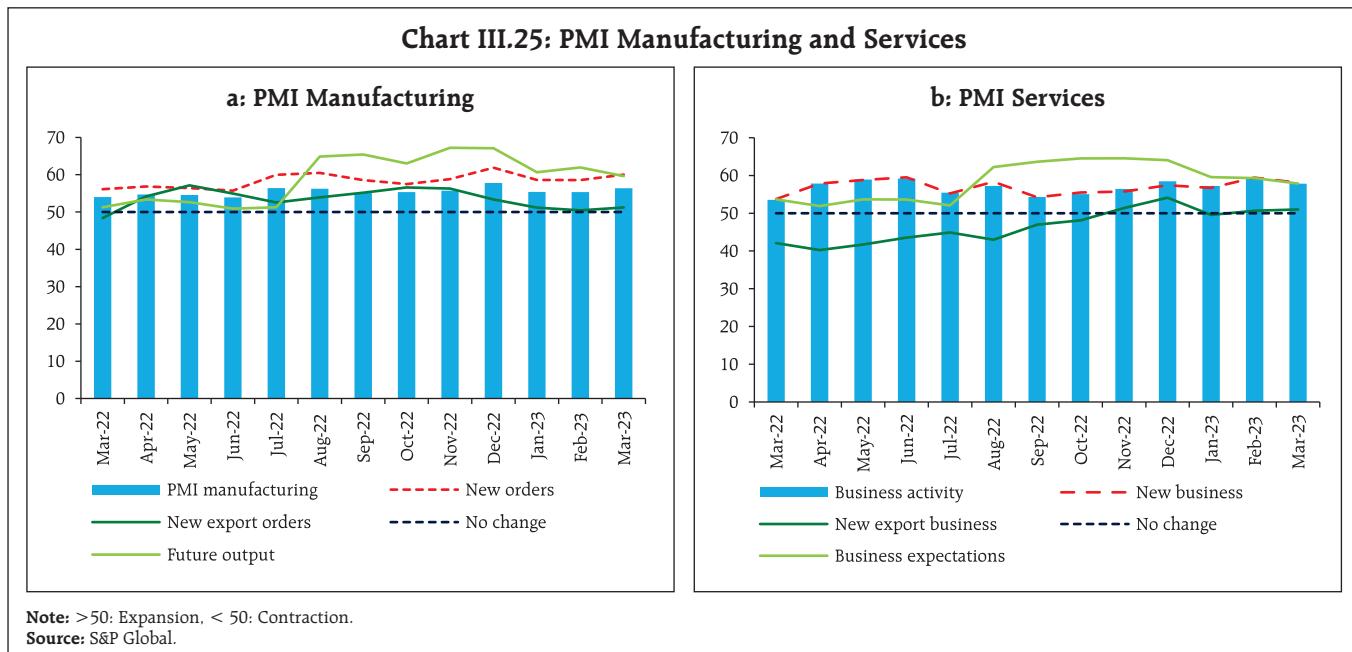
Sources: NSO; and RBI staff estimates.

The manufacturing purchasing managers' index (PMI) remained in expansion mode in H2, although

it moderated from 56.3 in Q3 to 55.7 in Q4, dragged down by new work and export orders (Chart III.25a).

Chart III.24: Electricity Generation and Consumption

Sources: Central Electricity Authority and Power System Operation Corporation Limited (POSOCO).



The output of manufacturing, primary goods, infrastructure and construction, capital goods and consumer non-durables sectors has surpassed their

pre-pandemic levels, while that of consumer durable goods is still trailing. Amongst the major sub-sectors, steel production, cement production, electricity

Table III.8: Industrial Sector: Progress towards Normalisation
(Ratio to the respective month/quarter of 2019-2020)

Indicators	2020-21				2021-22				2022-23					
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Jan	Feb	Mar
I Industrial Production														
1 PMI: Manufacturing (>50 indicates growth over previous month)	35.1	51.6	57.2	56.9	51.5	53.8	56.3	54.3	54.4	55.9	56.3	55.4	55.3	56.4
II Index of Industrial Production	64	94	102	106	93	103	104	108	105	105	106	107		
2 IIP: Manufacturing	60	94	102	107	91	102	103	108	103	103	104	105		
3 IIP: Primary goods	80	92	99	101	96	103	103	105	110	107	109	112		
4 IIP: Capital goods	35	87	99	109	74	102	97	111	95	109	105	103		
5 IIP: Infrastructure & construction goods	53	98	105	110	98	110	109	117	108	116	118	117		
6 IIP: Consumer durables goods	32	90	107	118	72	99	103	111	92	96	94	88		
7 IIP: Consumer non-durables goods	83	100	103	105	98	101	103	102	99	96	104	104		
III Eight Core Industries Index	76	95	100	103	96	104	105	109	109	110	110	115	109	
8 ECI: Steel	51	100	103	113	97	108	105	118	104	115	114	124	115	
9 ECI: Cement	62	89	96	110	97	110	104	119	114	115	115	112	112	
10 Electricity demand	84	99	106	108	98	108	110	113	116	115	118	121	113	
III Production of Automobiles														
11 Passenger vehicles	16	94	120	123	83	95	100	120	106	127	120	121	118	
12 Two wheelers	22	95	118	129	60	90	92	102	83	97	92	89	85	
13 Three wheelers	23	45	66	84	61	60	67	83	64	75	76	71	82	
14 Tractors	60	123	162	153	133	143	118	99	152	140	125	133	120	

Sources: CMIE; CEIC; NSO; SIAM; and RBI staff estimates.

← Below pre-Covid level

Normalisation / recovery of activity →

generation, and production of passenger vehicles and tractors are ruling above their 2019-20 levels, while two-wheelers and three-wheelers production is lagging (Table III.8).

III.2.3 Services

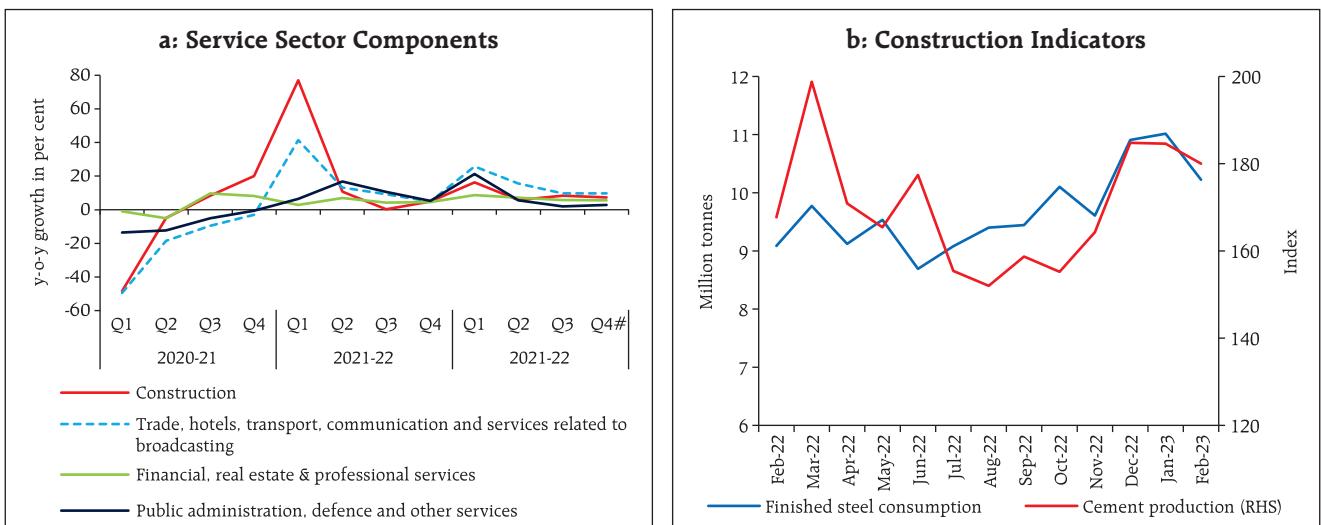
The services sector held up well in H2:2022-23, supported by an impetus from contact-intensive services and construction activity (Chart III.26a). Services sector GVA rose by 6.5 per cent in Q3 and was the main driver of aggregate GVA (with about 84 per cent contribution to aggregate GVA growth). The contact-intensive services, *viz.*, trade, hotels, transport, and communication grew by 9.7 per cent in H2 (20.1 per cent in H1). Construction activity remained robust in H2 as indicated by trends in finished steel consumption and cement production (Chart III.26b).

Robust GST collections in Q4 point towards an ongoing revival of domestic trading activity

(Table III.9). Domestic air passenger traffic rebounded in Q3:2022-23 and remained strong in Q4, buoyed by leisure and business travel and related activities. Amongst indicators of transportation services, commercial vehicles surged at double digit pace in Q3 and toll collections remained strong in Q3 and Q4. Port cargo expanded at a robust pace during December-February after a muted growth during October-November. Railway freight traffic, on the other hand, grew modestly in Q3 and Q4. The services PMI strengthened from 56.6 in Q3 to 58.1 in Q4. PMI services at 59.4 in February indicated the strongest expansion in 12 years due to new business orders (Chart III.25b). The PMI composite output index improved from 57.2 in Q3 to 58.3 in Q4.

The IT sector performed well in Q3:2022-23 as exhibited by strong growth in sales, supported by sustained domestic and international demand. With the pick-up in contact-intensive services,

Chart III.26: Services Sector



Note: #: Implicit.

Sources: Office of Economic Adviser, Joint Plant Committee, Department of Industrial Policy & Promotion, Ministry of Commerce & Industry.

Table III.9: Services Sector: Progress towards Normalisation
(Ratio to the respective month/quarter of 2019-2020)

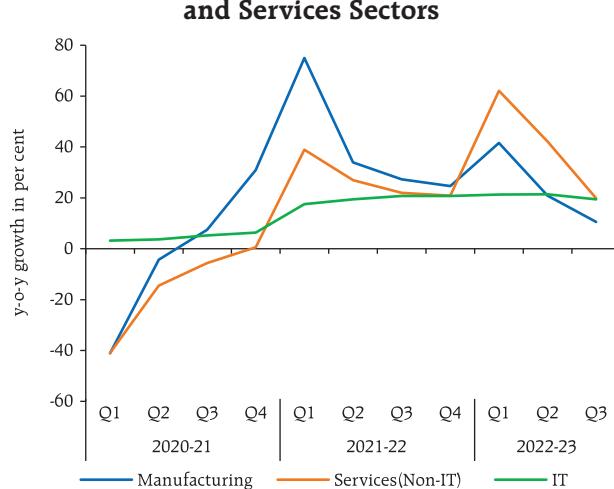
Indicators	2020-21				2021-22				2022-23					
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Jan	Feb	Mar
1 PMI: Services (>50 indicates growth over previous month)	17.2	41.9	53.4	54.2	47.2	52.4	57.3	52.3	58.7	55.7	56.6	57.2	59.4	57.8
I Construction														
2 Steel consumption	49	93	114	123	99	94	107	122	109	107	121	120	120	
3 Cement production	62	89	96	110	97	110	104	119	114	115	115	112	112	112
II Trade, hotels, transport, communication and services related to broadcasting														
4 Commercial vehicle sales	15	80	99	143	51	99	100	170	108	139	117			
5 Domestic air passenger traffic	7	25	50	72	31	53	81	77	95	87	96	100	100	
6 Domestic air cargo	26	68	90	105	78	86	92	101	103	95	90	87	95	
7 International air cargo	43	77	87	101	94	96	100	103	92	92	89	86	88	
8 Freight traffic	79	105	111	113	110	118	119	121	123	128	123	122	116	
9 Port cargo	80	91	103	107	102	97	104	106	111	109	110	113	114	
10 Toll collection: volume	184	349	295	174	548	699	513	259	1035	947	670	324	261	
11 Petroleum consumption	74	88	101	100	85	93	98	105	100	103	104	100	102	
12 GST E-way bill	50	100	115	128	98	127	128	140	143	153	150	145	143	
13 GST revenue	59	92	108	114	106	118	130	133	144	151	148	141	142	164
III Financial, real estate and professional services														
14 Credit outstanding y-o-y growth (per cent)	6.2	5.2	5.6	4.6	4.8	5.6	9.3	9.6	13.2	16.4	14.9	16.3	15.5	15.0
15 Bank deposits y-o-y growth (per cent)	11.0	10.5	11.5	11.4	10.3	9.4	10.3	8.9	8.3	9.2	9.2	10.5	10.1	9.6
16 Life insurance first year premium	81	116	97	135	87	122	107	169	122	166	127	128	123	
17 Non-life insurance premium	95	105	104	115	107	118	113	127	133	130	132	147	144	

Sources: CMIE; CEIC; NSO; MOSPI; IRDAI; RBI staff estimates.

← Below pre-Covid level

Normalisation / recovery of activity →

Chart III.27: Nominal Sales Growth in Industrial and Services Sectors

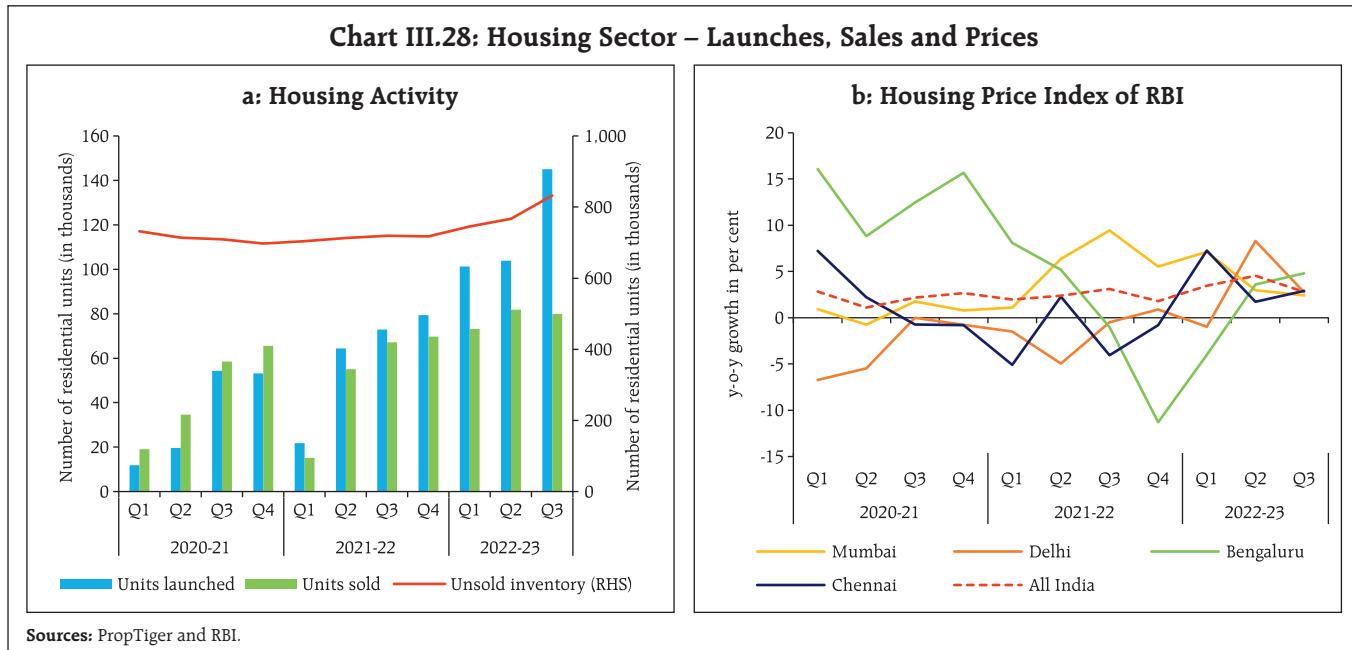


Note: Data for Q3:2022-23 are based on results of 1,718 listed private manufacturing companies and 740 listed private non-financial services companies.

Source: RBI staff estimates.

non-IT services also witnessed strong performance in sales, despite some moderation in growth (Chart III.27).

Real estate activity in Q3:2022-23 was marked by higher new launches and an increased unsold inventory (Chart III.28a). The growth in all-India housing prices decelerated in Q3; city-wise, the pace accelerated in Bengaluru and Chennai while it eased in Delhi and Mumbai (Chart III.28b). The growth in public administration, defence and other services (PADO) moderated in H2. The Centre's revenue expenditure excluding interest payments and subsidies rose by 2.2 per cent (y-o-y) during Q3 and 11.4 per cent in January–February 2023. Private services slowed down in Q3 partly due to unfavourable base.



III.3 Conclusion

Domestic economic activity exhibited resilience in H2:2022-23, amidst accentuating global headwinds. Investment activity was robust while private consumption growth moderated. On the supply side, services sector was the main driver, with elevated input cost pressures dragging down the manufacturing sector. Going ahead, the economic activity would

be supported by improving rural demand, the Government's thrust on infrastructure spending, revival in corporate investment, healthy bank credit, and moderating commodity prices. Headwinds from prolonged geopolitical tensions, tighter global financial conditions, global financial market volatility and slowing external demand are the key risks to the outlook.

IV. Financial Markets and Liquidity Conditions

Domestic financial markets evolved in an orderly manner during H2:2022-23 amidst policy repo rate hikes, moderating liquidity and recurrent bouts of global volatility impacting, in particular, equity and forex segments. Bank deposit and lending rates moved higher. Going forward, the RBI will need to remain vigilant in mitigating the impact of global spillovers on domestic financial markets.

Introduction

Since the September 2022 MPR, global financial markets have remained volatile amidst protracted geopolitical tensions, inflation remaining well above target across economies and aggressive monetary tightening. Sovereign bond yields fluctuated widely in line with incoming data and high intensity banking turmoil events in March. Equity markets in advanced economies (AEs) rallied on expectations of monetary policy pivots towards less restrictive stances, with EME stocks mirroring global sentiments, until the collapse of a few banks in the US triggered a flight to safety. In the currency markets, the US dollar eased from a two-decade peak and weakened against most currencies during October 2022-January 2023 but gained in February on strong US data. Volatility impacted EME currencies in an environment of risk aversion, safe haven demand, and correction in global equity markets.

IV.1 Domestic Financial Markets

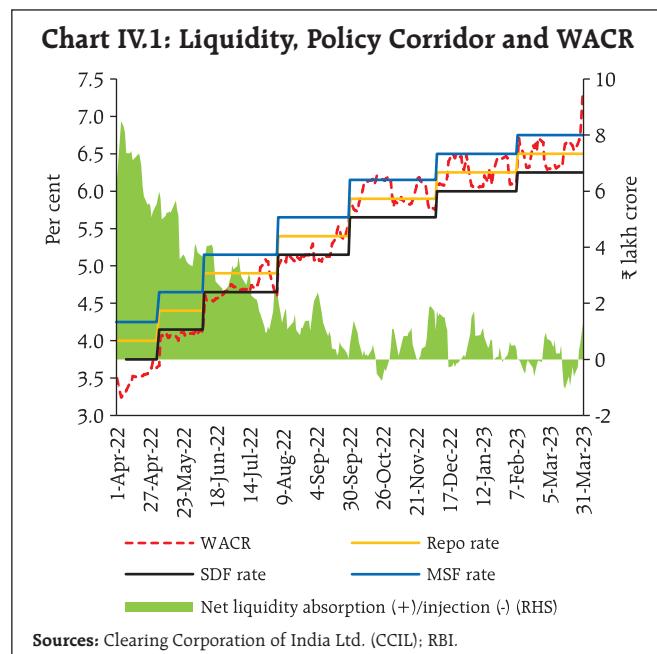
In contrast, domestic financial markets evolved in an orderly manner. Money market interest rates hardened during H2:2022-23, while bond yields were largely range-bound. Equity markets exhibited two-way movements in H2. The Indian rupee (INR) depreciated *vis-a-vis* the US dollar. Bank deposit and lending rates moved higher in response to monetary

policy actions. Bank credit growth remained in double digits throughout 2022-23 although it showed signs of slowdown from December 2022.

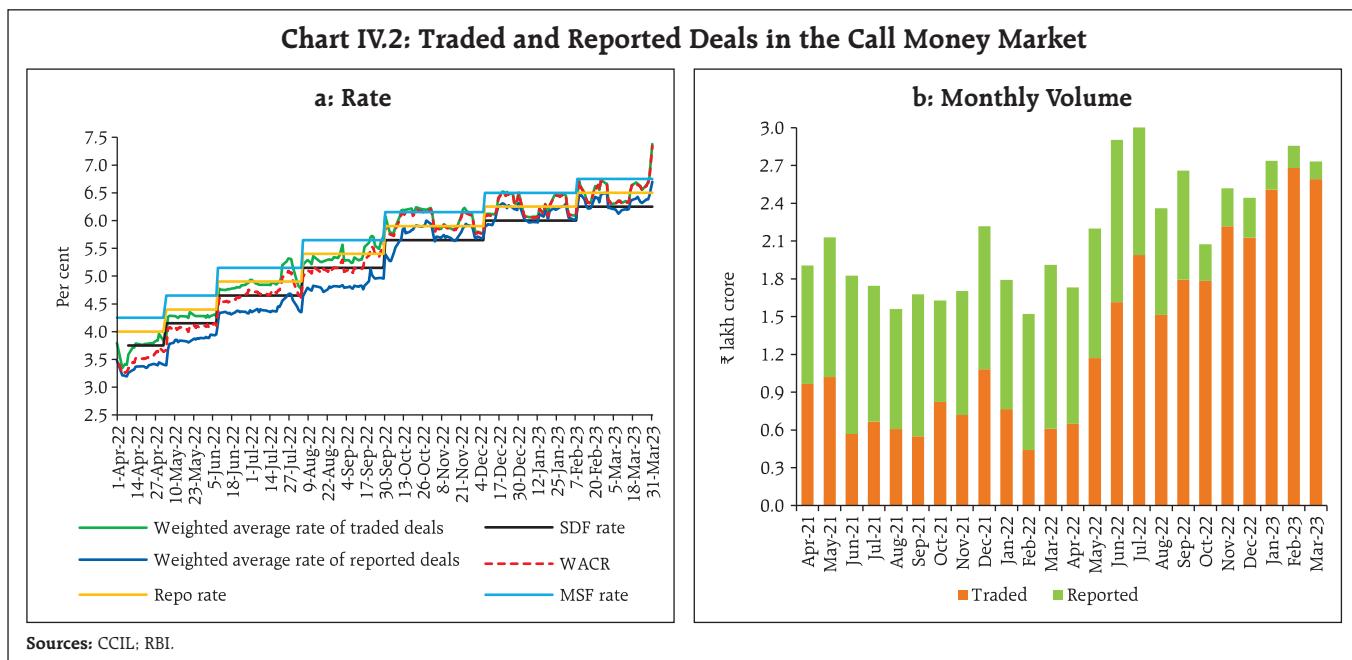
IV.1.1 Money Market

Money market rates firmed up across maturities during H2:2022-23, mirroring the increases in the policy repo rate and the ebbing of surplus liquidity. Reflecting these developments, the weighted average call money rate (WACR), on an average, was broadly aligned with the repo rate – 3 basis points (bps) above the repo rate in H2 as compared with 27 bps below in H1 (Chart IV.1).

In the overnight call money segment, the weighted average rate (WAR) on traded deals (on an average) was 5 bps above the policy repo rate while it was 15 bps below on reported deals¹ during H2 (Chart IV.2a). The average monthly volume of traded deals during H2 at ₹2.32 lakh crore was notably higher than ₹0.24 lakh crore in the reported segment



¹ 'Traded deals' are negotiated directly on the NDS-Call platform whereas 'reported deals' are over the counter (OTC) deals which are reported on the NDS-Call platform after the completion of negotiation of deals.

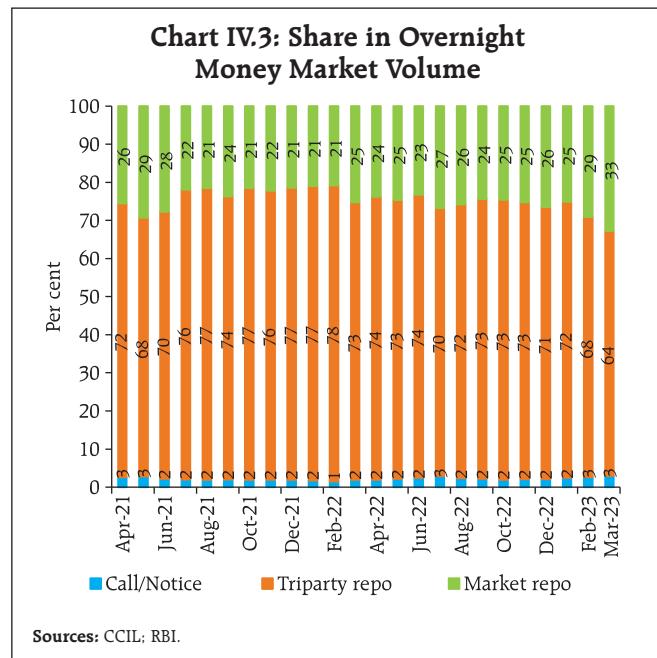


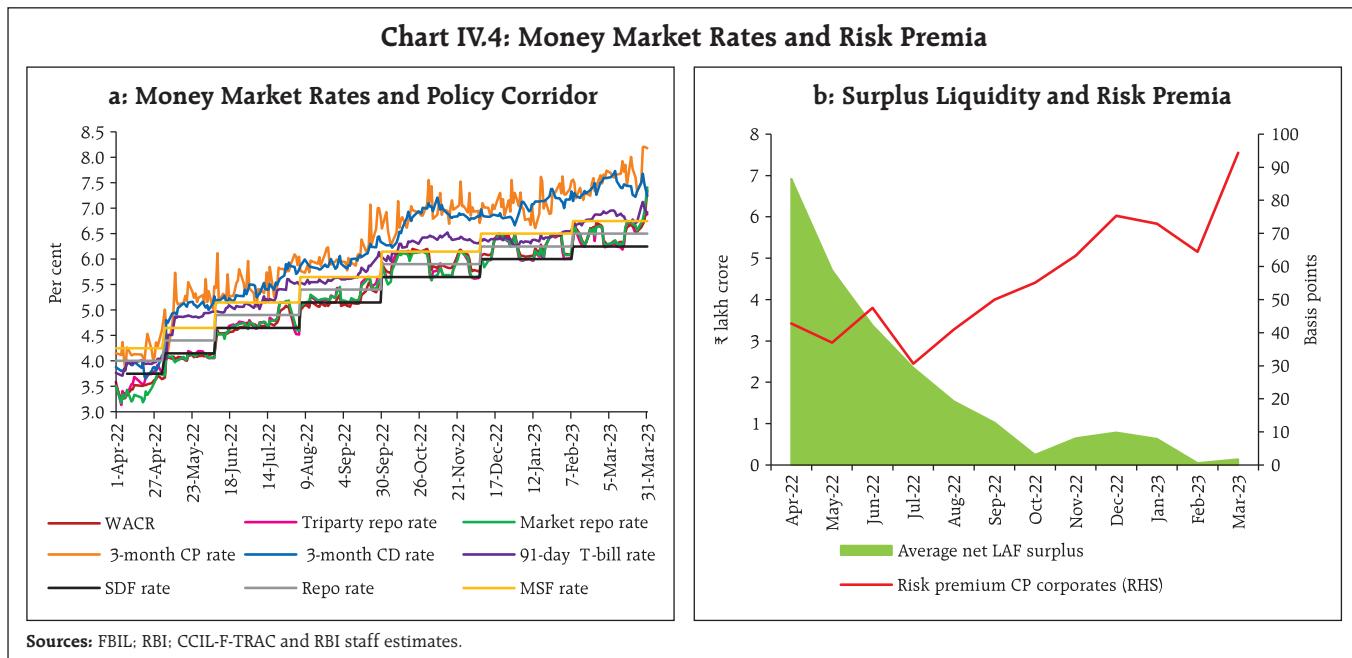
(Chart IV.2b). The share of reported deals in the total call money market volume declined to 5 per cent in March 2023 from 33 per cent in September 2022 due *inter alia* to the Reserve Bank's directive to all eligible call money participants (including cooperative banks) to obtain NDS-CALL membership, the restoration of regular market hours and tightening liquidity conditions.

Within the money market, the collateralised segments remained dominant. The share of the uncollateralised call money market in total money market volume was 2 per cent in H2. Amongst the collateralised segments, the share of triparty repo (TREPS) moderated to 71 per cent in H2 from 76 per cent a year ago, while that of market repo increased to 27 per cent from 22 per cent (Chart IV.3). Among investors, the share of mutual funds (MFs) – the major lenders in the collateralised segment – declined to 67 per cent in H2 from 71 per cent in H1 in the TREPS segment and to 40 per cent from 45 per cent in the market repo segment, mainly because of reduced inflows under debt funds. On the borrowing side, the share of public sector banks (PSBs) in TREPS

and market repo declined to 61 per cent and 15 per cent, respectively, in H2 from 65 per cent and 19 per cent, in H1.

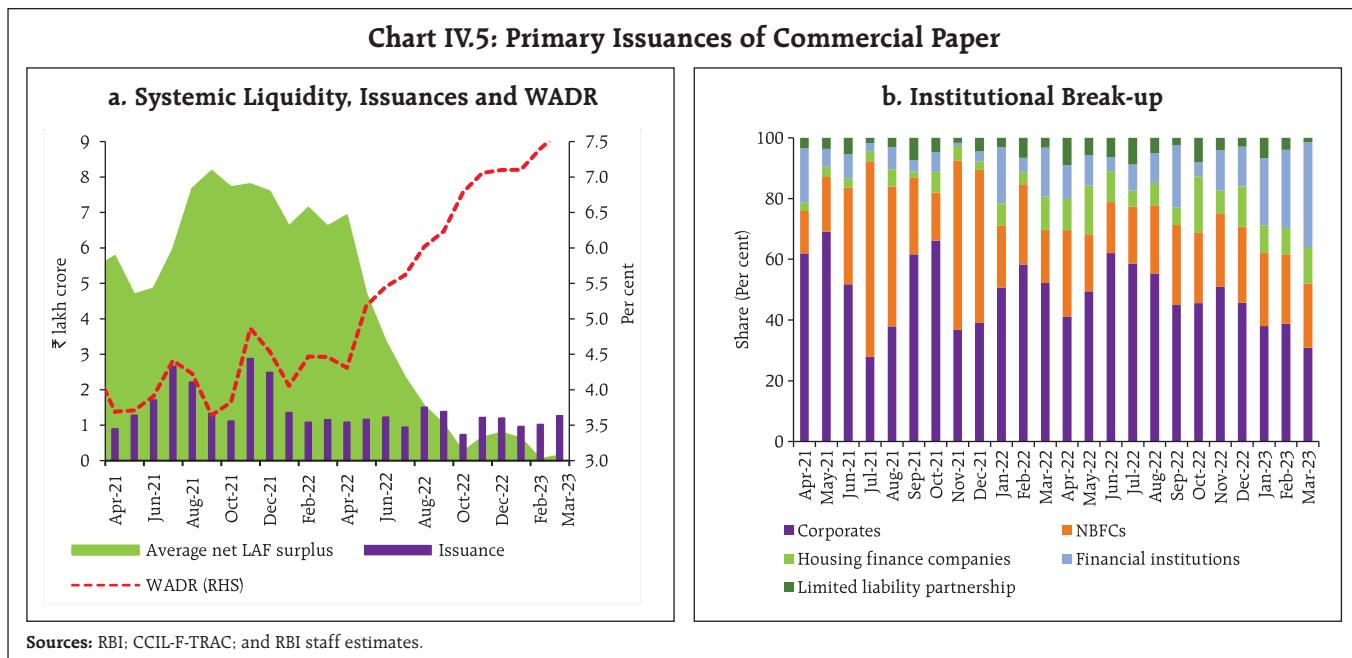
The interest rates on longer-term money market instruments – 3-month T-bills (TBs); certificates of deposit (CDs); and commercial paper (CPs) – rose in sync with the policy rate. The spread of TBs over





the policy repo rate at 30 bps in H2 was marginally higher than 25 bps in H1, while the spreads of CDs and CPs widened to 85 bps and 99 bps, respectively, from 46 bps and 63 bps, amidst receding surplus liquidity and rise in risk premia² during H2 (Chart IV.4).

Banks continued to rely on CDs for funding, with issuances of ₹3.8 lakh crore in H2 (up to March 24, 2023) on top of ₹3.0 lakh crore in H1. Resource mobilisation through CPs tapered from ₹7.3 lakh crore in H1 to ₹6.4 lakh crore in H2, revealing a preference for bank credit. The weighted average discount rate



² Spread of 3M CP-Corporates over 91-day T-bills.

Table IV.1: Maturity Profile of CP Issuances

(₹ lakh crore)

Tenor	H2: 2021-22	H1: 2022-23	H2: 2022-23
7-30 days	4.14	0.69	0.38
31-90 days	3.30	4.00	3.13
91-180 days	1.82	1.87	1.94
181-365 days	0.83	0.75	0.97
Total	10.09	7.32	6.42
Outstanding (as at end-period)	3.52	4.01	3.54

Sources: CCIL-F-TRAC and RBI staff estimates.

(WADR) on CP issuances firmed up to 7.21 per cent in H2 from 5.53 per cent in H1 (Chart IV.5a). Corporates remained the major issuers of CPs, although their share declined to 42 per cent in H2 from 52 per cent in H1 (Chart IV.5b).

The CP issuances were dominated by 31-90 days maturity segment with a share of about 49 per cent in H2 as against 33 per cent a year ago (Table IV.1).

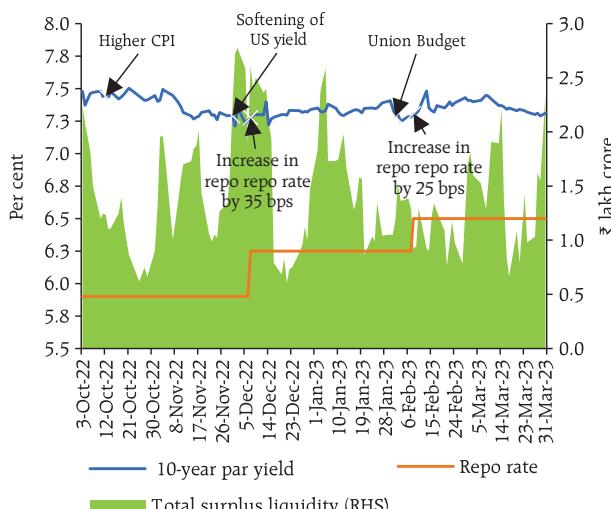
IV.1.2 Government Securities (G-sec) Market

During H2, G-sec yields were largely range-bound (Chart IV.6). Yields hardened in October 2022, tracking higher than expected domestic CPI inflation for

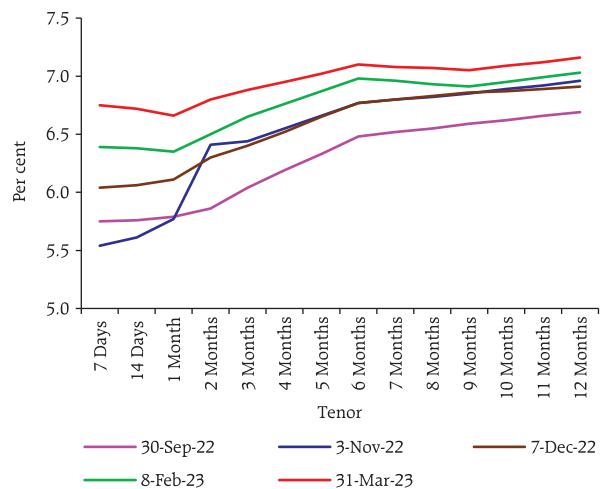
September. They moderated in November, taking cues from softening US yields with a lower-than-expected US CPI print and declining crude prices. Overall, the 10-year benchmark yield softened by 7 bps in Q3 to close at 7.33 per cent. In Q4, yields softened in early February on a lower than anticipated market borrowing programme of the central government for 2023-24. They hardened subsequently on higher domestic and US inflation prints and stronger US economic data. In March, the yields softened, taking cues from US yields following bank collapses which drove investors to safe assets. Overall, the 10-year benchmark yield fell by 3 bps to 7.31 per cent at end-March 2023.

The yields on T-bills firmed up across tenors in sync with the policy repo rate increases and moderation in surplus liquidity (Chart IV.7).

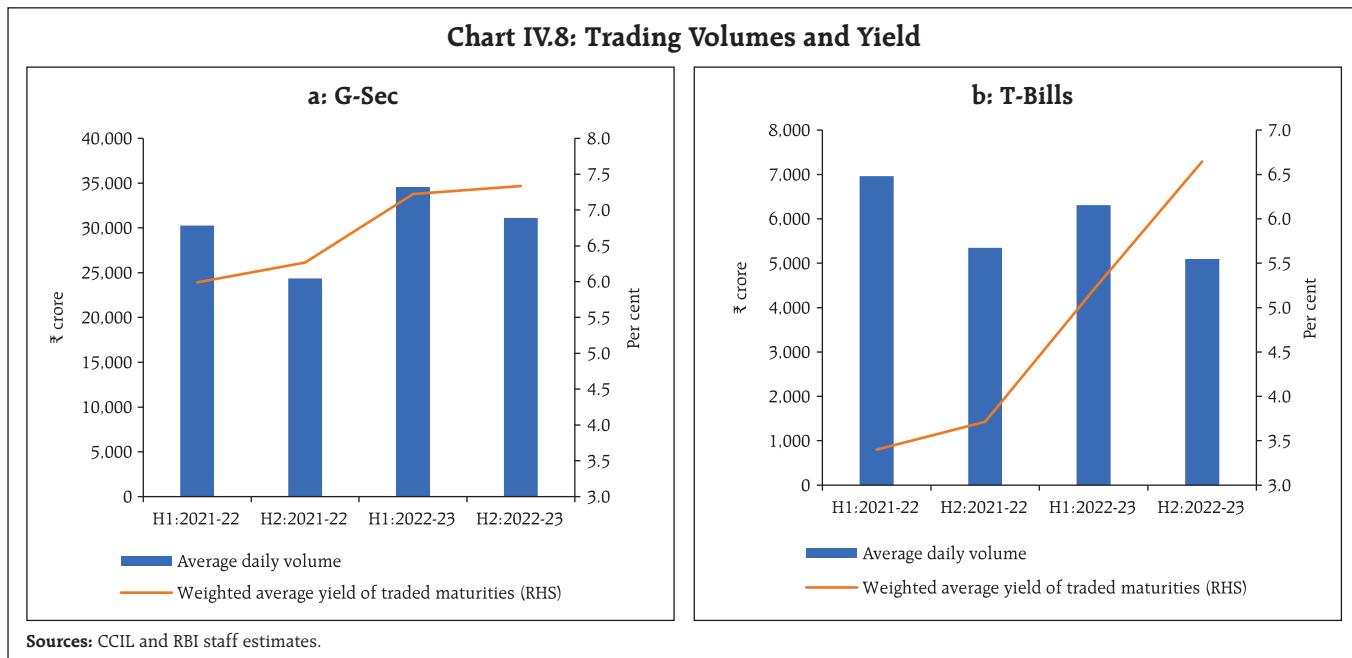
The trading volume in G-secs increased in H2 compared to the corresponding period of 2021-22 while it declined for T-bills over the same period (Chart IV.8). The weighted average yield on traded maturities for G-sec and T-bills increased by 107 bps and 293 bps, respectively, in H2 from their corresponding levels in H2 of the previous year.

Chart IV.6: 10-year Generic Yield, Repo Rate and Liquidity Conditions

Sources: RBI and FBIL.

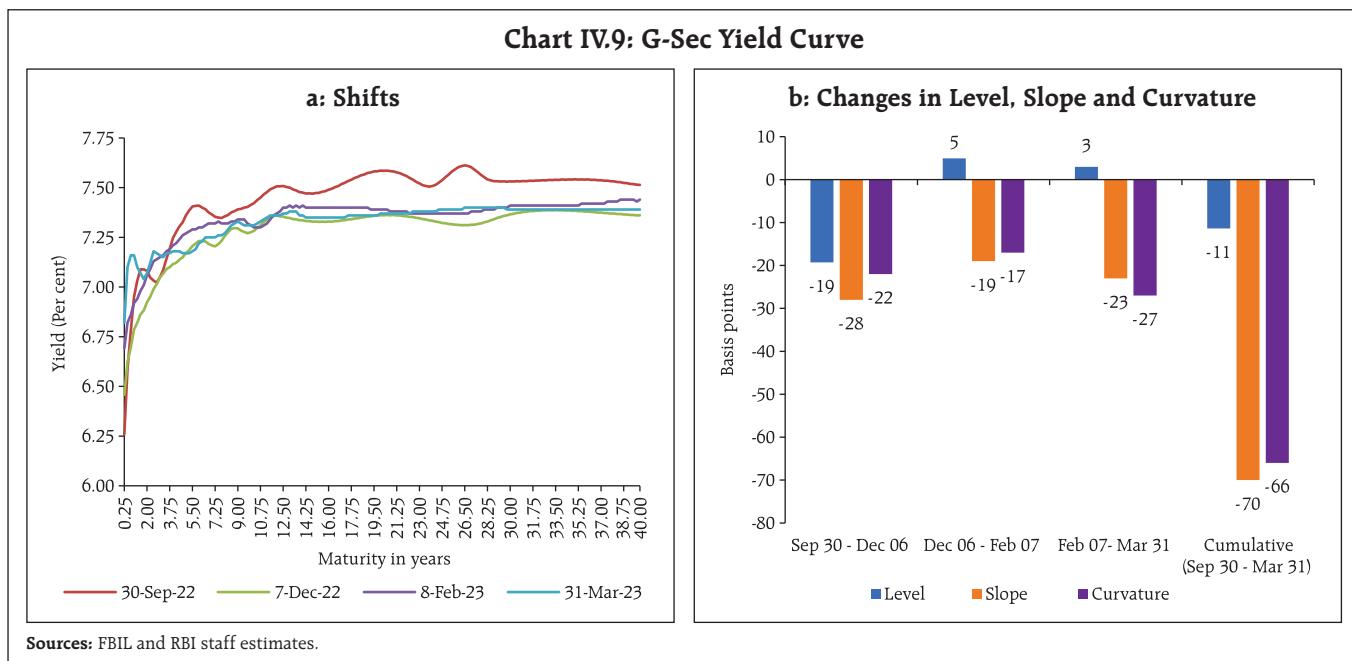
Chart IV.7: FBIL -T-Bill Benchmark (Yield to Maturity)

Source: FBIL.



The overall dynamics of the yield curve are captured by its level, slope, and curvature³. During H2, the average level of yields softened by 11 bps while the slope flattened by 70 bps due to relatively higher increase in short-term rates consequent upon

policy tightening, mirroring global movements. The curvature declined by 66 bps in response to yields hardening less in the mid-segment of the curve than in the short and long segments (Chart IV.9). In the Indian context, the level and curvature of the yield



³ The level is the average of par yields of all tenors up to 30-years published by FBIL and the slope (term spread) is the difference in par yields of 3-months and 30-year maturities. The curvature is calculated as twice the 14-year yield minus the sum of 30-year and 3-month yields.

curve have more information content on future macroeconomic outcomes than the slope, unlike in AEs.⁴

In line with the announcement in the Union Budget for 2022-23, the Reserve Bank issued Sovereign Green Bonds (SGRBs) amounting to ₹16,000 crore in two tranches of ₹8,000 crore each on January 25 and February 9, 2023. The proceeds are to be used exclusively for financing or re-financing new and/or existing projects compatible with the environment and/or climate.

To facilitate debt consolidation, the Reserve Bank conducted five switch auctions on behalf of the Central Government amounting to ₹49,387 crore during H2. The weighted average maturity (WAM) of the outstanding stock of G-secs at 11.94 years during H2 was similar to 11.96 years at end-September 2022. The weighted average coupon (WAC) at 7.26 per cent at end-March 2023 was higher than 7.15 per cent at end-September 2022.

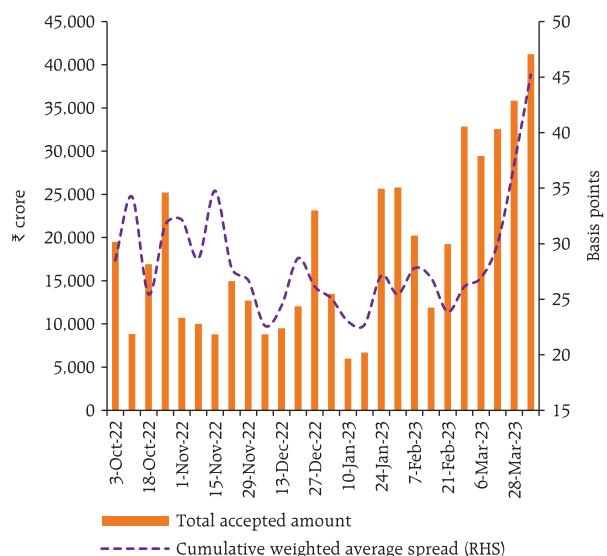
The weighted average spread of cut-off yields on state government securities (SGS) over G-sec yields of comparable maturities was 30 bps in H2 (Chart IV.10). The average inter-state spread on securities of 10-year tenor (fresh issuances) was 4 bps in H2.

IV.1.3 Corporate Bond Market

Corporate bond yields and spreads moved higher during H2, in sync with G-sec yields. The average yield on AAA-rated 3-year bonds issued by non-banking financial companies (NBFCs) and corporates increased by 57 bps (to 8.12 per cent) and by 49 bps (to 8.07 per cent), respectively, in March 2023 over September 2022. The average yield on issuances by public sector undertakings (PSUs), financial

⁴ Patra, M.D., Joice, J., Kushwaha, K.M., and I. Bhattacharyya (2022), "What is the Yield Curve telling us about the Economy?", Reserve Bank of India Bulletin, June.

Chart IV.10: SGS - Amount Raised and Spread

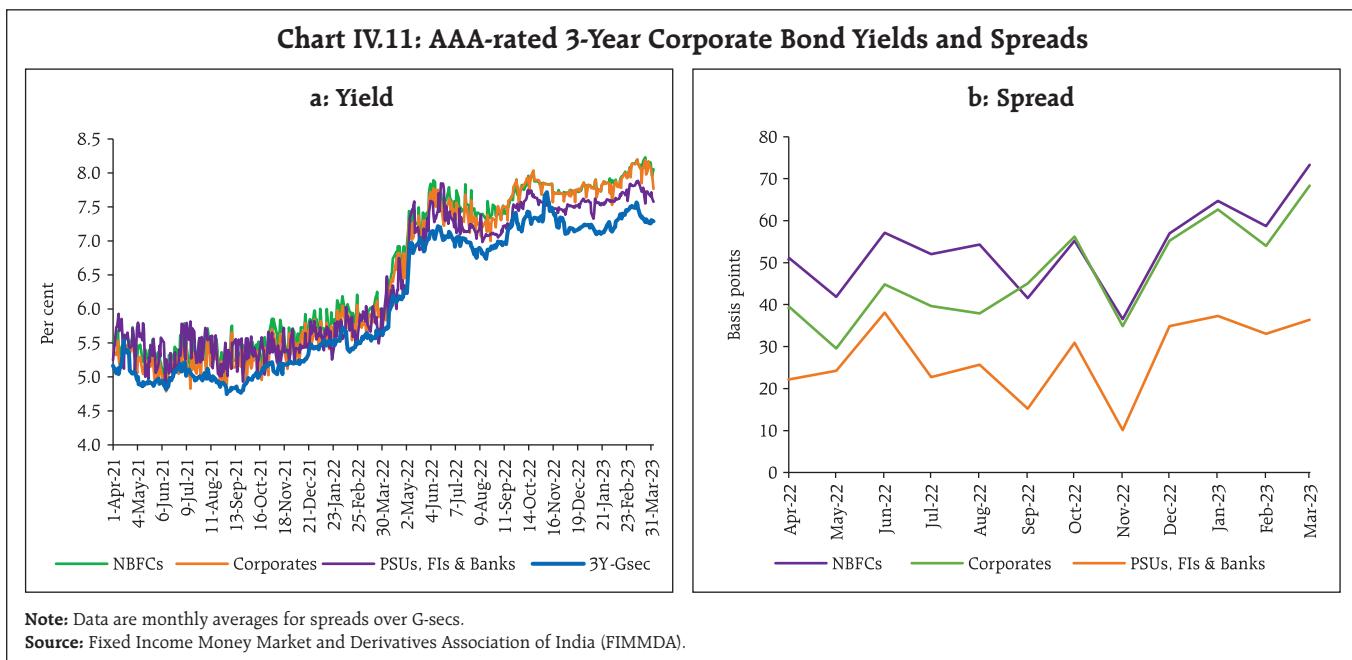


Source: RBI.

institutions (FIs) and banks rose by 46 bps to 7.75 per cent (Chart IV.11a). The risk premium (measured by the spread over 3-year G-sec yields) increased from 42 bps to 73 bps for NBFCs, from 45 bps to 68 bps for corporates and from 15 bps to 36 bps for PSUs, FIs and banks in H2 (Chart IV.11b).

The increase in risk premia was seen across tenors (*albeit* more at shorter segments) and rating spectrum (Table IV.2). The average 3-year credit default swap (CDS) spreads for State Bank of India's paper trading overseas reduced by three bps while that of ICICI Bank moderated by four bps in H2 over H1.

The primary market issuances of corporate bonds increased to ₹3.9 lakh crore during H2 (up to February 2023) from ₹2.5 lakh crore during the corresponding period of 2021-22, offsetting the moderation in overseas issuances from ₹0.5 lakh crore in H2:2021-22 to ₹0.1 lakh crore in H2:2022-23 (Chart IV.12a). Banks tapped the bond market to raise capital for their rapidly expanding balance sheets, driven by the surge in credit demand (Chart IV.12b). Nearly the entire resource mobilisation in the corporate bond market



(98.7 per cent) was through the private placement route. The outstanding investments by foreign portfolio investors (FPIs) in corporate bonds declined marginally from ₹1.14 lakh crore at end-September 2022 to ₹1.04 lakh crore at end-March 2023, pulling down the utilisation of the approved limits from 17.9 per cent to 15.5 per cent (Chart IV.12c). The daily average secondary market trading volume during

H2 (up to February 2023) at ₹5,332 crore was 7.7 per cent higher than in the corresponding period of the previous year (Chart IV.12d).

IV.1.4 Equity Market

In H2, domestic equity markets began on a positive note, amidst strong buying by FPIs and robust corporate earnings. The benchmark BSE Sensex touched an all-time high of 63,284 on December 1, 2022. In early Q4, rising US Fed terminal rate projections amidst tight labour market conditions dampened market sentiments. Domestic equities remained under pressure in March 2023 amidst spillovers triggered by the banking turmoil in the US and Europe. The BSE banking index (the Bankex), however, gained by 0.9 per cent in March 2023 in contrast to declines of 25.2 per cent and 13.8 per cent in the US and European banking benchmarks, respectively⁵. Overall, the BSE Sensex gained 2.7

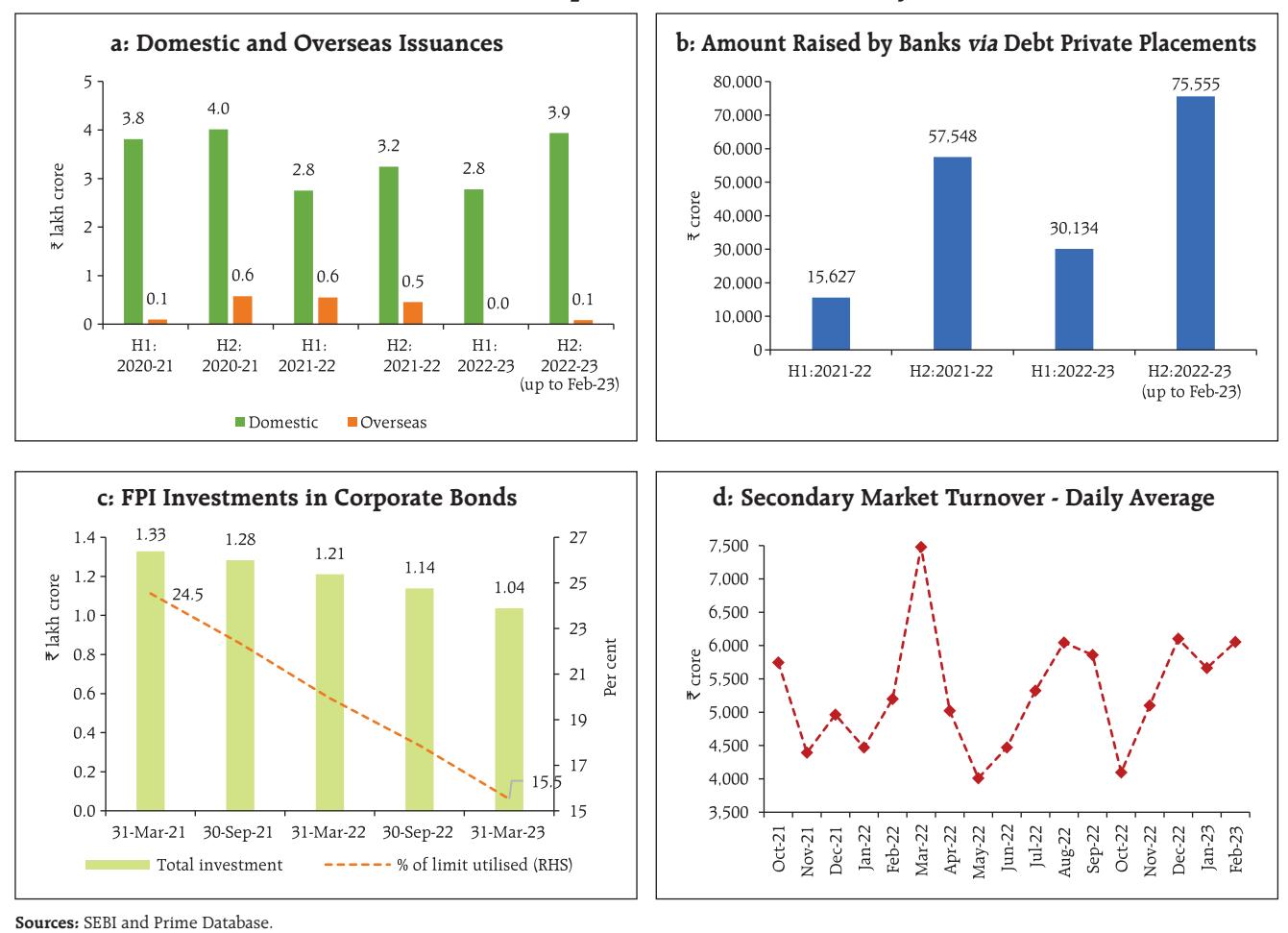
Table IV.2: Financial Markets - Rates and Spread

Instrument	Interest Rates (per cent)			Spread (bps) (over corresponding risk-free rate)		
	March 2022	Sep 2022	March 2023	March 2022	Sep 2022	March 2023
1	2	3	4	5	6	7
Corporate Bonds						
(i) AAA (1-yr)	5.03	6.87	8.08	28	12	66
(ii) AAA (3-yr)	5.86	7.58	8.07	25	45	68
(iii) AAA (5-yr)	6.43	7.54	8.00	-1	23	57
(iv) AA (3-yr)	6.57	8.33	8.77	96	120	139
(v) BBB-minus (3-yr)	10.24	11.99	12.42	463	486	504

Note: Yields and spreads are monthly averages.

Source: FIMMDA.

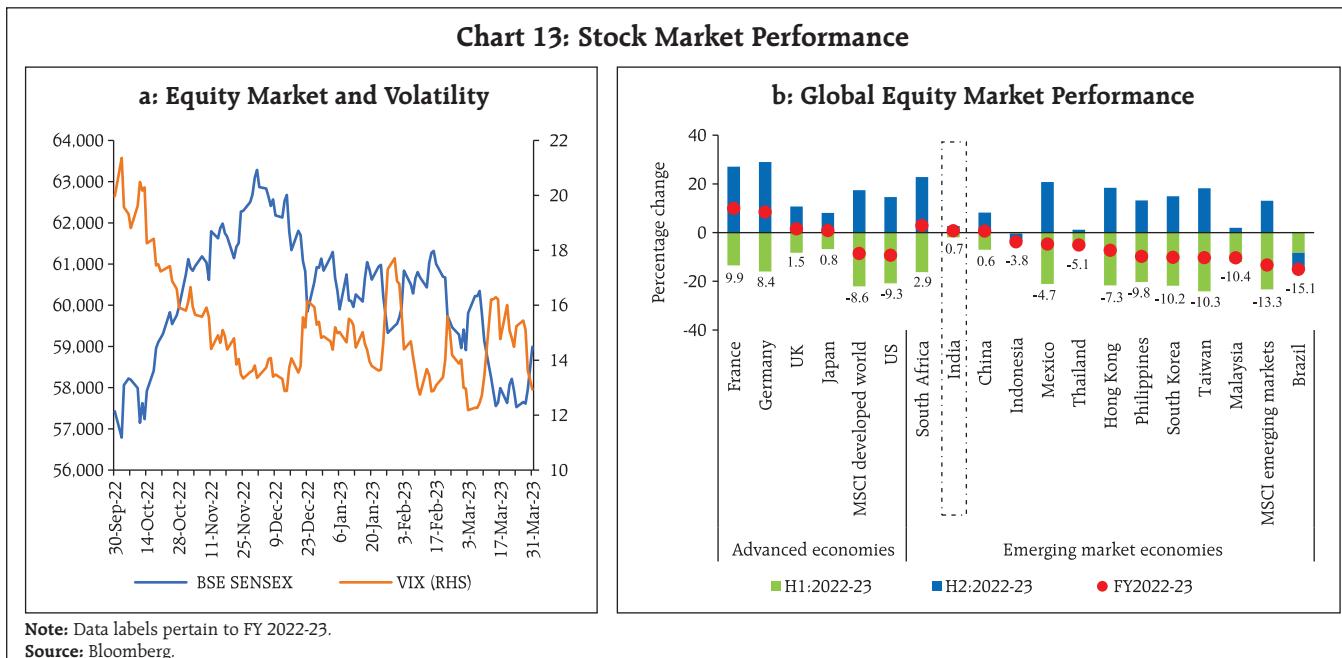
⁵ KBW index for the US and the Euro Stoxx Banking index (SX7E) for the Euro area.

Chart IV.12: Corporate Bond Market Activity

per cent in H2 to close at 58,992 on March 31, 2023. Barring brief phases of turbulence, equity market volatility trended downwards with the India VIX – which captures the short-term expected volatility of Nifty 50 – declining from 20 at end-September 2022 to 12.9 at end-March 2023 (Chart IV.13a). The Indian equity markets have remained resilient as compared to most EMEs in 2022-23 (Chart IV.13b).

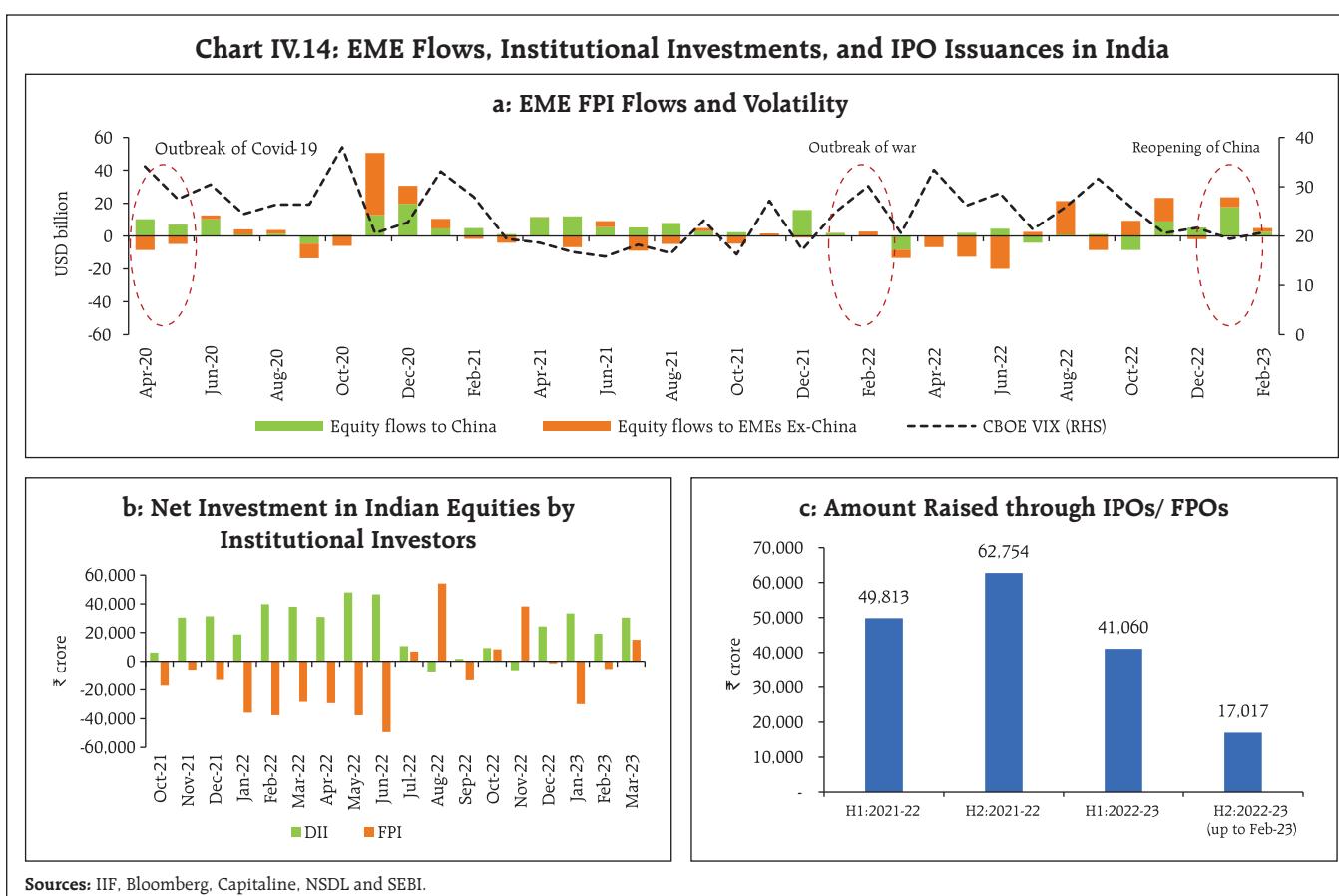
FPI flows to EMEs rebounded during H2 (Chart IV.14a). In India, foreign investors were net buyers in the domestic equity market in October-November

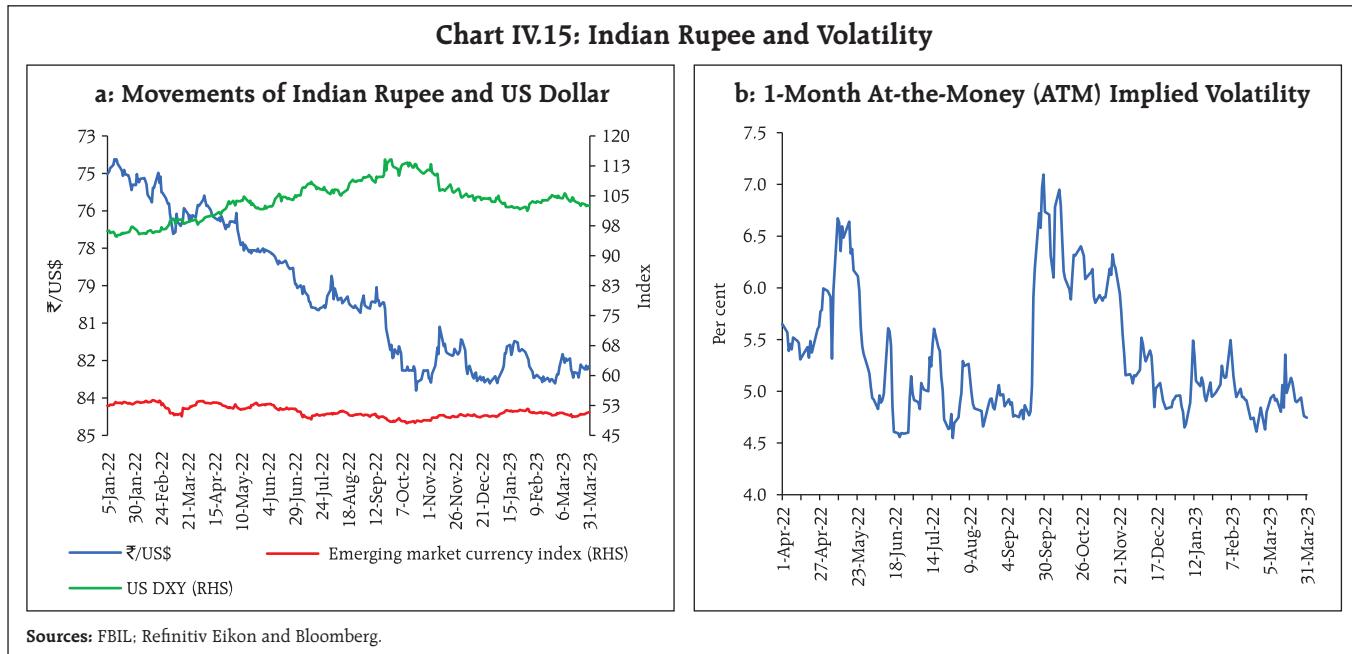
2022, attracted by robust earnings. They, however, turned net sellers in December-February on expectations of further monetary tightening by the US Fed and a sell-off in shares of a large Indian business conglomerate. Foreign investors turned net buyers in March. Domestic institutional investors (DIIs), on the other hand, were net buyers amidst steady retail participation through the Systematic Investment Plan (SIP) route, enabling the market to remain resilient. FPIs and DIIs were net buyers to the tune of ₹25,027 crore and ₹1.10 lakh crore, respectively, in H2



(Chart IV.14b). Activity in the domestic primary market remained subdued in H2, with issuers

reconsidering IPOs amidst volatile market conditions (Chart IV.14c).





IV.1.5 Foreign Exchange Market

The appreciation of the US dollar, triggered by aggressive rate hikes and the hawkish stance of the US Fed, exerted depreciation pressure on EME currencies in H2 (Chart IV.15a). Buffeted by these global spillovers, the INR touched an all-time low of 83.2 per US\$ on October 20, 2022. It recovered in November 2022, riding on a depreciating US dollar and net inflows through foreign portfolio investments. Since then, it has remained largely range-bound. The INR volatility – measured by the 1-month at the money (ATM) option implied volatility – increased marginally from 5.29 per cent during H1 to 5.33 per cent during H2 (Chart IV.15b).

On a financial year basis, the INR outperformed major EME currencies, including the Argentine Peso, the South African Rand, and the Turkish Lira during 2022-23 (Chart IV.16).

In terms of the 40-currency nominal and real effective exchange rate, the INR depreciated by 4.2 per

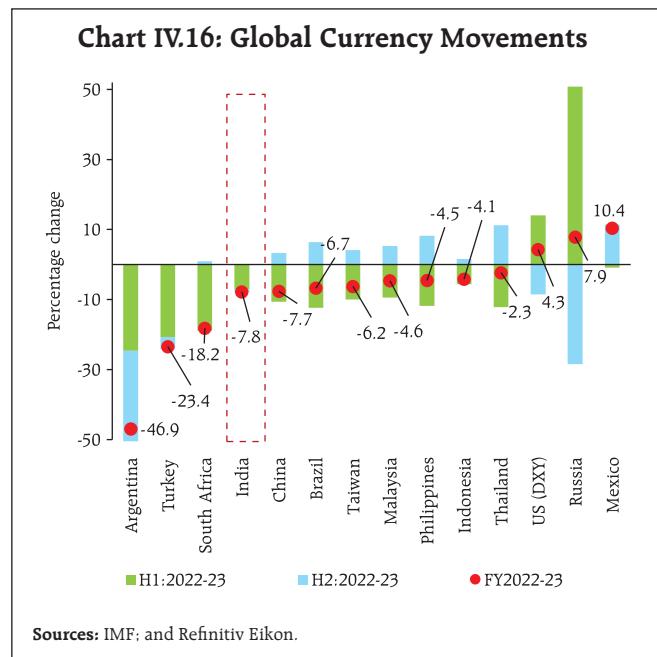


Table IV.3: Nominal and Real Effective Exchange Rate Indices (Trade-weighted)
 (Base: 2015-16 = 100)

Item	Index: March 31, 2023 (P)	Appreciation (+) / Depreciation (-) (Per cent)
		March 31, 2023 over September 2022 (average)
40-currency REER	99.7	-5.0
40-currency NEER	89.0	-4.2
6-currency REER	98.3	-6.4
6-currency NEER	82.8	-6.2
₹/US\$	82.2	-2.4

P: Provisional.

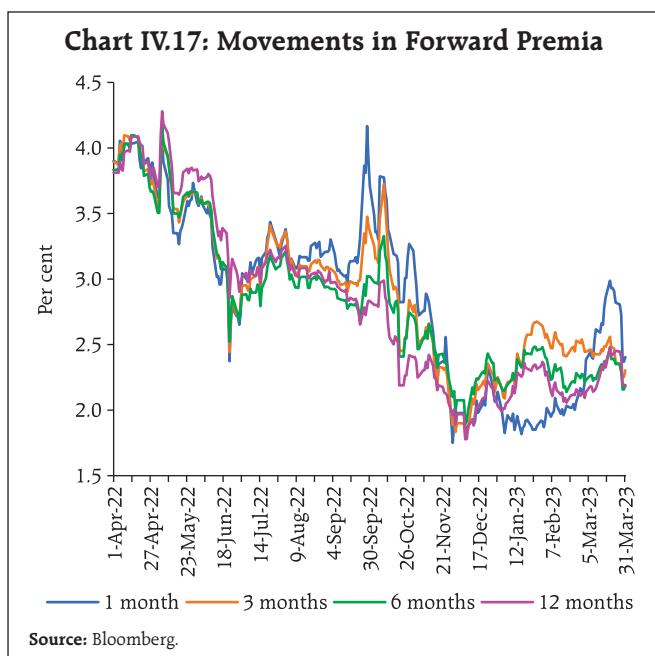
Sources: RBI; and FBIL.

cent and 5.0 per cent, respectively, between September 2022 (average) and end-March 2023 (Table IV.3).

Forward premiums fell during H2 – the 1-month forward premia declined to an average of 2.39 per cent during H2 from 3.38 per cent during H1 (Chart IV.17).

IV.1.6 Credit Market

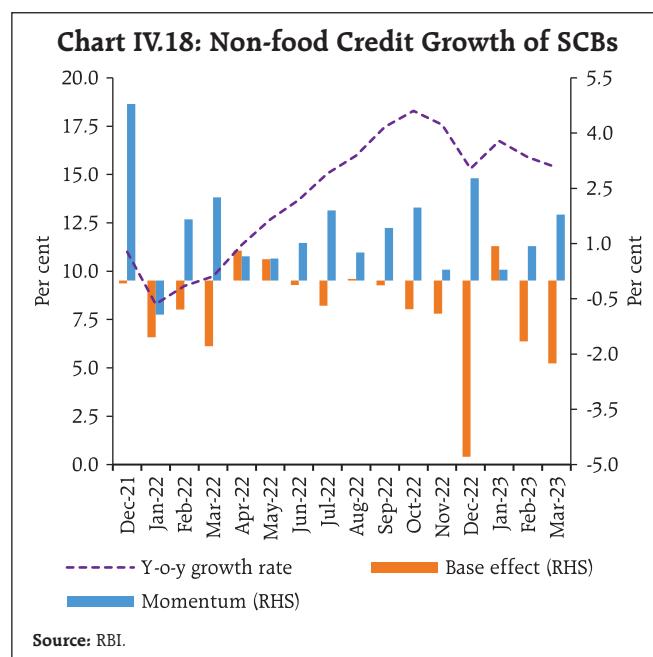
Bank credit growth remained robust in H2:2022-23 in tandem with economic activity. Growth in non-



food bank credit accelerated to 15.4 per cent (y-o-y) as at end-March 2023 from 9.7 per cent a year ago (Chart IV.18). With credit growth outpacing growth in aggregate deposits, the incremental credit deposit ratio was above 100 per cent, raising questions about the long-term sustainability of high credit growth (Box IV.1).

While credit growth picked up across the board, it remained higher for private sector banks (PVBs) (18.4 per cent) *vis-à-vis* the PSBs (13.7 per cent) (Chart IV.19a). PSBs were, however, the major driver of the incremental credit extended by all scheduled commercial banks (SCBs) in 2022-23 (Chart IV.19b).

Credit offtake was led by personal loans and services⁶. While the share of personal loans in incremental credit offtake declined *vis-à-vis* the



⁶ While overall bank credit and non-food credit data are based on Section-42 return (which covers all SCBs), 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.

Box IV.1: Is Current Credit Growth High?

Bank credit growth reflects factors such as swings in economic activity, the availability and cost of non-bank funding, the relative cost of bank funding, the banking sector's health and risk appetite. Bank credit growth during 2022-23 was in large part a cyclical rebound from the subdued profile during the pre-pandemic year (2019-20) and the pandemic phase (2020-21 and 2021-22). While deposit growth trailed credit growth in 2022-23, the position was the reverse in the previous two years, reflecting higher savings due to reduced spending on contact-intensive services. More recently, deposit growth has accelerated, partly boosted by higher deposit rates.

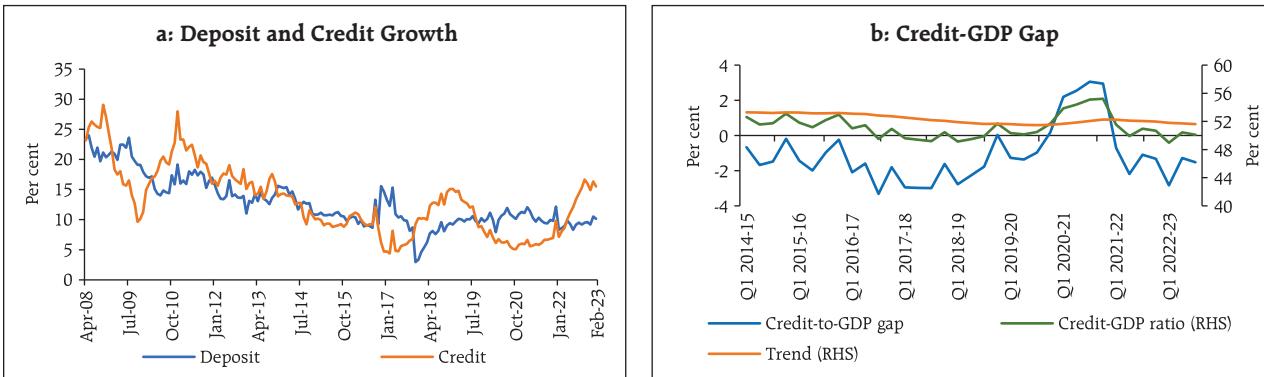
An econometric analysis of monthly non-food credit and deposit data of all scheduled commercial banks (SCBs) for the period April 2007-December 2022 shows that

bank deposits and credit are cointegrated, i.e., they co-move over time⁷. The long-run elasticity of credit with respect to deposits is 0.94, attesting to this high degree of co-movement. The error correction coefficient is (-)0.08 (and highly statistically significant with z-statistic of -3.94), which indicates that around 8 per cent of any divergence between credit and deposit growth is eliminated every month. Despite the buoyancy in bank credit in 2022-23, the credit-to-GDP gap remains negative (Chart IV.1.1). Overall, the credit growth is driven by a rebound in economic activity and is supported by an improvement in deposit growth.

Long run equation: $\text{Log Credit} = 0.819 + 0.94 \text{ Log Deposit}$
(29.1)

Note: Figures in parentheses are z-statistics.

Chart IV.1.1: Deposit and Credit Dynamics



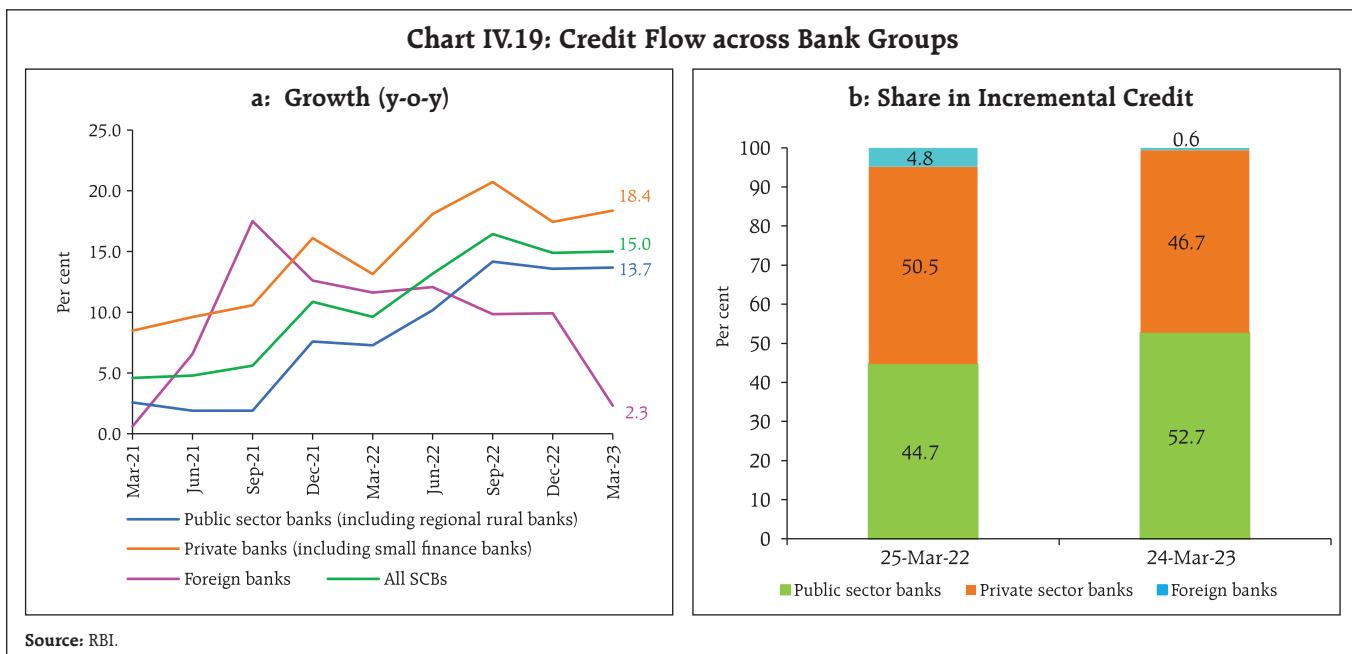
Sources: RBI staff estimates.

previous year, the share of the services sector nearly doubled in February 2023 (Chart IV.20).

Sector-wise, growth in agriculture credit accelerated to 14.9 per cent (y-o-y) in February 2023 from 10.3 per cent a year ago. Bank credit to industry rose by 7.0 per cent in February 2023 as compared with 6.7 per cent a year ago, driven by large industries, especially metals, petroleum, and chemical industries. Credit growth to the

infrastructure sector decelerated on the back of decline in credit to the telecom sector. The MSMEs' credit growth remained buoyant, shored up by the Emergency Line Guarantee Scheme (ECLGS) that was extended till March 2023 (Chart IV.21).

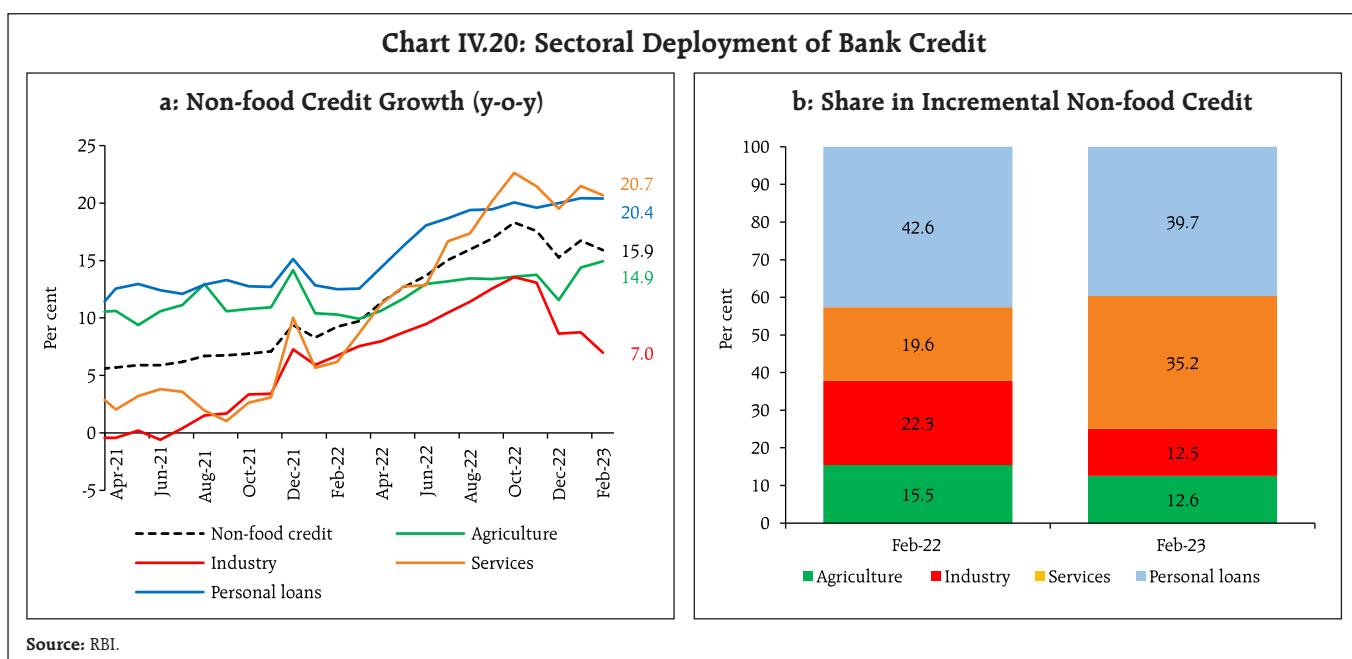
⁷ The vector error correction model includes eight lags, based on the Akaike Information Criterion (AIC). Johansen's test confirms the presence of one cointegrating vector. The regression diagnostics are satisfactory. R² for the short-run equation is 0.70. The Lagrange multiplier (LM) test for autocorrelation in the residuals confirms no autocorrelation up to lag 12.

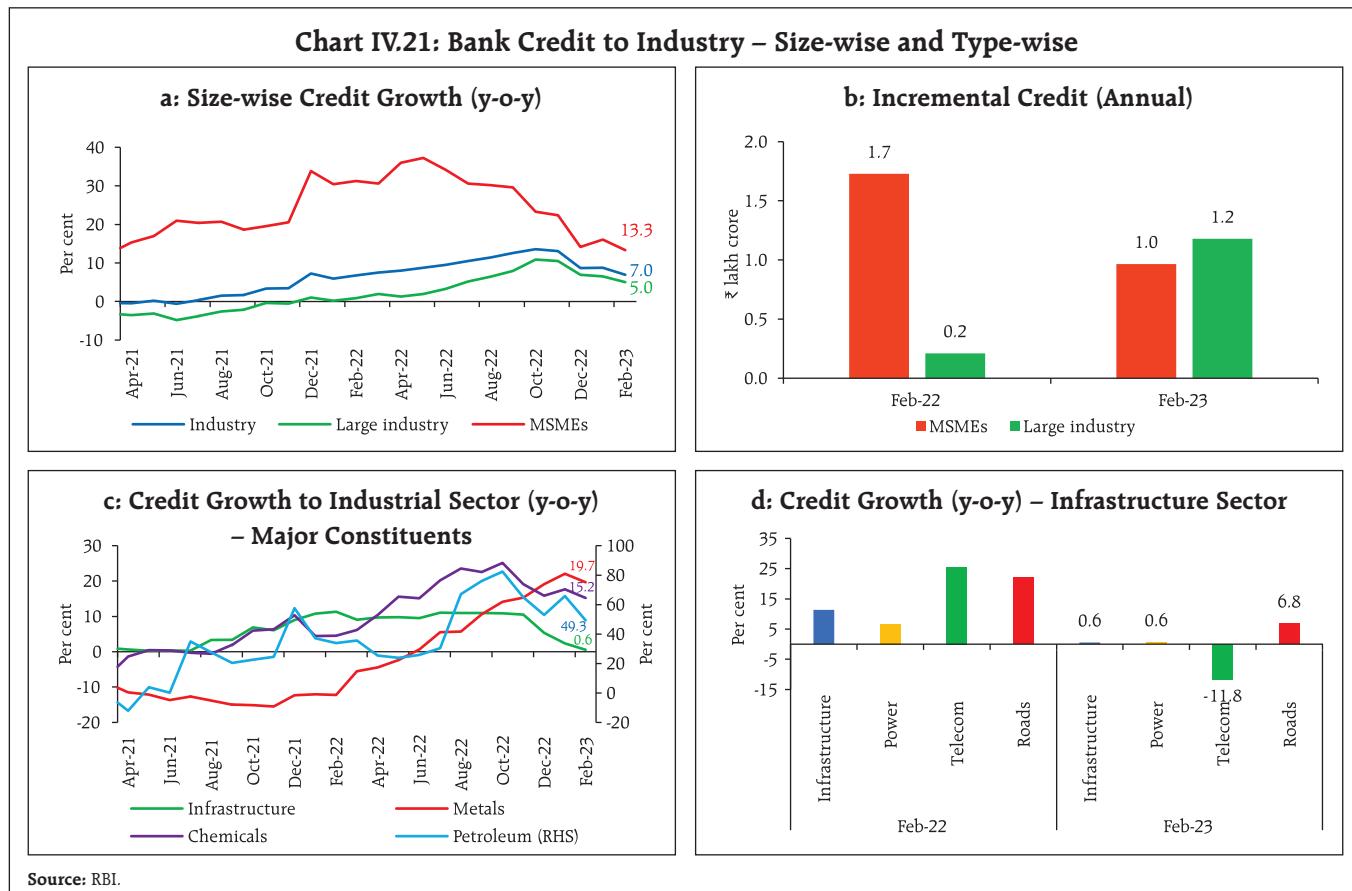


Services sector credit gained further traction in H2, propelled by flows to NBFCs, both housing finance companies and others NBFCs. With wholesale and retail trade included under the MSME category and easier access to loans under the Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE),

credit to the trade sector registered accelerated growth in H2 (Chart IV.22).

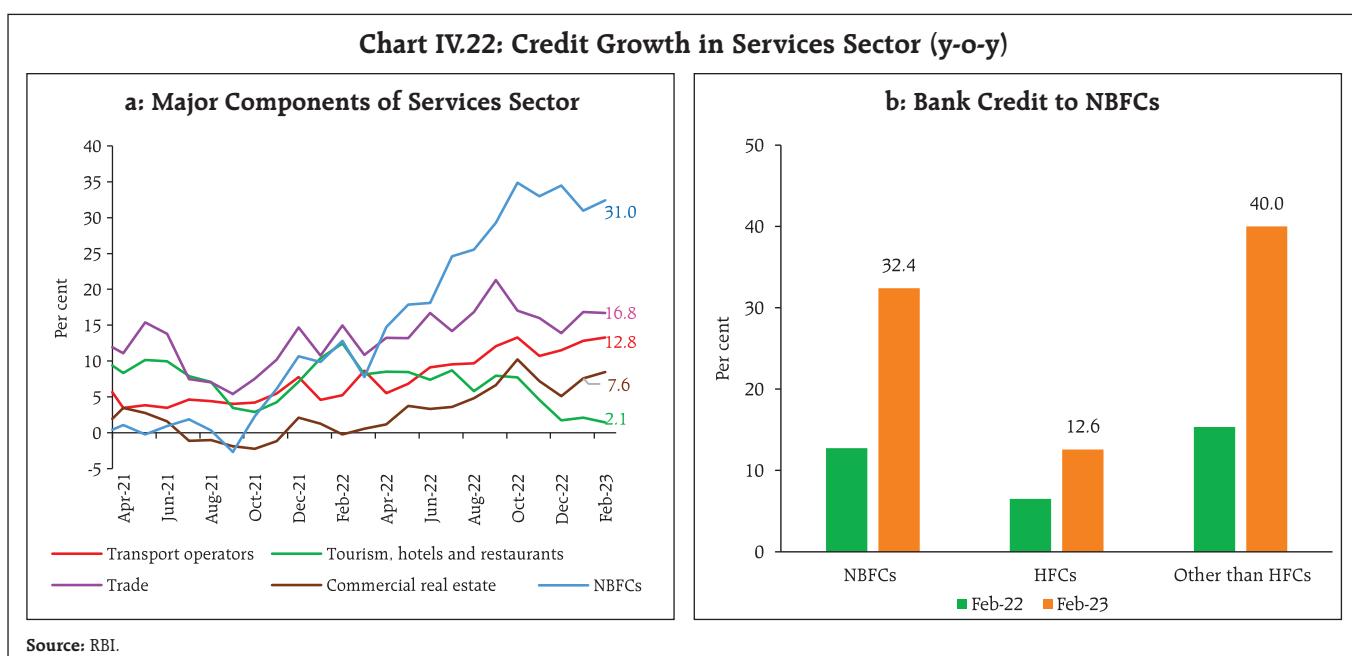
Retail loans remained the prime contributor to overall credit increase (y-o-y) in 2022-23. While credit to the housing sector recorded consistent expansion,

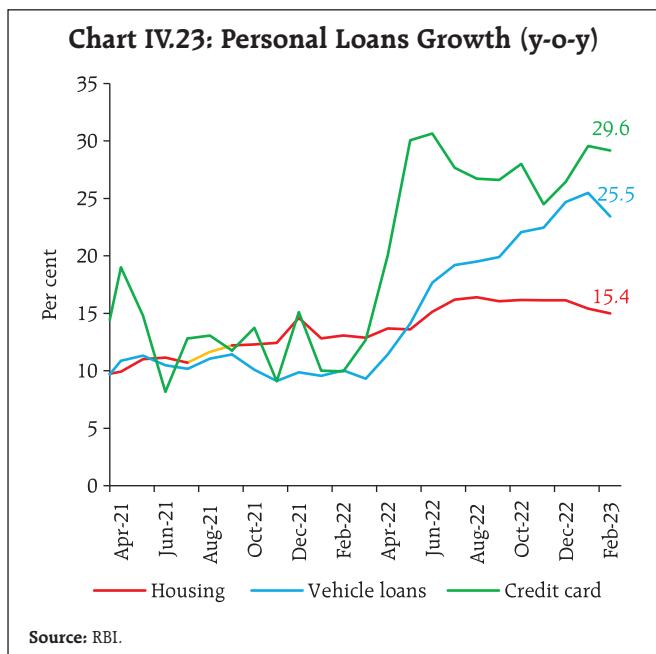




vehicle loan growth strengthened further. Credit card loan growth was in high double digits throughout

2022-23 reflecting pent-up consumption demand (Chart IV.23).





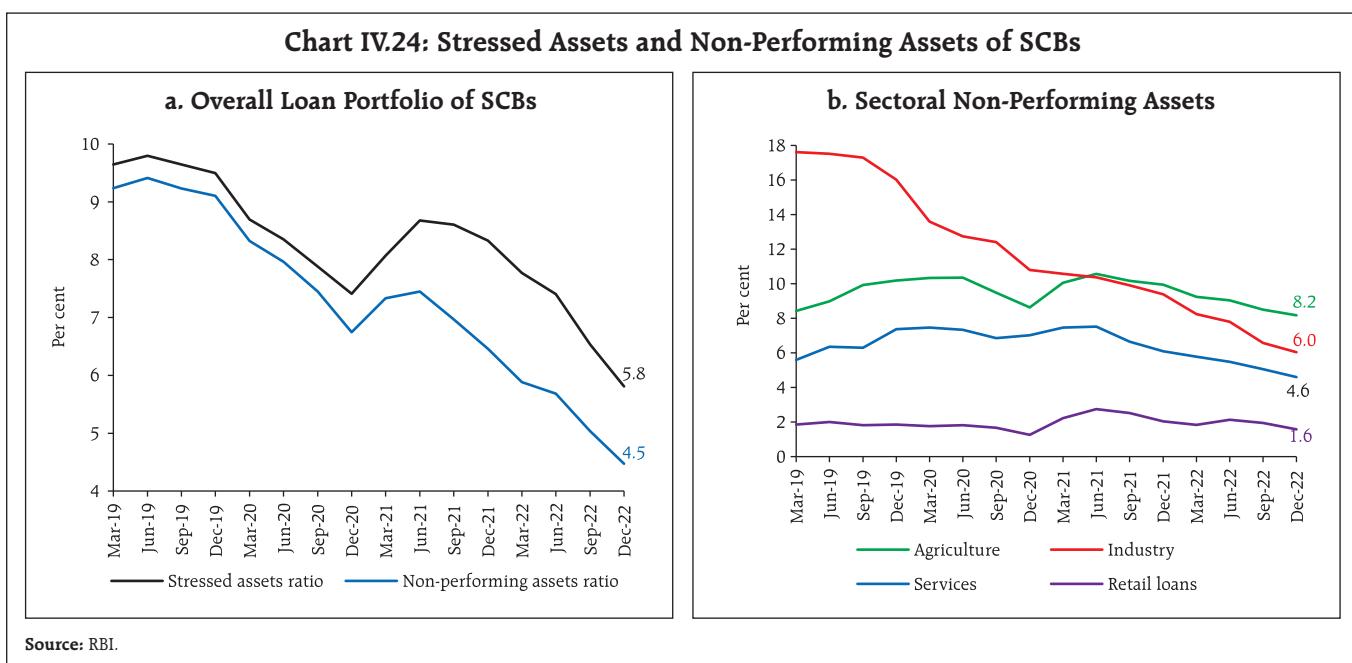
The asset quality of SCBs improved during 2022-23, with the overall non-performing assets (NPA) ratio declining to 4.5 per cent in December 2022 from 6.5 per cent a year ago (Chart IV.24a). Asset quality improved across all the major sectors over the same period (Chart IV.24b).

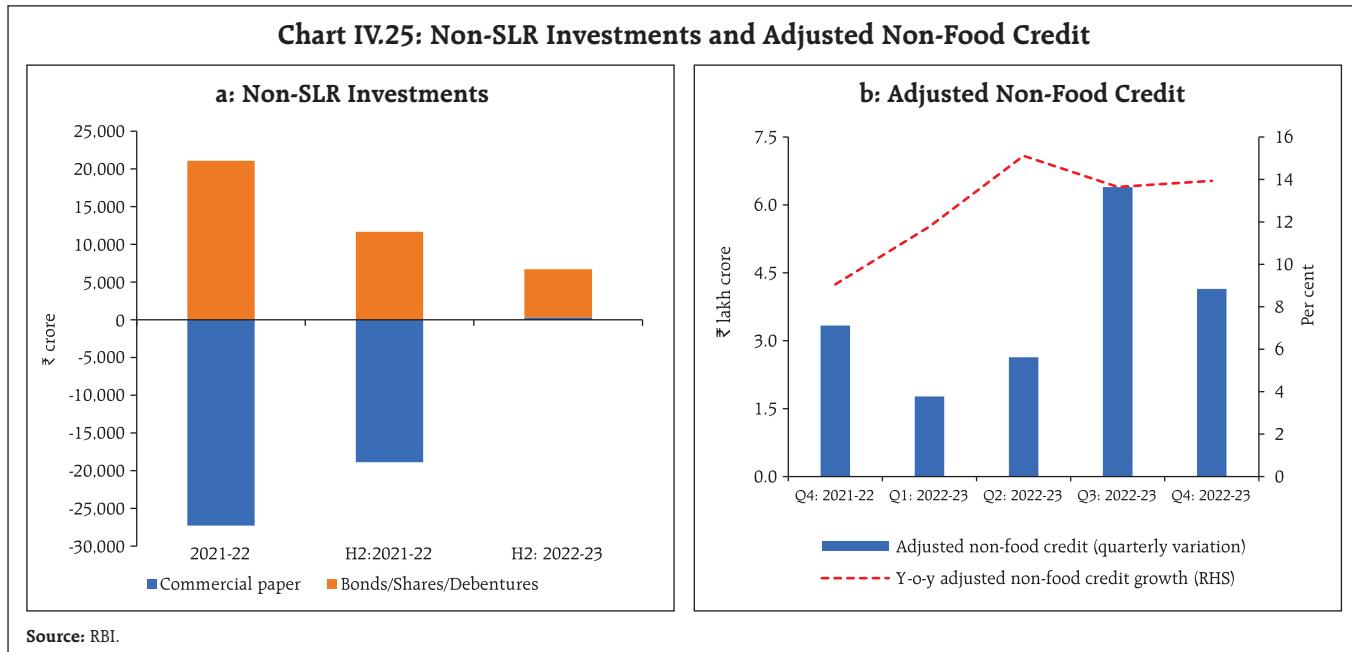
Banks' non-SLR investments – i.e., investments in CPs, bonds, debentures and shares of public and private corporates – were lower during H2 than a year ago, as banks preferred to support the commercial sector through loans and advances (Chart IV.25a). The growth in adjusted non-food credit (i.e., non-food bank credit and non-SLR investments taken together) accelerated to 13.9 per cent (y-o-y) in March 2023 from 9.1 per cent a year ago, driven by non-food credit (Chart IV.25b).

Excess holdings of statutory liquidity ratio (SLR) securities by banks moderated to 8.5 per cent of their net demand and time liabilities (NDTL) as on February 24, 2023 from 10.4 per cent at end-March 2022 as banks funded credit demand by shedding excess investments (Chart IV.26). Excess SLR holdings provide collateral buffers to banks for availing funds under the LAF and are also a component of the liquidity coverage ratio (LCR).

IV.2 Monetary Policy Transmission

The pace of transmission of policy repo rate increases to deposit and lending rates of banks





strengthened in H2:2022-23, reflecting the combined impact of the external benchmark regime for loans, the moderation in surplus liquidity in the banking system and credit growth persisting above deposit growth. Banks revised upwards their external benchmark-based lending rates (EBLRs) by 250 bps during May

2022- March 2023 in tandem with the increase in the policy repo rate. The marginal cost of funds-based lending rate (MCLR) – the internal benchmark for loan pricing – rose by 140 bps over the same period. The weighted average lending rate (WALR) on sanctioned fresh rupee loans increased by 173 bps and that on outstanding rupee loans by 95 bps during May 2022 to February 2023 (Table IV.4).

The external benchmark linked loans now dominate outstanding floating rate loans, with their share in total increasing from 44.0 per cent in March 2022 to 48.3 per cent in December 2022. Correspondingly, the share of MCLR-linked loans declined from 48.6 per cent to 46.1 per cent over the same period (Table IV.5). Within EBLR loans, the RBI's repo rate is the preferred benchmark, with a share of 81 per cent of all EBLR linked loans at end-December 2022. The significant increase in the share of repo linked loans with shorter reset periods aided the pace of transmission to WALR on outstanding loans.

Across domestic banks, the increase in the WALRs on fresh rupee loans was higher in the case of PSBs

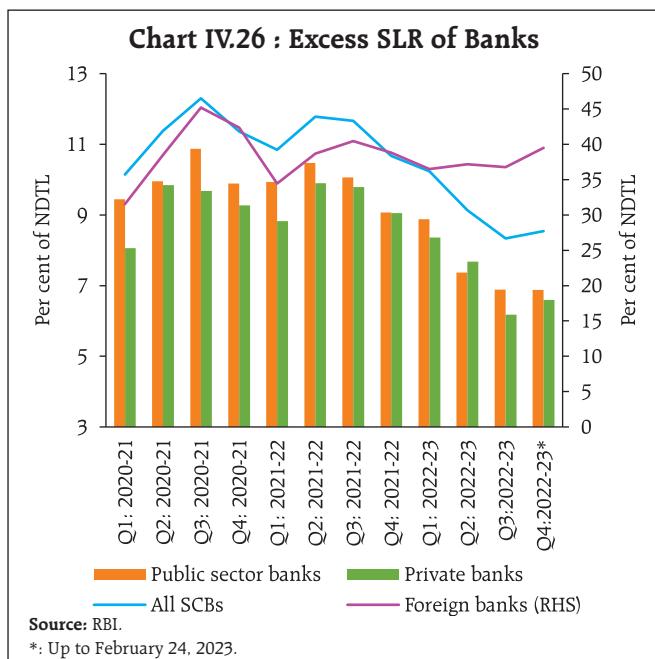


Table IV.4: Transmission from the Repo Rate to Banks' Deposit and Lending Rates

(Variation in basis points)

Period	Repo Rate	Term Deposit Rates			Lending Rates			
		WADTDR (Fresh Deposits)	WADTDR (Fresh Deposits)	WADTDR (Outstanding Deposits)	EBLR	1 - Year MCLR (Median)	WALR (Fresh Rupee Loans)	WALR (Outstanding Rupee Loans)
		Retail Deposits	Retail and Bulk Deposits					
February 2019 to March 2022	-250	-209	-259	-188	-250	-155	-232	-150
May 2022 to February/March 2023*	250	170	222	99	250	140	173	95
Memo:								
April 2022	0	0	-9	0	0	0	-12	-2
May-June 2022	90	10	58	10	90	25	40	20
July-September 2022	100	38	70	26	50	36	68	30
October-December 2022	35	105	85	39	85	45	29	30
January-March 2023*	25	17	9	24	25	35	36	15

Notes: 1. WALR: Weighted average lending rate; WADTDR: Weighted average domestic term deposit rate; EBLR: External benchmark-based lending rate; MCLR: Marginal cost of funds-based lending rate.

2. Data on EBLR pertain to 31 domestic banks.

* : Latest data on WALRs and WADTDRs pertain to February 2023.

Source: RBI.

than PVBs during May 2022 to February 2023 (Chart IV.27a). The lending rates of PVBs remained higher than those of PSBs (Chart IV.27b). The transmission to lending and deposit rates was the maximum in the case of foreign banks, reflecting a higher share of low cost and lower duration wholesale deposits in their total liabilities, which facilitates faster adjustment in interest rates.

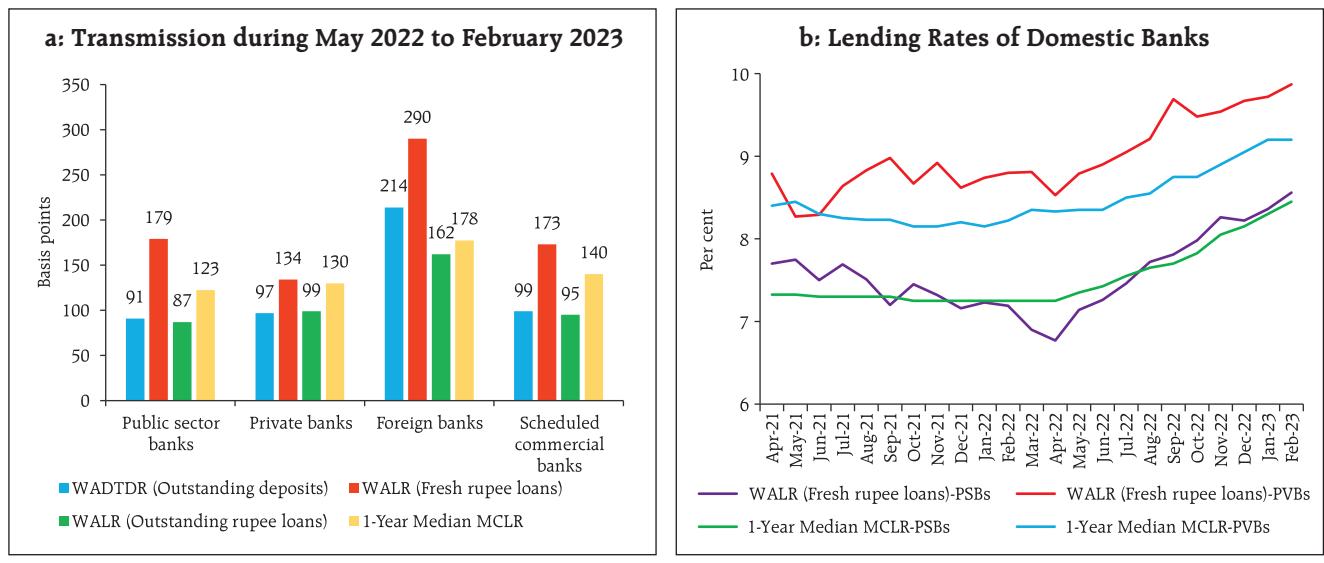
Table IV.5: Outstanding Floating Rate Rupee Loans of SCBs across Interest Rate Benchmarks

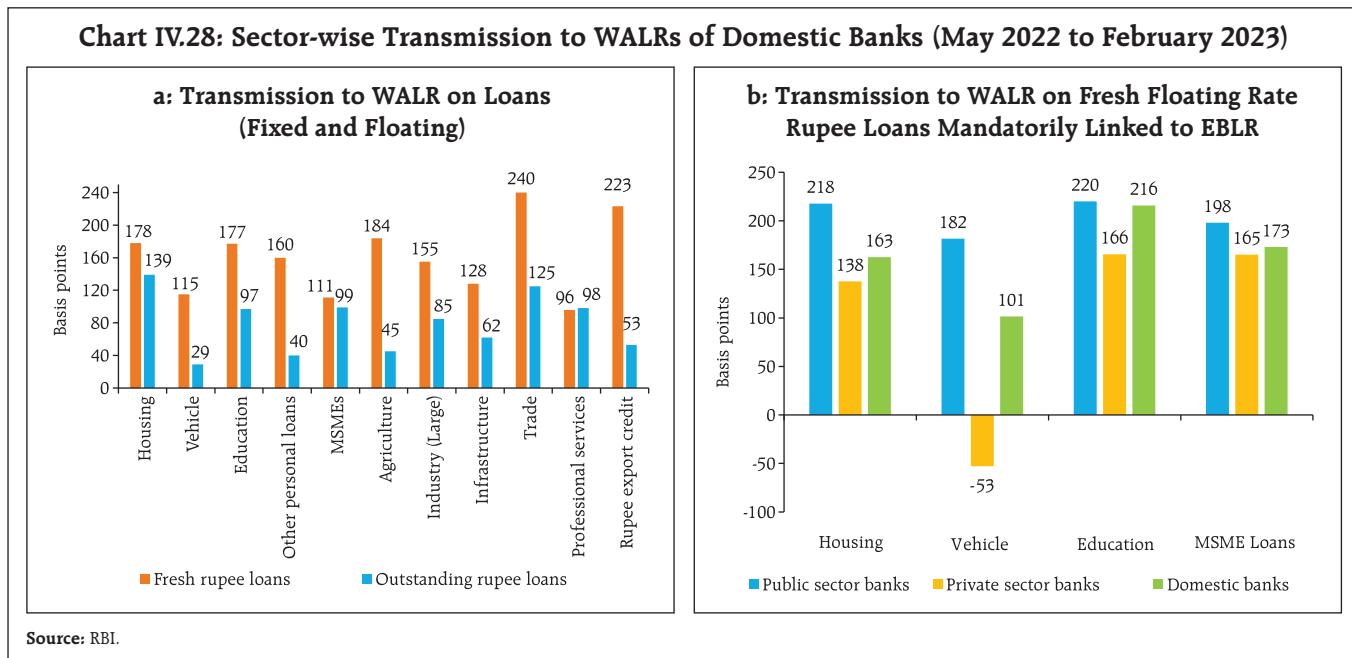
(Per cent to total)

	March 2020	March 2021	March 2022	December 2022
Base rate regime	10.3	6.4	4.9	3.4
MCLR regime	78.3	62.3	48.6	46.1
External benchmark regime	9.1	29.5	44.0	48.3
Others	2.3	1.8	2.5	2.2

Note: Data pertain to 74 scheduled commercial banks.

Source: RBI.

Chart IV.27: Bank Group-wise Transmission to Lending and Deposit Rates



The WALRs increased across all the sectors during May 2022–February 2023 (Chart IV.28).

The spreads charged by domestic banks over the policy repo rate (in the case of floating rate fresh rupee loans where the repo rate is the external benchmark) moderated for personal and MSME loans during H2:2022-23 (Table IV.6).

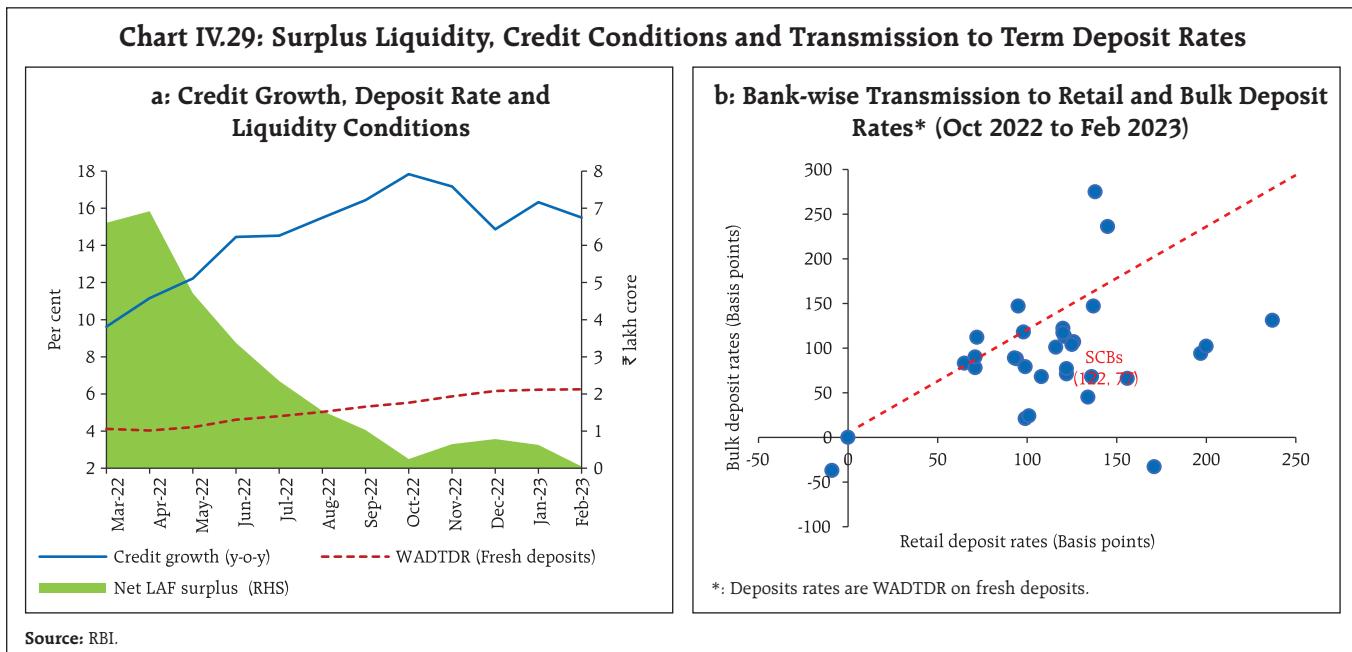
Table IV.6: Loans linked to External Benchmark – Spread of WALR (Fresh Loans) over the Repo Rate (Per cent)

Sectors	September 2022			February 2023		
	Public sector banks	Private banks	Domestic banks	Public sector banks	Private banks	Domestic banks
MSME loans	4.13	3.55	3.81	3.75	3.08	3.27
Personal loans						
Housing	2.79	2.49	2.63	2.59	2.20	2.34
Vehicle	3.09	3.48	3.13	2.69	1.36	2.06
Education	4.33	4.88	4.50	4.12	4.87	4.37
Other personal loans	4.03	6.38	4.21	3.43	3.35	3.42

Source: RBI.

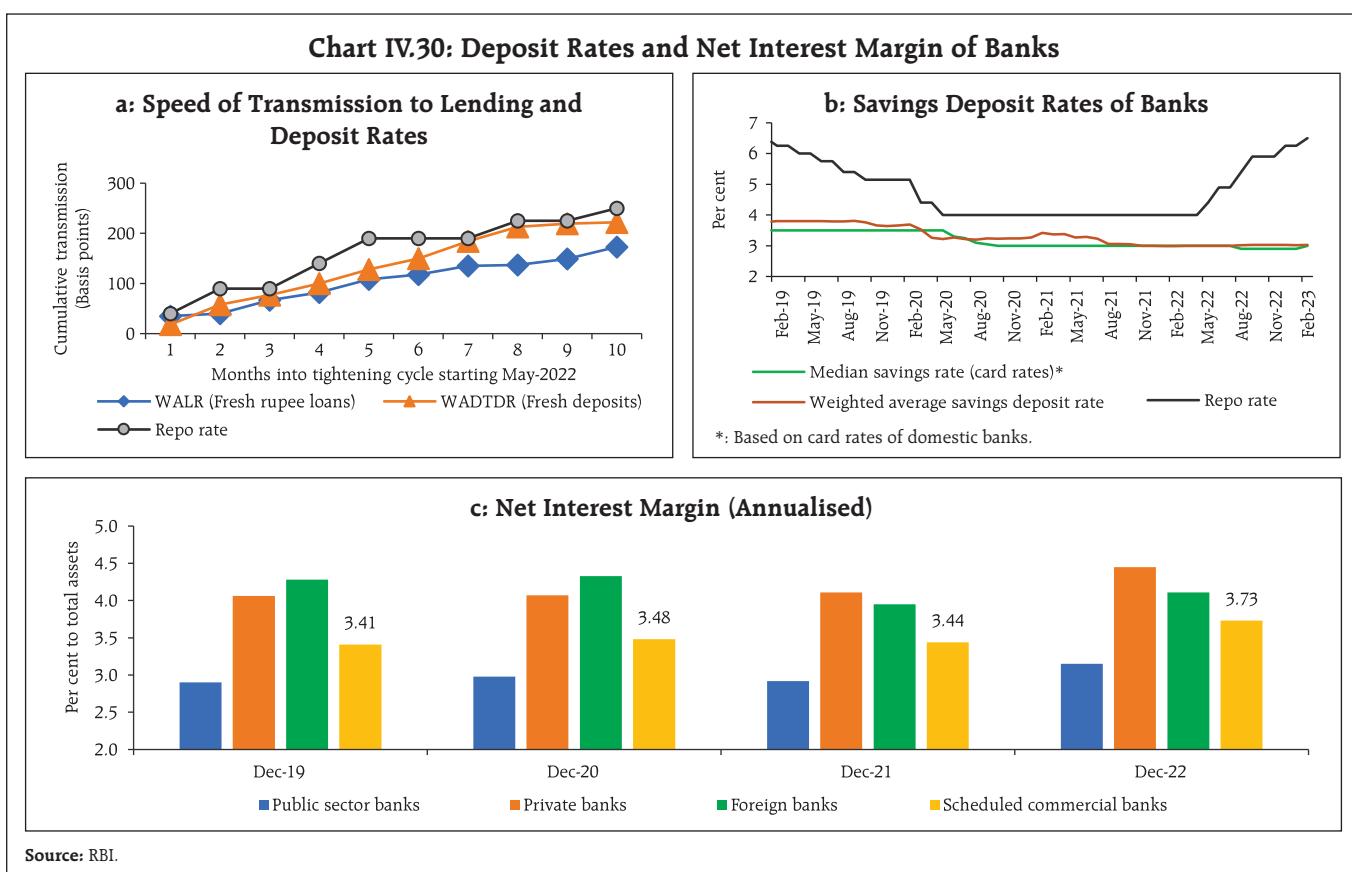
The transmission to retail deposit rates gathered pace in H2 after remaining subdued in H1 as banks intensified their efforts to garner retail deposits to fund robust credit growth (Chart IV.29a). The weighted average domestic term deposit rate (WADTDR) on fresh deposits (including retail and bulk) increased by 222 bps during May 2022 to February 2023. During H1, banks had focussed on mobilising bulk deposits. This was reversed in H2 with the increase in fresh retail deposit rates (122 bps) outpacing that in fresh bulk deposit rates (77 bps) (Chart IV.29b). The transmission to WADTDR on outstanding deposits is picking up, *albeit* gradually, reflecting the longer maturity profile of term deposits contracted at fixed rates.

The increase in term deposit rates in the current tightening cycle has exceeded that in lending rates (Chart IV.30a). Savings deposit rates of banks – which are a third of total deposits – have, however, remained



almost unchanged in the current tightening period (Chart IV.30b)⁸. This has moderated the increase in

banks' overall cost of funds and helped in improving their net interest margins (Chart IV.30c).



⁸ Term deposits constituted 58.5 per cent of aggregate deposits of SCBs in March 2023, while current account and savings account deposits were 8.9 per cent and 32.6 per cent, respectively.

Table IV.7: Interest Rates on Small Savings Instruments – Q1:2023-24

Small Savings Scheme	Maturity (years)	Spread (Percentage point) \$	Average G-sec Yield (%) of Corresponding Maturity (Dec 2022 - Feb 2023)	Formula based Rate of Interest (%) (applicable for Q1:2023-24)	Government Announced Rate of Interest (%) in Q1:2023-24	Difference (basis points)
(1)	(2)	(3)	(4)	(5) = (3) + (4)	(6)	(7) = (6) - (5)
Savings deposit	-	-	-	-	4.00	-
Public provident fund	15	0.25	7.51	7.76	7.10	-66
Term deposits						
1 Year	1	0	6.80	6.80	6.80	0
2 Year	2	0	6.91	6.91	6.90	-1
3 Year	3	0	7.02	7.02	7.00	-2
5 Year	5	0.25	7.25	7.50	7.50	0
Recurring deposit account	5	0	7.02	7.02	6.20	-82
Monthly income scheme	5	0.25	7.21	7.46	7.40	-6
Kisan Vikas Patra	115 Months#	0	7.51	7.51	7.50	-1
NSC VIII issue	5	0.25	7.45	7.70	7.70	0
Senior Citizens saving scheme	5	1.00	7.25	8.25	8.20	-5
<i>Sukanya Samridhdi account scheme</i>	21	0.75	7.51	8.26	8.00	-26

\$: Spreads for fixing small saving rates as per Government of India Press Release of February 2016.

#: Current maturity is 115 months.

Note: Compounding frequency varies across instruments.

Sources: Government of India; FBIL; and RBI staff estimates.

Interest rates on small savings instruments (SSIs) – administered by the government and linked to secondary market yields on G-secs of comparable maturities – were revised upwards by 10-30 bps for Q3:2022-23, 20-110 bps for Q4:2022-23 and 10-70 bps for Q1:2023-24 after being left unchanged for nine consecutive quarters, i.e., from Q2:2020-21 to Q2:2022-23. With these adjustments, rates on most of the SSIs are closely aligned with the formula-based rates (Table IV.7). Banks' term deposit rates are now competitively priced *vis-a-vis* post office term deposit rates (Chart IV.31).

IV.3 Liquidity Conditions and the Operating Procedure

The RBI Act, 1934 requires the Reserve Bank to place the operating procedure relating to the implementation of monetary policy and changes thereto from time to time, if any, in the public domain. In consonance with the monetary policy stance of

withdrawal of accommodation, surplus liquidity moderated further in H2:2022-23. On September 30, 2022, the Reserve Bank announced the merger of the

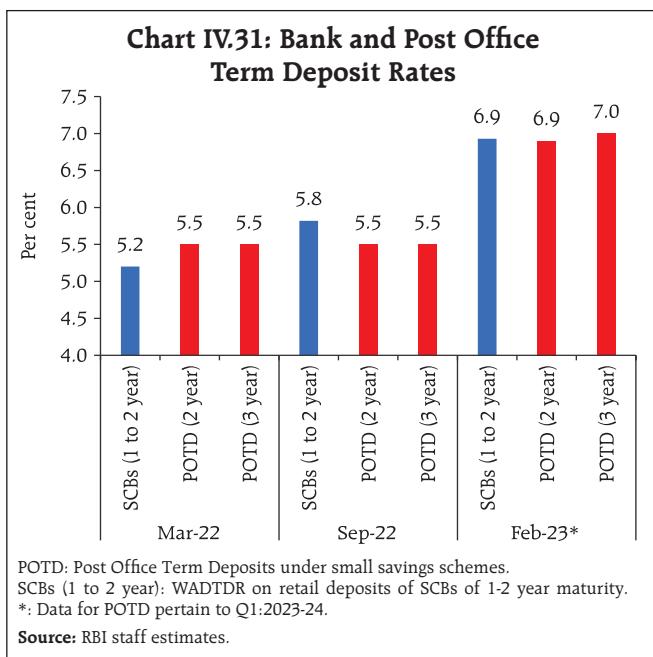


Table IV.8: Liquidity – Key Drivers and Management

(₹ crore)

Drivers	2021-22		2022-23*	
	H1	H2	H1	H2*
Drivers				
(i) CiC [withdrawal (-) / return (+)]	-71,344	-2,08,609	-24,604	-2,22,099
(ii) Net forex purchases (+)/ Sales (-)	3,04,980	-1,70,351	-2,73,554	49,278#
(iii) GoI cash balances [build-up (-) / drawdown (+)]	-1,75,933	3,73,153	-1,99,861	30,048#
(iv) Excess reserves [build-up (-) / drawdown (+)]	1,11,969	-1,55,698	95,719	38,005#
Management				
(i) Net OMO purchases (+)/ Sales (-)	2,36,926	-22,950	-21,080	-10,280
(ii) Required reserves [including both change in NDTL and CRR]	-99,242	-28,913	-1,17,000	-39,082
Memo Item				
(i) Average daily absorption during the period	7,02,231	8,13,922	4,22,682	1,47,886

CiC: Currency in Circulation. GoI: Government of India

Note: (+) / (-) sign suggests accretion/depletion in banking system liquidity.

*: Data for H2 are up to March 24, 2023. #: Data are up to January 2023.

Source: RBI.

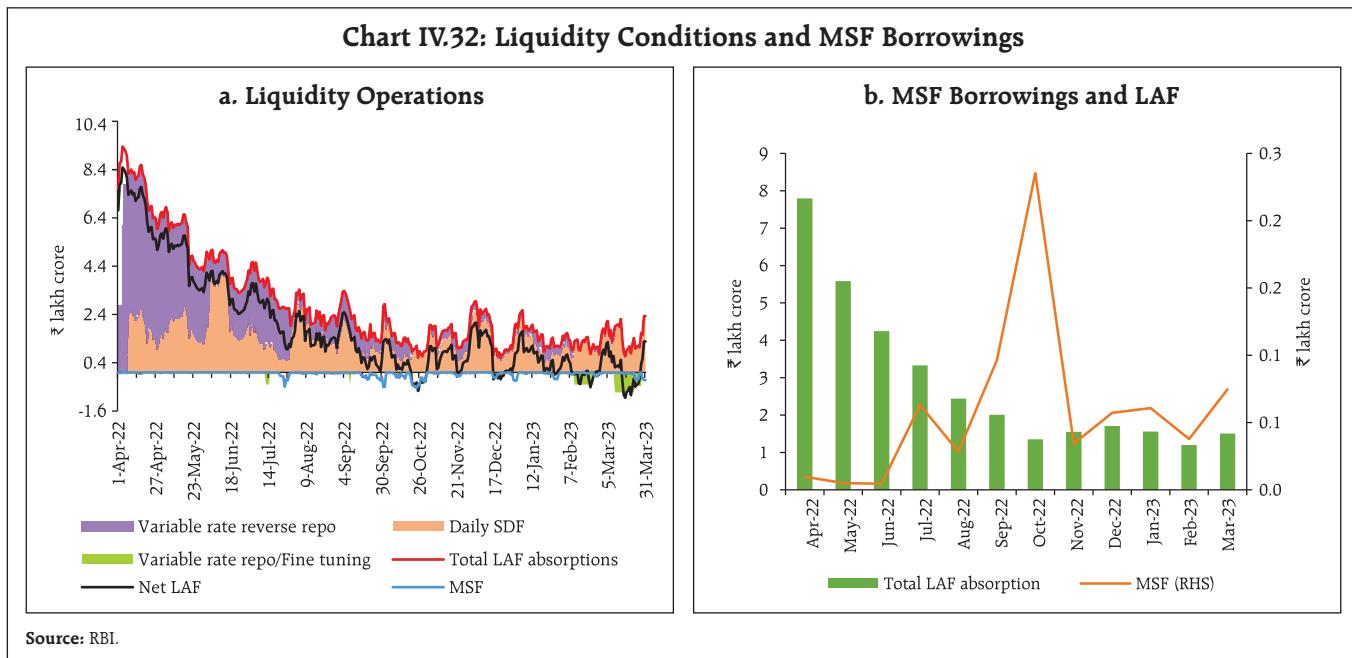
28-day VRRR with the fortnightly 14-day main auction. Amidst waning surplus liquidity, the Reserve Bank conducted two variable rate repo (VRR) main operation auctions in February-March and one fine-tuning VRR in March 2023. The Reserve Bank remained committed to meeting the productive requirements of the economy, with flexibility on conducting operations on either side of the LAF, depending on evolving liquidity conditions. The standing deposit facility (SDF), which has been operational over the past year as the floor of the LAF corridor, allowed the RBI to seamlessly absorb the surplus liquidity without being constrained by the availability of collateral.

Drivers and Management of Liquidity

Currency in circulation (CiC) was the key driver of liquidity drainage during H2. CiC expanded by ₹2.2 lakh crore during H2 (up to March 24, 2023), driven by festival season demand (Table IV.8). This was partly offset by the net forex purchases (₹0.5 lakh crore) and the pick up in government spending (₹0.3 lakh crore). Banks drew down their excess CRR holdings (₹0.4 lakh crore) which also augmented liquidity. In terms of the management of liquidity, OMO sales and

the increase in cash reserve balances (due to higher reserve base) sucked out liquidity from the system during H2:2022-23.

Net average daily absorptions under the LAF moderated to ₹0.4 lakh crore during H2 from ₹3.3 lakh crore during H1 (Chart IV.32a). The net LAF slipped occasionally into deficit mode in H2, triggered by frictional pressures from festival-related currency demand, month-end GST outflows and quarterly advance tax payments. In this regard, net LAF injections increased to ₹1.05 lakh crore on March 17, 2023 – the highest since April 24, 2019 (₹1.42 lakh crore). Amidst waning liquidity surplus, the amounts absorbed under the variable reverse repo rate (VRRR) auctions fell in H2; the average offer-cover ratio of the auctions was 0.26 in H2 as compared with 0.40 in H1. Moreover, banks also took greater recourse to the marginal standing facility (MSF), with daily average borrowings of ₹8,438 crore during H2 as compared with ₹3,448 crore during H1 (Chart IV.32b). During 2022-23, MSF borrowings touched a high of ₹65,646 crore on October 24, 2022. The increased access to the MSF window, even as large surplus funds were placed



under the SDF, reflected skewed liquidity distribution within the banking system. To meet liquidity requirements, the RBI conducted 14-day VRR auctions on February 10 and March 10, 2023 and a fine-tuning 5-day VRR auction on March 24. An amount of ₹5,000 crore was also made available to standalone primary dealers (SPDs) under the standing liquidity facility (SLF) on March 31, 2023 at the prevailing repo rate, with funds availed under this facility repayable on or before April 5, 2023.

With the periodic policy rate hikes accompanied by the progressive normalisation of surplus liquidity, the WACR was closely aligned with the repo rate in H2 in contrast to H1 when surplus liquidity conditions had kept the WACR below the repo rate (Chart IV.33).

Reserve money (RM) expanded by 10.0 per cent (y-o-y) as on March 24, 2023 as compared with 13.0 per cent at end-March 2022 (7.6 per cent adjusted for the

first-round impact of the change in the CRR as against 10.3 per cent at end-March 2022). Money supply (M3)

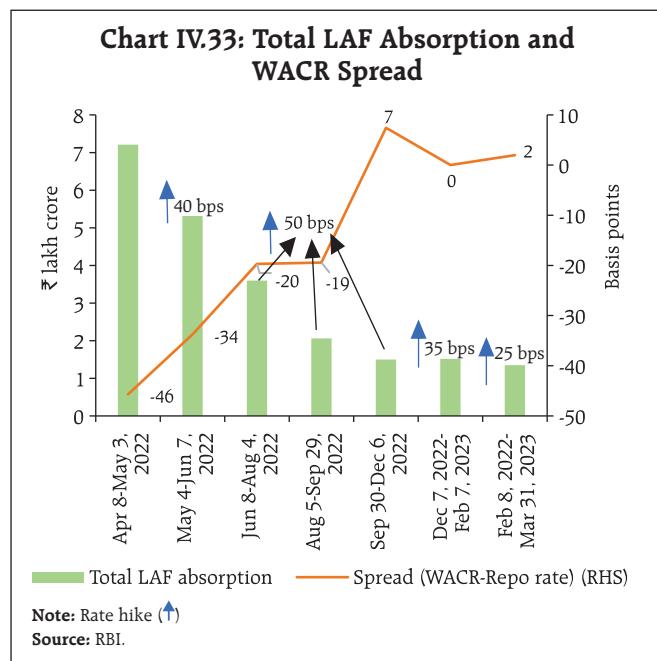


Table IV.9: Banking and Monetary Aggregates
(Y-o-y growth, per cent)

Indicator	March 2021	March 2022	March 2023
Reserve money (Adjusted for CRR changes)	18.8 (15.1)	13.0 (10.3)	10.0 (7.6)
Broad money (M3)	12.2	8.8	9.0
Currency with the public	17.1	10.3	7.9
Aggregate deposits	11.4	8.9	9.6
Demand deposits	15.1	11.4	5.2
Time deposits	10.9	8.6	10.2
Bank credit	5.6	9.6	15.0

Note: Data on deposit and credit growth pertain to scheduled commercial banks (SCBs).

Source: RBI.

increased by 9.0 per cent (y-o-y) as on March 24, 2023 as compared with 8.8 per cent at end-March 2022 (Table IV.9).

Other Policy Measures

With a view to enabling banks to better manage their investment portfolios, the dispensation of the enhanced held to maturity (HTM) limit of 23 per cent was extended by one year from March 31, 2023 to March 31, 2024. Banks were also allowed to include securities acquired between September 1, 2020 and March 31, 2024 in the enhanced HTM limit. The

HTM limits would be restored from 23 per cent to 19.5 per cent in a phased manner from June 2024. As part of the calibrated move towards normal liquidity operations, market hours were restored from 9.00 am to 5.00 pm for call/notice/term money, commercial paper, certificates of deposit, repo in corporate bond segments of the money market and rupee interest rate derivatives in December 2022, and for the government securities market in February 2023.

IV.4 Conclusion

Domestic financial market conditions adjusted in H2:2022-23 to monetary tightening and ebbing liquidity while exhibiting resilience to global policy spillovers. Market rates firmed up at varying degrees across segments, instruments, and maturity spectrum. Bank credit offtake remained buoyant on resilient economic activity. Bank lending and deposit rates rose in tandem with monetary policy actions. The INR depreciated reflecting the strengthening US dollar and portfolio outflows. Going forward, the RBI will remain vigilant, agile, and nimble in its liquidity management operations to meet the productive requirements of the economy while mitigating the impact of global spillovers on domestic financial markets.

V. External Environment

The global economy is slowing under the impact of tighter financial conditions, high inflation, and the lingering conflict in Ukraine. Global financial markets have exhibited heightened volatility in response to the evolving inflation and financial stability developments, in particular, recent banking sector stress. Food and energy insecurity, financial stability concerns and risks of debt distress pose downside risks to the outlook for emerging market and developing economies.

The global economy is slowing under the impact of tighter financial conditions, high inflation, and the lingering conflict in Ukraine. Consumer price inflation is ruling well above targets and is exhibiting persistence. In March, global financial markets were rattled by the failures/bailouts in the banking space which triggered extreme risk aversion, meltdowns, and flight to safety. Sovereign bond yields exhibited sizeable movements over the past six months – easing during November–January on expectations of less aggressive monetary tightening over softer inflation prints; hardening in February 2023 on stickier inflation and strong labour market conditions; and crashes across maturities in March on banking and financial stability concerns. Short-term yields recorded the sharpest single-day decline in decades in March. The US dollar weakened until January 2023, but it appreciated in February 2023. Global equity markets remained cautious with an upward bias up to February, with sharp corrections in mid-March. Looking ahead, food and energy insecurity, financial stability concerns and risks of debt distress pose downside risks to the outlook for emerging market and developing economies.

V.1 Global Economic Conditions

In H2:2022, global growth was stronger than anticipated, reflecting pent-up demand, accumulated

household savings, labour market gains, easing supply bottlenecks and sharp corrections in energy prices. High frequency indicators for Q1:2023 point to an easing of the downturn in manufacturing and an uptick in service sector activity. The International Monetary Fund (IMF) in its *World Economic Outlook* (WEO) update of January 2023 revised up global growth projections for 2022 and 2023 by 20 basis points (bps) each to 3.4 per cent and 2.9 per cent, respectively¹.

Emerging out of two quarters of sequential contraction, the US economy grew by 3.2 per cent (quarter-on-quarter, seasonally adjusted annualised rates (q-o-q, saar)) in Q3:2022 and 2.6 per cent in Q4 (Table V.1). The improvement was driven by private inventory investment, consumer spending, non-residential fixed investment, government spending and exports. The labour market recorded strong gains, with the unemployment rate at a multi-decade low. Nominal wage growth was robust, albeit with some slowing down more recently. The US composite S&P Global Purchasing Managers' Index (PMI²) at 50.1 in February 2023 signalled an end of a seven-month sequence of contraction.

After growing by 1.5 per cent (q-o-q, saar) in Q3, real GDP in the Euro area stagnated in Q4 due to a decline in private consumption and investment, reeling under high inflation, tightening financial conditions and geopolitical tensions. The Eurozone composite PMI rose for the third consecutive month to 53.7 in March from the near two-year low in October 2022 driven by services sector. The unemployment rate fell to 6.6 per cent in February 2023 from 6.7 per cent in December 2022.

¹ The OECD in its *Interim Economic Outlook* (March 2023) revised up global growth forecasts for 2023 and 2024 to 2.6 per cent and 2.9 per cent, respectively, from the November 2022 projections of 2.2 per cent and 2.7 per cent.

² The references to PMIs are to S&P Global indices, unless specified otherwise.

Table V.1: Real GDP Growth
(Per cent)

Country	Q1-2022	Q2-2022	Q3-2022	Q4-2022	2021	2022 (E)	2023 (P)	2024 (P)
Quarter-on-quarter, seasonally adjusted annualised rate (q-o-q, saar)								
Canada	2.4	3.6	2.3	0.0				
Euro area	2.5	3.6	1.5	-0.1				
Japan	-1.8	4.7	-1.1	0.1				
South Korea	2.6	3.0	1.3	-1.6				
UK	2.0	0.2	-0.4	0.5				
US	-1.6	-0.6	3.2	2.6				

Year-on-year**Advanced Economies**

Canada	3.1	4.7	3.8	2.1	5.0	3.4	1.5	1.5
Euro area	5.5	4.4	2.4	1.8	5.3	3.5	0.7	1.6
Japan	0.5	1.7	1.5	0.4	2.1	1.0	1.8	0.9
South Korea	3.0	2.9	3.1	1.3	4.1	2.6	1.7	2.6
UK	10.6	3.8	2.0	0.6	7.6	4.1	-0.6	0.9
US	3.7	1.8	1.9	0.9	5.9	2.1	1.4	1.0

Emerging Market Economies

Brazil	2.4	3.7	3.6	1.9	5.0	2.9	1.2	1.5
China	4.8	0.4	3.9	2.9	8.1	3.0	5.2	4.5
India	4.0	13.2	6.3	4.4	9.1	7.0	6.1	6.8
Indonesia	5.0	5.5	5.7	5.0	3.7	5.3	4.8	5.1
Philippines	8.2	7.5	7.6	7.2	5.7	7.6	5.0	6.0
Russia	3.5	-4.1	-3.7	-	5.6	-2.1	0.3	2.1
South Africa	2.8	0.3	4.2	0.9	4.9	2.0	1.2	1.3
Thailand	2.2	2.5	4.6	1.4	1.5	2.6	3.7	3.6

Memo:

World	2021	2022 (E)	2023 (P)	2024 (P)
World output	6.2	3.4	2.9	3.1
World trade volume	10.4	5.4	2.4	3.4

E: Estimate P: Projection.

Note: India's data correspond to fiscal year (April-March); E.g., 2022 pertains to April 2022-March 2023.

Sources: Official statistical agencies, Bloomberg, and IMF WEO Update, January 2023.

In the UK, GDP contracted by 0.4 per cent in Q3:2022 (q-o-q, saar) and rose by 0.5 per cent in Q4. The fall in real household incomes due to elevated energy and goods prices weighed on consumer spending. The labour market remains tight with strong wage growth and a low unemployment rate. The UK composite PMI

at 52.2 in March remained in expansion territory for the second consecutive month reflecting higher levels of business activity in both the manufacturing and the service sector.

Japan's GDP contracted by 1.1 per cent (q-o-q, saar) in Q3:2022, and the economy averted a recession with a meagre growth of 0.1 per cent in Q4 as a weak yen and higher import costs hurt consumption and businesses. The composite PMI (*au Jibun* Bank) rose from 48.9 in November, the lowest reading in H2:2022, to 52.9 in March registering the sharpest uptick since June 2022 driven by services activity, even as manufacturing sector remained subdued.

Amongst EMEs, China's GDP growth rebounded to 3.9 per cent (year-on-year, y-o-y) in Q3:2022 from 0.4 per cent in Q2, supported by policy interventions and an easing of COVID-19 lockdowns (Table V.1). Growth decelerated to 2.9 per cent (y-o-y) in Q4 due to re-emergence of COVID-19 infections and lockdowns, dragging down the annual growth for 2022 to 3.0 per cent – below the target of 5.5 per cent (Table V.2). The composite PMI (Caixin) rose to 54.2 in February, supported by both manufacturing and services activity. In March, however, manufacturing PMI slowed to the neutral level of 50 signalling stable business conditions at the end of Q1:2023. The real GDP growth target for 2023 has been fixed at around 5 per cent, the lowest in more than three decades.

Amongst other major EMEs, Brazil's GDP growth decelerated from 3.7 per cent (y-o-y) in Q2:2022 to 3.6 per cent in Q3 and further to 1.9 per cent in Q4. Agriculture recorded contraction (y-o-y) in Q4. The labour market, which surprised positively throughout 2022, is easing, with a drop in net admissions to the payrolls. The composite PMI fell to 49.7 in February 2023 from 51.9 in September 2022, with both service and manufacturing activity turning down. The South African economy grew by 1.8 per cent (q-o-q, saar) in Q3:2022 and contracted by 1.3 per cent in Q4. In y-o-y

Table V.2: Select Macroeconomic Indicators for BRICS

Real GDP growth rate (y-o-y, per cent)	Country	2021	2022(E)	2023(P)	General Govt. gross debt (per cent of GDP)	Country	2021	2022 (E)	2023(P)
	Brazil	5.0	2.9	1.2		Brazil#	93.0	88.2	88.9
	Russia	5.6	-2.1	0.3		Russia	17.0	16.2	16.9
	India	9.1	7.0	6.1		India	84.2	83.4	83.8
	China	8.1	3.0	5.2		China	71.5	76.9	84.1
	South Africa	4.9	2.0	1.2		South Africa	69.0	68.0	70.7
CPI inflation rate (y-o-y, per cent)	Country	2021	2022	2023(P)	Current account balance (per cent of GDP)	Country	2021	2022(E)	2023(P)
	Brazil	8.3	9.3	4.7		Brazil	-1.7	-1.5	-1.6
	Russia	6.7	13.8	5.0		Russia	6.9	12.2	11.1
	India	5.5	6.8	5.1		India	-1.2	-3.5	-2.9
	China	0.9	2.0	2.2		China	1.8	1.8	1.5
	South Africa	4.6	6.9	5.1		South Africa	3.7	1.2	-1.0
General Govt. net lending/borrowing (per cent of GDP)	Country	2021	2022(E)	2023(P)	Forex reserves* (US\$ billion)	Country	2021	2022	2023
	Brazil	-4.4	-5.8	-7.5		Brazil	362.2	324.7	328.1
	Russia	0.8	-2.3	-2.1		Russia	630.6	582.0	597.0
	India	-10.0	-9.9	-9.0		India	633.6	562.7	562.7
	China	-6.1	-8.9	-7.2		China	3426.9	3306.5	3372.5
	South Africa	-6.0	-4.9	-5.4		South Africa	57.8	60.6	61.9

E: Estimate. P: Projection.

*: Forex reserves for 2023 pertain to January 2023 for all except Brazil and India (February).

#: Gross debt refers to the nonfinancial public sector, excluding Eletrobras and Petrobras, and includes treasury bill in the central bank's balance sheet.

Notes: India's data correspond to fiscal year (April-March) except data on forex reserves which are as per calendar year. India's inflation data for 2022 is from April 2022 - February 2023.**Sources:** Official statistical agencies; WEO October 2022 database and January 2023 Update, IMF; Fiscal Monitor Update, October 2022, IMF; International Reserve and Foreign Currency Liquidity (IRFCL), IMF; and RBI.

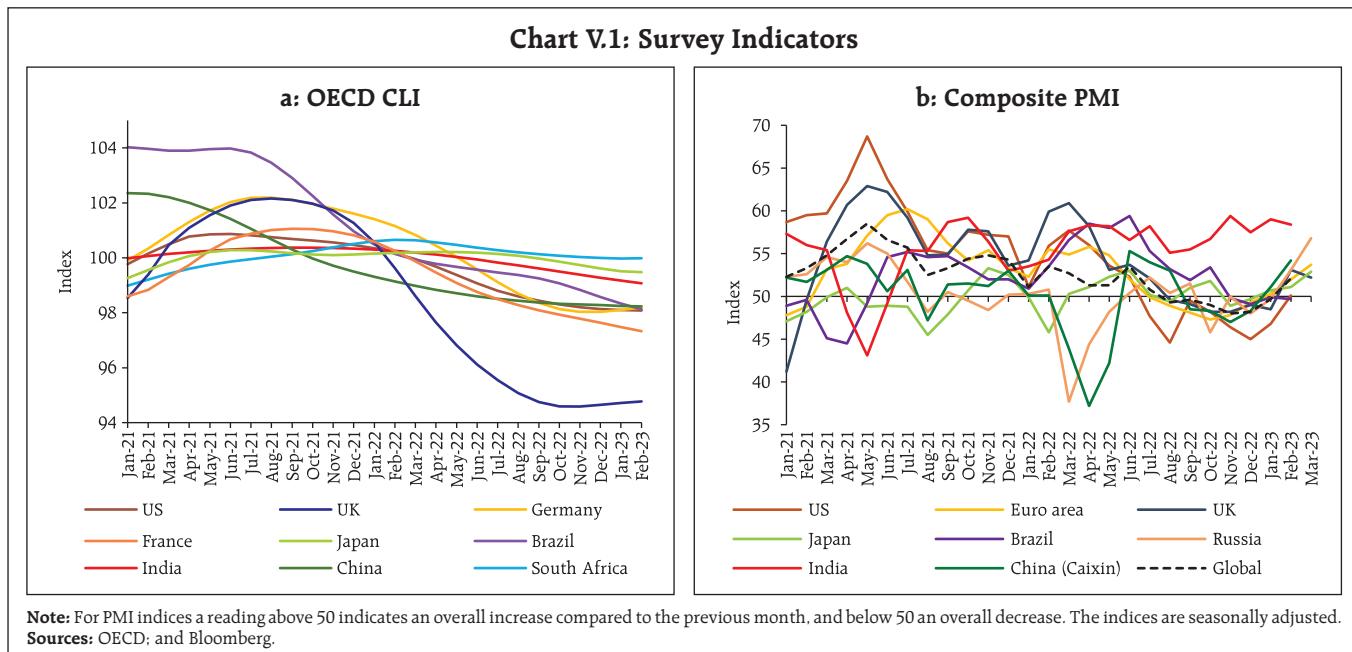
terms, the economy grew by 4.2 per cent in Q3 and by 0.9 per cent in Q4. In Q1:2023, the composite PMI at 50.5 in February indicated a return to an expansion in output, after falling to a 13-month low of 48.7 in January. The Russian economy contracted by 3.7 per cent (y-o-y) in Q3:2022. The labour market remains tight with unemployment close to its all-time low.

The Southeast Asia region recorded a robust growth performance in Q3:2022 on revival of consumption and tourism before decelerating in Q4:2022. The ASEAN³ manufacturing PMI for February pointed to an improvement in operating conditions

in the manufacturing sector as expansions in output and new orders gained momentum. Additionally, employment rose for the first time since October. The operating conditions continued to improve in March.

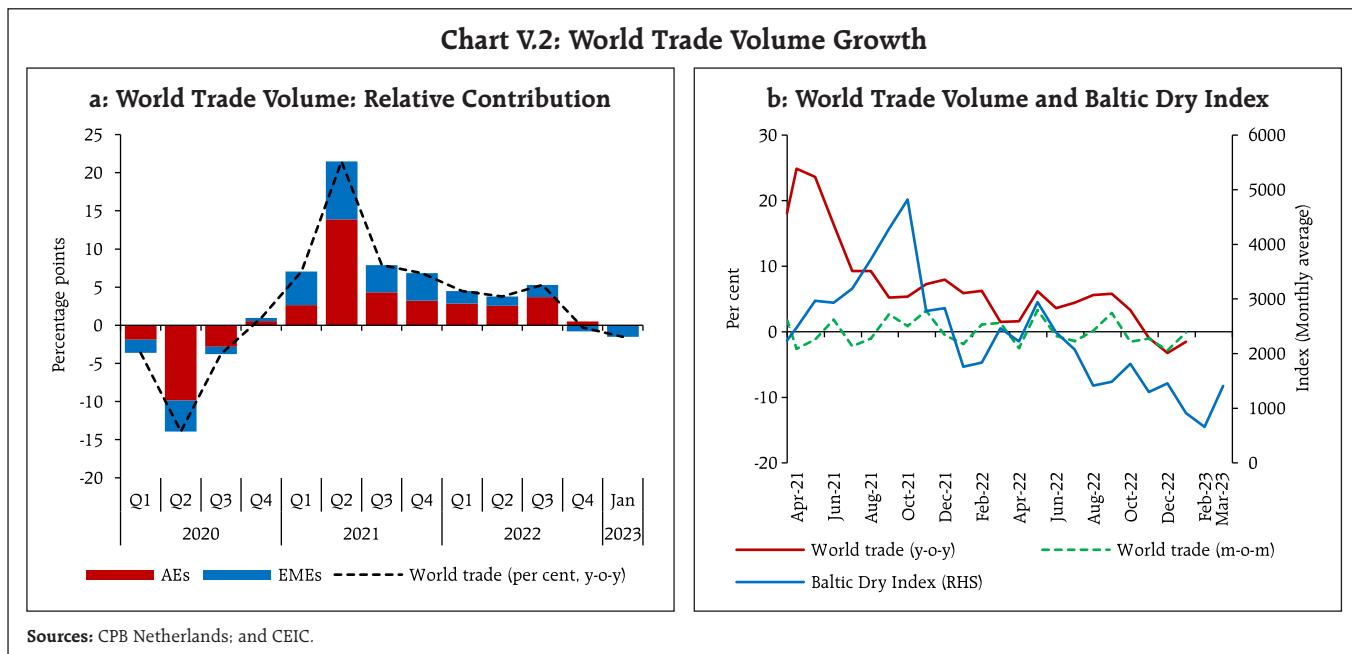
Amongst high frequency indicators, the Organisation for Economic Co-operation and Development (OECD) composite leading indicators (CLIs) for January-February 2023 remained below trend for most economies (Chart V.1a). The global composite PMI at 52.1 in February returned to expansion – ending a six-month sequence of contraction – led by the services sector and the first expansion of manufacturing production since July 2022 (Chart V.1b). Manufacturing production continued to expand in March, albeit at a slower pace.

³ Association of Southeast Asian Nations (ASEAN) includes Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam.



Weakening global demand led to subdued trade volumes, despite an easing of supply chain pressures. Merchandise trade volume declined by 0.3 per cent (y-o-y) in Q4:2022, and by a further 1.5 per cent in January 2023 (Chart V.2a). The Baltic Dry Index, which measures shipping costs for a wide variety of bulk commodities such as coal and iron ore, was 9.3 per cent higher in March 2023 than the pre-

COVID average of 2019-20 (Chart V.2b). The goods trade barometer compiled by the WTO fell to 92.2 in December 2022 (96.2 in September), indicating a weakening growth in trade volumes in Q1:2023. The IMF in its WEO update (January 2023) forecast world trade (goods and services) volume growth to decelerate to 2.4 per cent in 2023 from 5.4 per cent in 2022.



V.2 Commodity Prices and Inflation

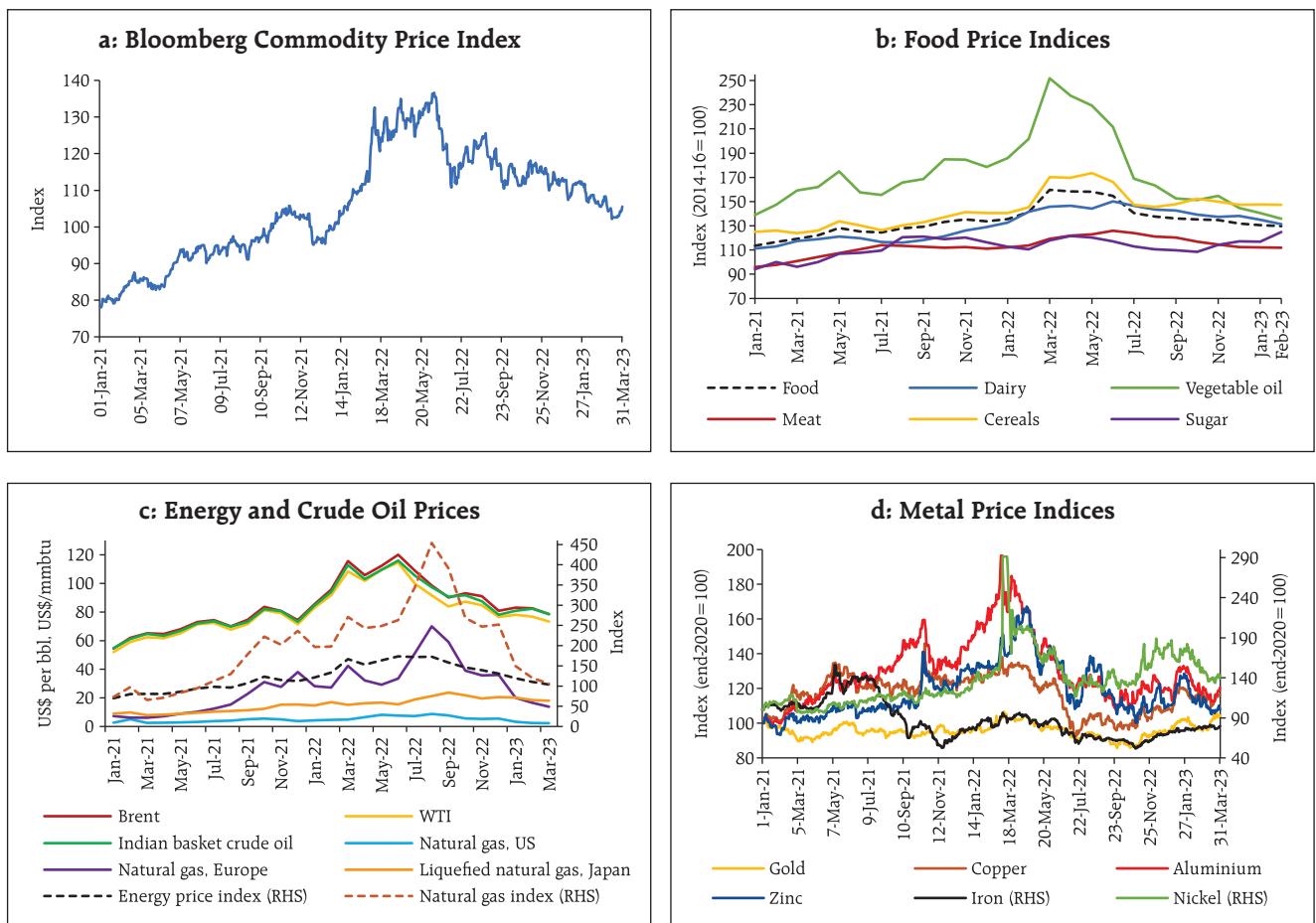
Global commodity prices remained volatile in Q4:2022 and Q1:2023. They initially increased by 5.4 per cent (in terms of the Bloomberg commodity price index) in the first half of Q4:2022, but continued to soften during the rest of Q4 and Q1:2023, touching January 2022 (the pre-Ukraine war) levels (Chart V.3a). Global food prices, according to the Food and Agriculture Organization (FAO), eased by 3.1 per cent in Q4:2022 and 1.5 per cent in Q1:2023 (up to February), driven by correction in the prices of meat, vegetable oil and dairy products (Chart V.3b). The prices of cereals moderated marginally whereas sugar prices increased.

Crude oil prices softened during Q4 and Q1 but rose in early April following production cut

announcement by the Organization of the Petroleum Exporting Countries (OPEC) amidst continuing volatility. A mild winter, weak industrial activity in Europe, COVID lockdowns in China, and winter blizzards in the US and Canada that disrupted holiday travel led to a contraction (y-o-y) in crude oil demand in Q4:2022 and lower prices (Chart V.3c). Natural gas prices softened significantly – by 77 per cent between their peak in August 2022 and March 2023 (according to World Bank's natural gas index) – on a milder winter in Europe and weaker economic activity (Chart V.3c).

Base metal prices edged up over the past six months, reflecting the weakening US dollar, decline in inventories, reopening of the Chinese economy and

Chart V.3: Commodity Prices



Sources: FAO; World Bank; Bloomberg; and PPAC, Ministry of Petroleum & Natural Gas, GoI.

better-than-anticipated industrial growth in Europe. Gold prices rebounded on retreat of the US dollar from its two-decade high level and safe haven demand amidst a few bank failures in the US. Other metals like copper, aluminium, iron and steel also gained during Q4:2022 and Q1:2023 (Chart V.3d).

Consumer Price Inflation

Consumer price inflation remained elevated across economies due to sustained high core inflation, and cost push pressures from elevated food and energy prices. It has, however, come off from recent peaks due to softening energy prices, easing supply chain bottlenecks, and the unwinding of monetary and fiscal stimulus. The recent softening notwithstanding, headline inflation remains well above target across AEs and EMEs (Table V.3). Core inflation persistence reflects tight labour market and a low unemployment rate, especially for AEs. According to the IMF WEO (January 2023), global inflation is projected to moderate from 8.8 per cent in 2022 to 6.6 per cent in 2023 and 4.3 per cent in 2024 – still above the pre-pandemic (2017-19) average of 3.5 per cent.

In the US, headline CPI inflation receded from its 40-year high of 9.1 per cent in June 2022 to 6.0 per cent in February 2023, driven down by decline in energy and food prices inflation. Over the same period, inflation in terms of the personal consumption expenditure (PCE) price index – the Federal Reserve (Fed)'s preferred measure of inflation – moderated from 7.0 per cent to 5.0 per cent (Chart V.4a), while core PCE inflation eased only modestly from 5.0 per cent to 4.6 per cent (Chart V.4b).

In the Euro area, CPI inflation (Harmonised Index of Consumer Prices or HICP) eased to 6.9 per cent in March 2023 from its peak of 10.6 per cent in October 2022. The underlying measures have, however, hardened over the same period – core inflation (inflation excluding energy, food, alcohol and tobacco) increased to 5.7 per cent from 5.0 per cent and services

Table V.3: Consumer Price Inflation

(Y-o-y, per cent)

Country	Inflation Target	Q1:2022	Q2:2022	Q3:2022	Q4:2022	Q1:2023
Advanced Economies						
Canada	2.0	5.8	7.5	7.2	6.7	5.6
Euro area	2.0	6.1	8.0	9.3	10.0	8.0
Japan	2.0	0.9	2.5	2.9	3.8	3.8
South Korea	2.0	3.8	5.4	5.9	5.2	4.7
UK	2.0	6.2	9.2	10.0	10.8	10.3
US	2.0	8.0 (6.4)	8.7 (6.6)	8.3 (6.3)	7.1 (5.7)	6.2 (5.2)
Emerging Market Economies						
Brazil	3.25 ± 1.5	10.7	11.9	8.7	6.1	5.7
Russia	4.0	11.5	16.9	14.4	12.2	11.4
India	4.0 ± 2.0	6.3	7.3	7.0	6.1	6.5
China		1.1	2.2	2.7	1.8	1.6
South Africa	3.0-6.0	5.8	6.6	7.6	7.4	7.0
Mexico	3.0 ± 1.0	7.3	7.8	8.5	8.0	7.8
Indonesia	3.0 ± 1.0	2.3	3.8	5.2	5.5	5.2
Philippines	3.0 ± 1.0	3.3	5.5	6.5	7.9	8.3
Thailand	1.0-3.0	4.7	6.5	7.3	5.8	3.9
Turkey	5.0 ± 2.0	54.8	74.0	81.1	78.1	54.5
Memo:						
			2021	2022 (E)	2023 (P)	2024 (P)
World consumer price inflation			4.7	8.8	6.6	4.3

Notes: (1) Figures in parentheses for US are y-o-y change in personal consumption expenditure (PCE) price index.

(2) The Bank of Canada aims to keep inflation at the 2 per cent mid-point of an inflation control target range of 1-3 per cent.

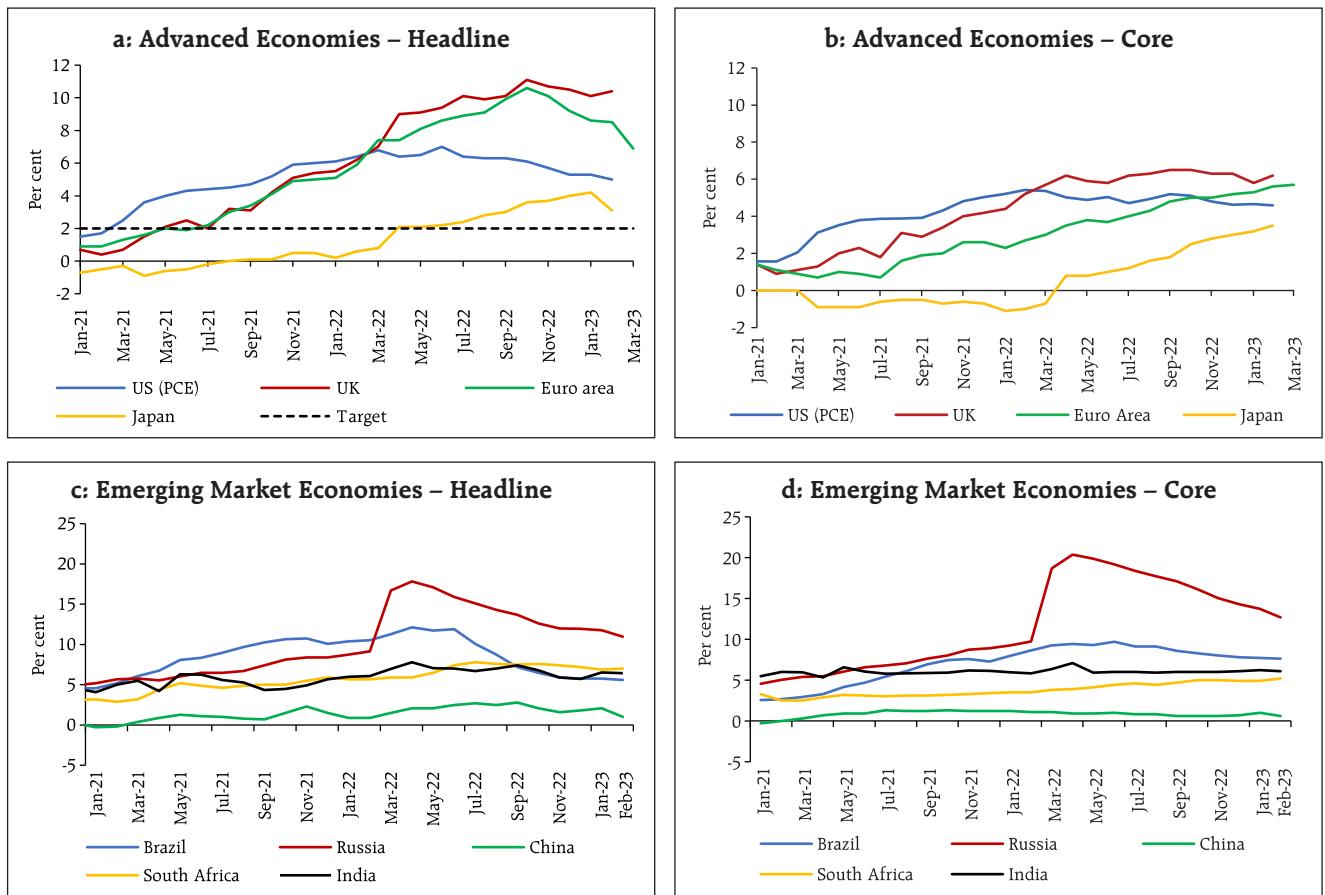
(3) Brazil's inflation target for 2022 was 3.50 ± 1.5 per cent.

(4) Inflation numbers for Q1:2023 are up to February 2023 except for Euro area, South Korea, Indonesia, Philippines, Thailand, and Turkey.

Sources: Central bank websites; and Bloomberg.

inflation rose to 5.0 per cent from 4.3 per cent. In the UK, CPI inflation eased to 10.4 per cent in February 2023 from 11.1 per cent in October 2022, on lower price pressures in transport and restaurants and hotels. In Japan, CPI inflation soared to a 41-year high of 4.3 per cent in January 2023 from 3.0 per cent in September 2022, led by fuel, light and water charges⁴. It moderated to 3.3 per cent in February.

⁴ CPI inflation in all items less fresh food – the Bank of Japan's target measure – rose to 4.2 per cent in January 2023 from 3.0 per cent in September 2022. It fell to 3.1 per cent in February.

Chart V.4: CPI Inflation – Select Economies

Notes: 1. For India, core CPI, i.e., CPI excluding food and fuel is worked out by eliminating the groups 'food and beverages' and 'fuel and light' from the headline CPI.
2. Japan's data in Chart V.4a refers to CPI inflation in all items less fresh food – the Bank of Japan's target measure, while data in Chart V.4b refers to CPI inflation in all items less fresh food and energy.

Sources: Official statistical agencies, RBI staff estimates, and Bloomberg.

Amongst major EMEs, CPI inflation in Brazil moderated to 5.6 per cent in February 2023 from 7.2 per cent in September 2022 (Chart V.4c). In Russia, it eased to 11.0 per cent in February 2023 from 13.7 per cent in September, partly due to currency appreciation. In South Africa, CPI inflation softened to 7.0 per cent in February 2023 from 7.5 per cent in September. In China, headline inflation remained subdued, falling to 1.0 per cent in February 2023 from 2.8 per cent in September, due to weak demand. Core inflation in EMEs remained relatively stickier (Chart V.4d).

V.3 Monetary Policy Stance

During Q4:2022 and Q1:2023, central banks pivoted towards smaller rate hikes or a pause from

the aggressive pace in the initial part of 2022, recognising that headline inflation is inching down but at a tardy pace and underlying inflation pressures remain relentlessly high. Heightened financial market volatility and financial stability concerns after the bank failures and bailouts have, however, added uncertainty to the future monetary policy trajectory.

Starting in March 2022, the US Fed has hiked the target range for federal funds rate in all its subsequent policy meetings to tame inflation. In November 2022, the US Fed effected a 75 bps increase in the target range, its fourth successive 75 bps hike. It slowed the pace of tightening with hikes of 50 bps in December and 25 bps each in February and March

2023. Cumulatively, the US Fed has raised rates by 475 bps in the current tightening phase spread over one year – the fastest pace since the 1980s. According to the Summary of Economic Projections released in March 2023, the majority of FOMC participants expected the federal funds rate to be in the range of 5.0-5.25 per cent by end-2023. In the wake of turmoil in the banking sector, the US Fed in March announced a new lending facility, the Bank Term Funding Program (BTFP), to provide banks liquidity to meet the needs of all their depositors. The BTFP offers loans of up to one year against collateral including US Treasuries and other qualifying assets, which will be valued at par. Additionally, the Federal Reserve along with the Bank of Canada, the Bank of England, the Bank of Japan, the European Central Bank, and the Swiss National Bank announced on March 19, 2023 a coordinated action to enhance the provision of liquidity via the standing U.S. dollar liquidity swap line arrangements.

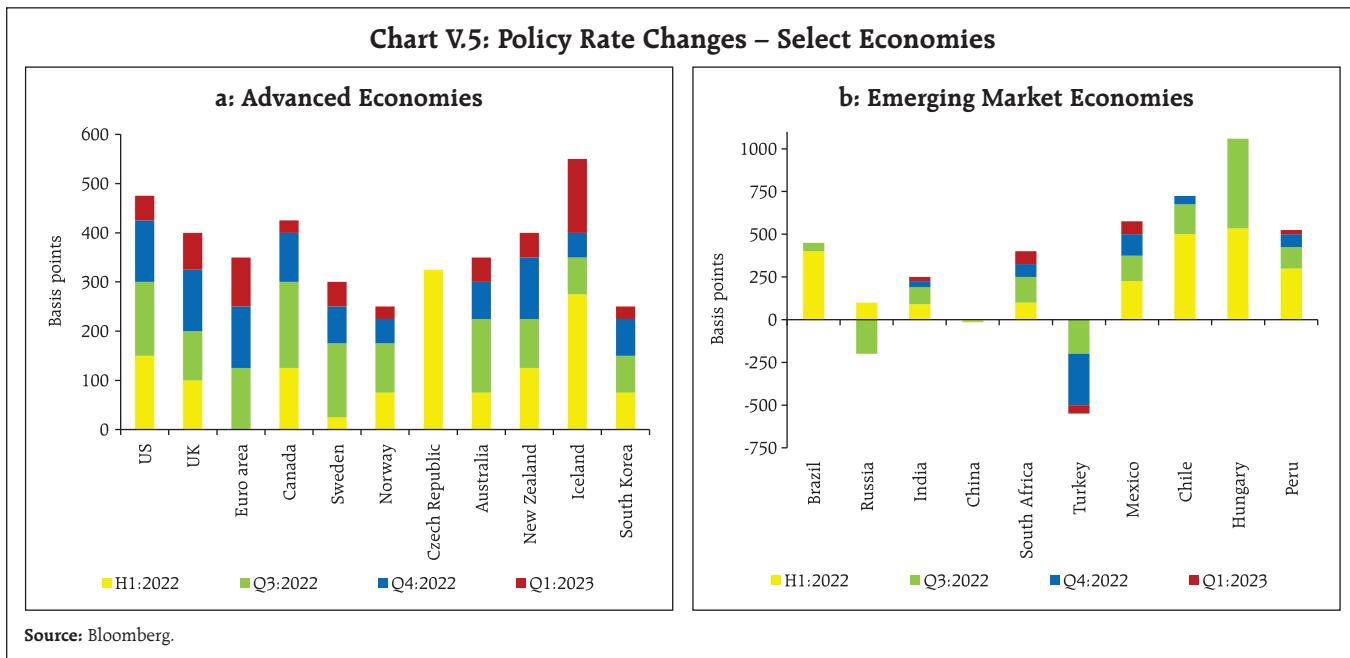
The ECB increased its key rate by 75 bps, its second successive 75 bps hike, in October 2022⁵. It toned down the pace of tightening with 50 bps hikes in December 2022, February and March 2023 each. In its December 2022 policy, the ECB also decided to reduce its asset purchase programme (APP) portfolio from the beginning of March 2023 at a pace of €15 billion per month on average until the end of the second quarter of 2023, with the subsequent pace of decline to be determined over time. It, however, intends to continue reinvesting maturing securities under its Pandemic Emergency Purchase Programme (PEPP) until at least the end of 2024.

⁵ In order to reinforce transmission of policy rates to bank lending conditions and to restore price stability, the ECB in its October meeting decided to: (a) adjust the interest rate applicable to targeted longer-term refinancing operations (TLTRO III) and to index them to the average applicable key ECB interest rates and offered banks early voluntary repayment dates; (b) set the remuneration of minimum reserves at the deposit facility rate instead of remuneration at its main refinancing operations (MRO) rate.

The Bank of England (BoE) raised its policy rate in the November 2022 meeting by 75 bps, followed by 50 bps in December and February 2023 each and 25 bps in March. The BoE started its gilt sales under £80 billion stock reduction programme on November 1, instead of the initial scheduled start of early October 2022. The postponement was due to the significant volatility in the UK financial markets in September. The BoE also wound down the emergency bond-buying scheme of £19 billion it had launched in September 2022 to restore orderly market conditions.

Amongst other major AEs, the Bank of Canada raised its policy rate by 50 bps each in its October 2022 and December meetings, 25 bps in January 2023 and paused in March. After raising its cash rate target by 50 bps in September, the Reserve Bank of Australia scaled down its rate hike size to 25 bps each in its October, November, December 2022, February and March 2023 meetings. The Norges Bank slowed its pace of rate hike to 25 bps starting November 2022 meeting from the 50 bps hikes in its previous meetings. The Bank of Korea paused its rate hike cycle in February 2023 after more than one year of monetary tightening. The Czech National Bank has maintained pause since August 2022 after effecting a cumulative 325 bps rate hike in 2022 (Chart V.5a). The Bank of Japan continued to diverge from the other AEs by maintaining an accommodative stance. It expanded its tolerance range of 10-year Japanese Government bond yield fluctuations from ± 0.25 percentage points to ± 0.5 percentage points in its December 2022 policy meeting.

Amongst EMEs, the Banco Central do Brasil maintained its policy rate at 13.75 per cent since the pause in September 2022. The South African Reserve Bank raised its policy rate by 75 bps in November 2022, 25 bps in January 2023 and 50 bps in March (Chart V.5b). The People's Bank of China (PBoC) and the Bank of Russia (BoR) maintained accommodative stances, after rate cuts in August and September, respectively. The PBoC reduced the required reserve



ratio (RRR) for financial institutions by 25 bps from March 27, 2023.

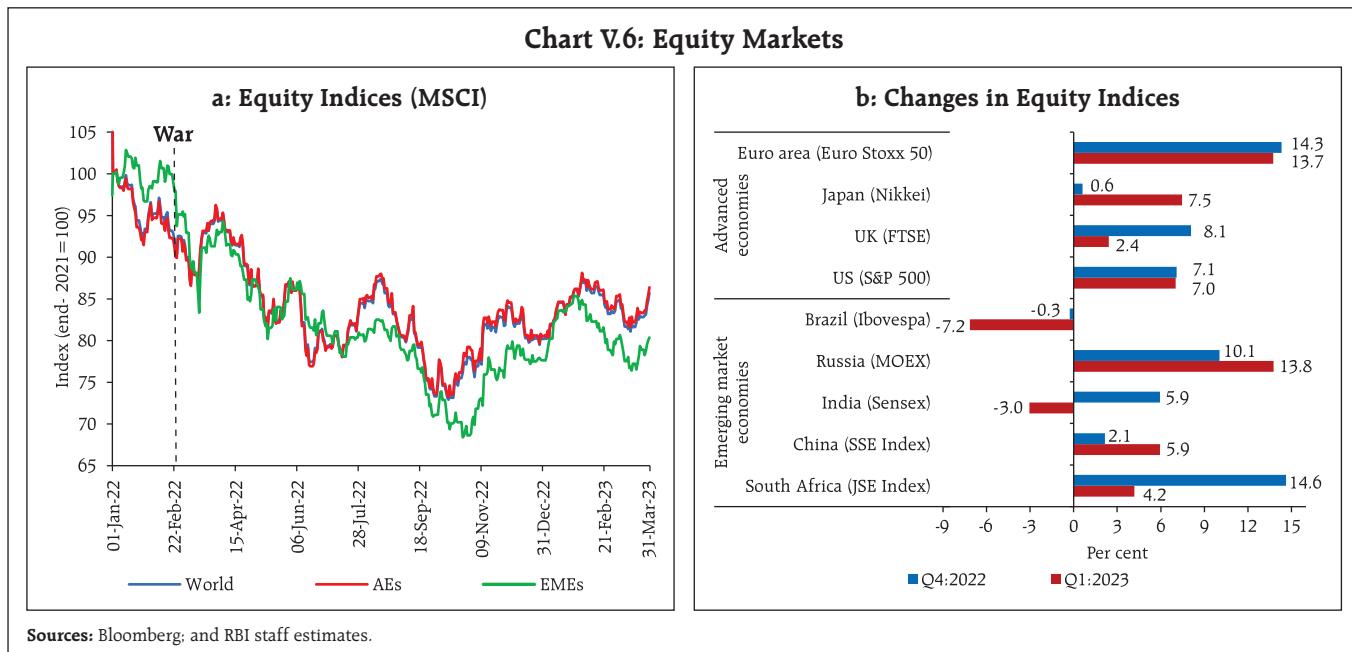
Amongst Asian EMEs, the Bank of Thailand which embarked on the tightening cycle in August 2022 raised rates by 25 bps in all its subsequent meetings. The Bank Indonesia increased its policy rate by 50 bps each in October and November 2022 and by 25 bps each in December 2022 and January 2023, with a pause since February. In Latin America, central banks of Mexico and Colombia slowed their pace of tightening to 25 bps in March 2023, while Chile and Peru have maintained a pause since December 2022 and February 2023, respectively. Among European EMEs, Hungary paused its hiking cycle in October 2022. The central bank of Turkey, on the other hand, cut its key policy rate by 150 bps each in October and November 2022 and by 50 bps in February 2023, even as inflation at 50.5 per cent in March 2023 was well above the target.

V.4 Global Financial Markets

Global financial markets witnessed large swings in Q4:2022 and Q1:2023, driven by fluctuating perceptions on the stickiness of inflation, the strength

of economic activity and expectations relating to the monetary policy path. Since March 10, financial stability concerns following the collapse of a few banks in the US have imparted sizeable volatility to global financial markets: bond yields crashed; there has been a sharp correction in equity markets; and the expectations of further monetary tightening yielded to pause/rate cuts.

In equity markets, the US S&P 500 generally rallied in Q4 and January on expectations of less aggressive US Fed actions amidst some fall in inflation and strong economic data. In February, the market corrected on concerns of more tightening and rates remaining higher for longer after the release of robust US non-farm payrolls and stronger inflation prints. The correction continued in March after bank failures, though it recouped losses by end of the month. Overall, the US S&P index rose by 14.6 per cent between October 2022 and March 2023. The Chicago Board Options Exchange Volatility Index (CBOE VIX) shot up to its highest level in 2023 on March 13 in response to bank collapses. The European stock market outperformed the US markets, over waning



recessionary concerns and benefitting from the sharp decline in natural gas prices.

EME equities gained around 9 per cent in Q4:2022, similar to developed markets. In Q1:2023, equity markets in AEs rallied sharply vis-à-vis EME equity markets on expectation of a turn in the US

Fed's monetary policy cycle. Portfolio outflows exerted downward pressures on equities in EMEs (Chart V.6). Given the prominent role of the US dollar in the international economy, US monetary policy surprises have a significant impact on global financial markets (Box V.1).

Box V.1: US Monetary Policy Surprises and Global Financial Markets

In 2022, the US Federal Reserve undertook aggressive monetary tightening, along with forward guidance of 'higher for longer', which impacted financial markets across segments and geographies. US monetary policy surprises can be proxied by the variations in the US overnight index swap rates (OIS) (Lloyd, 2018). Against this backdrop, an interest rate surprise is identified by a change in 3-month OIS rate. Its impact on global equities and bonds markets, both AEs and EMEs, is modelled using daily data as:

$$\Delta r_t = \alpha_0 + \alpha_1 \text{surprise}_t + \alpha_2 r_{t-1} + \alpha_3 \Delta vix_t + \alpha_4 \Delta sentiment_t + \varepsilon_t \quad \dots (1)$$

where r_t is the return on equity or bond index (in US\$ terms); vix_t is the JP Morgan global FX volatility index to capture global volatility; $sentiment_t$ is the global sentiment index; $surprise$ is the difference of the 3-month OIS from its previous day closing. MSCI world, AE and

EME equity indices are used for calculating equity returns for the respective stock markets, respectively, while FTSE Government and FTSE Emerging Markets bond indices are used for calculating returns on bonds.

The empirical analysis focuses on the experience during 2022 and indicates that, controlling for volatility and the prevailing global sentiment, an unanticipated US monetary tightening reduces global equity as well as bond returns (Table V.1.1). As regards EMEs, their bond markets turn out to be sensitive to US monetary surprises – rising interest rate differentials in favour of the US can make EME debt assets less attractive and depress portfolio inflows. Under these circumstances, inflation management is complicated by the impossible trinity constraints and mobile capital flows seeking safe haven (Patra, 2022).

(Contd.)

Table V.1.1: US Monetary Policy Surprises and Global Financial Markets

Variables	Equity Markets			Bond Markets #	
	World	AEs	EMEs	World	EMEs
Surprise	-3.406*** (-3.75)	-3.936*** (-3.86)	-0.876 (-1.25)	-0.919** (-2.28)	-1.052*** (-2.85)
Return, lag 1	-0.148*** (-2.64)	-0.194*** (-3.55)	0.073 (1.42)	0.061 (1.00)	0.170* (1.83)
Return, lag 2	-0.151*** (-2.97)				
Change in Volatility Index	-1.194*** (-4.23)	-1.282*** (-4.20)	-2.127*** (-6.76)	-0.084 (-0.63)	0.097 (0.77)
Change in World Sentiment Index	8.720*** (-9.09)	8.355*** (8.65)	4.437*** (4.67)	0.541 (1.29)	0.343 (1.02)
Constant	-0.021 (-0.33)	-0.001 (-0.02)	-0.042 (-0.65)	-0.063 (-1.99)	0.007 (0.31)
Adjusted R ²	0.43	0.38	0.36	0.15	0.21
LM test (p-value)	0.49	0.10	0.74	0.88	0.09

Note: Figures in parentheses refer to t-values (using Newey-West standard errors).

***, **, * denote levels of significance at 1%, 5% and 10%, respectively.

#: Regressions include dummy variables to control for outliers.

Source: RBI staff estimates.

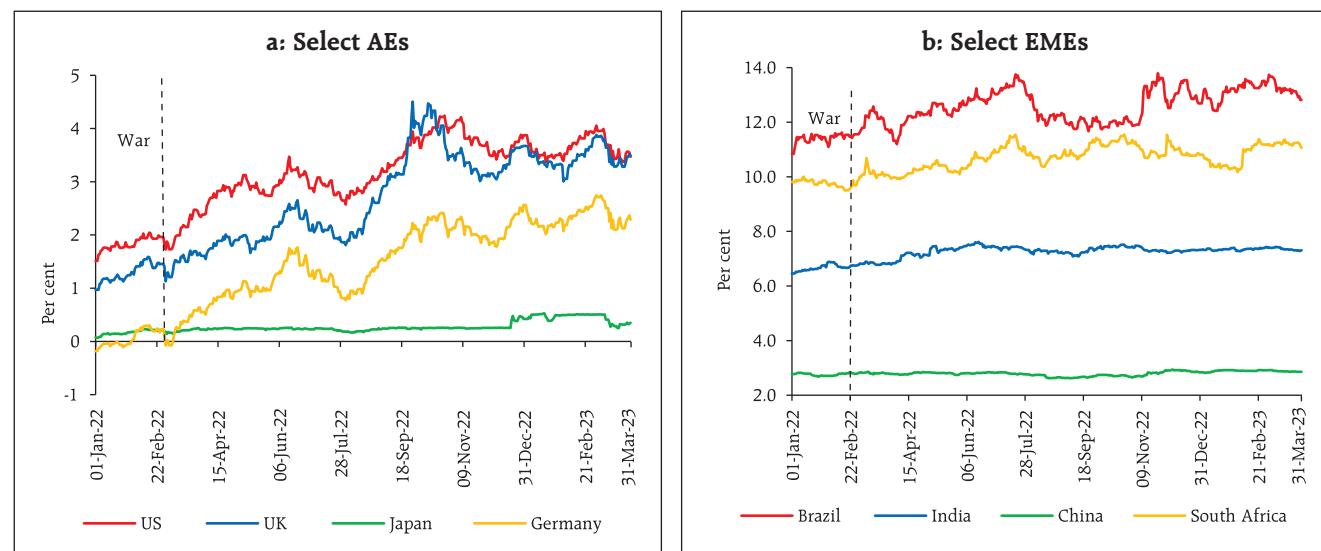
References:

Lloyd, S. P. (2018), "Overnight Index Swap Market-Based Measures of Monetary Policy Expectations", Bank of England Staff Working Paper No. 709.

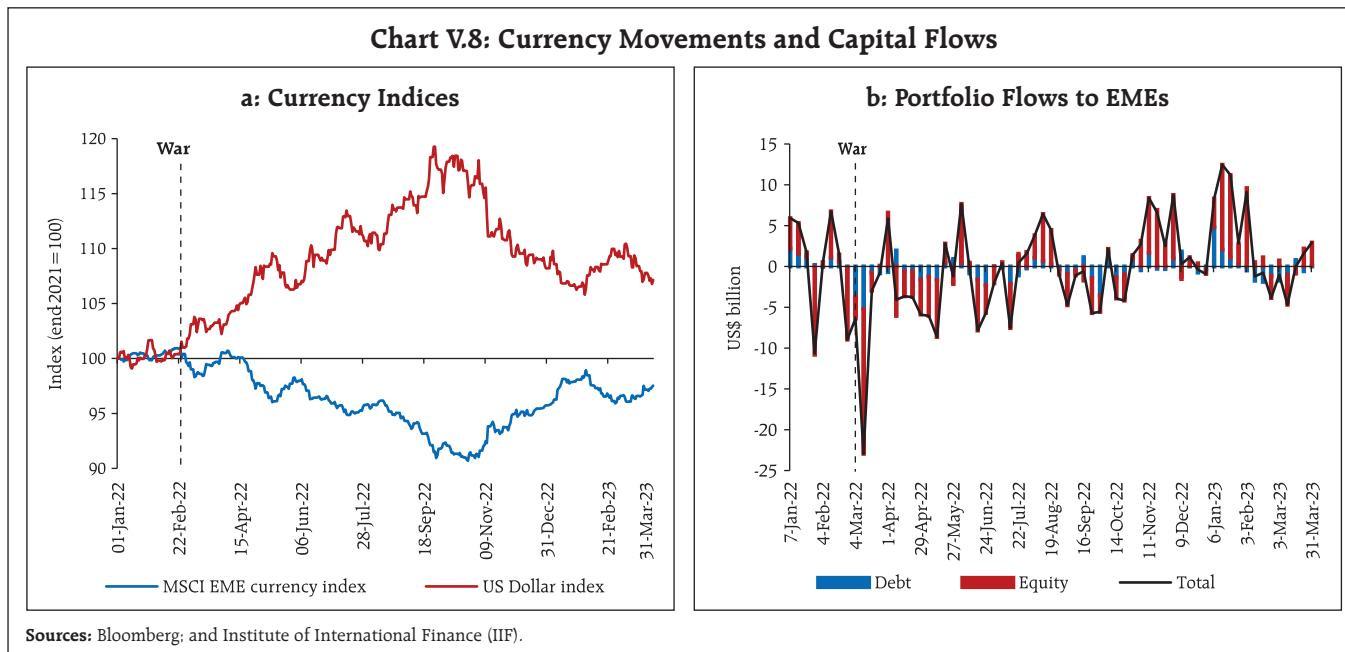
Patra, M. D. (2022), "Statement by Dr. Michael Debabrata Patra", Minutes of the Monetary Policy Committee Meeting, September 28-30, 2022, Reserve Bank of India.

In Q4, sovereign bond yields across major AEs softened in November on signs of easing inflationary pressures and expectations of less aggressive rate hikes. Yields, however, raced up in December 2022, with

the BoJ's expansion of its tolerance range for 10-year Japanese Government bond yield fluctuations to ± 0.5 percentage points. In Q1:2023, moderating inflation across countries led to softening of yields in January.

Chart V.7: 10-year Sovereign Bond Yields

Source: Bloomberg.



Yields, however, moved sharply higher in February on data showing sticky inflation and robust US retail sales and non-farm payroll gains. Yields fell precipitously in March as investors panicked and rushed towards safer assets amidst financial market turbulence caused by bank failures (Chart V.7a). The yield curve remained inverted in Q4 and Q1 over recession concerns and expectations of a turn in the monetary policy cycle. UK and German 10-year bond yields tracked the US markets. The Japanese bond yields remained range-bound, reflecting the yield curve control policy of the BoJ, barring the upward adjustment in the tolerance range in December. Bond yields in EMEs exhibited two-way movements, with a hardening bias driven by domestic monetary tightening as well as global cues (Chart V.7b). Chinese bond yields firmed up modestly despite monetary accommodation.

In the currency markets, the US dollar reversed its rally in October – after hitting a two-decade high in September 2022 – on perceptions of the Fed stepping down from its aggressive policy tightening (Chart V.8a). However, tight labour market conditions

and stronger-than-expected inflation data led the market to assess that the tightening cycle may last longer, strengthening the greenback in February. The US dollar tressed down in March on financial stability concerns and expectations that the Fed may be forced to reverse its tightening cycle. The US dollar dynamics were mirrored in the EME currencies, with the volatility exacerbated by capital outflows (Chart V.8b). The MSCI Emerging Market Currency Index gained 4.3 per cent in Q4:2022 and 1.9 per cent in Q1:2023.

V.5 Conclusion

The risks to the global growth outlook are tilted to the downside. The recent financial stability risks and global spillovers have imparted significant uncertainty to the economic outlook, as policymakers juggle between sticky inflation on the one hand and financial stability risks on the other. These developments are imparting sizeable volatility to global financial markets and generating large adverse spillovers on to emerging market economies through volatility in capital flows, currency movements and bond yields, posing downside risks to their growth prospects.

SPEECH

Financial Sector as an Enabler for Developed India
M. Rajeshwar Rao

*Financial Sector as an Enabler for Developed India**

M. Rajeshwar Rao

A very good evening to all of you. It is indeed a pleasure to be here and participate in the 31st annual management convention of Thrissur Management Association.

As Socrates once said, "*The only true wisdom is in knowing you know nothing.*" Little did we know, three years back, that we would face one of the greatest challenges of our lifetime - a pandemic that would upend our daily lives and force us to navigate through unknown, unforeseen, and unanticipated turbulences. As we complete a tad over three years after the onset of the pandemic it might be an opportune moment to reminisce about the challenges and responses to the COVID times as well as stocktake some of the lessons learnt.

What comes to mind in the first place is that the uncertainty and upheavals seen during the last three years has been a first for this living generation. To dwell on the experiences, challenges and responses, let me begin by focussing on the global economic recovery post pandemic as well as in our country and thereafter, briefly, outline my views on the changes that pandemic brought in the financial world and what this transformation means for the Indian growth story going forward.

Restoration and Revitalisation of the Economy

The stress induced by Covid was different from any other stress the world has seen before. The pandemic spread rapidly and affected almost every country in

the world. For financial regulators, it was an out-of-syllabus situation as the economic stress this time was not caused by underlying economic imbalances or financial market failures, but by a public health crisis. This made it a unique shock, as it impacted both the supply and demand sides of the economy, affecting both production and consumption. The impact was such that global GDP contracted by 3.5 per cent¹ in 2020. India's GDP contracted by 5.8 per cent² in the financial year 2020-21, making it the worst economic contraction in country's history. The recession was highly synchronised — more than 90 per cent of economies, even higher than the proportion of about 85 per cent of countries in recession at the height of the Great Depression of 1930-32³, witnessed a recession.

The Governments and Central Banks around the world responded with unprecedented fiscal and monetary policy measures, both conventional and unconventional, to support individuals, businesses, and financial markets. This included massive stimulus packages, quantitative easing, and other measures to sustain credit flows and economic activity. As per IMF estimates, by mid-2021, global economic stimulus in response to Covid reached \$16 trillion including additional government spending, revenue foregone and liquidity measures⁴, which amounts to close to 20 per cent of global GDP.

To combat the impact of the COVID-19 pandemic and to revive economic growth, India announced a special economic and comprehensive package amounting to about ₹27.1 lakh crore – more than 13 per cent of India's GDP.⁵ The Government's actions

¹ IMF World Economic Outlook Update, January 2021

² Data from Ministry of Statistics and Programme Implementation, available at <https://www.mospi.gov.in/data>

³ Chapter 1, Economic Survey 2020-21

⁴ IMF Fiscal Monitor Database of Country Fiscal Measures in Response to the COVID-19 Pandemic, October 2021

⁵ <https://www.pib.gov.in/PressReleaseIframePage.aspx?PRID=1693907>

* Keynote address delivered by Shri M. Rajeshwar Rao, Deputy Governor, Reserve Bank of India – March 22, 2023 - at the 31st Annual Management Convention of Thrissur Management Association. Inputs provided by Chandan Kumar, Pradeep Kumar and Pramanshu Rajput are gratefully acknowledged.

were complemented through various measures deployed by the Reserve Bank within days of Covid being declared as a pandemic by WHO. The repo rate was reduced cumulatively by 115 bps (between March and May 2020) and CRR was reduced by 1 percentage point on March 27, 2020, for one year to ease immediate liquidity constraints. To further augment systemic liquidity long-term repo operations (LTROs) and targeted long-term repo operations (TLTROs) were undertaken.

A calibrated set of regulatory measures were also announced to provide relief from the pandemic. These measures included moratorium on term loans for six months, deferment of interest on working capital facilities sanctioned in the form of cash credit/overdraft, easing of working capital financing, etc.

The measures taken by the Government and the RBI helped cushion the economy from the adverse effects of the pandemic and also demonstrated our commitment to support the businesses and individuals during the turbulence. The RBI's measures to provide liquidity support to the economy helped ease the funding constraints faced by financial markets and enabled them to continue their operations and meet their financial obligations, thereby supporting economic activity. The government's push for providing relief to weaker sections and hardest hit sectors of the economy ensured that their immediate concerns were addressed. The following year, i.e., in FY22, the Indian economy started to recover despite the Omicron wave of January 2022. Consequently, output in FY22 went past its pre-pandemic level in FY20⁶, with the Indian economy staging an impressive recovery.

Just as India and the world were expecting to recover from the pandemic, the geo-political upheavals in Europe exacerbated existing pandemic related stress

disrupting the commodities markets in particular. The turmoil led to increased prices and volatility in fuel, food grains, fertilisers, natural gas and metal prices, leading to a worldwide surge in inflation. The impact on commodities market can be gauged from the fact that the year-on-year growth in the prices as of March 2022, was 400 per cent for natural gas, 250 per cent for coal, 76 per cent for crude, 30 per cent for food and approximately 120 per cent for fertilisers.⁷ These increased prices led to multi-decade high inflation in many advanced economies. The inflation reached 10 per cent in Euro Area, Germany, and UK⁸. In India also, inflation reached 7.8 per cent in April 2022, before easing to 5.7 per cent in December 2022.⁹

Central Banks across economies led by US Fed Reserve responded with synchronised policy rate hikes to curb high inflation. Since May 2022, US has hiked policy rates by 450 bps, while UK and the EU have increased rates by 300 bps.

The conflict in Europe necessitated a revision in expectations for economic growth and inflation in FY23. Despite the downward revision, the growth estimate for FY23 for India is higher than for almost all major economies. IMF estimates India to be one of the top two fast-growing significant economies in 2022. Despite protracted global headwinds and tighter monetary conditions, India is still expected to display a healthy growth and it is a testament to India's underlying economic resilience and of our ability to recoup, renew and re-energise the growth drivers of the economy.

The first advance estimates (FAE) released by the National Statistical Office (NSO) on January 6, 2023, placed India's real gross domestic product (GDP) growth at 7.0 per cent year-on-year (y-o-y) for 2022-23, driven by private consumption and investment.

⁷ Economic Survey 2022-23

⁸ IMF, Economic Survey 2022-23

⁹ Minutes of Monetary Policy Committee Dec-22, Feb-23

⁶ Data from Ministry of Statistics and Programme Implementation, available at <https://www.mospi.gov.in/data>

Bank credit growth (y-o-y) stood at 16.8 per cent in December 2022 as compared with 8.4 per cent a year ago. Aggregate deposits increased by 10.3 per cent (y-o-y) in December 2022 as compared with 9.6 per cent a year ago, led by 13.2 per cent growth in term deposits.¹⁰ The government has continued on the path of fiscal consolidation in the Union Budget 2023-24 by reprioritising expenditure mix. The fiscal deficit is estimated to be 6.4 per cent for the current fiscal and is likely to fall to 5.9 per cent in the next fiscal. Tax revenues have remained buoyant with monthly GST collections crossing ₹1.5 lakh crore in January 2023.¹¹

This makes India the fastest-growing economy in the world and today we are referred to as 'bright spot on a dark horizon'. To conclude the first part of my talk, I would say that, indeed, amidst the challenges and uncertainties prevailing over the past three years, Indian economy and financial system has shown remarkable resilience and strength.

New horizons, Partnerships and Priorities

Moving on, let me focus on the transformative journey of Indian banking sector during past few years and specially during COVID period and how it is poised for supporting the Indian growth story.

The last decade has witnessed significant penetration of banking in the country. Under Pradhan Mantri Jan Dhan Yojana (PMJDY), 48.20 crore beneficiary accounts have been opened so far with outstanding balance of ₹1.89 lakh crore in these accounts.¹² As of June 2022, there are more than 1.6 lakh bank branches translating to approximately 15 branches per 1 lakh of population. This is further complemented by a network of 2.17 lakh ATMs¹³, out of which 47 per cent are in rural and semi-urban

areas. Additionally, there are close to 32 lakh Banking Correspondents (BCs) engaged by banks¹⁴ providing last mile access. As of 2021, 78 per cent of Indian adults (population with 15 years or more of age) had a bank account as compared to 53 per cent in 2014.¹⁵ Banking services have been made accessible to every village within a 5 km radius in 25 states and 7 Union Territories covering 99.94 per cent of villages.¹⁶

This has been supplemented by a few important developments which got a fillip during covid. ***The first noteworthy development is the increasing use of technology in finance.*** Technology in finance has been an important enabler that has empowered us to create a more inclusive and efficient financial ecosystem. Banks have been innovating and enhancing the quality and reach of their services using technological solutions for some time now. However, this got accelerated during the COVID period when mobility became a challenge and technology came to the rescue for fulfilling all our banking needs. The demands placed by the circumstances compelled banks and financial institutions to rethink their business processes and review their strategies. The Reserve Bank also facilitated banks and financial institutions in this journey by issuing appropriate guidelines such as use of Video KYC. However, all this was made possible through the giant strides taken by our country in building a public digital infrastructure with India Stack coupled with JanDhan – Aadhar – Mobile, the so-called JAM trinity, Account Aggregator framework and other digital initiatives, it enabled a decisive entry of the country into a digital finance era. What makes India Stack unique is the scale, public accessibility and the comprehensiveness that has helped in making a building a more inclusive digital economy.

The second important development to my mind during this period was the emergence of

¹⁰ RBI Quarterly Statistics on Deposits and Credit of SCBs: December 2022

¹¹ Union Budget 2023-24

¹² <https://www.pmjdy.gov.in> as of March 2023

¹³ RBI data available at <https://www.rbi.org.in/Scripts/ATMView.aspx?atmid=136>

¹⁴ RBI Annual Report 2021-22

¹⁵ World Bank's Global Findex Database

¹⁶ ibid

new partnerships between FinTech companies and banks. Banks are seen leveraging technological partnerships with FinTechs in various ways to provide better products and better serve their customers. In this partnership, FinTechs can contribute their technology expertise, while banks bring their domain expertise. By leveraging technologies such as chatbots, mobile apps, and personalised digital solutions, banks can provide customers with more convenient and seamless banking experiences. This collaboration allows banks to enhance their digital capabilities and meet the expectations of tech-savvy customers.

All of us have realised or experienced that in the post pandemic world, digital lending has grown exponentially including in India leading to both an increase in scale and velocity of credit. However, at the same time it has also given rise to a host of business conduct issues. This poses a regulatory dilemma as the Regulator then needs to play a balancing act in weighing the benefits brought in by innovative business models on one side and emerging business conduct and regulatory concerns on the other side. An attempt has been made by the Reserve Bank to address this issue through issuing principle-based guidelines on digital lending.

The third important development was the reinforcement of our focus regarding the importance of inclusiveness. The desperate times reminded us that even a small help at an appropriate time could make a world of difference to the person in need. Therefore, the Reserve Bank has accelerated its efforts towards building an inclusive financial system where access to financial services is not limited to a basic bank account, but everyone has access to formal channels of credit and they are able to use their banking account to make digital payments to everyone, everywhere, every time. This audience must be aware about the fact that today India's payment systems are among the best in the world with our real time fast retail payment system, UPI, enabling transactions of about

₹12 lakh crore per month in value and almost 26 crore transactions in daily volume.

The next thing which can revolutionise the credit markets is the credit decisions which are informed by availability of financial as well as alternate data. By leveraging data analytics, financial institutions are able to gain insights into customer behaviour, market trends, and emerging risks, enabling them to make more informed credit decisions. Data-driven finance is not just about collecting and analysing information; it's about using that information to drive innovation, create value for customers, and build sustainable, resilient financial models to the benefit of the system. To enable responsible use of data, RBI has introduced the Account Aggregator framework which enable customers to control their data and provide permission for it to be shared with third-party service providers, for provision of various financial products and services seamlessly. It is expected that AA framework would accelerate the development of alternative lending models such as cash flow-based lending and marketplace lending or what we popularly known as peer-to-peer lending. This would enable small businesses, including street vendors that may not have traditional collateral, to secure a loan. As technology continues to advance, we expect more innovative models to emerge that leverage data, automation, and artificial intelligence to transform the lending landscape.

A Fourth development post pandemic, is the reminder to us, the regulators, to keep the financial stability as the prime point of focus. The COVID shock, termed as 'The Great Lockdown¹⁷' by the IMF, put all stress testing models and business continuity plans to test. It also reminded us that the financial system is vulnerable to shocks arising in any sector, external as well as internal, and it is an imperative for us to take steps to ensure financial stability. For

¹⁷ World Economic Outlook, April 2020

modern economies, financial stability is not just a goal, it's a necessity - for when it falters, the ripple effects can bring down even the mightiest to their knees. The 2008 financial crisis was a stark reminder that financial stability isn't just an ideal, it's a prerequisite for a well-functioning economy.

Banks are the backbone of the financial system, and they play a significant role in ensuring financial stability. For this reason, the banks are required to comply with the prudential regulations issued by the Reserve Bank and are required to maintain sufficient capital buffers to absorb losses. The other crucial element of financial stability is robust governance. Robust governance is the cornerstone of stability and prosperity of any organisation, safeguarding the integrity and ensuring that all decisions are taken in the best interest of stakeholders.

Recognising this, the Reserve Bank has always placed greater importance on governance and has taken several measures to strengthen the same in banks. The Reserve Bank's guidelines now require banks to have a diverse and independent board of directors, with a mix of executive and non-executive directors with certain minimum qualifications and experience. The oversight from Board of Directors must be supported by robust risk management, audit and compliance functions.

Future Challenges and Opportunities

Although, we have come a long way in our quest for providing banking for all, there is still a long path to traverse. The huge gap in availability and utilisation of financial services by the urban and rural India is one such challenge. This gives us an immense opportunity as the objective of financial inclusion is not just about giving access to thrift and credit, it's about empowering individuals to realise their true potential and contribute to a thriving economy.

Financial inclusion needs to be redefined by developing bespoke products and services that are

best suited to different strata of the society depending upon their income level. This shall include innovative solutions that make it easier for people to not only access basic but also to use a variety of financial services. Towards this end and to enable easy, adequate, and customised credit, the Reserve Bank has made provisions for differentiated banking license. These are niche banks which can help plug the gap in meeting specialised needs for banking products and services across a wider and diverse spectrum.

Another, critical issue in India's credit market has been the consistent gap between the demand and supply of credit to Micro Small and Medium Enterprises (MSMEs). The Micro, Small and Medium Enterprises (MSME) sector contributes around 30 per cent to India's GDP, 45 per cent to its manufacturing output, and 48 per cent to exports. This has to be seen as an area of opportunity by the banks and other financial institutions.

Another emerging area of focus is making finance available for transitioning to a low-carbon economy. All of us are now cognisant of the global challenge that climate change poses to our planet and its impact which is reverberating across the world. If we fail to take timely action, the consequences will be irreversible. The Indian Government has already committed to reduce the total projected carbon emissions from now till 2030 by one billion tonnes, reduce carbon intensity of the economy by more than 45 per cent by 2030, and achieve 'Net Zero' emissions by the year 2070. As a central bank, we also have a responsibility to promote sustainable economic growth which includes transition to a low-carbon economy.

Banks can play an essential role in financing the transition to a low-carbon economy by channelising finance to sustainable and green projects as well as by developing new financial products that incentivise green initiatives. Our actions will set the course not only for the future of the planet but also determine the kind of environment which we bequeath our future generations.

For a regulator in a developing country, given the high rate of technology adoption, keeping pace with market innovations is always a challenge. Regulating such a dynamic financial sector can be very aptly described as "Just when we thought we knew all the answers, someone changed the questions". But it is our firm belief that for the customers to enjoy the fruits of financial innovation, it has to be sustainable and within the realm of a sound regulatory framework. Keeping this in mind, we have followed a nuanced and consultative approach with an aim to responsible innovation, while nudging the industry to adopt sustainable business practices.

Concluding thoughts

It is important for us to be cognisant of the fact that the bedrock of a strong and resilient financial system is the trust that the people repose in it. The trust element is not only created just by the individual institutions but by the collective actions of the entities operating in the financial system. We expect firms to be

responsible for their actions and of the actions of the service providers engaged by them and demonstrate accountability for same. Compliance with applicable regulations and ensuring customer-centricity are two non-negotiable principles for entities functioning in the financial sector and the same must flow from the top.

To conclude, I would like to emphasise that the banking sector has been instrumental in India's growth story, and it is crucial that banks continue to innovate and adapt to changing times to meet the evolving needs of the economy. As India continues to march forward, the banking sector must, as hitherto, continue to be a key contributor to the country's growth story. As always, we at RBI will be working closely to ensure that the banking sector and other stakeholders can help build a stronger, more inclusive, and sustainable future for India.

Thank you.

ARTICLES

State of the Economy

Recent Regime Reversal in Inflation: The Indian Experience

Capital Outlay of Indian States: An Empirical Assessment
of its Role and Determinants

Industrial Relations Code and Labour Productivity:
A Cross-Country Meta-Analysis

A Composite Indicator of Realty Sector Activity in India

*State of the Economy**

Global economic conditions are beset by heightened uncertainty as financial conditions remain volatile and financial markets are on edge. In India, aggregate demand conditions remain resilient, supported by a rebound in contact-intensive services. Expectations of a bumper rabi harvest, the fiscal thrust on infrastructure, and the revival in corporate investment in select sectors augur well for the economy. In response to monetary policy actions and supply side measures, headline CPI inflation has gradually declined from its peak of 7.8 per cent in April 2022 to 5.7 per cent in March 2023 and is projected to ease further to 5.2 per cent in Q4: 2023-24.

Introduction

As the world converged to Washington D.C. in mid-April to take in the spring air with cherry blossoms blooming in a short burst of colour and fading away, the multilateral institutions – the International Monetary Fund (IMF) and the World Bank – issued dire messages about the global economy. One warned of a rocky road ahead as global growth bottoms out in 2023; the other cautioned about a lost decade as an aging workforce, weakening investment and slowing productivity take their toll on global potential growth – “the maximum rate at which an economy can grow without igniting inflation.”

Meanwhile, investors have scaled back expectations of global interest rate increases after the sudden failure of some mid-sized banks in certain advanced economies (AEs) and the forced marriage of another that was deemed too-big-to-fail. Trust in the banking sector in these countries is not yet fully

restored. The resilience of the global financial system has been severely tested. Sentiment remains fragile, with fears of hidden valuation losses lurking sinistly in the books of financial institutions. Funding strains confront policy makers, some of whom have put in place emergency liquidity measures that may reverse some part of the quantitative tightening achieved so far. The overarching sense seems to be that central banks and financial regulators must do more to restore confidence and financial stability – their original mandate – rather than excoriate inflation. Accordingly, sharp repricing of monetary policy paths is underway. Consequently, financial conditions remain volatile and financial markets are on edge.

The messages from the IMF's flagship publications imbibed the surrounding uncertainty. Heightened debt risks weighing on the weakest economies and whittled down fiscal buffers were highlighted by the Fiscal Monitor. In this context, it underlined the importance of coordination among creditors on preemptive and orderly debt restructuring. It pointed out that in spite of inflation having reduced some of the burden of burgeoning public debt, fiscal policy must be tightened alongside monetary policy to ease inflation pressures. The other two flagships – the World Economic Outlook (WEO) and Global Financial Stability Report (GFSR) – also recommended that the fight against inflation must continue. Only in the event of systemic financial stress should the overriding priority shift to maintaining confidence in the global financial system, with adequate liquidity to limit contagion. Meanwhile, specific tools need to be deployed to ensure that banks' governance and risk management is commensurate with risk profiles. Efforts should be directed to strengthen resolution regimes and crisis management frameworks. Monitoring the build-up of risks in banks, non-bank financial intermediaries, real estate sectors and less/lightly regulated pockets of the financial sector is key. The IMF also recognised financial stability risks for emerging and developing economies (EMDEs)

* This article has been prepared by G. V. Nadhanael, Rajni Dahiya, Kunal Priyadarshi, Harshita Keshan, Thangzason Sonna, Pankaj Kumar, Harendra Behera, Dhanya V., Rigzen Yangdol, Prashant Kumar, Anoop K Suresh, Rishabh Kumar, Rohan Bansal, Kovuri Akash Yadav, Himani Shekhar, Priyanka Sachdeva, Ashish Santosh Khobragade, Satyam Kumar, Alisha George, Yuvraj Kashyap, Supriyo Mondal, Sujeesh Kumar, Tushar Baran Das, Rajendra Nana Chavan, Renjith Mohan, 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.

stemming from exchange rate volatility and potential capital outflows, and acknowledged the legitimacy of tools such as foreign exchange interventions and capital flow measures.

For the longer term, the IMF has underscored the urgency of preventing catastrophic climate change by accelerating green transition. For this purpose, mobilising capital for EMDE climate finance is essential. In its view, strengthening cooperation on common global public goods such as the climate and mitigating fragmentation risks due to industrial policy and subsidies that threaten to shut off economies from the world assume importance. In the context of the latter, the IMF advocated the removal of trade restrictions and other discriminatory measures.

For the Indian economy, the multilateral institutions downgraded their earlier forecasts of real GDP growth for 2023-24, citing 'slower consumption growth and challenging external conditions' (World Bank, 2023¹) and upward revisions of GDP data of past years (IMF 2023²). This downcasting of growth for India is in line with the lowering of global growth projections as well as those for EMDEs. Yet, India is expected to be among the fastest growing major economies of the world, accounting for 15 per cent of global growth – the second largest contribution, and higher than that of the US and EU put together. Although too early to tell, most recent data arrivals suggest that the multilateral institutions – the IMF, in particular – might encounter forecast errors, with actual outcomes surprising them positively.

Aggregate demand conditions in India have remained resilient so far. Urban consumption demand has risen robustly, with the rebound in contact-intensive services providing a strong upside.

Rural demand indicators are steadily improving, brightened by expectations of a bumper *rabi* harvest. Damage to standing crops due to unseasonal rains and hailstorms appears contained. The setting in of *El Nino* conditions in June and developing into a strong event as predicted by the US National Oceanic and Atmospheric Administration is a downside risk for the prospects for agriculture; however, the Indian Ocean Dipole (IOD), which is the difference in sea surface temperature between the western pole in the Arabian Sea and an eastern pole south of Indonesia is currently neutral and forecast to turn positive. Its influence on rainfall variability in the region is likely to be beneficial for south-west monsoon (SWM) precipitation.

Investment activity in India is exhibiting buoyancy on the back of strong composite purchasing managers indices (PMIs) – India has the highest PMI among comparators – the fiscal thrust on infrastructure spending, and revival in corporate investment in certain key sectors. The total flow of resources to the commercial sector, including bank credit, has increased by 37 per cent up to March 2023. Merchandise exports have risen by 6 per cent in 2022-23 and services exports are booming. Taking all these factors into consideration, the risks are evenly balanced around real GDP growth for 2023-24 at 6.5 per cent as projected by the monetary policy committee (MPC) of the Reserve Bank of India (RBI). Even if *El Nino* impacts value added in agriculture, real GDP growth in India would be well above 5.9 per cent projected in the IMF's WEO.

A dormant actor in the recovery of the Indian economy has been India Inc. After a robust turnaround in 2021-22 from contraction in the preceding two years, corporate revenues and profits moderated in 2022-23, but they remain healthy amidst multiple challenges. This might provide the fillip for the much-awaited revival in the corporate capex cycle in 2023-24. Signs of upturn are becoming evident

¹ <https://www.worldbank.org/en/news/press-release/2023/04/04/indian-economy-continues-to-show-resilience-amid-global-uncertainties>

² International Monetary Fund, World Economic Outlook, April 2023 <https://www.imf.org/en/Publications/WEO>

in industries such as cement, steel, oil and gas, textiles and data centres, to name a few early birds. Supply chain realignments will also help, especially industries such as pharmaceuticals, semi-conductors and renewables. Corporate fortunes will hinge around a durable reduction in inflation which will bring in its train stronger consumer discretionary spending and hence revenue growth, alongside a moderation in interest expenses. Input costs are likely to moderate as international commodity prices ease. On the other hand, the weakening of exports from the second half of 2022-23 could affect industries like two wheelers, auto ancillaries, garments, chemicals, metals and gems and jewellery. The services sector, especially information technology, a wide range of business services, tourism and exports out of global capability centres remain bright spots.

The RBI's industry monitoring group (IMG) conducts a semi-annual survey for the purpose of informing monetary policy formulation. Feedback from various industry bodies, credit rating agencies and banks in the latest round of the survey solicited just ahead of the MPC's April 2023 meeting indicates that corporate sales are recording double digit growth across several categories, especially consumer durables, aided by increased sales in premium products. On the other hand, consumer non-durables volumes are suffering from high prices, with decline in rural sales and in the unorganised segment of traditional trade (*kirana stores*), particularly in respect of items of non-food consumption. On the other hand, the e-commerce market estimated at US\$ 100 billion in 2022, is poised for robust growth in 2023.

Survey evidence points to crowding in of investment in infrastructure-related sectors. The production linked incentive scheme and growth prospects in new age sectors³ is bringing in private investment. Capacity utilisation has breached decadal

averages for major capital-intensive sectors as well as contact intensive services sectors, barring the automobile sector in which capacity utilization in two wheelers and three wheelers is lagging. Going forward, the upcoming second phase of BS 6 emission norms from April 1, 2023 and additional mandates on safety features would continue to put pressure on entry level cars. The information technology (IT) sector has remained resolute, aided by cost rationalisation. The micro, small and medium enterprises (MSME) sector is on a path of recovery, with revenues likely to cross pre-pandemic levels in 2023-24, except for export oriented sectors affected by global headwinds. Easing commodity prices may support improvement in profit margins and improve credit profiles in the sector. In the hospitality industry, revenues have recovered across hotel classes, indicating a widespread revival in the industry.

Credit ratios are improving across sectors, with upgrades exceeding downgrades. Credit ratings have appreciably improved for real estate, followed by finance companies, power, textiles and engineering. Credit growth remains resilient with rising inquiry levels, although some moderation has set in more recently. Delinquencies are reducing in the 90+ days past due bracket across all categories of consumer credit, barring credit cards and education loans.

Set against this backdrop, the remainder of the article is structured into four sections. Section II covers the rapidly evolving developments in the global economy. An assessment of domestic macroeconomic conditions is set out in Section III. Section IV encapsulates financial conditions in India, while the last Section sets out concluding remarks.

II. Global Setting

Global economic conditions are once again beset by heightened uncertainty. In its World Economic Outlook (WEO) released in April 2023, the IMF projected global growth to decline to 2.8 per cent in

³ Green hydrogen; semiconductors; wearables; and solar modules.

Table 1: GDP Growth Projections – Select AEs and EMEs

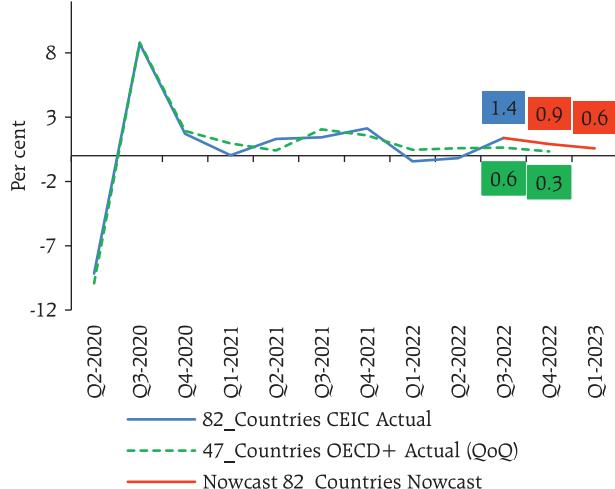
(Per cent)

Projection for Month of projection	2023		2024	
	April 2023	January 2023	April 2023	January 2023
World	2.8	2.9	3.0	3.1
Advanced Economies				
US	1.6	1.4	1.1	1.0
UK	-0.3	-0.6	1.0	0.9
Euro area	0.8	0.7	1.4	1.6
Japan	1.3	1.8	1.0	0.9
Emerging Market Economies				
Brazil	0.9	1.2	1.5	1.5
Russia	0.7	0.3	1.3	2.1
India	5.9	6.1	6.3	6.8
China	5.2	5.2	4.5	4.5
South Africa	0.1	1.2	1.8	1.3

Source: IMF.

2023 – a downward revision by 10 basis points from its January 2023 projection – from 3.4 per cent in 2022, before settling at 3.0 per cent during 2024-28 (Table 1). Recent financial sector turmoil, persistently high inflation, the ongoing conflict in Ukraine and its spillovers and the lingering effects of the pandemic including new waves of infections, are weighing on global growth. The IMF also highlighted an alternative scenario with severe financial sector stress which could cause global growth to fall to 2.5 per cent in 2023. Global headline inflation under the baseline scenario is likely to fall from 8.7 per cent in 2022 to 7.0 per cent in 2023 (a 40 bps upward revision from the January forecast) while underlying core inflation could remain high for longer.

Chart 1: Global GDP Growth Nowcast (Adjusted Series, (QoQ))



Sources: CEIC; OECD; RBI staff estimates.

Our model-based nowcast projects a positive global growth momentum of 0.6 per cent in Q1:2023 (Chart 1).

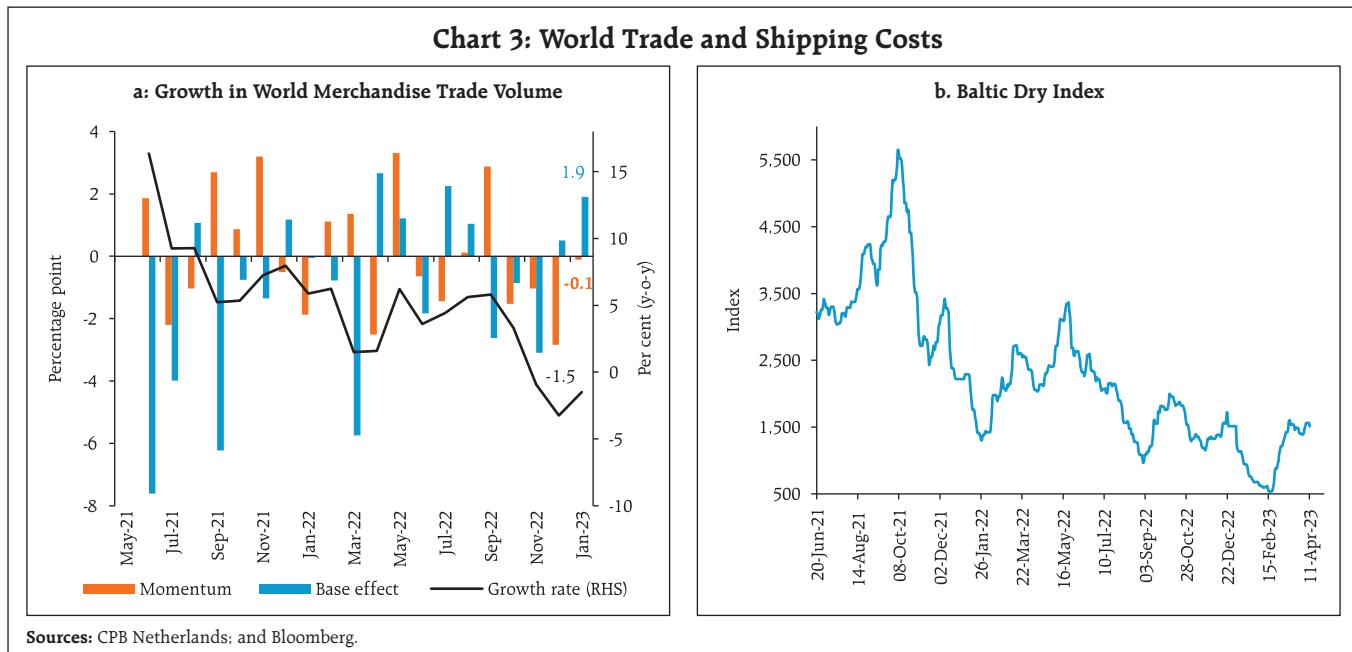
Among the high-frequency indicators, the global composite purchasing managers index (PMI) increased to 53.4 in March 2023 from 52.1 in the previous month, driven by the global services PMI, which

Chart 2: Global PMI



Note: Level of 50 corresponds to no change in activity and a reading above 50 denotes expansion and vice versa.

Source: IHS Markit.

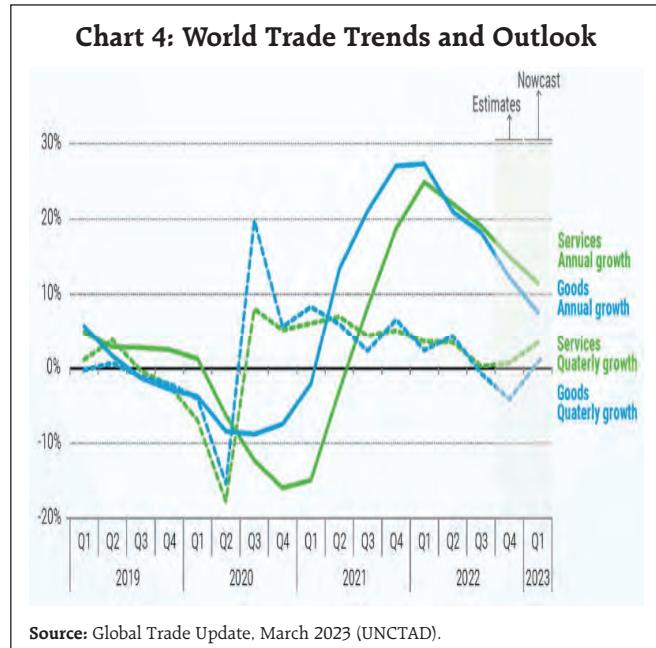


increased to 54.4 in March from 52.6 in February. On the other hand, global manufacturing PMI declined to 49.6 in March 2023 from 49.9 a month ago due to slower growth of output and employment, and a fall in new orders and stocks of purchases.

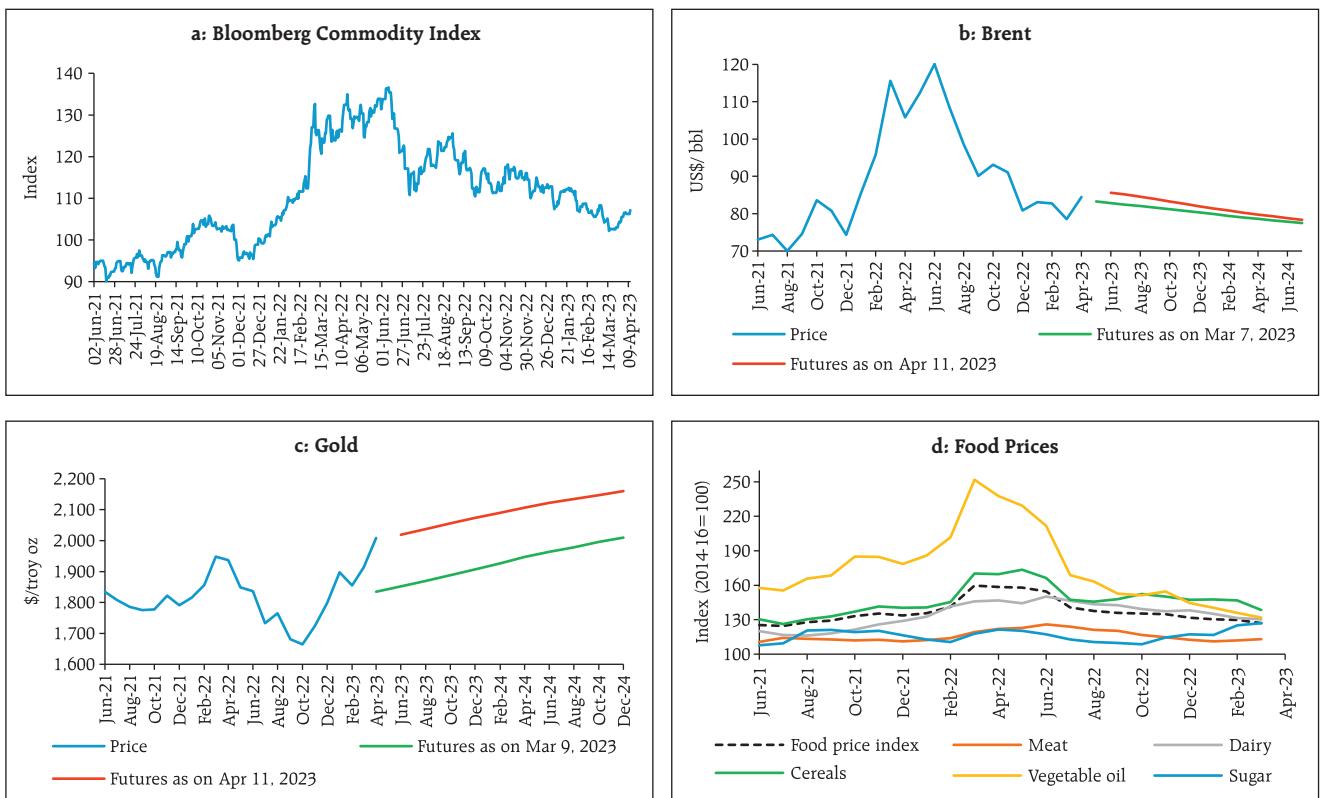
World trade volume contracted for the third consecutive month in January 2023 by 1.5 per cent (y-o-y) due to negative momentum, despite a favourable base effect (Chart 3a). The Baltic Dry Index – a measure of shipping charges for dry bulk commodities – however, more than doubled, since mid-February, buoyed by higher rates for capesize and panamax vessel segments, with the index growing by over 40 per cent in March 2023 (Chart 3b). The United Nations Conference on Trade and Development (UNCTAD) nowcast for Q1:2023 suggests a rebound in global trade with goods projected to increase by about 1 per cent sequentially, while trade in services is expected to increase by about 3 per cent on the same basis (Chart 4).

In March, global commodity prices softened further edging closer to pre-Ukraine war (January 2022) levels as prices of most agricultural commodities,

especially grains, moderated post the renewal of the Black Sea Grain initiative⁴ and supply bottlenecks continued to ease (Chart 5a). Crude oil prices treaded down in March, reaching an average of US\$ 78.5 per



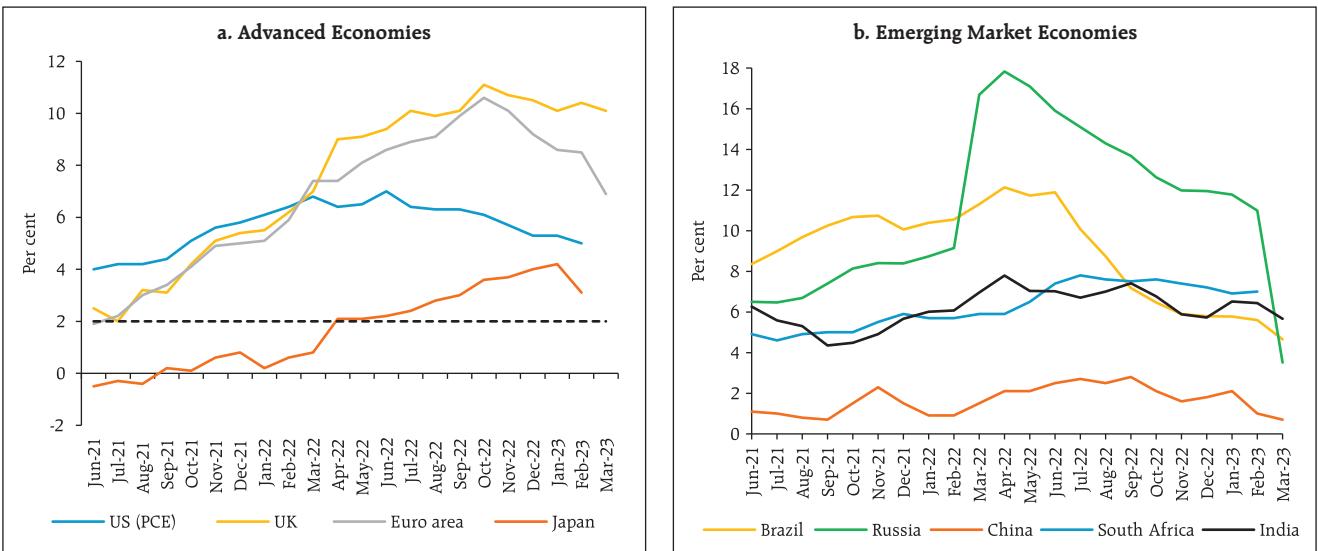
⁴ The Initiative specifically allows for commercial food and fertilizer (including ammonia) exports from three key Ukrainian ports in the Black Sea – Odesa, Chornomorsk and Yuzhny/Pivdennyi.

Chart 5: Commodity and Food Prices

barrel as global oil supply increased, particularly from the US and Canada. Prices rose in early April following a surprise production cut announcement by the Organization of the Petroleum Exporting Countries (OPEC) [Chart 5b]. Gold prices rebounded on safe-haven demand amidst bank failures in the US (Chart 5c). The Food and Agricultural Organization (FAO) food price index⁵ declined by 2.1 per cent (m-o-m) in March 2023, led by drops in cereal, vegetable oil and dairy prices, whereas those of sugar and meat increased (Chart 5d). The index has been on a secular decline from its peak recorded a year ago, leading to a y-o-y fall of 20.5 per cent in March 2023.

⁵ Sub-indices include cereal, vegetable oil, dairy, meat and sugar price indices.

Consumer price inflation has come off from recent peaks in most economies due to softening energy prices and easing supply chain bottlenecks; yet core inflation remains stubborn. Notwithstanding the recent softening, headline inflation remains well above target across most AEs and EMEs. US headline CPI inflation (y-o-y) eased markedly to 5.0 per cent in March 2023 from 6.0 per cent in February – the lowest level since May 2021 – due to a favourable base effect. Inflation based on the personal consumption expenditure (PCE) index also eased to 5.0 per cent in February from 5.3 per cent in the previous month (Chart 6a). In the Euro area, inflation slowed significantly to 6.9 per cent in March 2023 from 8.5 per cent in the previous month, driven by negative momentum in the energy sub-component. In the

Chart 6: Inflation

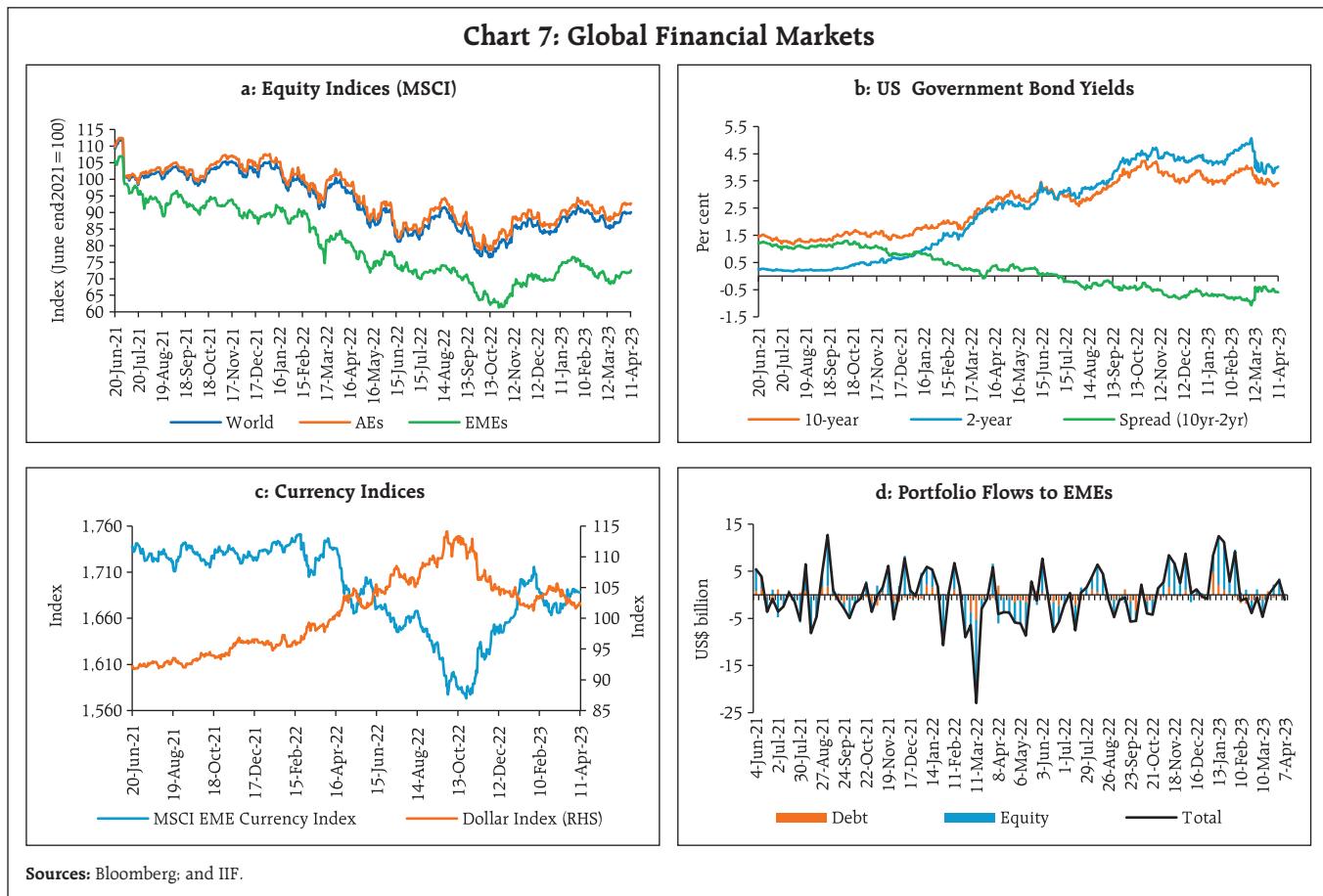
Sources: Bloomberg; and OECD.

UK, however, inflation inched up to 10.4 per cent in February 2023 from 10.1 per cent in January, with high monthly price momentum in food and non-alcoholic beverages. Japan's CPI (all items less fresh food) inflation eased to 3.1 per cent in February from an over-40-year high of 4.2 per cent in January 2023. Among the EMEs, inflation eased further in Brazil (4.7 per cent), and China (0.7 per cent) in March 2023 while it increased marginally in South Africa in February 2023. In Russia, it fell sharply to 3.5 per cent in March 2023 driven by base effects (Chart 6b).

Global financial markets exhibited considerable volatility since March 10, 2023 as financial stability concerns following the collapse of a few banks in the US rattled markets and caused sharp corrections in equity and bond valuations. Markets recouped losses by end-March and continued to trade higher in April so far (up to April 17) as confidence returned on

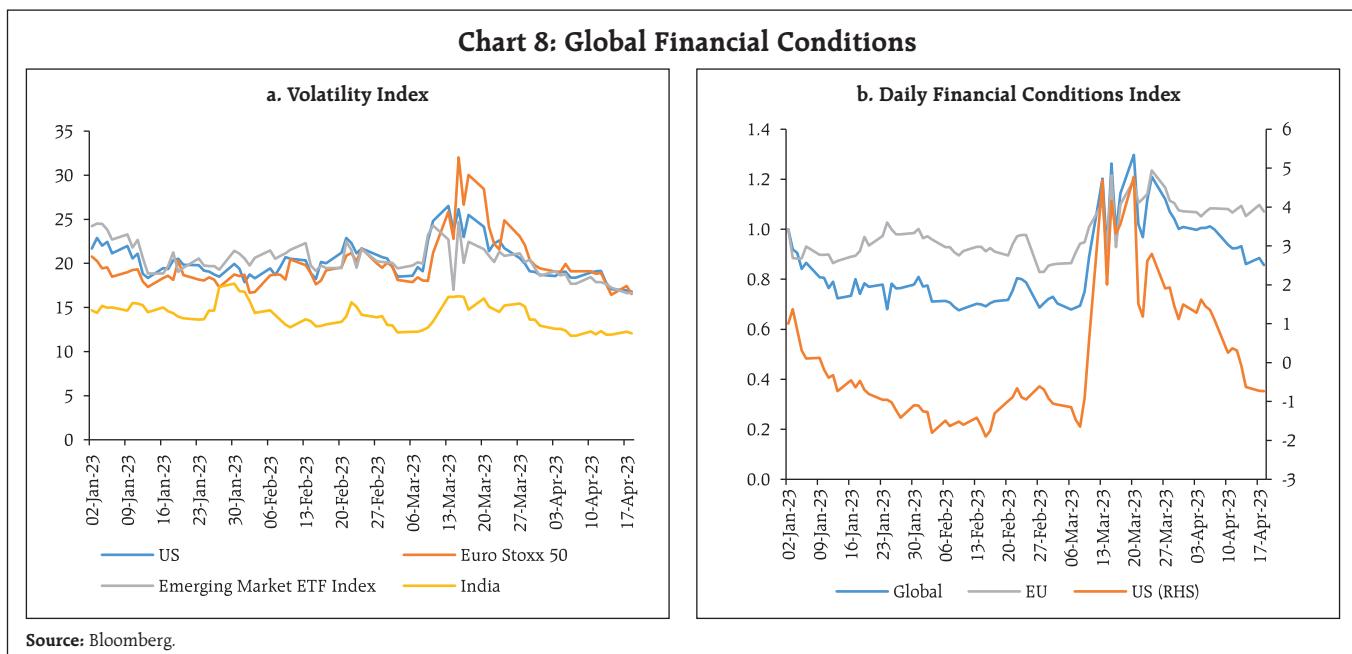
policy actions assuaging concerns of contagion (Chart 7a). The US 2-year G-sec yield touched the 5 per cent mark on March 07, 2023, reaching highs last seen in 2007 as incoming data on employment and inflation suggested a hawkish monetary policy stance going forward. The banking sector stress in March has, however, engendered expectations of a turn in the monetary policy cycle, softening yields (Chart 7b).

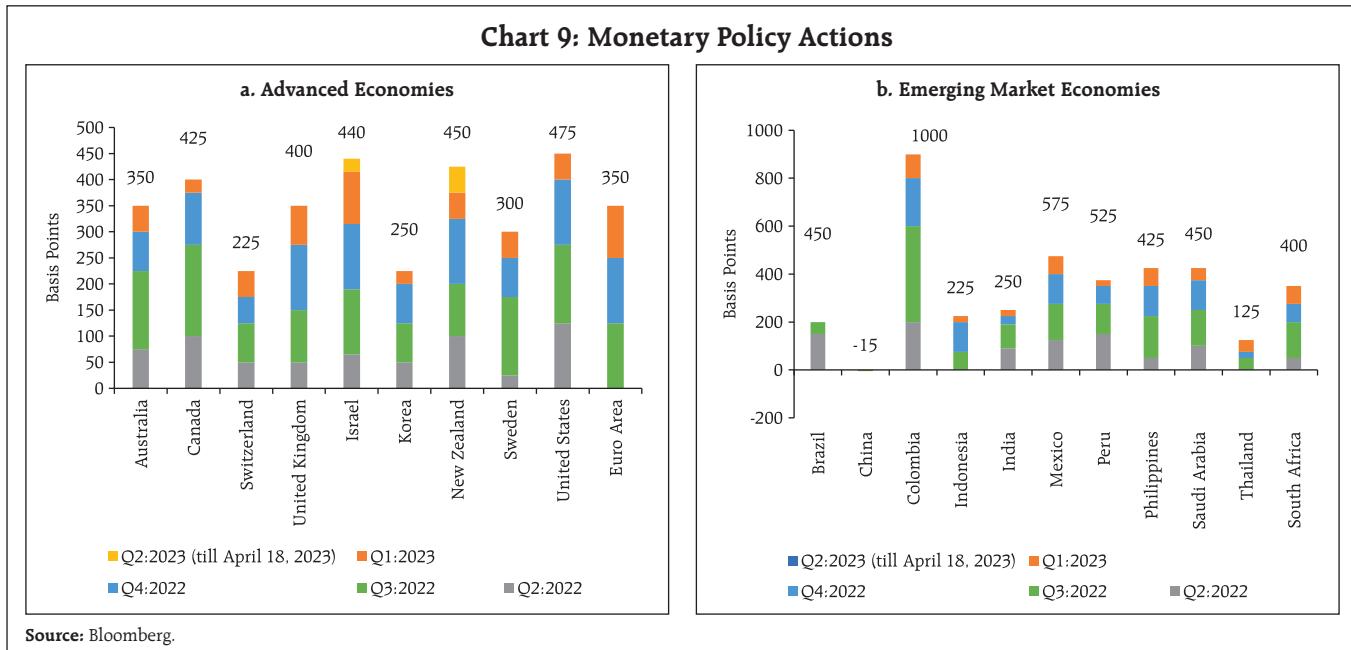
The US dollar shed 2.3 per cent in March on perceptions of the Fed stepping back from aggressive policy tightening. Concomitantly, the MSCI currency index for EMEs gained momentum by rising 1.6 per cent even though capital flows remained volatile (Chart 7c and 7d). The volatility index (VIX) was considerably lower across jurisdictions relative to its levels in early March 2023 (Chart 8a). Consequently, financial conditions have also partly eased in major economies by the end of March (Chart 8b).



Central banks have pivoted towards a pause or smaller rate hikes as heightened financial market

volatility has added further uncertainty to the economic outlook (Chart 9a). In March 2023, the US



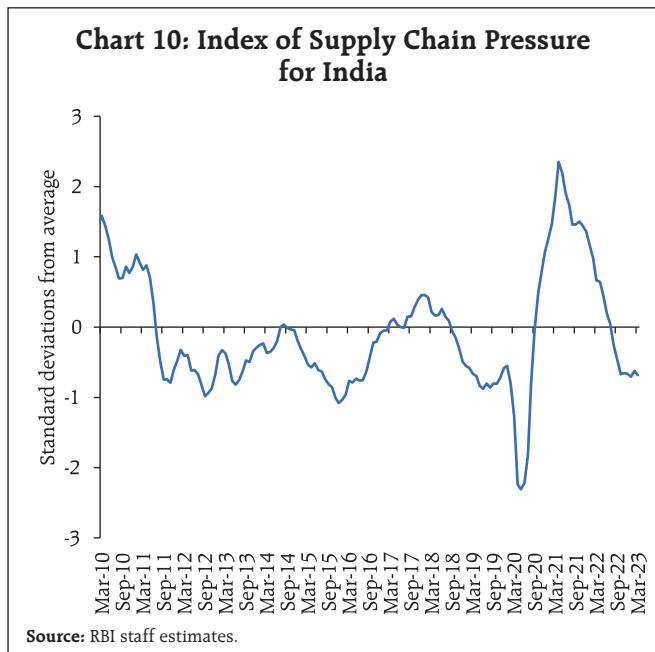


Federal Open Market Committee (FOMC) increased its target range for the federal funds rate by 25 bps, while providing forward guidance about additional policy tightening in the future. Following the turmoil in the banking sector, the US Fed in March announced a new lending facility – the Bank Term Funding Program (BTFP) – to provide banks liquidity for meeting the needs of all their depositors. Additionally, the Federal Reserve, along with the Bank of Canada, the Bank of England, the Bank of Japan, the European Central Bank and the Swiss National Bank announced coordinated action on March 19, 2023 to enhance the provision of liquidity via standing US dollar liquidity swap line arrangements. Switzerland and Norway raised their key rates in March by 50 bps and 25 bps, respectively. The Reserve Bank of New Zealand and Bank of Israel hiked their policy rates by 50 bps and 25 bps, respectively, in their April meetings, while Australia, Korea and Singapore paused.

Most EME central banks have also pivoted to relatively less aggressive monetary policy actions (Chart 9b). In March 2023, Mexico and the Philippines raised their policy rates by 25 bps each while South Africa increased by 50 bps. Indonesia, Peru, and Romania in February held their key rates unchanged while Chile kept its policy rate the same in the April meeting. China, on the contrary, continued with its accommodative stance reducing the required reserve ratio (RRR) for financial institutions by 25 bps with effect from March 27, 2023.

III. Domestic Developments

Amidst an uncertain global outlook, the Indian economy exhibited signs of resilience, as indicated by various high-frequency indicators. Our index of supply chain pressures for India (ISPI) continued to remain at levels below its historical average since July 2022 (Chart 10).



The economic activity index (EAI), which tracks the movements of a set of 27 high-frequency indicators, indicated that overall economic activity in Q4:2022-23 may have gathered some momentum in February (Chart 11a). Our nowcast of real GDP

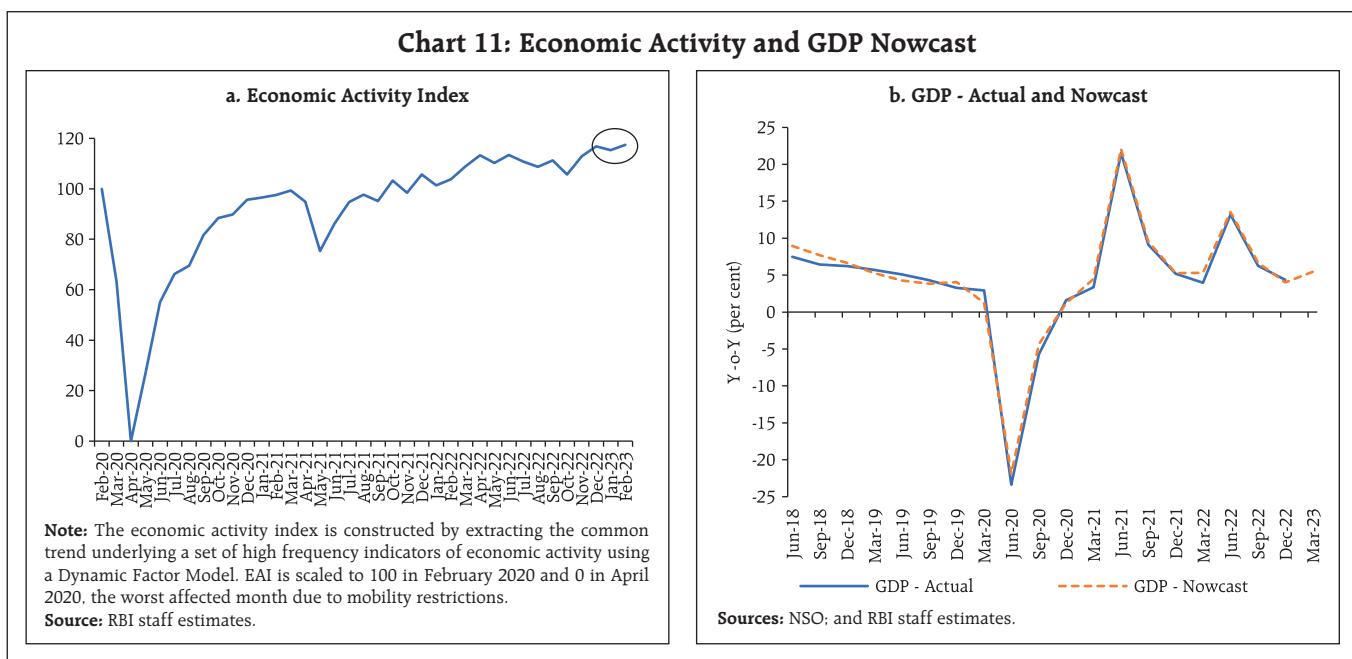
growth for Q4:2022-23 is placed at 5.4 per cent (Chart 11b).

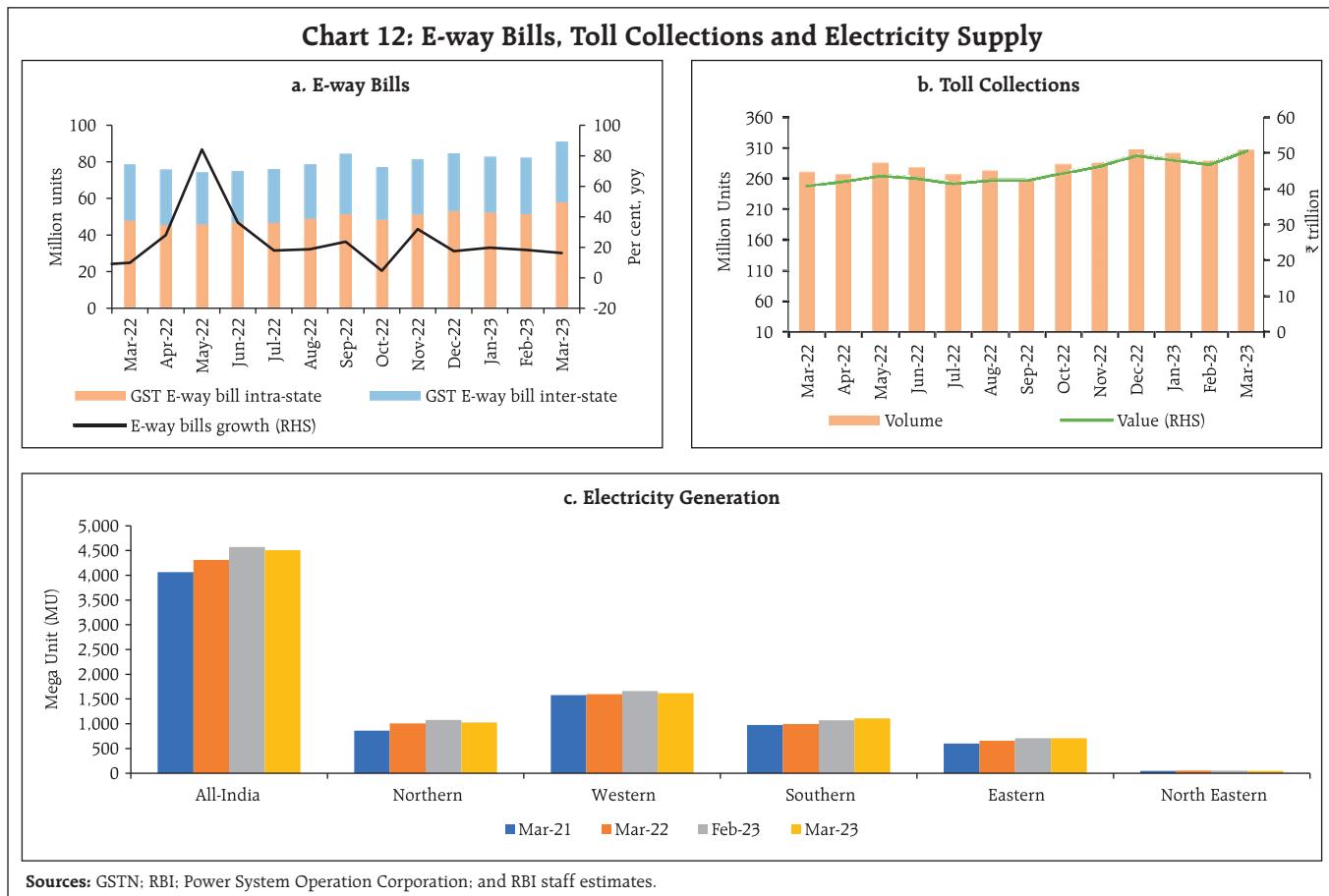
Aggregate Demand

Among the lead indicators of demand conditions, E-way bill volumes and toll collections remained ebullient, scaling new highs in March 2023 (Chart 12a and 12b). Average electricity generation, however, moderated in March 2023, partly on account of the temperature relief provided by unseasonal rains (Chart 12c).

In March 2023, the daily average consumption of fuel further edged up to a new peak (Chart 13a). Retail sales of vehicles, as proxied by vehicle registrations, recorded a four-month high in March due to increases in both non-transport and transport vehicles' registrations (Chart 13c).

Two wheeler sales went up by 7.7 per cent y-o-y, with the electric vehicle (EV) segment recording highest ever sales at 1.4 lakhs in March. Sales of motorcycles and three wheelers were also spurred





by healthy demand during the *Holi* festival followed by higher dispatches before BS6 phase II transition (to be implemented from April 2023).⁶ Tractor sales growth remained in double digits for the fourth consecutive month, aided by better crop prices (Chart 13d).

In the tourism sector, the hotel occupancy rate crossed 70 per cent for the first time since the onset of the pandemic (Chart 14a). Average room rates also increased sharply in February 2023 over a year ago, aiding growth in revenue per available room (RevPAR) [Chart 14b].

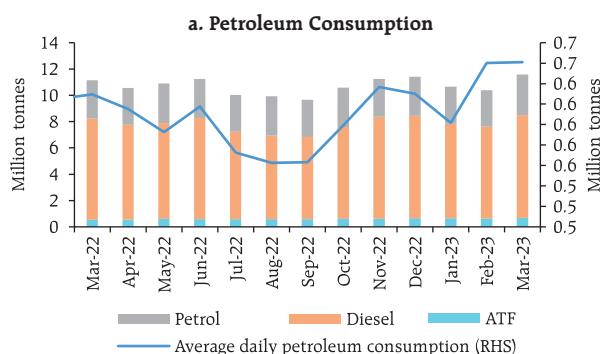
Improvements in demand conditions led to capacity augmentation efforts by the business sector as reflected in their investment intentions (Chart 15). There was a surge in the quarterly average of the total cost of projects sanctioned by banks and financial institutions.

Households' assessment of economic conditions reported in the Reserve Bank's consumer confidence survey (CCS) shows continued rise in consumer confidence from its historic low in mid-2021 (Chart 16). The major takeaways from the Reserve Bank's enterprise surveys are summarised in Annex 1.

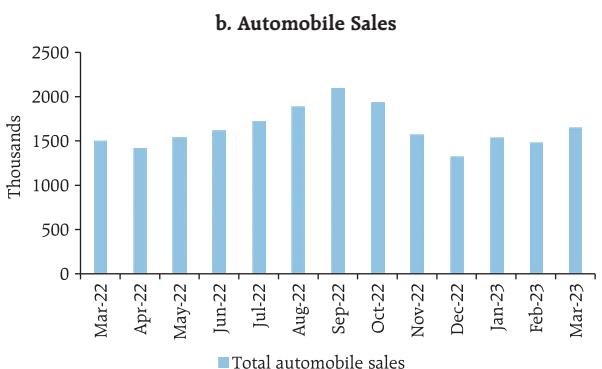
According to the Centre for Monitoring Indian Economy (CMIE), the all-India unemployment rate

⁶ <https://auto.economictimes.indiatimes.com/news/industry/auto-wholesales-in-march-pv-tractor-record-best-ever-2w-recovery-yet-to-happen/99206949>

Chart 13: Automobile Sector Indicators

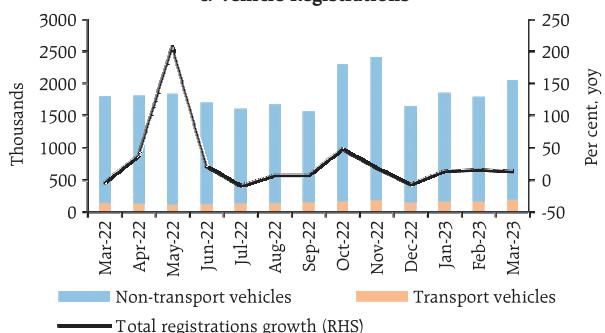


Sources: Petroleum Planning and Analysis Cell; and RBI staff estimates.



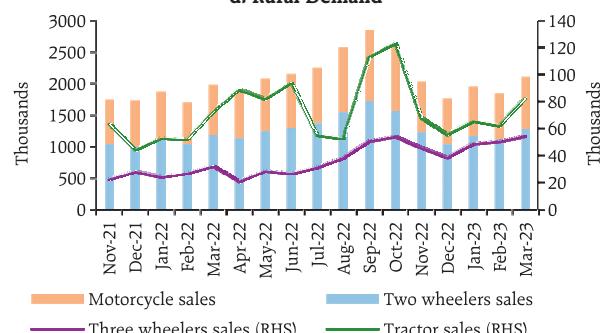
Sources: SIAM; and RBI staff estimates.

c. Vehicle Registrations



Sources: Ministry of Road Transport and Highways; and RBI staff estimates.

d. Rural Demand

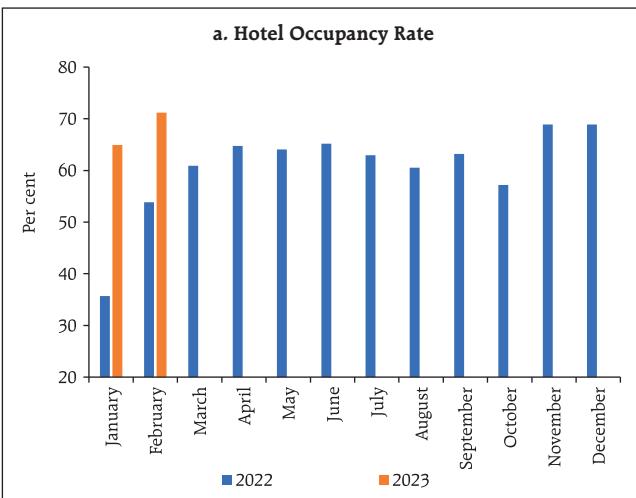


Sources: SIAM; TMA; and RBI staff estimates.

was at 7.8 per cent in March 2023, up from 7.5 per cent a month ago (Chart 17a). The employment rate

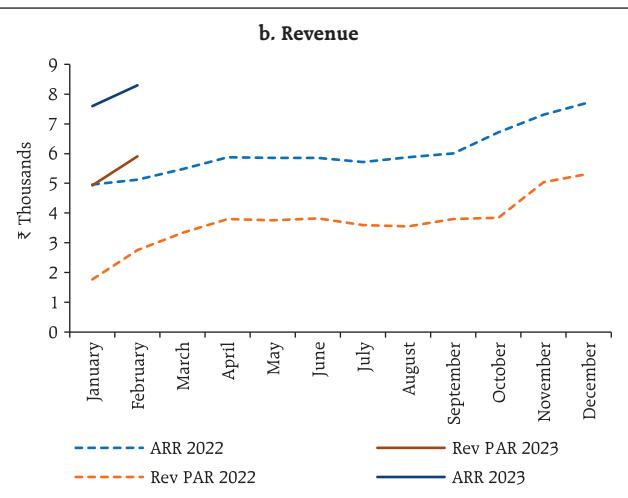
(ER) and labour force participation rate (LFPR) edged down (Chart 17b).

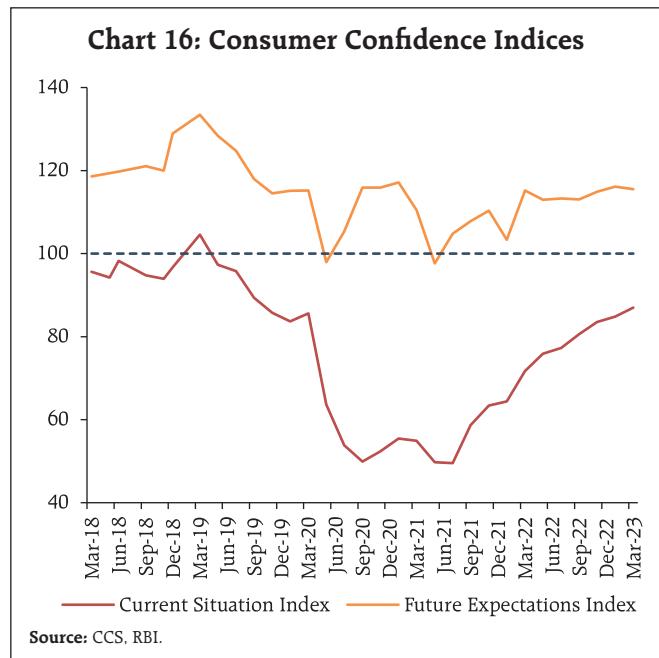
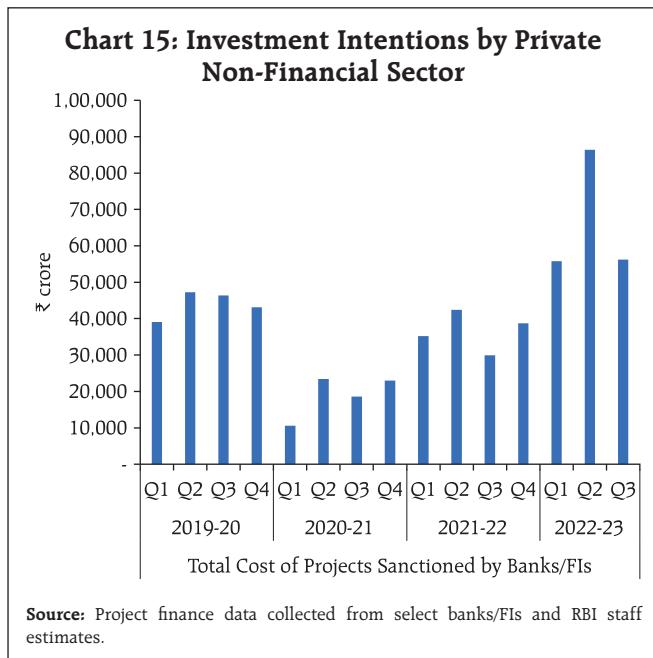
Chart 14: Hotel Sector Indicators



Note: ARR: Average room (room revenue divided by the number of rooms sold/occupied); RevPAR: Revenue per Available Room (rooms revenue divided by the number of rooms available in a given period).

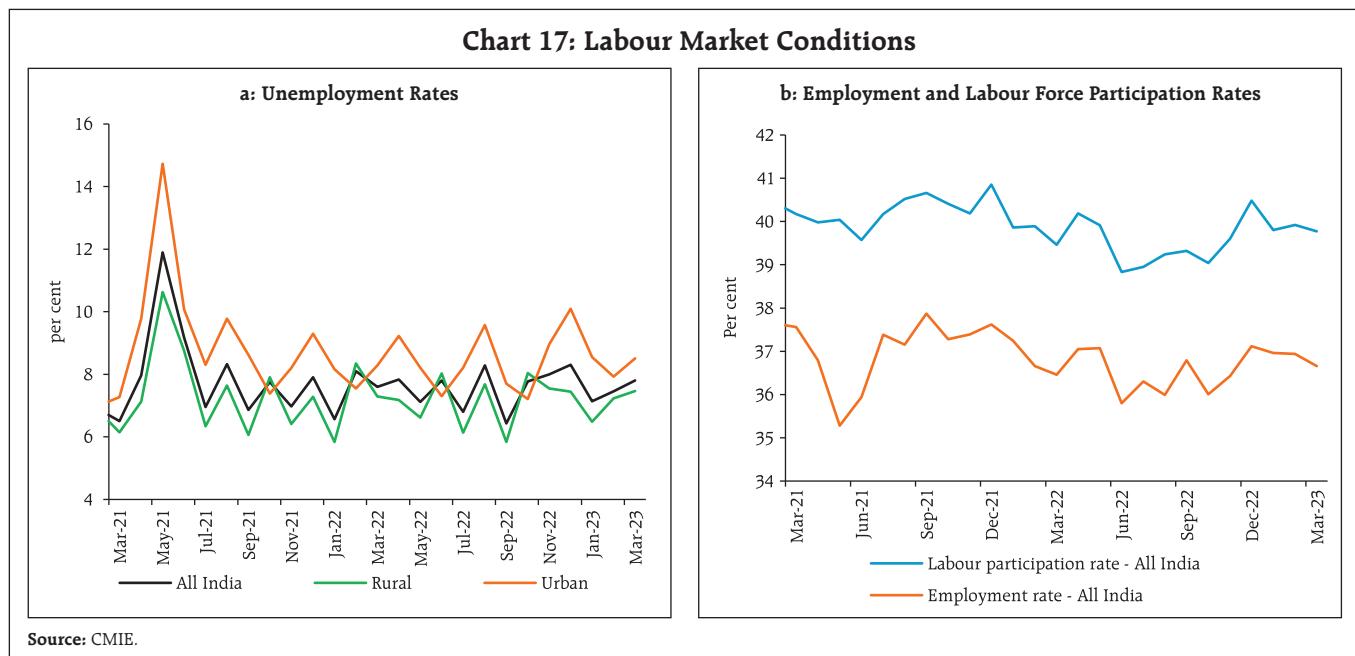
Sources: HVS Anarock; and RBI staff estimates.

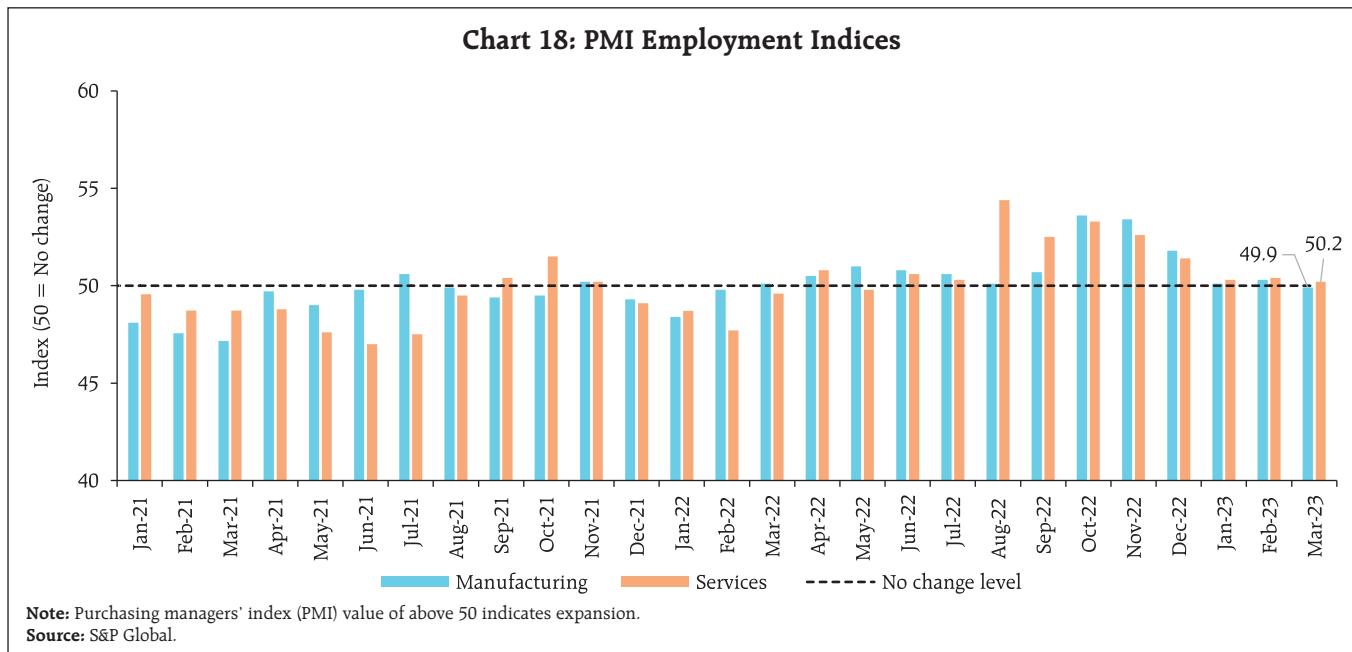




Employment in the organised manufacturing sector as polled by the PMI for manufacturing weakened in March 2023 for the first time since March 2022 (Chart 18). Services sector employment, however, recorded marginal expansion in March.

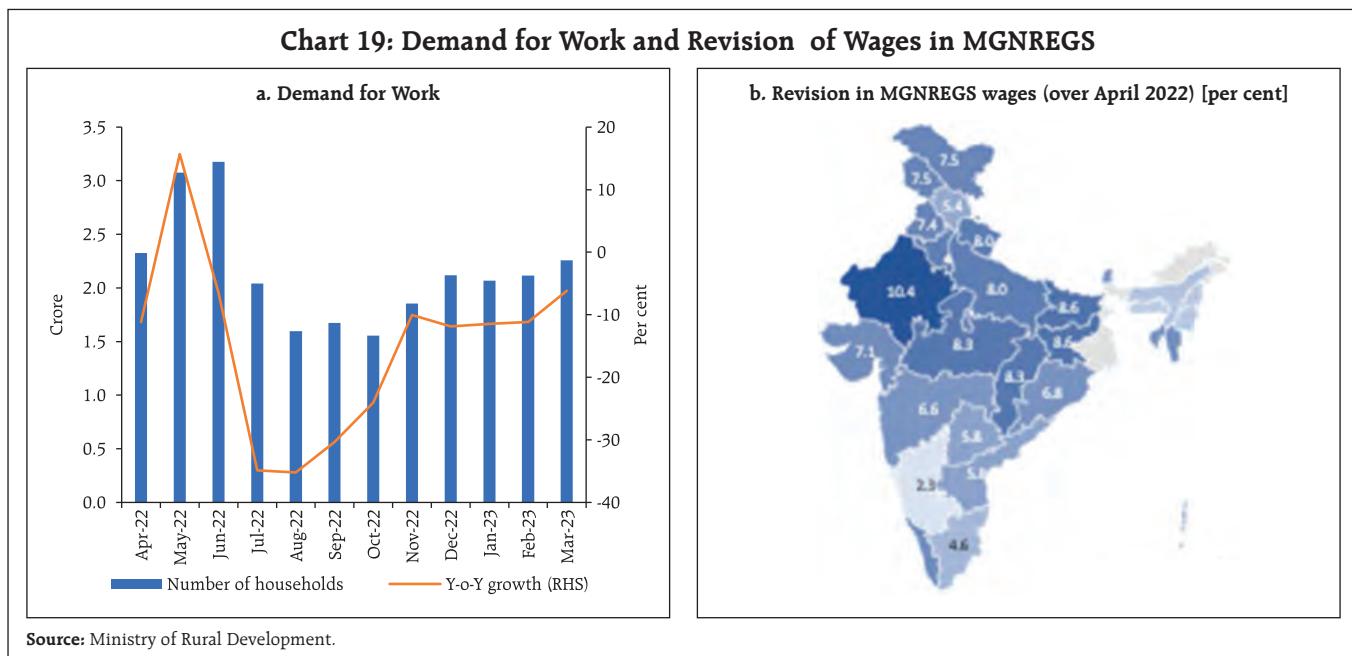
With the end of *rabi* sowing, the demand for work under Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) recorded a slight uptick in March month-on-month (m-o-m). The y-o-y growth rate remains in negative territory, indicating



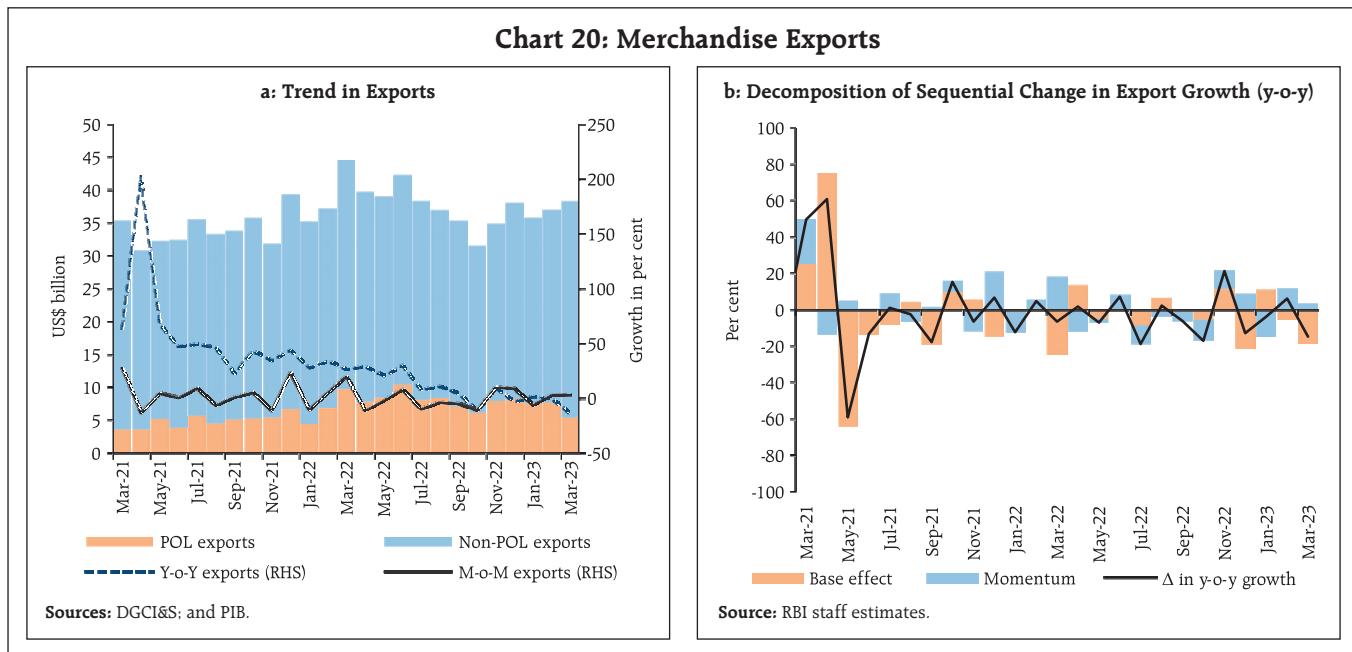


improved rural labour market conditions as compared with a year ago (Chart 19a). To protect rural labourers from the hardships of higher inflation, the daily wages under MGNREGS have been revised by the central government by 2 to 10 per cent (₹ 7 - ₹ 26/day) with effect from April 01, 2023 (Chart 19b).

India's merchandise⁷ exports grew by 3.7 per cent on a m-o-m basis, reaching a 9-month high of US\$ 38.4 billion in March 2023 (Chart 20). On a y-o-y basis, exports registered a contraction of 13.9 per cent due to an unfavourable base effect. Overall, merchandise exports reached an all-time high of US\$ 447.5 billion



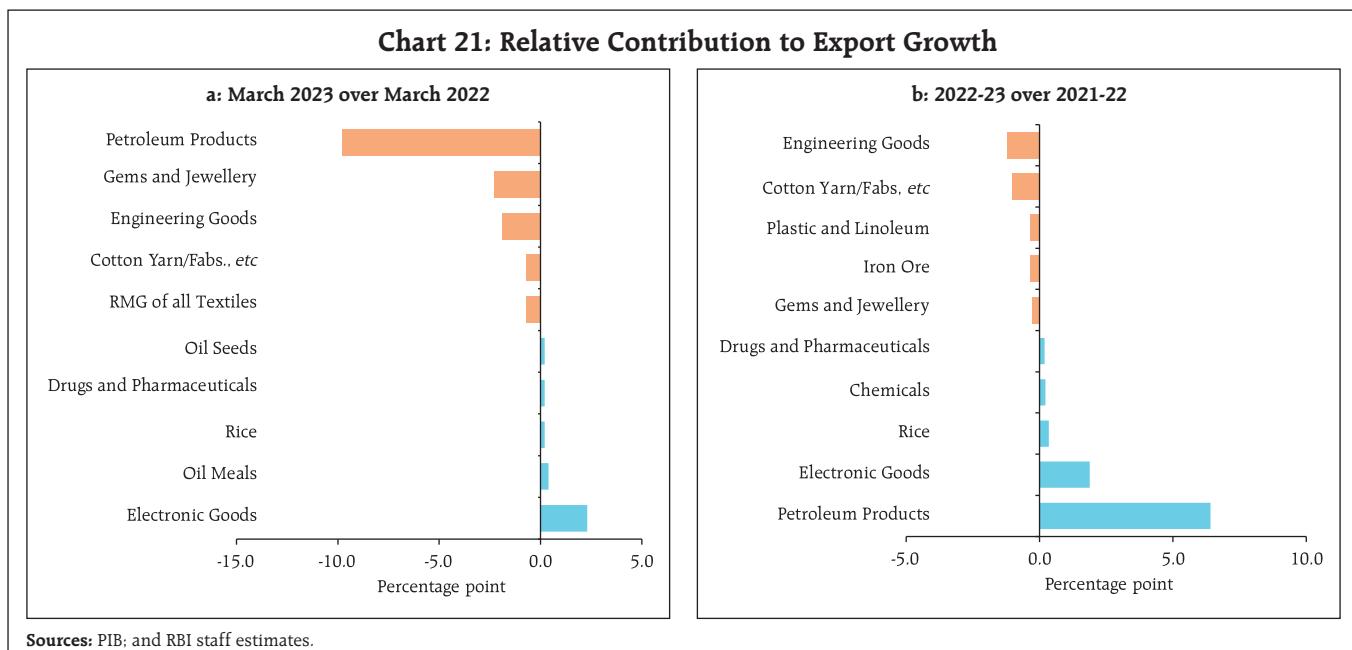
⁷ The analysis of merchandise trade is as per the press release dated April 13, 2023, by the Ministry of Commerce and Industry.



in 2022-23, growing by 6.0 per cent over their level in the previous year.

Out of the 30 major commodities, 17 commodities accounting for 68.7 per cent of the export basket witnessed y-o-y contraction in March 2023. Petroleum products, gems and jewellery and engineering goods dragged exports down whereas electronic goods, oil

meals and rice supported export growth in March (Chart 21a). Non-oil exports contracted for the eighth consecutive month in March. On an annual basis, petroleum products were the major driver of export growth in 2022-23, with their share in total exports increasing to 21.1 per cent *vis-à-vis* 16.0 per cent in 2021-22. Among non-oil products, electronic goods, rice and chemicals led export growth whereas

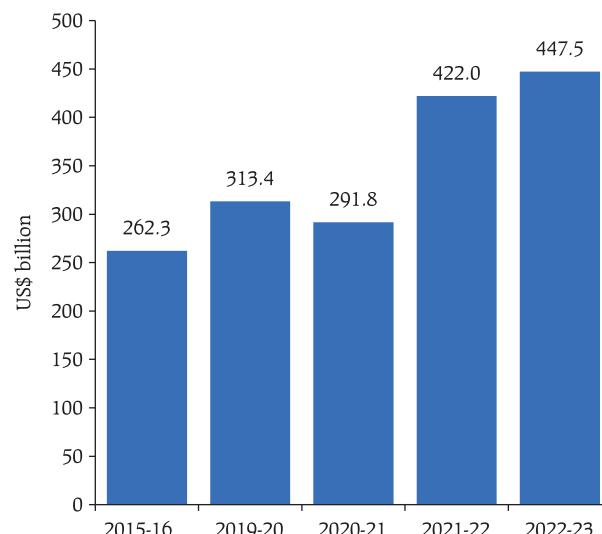


engineering goods, cotton yarn, fabrics, plastic and linoleum contributed negatively to exports in 2022-23 (Chart 21b).

India registered record exports of defence goods in 2022-23, with exports having risen ten-fold in a span of seven years leveraging on policies such as "*Atmanirbhar Bharat*" (Chart 22). Recent initiatives, including the introduction of an open general export license policy, simplified end-to-end online export authorisation and establishment of defence industrial corridors augur well for India's defence exports going forward.

Despite the recent moderation, India's merchandise exports recorded a compound annual growth rate (CAGR) of 7.9 per cent between 2015-16 and 2022-23 under the aegis of the previous Foreign Trade Policy (FTP) that was in place till March 2023 (Chart 23). The Government announced FTP 2023 on March 31, 2023 which aims at reducing transaction costs and encouraging ease of doing business through process re-engineering and automation. The FTP will

Chart 23: India's Merchandise Exports



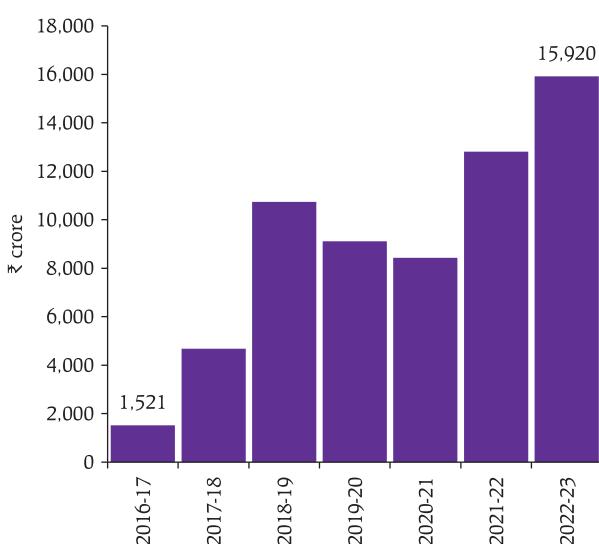
Sources: DGCI&S; and PIB.

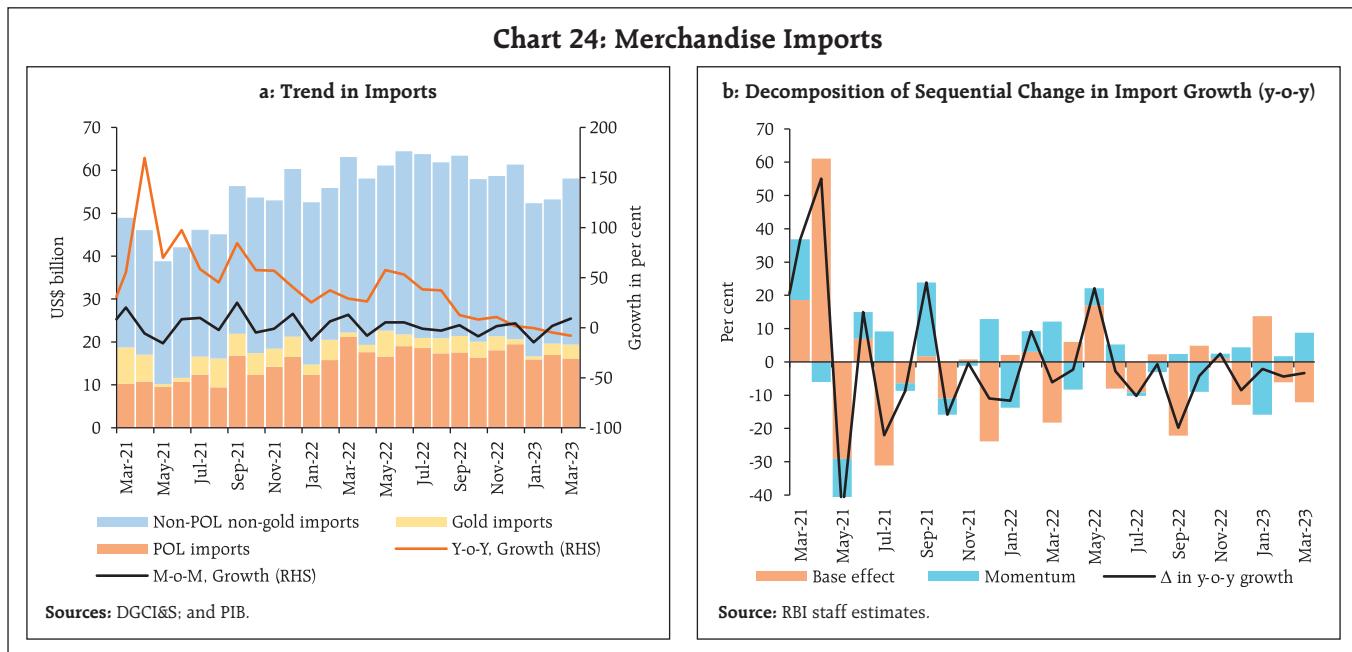
be based on time-tested schemes facilitating exports and is responsive to the emerging requirements of trade.

Merchandise imports at US\$ 58.1 billion in March 2023 recorded a positive momentum of 9.1 per cent (Chart 24). On a y-o-y basis, however, they contracted for the third consecutive month on account of a large base effect.

At a disaggregated level, 14 major items accounting for 65.5 per cent of the import basket, registered contraction. Petroleum, oil and lubricants (POL), electronic goods and coal were the main items that dragged down overall imports while, gold, machinery, and metalliferous ores and other minerals contributed positively in March (Chart 25a). Overall, merchandise imports also reached an all-time high of US\$ 714.2 billion in 2022-23, increasing by 16.5 per cent y-o-y. Annual import growth was supported by POL, coal and transport equipment, while gold, medicinal products, and pearls, precious and semi-precious stones dragged down growth (Chart 25b).

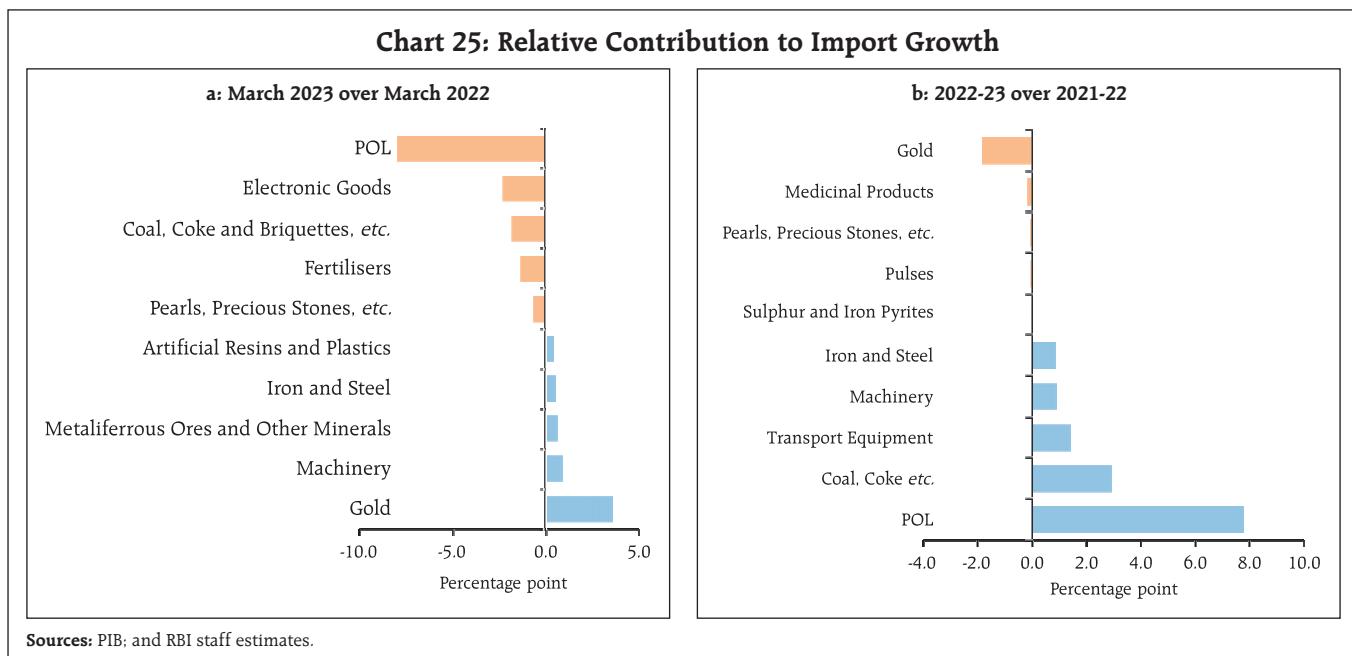
Chart 22: India's Defence Exports

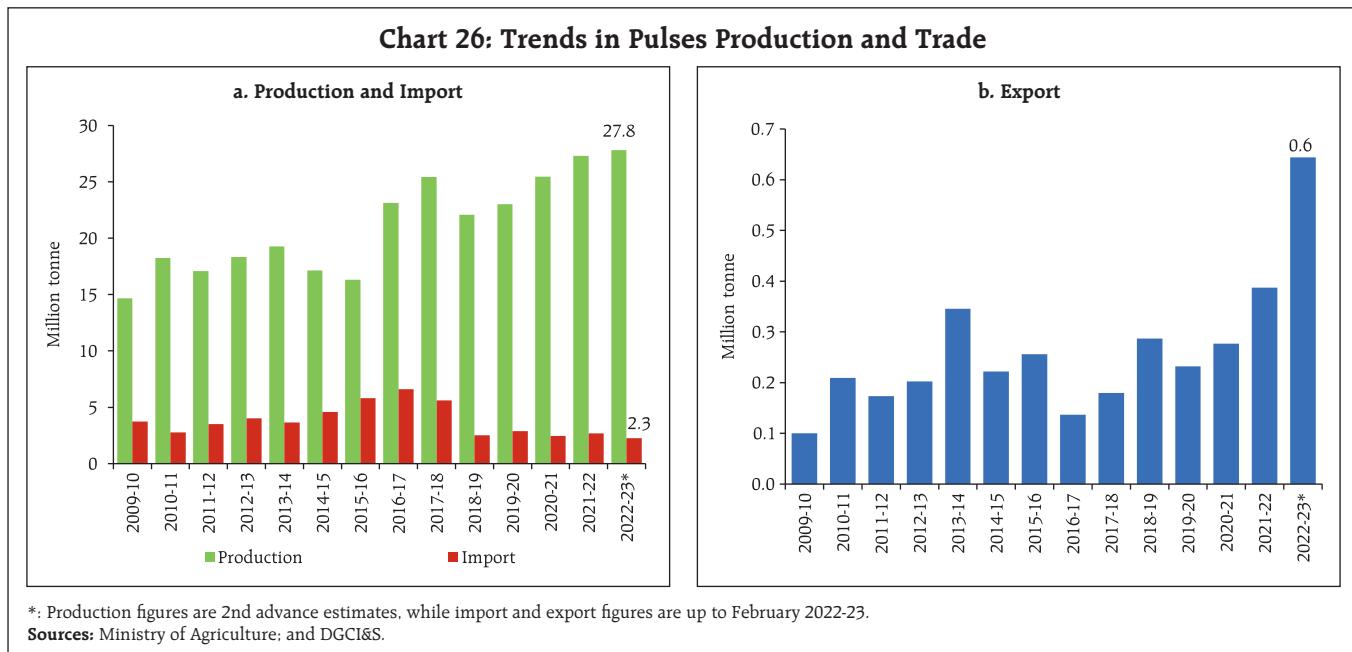




Among agricultural commodities, import dependence on pulses has come down in recent years. The import dependency ratio of imports to total consumption for pulses has reduced to about 8.0 per cent for 2022-23 from 19.0 per cent in 2013-

14. Production of pulses has increased significantly in recent years and is expected to have hit a record of 27.8 million tonne in 2022-23, helping India to become *Atmanirbhar* in pulses by further reducing import dependency while stimulating exports (Chart 26).





Due to the faster sequential increase in imports than in exports, the merchandise trade deficit increased to US\$ 19.7 billion in March 2023. In 2022-23, India's trade deficit increased to US\$ 266.8 billion, 1.4 times the level of the previous year. The increase in the deficit was mainly on account of

petroleum products, which were 22.0 per cent higher than a year ago (Chart 27).

During 2022-23 (April – February 2022-23), the financial position of the central government remained sound, helped by buoyant tax collections under major tax heads such as income tax, corporation tax and

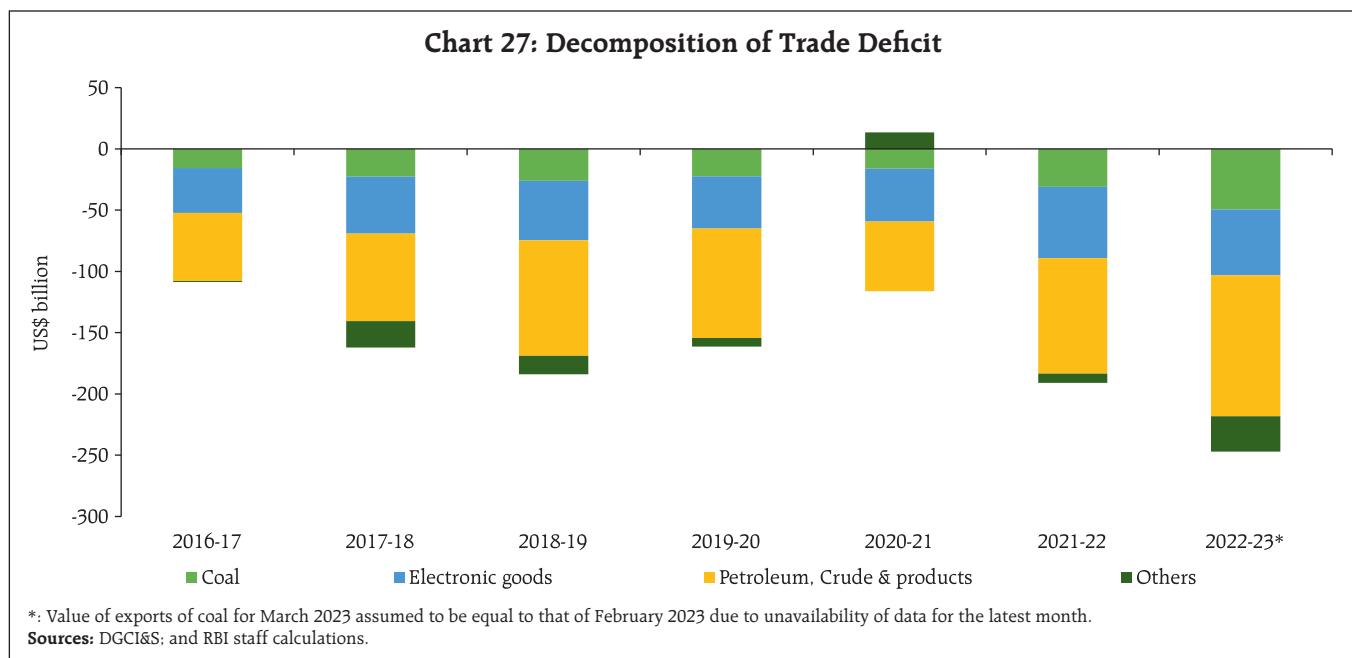
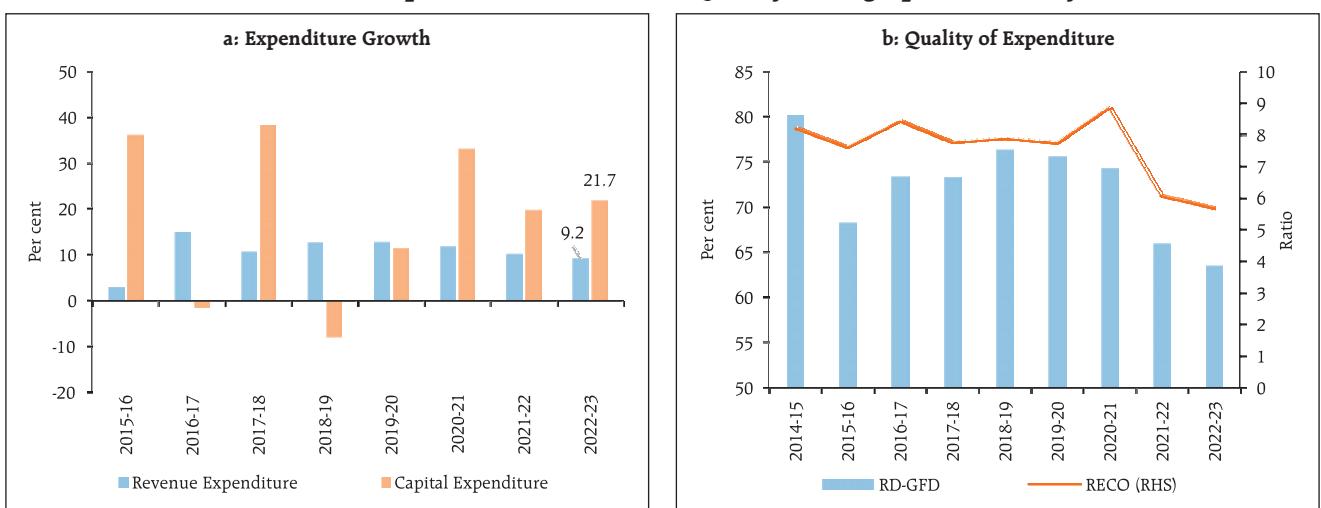


Chart 28: Expenditure Growth and Quality during April - February

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); Union Budget Documents and RBI staff estimates.

the goods and services tax (GST). On the expenditure front, despite the spike in spending on subsidies, the emphasis on capital expenditure has significantly improved the quality of expenditure. This is visible in the year-on-year (y-o-y) growth in capital outlay of 16.7 per cent *vis-à-vis* a growth of 9.2 per cent in revenue expenditure. This resulted in the reduction of the revenue expenditure-capital outlay (RECO) ratio, an indicator of quality of expenditure (Chart 28a and 28b).

As a result, the gross fiscal deficit (GFD) remained largely the same as in the corresponding period of the previous year (Chart 29).

As per the revised estimates (RE) released by the Government on February 1, 2023 revenue and capital expenditure are expected to grow (y-o-y) by 8.1 per cent and 22.8 per cent, respectively, during 2022-23. Revenue and capital expenditure would require to grow by 2.5 per cent and 28.2 per cent, respectively, during March 2023 to meet budgetary targets (Chart 30a and 30b).

On the receipts side, gross tax revenue recorded a growth of 12.0 per cent. Collections from excise duty recorded a contraction, attributable to the cut in excise duty on petrol and diesel during May 2022. Both direct and indirect taxes registered a y-o-y

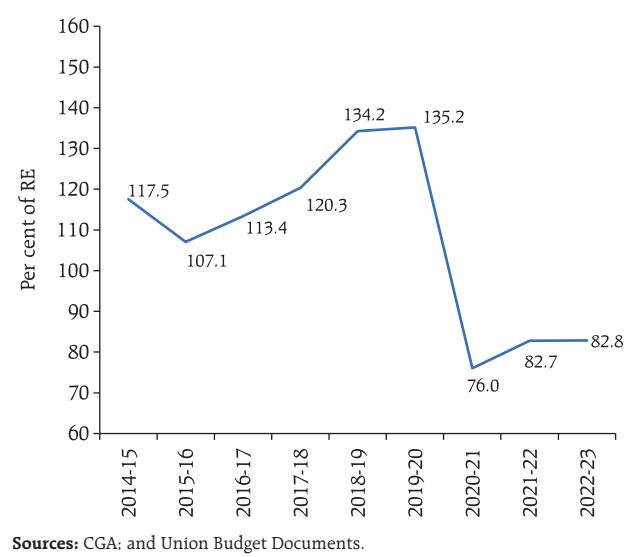
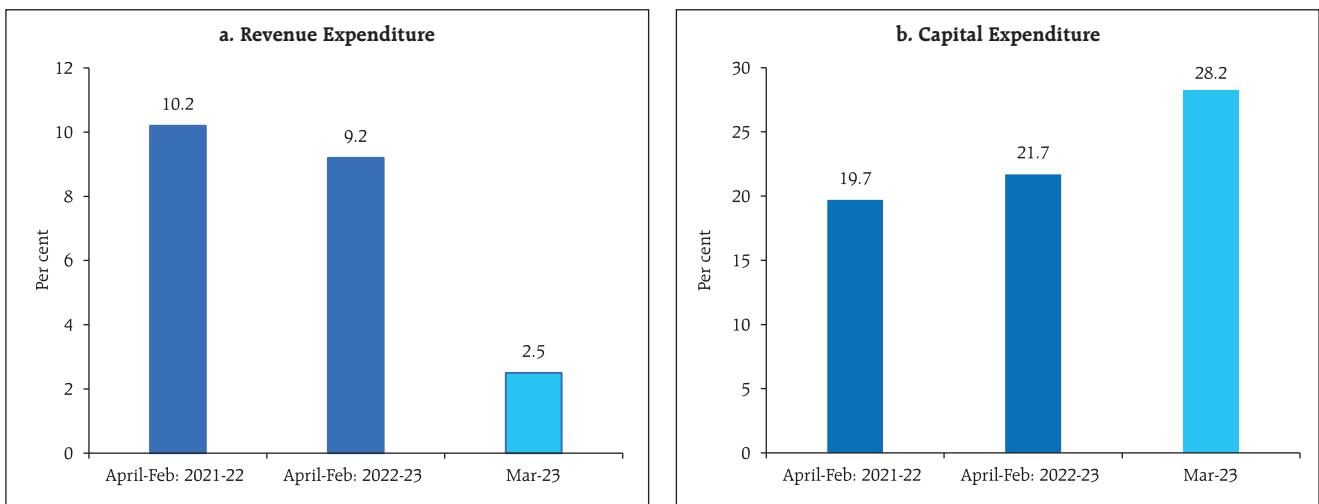
Chart 29: Fiscal Deficit of the Union Government during April-February

Chart 30: Implicit Expenditure Growth for March:2022-23

Note: Revenue and capital expenditure growth for March 2023 is the implied growth rate based on the revised estimates for 2022-23 and the actuals up to February 2023 (i.e., April-February 2022-23) data released by the CGA. Lighter blue shade bars denote the implied expenditure growth.

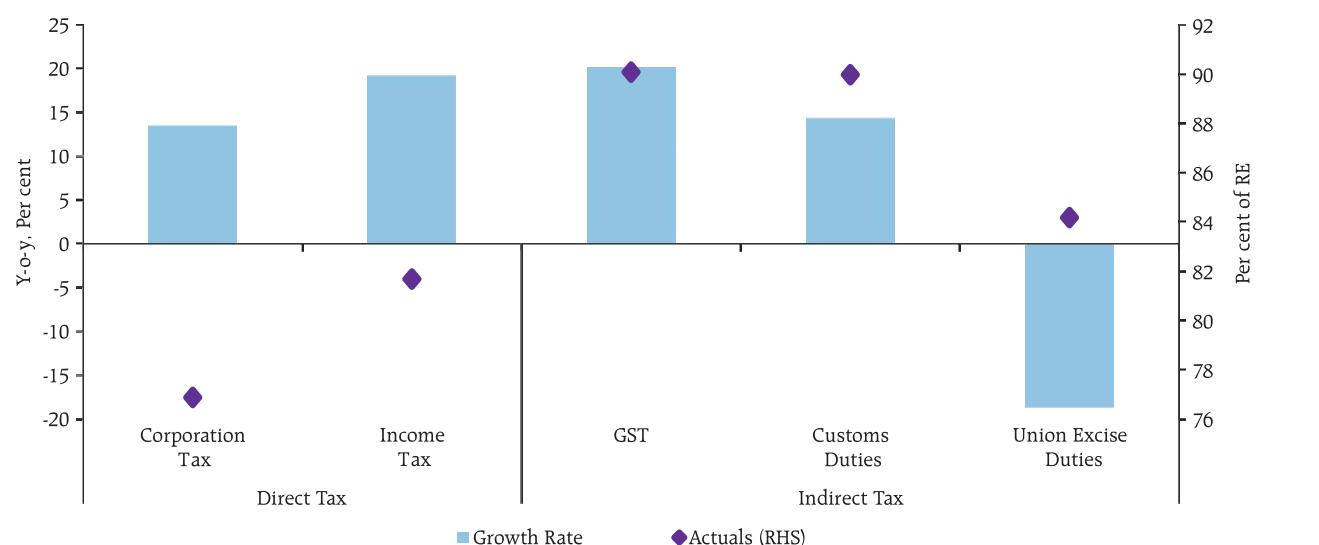
Sources: Union Budget Documents 2023-24; CGA and RBI staff estimates.

growth of 15.9 per cent and 8.1 per cent, respectively (Chart 31).

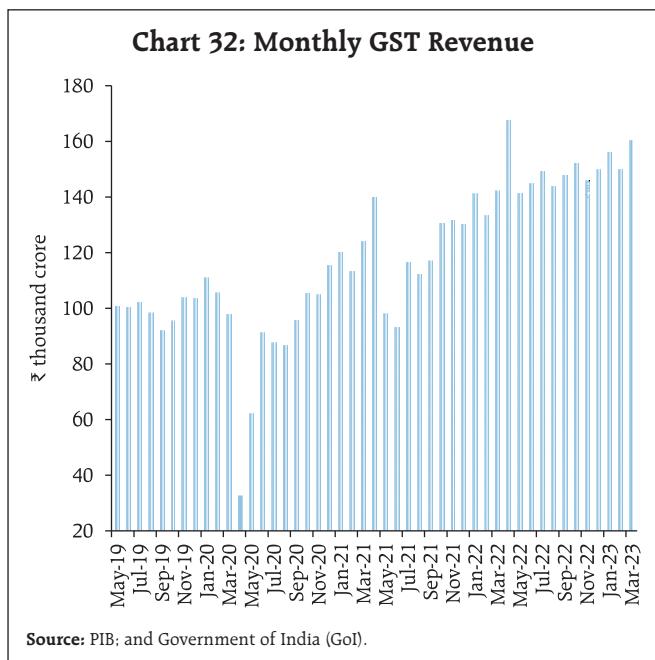
During April-February 2022-23, non-tax revenue reached 95.0 per cent of the RE for 2022-23, mainly due to higher dividend payment by central public sector undertakings (CPSEs). On the other hand, receipts from disinvestment stood at ₹38,671 crore, which was only 64.5 per cent of the RE for 2022-23. On a y-o-y

basis, however, receipts from disinvestment recorded an improvement, led by the successful initial public offer (IPO) of Life Insurance Corporation (LIC) in May 2022.

GST collections (Centre *plus* States) grew by 12.7 per cent (y-o-y) in March 2023. At ₹1.6 lakh crore, they were the second highest since the launch of the GST in July 2017 (Chart 32). Gross GST collections for

Chart 31: Tax Revenue during April-February

Sources: CGA; and Union Budget Documents.

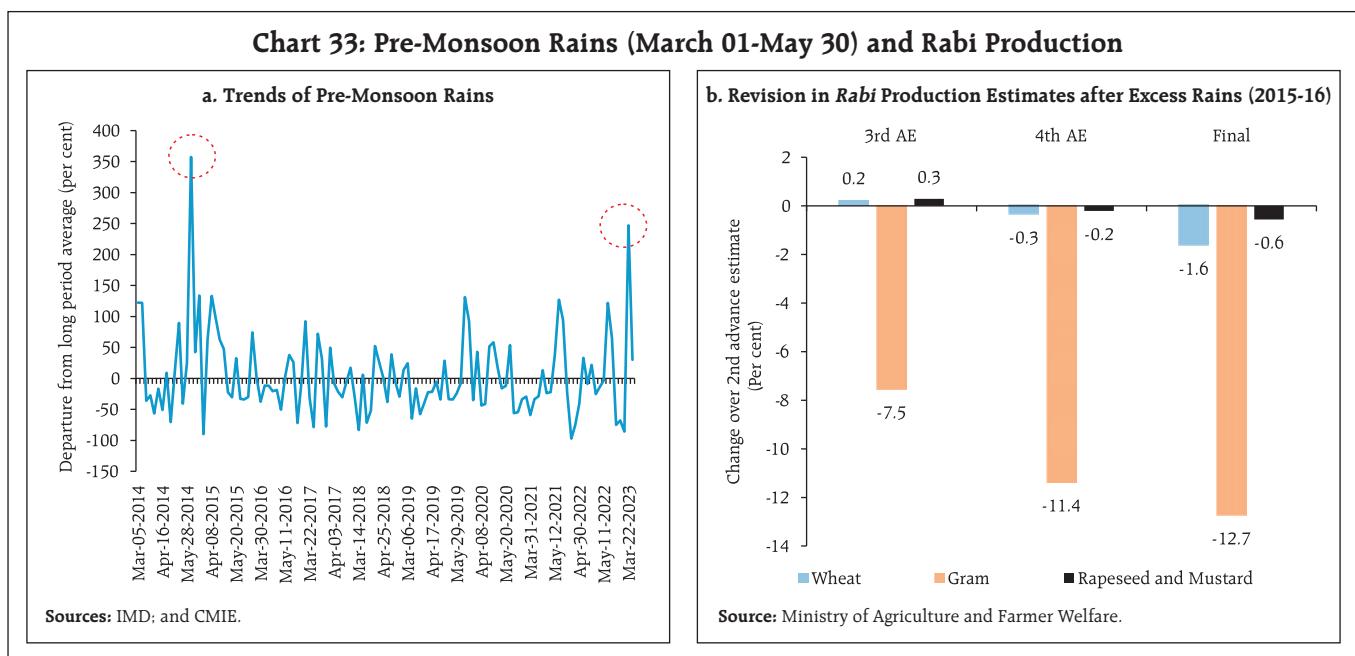


2022-23 grew by 21.4 per cent. This reflects an average gross monthly GST collection of almost ₹1.51 lakh crore during 2022-23 vis-à-vis ₹1.24 lakh crore in the previous year.

Aggregate Supply

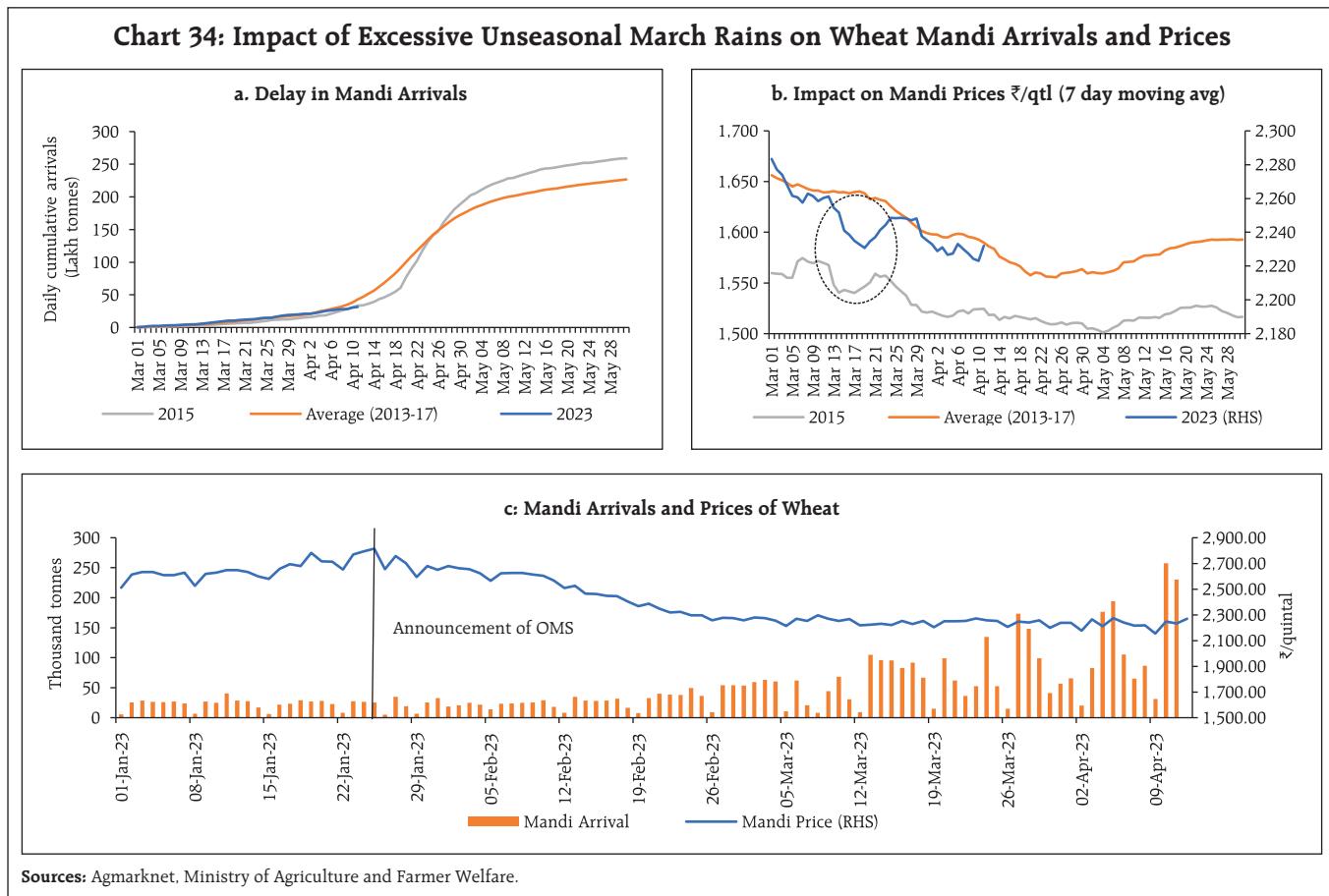
Unseasonal rain in the latter half of March was of the largest magnitude since 2015 (Chart 33a). While it posed a threat to the standing *rabi* crops, it weakened the heatwaves building up since February 2023 thereby minimising the shrinking of grains as what happened last year. During a similar episode in March 2015, the loss in production⁸ was marginal in the case of wheat and mustard, but substantial for gram (Chart 33b). Although overall production of wheat did not face significant decline, *mandi* arrivals were delayed by around 10 to 15 days along with a spike in prices (Chart 34a and 34b).

Open market sales (OMS) have cooled down the price of wheat and *atta* all over the country. The robust procurement of new produce from the ongoing harvest is expected to aid the process further (Chart 34c).⁹ The target for public procurement of wheat for the upcoming *rabi* marketing season of 2023-24 is set at 341.5 lakh tonne. As of April 11, 2023 procurement



⁸ The amount of damage to production could be gauged from the differences between production estimate which were released before the occurrence of rains (second advance estimates (AE) in February) and those released afterwards (3rd AE, 4th AE and Final Estimates) which would have accounted for the damages, if any.

⁹ <https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1905607>



stood at 16.7 lakh tonne (as compared with 20.5 lakh tonne on the corresponding date of the previous year) with the bulk (88.4 per cent) of the procurement being from Madhya Pradesh.

As regards rice, the cumulative procurement in the *kharif* marketing season (October 01, 2022 – April 11, 2023) stood at 493.3 lakh tonne, 2.4 per cent lower than last year. The public stocks stood at 3.2 times the buffer norm for rice and 1.1 times for wheat as of April 01, 2023. *Chana* stocks at 1.2-1.3 million tonnes¹⁰ are also sufficient to provide a buffer against production shocks.

Following an estimated 13.1 per cent y-o-y decline in *tur* production for 2022-23 (as per second advance

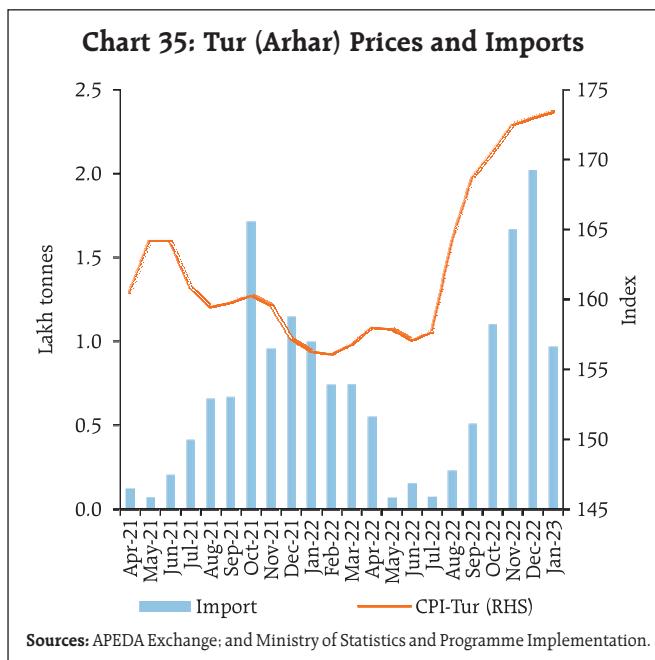
estimates), the Government extended its policy of free imports (which was earlier till March 31, 2023) by another year.¹¹ Despite regular arrivals of import, *tur* prices have remained significantly higher than in the previous year (Chart 35).¹² In order to monitor the stock of *tur* held by entities such as importers, millers, stockists, and traders, the Government has constituted a committee which would be working closely with the State Governments.

As per the India Meteorological Department's (IMD) long range forecast released on April 11, 2023 the south west monsoon (SWM) is likely to be normal this year at 96 per cent of the long period average (LPA) which has boosted *kharif* crop prospects.

¹⁰ https://www.business-standard.com/economy/news/80-new-wheat-arriving-in-mandis-till-last-week-had-high-moisture-content-123040200682_1.html

¹¹ <https://content.dgft.gov.in/Website/dgftprod/e364ae79-c8e4-42a1-9487-2b1c60a29a60/Noti%2052%20Eng.pdf>

¹² <https://pib.gov.in/PressReleasePage.aspx?PRID=1911140>

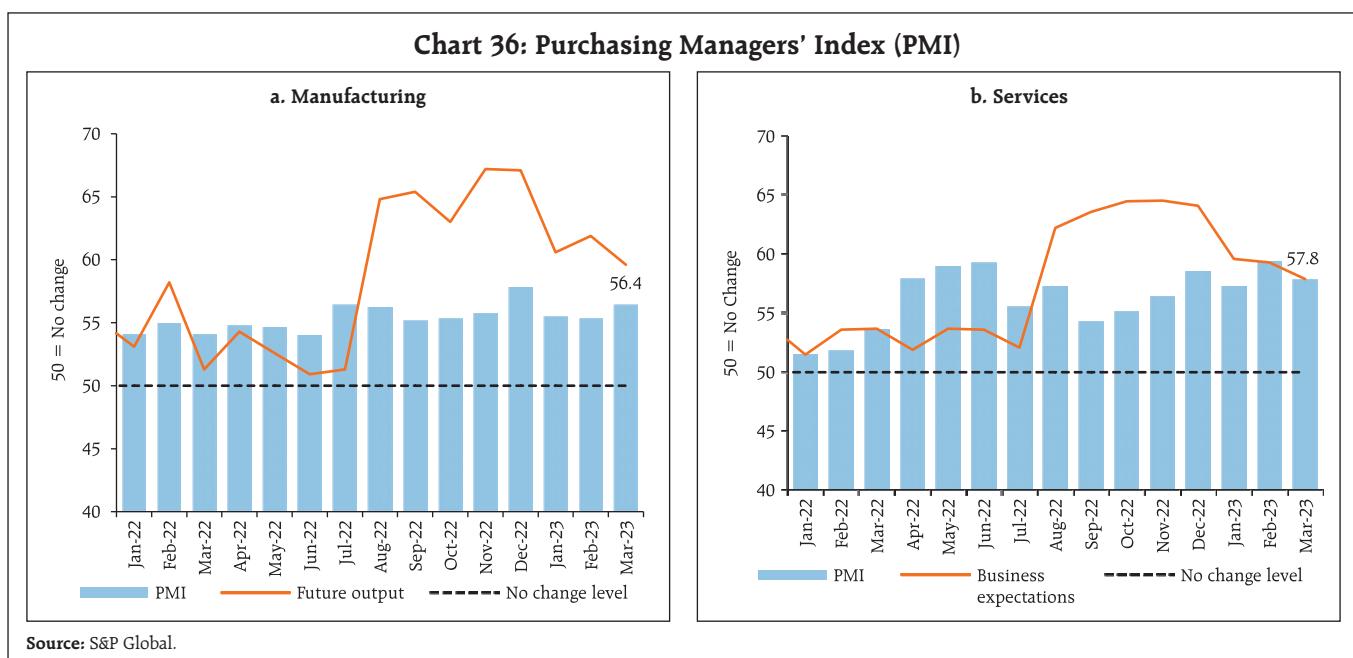


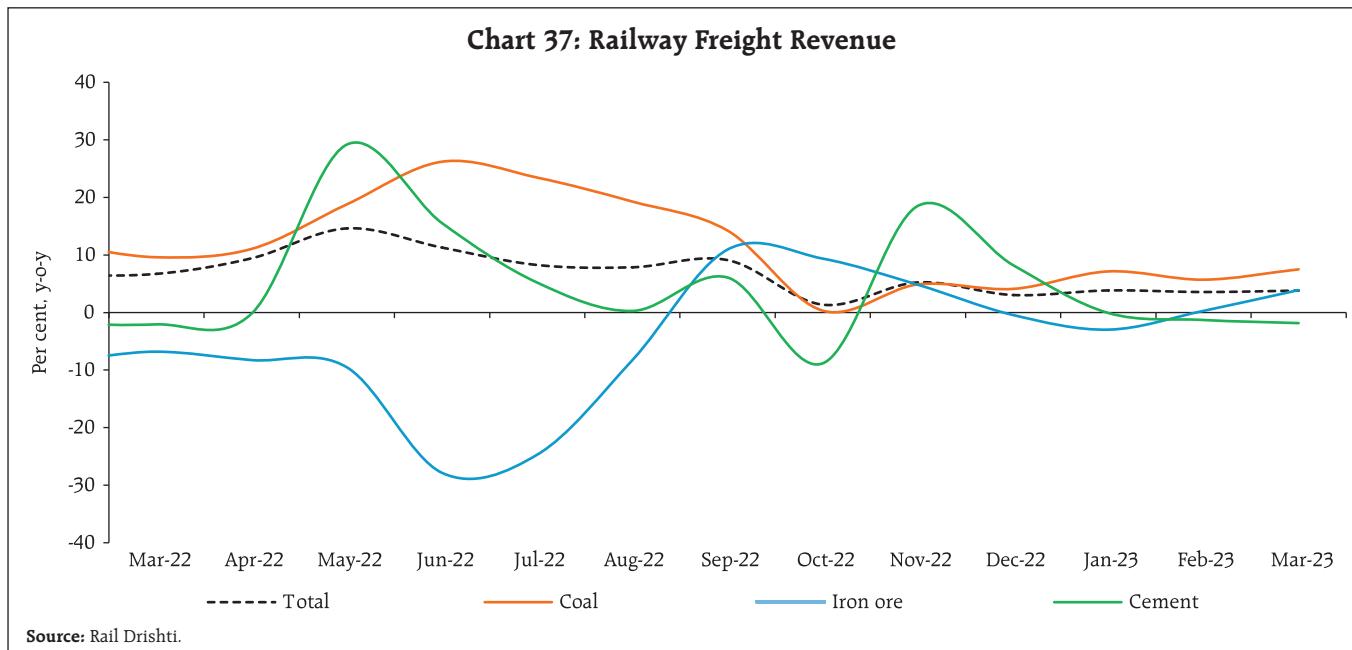
The forecast suggests a 49 per cent probability for rainfall to be normal or above for the country as a whole. Currently, *La Niña* conditions have changed

to neutral over the equatorial Pacific region, but *El Niño* conditions are likely to develop in the second half of the season which is generally associated with deficient SWM rains. However, positive Indian Ocean Dipole (IOD) conditions could offset the impact of *El Niño*.

In the industrial sector, the headline PMI for manufacturing at 56.4 in March 2023 expanded at the fastest rate in three months led by a pick-up in output and new orders (Chart 36a). Output in the service sector remained in the expansionary zone at 57.8 in March 2023 albeit with a moderation from 59.4 a month ago, due to softening in new business, future activity, and employment (Chart 36b).

In the services sector, railway freight earnings remained largely flat in March, as freight traffic of coal and container services recorded expansion whereas cement and foodgrain recorded contraction (Chart 37).





In the construction sector, activity remained robust, with steel consumption sustaining growth in March (Chart 38). Steel consumption recorded double-digit growth in March, partly aided by favourable base effects.

High-frequency indicators in the service sector exhibited resilience in March 2023 with domestic

transport of goods picking up as reflected by growth in railway freight traffic and E-way bill volumes (Table 2).

In terms of regional policy initiatives, Karnataka has amended the state labour laws which now allow industries to extend working hours to provide a boost to the local manufacturing sector. Tamil Nadu released

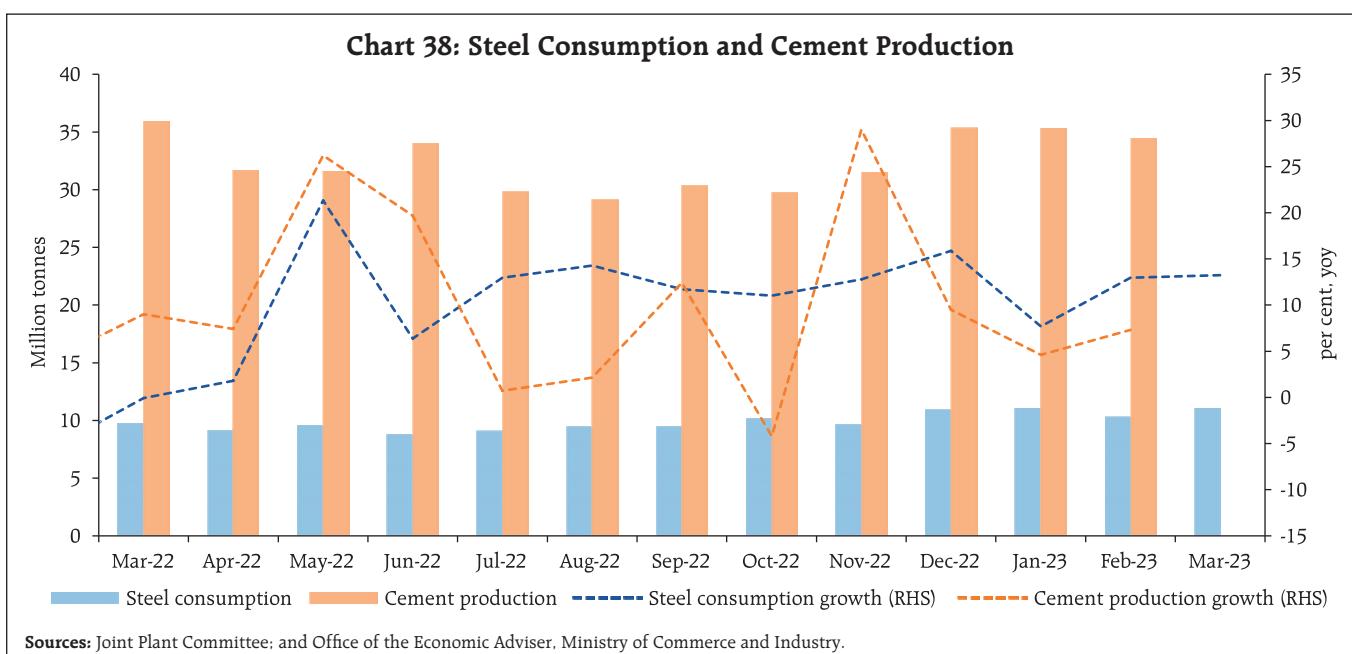


Table 2: High Frequency Indicators – Services

Sector	Indicator	Growth (y-o-y, per cent)					
		Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23
Urban Demand	Passenger Vehicles Sales	28.6	28.1	7.2	17.2	11.0	4.5
Rural Demand	Two Wheeler Sales	2.3	17.7	3.9	5.0	7.6	7.7
	Three Wheeler Sales	70.4	103.2	37.6	103.0	86.1	69.2
	Tractor Sales	6.8	6.5	25.6	24.4	20.0	13.7
Trade, hotels, transport, communication	Commercial Vehicles Sales		11.5			7.1	
	Railway Freight Traffic	1.4	5.2	3.1	3.8	3.6	3.8
	Port Cargo Traffic	3.1	1.8	10.3	12.2	11.8	
	Domestic Air Cargo Traffic	-8.0	3.7	-3.6	2.4	8.1	
	International Air Cargo Traffic	-18.7	-6.0	-7.4	-7.5	-1.7	
	Domestic Air Passenger Traffic	30.4	12.6	14.6	96.8	57.4	
	International Air Passenger Traffic	115.0	97.5	85.9	121.9	109.3	
	GST E-way Bills (Total)	4.6	32.0	17.5	19.7	18.4	16.3
	GST E-way Bills (Intra State)	12.0	37.7	23.2	24.1	22.2	20.7
	GST E-way Bills (Inter State)	-5.9	23.1	8.6	12.8	12.4	9.3
Construction	Tourist Arrivals	243.2	191.3	204.2	330.8	259.4	
	Steel Consumption	11.0	12.8	15.9	7.7	13.0	13.2
PMI Index#	Cement Production	-4.2	29.0	9.5	4.6	7.3	
	Services	55.1	56.4	58.5	57.2	59.4	57.8

Note: #: Data in levels.

Sources: CMIE; CEIC data; IHS Markit; SIAM; Airports Authority of India; and Joint Plant Committee.

its Organic Farming Policy 2023 to ensure agricultural sustainability. Tamil Nadu, Telangana, Madhya Pradesh, and Punjab have announced measures to provide compensation to farmers for crop loss due to unseasonal rains and hailstorms. As part of the State budget, Tamil Nadu has announced a monthly direct cash transfer scheme (₹1,000), targeting about one crore eligible women. Assam also has proposed to transfer ₹1,000 into all bank accounts of women members of self-help groups (SHGs) to incentivise them to maintain an active bank account and prepare a business proposal.

Inflation

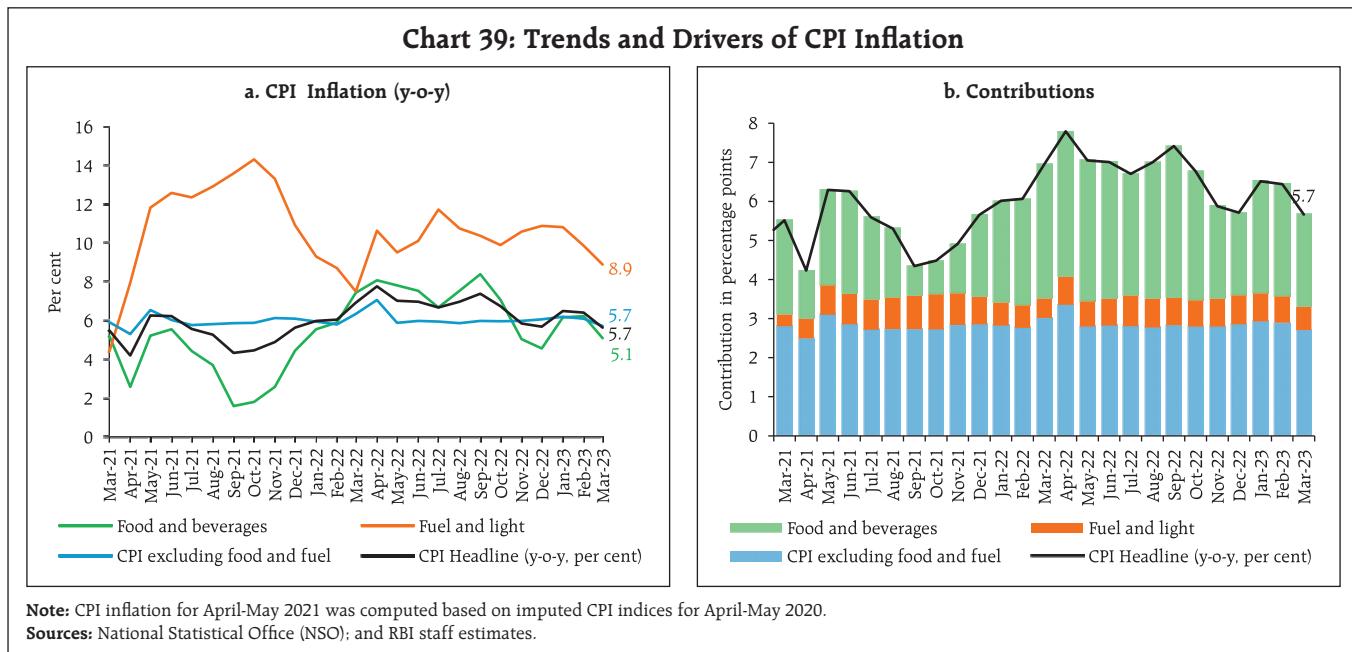
Inflation, as measured by y-o-y changes in the all-India consumer price index (CPI), moderated to 5.7 per cent in March 2023 from 6.4 per cent in February.¹³

¹³ As per the provisional data released by the National Statistical Office (NSO) on April 12, 2023.

The decline was broad-based across major groups viz., food, fuel and core (excluding food and fuel) [Chart 39a and 39b]. The fall in headline inflation by 78 bps between February and March was on account of a large favourable base effect (96 bps), which more than offset a positive price momentum of around 23 bps during the month.

Within major groups, the m-o-m increase in prices was of the order of 23 bps in food and beverages and 26 bps in the core group; while fuel group price index remained unchanged.

In terms of annual inflation, CPI food inflation moderated sharply to 5.1 per cent in March from 6.3 per cent in February on account of a favourable base effect of 132 bps, which overwhelmed a positive momentum of 23 bps. In terms of sub-groups, inflation moderated sharply in the case of milk, cereals, and sugar, driven by negative momentum (Chart 40). Spices, non-alcoholic beverages and prepared meals



also recorded lower inflation while edible oils, meat and fish registered deflation. Inflation in pulses, eggs

and fruits edged up while vegetables registered lower deflation in March (Chart 41).

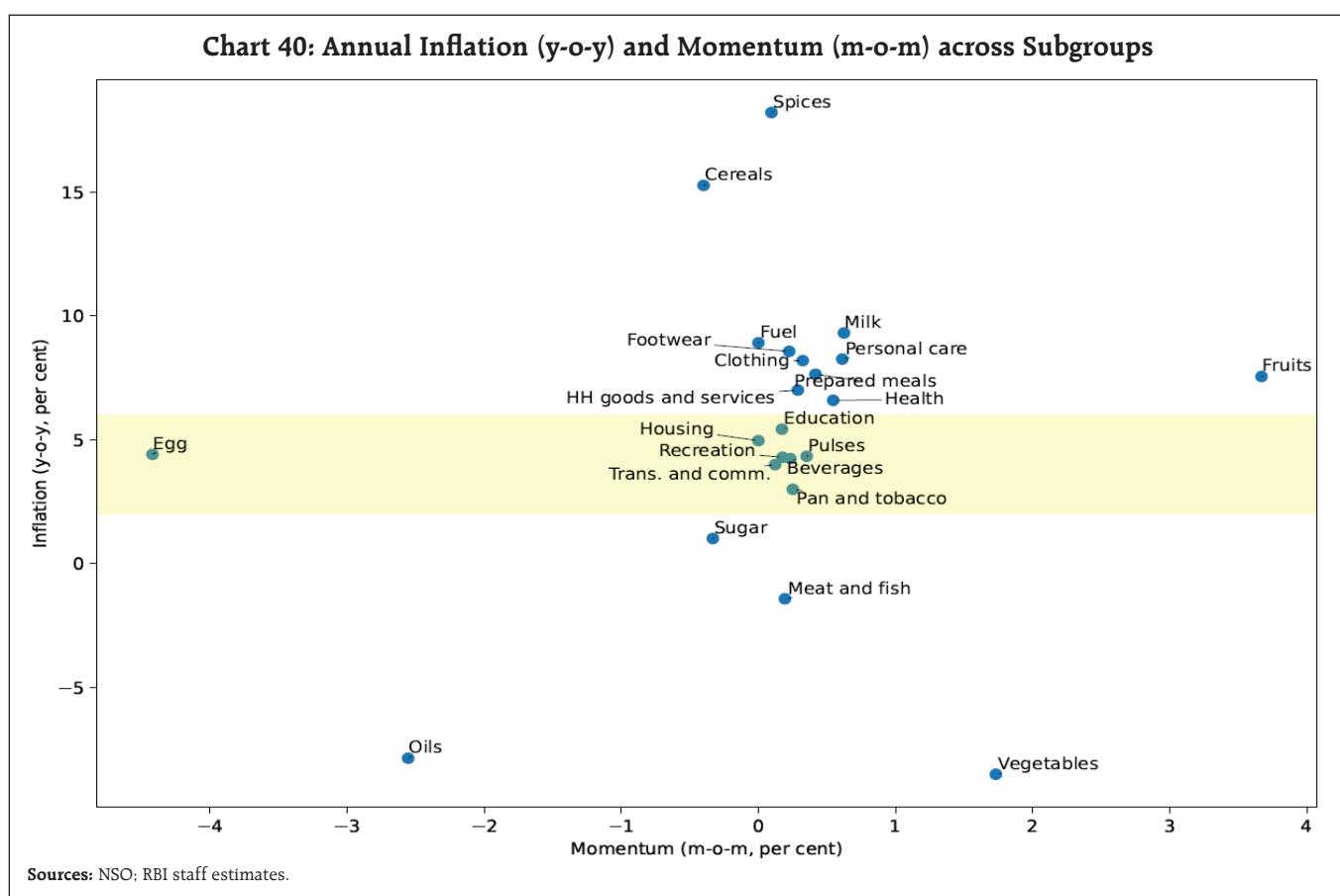
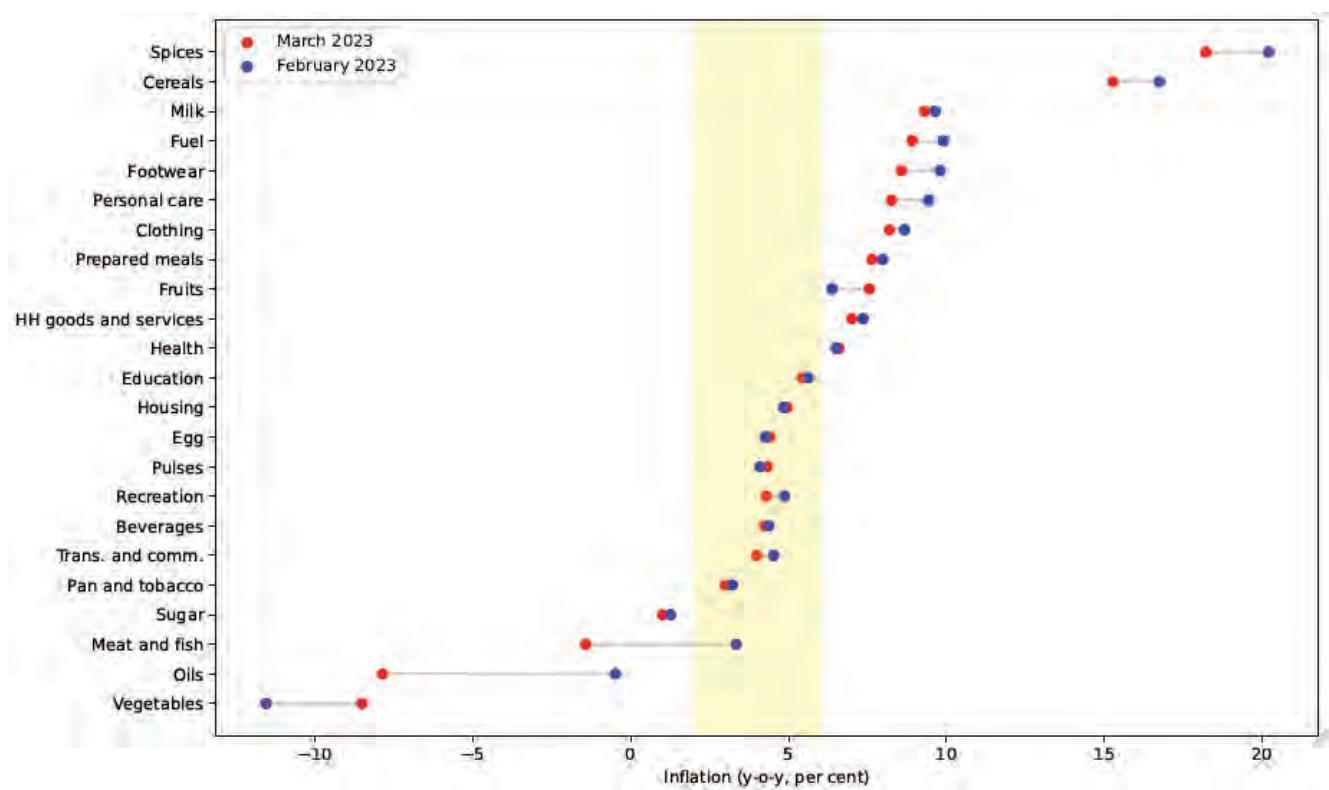


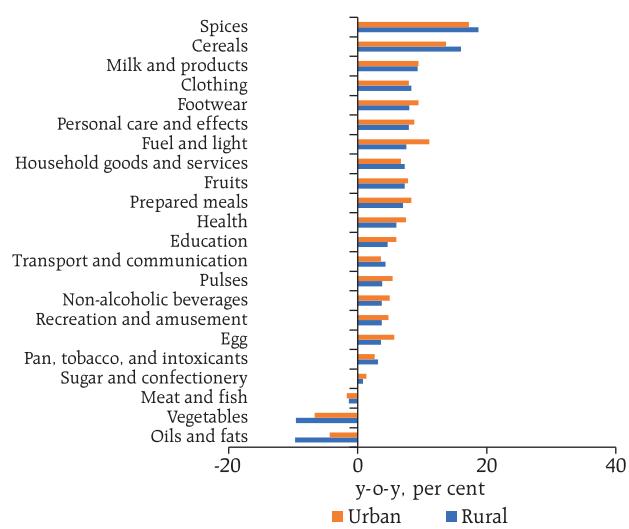
Chart 41: Annual Inflation across Subgroups (March 2023 versus February 2023)

Inflation in the fuel and light group declined to 8.9 per cent in March from 9.9 per cent in February, mainly driven by moderation in kerosene (PDS) and firewood and chips price changes. Electricity price inflation remained steady even as LPG price inflation registered an uptick.

Core inflation softened to 5.7 per cent in March from 6.1 per cent in February. The moderation was broad-based with 7 out of 9 sub-groups (pan, tobacco and intoxicants; recreation and amusement; clothing and footwear; household goods and services; transport and communication; education; and personal care and effects) recording a deceleration in inflation. Housing and health sub-groups, however, registered an increase.

In terms of regional distribution, rural inflation (5.5 per cent) was lower than urban inflation (5.9 per cent) in March 2023 for the first time since May

2022 with the fall in rural inflation coming largely from vegetables and oils (Chart 42). Among the states,

Chart 42: Inflation in Select Items (Rural versus Urban)

Tripura experienced inflation in excess of 8 per cent whereas Chhattisgarh, Delhi, Goa, Himachal Pradesh, Manipur and Meghalaya recorded inflation below 4 per cent (Chart 43).

High frequency food price data for the month of April (April 1-12) from the Department of Consumer Affairs (DCA) point to a decline in cereal prices, primarily due to a fall in wheat and atta prices. Pulses prices registered a broad-based increase while edible oil prices, barring groundnut oil, continued to decline. Among key vegetables, prices of onions and potatoes softened, while tomato prices edged up (Chart 44).

Retail selling prices of petrol and diesel in the four major metros remained steady in April so far. While LPG prices were kept unchanged in April after an increase observed in March, kerosene prices declined sharply in April (Table 3).

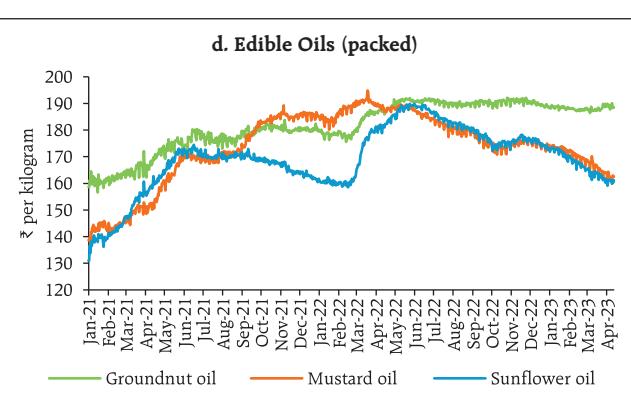
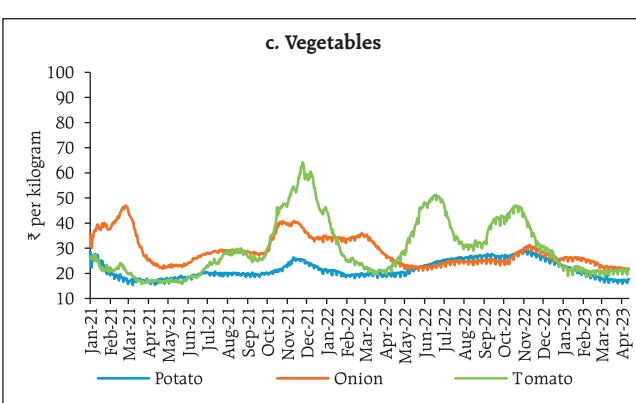
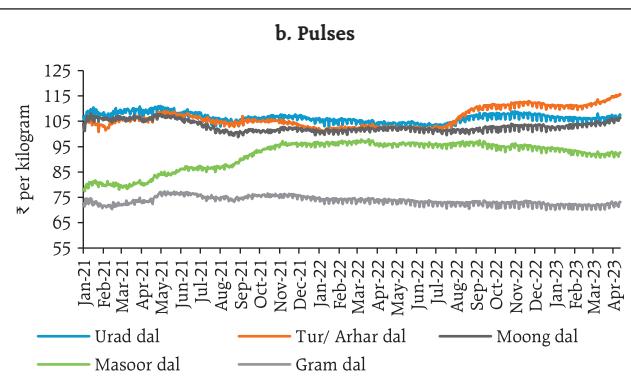
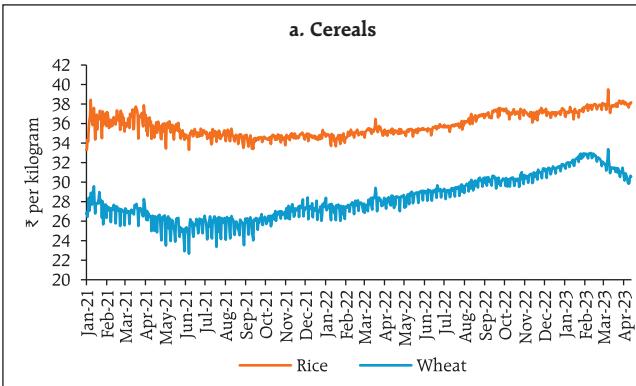
Chart 43: Spatial Distribution of Inflation March 2023 (CPI- Combined, y-o-y)



Source: NSO; and RBI Staff Estimates.

Wholesale price index (WPI) based input costs inflation continued to moderate in March 2023

Chart 44: DCA Essential Commodity Prices



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

Table 3: Petroleum Products Prices

Item	Unit	Domestic Prices			Month-over-month (per cent)	
		Apr-22	Mar-23	Apr-23^	Mar-23	Apr-23
Petrol	₹/litre	112.61	102.92	102.92	0.0	0.0
Diesel	₹/litre	100.19	92.72	92.72	0.0	0.0
Kerosene (subsidised)	₹/litre	56.99	54.21	49.20	-2.8	-9.2
LPG (non-subsidised)	₹/cylinder	960.13	1113.25	1113.25	4.7	0.0

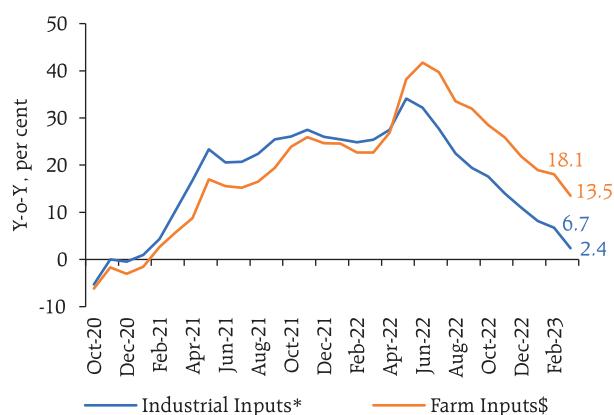
[^]: For the period April 1-13, 2023.

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

(Chart 45). The decline in input cost pressures was primarily driven by fall in prices of HSD (High Speed Diesel) and electricity.

Selling prices edged up across manufacturing and services, as indicated by the PMI data for the month of March 2023; however, the pace of expansion

Chart 45: Input Costs

Notes: * Comprising primary non-food articles, minerals, coal, aviation turbine fuel, high speed diesel, naphtha, bitumen, furnace oil, lube oil, petroleum coke, electricity, cotton yarn and paper & pulp from WPI.

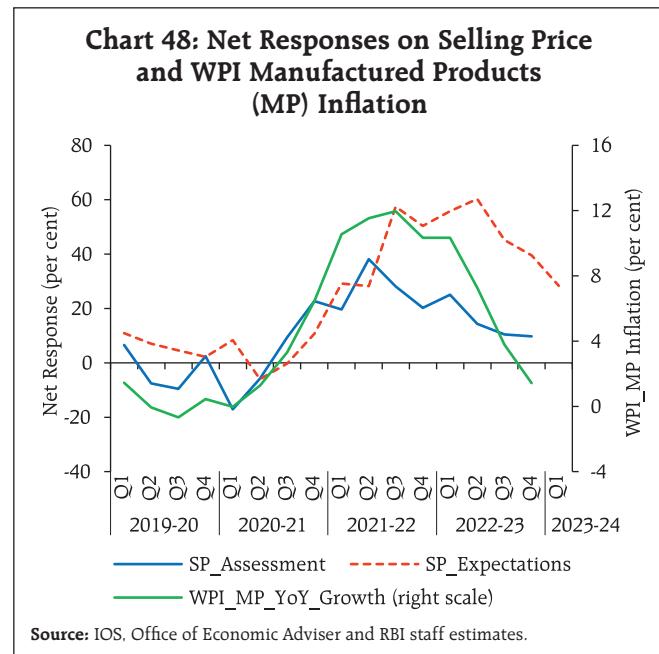
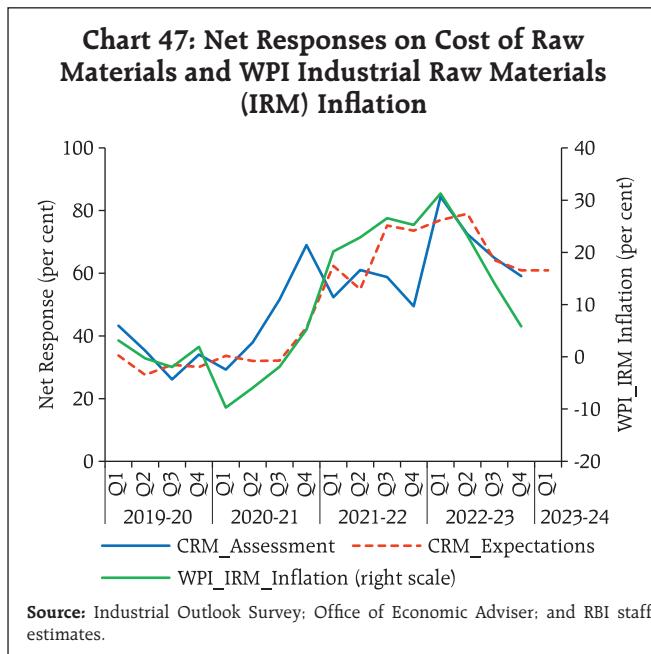
\$ Comprising high speed diesel, fodder, electricity, fertilizers, pesticides and agricultural & forestry machinery from WPI.

Sources: Office of the Economic Adviser, Department for Promotion of Industry and Internal Trade; and RBI staff estimates.

remained muted. Input costs across manufacturing and services sector recorded a lower magnitude of expansion in March as compared with a month ago (Chart 46).

Chart 46: PMI Input and Output Prices

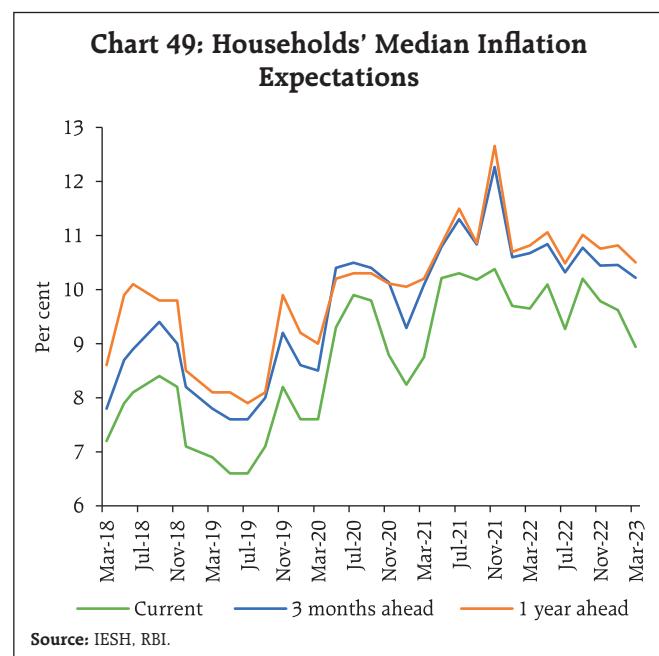
Source: S&P Global.



Manufacturers' assessment and expectation¹⁴ on cost of raw materials (CRM), as reflected in net responses (NRs)¹⁵ in the RBI's quarterly industrial outlook survey (IOS), closely track movements in wholesale prices of industrial raw materials¹⁶ (Chart 47). Similarly, NRs on IOS selling prices (SP) track WPI Manufactured products inflation (weight: 64.2 per cent) quite well (Chart 48). The results of the latest round of survey indicate moderation in the pace of increase in input costs and a concomitant moderation in selling price increases for the manufacturing sector.

Households' inflation perception (current) have shown signs of easing since September 2022; they

recorded a 70 basis points (bps) fall in the March 2023 round of the bi-monthly survey (Chart 49). Concomitantly, three-months ahead and one-year ahead inflation expectations also edged down.



¹⁴ Banerjee N. and Majumdar, S. (2022).

https://rbi.org.in/Scripts/BS_ViewBulletin.aspx?Id=20815

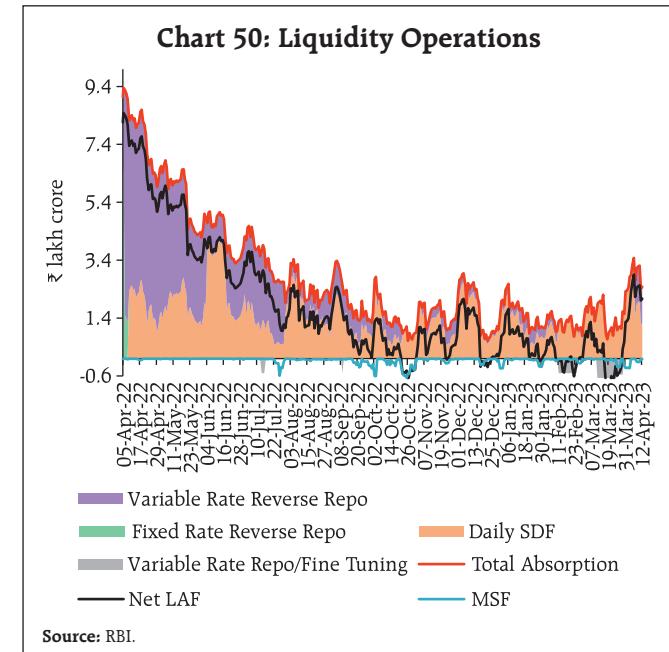
¹⁵ If I, N and D correspond to proportion of increase response, no change and decrease response respectively for the response to the question on a particular parameter, the NR is calculated as, $NR = 100 * (I - D)$ and no change (NC) or status quo is presented as $NC = 100 * N$.

¹⁶ Comprises specific items from WPI with total weight being 18.1 per cent.

IV. Financial Conditions

Liquidity conditions tightened during the second half of March 2023 but improved thereafter towards the month-end and at the beginning of April with a pick up in government spending. Overall, average total absorptions under the liquidity adjustment facility (LAF) stood at ₹2.0 lakh crore during March 16 to April 15, higher than ₹1.5 lakh crore during February 16 through March 15, 2023. Notwithstanding large placement of funds under the SDF at the system level, many banks took recourse to the marginal standing facility (MSF), which averaged ₹0.11 lakh crore during March 16 to April 15, reflective of skewed distribution of liquidity within the banking system. There were also continuous net injections during the period March 16-26, averaging about ₹0.65 lakh crore (Chart 50). To ease the liquidity stress, the Reserve Bank undertook a series of measures which included one 5-day fine tuning variable rate repo (VRR) operation on March 24, 2023 injecting ₹55,885 crore. An amount of ₹5,000 crore was also made available to standalone primary dealers (SPDs) under the standing liquidity facility (SLF) on March 31, 2023 at the prevailing repo rate, with funds availed under this facility (₹3,900 crore) repayable on or before April 5, 2023.

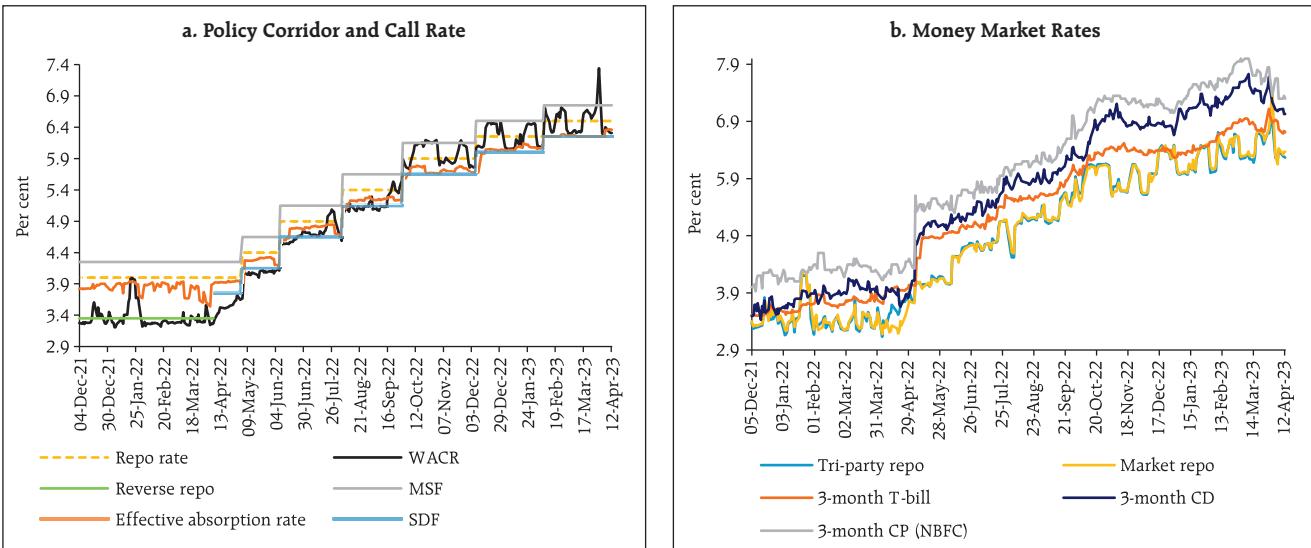
In the last week of 2022-23 (i.e., March 25-31), government spending increased by ₹2.55 lakh crore which augmented system liquidity. Despite such improvement in liquidity conditions being further bolstered by the Reserve Bank's liquidity operations, money market rates tightened appreciably on March 31, with the WACR hardening to 7.34 per cent. This tightening can be attributed to several factors: (i) high borrowing demand from some banks and primary dealers (PDs) on account of financial year closure of accounts; (ii) large spike in excess cash reserve ratio (CRR) maintenance by banks on March 31; (iii) banking system-wide outflows because of residual tax and non-tax payments on March 31; (iv) call market volumes



shrinking sharply to ₹6,938 crore on March 31 from ₹12,540 crore on March 29 as participants became reluctant to lend because of year-end balance-sheet considerations; and (v) mutual funds – traditional lenders in the tri-party repo segment – turning into borrowers in the wake of large redemption pressures. On an average basis, the WACR, triparty repo and market repo rates stood 5 bps, 5 bps and 10 bps, respectively, above the policy repo rate during March 16 through April 15, 2023 (Chart 51a).

Across the term money segment, rates remained elevated 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 cumulative policy rate hikes, uncertainty and the sharp moderation in domestic surplus liquidity (Chart 51b).

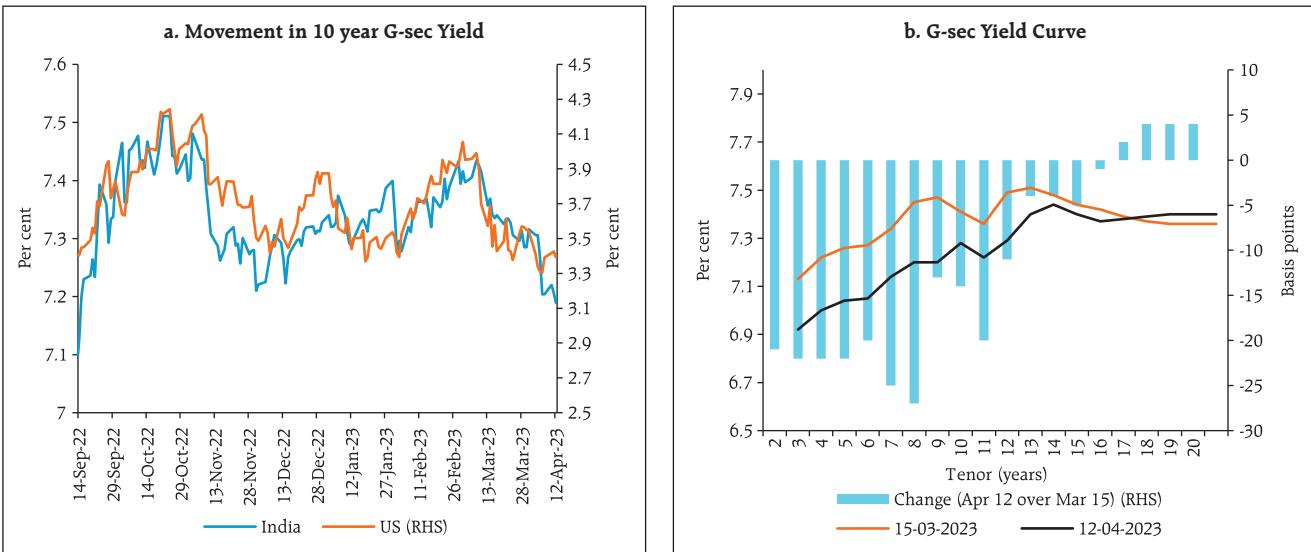
In the primary market, fund mobilisation through CDs issuances was strong at ₹6.7 lakh crore during 2022-23, higher than ₹2.3 lakh crore in the previous year. Banks are experiencing additional demand for funds, driven by buoyant credit offtake. During 2023-24 (up to April 7), CD issuances stood at ₹0.11 lakh crore as

Chart 51: Policy Corridor and Money Market Rates

against ₹0.22 lakh crore in the corresponding period of 2022-23. With the corporate sector increasingly resorting to bank credit for funding requirements, CP issuances moderated to ₹13.7 lakh crore during 2022-23 from ₹20.2 lakh crore in 2021-22.

The yield on the 10-year benchmark G-sec (7.26% GS 2033) eased from 7.34 per cent on March 15 to 7.22

per cent on April 13, 2023 (Chart 52a). The flight to safe assets in the wake of the banking crisis in the US resulted in a softening of US treasury yields, with a commensurate impact on domestic yields. Even so, domestic yields largely traded in a narrow range ahead of the release of the monetary policy statement on April 6, 2023. Following the MPC's decision to pause,

Chart 52: Developments in the G-sec Market

the yield on the 10-year G-sec softened from 7.28 per cent to a low of 7.15 per cent on April 6 before closing at 7.20 per cent. The monetary policy decision appeared to be largely unanticipated by the market, as evident from indexed swap (OIS) rates – the 2-month OIS rate declined by 14 bps following the monetary policy announcement.

The government borrowing calendar on dated securities for H1:2023-24 released on March 29, 2023 pegged the gross borrowing requirement at ₹8.9 lakh crore – 58 per cent of the total budgeted gross borrowing for the year. The T-bill calendar proposed gross issuance of ₹4.2 lakh crore (net issuance of ₹1.4 lakh crore) for Q1:2023-24. Across the curve, yields softened at the short to mid-end, while they hardened at the longer end (Chart 52b).

Corporate bond yields generally eased, while spreads hardened for most of the issuer categories and tenors during the second half of March through April 11, 2023. The average risk premium in the bond market (5-year AAA minus 5 year G-sec) increased sharply during Mar 16, 2023 – Apr 11, 2023 (Table 4). Funds mobilised through corporate bond issuances increased to ₹0.75 lakh crore during February 2023 from ₹0.68 lakh crore in the preceding month.

Reserve money (RM), excluding the first-round impact of change in the CRR, grew by 7.5 per cent on a y-o-y basis as on April 7, 2023 (10.1 per cent a year ago) [Chart 53]. Currency in circulation (CiC), the largest component of RM, decelerated to 7.6 per cent from 10.1 per cent a year ago. The moderation in the CiC tracked the increase in digital payments in India in the post-pandemic period through various initiatives of the Reserve Bank, besides a reduction in the 'dash for cash' behaviour observed during the peak of the pandemic.

Table 4: Financial Markets - Rates and Spread

Instrument	Interest Rates (per cent)			Spread (basis points) (Over Corresponding Risk-free Rate)		
	Feb 16, 2023 – Mar 15, 2023	Mar 16, 2023 – Apr 11, 2023	Variation (in bps)	Feb 16, 2023 – Mar 15, 2023	Mar 16, 2023 – Apr 11, 2023	Variation (in bps)
1	2	3	(4 = 3-2)	5	6	(7 = 6-5)

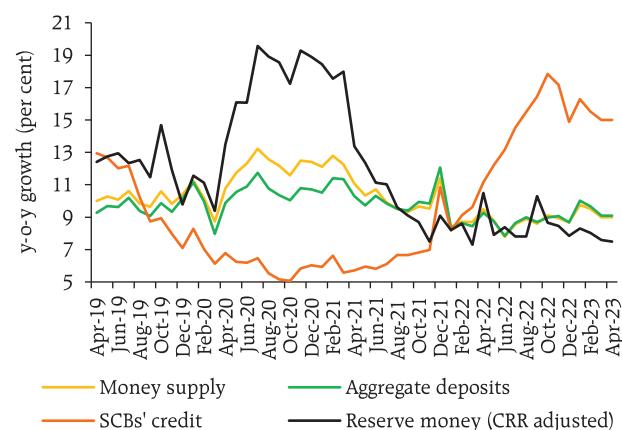
Corporate Bonds						
(i) AAA (1-year)	8.06	8.00	-6	46	69	23
(ii) AAA (3-year)	8.03	8.02	-1	58	76	18
(iii) AAA (5-year)	7.95	8.01	6	43	71	28
(iv) AA (3-year)	8.75	8.70	-5	130	145	15
(v) BBB-(3-year)	12.4	12.35	-5	495	510	15

Note: Yields and spreads are computed as monthly averages.

Sources: FIMMDA; and Bloomberg.

During 2022-23 (up to March 24, 2023), the expansion in RM was driven mainly by net foreign assets (NFA) [contributing around 67 per cent], and

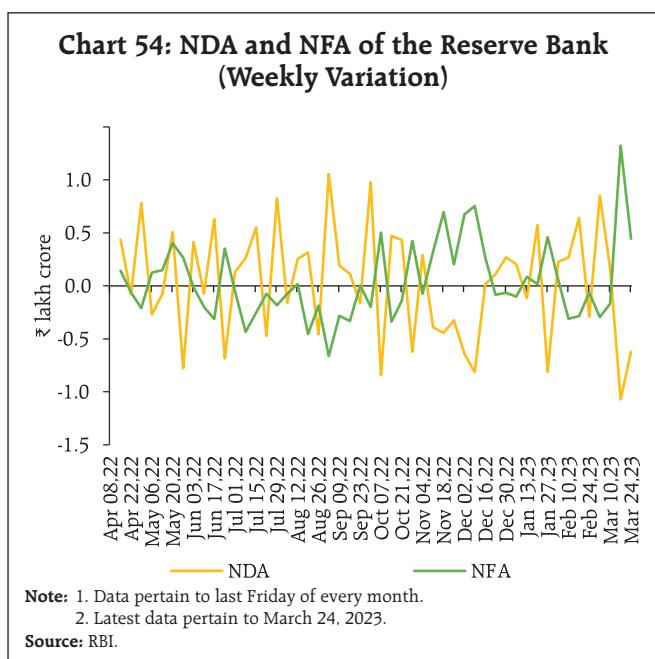
Chart 53: Monetary and Credit Aggregates



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 April 7, 2023 and money supply pertain to March 24, 2023.

Source: RBI.

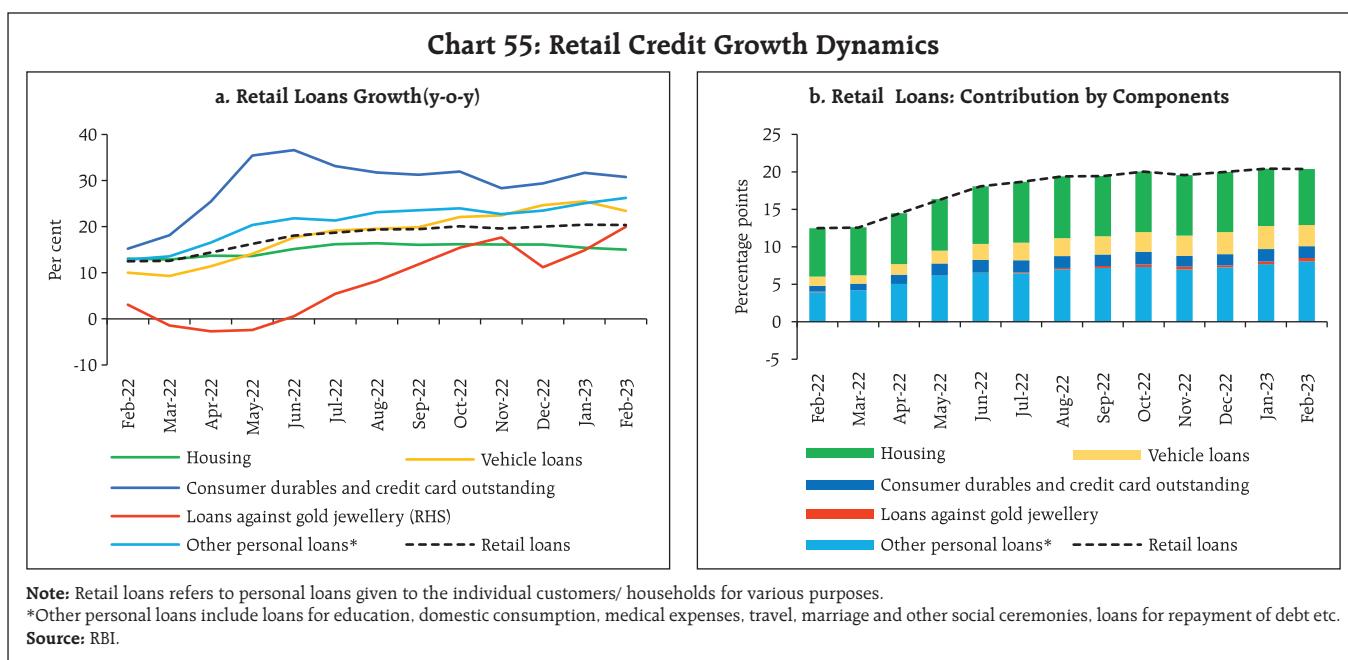


net domestic assets (NDA) [contributing around 33 per cent] (Chart 54).

Money supply (M_3) grew by 9.0 per cent (y-o-y) as on March 24, 2023 (8.7 per cent a year ago), primarily driven by its largest component – aggregate deposits with banks – which increased by 9.1 per cent (8.4 per

cent a year ago). Scheduled commercial banks' (SCBs) credit grew in double digits at 15.0 per cent as on March 24, 2023, moderating from the peak of 17.8 per cent recorded in October 2022 due to unfavourable base effects and tapering of the momentum of credit offtake, especially for industry. The deceleration in industrial credit since November 2022 was on account of micro, small and medium enterprises (MSMEs) and large industries, with a decline in credit offtake from the infrastructure segment. Retail loans remained the major driver of overall credit growth, followed by the services sector. Personal loans growth at 20.4 per cent in February was boosted by housing loans, vehicle loans and other small-ticket loans. Consumer durable and credit card loans expanded at a robust pace, reflecting growing consumer demand (Chart 55a and 55b). Credit growth to the services sector was largely contributed by NBFCs. Bank credit growth has been broad-based recording double digit growth across all population groups (rural, semi-urban, urban and metropolitan). There is a rising demand for working capital loans.

As on April 07, 2023, SCBs' credit-deposit ratio stood at 75.8 per cent (71.5 per cent as on April 08, 2022).

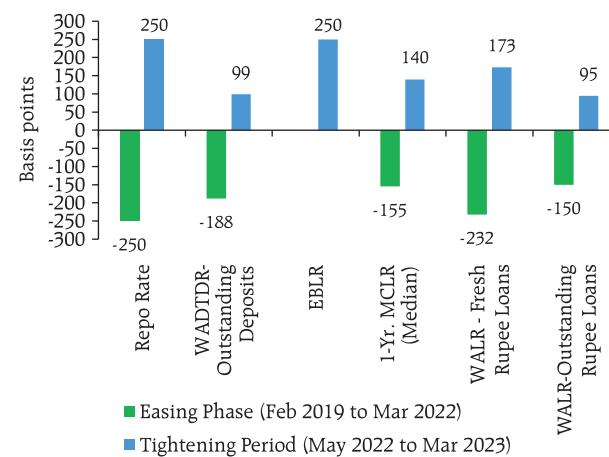


The incremental credit-deposit (C-D) ratio, which had slipped below 50 per cent around the onset of the pandemic and remained low up to late 2021, surged to 142.2 per cent in November 2022 before moderating to 110.0 as on April 07, 2023 (Chart 56).

SCBs have adjusted their external benchmark based lending rate (EBLR) to reflect policy rate increases. The 1-year median marginal cost of funds-based lending rate (MCLR) increased by 140 bps during May 2022 - March 2023. The pass-through to weighted average lending rates (WALR) on fresh and outstanding rupee loans increased to 173 bps and 95 bps, respectively, during May 2022-February 2023 (Chart 57). On the deposit side, the weighted average domestic term deposit rate (WADTDR) on outstanding deposits increased by 99 bps during May 2022-February 2023. External benchmark-linked loans dominate outstanding floating rate loans, accounting for a share of 48.3 per cent as at-end December 2022.¹⁷

The Government of India revised the rates on small savings instruments (SSIs) in the range of 10-70 bps for Q1:2023-24 vis-à-vis Q4:2022-23. The interest

Chart 57: Transmission to Banks' Deposit and Lending Rates



Note: 1. Latest data on WADTDR & WALRs pertain to February 2023.

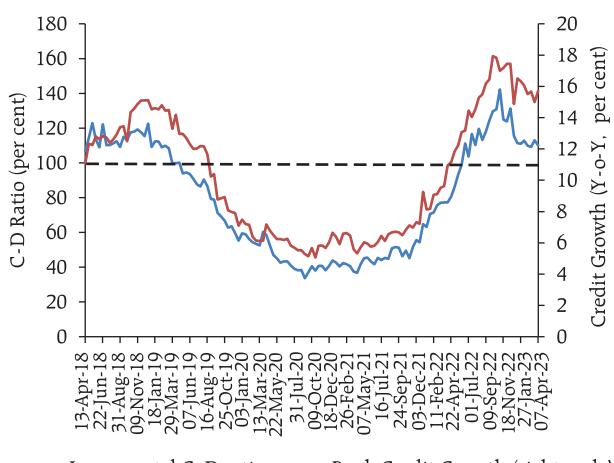
2. 31 domestic banks have increased their EBLRs by 250 bps as at end-March 2023.

Source: RBI.

rate on the Public Provident Fund (PPF) remained unchanged (Chart 58). With these adjustments, interest rates on most SSIs are now closely aligned with the formula-based rates. The rates on PPF, post office recurring deposit accounts and the *Sukanya Samridhhi* account scheme are, however, below the formula-based rates of interest by 26 to 82 bps.¹⁸

Domestic equity markets reflected the tremors emerging from the banking turmoil in the US and Europe during the second half of March 2023. Markets recovered towards the month-end, however, as contagion fears receded. In April 2023, positive global cues from lower-than-expected Eurozone inflation, strong domestic manufacturing PMI and encouraging auto sales numbers boosted market sentiments. Furthermore, a pause in the rate hike cycle by the Reserve Bank contributed to the positive momentum. Thereafter, markets declined amid a sell-off in IT sector stocks following announcement of weak Q4: 2022-23 earnings results. Overall, the BSE Sensex gained 3.8 per cent since March 15, 2023 to close at 59,727 on April 18, 2023.

Chart 56: Bank Credit Growth (Y-o-Y) and Incremental Credit-Deposit ratio (26-fortnight rolling)



¹⁷ Monetary Policy Report- April 2023, Chapter IV

¹⁸ Monetary Policy Report- April 2023, Chapter IV

Chart 58: Change in Rates on Small Savings Instruments for Q1:2023-24

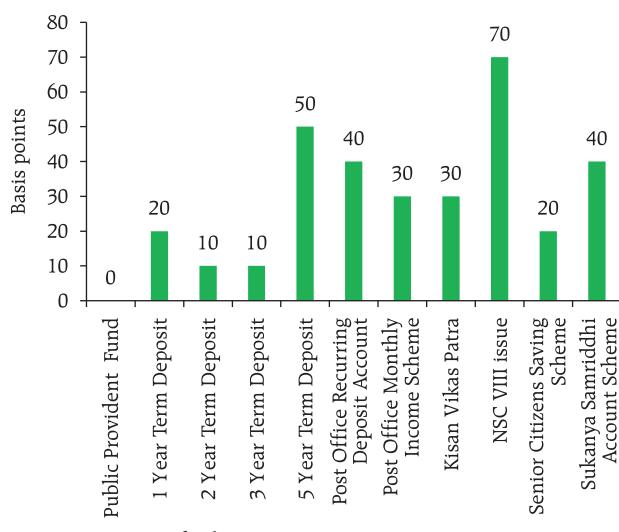
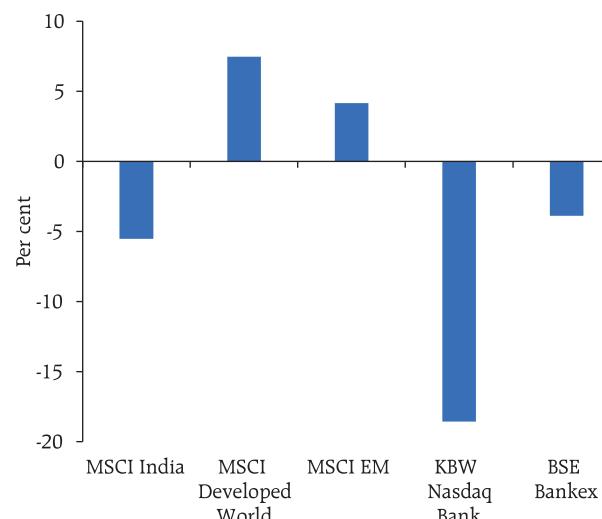


Chart 59: Performance of Equity Markets in 2023



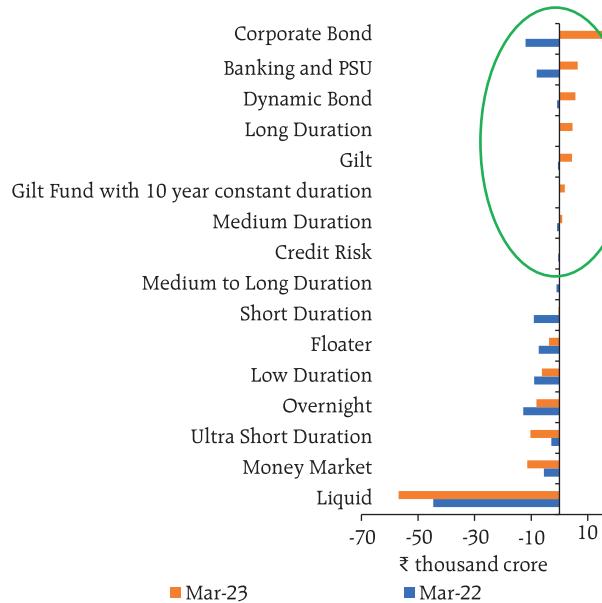
In 2023, the banking sector index (BSE-Bankex) has shown resilience, reflecting the soundness and health of the Indian banking sector (Chart 59).

In terms of regulatory developments in March 2023, the taxation arbitrage enjoyed by the debt mutual funds has been removed¹⁹, bringing uniformity in taxation between various fixed-income investment avenues. Investors rushed to invest in debt mutual funds in the last week of March to take advantage of preferential taxation under the erstwhile tax structure, as the new tax regime kicks in from April 2023 (Chart 60).²⁰ Also, the announcement of the Corporate Debt Market Development Fund (CDMDF) as a backstop facility for the purchase of investment-grade corporate debt securities during times of stress instilled confidence in the corporate bond market.

Gross inward foreign direct investment (FDI) moderated by 14.5 per cent during April-February

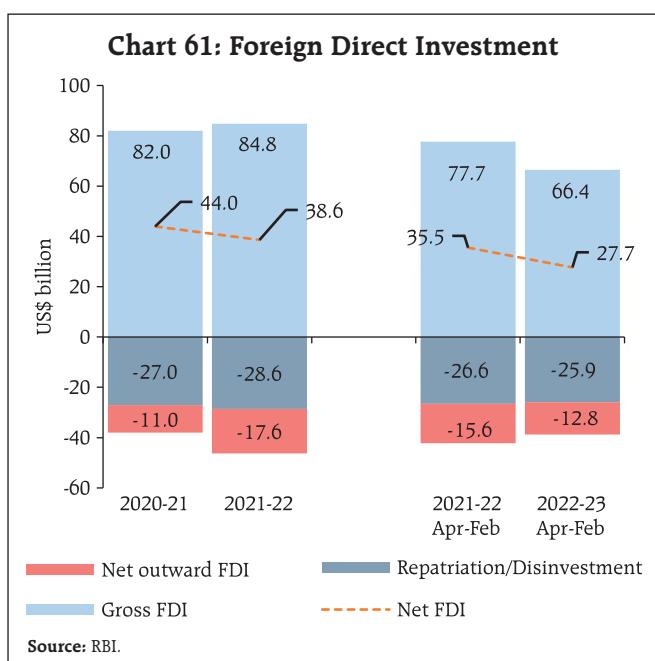
2022-23 on a y-o-y basis (Chart 61). More than 63 per cent of FDI equity flows were reported to be from Singapore, Mauritius, and the US during this period. Net FDI decreased to US\$ 27.7 billion from US\$ 35.5

Chart 60: Net Flows in Open-Ended Debt-Oriented Funds



¹⁹ <https://egazette.nic.in/WriteReadData/2023/244830.pdf>

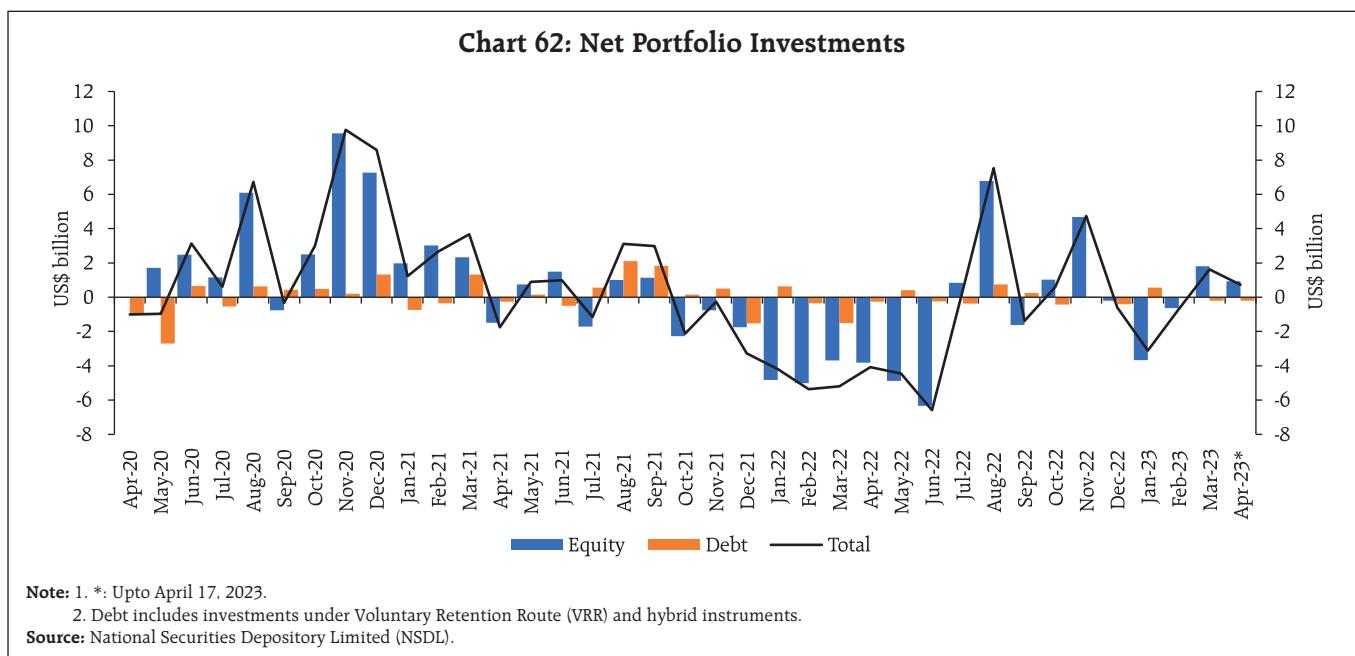
²⁰ <https://www.livemint.com/news/india/investors-pour-31-179cr-into-debt-mfs-ahead-of-tax-change-11681236818180.html>

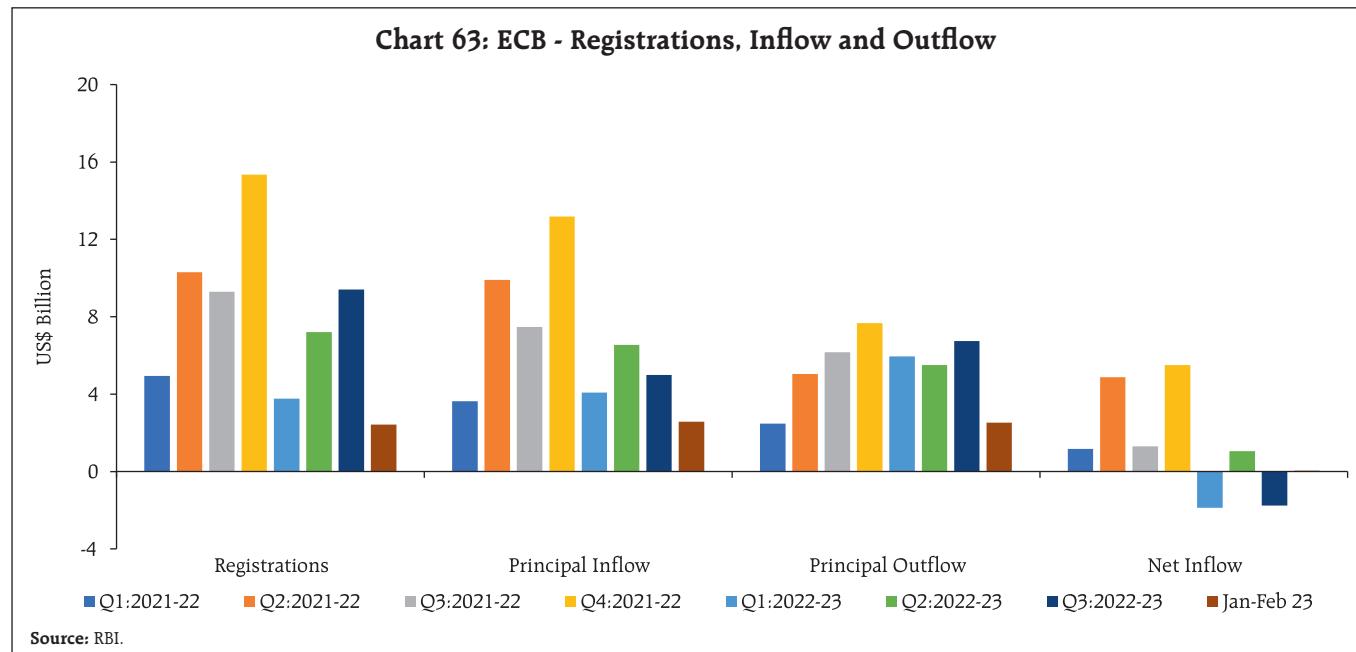


billion a year ago, mainly due to moderation of gross FDI inflows and increase in repatriations. FDI equity flows remained skewed towards manufacturing, followed by financial services and computer services. Together, they constituted around half of the total inflows during April-February 2023.

Foreign portfolio investors (FPIs) turned net purchasers in domestic financial markets during March 2023 (Chart 62), primarily in the equity segment (US\$ 1.8 billion), whereas the debt segment recorded outflows. In 2022-23, FPIs withdrew US\$ 5.9 billion; since July 2022, however, the FPIs have registered net inflows of US\$ 9.2 billion, largely in the equity market. In the second half of March 2023, the capital goods sector, construction segment and fast moving consumer goods sector were the leading recipients of equity FPI. In April 2023 (upto 17th), FPI flows were positive to the tune of US\$ 0.7 billion.

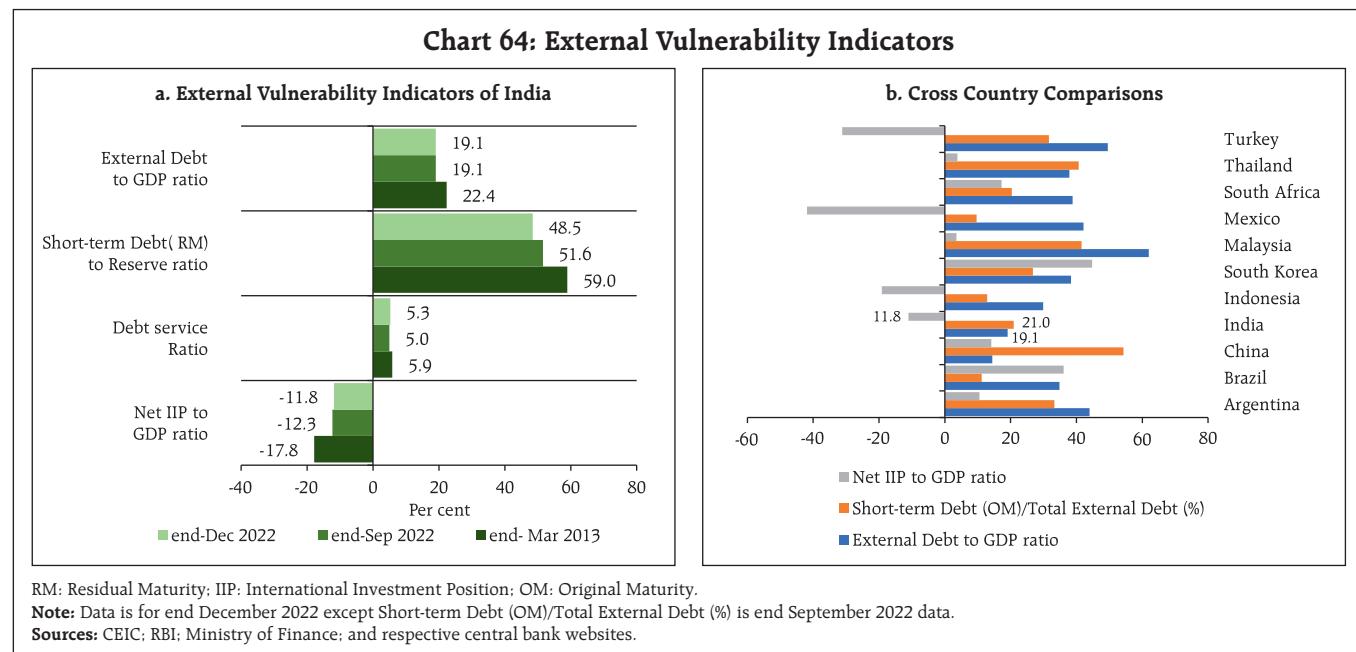
External commercial borrowings (ECB) disbursements in Jan-Feb 2023 at US\$ 2.6 billion have moderated by more than 70 per cent when compared with those in first two months of 2022. With principal payments being slightly lower, however, net ECBs were positive during January-February 2023 in contrast to large net outflows in Q3:2022-23 (Chart 63). Net accretions to non-resident deposits increased to US\$ 6.4 billion in April-February 2022-23 from US\$ 2.4 billion a year ago.

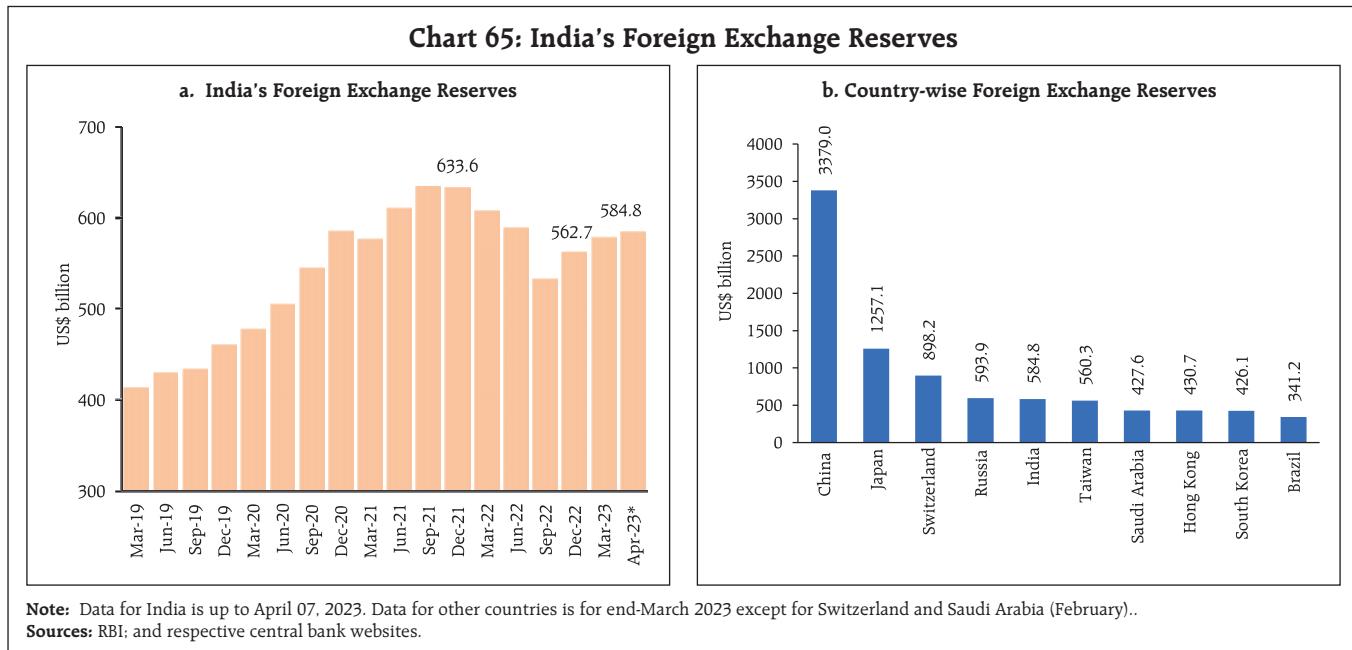




Key indicators of external sector vulnerability such as the external debt to GDP ratio, short-term debt (residual maturity) to reserves ratio, debt service ratio and net international investment position (IIP) to GDP ratio recorded an improvement in

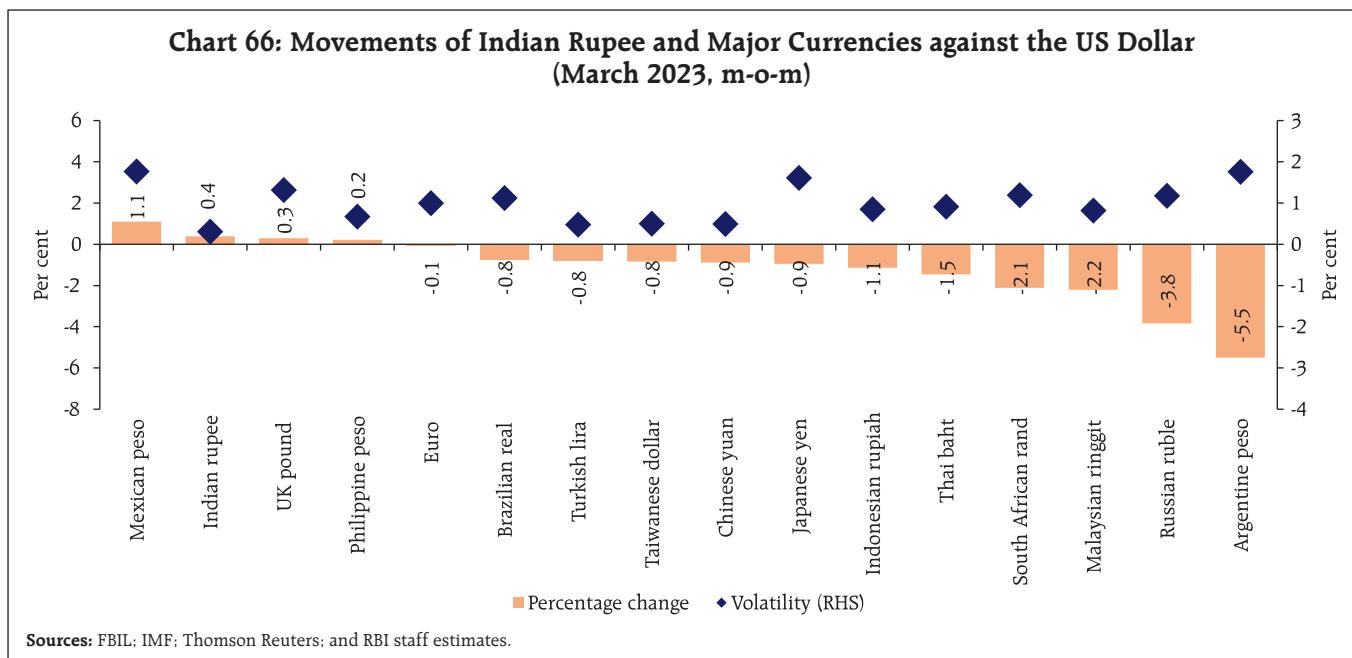
Q3:2022-23 demonstrating external sector resilience (Chart 64). India's external debt to GDP ratio stood at 19.1 per cent at end-December 2022 – the same level as on end-September 2022.

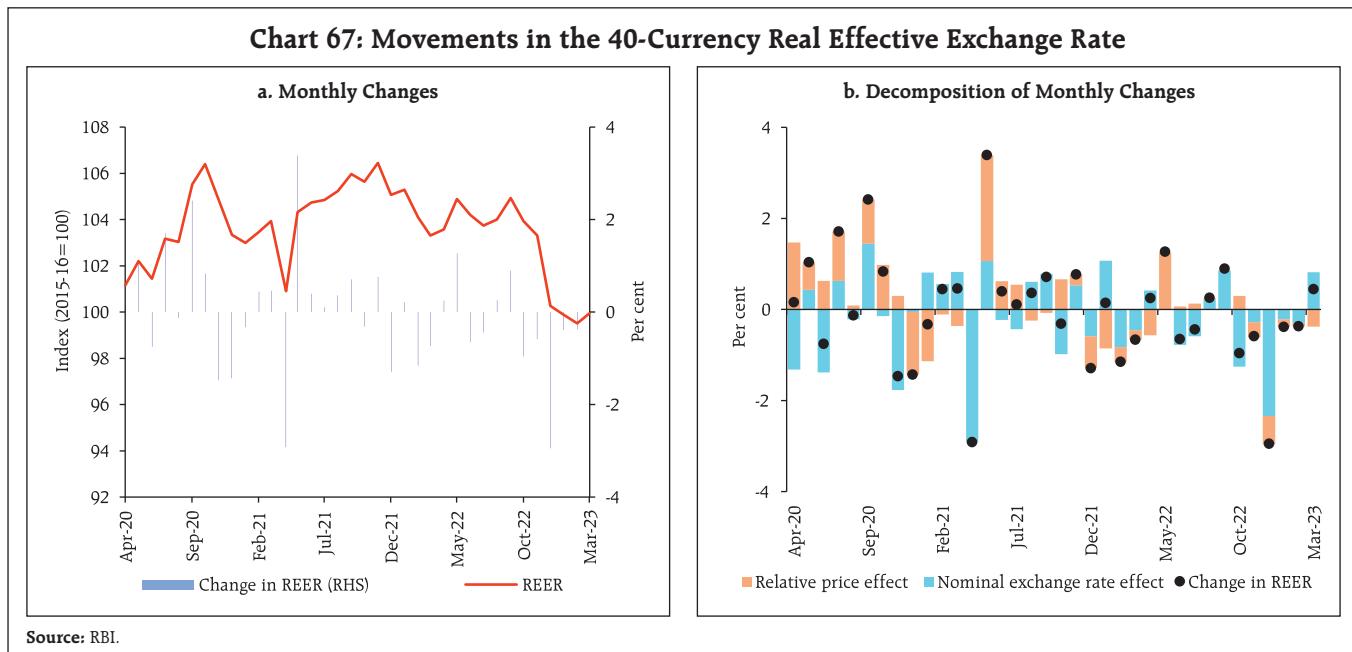




Foreign Exchange reserves increased by US\$60.2 billion since October 21, 2022 and stood at US\$ 584.8 billion on April 07, 2023, sufficient to cover 9.9 months of projected imports for 2022-23 (Chart 65).

The Indian rupee (INR) appreciated by 0.4 per cent (m-o-m) *vis-à-vis* the US dollar in March 2023 and turned out to be among the least volatile major currencies (Chart 66).





The INR appreciated by 0.4 per cent (m-o-m) in terms of the 40-currency real effective exchange rate (REER) index in March 2023 (Chart 67).

Payment Systems

Digital payments grew across channels in March 2023, led by retail transactions through the Unified Payments Interface (UPI), the Bharat Bill Payment System (BBPS), and the National Automated Clearing House (NACH) (Table 5). In its Statement on Developmental and Regulatory Policies of April 6, 2023

the Reserve Bank proposed to expand the ambit of the UPI by enabling transfer to and from pre-sanctioned credit lines at banks using the UPI, in addition to the deposit accounts. This measure will facilitate payments financed by bank credit. The National Payments Corporation of India (NPCI) has allowed the Prepaid Payment Instruments (PPI) wallets to be part of the interoperable UPI ecosystem with interchange charges for PPI merchant transactions above ₹2,000 to promote the interoperability of the UPI, and foster healthy competition in the ecosystem.²¹

Table 5: Growth in Select Payment Systems

(y-o-y in per cent)

Payment System Indicators	Transaction Volume				Transaction Value			
	Feb-22	Feb-23	Mar-22	Mar-23	Feb-22	Feb-23	Mar-22	Mar-23
RTGS	14.3	11.2	13.7	7.8	14.1	16.7	11.4	11.5
NEFT	28.8	28.7	23.9	26.8	15.1	12.1	14.6	7.4
UPI	97.5	66.4	97.9	60.0	94.5	49.5	90.3	46.3
IMPS	32.0	6.4	35.5	1.0	39.7	21.9	41.3	18.2
NACH	28.0	70.9	7.5	29.8	30.2	36.6	-6.3	35.1
NETC	53.3	18.4	39.9	13.3	42.0	29.0	32.7	23.7
BBPS	121.2	54.1	102.4	56.5	136.2	63.4	120.7	61.6

Source: RBI.

²¹ NPCI Press Releases, March 2023

The Bank signed a Memorandum of Understanding with the Central Bank of the United Arab Emirates (CBUAE) to boost collaboration in the areas of FinTech and interoperability between the respective countries' digital currencies. To cater to emerging technological and cybersecurity-related research and capacity-building requirements, the foundation stone was laid for the establishment of a Greenfield Data Centre and Enterprise Computing and Cybersecurity Training Institute of the Reserve Bank at Bhubaneshwar, Odisha.

In the real-time payments (RTP)²² segment, India recorded the highest number of transactions²³ in 2022 (accounting for 46 per cent of all real-time transactions worldwide), followed by Brazil, China and Thailand. The strong brand identity of the UPI, high merchant acceptance and policy support are the key drivers of this growth.²⁴ The rapid progress in digitalisation is leading to declining cash transactions – cash usage at the Point of Sale (PoS) declined at 27 per cent of PoS transactions value in 2022, down from 71 per cent in 2019.

Digital loan repayment (volume and value) through the BBPS has doubled (y-o-y) in the last month, indicative of rapid digitalisation of lending business. E-commerce in India is expected to record a total transaction value of US\$ 150 billion in 2026, up from US\$ 83 billion in 2022. With an estimated 16 per cent CAGR through 2026, India will outpace the global e-commerce growth (9 per cent).²⁵

V. Conclusion

In this setting, the RBI's MPC met during April 6-8, 2023 and reviewed the macroeconomic and financial outlook. Noting that the inflation trajectory for 2023-24 is likely to be shaped by both domestic and global risks on the upside and the downside, it projected inflation at 5.2 per cent for 2023-24, down from 6.7 per cent in 2022-23 but still elevated. Accordingly, the Committee decided to remain resolutely focused on aligning inflation with the target to rein in the generalisation of price pressures and anchor inflation expectations so that the resilience in domestic economic activity is sustained. While keeping the policy rate unchanged in that meeting and continuing to withdraw accommodation, the MPC maintained 'readiness to act, should the situation so warrant, to ensure that inflation progressively aligns with the target, while supporting growth.'

Beginning with (i) the modulation of liquidity through variable rate reverse repo auctions in the second half of 2021-22, (ii) the introduction of the standing deposit facility in April 2022 at a rate 40 basis points above the fixed rate reverse repo rate of 3.35 per cent and (iii) a cumulative increase in the policy repo rate of 250 basis points during 2022-23, the weighted average call money rate, the operating target of monetary policy, was lifted by an effective 320 basis points during 2022-23. In response and aided by supply side measures, headline CPI inflation has gradually declined from its peak of 7.8 per cent in April 2022 to 5.7 per cent in March 2023 and is projected to ease further to 5.2 per cent four quarters ahead in January-March 2024 – a reduction of 260 basis points. Monetary policy is at work. Substantial disinflation has been achieved, but the road to be travelled stretches ahead till inflation is at or close to the target of 4 per cent.

At this point, the level of the policy rate at 6.5 per cent is 1.25 times the level of inflation four quarters

²² RTP refer to instantaneous settlement after initiation of payment request. UPI and Immediate Payment Service (IMPS) come under the category of such payments in India.

²³ Real time transactions in India grew at 76.8 per cent to record a total transactions volume of 89.5 billion in 2022.

²⁴ ACI Worldwide & Global Data (2023). It's Prime Time for Real-Time 2023.

²⁵ Fidelity National Information Services, Inc. (2023), The Global Payments Report

ahead (5.2 per cent in Q4 of 2023-24 as projected by the MPC). This satisfies the Taylor principle which has become a central tenet of monetary policy. It postulates that the nominal interest rate should be raised more than point-for-point when inflation rises. Satisfying the Taylor principle is both necessary and sufficient for stabilising inflation. The Taylor principle is embedded in the celebrated Taylor rule (Taylor, 1993)²⁶. The promontory that monetary policy in India has achieved upto now provides just enough headroom to weigh the impact of actions taken so far and to strategise the appropriate response should actual inflation prints deviate from the projected path. Concomitantly, we need to evaluate the effects on underlying economic activity as past monetary policy actions work their way through the well-known lags associated with the implementation of monetary policy. In the

words of Governor Shri Shaktikanta Das, "Our job is not yet finished and the war against inflation has to continue until we see a durable decline in inflation closer to the target. We stand ready to act appropriately and in time. We are confident that we are on the right track to bring down inflation to the target rate over the medium term." With the RBI remaining steadfast and committed to this mission, we firmly believe that actual outcomes will eventually reflect the nuanced assessment of the outlook that we provide in the State of the Economy. In time, enduring price and financial stability will strengthen the foundations of the economy and provide a fillip to growth. Central banks the world over that are invested with dual mandates are at a fork in their course. The RBI has taken the road that is less travelled by, balancing and calibrating both actions and pace.

²⁶ According to the Taylor rule, the policy interest rate equals the inflation rate *plus* 0.5 times the inflation gap (inflation *minus* the target inflation rate) *plus* 0.5 times the output gap (the percentage difference between GDP and potential GDP) *plus* the equilibrium real interest rate. With the target inflation rate and the equilibrium real interest rate both set equal to 2.0, the rule simplifies to the policy rate = $1.0 + 1.5 * \text{inflation} + 0.5 * \text{output gap}$.

Annex 1: Major Takeaways from the RBI's Enterprise Surveys

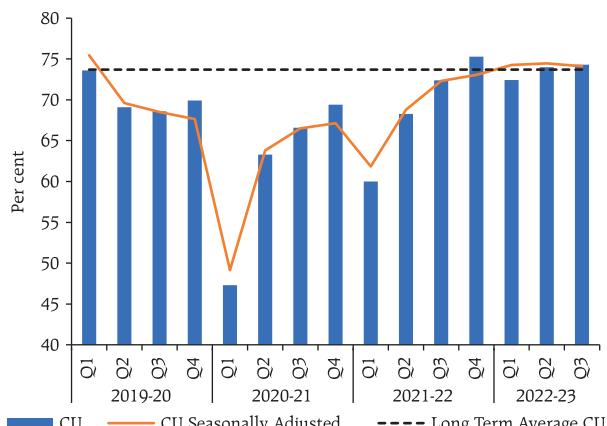
Key takeaways from the Reserve Bank's quarterly enterprise surveys²⁷ conducted during Q4:2022-23 are:

- Businesses remain optimistic on sustained improvement in demand conditions.
- Capacity utilisation (CU) and seasonally adjusted CU marginally exceeded the long-term

average CU in Q3:2022-23 and the buoyancy is likely to persist (Charts A1 and A2).

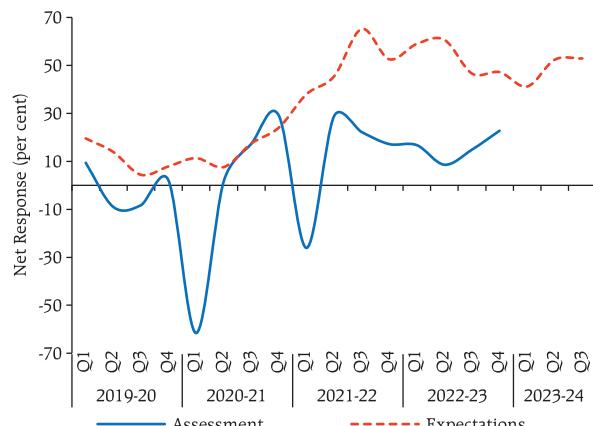
- Overall business sentiments have remained strong for services and infrastructure firms; manufacturers expect further normalisation, as reflected in a climbdown from high optimism on production, order books, capacity utilisation and foreign trade (Charts A3 and A4).

Chart A1: Capacity Utilisation in Manufacturing Sector



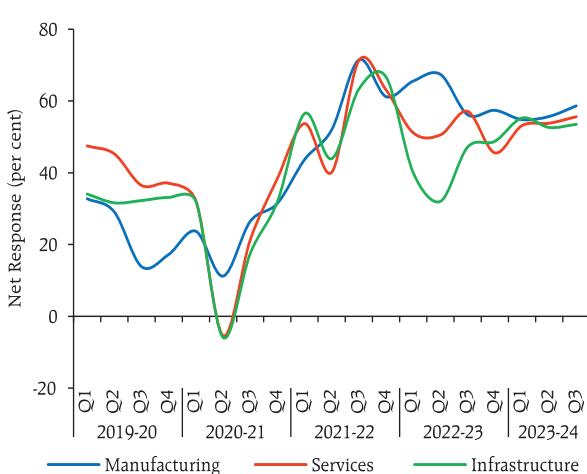
Source: Order Books, Inventories and Capacity Utilization Survey (OBICUS), RBI.

Chart A2: Manufacturers' Sentiments on Capacity Utilisation



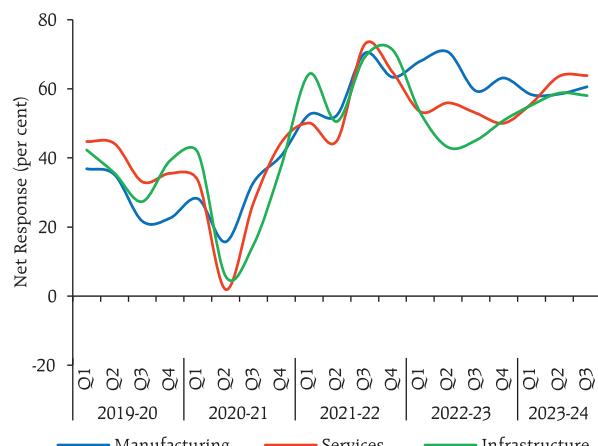
Source: Industrial Outlook Survey (IOS), RBI.

Chart A3: Sentiments on Production/Turnover



Sources: IOS; and Services and Infrastructure Outlook Survey (SIOS), RBI.

Chart A4: Sentiments on Overall Business Situation



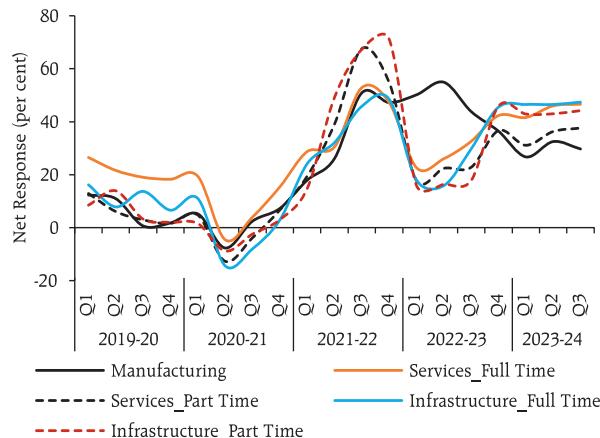
Sources: IOS and SIOS, RBI.

(Contd..)

²⁷ https://www.rbi.org.in/Scripts/BS_PressReleaseDisplay.aspx?prid=55480

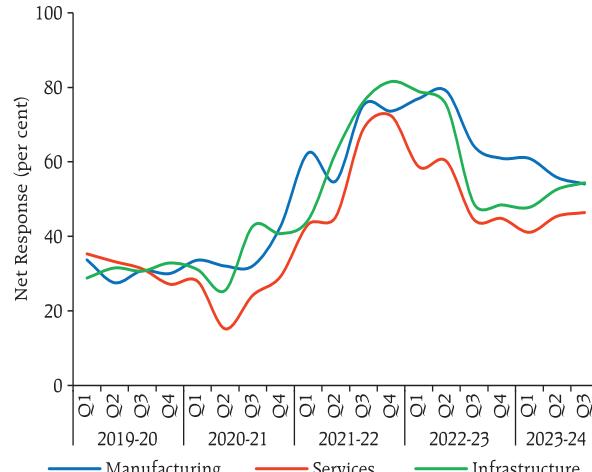
Annex 1: Major Takeaways from the RBI's Enterprise Surveys (*Concl.*)

Chart A5: Sentiments on Employment Situation



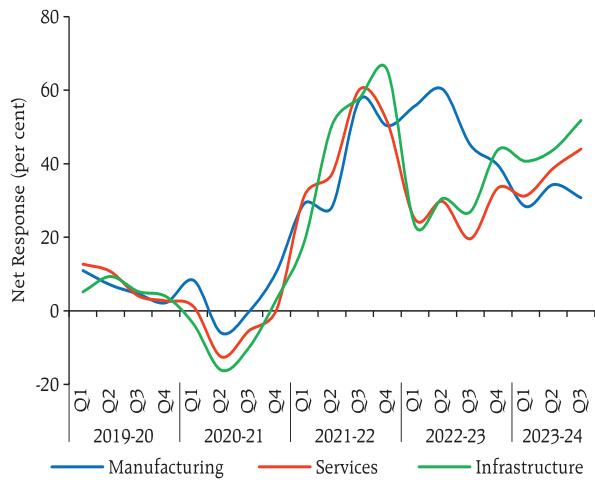
Sources: IOS and SIOS, RBI.

Chart A6: Sentiments on Input Cost



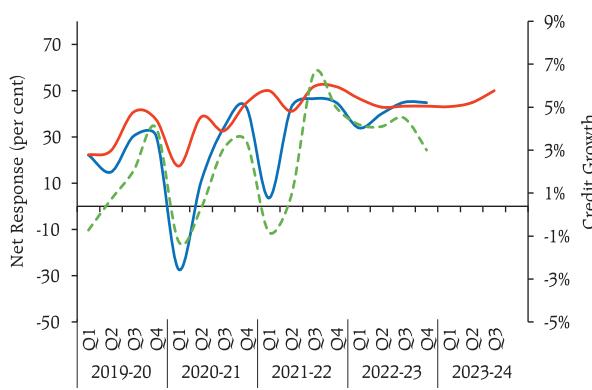
Sources: IOS and SIOS, RBI.

Chart A7: Sentiments on Selling Price



Sources: IOS and SIOS, RBI.

Chart A8: Senior Loan Officers' Expectations on Credit Demand



Source: Bank Lending Survey (BLS), RBI.

Note: 'Net response' is the difference between the percentage of respondents reporting optimism and those reporting pessimism. It ranges between -100 and 100; any value greater than zero indicates expansion/optimism and values less than zero indicate contraction/pessimism.

- Job landscape in the services and infrastructure sectors are expected to improve sequentially (Chart A5).
- Input cost pressures may be relatively milder with expected moderation in the pace of increase in raw material cost (Charts A6 and A7).
- Senior loan officers expect robust demand for bank loans during the first three quarters of 2023-24 (Chart A8).

Recent Regime Reversal in Inflation: The Indian Experience

by Michael Debabrata Patra, Joice John and Asish Thomas George[^]

Examining properties such as persistence, anchoring, generalisation, convergence and cyclical sensitivity, this article finds that supply shocks during 2020-22 transited the Indian economy to a high inflation regime. Since the second half of 2022-23, there is a rising probability that inflation is transiting away from the high regime with a decline in persistence and trend, even as it is exhibiting increasing sensitivity to demand factors. The task of monetary policy is to guide the economy to a low inflation regime while being in readiness to address the rising sensitivity of inflation to demand pull.

In India, inflation declined from double digits in the early 2010s and aligned with the legislatively mandated target of 4 per cent set under the flexible inflation targeting (FIT) framework over the period 2016 to 2019. The onset of the Covid-19 pandemic brought in lockdowns, massive urban-to-rural migrations and severe supply disruptions. Just as signs of waves of the pandemic abating became evident, the war in Ukraine since February 2022 reignited inflationary pressures catching central banks across the globe wrong footed by what seemed to be multiple supply shocks (supply chain disruptions; container shortages; port and shipping dislocations; war-induced evaporation of food, energy, fertilisers and metal supplies; sanctions and financial fragmentations) when incipiently a surge in pandemic-liberated demand was taking hold as it rotated away from contact-intensive services. Quickly inflation became global, stinging central banks

into the most aggressive and synchronised monetary policy response in several decades. In India, inflation remained above the upper tolerance band, triggering statutory accountability procedures by November 2022.

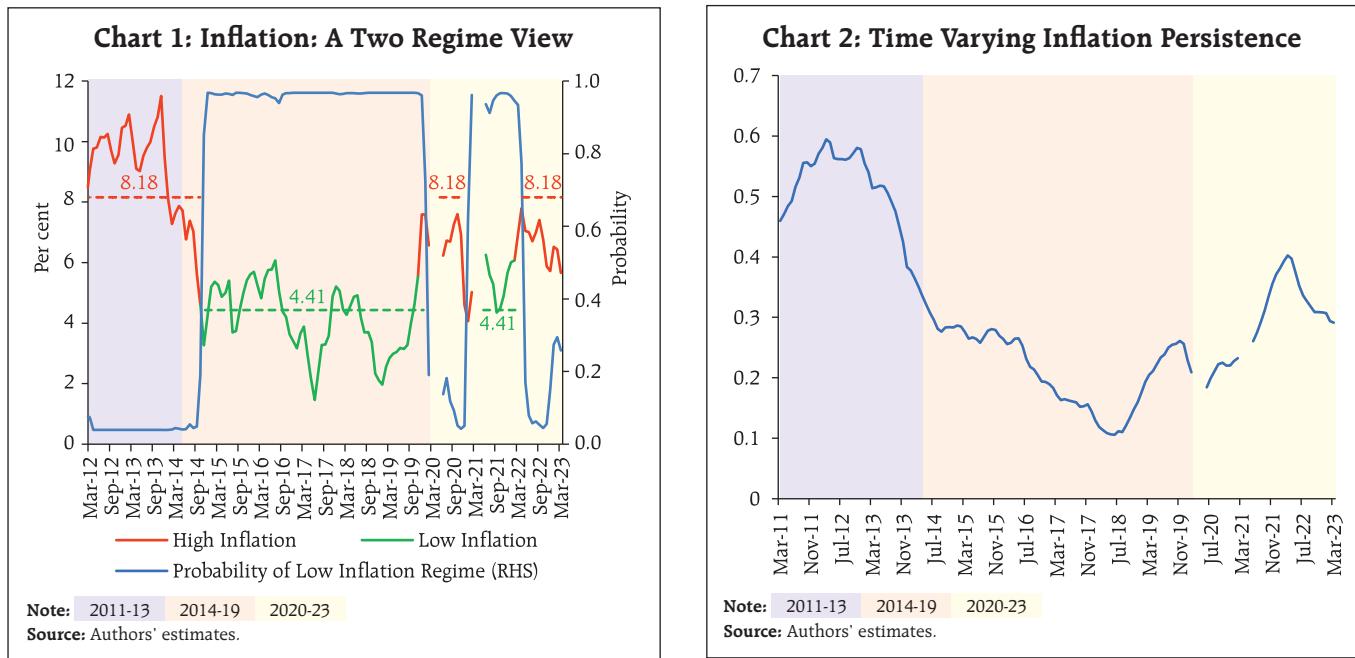
This article peers underneath the inflation prints to try to decipher why India was ambushed by these inflation regime shifts - the high inflation experience of 2020 and 2022, followed by signs of transition. It follows influential work on a two-regime view of inflation with focus on transitions (Borio, et al., 2023) to analyse the properties of those regimes in India after statistically identifying them in section II. We examine the behaviour of trend inflation, its persistence and stochastic volatility in order to examine the state of inflation expectations. Externalities associated with these regime changes in inflationary pressures, their generalisation tendencies and relative price dynamics are parsed in section III with a view to understanding the broad-based nature of inflation. Section IV revisits the convergence properties between core and headline so as to examine the durability of inflationary pressures. Section V investigates the cyclical sensitivity of inflation across regimes to evaluate the role of demand factors in the evolution of inflation. Section VI concludes with some policy perspectives.

II. Regime Shifts in India's Inflation History

The Markov switching model (Hamilton, 1989) is among the most popular nonlinear time series regime switching models in the literature. This model examines multiple structures that can depict inflation behaviour in different regimes, characterising the complex dynamic patterns switching between these structures.

A Markov switching model applied on year-on-year (y-o-y) inflation rates in India from January 2012 to March 2023 reveals that with the *de facto* introduction of FIT in India in 2014, inflation shifted from a high regime in which it averaged over 8 per

[^] The authors are from the Reserve Bank of India. The views expressed in this article are those of the authors and do not represent the views of the Reserve Bank of India.



cent during 2012-14 to a lower regime averaging 4.4 per cent. With the outbreak of the Covid-19 pandemic in early 2020, inflation moved back to a high regime for a brief period. As the pandemic seemed to abate, inflation reverted to a low regime by early 2021 and remained there till the Ukraine war in early 2022 caused it to move back to a high regime during the first half of 2022-23. Since H2 of 2022-23 there is a rising probability that inflation is transiting away from the high regime (Chart 1).

In line with the seminal work on the subject (Stock and Watson, 2007 and Cogley, et al., 2010), we decompose inflation into two components – trend and cycle. Changes in the trend component are highly persistent, whereas shocks to the cyclical component are temporary. Equations (1) and (2) are estimated as time-varying parameter regressions with stochastic volatility (TVP-SV) wherein inflation is measured by seasonally adjusted month-on-month (m-o-m) annualised rate of the Consumer Price Index (CPI).

$$\text{Inflation: } \pi_t = \underbrace{\rho_t}_{\text{intrinsic}} * \pi_{t-1} + \underbrace{(1 - \rho_t)}_{\text{expectation-based}} * \pi_t^T + \underbrace{\varepsilon_t^\pi}_{\text{error-term}} \dots (1)$$

$$\text{Inflation Trend: } \pi_t^T = \pi_{t-1}^T + \varepsilon_t^{\pi^T} \dots (2)$$

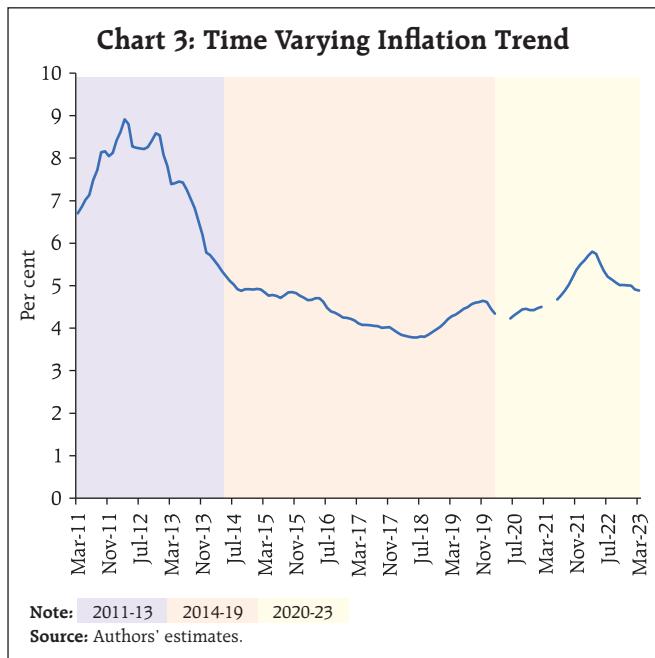
$\varepsilon_t^\pi \sim N(0, \sigma_t^\pi)$ and $\varepsilon_t^{\pi^T} \sim N(0, \sigma_t^{\pi^T})$. Logarithms of

$(\sigma_t^\pi)^2$ and $(\sigma_t^{\pi^T})^2$ evolve as independent random walks. The time varying parameters are estimated by using Bayesian Markov Chain Monte Carlo (MCMC) method using the codes of Nakajima (2011).

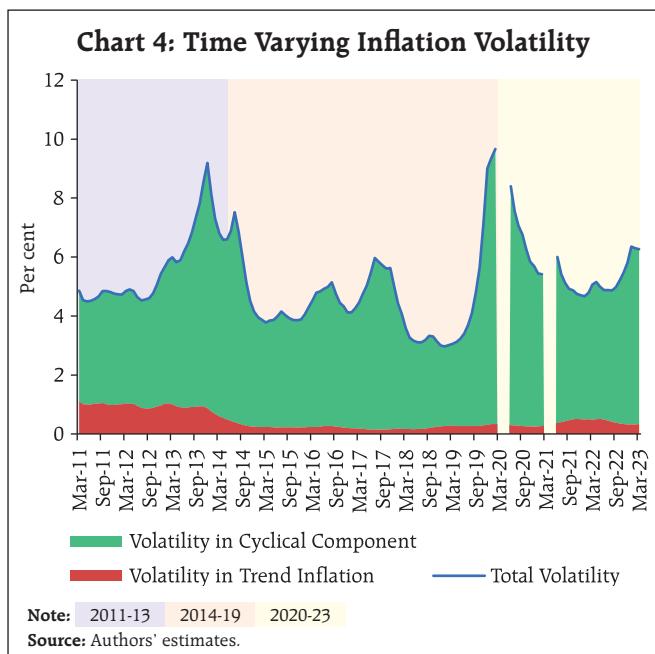
We observe that the "intrinsic" element, which represents the persistence of inflation due to its own past or price-setting inertia, was high during 2011-13. It declined from 2014 and remained low through 2016 till 2019. After the Covid-19 shock in early 2020, inflation persistence started to increase till it peaked in April 2022. More recently, intrinsic inflation persistence seems to be on a declining trajectory (Chart 2).

Equations (1) and (2) can also be utilised to filter out the unobserved trend in inflation in India. Trend inflation in India fell down from the peak during 2011-13 and remained range bound around the target during 2016-19. It started to increase after the onset of the pandemic, i.e. from early 2020, but it is found to be very gradually returning to the target (Chart 3).

Decomposing the variability in inflation into trend and cyclical components shows a marked increase



in both components, post Covid-19 period. Overall, in all regimes inflation variability has been mainly driven by its cyclical component, indicating the role of supply shocks. The variability of the trend component of inflation, has declined from its highs during 2011-13 and remained modest till 2019, indicating that inflation expectations were getting anchored. After the Covid-19 shock, however, volatility in the

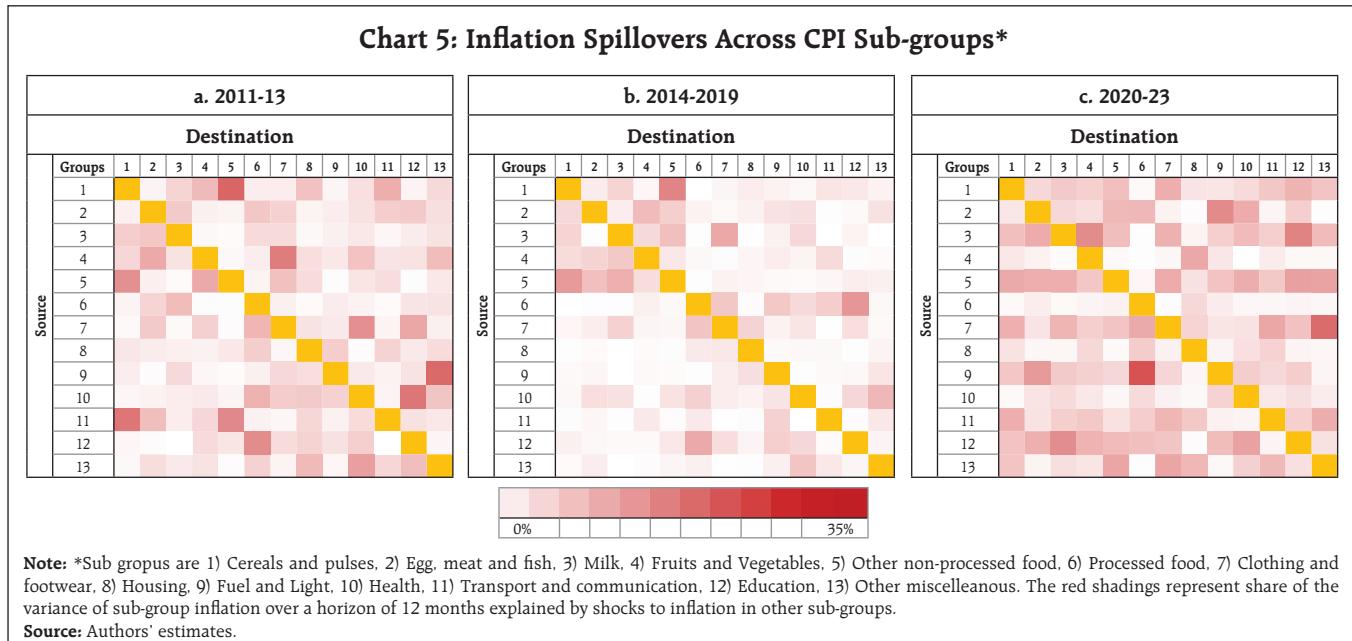


cyclical component of inflation caused by supply also translated into an increase in the variability of trend inflation suggesting de-anchoring of inflation expectations (Chart 4).

III. Relative Price Dynamics and Inflation Spillovers

Has the inflationary process been driven by relative prices or is it generalised? Without spillovers, commodity-specific price increases will die out over time rather than getting generalised. Even when commodity prices exhibit volatility, idiosyncratic changes independent of each other will get reflected in relative price changes rather than becoming broad-based.

We measure the spillovers of price changes across different constituent sub-groups of the CPI by using the generalised forecast error variance decomposition (GFEVD) over a given horizon (say 12 months) as estimated from a Vector Auto Regression (VAR) of sub-group level m-o-m annualised inflation (Borio, et al., 2023). Off-diagonal elements of GFEVD matrix represent the shares of variance in inflation of each sub-group that is explained by inflation in other sub-groups. A measure of total spillovers can be constructed by a weighted aggregate of the off-diagonal elements of the GFEVD matrix. It represents the amount of variance in inflation pertaining to each sub-group, which is not explained by its own shocks, but instead by the transmission of shocks from other sub-groups inflation working through the lag structure of the VAR (Borio, et al., 2023). It is depicted in a heat map (Chart 5). Darker shades of red indicate greater spillovers from sub-groups on the horizontal axis to the sub-groups on the vertical axis. The diagonal elements of the matrices in Chart 5 represent own shocks and do not contribute to spillovers across sub-groups. The weighted sum of all the off-diagonal elements of the GFEVD matrix in the second sub-sample (2014-19) is 45 per cent, which is substantially lower than that of the first sub-sample (2011-13, 60 per cent). Post-2020, there is an increase in

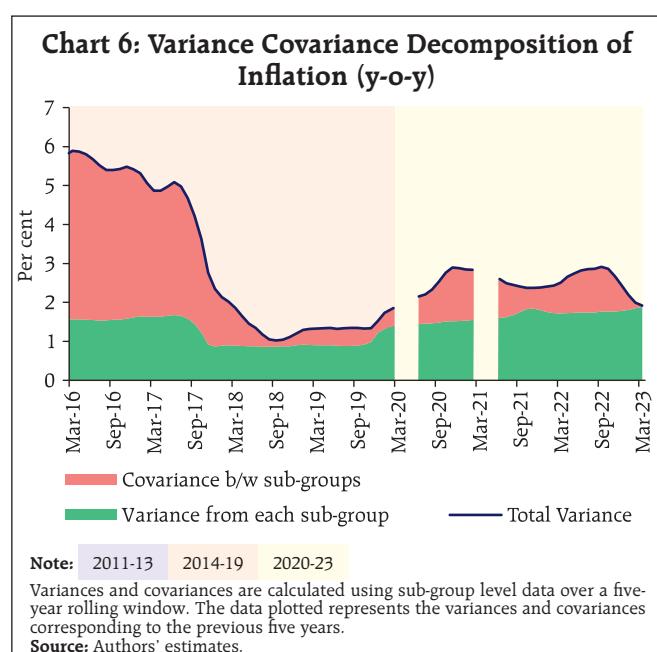


spillovers captured by the shading becoming darker – the average weighted spillover stood at 74 per cent during this period.

Another approach to measure the inflation spillovers is to decompose the cross-sectional variance of 12 month inflation into the portion attributable to two components: a) the aggregate weighted variance of inflation in sub-groups and b) the aggregate covariances between them, the latter being an indicator of inflation spillovers across sub-groups (Borio, et al., 2023).

This decomposition shows a decline in overall variance in inflation during 2016-19 on account of reduced covariances in inflation among sub-groups and hence lower degree of their co-movement and anchoring. Total variance in inflation, its variances in sub-groups and covariance has increased after 2020, the latter pointing to generalisation of inflation. Hearteningly, total variance in inflation has shown a decline since October 2022 on account of a decline in covariance, however, individual sub-

groups are exhibiting higher inflation volatility, which are idiosyncratic and independent of each other (Chart 6). In more recent months, therefore, inflation generalisation is getting weaker and it is localised price movements that are driving the inflation.



IV. Headline-Core Convergence

The underlying or core inflation rate filters out transitory fluctuations in headline inflation and provides a stable underlying measure of inflation that is free of the effects of sectoral shocks. Since volatility can also emerge from price changes in CPI sub-groups other than food and fuel, "outlier-exclusion" measures of core inflation have become popular (Ball, et al., 2023). The simplest type is the weighted median inflation in which 50 percent of the distribution of CPI item-level inflation rates is trimmed off on each side and core inflation is measured by the inflation rate in the middle.

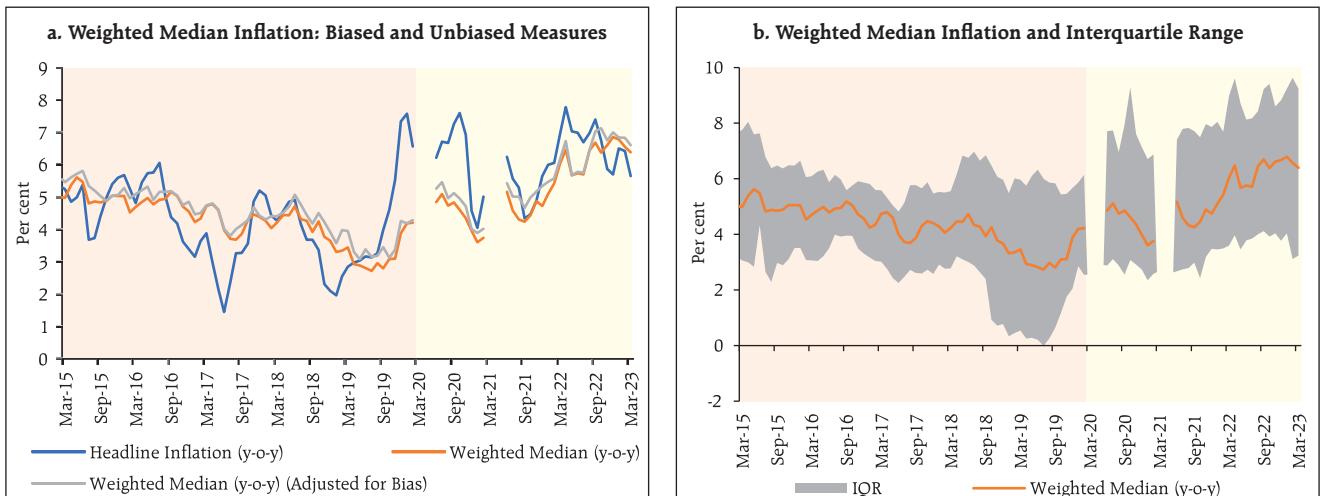
Two different types of weighted median measures of core inflation are constructed. For each month a measure of median inflation is computed over the previous 12 months. This is done by computing each CPI item's inflation rate from month $t-12$ to month t and taking the weighted median. The weighted median inflation can be defined at time t by considering all CPI items under a ranking operator, which ranks item-specific inflation rates from smallest to largest and

cumulates their corresponding weights. The weighted median inflation rate is selected as the inflation rate at time t for the CPI-item at which the sum of the ranked weights is at above the 50th percentile (Ball and Mazumder, 2019). The weighted median can become a biased estimator of core inflation that its average over time is lower than that of headline inflation. A bias adjusted measure is defined as the inflation rate at that percentile of the item-level inflations with the smallest average difference between its value and that of headline inflation (Ball, et al., 2023). The bias adjustment is dependent on the sample period. Here, we have adjusted the bias in the sample for the period January 2015 to March 2023 so that headline and core inflation have almost the same mean during that period.

Weighted median inflation (y-o-y) shows persistence (Chart 7a). The bias adjustment pushes core inflation further up (Chart 7b).

In contrast to the y-o-y measure, the m-o-m weighted median shows a decline since the Ukraine war related inflation spike in Q1:2022-23, indicating

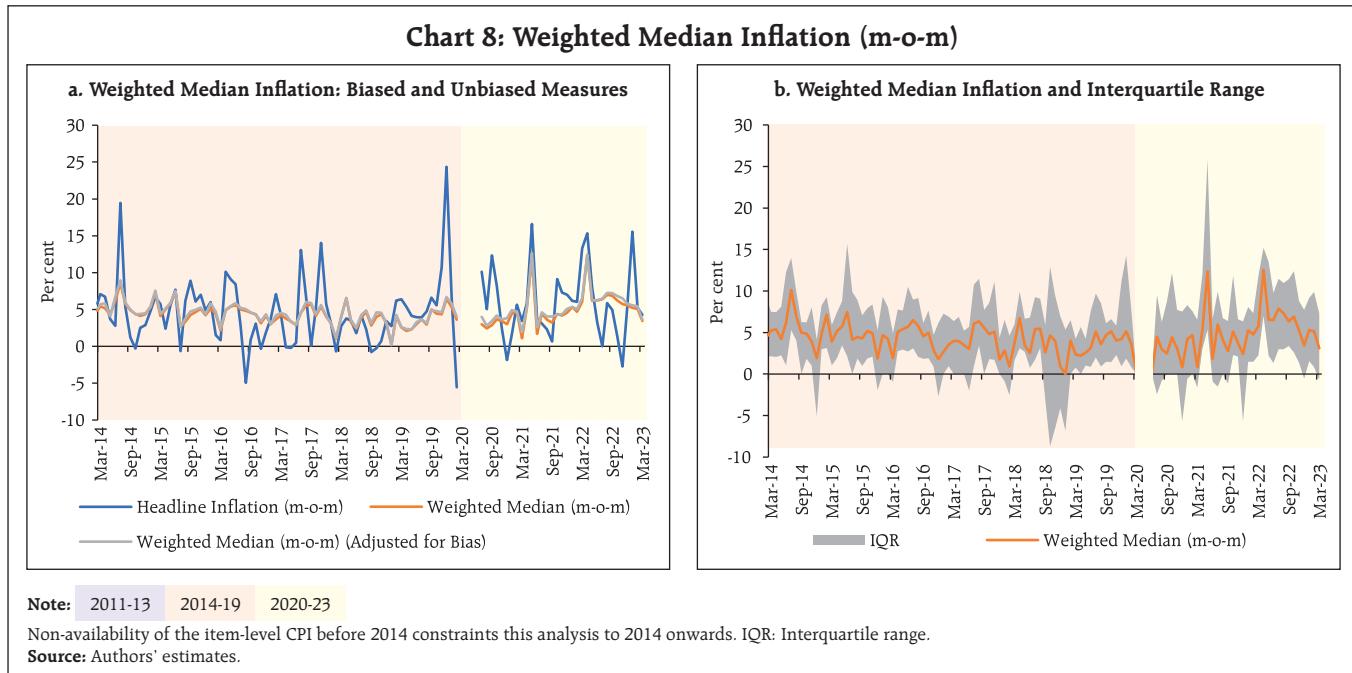
Chart 7: Weighted Median Inflation (y-o-y)



Note: 2011-13 2014-19 2020-23

Non-availability of the item-level CPI before 2014 constraints this analysis to 2015 onwards. IQR: Interquartile range.

Source: Authors' estimates.



that the y-o-y weighted median inflation may also decline further going forward in the absence of any unfavourable shocks (Chart 8a, b).

One way to check whether item-level price changes are likely to have significant consequences for underlying inflation is to investigate whether headline inflation tends to converge to core or vice versa. When headline converges to core volatile price changes incline to dissipate, by contrast, when core converges to headline, those price changes indicate potentially powerful second-round effects (Cecchetti and Moessner, 2008; Borio, et al., 2023).

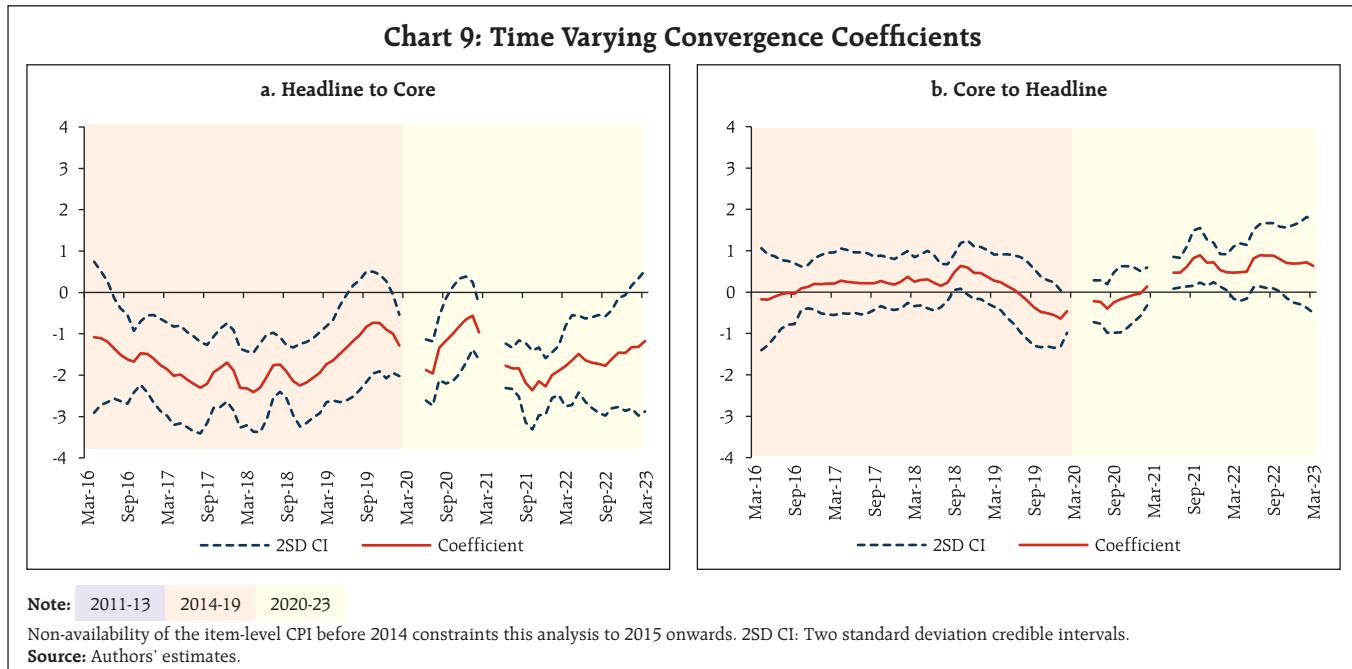
To examine this proposition, we estimate the following two regression equations allowing parameters to change over time:

$$\Delta^{12}P_{t+12}^H - \Delta^{12}P_t^H = \alpha_t^0 + \alpha_t^1(\Delta^{12}P_t^H - \Delta^{12}P_t^C) + \varepsilon_{t+12}^H \quad \dots(3)$$

$$\Delta^{12}P_{t+12}^C - \Delta^{12}P_t^C = \beta_t^0 + \beta_t^1(\Delta^{12}P_t^C - \Delta^{12}P_t^H) + \varepsilon_{t+12}^C \quad \dots(4)$$

where $\Delta^{12}P_{t+12}^H$ and $\Delta^{12}P_{t+12}^C$ denote the 12-month headline and core inflation (measured using weighted median) between months t-12 and t, respectively. α_t^1 and β_t^1 measure the degree to which deviations of headline inflation from the core and the opposite dissipate over a period of 12 months, respectively.

The time varying estimates show that α_t^1 is negative and significant while β_t^1 is insignificant throughout the sample period (April 2016 to March 2023) (Chart 9). These findings indicate that headline inflation converges to core and not otherwise. Further, the transitory shocks emanating from the non-core part are expected not to affect core inflation beyond a period of 12 months.

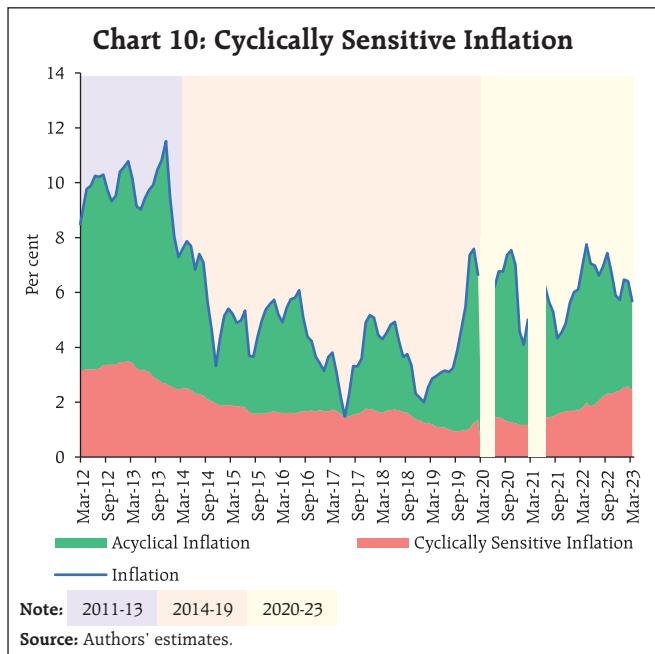


V. Role of Demand and Supply

By making use of historically determined weights based on correlations between sub-group level inflation and a measure of aggregate demand proxied by output gap (Patra, et al., 2021), cyclically sensitive inflation can be estimated (Stock and Watson, 2020; Patra, et al. 2022). There could be various explanations as to why the sensitivity of inflation to economic activity might differ from one sub-group to another. First, the cyclical sensitivity of the price of a good or service depends whether it is set on international or domestic market conditions. For example, with around 85 per cent of fossil fuel demand met through imports, India is typically a taker of prices set in global markets. Hence the link between domestic demand and the transportation costs will be influenced by import prices of crude oil. On the other hand, CPI categories such as household goods and services, education and housing have prices that are based on local market conditions and subject to domestic cyclical movements. In general, price-setting behaviour differs across sub-groups based on market

structure, wage-setting process and other structural factors. Second, measurement issues also contribute to differences in sensitivity to inflation. Accordingly, Cyclically Sensitive Inflation (CySI) is computed for India to identify which parts of the CPI are impacted by economic cycles (demand). The weights attached to each part is extracted from time varying Phillips curves estimated at the sub-group level (Patra, et al., 2022).

The results show that CySI has contributed substantially to the pre-2014 high inflation regime. Since the *de facto* adoption of the FIT in India in 2014, the contribution of CySI has declined. During the pandemic period (since Q1 of 2020), CySI remained persistently lower than acyclical inflation, indicating the collapse of demand (Patra et al., 2022). Thus, it were acyclial factors induced by supply bottlenecks and lockdowns that instead drove headline inflation. Since H2 of 2022-23 the contribution of CySI has been rising (Chart 10) and the gap between the acyclical inflation and CySI has turned negative, signalling the appropriateness of monetary policy action (Patra et al., 2022).



Global factors played a large role in the transition of inflation to a high regime since H2 of 2020-21 till H1 of 2022-23; in contrast, domestic factors were dominant in the earlier high inflation regime prior to 2014. From the second half of 2022-23, the contribution of imported inflation had been gradually declining and domestic factors were playing a larger role, reflecting the increasing role of cyclically sensitive inflation.¹

VI. Conclusion

Over the decade gone by, inflation in India has switched from a high pre-FIT regime to a low FIT regime and back under unprecedented and overlapping shocks. Since the second half of 2022-23, there are signs of a transition to a low inflation regime. Our findings can be summarised into two parts.

First, it was the succession of supply shocks during 2020-22 that transited the Indian economy to a high inflation regime. Our measure of cyclically

sensitive inflation remained persistently lower than the acyclical inflation even after the incidence of the shocks, indicating the absence of demand pull in the transition to the new regime. In the transition, inflation exhibited persistence and an upshift in its trend. Alongside, the volatility of both trend and cyclical components surged. Taken together, these results point to inflation expectations breaking loose from the anchoring that had occurred during 2016-19. The clear vision of hindsight would show that monetary policy action was warranted to restore credibility and re-anchor expectations, justifying the effective increase of 3.2 percentage points in the weighted average call money rate, the operating target of monetary policy in India, between March 2022 and March 2023. Influential work on a two-regime view of global inflation cited earlier highlights the importance of monetary policy being pre-emptive when the risk of a transition to a high inflation regime increases, although it acknowledges the challenge of assessing this risk in real time (Borio, et al., 2023). Delaying the response will warrant more forceful actions inevitably, with implications for the sacrifice of growth.

The supply shocks of 2020-22 increased the total variance of headline CPI inflation as well as covariance among inflation in its sub-groups. This translates to evidence that in the high inflation regime, there has been a generalisation of price pressures – they have spread across many sub-groups, which are experiencing more co-movement of high inflation than normally seen. This is a clearer call for monetary policy action to quell inflationary pressures and contain their broad-basing. Again, the monetary policy actions and stance of the Reserve Bank through 2022-23 are validated.

Second, what do our findings suggest for the way forward? In terms of the regime shift exercise,

¹ The contribution of imported inflation was calculated by re-adjusting the CPI weights based on the pass-through coefficients estimated at sub-group level using time varying parameter (TVP) regressions for the period from January 2012 to March 2023.

there is a rising probability since the second half of 2022-23 that the Indian economy is transiting away from the high regime. Absent unfavourable idiosyncratic shocks, conditions are right for early signs of grudging disinflation to firm up into a central tendency. Also, inflation persistence and trend are on the decline, however gradual, suggesting that inflation expectations are slowly getting re-anchored as policy actions and stance are gaining traction and have started showing demand restraining influences. For monetary policy, the recommendation would be: wait and watch, while guiding inflation towards the imminent onset of a low inflation regime. Since the second half of 2022-23, individual sub-groups are exhibiting higher volatility – sporadic supply shocks are at work – but, importantly, covariance is declining. This suggest that generalisation or broad-basing of inflationary pressures is on the ebb and increasingly localised price movements are influencing headline inflation. This calls for fine-tuning measures to align demand and supply of specific goods and services, which lies outside the realm of monetary policy but are being undertaken on an ongoing basis to head off potential price pressures from getting deep-seated.

Additional evidence that inflationary pressures in India are easing is found in the decline in the m-o-m momentum of core inflation, reinforcing empirical support for a low inflation regime ahead of us from the proposition that headline inflation will inevitably converge to its core. A dissonant note in our findings is that our cyclically sensitive inflation measure is increasing. This indicates that demand pull is increasingly gaining traction. For monetary policy, therefore, there can be no letting down of the guard. Readiness to act pre-emptively to ensure that the disinflation that is underway is not interrupted is our policy recommendation for the way forward.

References

- Ball, L. M., & Mazumder, S. (2019). The nonpuzzling behavior of median inflation (No. w25512). National Bureau of Economic Research.
- Ball, L. M., Carvalho, C., Evans, C., & Ricci, L. A. (2023). Weighted median inflation around the world: A measure of core inflation. *IMF Working Papers*, 2023 (044).
- Borio, C., Lombardi, M., Yetman, J., & Zakrajšek, E. (2023). The two-regime view of inflation. *BIS Papers*.
- Cecchetti, S. G., & Moessner, R. (2008). Commodity prices and inflation dynamics. *BIS Quarterly Review*, 55-66.
- Cogley, T., Primiceri, G. E., & Sargent, T. J. (2010). Inflation-gap persistence in the US. *American Economic Journal: Macroeconomics*, 2(1), 43-69.
- Hamilton, J. D. (1989). A new approach to the economic analysis of nonstationary time series and the business cycle. *Econometrica: Journal of the econometric society*, 357-384.
- Nakajima, J. (2011). Time-varying parameter VAR model with stochastic volatility: An overview of methodology and empirical applications.
- Patra, M. D., Behera, H., & John, J. (2021). Is the Phillips Curve in India dead, inert and stirring to life or alive and well? *RBI Bulletin November*.
- Patra, M. D., George, A. T., Nadhanael, G. V., & John, J. (2022). Anatomy of inflation's ascent in India. *RBI Bulletin December*.
- Stock, J. H., & Watson, M. W. (2007). Why has US inflation become harder to forecast?. *Journal of Money, Credit and banking*, 39, 3-33.
- Stock, J. H., & Watson, M. W. (2020). Slack and cyclically sensitive inflation. *Journal of Money, Credit and Banking*, 52(S2), 393-428.

Capital Outlay of Indian States: An Empirical Assessment of its Role and Determinants

by Deba Prasad Rath, Bichitrana Seth,
Samir Ranjan Behera and Anoop K Suresh[^]

This study investigates the relationship between States' capital outlay and gross state domestic product (GSDP) while also identifying the factors that influence the States' capital outlay decisions. An application of the panel framework for 15 Indian States revealed a positive and significant association between capital outlay and GSDP. Past capital outlay turns out to be a predictor of current capital outlay decisions and higher debt levels to be a barrier to public investment. States exhibit a counter-cyclical behaviour in terms of capital outlay under both negative and positive output gap environment. States may prioritize capital outlay while being cautious about higher debt levels, besides adhering to fiscal responsibility.

Introduction

As the world emerges from the COVID-19 pandemic, there is a growing consensus that governments' capital expenditure could play a vital role in economic recovery (Berawi et al., 2020, Gaspar et al., 2020; OECD, 2021). Investing in infrastructure projects, renewable energy, and technology can create jobs, stimulate growth, and promote sustainability. Capital expenditure is a crucial tool used by governments to promote higher and stable economic growth particularly in economies that face infrastructural constraints (Ismail and Mahyideen, 2015; Waweru and Mose, 2021). India continues to be one of the fastest-growing economies in the world and maintaining high and sustainable growth would

require significant investment in infrastructure. A recent estimate puts India's investment requirement of US\$840 billion over the next 15 years into urban infrastructure if it is to effectively meet the needs of its fast-growing urban population (World Bank, 2022). Recognising this, continued thrust has been provided to capital spending by the Centre and States in India, especially since the onset of the pandemic. For instance, capital expenditure by the Centre is budgeted to increase to 3.3 per cent of the GDP in 2023-24 from 2.7 per cent of the GDP in 2022-23 (RE). However, in a federal set up such as India, the sub-national governments' capital expenditure decisions along with the central government, play a critical role in driving economic growth as well as promote social and economic development through investment in education, healthcare, and other social infrastructure. Moreover, capital expenditure by sub-national governments constitutes around two-third of the capital spending incurred by the General Government, while their own revenue is only one-third. Recently, State governments have increased their allocation towards capital spending, with capital outlay rising to 2.7 per cent of GDP in 2021-22 (from an average of 2.0 per cent in 2000s) and is budgeted to increase to an all-time high of 2.9 per cent in 2022-23. In this context, this article provides an assessment of the drivers of States' capital outlay, as there is a paucity of empirical literature on this issue.

Apart from providing a set of stylised facts, the study utilises various data¹ analytic methods, such as panel cointegration, fully modified ordinary least square (FMOLS), and dynamic ordinary least square (DOLS), to assess the impact of capital outlay on gross

[^] The authors are from the Department of Economic and Policy Research. The authors are thankful to Dr. G.V. Nadhanael for his valuable inputs and suggestions. The views expressed in this article are those of the authors and do not necessarily represent the views of the Reserve Bank of India.

¹ For examining relationship between States' capital outlay and their GSDP, we have utilised a panel dataset from 15 major Indian States spanning 20 years from 2000-01 to 2019-20. The study deliberately does not extend to 2022-23, as it may have been influenced by abnormal factors that could have skewed the results. On the other hand, for examining the factors determining States' capital outlay, we have confined the period of analysis from 2011-12 to 2019-20.

state domestic product (GSDP). Thereafter, the study employs a two-way system generalised method of moments (GMM) to identify the factors influencing States' decisions on capital spending, using the capital outlay to GSDP ratio as the dependent variable and factors such as one-year lagged debt-GSDP ratio, output gap, and dummy variables to capture the impact of election years and natural calamities as independent variables. Additionally, the study examines the asymmetric responses of States to debt levels and the output gap.

The rest of the article is divided into five sections. Section II undertakes a literature survey of past research studies in this arena. Stylised facts are outlined in Section III and provides essential insights into the research question. Section IV discusses the data and methodology employed in the study whereas the empirical results are presented in Section V. Lastly, Section VI concludes by outlining policy implications and recommendations based on the findings from our analysis.

II. Literature Review

The association between government's capital expenditure and economic growth has led to a series of debates (Waweru and Mose, 2021). The capital expenditure incurred by the government has the ability to absorb new workforce, crowd in private investment and set the economy free from the vicious cycle of poverty (Leasiwal, 2021; Teklay, 2016; Victoria, 2015). Governments' capital expenditure on human capital such as education and health further positively impact economic growth (Cullison, 1993; Paudel, 2023). On the contrary, it is also argued that the effect of capital expenditure on economic growth is negative attributable to the crowding out effect (Korman and Bratimasrene, 2007; Gregoriou and Ghosh, 2009).

In terms of determinants of capital expenditure by the government, budget constraints and debt levels have been considered as key factors influencing

the government's decisions on capital expenditure (Toubeau and Vampa, 2021; Idenyi *et al.*, 2016; Lora and Olivera, 2007). Similarly, elections and natural calamities could affect their available budget for capital expenditure (Rasmussen, 2004; Rizqiyati and Setiawan, 2022).

In India, the multiplier effect of capital expenditure is found to be much higher at 7.6 than its revenue counterpart (Jain and Kumar, 2013). Furthermore, unlike the revenue expenditure multiplier, which has a short-run impact, the capital expenditure multiplier is dynamic, the effect of which lasts several years. Interestingly, capital expenditure is found to be particularly effective during periods of economic slack (RBI, 2022).

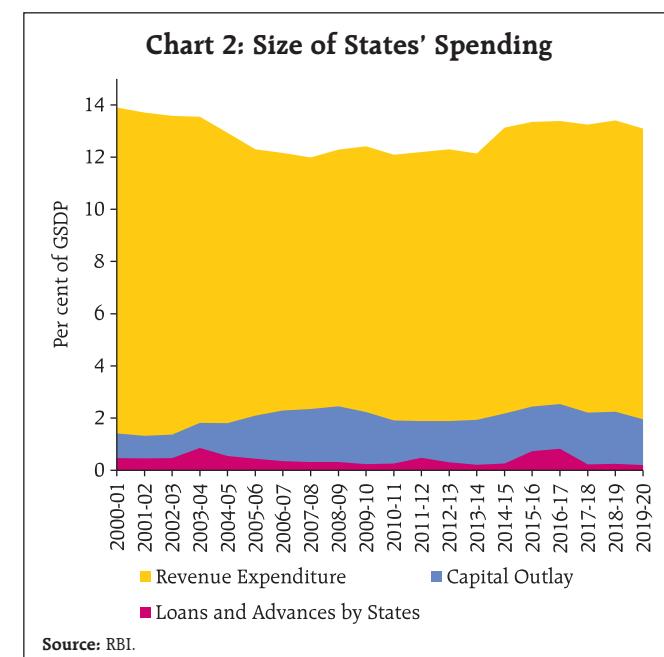
Overall, there are several studies that examine the association between government's capital investment and economic growth; however, there seems to be a dearth of such studies at the sub-national level. Therefore, this paper attempts to contribute to the existing literature on the relationship between capital outlay and States' GSDP for India and would aid in drawing implications for policy. These findings would enable the Indian States to make better decision and improve the medium to long-term economic growth prospective.

III. Stylized Facts

By convention, the expenditure incurred by the State governments are categorized into two distinct groups: revenue and capital. The former covers operational expenses such as salaries, wages, pension and supplies while the latter involves investment in infrastructure and other long-term assets. The capital expenditure is further subdivided into capital outlays as well as loans and advances which are provided to diverse entities by the States. We present a set of stylised facts that characterise the nature of major 15 States' capital outlay in India.

Firstly, a significant portion of the States' borrowing has been undertaken for capital outlay, unlike the initial years of the 2000s wherein they were utilised for meeting the revenue expenditure as evident from trends in ratio of revenue deficit to the gross fiscal deficit (RD-GFD) (Chart 1). A similar pattern is also visible for the revenue expenditure-capital outlay (RECO) ratio – another indicator of quality of expenditure. Although this ratio has risen since 2017-18, it is relatively smaller than its trend during the first half of the 2000s. Use of borrowings by States for capital outlay largely follows the principle that revenue deficits should be financed through revenue collection, and borrowings should be spent on creating productive assets so that the receipts emanating from the assets in the future can be used to repay the debt.

Secondly, the total expenditure of the States has been increasing since the fiscal year 2014-15. This increasing trend in expenditure could be attributed to factors such as the *Ujjwal DISCOM Assurance Yojana* (UDAY) scheme, farm loan waivers, and other development-related expenses. However,



the growth of capital outlay has been relatively slow (Chart 2).

Thirdly, the capital outlay-to-GSDP ratio gradually increased from 1.3 per cent in 2002-03 to 2.5 per cent in the pre-global financial crisis (GFC) year driven by high growth in GSDP (Chart 3). With the slowdown on account of the impact of the GFC, States' GFD increased above the fiscal responsibility legislation (FRL) limit, thereby reducing their capital outlay until 2010-11. Post 2013-14, however, this ratio recovered to 2.5 per cent by 2016-17 although it could not be sustained thereafter on account of increase in expenditure owing to factors noted above and revenue uncertainty due to the implementation of the goods and services tax (GST) regime from July 1, 2017.

Fourthly, State governments prioritise and allocate capital outlay towards various social and economic sectors. A significant proportion of the overall capital outlay is channelled towards the transport, irrigation, flood control, and energy sectors, while sectors related to human development, such as

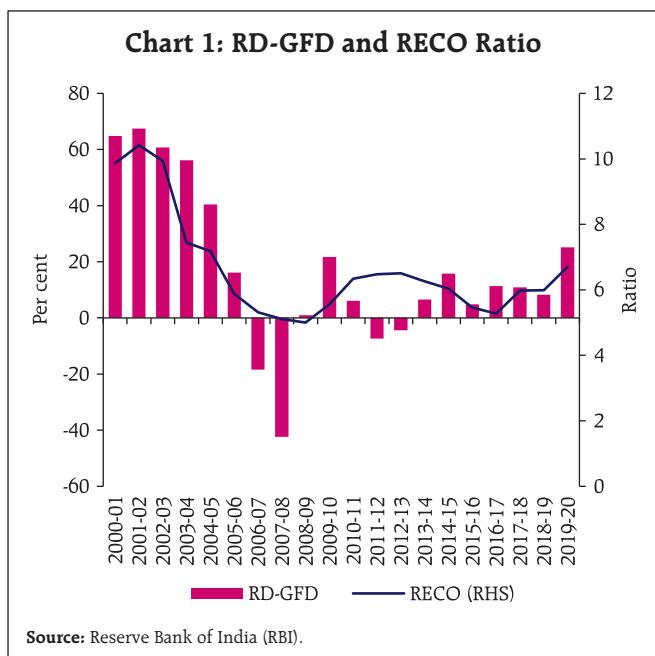
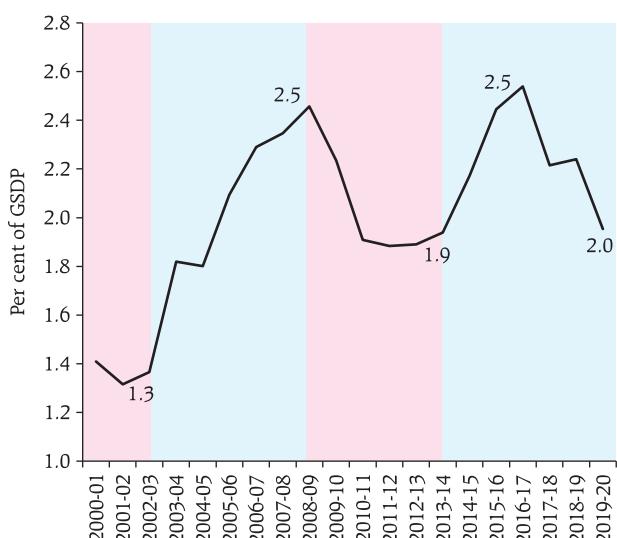
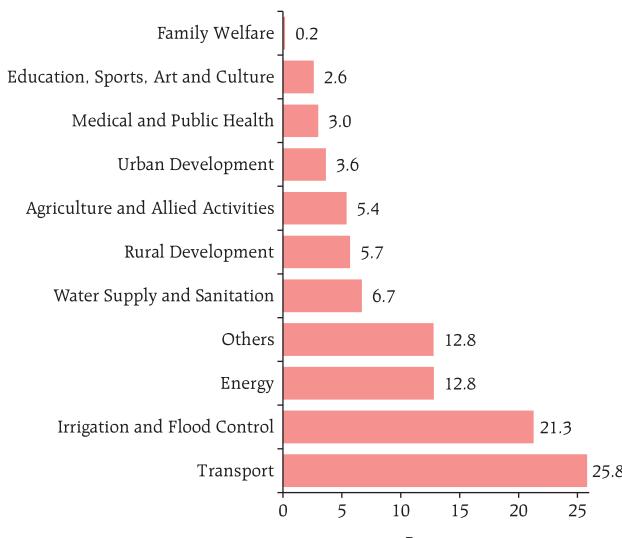


Chart 3: Capital Outlay-GSDP Ratio

Source: RBI.

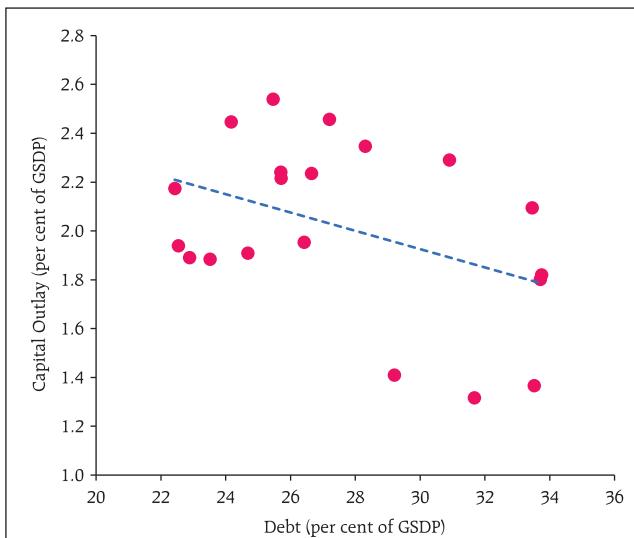
Chart 4: Composition of States' Capital Outlay

Source: RBI.

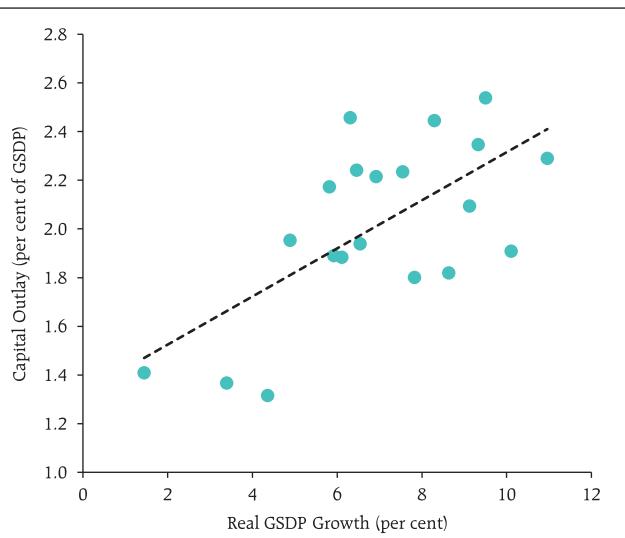
education and health, receive a comparatively smaller share (Chart 4). Barring education and health, this allocation pattern is consistent with the government's emphasis on investing in infrastructure in order to promote economic growth and development.

Fifthly, revised estimates (RE) tends to overshoot both budget estimates (BE) and actuals, with the most significant deviation arising from revenue

receipts, mainly tax revenue (RBI, 2023). As a reaction, most States tend to reduce their allocation towards capital outlay in RE and further in actuals. Finally, as mentioned earlier, States are constrained by debt levels and economic conditions while deciding on capital outlay. Chart 5 illustrates that while capital outlay is inversely correlated with debt levels, it is positively correlated with GSDP growth.

Chart 5: Capital Outlay, Debt and Real GSDP Growth – All States

Source: RBI.



In view of the stylised facts presented above, we now formally examine the relationship between capital outlay and economic growth at sub-national level as well as identify the role of various factors in determining States' capital outlay.

IV. Data and Methodology

The study focuses on 15 Indian States.² As the first step of empirical analysis, the relationship between capital outlay and GSDP is investigated for 2000-01 to 2019-20. We use Pedroni and Kao's residual panel cointegration methods³, FMOLS, DOLS as our empirical approach. The data on capital outlay and GSDP were obtained from the Reserve Bank of India (RBI) and Ministry of Statistics and Programme Implementation (MoSPI), respectively. Stationarity tests confirmed that the variables in log form are non-stationary, i.e. I(1). Once the cointegration is established between capital outlay and States' GSDP, the long-run coefficients are estimated.

In order to examine the determinants of States' capital outlay, a two-way system GMM is employed in a panel setting. These methods allow for accounting endogeneity, individual-specific effects, and potential biases, providing consistent and reliable estimates. Here we use data on capital outlay for the same set of States for the period 2011-12 to 2019-20. We regress capital outlay to GSDP ratio on debt-GSDP ratio, output gap⁴, natural calamity dummy, and election dummy. To attempt a further deep dive, the debt and output gap are provided an asymmetric treatment by

² Andhra Pradesh (including Telangana), Bihar, Gujarat, Haryana, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Odisha, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh, and West Bengal.

³ The Pedroni test assumes cross-sectional independence in the residuals, while the Kao test allows for cross-sectional dependence by modelling a common factor in the residuals. Moreover, the Pedroni test allows for heterogeneity in the intercept and trend coefficients across cross-sections, whereas the Kao test assumes homogeneity of the cointegration relationship across cross-sections.

⁴ Output gap is estimated using HP filter.

including dummy variables separately for periods of high and low debt levels and interacting them with the debt levels.⁵ Similarly dummies are also used for positive and negative output gap and interacted with the output gap variable.

V. Empirical Findings

Are Capital Outlay and GSDP cointegrated?

Pedroni residual cointegration tests indicates strong evidence of cointegration between the capital outlay and GSDP (Table 1). The Kao residual cointegration test, based on the augmented dickey fuller (ADF) test, also supported the presence of cointegration. Furthermore, employing a panel vector

Table 1: Estimation Results: Pedroni and Kao Residual Cointegration Test

Pedroni Residual Cointegration Test				
Alternative Hypothesis: Common AR Coefficients				
	Statistic	Prob.	Weighted Statistic	Prob.
Panel v-Statistic	3.879	0.0001	3.406422	0.0003
Panel rho-Statistic	-7.250	0.0000	-6.6964	0.0000
Panel PP-Statistic	-6.482	0.0000	-5.979	0.0000
Panel ADF-Statistic	-6.721	0.0000	-6.33	0.0000
Alternative Hypothesis: Individual AR Coefficients				
	Statistic	Prob.		
Group rho-Statistic	-3.0781	0.0010		
Group PP-Statistic	-4.5413	0.0000		
Group ADF-Statistic	-5.159	0.0000		
Kao Residual Cointegration Test				
Statistics			t-Statistic	Prob.
ADF			-7.861936	0.0000

Note: Common AR coefficients pertain to 'within-dimension' whereas Individual AR coefficients pertain to 'between-dimension'.

Source: Authors' estimates.

⁵ These dummy variables take the value of 1 for periods when the actual debt levels are in the top or bottom quartile (25 per cent). The threshold of debt-GSDP ratio at 25 per cent is chosen based on the average of the ratios from 2015-16 to 2019-20 of all States. This ratio, however, does not represent an optimal level of debt or sustainable level of debt.

Table 2: Estimation Results: Panel FMOLS and DOLS

Variable	Coefficient	Std. Error	t-Statistic	Probability
FMOLS	0.84	0.02	47.91	0.00
DOLS	0.82	0.02	45.99	0.00

Source: Authors' estimates.

error correction model (VECM) ensured that the error correction term⁶ is negative and statistically significant.⁷

Table 2 presents the results of the two-panel regression models, FMOLS and DOLS, investigating the relationship between States' capital outlay and GSDP and the coefficients turn out to be significant at 0.84 and 0.82, implying that a one per cent increase in States' capital outlay is associated with a range of 0.82-0.84 per cent increase in GSDP.

What Factors Influence States' Decision for Capital Outlay?

Next, we turn to the determinants of States' capital outlay using two-way system GMM within a panel framework. As alluded to earlier, various factors, such as debt, economic conditions, natural disasters, and elections, impact the State's decision to undertake capital outlay and our variables capture these dimensions.

(a) Baseline Results

Column (I) in Table 3 has baseline specification, while Columns (II) and (III) include an election year dummy and natural calamities dummy, respectively. The validity of the instruments (*i.e.*, lags of debt-

⁶ The error correction term represents the short-run dynamics between the variables, indicating how quickly the variables adjust to deviations from the long-run equilibrium relationship. If the coefficient of the error correction term is negative and statistically significant, it indicates that deviations from the long-run equilibrium are corrected in the short run, meaning that if capital outlay deviates from its long-run equilibrium level, it would adjust to that level in the short run.

⁷ Results of panel VECM are not presented in the paper. However, they would be made available upon request.

Table 3: Estimation Results: Two-Way GMM

Variable	Dependent Variable: Capital Outlay to GSDP Ratio		
	(I)	(II)	(III)
Capital Outlay to GSDP Ratio _{t-1}	0.77*** (0.15)	0.98*** (0.12)	0.97*** (0.12)
Debt to GSDP Ratio _{t-1}	-0.01 (0.03)	-0.06* (0.03)	-0.07** (0.03)
Output Gap (real term)	-0.08 (0.05)	-0.10*** (0.03)	-0.08*** (0.02)
Election Dummy		0.15 (0.19)	0.29 (0.17)
Natural Calamities			-0.52 (0.44)
Intercept	0.68 (0.56)	1.60* (0.88)	1.80** (0.77)
Observations	135	105	105
AR (2)	0.91	0.50	0.73
Hansen	0.78	0.90	0.94

Note: 1. Standard errors in parentheses.

2. The asterisks stand for the p-value significance levels (**
 $p < 0.01$, ** $p < 0.05$, * $p < 0.1$).

Source: Authors' estimates.

GSDP ratio) used in the study is assessed using the Hansen and Sargan tests. Both tests fail to reject the null hypothesis in all three equations, indicating that the model is correctly specified, and the instruments used are valid.

The coefficients of the lagged value of capital outlay to GSDP ratio have a positive and significant effect on all three specifications, suggesting that past values of capital outlay influence the current year's decision. Furthermore, higher debt levels hinder a State's ability to invest in capital outlay. As the debt-to-GSDP ratio has a negative coefficient in the equations, it indicates that States with more debt are less likely to increase their investment in capital outlay. The output gap has a negative effect on capital outlay, as shown by the statistically significant negative coefficients in column (II) and (III). An increase in the output gap leads to a decline in capital outlay. Both the dummy variables for elections and natural calamities are insignificant, implying that they do not significantly influence the States' capital outlay decisions.

To capture the asymmetric response of States to debt levels (*i.e.*, debt less than 25 per cent and more than 25 per cent) and economic conditions (*i.e.*, positive and negative output gap), the base level equation (depicted in Column III of Tables 3 and Column I of Table 4) has been modified to the form depicted in Column II to V in Table 4. Aggregate debt variable is replaced by interacting dummies of debt less than 25 per cent (DL25) and more than 25 per cent (DM25), which are used alternatively in order to avoid dummy variable traps. Finally, alternative specifications for the output gaps, *i.e.*, positive (POG) and negative (NOG) are also included in the system. All other variables are kept unchanged in all specifications.

Interestingly, the finding that States reduce public investment as the debt level increases

cannot be generalized to all levels of debt. The insignificant coefficient of DL25 indicates that the State government's decision to allocate capital outlay is not affected by a debt level lower than 25 per cent. This is attributed mainly to the fact that when the debt level is low, the State government has more financial flexibility to spend on public investment. On the other hand, the negative and statistically significant coefficient of DM25 suggests that when the debt level exceeds 25 per cent, the State government reduces its allocation of public investment. The State government faces financial constraints when the debt level is high, limiting its ability to spend on public investment. The higher debt level also increases the cost of borrowing, reducing the availability of funds for public investment.

The coefficient for output gap (OG) is negative and significant, both in positive and negative cases of output gap – a result which warrants careful interpretation. During positive output gap periods, it could be plausible that States commit to the path of fiscal consolidation *i.e.*, to keep GFD-GSDP ratio within the FRL limit. During negative output gap periods, the Governments provide support to the economy through counter-cyclical fiscal policy. Part of this could also be in the form of higher capital expenditure. This policy has been evident in recent years as governments increased capital expenditure during the recovery period in the aftermath of the COVID-19 pandemic.

In summary, the study's findings suggest that past values of capital outlay, debt-to-GSDP ratios, and economic conditions proxied by the output gap are significant factors influencing States' capital outlay decisions. These findings have important implications for policymakers *viz.*, investments in capital outlay may be hindered by high levels of debt highlighting the need for careful fiscal management and planning by the States.

Table 4: Estimation Results: Two-Way GMM

Dependent Variable: Capital Outlay to GSDP Ratio					
Variable	(I)	(II)	(III)	(IV)	(V)
Capital Outlay to GSDP Ratio _{t-1}	0.97*** (0.12)	0.97*** (0.13)	0.99*** (0.14)	0.99*** (0.10)	0.90*** (0.11)
Debt to GSDP Ratio _{t-1}	-0.07** (0.03)			-0.06* (0.04)	-0.05* (0.03)
Output Gap (real term)	-0.08*** (0.02)	-0.11*** (0.03)	-0.10*** (0.02)		
Election Dummy	0.29 (0.17)	0.27 (0.22)	0.28 (0.20)	-0.17 (0.54)	0.37 (0.35)
Natural Calamities	-0.52 (0.44)	-0.54 (0.56)	-0.72 (0.55)	-0.03 (0.53)	-0.29 (0.40)
DL25 (Debt<25 per cent)		0.03 (0.02)			
DM25 (Debt>25 per cent)			-0.02* (0.01)		
POG (positive output gap)				-0.16*** (0.04)	
NOG (negative output gap)					-0.20*** (0.05)
Constant	1.80** (0.77)	-0.25 (0.38)	0.36 (0.33)	2.04* (1.08)	1.41 (0.85)
Observations	105	105	105	105	105
AR (2)	0.73	0.62	0.74	0.61	0.40
Hansen	0.94	0.84	0.89	0.86	0.84

Note: 1. Standard errors in parentheses.

2. The asterisks stand for the p-value significance levels
(** p<0.01, ** p<0.05, * p<0.1).

Source: Authors' estimates.

VI. Conclusion

The empirical findings of the study revealed a significant and positive association between States' capital outlay and GSDP - a one per cent increase in capital outlay leading to a range of 0.82-0.84 per cent increase in GSDP. Further, the findings also revealed that past values of capital outlay influence the current year's decision, while higher levels of debt hinder States' ability to invest in public investment. Additionally, State governments reduce their allocation of public investment when the debt levels are high. States exhibit a counter-cyclical behaviour in their allocation of capital outlay. The study's findings provide important policy implications for State governments' decision-making on capital outlay. While there is a need for prioritizing capital outlay due to their positive association with GSDP, adopting a prudent approach to public investment when debt levels are high is also called for. Thus, the analysis brings out the need for balancing the requirement for higher capital outlay with the goal of keeping the overall debt levels low and sustainable.

References

- Berawi, M., Miraj, P and Sari, M (2020). Accelerating Infrastructure Development in Post-Pandemic Era. *CSID Journal of Infrastructure Development*. Vol. 3(114).
- Cullison, W. E. (1993). Public Investment and Economic Growth. *Federal Reserve Bank Of Richmond Economic Quarterly*, 15.
- Gaspar, V., Mauro, P., Pattillo, C and Espinoza, R (2020). Public Investment for the Recovery. *IMF Blog*. October.
- Gregoriou, A and Ghosh, S. (2009). The Impact of Government Expenditure on Growth: Empirical Evidence from Heterogeneous Panel. *Bulletin of Economic Research*. Vol. 61(1). pp.95-102. February.
- Idenyi, O.S., Ogonaa, I.C., and Ifeyinwa, A.C (2016). Public Debt and Public Expenditure in Nigeria: A Causality Analysis. *Research Journal of Finance and Accounting*. Vol. 7(10).
- Ismail, N and Mahyideen, J. (2015). The Impact of Infrastructure on Trade and Economic Growth in Selected Economies in Asia. *ADBI Working Paper Series*. No.553. December.
- Jain, R. and Kumar, P. (2013). Size of Government Expenditure Multipliers in India: A Structural VAR Analysis. *RBI Working Paper Series*. No.7. September.
- Korman, J and Bratimasrene, T. (2007). The Relationship between Government Expenditure and Economic Growth in Thailand. *Journal of Economic Education*. Vol.14. pp. 234-246.
- Leasiwal, T. (2021). Impact of Government Capital Expenditure on Poverty Levels in Maluku. *Jurnal Cita Ekonomika*, Vol.15(1). pp.43–49.
- Lora, E and Olivera, M. (2007). Public Debt and Social Expenditure: Friends or Foes?. *Emerging Markets Review*. Elsevier, Vol. 8(4). pp. 299-310. December.
- Organisation for Economic Cooperation and Development (2021). COVID-19 Transport Brief: Analysis, Facts and Figures for Transport's Response to Corona Virus. March.
- Paudel, R. (2023). Capital Expenditure and Economic Growth: A Disaggregated Analysis for Nepal. *Cogent Economics and Finance*. Vol. 11(1). March.
- Rasmussen, T. (2004). Macroeconomic Implications of Natural Disasters in the Caribbean. *IMF Working Paper*. December.
- Reserve Bank of India (2022). Report on Currency and Finance. April.
- Reserve Bank of India (2023). State Finances: A Study of Budgets of 2022-23. January.

- Rizqiyati, C and Setiawan, D. (2022). Do Regional Heads Utilize Capital Expenditures, Grants, and Social Assistance in the Context of Elections? *Economies*. Vol.10(220). September.
- Teklay, B. (2016). Impact of Government Capital Expenditure on Growth of Private Sector Investment: The Case of Ethiopia. *Developing Country Studies*. Vol. 6(4). pp.49-61.
- Toubeau, S and Vampa, D (2021). Adjusting to Austerity: The Public Spending Responses of Regional Governments to the Budget Constraint in Spain and Italy. *Journal of Public Policy*. Cambridge University Press. Vol. 41(3). pp. 462-488. September.
- Victoria, J (2015). Human Capital Investment and Economic Growth in Nigeria. *African Research Review*. 9(1). S/No. 36. January.
- Waweru, D and Mose, N. (2021). Government Capital Expenditure and Economic Growth: An Empirical Investigation. *Asian Journal of Economics, Business and Accounting*. Vol.21(8). pp.29-36. June
- World Bank (2022). Financing India's Urban Infrastructure Needs: Constraints to Commercial Financing and Prospects for Policy Action. November.

Industrial Relations Code and Labour Productivity – A Cross-Country Meta-Analysis

by Shruti Joshi and Rakhe P. Balachandran ^

India recently codified the 29 Central labour laws into four labour codes viz., code on wages, industrial relations, social security, and occupational safety, health and working conditions. The code on industrial relations has also introduced fixed term employment (FTE). This study synthesises the international evidence on the impact of FTE using a meta-regression analysis. Based on 19 studies done in different country contexts, we find that FTEs, on an average, have a positive impact on labour productivity.

Labour laws in India have been shaped by the recommendations of various national committees and commissions including the first national commission on labour (1969), the national commission on rural labour (1991), the second national commission on labour (2002), and the national commission for enterprise in the unorganised sector (2009). These committees recommended reforms on social security, wages, insurance, and industrial relations. Many of these changes have been added in a piecemeal manner, making the labour laws complicated. Recently, India codified the 29 Central labour laws into four labour codes viz., code on wages, industrial relations, social security, and occupational safety, health and working conditions.

The code on industrial relations aims to consolidate the laws relating to trade unions and settlement of industrial disputes. This code subsumed three erstwhile central labour laws: Trade

Unions Act, 1926; Industrial Employment (Standing Orders) Act, 1946, and Industrial Disputes Act, 1947. Provisions of this code include timely settlement of disputes, flexibility to hire fixed term workers and limiting sudden disruption in work due to strikes and lockdowns. It revamped the structural procedure for negotiation of labour disputes and introduced FTEs in India, which is supposed to make labour management more flexible. FTE is viewed as a mechanism to enhance labour flexibility according to the business cycles, which may lead to overall economic efficiency, *albeit* available evidence points towards mixed impact of FTE on labour productivity.

FTEs are popular in European countries for increasing firms' flexibility of labour management. FTE employees are entitled to same pay, allowances, and benefits like the permanent workers¹ and are directly hired by firms by avoiding middlemen². However, FTE employees are not entitled to any termination notice or severance pay and any retrenchment benefit because of non-renewal of their contract. This imparts flexibility of labour management without incurring any additional redundancy costs. On the one hand, such flexibility enables firms to meet seasonal fluctuations in demand, but being temporary in nature, it demotivates workers. Employers may also not have the incentive to provide on-the-job training to these employees, thus, adversely affecting their productivity (Arulampalam and Booth 1998; Booth et al. 2002; Fourage et al. 2012; Vidal and Triggs 2009). Alternatively, FTE can also act as a screening mechanism to identify productive workers by firms and would lead to overall improvement in labour productivity (Wang and Weiss 1988; Gerfin et al. 2005; Gash 2008). How do we draw inferences about the impact of FTE for India on labour productivity

[^] This article has been prepared by Shruti Joshi and Rakhe P. Balachandran of the Department of Economic and Policy Research. The views expressed in the article are those of the authors and do not represent the views of the Reserve Bank of India.

¹ <https://egazette.nic.in/WriteReadData/2020/222118.pdf>

² <https://indianexpress.com/article/opinion/columns/labour-laws-india-apple-plant-wistron-violence-7117353/>

from these studies? Toward this purpose, we conduct a meta-analysis of 19 studies to comment on what India can expect on the labour productivity front, from the implementation of the industrial relation code which introduced FTE.

With this backdrop, the remaining article is organised as follows: Section II provides an overview of the literature analysing the impact of FTE on growth, employment and productivity. Section III explains the construction of Meta data. Section IV explains the meta-regression model, section V provides results and VI concludes.

II. Literature Review

The strand of literature analysing the relationship among labour regulations and economic indicators mostly relate employment protection legislation to economic growth, productivity and employment. There is evidence in the literature that flexible labour laws enhance industrial output (Holmes 1988; Besley and Burgess 2004; Sanyal and Menon 2005; Ahasan and Pages 2009). Onerous labour regulations, on the other hand, adversely affect the growth prospects of economies (Caballero *et al* 2004; Micco and Pages 2006). A meta regression on 53 studies reveals that only 28 per cent of studies agreed with the IMF consensus that labour market deregulation increases employment and reduces unemployment (Brancaccio 2020). Further, Author *et al.* (2007) find that mandated employment protection reduces capital deepening and firm productivity.

Labour market regulations, including minimum wages and mandated severance pay, impact unemployment by reducing the demand for labour (Lazear 1990; Currie and Fallick 1996; Abowd Kramarz and Margoliz 1999; Blanchard and Wolfers 2000; Heckman and Pages 2003; Kugler 2004; Boero *et al* 2004). Minimum wages create a floor on wages and constrain the ability of employers to freely decide

wages, thus, adversely impacting the employment generation. However a meta regression, on 236 estimated minimum wage elasticity and 710 partial correlation coefficients from 16 studies, examining the adverse employment effect of minimum wages in the UK found that minimum wages do not have any adverse employment effect (Leonard *et al* 2020).

Many studies examine the effect of FTE on productivity (Sanchez *et al* 2000; Ortega *et al* 2010; Lucidi 2010). The human capital theory argues that employers are reluctant to invest in firm-specific human capital and training on temporary employees due to their short duration, leading to a tradeoff between FTE and investment in human capital (Arulampalam and Booth 1998; Booth *et al.* 2002; Fourge *et al.* 2012). Second, substitution of core workers by fixed term workers reduces the motivation of both core and fixed term workers (Vidal and Triggs 2009). Thirdly, high level of FTE can stimulate sectoral shift in activity, as usually low productive sectors benefit the most from temporary employment (OECD 2005). On the other hand, in the presence of imperfect markets and asymmetric information, FTE enables firms to screen new workers, hence, incentivising workers to put in efforts. Firms which offer permanent contracts to most productive workers can improve their overall productivity (Wang and Weiss 1988; Gerfin *et al.* 2005; Gash 2008). The impact of temporary contracts on total factor productivity is reported as negative in the literature (Dolado *et al* 2008; Addessi 2011; Hospido *et al* 2015).

Studies in the Indian context, in general, point to a positive relationship between flexibility in labour laws with industrial employment and output. To illustrate, in States with rigid laws, there was a slowdown in output, employment and productivity (Besley and Burgess 2004); industries located in states with flexible labor laws grew more quickly in response to liberalization policies (Aghion *et al* 2003); industrial

employment was more sensitive to shocks in labor market in states with flexible labor laws (Sharma et al 2011); increased cost of labor disputes reduced the output and employment in registered manufacturing (Ahsan and Pages 2008).

III. Data

This study focuses on the estimated impact of FTE on labour productivity. The article search for the meta happened during April-June, 2022. We mainly used four search engines, viz., google scholar, ECONLIT, Science Direct and JSTOR. In addition to these search engines, we also referred to the reference list mentioned in the identified studies from the first round of search. Keywords for the search included various combination of 'fixed term employment' 'temporary employment', 'labour contract', 'fixed term contract', 'temporary contract', 'productivity' and 'labour productivity'. Based on the above search, we were able to identify 65 studies. To be added in the meta, a study must contain the empirical estimates of the effect of FTE on productivity. Two theoretical studies which did not contain empirical estimate were not included in the meta. Further, 39 studies did not study the impact of FTE on productivity, and, hence, were removed from the meta-analysis. These studies were looking at the impact of employment protection legislation on productivity instead of FTE. Lastly, two studies were purely descriptive. This process led to the elimination of 43 studies out of the identified 65 studies. Further, we have also excluded three studies on total factor productivity. As a result, we selected 19 relevant studies with 311 coefficients for meta-analysis.

In all the included studies, the variable on FTE was the proportion of temporary/fixed term workers to the total workers. Two forms of theoretical specification exist for measuring the dependent variable: partial measure and total factor productivity (TFP). We focus

on partial measure of productivity. The different partial measures of labour productivity used in the included studies are output per worker, sales per worker and revenue per worker. In addition to this, two studies have used wages and level of production as a measure of productivity. In our analysis, we code per worker measure of productivity as one and zero, otherwise.

In establishing the causal relation between labour productivity and FTE, we encounter endogeneity, as shocks to labour productivity can also affect the share of fixed term workers used by the firm. For instance, a negative shock to productivity might induce increased use of temporary workers. Therefore, the effect of FTE on labour productivity is likely to be biased. We have coded studies that have controlled for endogeneity as one and, otherwise zero.

The type of data used in the studies also impart variations in the study results. For example, the advantage of using panel data over cross section is that it enables to control for time invariant changes. Thus, the results are relatively more robust from panel data studies as compared to their cross-section counterparts. We have coded studies that used panel data as one and, zero otherwise.

We also control the type of survey: coding government survey as one and, zero otherwise. Government surveys have usually wider coverage, structured questionnaire as well as more professional data collection process, making it more reliable and unbiased, as compared to surveys conducted by individual authors. In addition to this, year fixed effects capture any time variant changes which might have occurred during the period of analysis. The country dummy takes value one if the study is based on a single country and zero otherwise. Finally, region control takes the value one if it is a European region and zero otherwise.

Other study specific characteristics include firm specific effects such as firm age, firm size, investment, trade union density and sector of economic activity. Firm age and size positively impact labour productivity as these firms have required investments as well as experience which enables them to improve labour productivity. We also control for worker specific characteristics which includes education, type of work and gender. Labour productivity also depends on the nature of work one does; workers engaged in blue collar services will have lower productivity *vis-à-vis* those involved in white collar jobs.

Studies also controlled for other variables such as ownership structure. In some studies, number of children has been used as a measure of productivity for women. Innovation and R&D has a positive impact on labour productivity, which are accounted for by many studies. Further, merger and acquisition are used as an indicator of firm organisation and, performance related pay is a way to incentivise workers to put in more efforts. However, the number of studies that controlled for these characteristics are not high enough to include them in the meta-analysis as moderator variables.

Descriptive Statistics

Our dataset has 311 observations covering periods from 1987 to 2015 and coming from 7 countries³ and the EU. The largest coming from Italy (35 per cent) and Colombia (24 per cent). All the studies directly report the estimated effect of temporary jobs on labour productivity. There are a couple of studies in the Indian context, *albeit*, we could not include these studies in our analysis as they were not directly analysing the impact of FTE on labour productivity.⁴

³ The included studies belong to the following countries: Germany, Italy, Spain, South Korea, Belgium, Colombia and Britain

⁴ A summary of findings of the studies in the Indian context is provided in the literature review.

The distribution of the reported coefficient is shown in figure 1. The range of the reported coefficient is from (-) 0.84 to 1.12. Of the reported coefficients, 60 per cent of the observations are less than zero. This indicates an adverse effect of FTEs on labour productivity while remaining 40 per cent of the observations are more than zero indicating a positive effect of FTE on productivity. None of the reported coefficient is zero which means that the included studies find some effect of FTE on productivity. As can be seen from figure 1, our reported coefficient is bimodal for the entire sample, clearly depicting one mode for the European region estimates and another for the non-European region estimates. The mean effect size of the European region is (-) 0.102 while for the non-European regions is 0.83. (Figure 1 and Table 4).

In the meta sample, 73 per cent of the studies are from the European region and 80 per cent of them are single country studies. Seventy per cent of them are published in peer reviewed journals. Majority of the studies have analyzed data from Government surveys (85 per cent) and used panel data (60 per

Figure 1: Distribution of the Coefficient of FTE on Labour Productivity across Studies

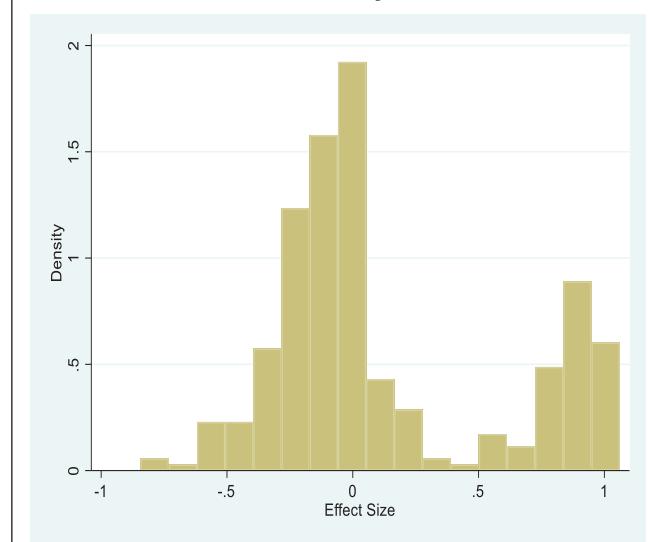


Table 4: Descriptive Statistics

Variable	Code	Whole sample	European Sample	Non-European sample
Total Number of productivity estimates (Dependent variable)		311	229	82
Average Estimate		-0.13	-0.12	0.83
Subjective Measure		1.9	2.4	0
Per worker measure		96	95	100
Moderator Variables in Percentages				
Data	Panel=1; 0 otherwise	60	81	1.2
Survey	Survey by government=1 ;0 otherwise	85	81	100
Estimation	Controls for endogeneity = 1; 0 otherwise	44	27	95
Firm age	Controls for firm age=1; 0 otherwise	14	20	0
Firm size	Controls for firm size=1; 0 otherwise	25	34	0
Trade union density	Controls for trade union density=1; 0 otherwise	20	27	0
Investment	Controls for investment=1; 0 otherwise	19	27	0
Sector of economic activity	Controls for sector of economic activity=1;0 otherwise	48	66	0
Education	Controlled education= 1;0 otherwise	18	23	0
Training	Controls for training=1; 0 otherwise	27	36	0
Blue collar	Controls for blue collar worker=1; 0 otherwise	19	27	0
Gender	Controls for gender=1;0 otherwise	14	20	0
Year Fixed effect	Controls for year fixed effect=1; 0 otherwise	30	41	0
Country	Single country=1; 0 otherwise	80	72	100
Region	European=1; 0 otherwise	73	100	0
Published	Published=1;0 otherwise	70	58	100

cent). Forty-four per cent of studies have controlled for endogeneity, thus, provides robust results on the relationship between FTE and labour productivity. Studies that controlled for other study specific characteristics such as firm age (14 per cent), firm size (25 per cent), trade union density (20 per cent), investment (19 per cent), education (18 per cent), training (27 per cent), blue collar workers (19 per cent), and gender (14 per cent) are relatively low in the meta-sample (Table 4).

V. Model

Meta-analysis refers to statistical analysis of individual studies for the purpose of integrating the findings. It enables researchers to deeply understand what an entire empirical literature implies. Metaregression is an effective tool to control for the potential publication bias that occurs when researchers

tend to report statistically significant findings (Card and Krueger, 1995).

To control for the publication bias, every study must report an effect size, *viz.*, coefficient on FTE, and the respective standard errors. As t-statistic is calculated by dividing the coefficient with the respective standard error, when the standard error is high, researcher may search for a large coefficient to establish statistical significance. This will lead to a positive relationship between the coefficient and the standard error. This relationship is modelled in a standard FAT-PET (funnel-asymmetry test- precision effect test) specification to control for publication bias (Stanley and Doucouliagos, 2012). The FAT-PET model depicting the relation between standard error and coefficient on FTE can be represented as follows:

$$\text{EffectSize}_i = B_0 + B_1 \text{SE}_i + \varepsilon_i \quad \dots(1)$$

In equation 1, B_1SE_i is the rough approximation of publication bias. The FAT test is the conventional way to identify the publication bias, $H_0: B_1 = 0$. After controlling for the potential publication bias, the parameter B_0 becomes the unbiased estimate of productivity. Testing $H_0: B_0 = 0$ provides a valid method to identify if there is any genuine empirical effect after controlling for publication bias. This is also called the precession effect test. Furthermore, Stanley and Doucouliagos (2014) recommend that if B_0 is significant in equation (1), a better approximation of the true effect will be captured using the Precision-effect estimate with standard error (PEESE) estimator which relies on SE squared. In the empirical specification (1), we additionally control for moderator variables. Since the standard errors of each estimate is known, equation 1 can be estimated using weighted least squares (WLS).

The productivity estimates are not independent as studies report more than one estimate from the same data. Thus, we use clustered standard error to control for correlation among standard errors (Nelson 2014; Penn and Hu 2018). However, we have only 19 studies, hence 19 clusters, leading to small sample bias in the clustered SE. To address this issue, we use cluster-robust variance estimators with small-sample corrections for linear regression (Tyzlser et al 2017).

Table 5: FAT-PET and PEESE Whole Sample

	FAT-PET	PEESE	FAT-PET WLS- corrected	PEESE WLS- corrected
	Effect size	Effect size	Effect size	Effect size
S.E.	0.121 (0.32)		0.085 (0.19)	
S.E. square		-0.722 (-0.58)		-0.722 (-0.53)
Constant	0.0852 (0.54)	0.0905 (0.55)	0.087 (0.501)	0.0905 (0.51)
N	304	304	304	304

t statistics in parentheses.

* p < 0.05, ** p < 0.01, *** p < 0.001.

VI. Results

Table 5 gives the FAT-PET and PEESE results for the whole sample without adding the moderator variables. We find that the FAT test indicates no publication bias as the coefficient of SE is not statistically significant. We find that our estimate of unbiased effect of FTE on productivity is also not statistically significant indicating that there is no empirical effect of FTE on productivity. Our results remain the same even after correcting for small sample bias of clustered standard error. Table 6 shows that for the European sample although there is no publication bias, FTE has a marginally significant negative effect on labour productivity.

In table 7, we add the other moderator variables. Labour productivity is influenced by a host of variables in addition to the nature of employment contract. Hence, moderator variables are added to equation (1) for avoiding any misspecification bias. After adding the moderator variables, table 7 shows that the average impact of FTE on labour productivity is 0.81, which is significant at 0.1 per cent level in the full sample. In the European sample, the average impact of FTE on labour productivity is marginally significant with a coefficient of 0.85. After correcting for small sample bias of clustered SE, we do not find any significant

Table 6: FAT-PET and PEESE for European sample

	FAT-PET	PEESE	FAT-PET WLS- corrected	PEESE WLS- corrected
	Effect size	Effect size	Effect size	Effect size
SE	-0.0647 (-0.17)			-0.072 (-0.14)
SE square			0.411 (0.63)	0.411 (0.52)
Constant	-0.0838 (-2.11)	-0.0868* (-2.21)	-0.0838* (-1.97)	-0.0868* (-2.08)
N	226	226	226	226

t statistics in parentheses.

* p < 0.05, ** p < 0.01, *** p < 0.001.

Table 7: Results

	Full Sample	European Sample	Full Sample WLS-corrected	European Sample WLS-corrected
	effect size	effect size	effect size	effect size
SE	-1.095** (-3.11)	-1.210** (-3.00)	-1.009** (-3.15)	-1.099** (-2.89)
Type of data	-0.571*** (-4.36)	-0.611*** (-4.11)	-0.571*** (-3.53)	-0.602*** (-3.43)
Survey	– –	-0.326* (-2.51)		
Estimation	-0.0263 (-1.33)	-0.0212 (-1.06)	-0.025 (-1.25)	-0.02 (-0.99)
Labour productivity (Subjective measure)	-0.0426 (-0.25)	-0.0564 (-0.35)	-0.113 (-0.49)	-0.112 (-0.22)
Per worker measure of labour productivity	0.00922 (0.93)	0.00802 (0.84)	0.007 (0.7)	0.007 (0.7)
Labour productivity in comparison to other firms	-0.00652 (-0.08)	-0.0170 (-0.21)		
Published study	0.0465 (1.07)	0.0489 (1.23)	-0.024 (-0.3)	-0.021 (0.80)
Firm size	-0.0981 (-2.06)	-0.108* (-2.28)	-0.096 (-1.37)	-0.103 (-1.47)
Firm age	– –	– –	0.263* (1.45)	0.292* (1.98)
Trade union density	-0.0127 (-0.77)	-0.00875 (-0.48)	-0.082 (-0.911)	-0.0084 (-0.91)
Sector dummy	-0.0333* (-2.44)	-0.0342* (-2.75)	0.01 (0.2)	0.006 (0.12)
Investments	0.121 (1.54)	0.119 (1.66)	0.158 (1.21)	0.154 (1.28)
Training	-0.580*** (-4.80)	-0.611*** (-4.63)	-0.575** (-3.05)	-0.601** (-3.17)
Education	0.229** (2.93)	0.247** (3.04)	0.206 (2.2)	0.220 (2.4)
Blue collar	0.110 (1.49)	0.108 (1.59)	0.053 (0.58)	0.053 (0.58)
Gender	0.293* (2.51)	– –		
Country	0.0273 (1.15)	0.0327 (1.31)	-0.08 (1.6)	-0.076 (1.52)
Region	-0.329* (-2.14)	– –	-0.302** (-1.68)	
Year	0.0141 (0.39)	0.00951 (0.27)	0.0141 (0.29)	0.00951 (0.20)
Constant	0.811*** (14.30)	0.859* (2.60)	1.027*** (5.00)	0.695* (2.07)
N	304	226	304	226

t statistics in parentheses.

* p < 0.05, ** p < 0.01, *** p < 0.001.

change in this impact. For instance, for the full sample the coefficient marginally increases to 1.03, whereas for the European sample it marginally falls to 0.7. Thus, meta-analysis of the empirical evidence from countries, who have already implemented FTE

for years, shows that FTE has a positive impact on labour productivity, on an average, after controlling for all study specific characteristics. This supports the hypothesis that, in the presence of asymmetric information, FTE enables employers to identify

productive workers and it incentivises workers to put in more effort so that they become permanent employees in the firm (Wang and Weiss 1988; Gerfin et al. 2005; Gash 2008).

After correcting for small sample bias of clustered SE, we find that in the full sample, other study specific characteristics such as controlling for training and type of data, and the region in which the study is conducted, are also significant determinants of the impact of FTE on labour productivity. The average impact of FTE on labour productivity significantly declines when studies independently controlled for training in their respective estimations. This could be due to the possible positive omitted variable bias created by the variable 'training' in studies that did not control for it independently, thus, driving up the average impact of FTE on labour productivity. In some cases, employees on FTE join as trainees or in some cases firms treat FTE as a mechanism to train/screen out their future productive employees (Wang and Weiss 1988; Gerfin et al. 2005; Gash 2008). We find that studies employing panel data reported significantly smaller impact of FTE on labour productivity as compared to studies employing cross section data. This could be due to the higher information content in the panel data in comparison with cross section data. Region affects the relationship between FTE and labour productivity as countries may differ in terms of their market regulations and institutions, thus, influencing this relationship.

Conclusion

In this study, we employed a meta-regression analysis to understand the impact of FTE on labour productivity based on international experience. On the one hand, FTE can worsen labour productivity as it does not incentivise firms to invest on the fixed term workers; on the other hand, in anticipation of conversion of FTE into permanent contracts, workers can put in more efforts thereby improving their productivity. We synthesize the existing empirical

literature on the relationship between FTE on labour productivity to arrive at an unbiased average estimate of this relationship.

Our results indicate that FTE has a positive and significant effect on labour productivity. Our meta-analysis showed that controlling for publication bias, the effect size was 1.03 for the entire sample and 0.7 for the European sample. The positive impact of FTE on labour productivity stems from the fact that FTE can function as a screening mechanism to identify productive employees. Moreover, if these contracts are converted into permanent contracts, workers also have the incentive to put in more effort (Wang and Weiss 1988; Gerfin et al. 2005; Gash 2008). Based on the results, the introduction of FTE under the industrial relation code can be expected to improve labour productivity in India, which is currently lower than what is observed in advanced economies. However, the exact magnitude of the impact would be conditional on the specific characteristics of Indian labor market. Studies focusing on India are not currently feasible due to non-availability of data. Therefore, results in this paper provide a broad direction based on international experience to fill this lacuna.

References

- Abowd, J. M., Kramarz, F., & Margolis, D. N. (1999). Minimum wages and employment in France and the United States.
- Addessi, W. (2011). Labor contracts and productivity dynamics. In XXVI National Conference of Labour Economics, Milan, September (pp. 15-16).
- Aghion, P., Burgess, R., Redding, S., & Zilibotti, F. (2003). *The unequal effects of liberalization: theory and evidence from India*. LSE mimeo. London, UK: LSE.
- Ahsan, A., & Pagés, C. (2009). Are all labor regulations equal? Evidence from Indian manufacturing. *Journal of Comparative Economics*, 37(1), 62-75.

- Arulampalam, W., & Booth, A. L. (1998). Training and labour market flexibility: is there a trade-off?. *British Journal of Industrial Relations*, 36(4), 521-536.
- Baek, J., & Park, W. (2018). Firms' adjustments to employment protection legislation: Evidence from South Korea. *ILR Review*, 71(3), 733-759.
- Besley, T., & Burgess, R. (2004). Can labor regulation hinder economic performance? Evidence from India. *The Quarterly journal of economics*, 119(1), 91-134.
- Blanchard, O., & Wolfers, J. (2000). The role of shocks and institutions in the rise of European unemployment: the aggregate evidence. *The Economic Journal*, 110(462), C1-C33.
- Booth, A. L., Francesconi, M., & Frank, J. (2002). Temporary jobs: stepping stones or dead ends?. *The economic journal*, 112(480), F189-F213.
- Botero, J. C., Djankov, S., Porta, R. L., Lopez-de-Silanes, F., & Shleifer, A. (2004). The regulation of labor. *The Quarterly Journal of Economics*, 119(4), 1339-1382.
- Brancaccio, E., De Cristofaro, F., & Giammetti, R. (2020). A meta-analysis on labour market deregulations and employment performance: no consensus around the IMF-OECD consensus. *Review of Political Economy*, 32(1), 1-21.
- Caballero, R. J., Cowan, K., Engel, E., & Micco, A. (2004). Effective labor regulation and microeconomic flexibility.
- Cappellari, L., Dell'Aringa, C., & Leonardi, M. (2012). Temporary employment, job flows and productivity: A tale of two reforms. *The Economic Journal*, 122(562), F188-F215.
- Card, D., & Krueger, A. B. (1995). Time-series minimum-wage studies: a meta-analysis. *The American Economic Review*, 85(2), 238-243.
- Castellani, F., Lotti, G., & Obando, N. (2020). Fixed or open-ended? Labor contract and productivity in the Colombian manufacturing sector. *Journal of Applied Economics*, 23(1), 199-223.
- Currie, J., & Fallick, B. (1993). The minimum wage and the employment of youth: evidence from the NLSY.
- de Linde Leonard, M., & Stanley, T. D. (2020). The wages of mothers' labor: A meta regression analysis. *Journal of Marriage and Family*, 82(5), 1534-1552.
- De Linde Leonard, Megan, T. D. Stanley, and Hristos Doucouliagos. "Does the UK minimum wage reduce employment? A meta-regression analysis." *British Journal of Industrial Relations* 52.3 (2014): 499-520.
- Dolado, J. J., Ortigueira, S., & Stucchi, R. (2012). Does dual employment protection affect TFP? Evidence from Spanish manufacturing firms.
- Gash, V. (2008). Bridge or trap? Temporary workers' transitions to unemployment and to the standard employment contract. *European Sociological Review*, 24(5), 651-668.
- Gerfin, M., Lechner, M., & Steiger, H. (2005). Does subsidised temporary employment get the unemployed back to work? Aneconometric analysis of two different schemes. *Labour economics*, 12(6), 807-835.
- Heckman, J. J., & Pages, C. (2003). Law and employment: Lessons from Latin America and the Caribbean.
- Holmes, T. J. (1998). The effect of state policies on the location of manufacturing: Evidence from state borders. *Journal of political Economy*, 106(4), 667-705.
- Hospido, L., & Moreno-Galbis, E. (2015). The Spanish productivity puzzle in the great recession.
- Hospido, L., & Moreno-Galbis, E. (2015). The Spanish productivity puzzle in the great recession.
- Kugler, A. D. (2004). The effect of job security regulations on labor market flexibility. Evidence from the Colombian Labor Market Reform. In *Law and*

- Employment: Lessons from Latin America and the caribbean (pp. 183-228). University of Chicago Press.
- Kugler, A., & Kugler, M. (2009). Labor market effects of payroll taxes in developing countries: Evidence from Colombia. *Economic development and cultural change*, 57(2), 335-358.
- Lazear, E. P. (1990). Job security provisions and employment. *The Quarterly Journal of Economics*, 105(3), 699-726.
- Lucidi, F. (2010, September). Labour market flexibility and productivity growth: new evidence from firm-level data. In XXIII National Conference of Labour Economics, Brescia (pp. 11-12).
- Micco, A., & Pagés, C. (2006, May). The economic effects of employment protection laws. In *IZA/The World Bank Conference on employment and development* (pp. 25-27).
- OECD (2005) OECD economic surveys: Spain 2005. OECD, Paris
- Ortega, B., & Marchante, A. J. (2010). Temporary contracts and labour productivity in Spain: a sectoral analysis. *Journal of Productivity analysis*, 34(3), 199-212.
- Sanyal, P., & Menon, N. (2005). Labor disputes and the economics of firm geography: A study of domestic investment in India. *Economic Development and Cultural Change*, 53(4), 825-854.
- Taymaz, E. (2002, November). Are small firms really less productive? An analysis of productivity differentials and firm dynamics. In International Workshop on "The Post-entry Performance of Firms: Technology, Growth and Survival", University of Bologna.
- Vidal, M., & Tigges, L. M. (2009). Temporary employment and strategic staffing in the manufacturing sector. *Industrial Relations: A Journal of Economy and Society*, 48(1), 55-72.
- Wang, R., & Weiss, A. (1998). Probation, layoffs, and wage-tenure profiles: A sorting explanation. *Labour Economics*, 5(3), 359-383.

A Composite Indicator of Realty Sector Activity in India

by Dipak R. Chaudhari, Akanksha Handa, Priyanka Upreti, and Saurabh Ghosh[^]

The realty sector plays a crucial role in India in terms of employment generation, savings in physical form, contribution to the country's GVA, and even as an early warning indicator. However, low-frequency traditional data and the lag in data releases make its active use in policy-making difficult. We aim to bridge this challenge by constructing a realty sector activity indicator using a variety of high-frequency indicators and a dynamic factor model. Using this indicator, we quantify the impact of realty sector developments on economic activity, its first and second-rounds effects across business cycles.

Introduction

The realty sector plays a pivotal role in the Indian economy. This sector provides the second-largest employment, after the agriculture sector, for both skilled and unskilled labourers (84 per cent share of informal workers). Moreover, the realty sector produces employment opportunities to a large fraction of immigrant workers from several parts of the country (GOI, 2021). The realty sector is also linked to upstream and downstream industries, creating second-round positive spillover effects on them. In addition, the realty sector¹ provides an essential avenue for savings in physical form. The average household in India holds 77 per cent of its total assets in real estate which comprises of constructions for residential purposes, farm and non-farm activities, recreational facilities, rural and urban land, etc. (Ramadorai, 2017). The high

level of real estate holdings by Indian households could indicate their need for real estate investments in addition to usual consumption needs.

The available literature from similar emerging market economies (EMEs) suggests that construction activities have a positive relationship with economic growth, however, it may be a contemporaneous, lead or lagged association. For instance, Berk and Bicen (2017) examined the relationship between investment in the construction sector and gross domestic product (GDP) growth and found that the former leads to economic growth. Ahmad et al. (2019) examined the interactions between the construction sector and urbanisation, energy consumption, economic growth, and carbon emissions for the Chinese economy and found that the construction sector leads to urbanisation, which is a key driver of economic growth. Hung et al. (2019) analysed the linkages of the construction sector with the total output of the economy using a multi-regional input-output table for Hong Kong and found similar results.

In the Indian context, there exists limited literature that has examined the relationship of construction activities with economic growth. Tiwari (2011) studied the relationship between construction activity and economic growth and found the existence of bidirectional causality between economic growth and construction activities. Kumar and Choudhary (2014) empirically investigated the effect of housing investment on GDP and found a strong positive correlation among housing, GDP and employment. Using a production function based approach, Mallick and Mahalik (2010) found a positive impact of construction on economic growth.

Since a significant portion of the realty sector and its feedback effects relate to the informal sectors in India, data availability issues pose a considerable challenge to pre-emptive policy research in this domain. We aim to address this gap by using both conventional and unconventional data sources. In

[^] Authors are from the Department of Economic and Policy Research (DEPR), Reserve Bank of India.

The views expressed in this article are those of the authors and do not necessarily represent the views of the Bank.

¹ In the study, real estate, housing and construction are being used interchangeably.

this vein, we start with a preliminary assessment of available high-frequency indicators that could be related to the real estate sector in India. Second, we attempt to find a latent common factor underlying these series that represent realty sector developments and construct a dynamic factor for housing (DFH), which can be used for policy research. Finally, we run empirical tests using DFH, construction gross value added (GVA), and GVA net of construction to evaluate the efficacy of DFH in policy-research.

The rest of the study is organised as follows: Section II takes a deep dive into the realty sector with the help of conventional and unconventional high-frequency data. Section III explains data dimension reduction, nowcasting and other empirical findings. Section IV concludes the study and discusses policy implications.

II. Data and Trends

India is a services-driven economy, with the services sector accounting for more than 60 per cent of total GVA. The construction sector, which accounts for around 8 per cent of total GVA, recorded the steepest decline, by around 50.3 per cent as sales and new launches contracted during the first quarter of 2020-21, primarily due to lockdown and sluggishness of consumer sentiments during pandemic period (MOSPI, 2020). Consumer Pyramid database of Centre for Monitoring Indian Economy (CMIE) indicates that unemployment figures for the construction sector were amongst the highest in various industries during the lockdown. Another component of services i.e., financial, real estate and professional services, witnessed a decline in the first and the second quarter of 2020-21 as compared to the same periods in 2019-20.

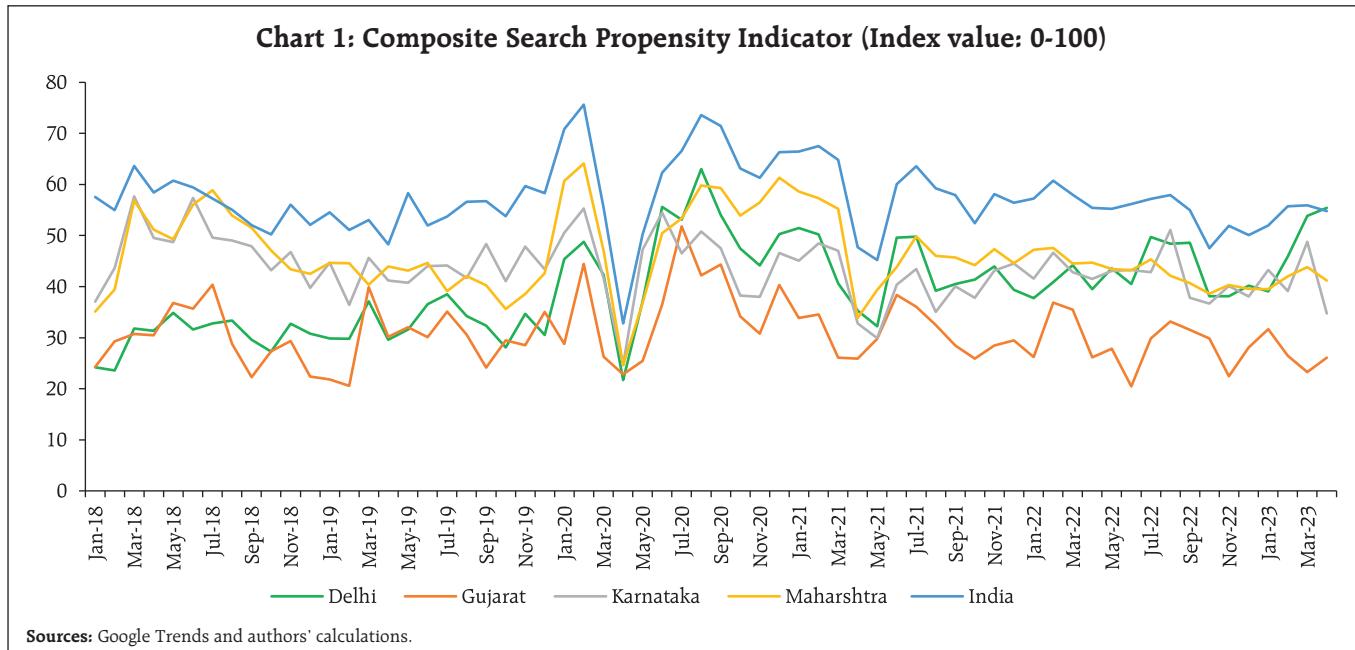
However, there are two problems with the conventional dataset: (a) it is of quarterly frequency, and (b) it is difficult to gauge the direct and indirect impact of an adverse-shock or slowdown in the realty sector on the overall economic data, especially for

identifying the impact on the supply side *vis-à-vis* the demand side. We, therefore, considered a slew of available high-frequency indicators that are related to the realty sector in India. These include variables such as housing prices, credit and profits of real estate companies that are mostly sourced from CEIC.

Available corporate performance data (from CMIE Prowess dataset) and stock market indices (Bloomberg Data) indicate mixed evidence. While the former shows signs of deterioration, the realty stock indices have surpassed their pre-COVID levels, indicating future promises for the sector. Further, we included high-frequency variables such as cement and steel production (CEIC database), which may be related to the construction sector through upstream or downstream supply chain linkages. Since steel and cement have a combined weight of only 23 per cent in IIP core² and there are other industries i.e., electricity, coal and crude oil too that have a direct and indirect impact on the realty sector, IIP core is used as a separate variable. Moreover, since many of these are bulk inputs and are commonly transported by railways, we have also included different components of railway freight in our analysis. In doing so, we realized that total freight and *freight (tonne) per KM* have quite different cycles (Annexure Chart 1.B). Therefore, we preferred to retain both for our analysis.

Finally, in view of the infotech revolution and stock market developments, we use a few unconventional variables in our analysis. These include Realty Index (adjusted for broad market movements) and Google Search Propensity related to the realty sector. Chart 1 shows the trends in the composite real estate search propensity indicator which is calculated by taking weighted average of search propensity of some keywords related to commercial property (real estate, commercial property, residential property, 99 acres,

² IIP core is an index of the output of eight core industries viz., electricity, steel, refinery products, crude oil, coal, cement, natural gas and fertilisers.



Magicbricks, No Broker), weights being the inverse of the variance of search propensity of each keyword. This search propensity indicates the ratio of the total number of searches containing a particular keyword relative to the total number of searches during that time period, which is then normalised between 0-100.

While these variables indicate divergent movements in the short run, our analyses indicate that there could be a hidden common factor that drives all realty sector-related variables in the long run. In the following empirical section, we intend to decipher this common factor based on a select list of variables.

III. Empirical Findings

We analyse the above set of variables that are related to the realty sector across different phases of business cycles. Here, we have focused on the post-global financial crisis (GFC) period, *i.e.*, 2009 onwards. The period of the study is from March 2009 to December 2020. We evaluated the correlation of the above-mentioned variables with construction sector GVA and overall GDP and computed dynamic

correlations.

III.1. Dating of GDP Growth Cycle and Growth Rates of Select Housing Variables

Following Bhadury *et al.* (2020), we identify the GDP growth cycle over the last two decades, by using the 1st and 4th quartiles of GDP growth, *i.e.*, the lowest 25 per cent and the highest 25 per cent of growth rates. In addition, we apply a few censor rules to clearly recognise the turning points in the GDP cycle.

We observe a common trend/co-movements in the construction-related variables, namely steel, cement and railway freight. The other variables, namely housing prices, stock indices (adjusted realty index) and housing credit appear to be mostly pro-cyclical (Annexure Chart 1.A). Google search propensity index has also shown divergence from the phases of the business cycle indicating more search intensity of the terms related to the real sector during slowdown phases.

Next, we carry out the correlation analysis for our quarter-over-quarter (Q-o-Q) seasonally adjusted

annualised growth of the construction-GVA as it is a more representative indicator for output in the real estate sector (Table 1). The exercise is conducted for the period Q2:2009 to Q4:2020, with 46 observations, at different leads and lags of construction GVA. The variables have a Contemporaneous ('C'), Leading ('L+') or Lagging ('L-') relationship with the construction GVA. It can be clearly seen from Table 1 that steel, cement production, Index of Industrial Production (IIP) core, Sensex-adjusted Realty Index and rail freight exhibit high contemporaneous correlation with construction GVA. Housing prices are found to be significantly correlated with past construction GVA.

From these two exercises, five variables are found to be having a high contemporaneous relationship with construction GVA and one variable is found to be having a lagging relationship with construction GVA³. The variables are steel, cement production, IIP core, rail-freight, rail-freight (ton) per KM, adjusted realty index, and housing prices, which were considered

for extracting the common factor in a dynamic factor model (Annexure Chart 1.A and 1.B).

III.2 Dynamic Factor for Realty Sector

We attempt to use a data shrinkage technique to extract the common trend in the realty sector after selecting the relevant variables related to the realty sector. We start with each of the variables, i.e., steel and cement production, IIP core, rail-freight (also tonne per KMs), adjusted realty index, Google Search Propensity Index and housing prices- in their levels, de-seasonalised them using Census X-12, which are then z-score transformed for standardisation. Since we are attempting to capture one consensus underlying trend from several high-frequency indicators, differencing may lead to loss of information. This is consistent with the literature (Bhadury *et al.*, 2020). The trend is obtained by estimating a dynamic factor model (DFM) using seven shortlisted variables. The procedure is in line with Stock & Watson (1989),

Table 1: Correlation of Selected Variables with Construction GVA

Variables	Construction GVA(-t) (Lagging Relationship)	Construction GVA (contemporaneous relationship)	Construction GVA(+t) (leading relationship)	Comments
Housing credit	0.1336	-0.1094	-0.1127	No significant correlation
Housing credit (excluding COVID period)	-0.0086	-0.0676	0.1533	No significant correlation
Housing prices	0.1433	-0.0078	-0.0907	No significant correlation
Sensex	-0.0723	0.2278	-0.0272	No significant correlation
Housing prices	0.3462**	0.2344	-0.0579	L- (excluding COVID period)
Steel Production	-0.3772**	0.9454**	-0.5187**	C
Cement Production	-0.3726**	0.9429**	-0.5016**	C
IIP Core	-0.3343**	0.921**	-0.6141**	C
Google Search Propensity Index	-0.2706	0.5524**	-0.3128**	C
Realty Index	-0.0963	0.3373**	-0.2591	C
Rail freight	-0.399**	0.9406**	-0.4636**	C
Rail_cement	-0.1506	-0.3677**	0.7448**	C
Adjusted Realty	-0.0918	0.3395**	-0.3655**	L+/C

Note: The symbols *, **, *** denote the cases where we reject the null at the 10%, 5%, 1% significance levels, respectively. No of Obs: 46

Source: Authors' calculations.

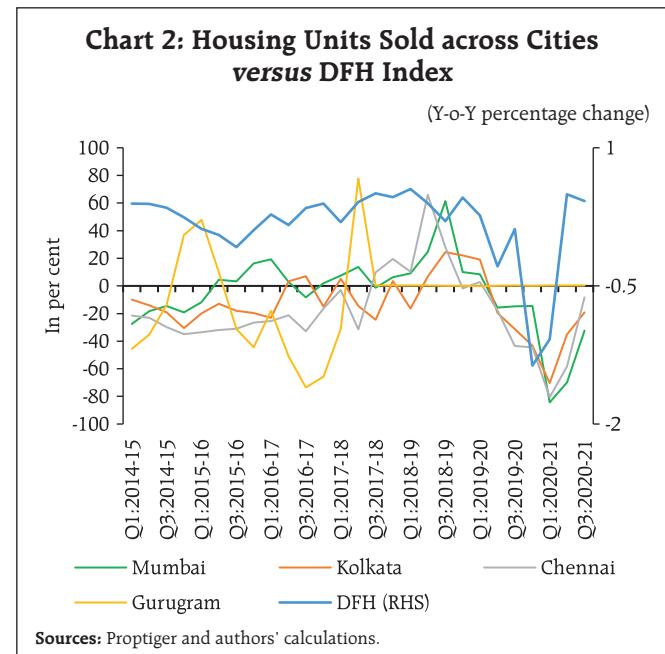
³ The correlation of the selected variables with construction GVA for the pre-COVID period is reported in Annexure Table 1.A.

which specifies an "unobserved single index" x_t . The observation equation ($y_t = Zx_t + \alpha + v_t$) contains y_t which is a $n \times 1$ matrix of economic indicators at a time t . The State specification ($x_t = Bx_{t-1} + w_t$) extracts the common underlying trend in y_t into a single-index dynamic factor. In this specification, Z represents factor loadings (Annexure Chart 1.C) and " α " refers to an offset factor.

After estimating dynamic factor using the expected mean methodology⁴, we validate whether the DFH index tracks the housing development in India with an alternative data source, i.e., Proptiger, that reports the number of housing units sold across different cities. It appears that DFH is able to capture the broad trends that are observed in the housing market except during some policy intervention phases viz., housing for all, demonetisation, the introduction of RERA (Real Estate Regulatory Authority), etc. (Chart 2). Due to the limited observations of the city-wise data, we could not perform any in-depth empirical estimations; however, correlations of the respective city units sold and the DFH is in the range of 0.56 to 0.80 positive (2017-18 onwards), indicating that the DFH index is capturing the housing sector activities precisely.

Next, we undertake a Granger Causality test among indicators of economic activities and DFH. The causality results indicate that there are evidences of one-way causation from the housing sector to economic activity. For brevity, we report the causality results in annexure (Table 1.B) and directly turn to the business cycle analysis, so that we can draw a few policy conclusions. For this, we use the same business cycle dating and create an upcycle dummy. We then

⁴ EM algorithm finds the Maximum Likelihood estimate using an iterative process, starting from an initial set of parameters θ_1 , it computes the value of the latent variable conditional on θ_1 and then calculates the loglikelihood function. For the next iteration, θ_2 value is calculated using " $\text{argmax } E\{\mathcal{L}(X/\theta_1)\}$ ". This process continues until the change in Loglikelihood is smaller than a predetermined tolerance limit (Ref. MARSS package R prog).



regress lags of DFH and upcycle dummy using each of GVA, Non-Agricultural GVA, Non-Agricultural-Non-Construction GVA as our dependent variables. The regression equations could be summarised as an autoregressive equation of economic activities (GVA, and adjusted GVA) augmented by contemporaneous DFH, lagged DFH and upcycle interaction term. The equation is given as under:

$$y_t = c + \beta * y_{t-1} + \sum_{i=0}^n \gamma_i * DFH_{t-i} + \sum_{j=0}^n \delta_j * DFH_{t-j} * upcycle_{dummy} + \epsilon_t$$

DFH coefficients indicate a positive sign, which are statistically significant at the conventional levels for GVA and Non-Agri-GVA, when each of them is used as a dependent variable. Further, when an interactive dummy for an upcycle period was used in this regression, the coefficient of the interactive dummy turned out to be positive and significant, after a lag. The positive and significant value was consistent across all the dependent variables, which indicates the buoyancy of the realty sector growth during the upcycle period (Table 2).

Table 2: Regression Results

Variable	GVA		GVA minus Agri		GVA minus Agri & Construction	
	1	2	3	4	5	6
Coefficient						
C	1.52	1.53	1.83	1.95	1.84	1.94
Dependent Variable lag	0.73***	0.77***	0.71***	0.73***	0.71***	0.76***
DFH	0.24*	0.18	0.26*	0.17	0.28	-1.15
DFH(-1)		-0.98		-1.10		
DFH(- 1) *UPCYCLE		1.02*		1.18*		1.22*
R-Sq	0.63	0.6	0.59	0.65	0.61	0.63
F-Stat	Significant at 1 per cent level					
N	39					

Note: All variables are in y-o-y growth terms. The symbols *, **, *** denote the cases where we reject the null at the 10%, 5%, 1% significance levels, respectively. Based on the trimmed quarterly sample between 2010 and 2020.

Source: Authors' calculations.

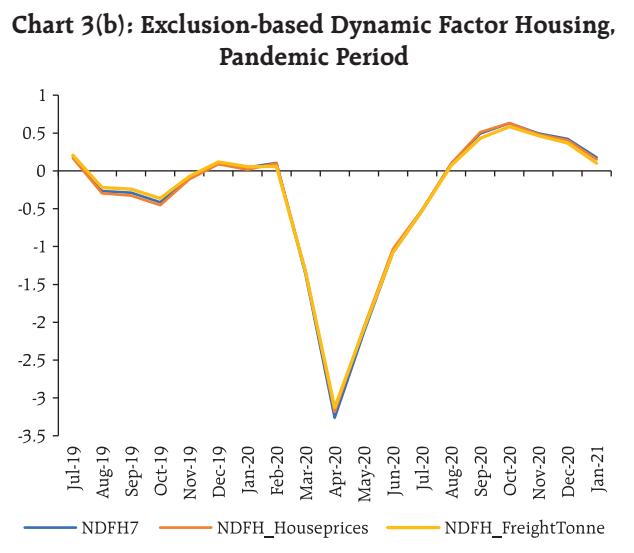
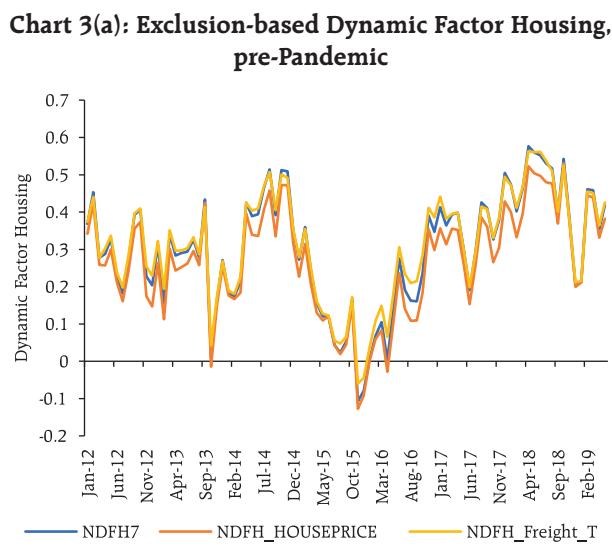
Construction is included in the GVA series; therefore, the above results could indicate both direct and indirect impacts. To identify the indirect impact, we exclude construction from Non-agricultural GVA (NANC-GVA) and use the same as dependent variable⁵. The positive and significant coefficients NANC-GVA capture the indirect impact of construction, that is

positive and significant. It may be because of upstream and downstream linkages of the realty sector, which connects not only to capital-intensive sectors like cement and steel but also to several ancillary industries that are typically labour-intensive.

III.3 Robustness of Dynamic Factor Housing

Based on Table 1, we found six variables (including railways freight tonne per KM) having a high contemporaneous relationship while one is having a lagged relationship with GVA-construction. Though CPI housing prices indicated housing prices series is a lagged relationship, we believe that housing prices series is a very important variable and provide information about the housing market. However, from a technical point of view, housing prices could be considered separately. Therefore, we calculated DFH after removing the house price and found that our DFH_Houseprice is in line with our DFH.

Similarly, notwithstanding the possibility of overlap, we considered both railway freight and railway freight tonne per KM, as we found their cyclical patterns are different (NDFH7). However,



Source: Authors' calculations.

⁵ EM algorithm finds the Maximum Likelihood estimate using an iterative process, starting from an initial set of parameters θ_0 , it computes the value of the latent variable condition.

we computed DFH after excluding railways freight tonne per KM. The DFH_Freight_Tonne is reported in Chart 3. It indicates, except for a few time periods, the DFHs have been moving in tandem, tracking the broad trends in the Indian realty sector.

IV. Conclusion

Considering the importance of the realty sector for growth and employment generation, we attempt to evaluate its role in macroeconomic surveillance. While exploring the same for policy analyses, we discovered that the low data frequency (quarterly) and long lags in data availability have somewhat constrained the application of this sector in active policy making. In this article, we attempt to bridge this gap to facilitate faster information availability and policy analysis.

In this vein, we examine various conventional monthly indicators, such as, housing prices, realty sector balance sheet, steel and cement production. We also look at unconventional indicators, such as Nifty Realty Index adjusted for broad market movements and Google search propensity indicator related to the real-estate sector. We then estimate a dynamic factor housing (DFH), to get a common factor from these variables that will capture the broad trend in the realty sector at a monthly frequency.

Next, we validate that it indeed tracks the construction/realty sector, and therefore may be used for policy analysis. Our empirical findings indicate a positive and significant impact of DFH on GVA and non-agri-non-construction-GVA, indicating direct and second-round impacts of the realty sector on economic activities.

We believe that the findings of this paper could be used in a variety of ways to improve policy analysis. To begin with, timely information facilitates efficient

policymaking by minimising recognition lags. In this vein, the dynamic factor-based 'DFH' is likely to fill the void left by a monthly high-frequency variable capable of accessing the underlying situation and even aid in nowcasting construction GVA. Moreover, given the construction sector's share in GVA, our findings regarding first and second-round effects indicate that the realty sector could play a significant role in the post-pandemic growth revival.

References

- Ahmad, M., Zhao, Z. Y., & Li, H. (2019). Revealing stylized empirical interactions among construction sector, urbanization, energy consumption, economic growth and CO₂ emissions in China. *Science of the Total Environment*, 657, 1085-1098.
- Berk, N., & Biçen, S. (2017). Causality between the construction sector and GDP growth in emerging countries: The case of Turkey. In *10th Annual International Conference on Mediterranean Studies* (pp. 10-13).
- Bhadury, S., Ghosh, S., & Kumar, P. (2020). Nowcasting Indian GDP growth using a Dynamic Factor Model. *RBI Working Papers No. 3*
- Government of India (GoI). (2013). The Economic Survey.
- (2021). The Economic Survey.
- Hung, C. C., Hsu, S. C., Pratt, S., Chen, P. C., Lee, C. J., & Chan, A. P. (2019). Quantifying the linkages and leakages of construction activities in an open economy using multiregional input-output analysis. *Journal of Management in Engineering*, 35(1), 04018054.
- Kumar, A., & Chaudhary, N. (2014). Impact of Housing Investment on Indian Economy. *International Journal of Languages, Education and Social Sciences*.
- Mallick, H., & Mahalik, M. K. (2010). Constructing the

economy: The role of construction sector in India's growth. *The Journal of Real Estate Finance and Economics*, 40(3), 368-384.

Ministry of Statistics & Programme Implementation (MOSPI). (2020). Estimates of Gross Domestic Product for the First Quarter (April-June) of 2020-21.

Ramadorai, T. (2017). *Report of the Household Finance Committee*. Technical Report, Reserve Bank of India.

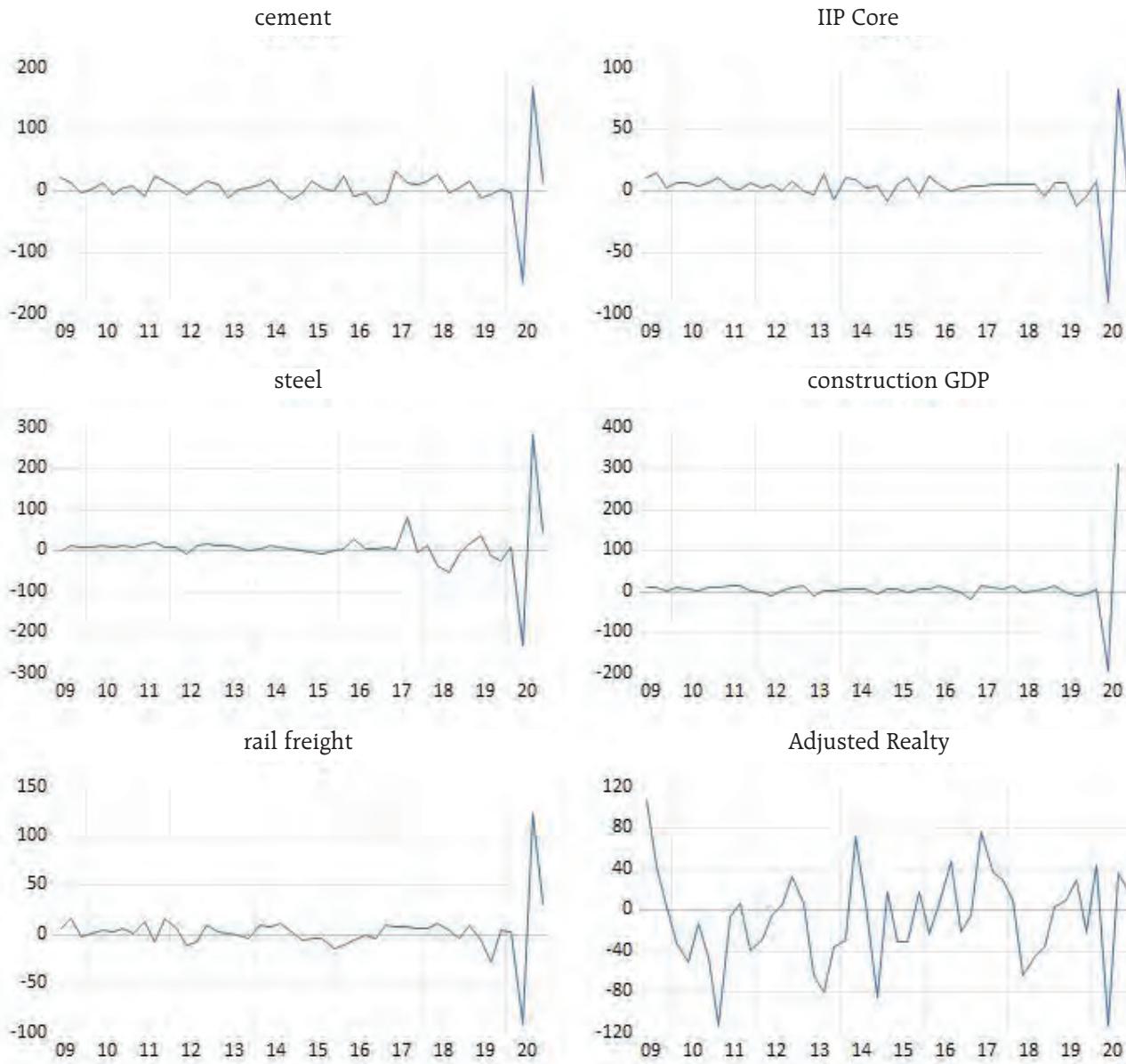
Reserve Bank of India (RBI). (2020). Report on Trend and Progress of Banking in India.

Stock, J., & Watson, M. (1989). New Indexes of Coincident and Leading Economic Indicators. *Macroeconomics Annual, National Bureau of Economic Research*, 4, 351-409.

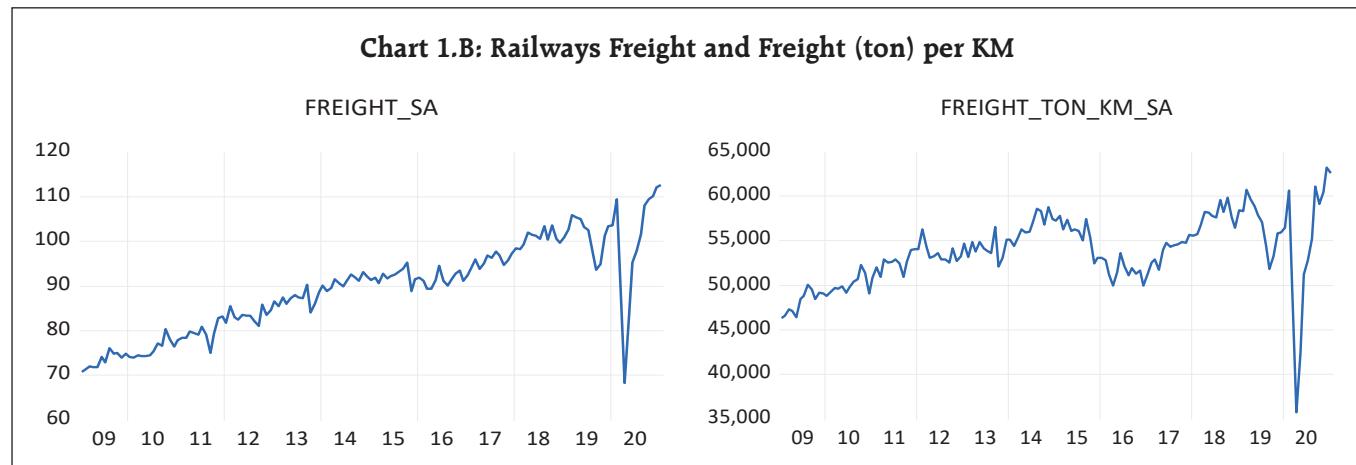
Tiwari, A. K. (2011). A causal analysis between construction flows and economic growth: evidence from India. *Journal of International Business and Economy*, 12(2), 27-42.

Annexure

**Chart 1.A: Variables and their co-movements with Construction GVA Growth
(Y-o-Y per cent)**



Sources: CMIE, DBIE and authors' compilation.

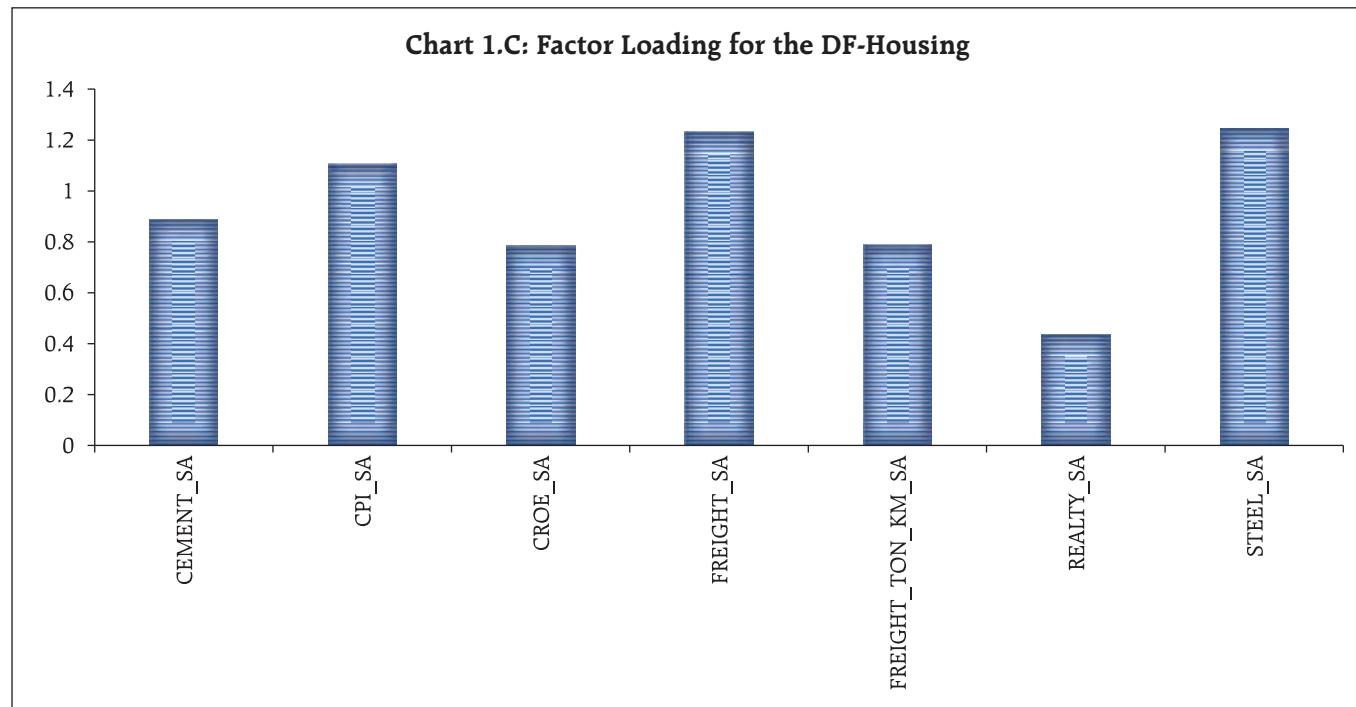


Sources: CEIC and authors' compilation.

Table 1.A: Correlation of Selected Variables with Construction GVA (Pre COVID period)

Variables	Construction GVA(-t) (Lagging Relationship)	Construction GVA (contemporaneous relationship)	Construction GVA(+t) (leading relationship)	Comments
Housing credit	-0.0086	-0.0676	0.1533	No significant correlation
Steel Production	0.3392**	0.3422**	-0.085	C and L-
Cement Production	0.0681	0.5443**	0.1715	C
IIP Core	0.1817	0.2773	0.1491	No significant correlation
Housing prices	0.3462**	0.2344	-0.0579	L-
Rail freight	0.2015	0.28**	0.1184	C
Rail_cement	-0.0101	-0.1704	0.1567	No significant correlation
Realty Index	-0.098	0.2662	0.0644	No significant correlation
Sensex	-0.0392	0.11	0.096	No significant correlation
Adjusted Realty	-0.117	0.3153**	0.025	C
Google Search Propensity Index	-0.1939	-0.2101	-0.022	No significant correlation

Note: The symbols *, **, *** denote the cases where we reject the null at the 10%, 5%, 1% significance levels, respectively.
Source: Authors' calculations.



Source: Authors' calculations.

Table 1.B Granger Causality Test

Null Hypothesis:	Obs	F-Statistic	Prob.
GDP does not Granger Cause DFH	34	0.49	0.74
DFH does not Granger Cause GDP		1.70	0.17
NON_AGRI_GDP does not Granger Cause DFH	34	0.33	0.85
DFH does not Granger Cause NON_AGRI_GDP		2.72	0.05
NON_AGRI_GDP_CONSTRUCTION does not Granger Cause DFH	34	0.41	0.79
DFH does not Granger Cause NON_AGRI_GDP_CONSTRUCTION		2.05	0.10

Source: Authors' calculations.

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	197
Reserve Bank of India		
2	RBI – Liabilities and Assets	198
3	Liquidity Operations by RBI	199
4	Sale/ Purchase of U.S. Dollar by the RBI	200
4A	Maturity Breakdown (by Residual Maturity) of Outstanding Forwards of RBI (US\$ Million)	201
5	RBI's Standing Facilities	201
Money and Banking		
6	Money Stock Measures	202
7	Sources of Money Stock (M_3)	203
8	Monetary Survey	204
9	Liquidity Aggregates	204
10	Reserve Bank of India Survey	205
11	Reserve Money – Components and Sources	205
12	Commercial Bank Survey	206
13	Scheduled Commercial Banks' Investments	206
14	Business in India – All Scheduled Banks and All Scheduled Commercial Banks	207
15	Deployment of Gross Bank Credit by Major Sectors	208
16	Industry-wise Deployment of Gross Bank Credit	209
17	State Co-operative Banks Maintaining Accounts with the Reserve Bank of India	210
Prices and Production		
18	Consumer Price Index (Base: 2012=100)	211
19	Other Consumer Price Indices	211
20	Monthly Average Price of Gold and Silver in Mumbai	211
21	Wholesale Price Index	212
22	Index of Industrial Production (Base: 2011-12=100)	216
Government Accounts and Treasury Bills		
23	Union Government Accounts at a Glance	216
24	Treasury Bills – Ownership Pattern	217
25	Auctions of Treasury Bills	217
Financial Markets		
26	Daily Call Money Rates	218
27	Certificates of Deposit	219
28	Commercial Paper	219
29	Average Daily Turnover in Select Financial Markets	219
30	New Capital Issues by Non-Government Public Limited Companies	220

No.	Title	Page
External Sector		
31	Foreign Trade	221
32	Foreign Exchange Reserves	221
33	Non-Resident Deposits	221
34	Foreign Investment Inflows	222
35	Outward Remittances under the Liberalised Remittance Scheme (LRS) for Resident Individuals	222
36	Indices of Nominal Effective Exchange Rate (NEER) and Real Effective Exchange Rate (REER) of the Indian Rupee	223
37	External Commercial Borrowings (ECBs) – Registrations	224
38	India's Overall Balance of Payments (US \$ Million)	225
39	India's Overall Balance of Payments (₹ Crore)	226
40	Standard Presentation of BoP in India as per BPM6 (US \$ Million)	227
41	Standard Presentation of BoP in India as per BPM6 (₹ Crore)	228
42	India's International Investment Position	229
Payment and Settlement Systems		
43	Payment System Indicators	230
Occasional Series		
44	Small Savings	232
45	Ownership Pattern of Central and State Governments Securities	233
46	Combined Receipts and Disbursements of the Central and State Governments	234
47	Financial Accommodation Availed by State Governments under various Facilities	235
48	Investments by State Governments	236
49	Market Borrowings of State Governments	237
50 (a)	Flow of Financial Assets and Liabilities of Households - Instrument-wise	238
50 (b)	Stocks of Financial Assets and Liabilities of Households- Select Indicators	241

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
1 Real Sector (% Change)					
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	2022		2023	
		Jan.	Feb.	Jan.	Feb.
	1	2	3	4	5
1.2 Index of Industrial Production	11.4	2.0	1.2	5.5	5.6
2 Money and Banking (% Change)					
2.1 Scheduled Commercial Banks					
2.1.1 Deposits	8.9	8.3	8.6	10.5	10.1
2.1.2 Credit #	9.6	8.2	9.1	16.3	15.5
2.1.2.1 Non-food Credit #	9.7	8.3	9.2	16.7	15.9
2.1.3 Investment in Govt. Securities	6.0	3.3	4.7	13.4	14.3
2.2 Money Stock Measures					
2.2.1 Reserve Money (M0)	13.0	13.5	13.9	10.8	10.5
2.2.2 Broad Money (M3)	8.8	8.4	8.7	9.8	9.5
3 Ratios (%)					
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	4.8	4.6	5.2	5.0
3.4 Credit-Deposit Ratio	72.2	71.5	71.8	75.3	75.3
3.5 Incremental Credit-Deposit Ratio #	77.2	67.6	72.1	115.3	111.6
3.6 Investment-Deposit Ratio	28.7	28.6	28.8	29.3	29.9
3.7 Incremental Investment-Deposit Ratio	19.7	12.8	18.8	37.1	43.6
4 Interest Rates (%)					
4.1 Policy Repo Rate	4.00	4.00	4.00	6.25	6.50
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	6.25
4.4 Marginal Standing Facility (MSF) Rate	4.25	4.25	4.25	6.50	6.75
4.5 Bank Rate	4.25	4.25	4.25	6.50	6.75
4.6 Base Rate	7.25/8.80	7.25/8.80	7.25/8.80	8.65/9.40	8.65/9.40
4.7 MCLR (Overnight)	6.45/7.00	6.45/7.00	6.45/7.00	7.30/8.40	7.50/8.40
4.8 Term Deposit Rate >1 Year	5.00/5.60	5.00/5.60	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	3.72	3.30	6.44	6.62
4.11 91-Day Treasury Bill (Primary) Yield	3.84	3.71	3.70	6.47	6.82
4.12 182-Day Treasury Bill (Primary) Yield	4.27	4.18	4.19	6.87	7.18
4.13 364-Day Treasury Bill (Primary) Yield	4.58	4.51	4.52	6.90	7.26
4.14 10-Year G-Sec Par Yield (FBIL)	6.86	6.69	6.78	7.35	7.43
5 Reference Rate and Forward Premiums					
5.1 INR-US\$ Spot Rate (Rs. Per Foreign Currency)	76.18	74.95	75.28	81.54	82.74
5.2 INR-Euro Spot Rate (Rs. Per Foreign Currency)	84.01	83.60	84.38	88.66	87.70
5.3 Forward Premiums of US\$ 1-month (%)	5.67	3.84	4.30	1.77	2.10
3-month (%)	4.46	4.88	4.41	2.55	2.56
6-month (%)	4.10	4.66	4.20	2.44	2.30
6 Inflation (%)					
6.1 All India Consumer Price Index	5.51	6.0	6.1	6.5	6.4
6.2 Consumer Price Index for Industrial Workers	5.13	5.8	5.0	6.2	6.2
6.3 Wholesale Price Index	12.97	13.7	13.4	4.7	3.9
6.3.1 Primary Articles	10.25	15.6	13.9	3.9	3.3
6.3.2 Fuel and Power	32.50	34.4	30.8	15.2	14.8
6.3.3 Manufactured Products	11.10	9.5	10.2	3.0	1.9
7 Foreign Trade (% Change)					
7.1 Imports	55.43	25.1	37.2	-0.5	-4.8
7.2 Exports	44.62	27.9	34.5	1.6	-0.4

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 *

(₹ Crore)

Item	As on the Last Friday/ Friday#						
	2022-23	2022	2023				
		Mar.	Feb. 24	Mar. 3	Mar. 10	Mar. 17	Mar. 24
		1	2	3	4	5	6
1 Issue Department							
1.1 Liabilities							
1.1.1 Notes in Circulation	3350412	3107637	3301605	3315748	3343547	3342288	3350412
1.1.2 Notes Held in Banking Department	13	15	11	15	13	13	13
1.1/1.2 Total Liabilities (Total Notes Issued) or Assets	3350425	3107652	3301616	3315764	3343560	3342301	3350425
1.2 Assets							
1.2.1 Gold	142136	128208	130104	129616	129377	137425	142136
1.2.2 Foreign Securities	3207988	2978927	3171023	3185699	3213804	3204537	3207988
1.2.3 Rupee Coin	300	518	489	448	379	338	300
1.2.4 Government of India Rupee Securities	—	—	—	—	—	—	—
2 Banking Department							
2.1 Liabilities							
2.1.1 Deposits	1340653	1794574	1320222	1314256	1330340	1365084	1340653
2.1.1.1 Central Government	100	101	101	101	100	100	100
2.1.1.2 Market Stabilisation Scheme							
2.1.1.3 State Governments	43	42	43	42	43	42	43
2.1.1.4 Scheduled Commercial Banks	809907	683437	797986	837782	810703	835042	809907
2.1.1.5 Scheduled State Co-operative Banks	7332	7123	7320	7552	7326	7436	7332
2.1.1.6 Non-Scheduled State Co-operative Banks	4615	4121	4419	4596	4489	4545	4615
2.1.1.7 Other Banks	45939	37589	45092	45664	45678	45898	45939
2.1.1.8 Others	379890	988819	357329	317829	365247	381863	379890
2.1.1.9 Financial Institution Outside India	92826	73343	107934	100690	96755	90157	92826
2.1.2 Other Liabilities	1627193	1359254	1509502	1454931	1463131	1573416	1627193
2.1/2.2 Total Liabilities or Assets	2967845	3153828	2829724	2769188	2793471	2938500	2967845
2.2 Assets							
2.2.1 Notes and Coins	13	15	11	15	13	13	13
2.2.2 Balances Held Abroad	1023426	1243853	960958	917722	873203	993346	1023426
2.2.3 Loans and Advances							
2.2.3.1 Central Government	—	—	—	—	—	—	—
2.2.3.2 State Governments	7625	670	9515	14077	736	8189	7625
2.2.3.3 Scheduled Commercial Banks	165085	94299	109026	94174	177196	179260	165085
2.2.3.4 Scheduled State Co-op.Banks	—	—	—	—	—	—	—
2.2.3.5 Industrial Dev. Bank of India	—	—	—	—	—	—	—
2.2.3.6 NABARD	—	24927	—	—	—	—	—
2.2.3.7 EXIM Bank	—	—	—	—	—	—	—
2.2.3.8 Others	18368	8077	10466	12378	16693	18869	18368
2.2.3.9 Financial Institution Outside India	93236	72741	107037	99704	96112	90740	93236
2.2.4 Bills Purchased and Discounted							
2.2.4.1 Internal	—	—	—	—	—	—	—
2.2.4.2 Government Treasury Bills	—	—	—	—	—	—	—
2.2.5 Investments	1407585	1491042	1399711	1399050	1397795	1403534	1407585
2.2.6 Other Assets	252508	218203	233001	232068	231723	244551	252508
2.2.6.1 Gold	232981	201354	215380	214980	214584	226626	232981

* Data are provisional.

The figures for Friday, March 31, 2023 will be published as part of RBI's Balance Sheet in May 2023 in the Annual Report of the Bank.

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
Feb. 1, 2023	-	-	-	-	2083	84118	-506	-	-	-	-82541
Feb. 2, 2023	-	-	-	-	2124	117318	-2545	-	-	-	-117739
Feb. 3, 2023	-	-	-	-	684	101061	-272	-	-	-	-100649
Feb. 4, 2023	-	-	-	-	1902	21996	-	-	-	-	-20094
Feb. 5, 2023	-	-	-	-	23	5777	-	-	-	-	-5754
Feb. 6, 2023	-	-	-	-	784	103392	-	-	-	-	-102608
Feb. 7, 2023	-	-	-	-	4102	94084	-	-	-	-	-89982
Feb. 8, 2023	-	-	-	-	8038	57577	-	-	-	-	-49539
Feb. 9, 2023	-	-	-	-	8706	59043	456	-	-	-	-49881
Feb. 10, 2023	-	-	50000	-	888	129379	320	-	-	-	-78171
Feb. 11, 2023	-	-	-	-	159	3668	-	-	-	-	-3509
Feb. 12, 2023	-	-	-	-	11	3355	-	-	-	-	-3344
Feb. 13, 2023	-	-	-	-	720	92422	-309	-	-	-	-92011
Feb. 14, 2023	-	-	-	-	1996	90336	-	-	-	-	-88340
Feb. 15, 2023	-	-	-	-	702	122837	-	-	-	-	-122135
Feb. 16, 2023	-	-	-	-	713	134132	-	-	-	-	-133419
Feb. 17, 2023	-	-	-	-	967	126267	-	-	-	-	-125300
Feb. 18, 2023	-	-	-	-	2685	18360	-	-	-	-	-15675
Feb. 19, 2023	-	-	-	-	47	2696	-	-	-	-	-2649
Feb. 20, 2023	-	-	-	-	3650	108858	500	-	-	-	-104708
Feb. 21, 2023	-	-	-	-	983	76053	511	-	-	-	-74559
Feb. 22, 2023	-	-	-	-	817	98744	-	-	-	-	-97927
Feb. 23, 2023	-	-	-	-	741	117490	-500	-	-	-	-117249
Feb. 24, 2023	-	-	-	12752	15233	84681	477	-	-	-	-81723
Feb. 25, 2023	-	-	-	-	578	7052	-	-	-	-	-6474
Feb. 26, 2023	-	-	-	-	9	2841	-	-	-	-	-2832
Feb. 27, 2023	-	-	-	-	1874	65660	7500	-	-	-	-56286
Feb. 28, 2023	-	-	-	-	3755	113466	-	-	-	-	-109711

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	
		Feb.	Jan.	Feb.	
		1	2	3	4
1 Net Purchase/ Sale of Foreign Currency (US \$ Million) (1.1–1.2)		0	0	0	0
1.1 Purchase (+)		2370	0	150	0
1.2 Sale (-)		2370	0	150	0
2 Outstanding Net Currency Futures Sales (–)/ Purchase (+) at the end of month (US \$ Million)		0	0	0	0

**No. 4 A : Maturity Breakdown (by Residual Maturity) of Outstanding
Forwards of RBI (US \$ Million)**

Item	As on February 28, 2023		
	Long (+)	Short (-)	Net (1-2)
	1	2	3
1. Upto 1 month	750	1400	-650
2. More than 1 month and upto 3 months	4368	500	3868
3. More than 3 months and upto 1 year	13363	1246	12117
4. More than 1 year	5135	0	5135
Total (1+2+3+4)	23616	3146	20470

No. 5: RBI's Standing Facilities

(₹ Crore)

Item	As on the Last Reporting Friday							
	2022-23	2022				2023		
		Mar. 25	Oct. 21	Nov. 18	Dec. 30	Jan. 27	Feb. 24	Mar. 24
	1	2	3	4	5	6	7	8
1 MSF	28388	11	51134	3250	33224	27370	15233	28388
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	2442	0	1022	1801	2376	1675	2107	2442
4 Others	-							
4.1 Limit	76000	76000	76000	76000	76000	76000	76000	76000
4.2 Outstanding	15900	32401	20249	10850	15400	7500	8350	15900
5 Total Outstanding (1+2.2+3.2+4.2)	46730	32412	72405	15901	51000	36545	25690	46730

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		
		Feb. 25	Jan. 27	Feb. 10	Feb. 24
	1	2	3	4	5
1 Currency with the Public (1.1 + 1.2 + 1.3 – 1.4)	3035689	2980565	3169720	3207073	3231824
1.1 Notes in Circulation	3105703	3052620	3261863	3294591	3301475
1.2 Circulation of Rupee Coin	27270	27139	29048	29048	29264
1.3 Circulation of Small Coins	743	743	743	743	743
1.4 Cash on Hand with Banks	98028	99937	122062	117443	99788
2 Deposit Money of the Public	2271436	2157809	2360613	2294719	2356710
2.1 Demand Deposits with Banks	2212992	2103056	2296792	2230889	2292581
2.2 ‘Other’ Deposits with Reserve Bank	58444	54752	63821	63830	64129
3 M₁ (1 + 2)	5307125	5138374	5530333	5501792	5588534
4 Post Office Saving Bank Deposits	188433	182889	199087	199087	199087
5 M₂ (3 + 4)	5495558	5321263	5729420	5700879	5787621
6 Time Deposits with Banks	15186605	15045154	16364701	16486210	16513885
7 M₃ (3 + 6)	20493729	20183528	21895034	21988001	22102418
8 Total Post Office Deposits	1012241	990274	1105137	1105137	1105137
9 M₄ (7 + 8)	21505970	21173802	23000171	23093138	23207555

No. 7: Sources of Money Stock (M₃)

(₹ Crore)

Sources	Outstanding as on March 31/last reporting Fridays of the month/reporting Fridays					
	2021-22	2022	2023			
		Feb. 25	Jan. 27	Feb. 10	Feb. 24	
		1	2	3	4	5
1 Net Bank Credit to Government	6477629	6232004	6657365	6784535	6854246	
1.1 RBI's net credit to Government (1.1.1–1.1.2)	1450596	1267912	1162729	1216727	1216525	
1.1.1 Claims on Government	1490991	1498132	1419355	1403887	1407652	
1.1.1.1 Central Government	1489324	1497945	1402610	1401485	1398137	
1.1.1.2 State Governments	1667	186	16745	2401	9515	
1.1.2 Government deposits with RBI	40394	230220	256626	187160	191127	
1.1.2.1 Central Government	40352	230177	256584	187117	191085	
1.1.2.2 State Governments	42	43	42	43	43	
1.2 Other Banks' Credit to Government	5027033	4964092	5494636	5567808	5637721	
2 Bank Credit to Commercial Sector	12616520	12350302	14072457	14155164	14188368	
2.1 RBI's credit to commercial sector	16571	1853	11223	11850	12529	
2.2 Other banks' credit to commercial sector	12599950	12348448	14061234	14143314	14175838	
2.2.1 Bank credit by commercial banks	11891314	11643717	13337536	13418060	13450269	
2.2.2 Bank credit by co-operative banks	690201	686893	706416	707947	708230	
2.2.3 Investments by commercial and co-operative banks in other securities	18435	17838	17281	17306	17340	
3 Net Foreign Exchange Assets of Banking Sector (3.1 + 3.2)	4854063	4881815	4792608	4767235	4731899	
3.1 RBI's net foreign exchange assets (3.1.1–3.1.2)	4442479	4582959	4537015	4511642	4476306	
3.1.1 Gross foreign assets	4442720	4583200	4537274	4511904	4476568	
3.1.2 Foreign liabilities	241	241	259	262	262	
3.2 Other banks' net foreign exchange assets	411583	298856	255593	255593	255593	
4 Government's Currency Liabilities to the Public	28013	27882	29791	29791	30007	
5 Banking Sector's Net Non-monetary Liabilities	3482496	3308475	3657186	3748723	3702101	
5.1 Net non-monetary liabilities of RBI	1308500	1324383	1531460	1535228	1496402	
5.2 Net non-monetary liabilities of other banks (residual)	2173996	1984092	2125727	2213495	2205699	
M₃ (1+2+3+4–5)	20493729	20183528	21895034	21988001	22102418	

No. 8: Monetary Survey

(₹ Crore)

Item	Outstanding as on March 31/last reporting Fridays of the month/reporting Fridays				
	2021-22	2022	2023		
		Feb. 25	Jan. 27	Feb. 10	Feb. 24
	1	2	3	4	5
Monetary Aggregates					
NM ₁ (1.1 + 1.2.1+1.3)	5307125	5138374	5530143	5501792	5588318
NM ₂ (NM ₁ + 1.2.2.1)	12081049	11848309	12824268	12848837	12947497
NM ₃ (NM ₂ + 1.2.2.2 + 1.4 = 2.1 + 2.2 + 2.3 – 2.4 – 2.5)	20634885	20326080	22199079	22291759	22408995
1 Components					
1.1 Currency with the Public	3035689	2980565	3169530	3207073	3231607
1.2 Aggregate Deposits of Residents	17266157	17014024	18505959	18557658	18646314
1.2.1 Demand Deposits	2212992	2103056	2296792	2230889	2292581
1.2.2 Time Deposits of Residents	15053166	14910967	16209167	16326769	16353733
1.2.2.1 Short-term Time Deposits	6773925	6709935	7294125	7347046	7359180
1.2.2.1.1 Certificates of Deposit (CDs)	176718	128422	282706	270840	282944
1.2.2.2 Long-term Time Deposits	8279241	8201032	8915042	8979723	8994553
1.3 ‘Other’ Deposits with RBI	58444	54752	63821	63830	64129
1.4 Call/Term Funding from Financial Institutions	274594	276739	459769	463199	466945
2 Sources					
2.1 Domestic Credit	20080599	19568663	21861698	22027909	22163277
2.1.1 Net Bank Credit to the Government	6477629	6232004	6657365	6784535	6854246
2.1.1.1 Net RBI credit to the Government	1450596	1267912	1162729	1216727	1216525
2.1.1.2 Credit to the Government by the Banking System	5027033	4964092	5494636	5567808	5637721
2.1.2 Bank Credit to the Commercial Sector	13602969	13336659	15204333	15243374	15309031
2.1.2.1 RBI Credit to the Commercial Sector	39581	26706	11223	11850	12529
2.1.2.2 Credit to the Commercial Sector by the Banking System	13563389	13309953	15193109	15231524	15296502
2.1.2.2.1 Other Investments (Non-SLR Securities)	952181	952673	1111042	1067645	1097846
2.2 Government’s Currency Liabilities to the Public	28013	27882	29600	29791	29791
2.3 Net Foreign Exchange Assets of the Banking Sector	4705191	4763870	4628291	4605238	4607135
2.3.1 Net Foreign Exchange Assets of the RBI	4442479	4582959	4537015	4511642	4476306
2.3.2 Net Foreign Currency Assets of the Banking System	262711	180910	91276	93596	130829
2.4 Capital Account	3021858	3053964	3503011	3510957	3487014
2.5 Other items (net)	1157060	980370	817499	860222	904194

No. 9: Liquidity Aggregates

(₹ Crore)

Aggregates	2021-22	2022		2023	
		Feb.	Dec.	Jan.	Feb.
	1	2	3	4	5
1 NM₃	20630753	20326080	22199079	22199079	22408995
2 Postal Deposits	596588	585275	594633	651847	651847
3 L₁ (1 + 2)	21227341	20911355	22793712	22850926	23060842
4 Liabilities of Financial Institutions	49578	44627	65601	70232	49679
4.1 Term Money Borrowings	1824	2082	963	1133	1229
4.2 Certificates of Deposit	39170	34185	56570	61870	41920
4.3 Term Deposits	8584	8360	8069	7229	6530
5 L₂ (3 + 4)	21276919	20955982	22859314	22921158	23110522
6 Public Deposits with Non-Banking Financial Companies	70564	..	78061
7 L₃ (5 + 6)	21347483	..	22937375

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		
		Feb. 25	Jan. 27	Feb. 10	Feb. 24
	1	2	3	4	5
1 Components					
1.1 Currency in Circulation	3133716	3080502	3291592	3324515	3331396
1.2 Bankers' Deposits with the RBI	876726	712237	870956	862238	854816
1.2.1 Scheduled Commercial Banks	823632	664473	813573	805398	797986
1.3 'Other' Deposits with the RBI	58444	54752	63821	63830	64129
Reserve Money (1.1 + 1.2 + 1.3 = 2.1 + 2.2 + 2.3 - 2.4 - 2.5)	4068887	3847491	4226369	4250583	4250341
2 Sources					
2.1 RBI's Domestic Credit	906895	561032	1191213	1244378	1240647
2.1.1 Net RBI credit to the Government	1450596	1267912	1162729	1216727	1216525
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	1267768	1146027	1214368	1207052
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	1497537	1402174	1401124	1397648
2.1.1.1.3.1 Central Government Securities	1488816	1497537	1402174	1401124	1397648
2.1.1.1.4 Rupee Coins	508	409	436	361	489
2.1.1.1.5 Deposits of the Central Government	40352	230177	256584	187117	191085
2.1.1.2 Net RBI credit to State Governments	1624	144	16702	2359	9472
2.1.2 RBI's Claims on Banks	-583282	-733586	17261	15801	11593
2.1.2.1 Loans and Advances to Scheduled Commercial Banks	-560272	-708733	17261	15801	11593
2.1.3 RBI's Credit to Commercial Sector	39581	26706	11223	11850	12529
2.1.3.1 Loans and Advances to Primary Dealers	-	-	1675	1428	2107
2.1.3.2 Loans and Advances to NABARD	23010	24853	-	-	-
2.2 Government's Currency Liabilities to the Public	28013	27882	29600	29791	29791
2.3 Net Foreign Exchange Assets of the RBI	4442479	4582959	4537015	4511642	4476306
2.3.1 Gold	322213	319800	358942	353627	345484
2.3.2 Foreign Currency Assets	4120283	4263177	4178090	4158033	4130840
2.4 Capital Account	1254092	1290045	1566409	1571862	1547974
2.5 Other Items (net)	54408	34338	-34950	-36634	-51572

No. 11: Reserve Money - Components and Sources

(₹ Crore)

Item	2021-22	Outstanding as on March 31/ last Fridays of the month/ Fridays					
		2022		2023			
		Feb. 25	Jan. 27	Feb. 3	Feb. 10	Feb. 17	Feb. 24
		1	2	3	4	5	6
Reserve Money (1.1 + 1.2 + 1.3 = 2.1 + 2.2 + 2.3 + 2.4 + 2.5 - 2.6)	4068887	3847491	4226559	4255037	4250583	4285987	4250557
1 Components							
1.1 Currency in Circulation	3133716	3080502	3291782	3297737	3324515	3330335	3331612
1.2 Bankers' Deposits with RBI	876726	712237	870956	892435	862238	888699	854816
1.3 'Other' Deposits with RBI	58444	54752	63821	64865	63830	66954	64129
2 Sources							
2.1 Net Reserve Bank Credit to Government	1450596	1267912	1162729	1286371	1216727	1248754	1216525
2.2 Reserve Bank Credit to Banks	-560272	-708733	17261	-41124	15801	18493	11593
2.3 Reserve Bank Credit to Commercial Sector	16571	1853	11223	11074	11850	11541	12529
2.4 Net Foreign Exchange Assets of RBI	4442479	4582959	4537015	4542673	4511642	4482971	4476306
2.5 Government's Currency Liabilities to the Public	28013	27882	29791	29791	29791	29791	30007
2.6 Net Non- Monetary Liabilities of RBI	1308500	1324383	1531460	1573747	1535228	1505561	1496402

No. 12: Commercial Bank Survey

(₹ Crore)

Item	Outstanding as on last reporting Fridays of the month/ reporting Fridays of the month				
	2022-23	2022	2023		
		Feb. 25	Jan. 27	Feb. 10	Feb. 24
	1	2	3	4	5
1 Components					
1.1 Aggregate Deposits of Residents	17882783	16083342	17563894	17614084	17701702
1.1.1 Demand Deposits	2180402	1963976	2156747	2091305	2150731
1.1.2 Time Deposits of Residents	15702381	14119366	15407147	15522779	15550972
1.1.2.1 Short-term Time Deposits	7066072	6353715	6933216	6985251	6997937
1.1.2.1.1 Certificates of Deposits (CDs)	304088	128422	282706	270840	282944
1.1.2.2 Long-term Time Deposits	8636310	7765651	8473931	8537528	8553034
1.2 Call/Term Funding from Financial Institutions	445329	276739	459769	463199	466945
2 Sources					
2.1 Domestic Credit	20197172	17266754	19655333	19765532	19899791
2.1.1 Credit to the Government	5414322	4669023	5193768	5267113	5336711
2.1.2 Credit to the Commercial Sector	14782850	12597731	14461566	14498419	14563080
2.1.2.1 Bank Credit	13675228	11643717	13337536	13418060	13450269
2.1.2.1.1 Non-food Credit	13655322	11575493	13287371	13373764	13414992
2.1.2.2 Net Credit to Primary Dealers	19491	9095	21097	20828	23081
2.1.2.3 Investments in Other Approved Securities	826	1209	853	848	847
2.1.2.4 Other Investments (in non-SLR Securities)	1087305	943710	1102079	1058683	1088883
2.2 Net Foreign Currency Assets of Commercial Banks (2.2.1+2.2.2+2.2.3)	114930	180910	91276	93596	130829
2.2.1 Foreign Currency Assets	353850	384970	318413	317345	357705
2.2.2 Non-resident Foreign Currency Repatriable Fixed Deposits	160923	134187	155534	159441	160152
2.2.3 Overseas Foreign Currency Borrowings	77997	69873	71602	64308	66724
2.3 Net Bank Reserves (2.3.1+2.3.2+2.3.3)	833002	1461464	906743	895413	874539
2.3.1 Balances with the RBI	809907	664473	813573	805398	797986
2.3.2 Cash in Hand	90263	88258	110431	105816	88146
2.3.3 Loans and Advances from the RBI	67168	-708733	17261	15801	11593
2.4 Capital Account	1916966	1739748	1912431	1914924	1914869
2.5 Other items (net) (2.1+2.2+2.3–2.4–1.1–1.2)	900026	809300	717259	762333	821643
2.5.1 Other Demand and Time Liabilities (net of 2.2.3)	710215	568393	660098	710034	696225
2.5.2 Net Inter-Bank Liabilities (other than to PDs)	44693	28229	32462	55719	44850

No. 13: Scheduled Commercial Banks' Investments

(₹ Crore)

Item	As on March 25, 2022	2023			
		Feb. 25	Jan. 27	Feb. 10	Feb. 24
			1	2	3
1 SLR Securities	4728948	4670231	5194621	5267961	5337558
2 Other Government Securities (Non-SLR)	-	-	181956	182553	182650
3 Commercial Paper	55315	49155	52392	55078	56361
4 Shares issued by					
4.1 PSUs	7642	8384	10047	10096	9829
4.2 Private Corporate Sector	73814	73319	70612	70608	70826
4.3 Others	5152	5014	5071	4788	4757
5 Bonds/Debentures issued by					
5.1 PSUs	117860	117941	90212	90183	90873
5.2 Private Corporate Sector	326188	336955	326385	299306	325678
5.3 Others	148753	142778	97973	100869	101399
6 Instruments issued by					
6.1 Mutual funds	34404	43286	58938	55954	56553
6.2 Financial institutions	174090	166879	191608	189248	189957

Note: Data against column Nos. (1), (2) & (3) are Final and for column Nos. (4) & (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		
		Feb.	Jan.		Feb.	Jan.		
	1	2	3	4	5	6	7	8
Number of Reporting Banks	212	212	212	212	136	136	137	137
1 Liabilities to the Banking System	262674	255874	329409	348005	258649	251956	326191	344778
1.1 Demand and Time Deposits from Banks	194143	185500	210725	219565	190570	182114	208480	217311
1.2 Borrowings from Banks	38369	44491	63049	68709	38317	44343	62698	68361
1.3 Other Demand and Time Liabilities	30162	25883	55635	59731	29762	25499	55013	59106
2 Liabilities to Others	17832517	17569489	19353582	19537234	17380755	17132534	18910898	19091748
2.1 Aggregate Deposits	16899634	16638218	18145363	18290154	16465313	16217529	17719428	17861854
2.1.1 Demand	2117513	2006907	2201162	2197093	2072747	1963976	2156747	2150731
2.1.2 Time	14782121	14631311	15944201	16093061	14392567	14253553	15562681	15711123
2.2 Borrowings	278985	281772	464367	471760	274594	276739	459769	466945
2.3 Other Demand and Time Liabilities	653898	649500	743851	775320	640848	638266	731701	762949
3 Borrowings from Reserve Bank	94299	96123	121622	109026	94299	96123	121622	109026
3.1 Against Usance Bills /Promissory Notes	–	–	–	–	–	–	–	–
3.2 Others	94299	96123	121622	109026	94299	96123	121622	109026
4 Cash in Hand and Balances with Reserve Bank	788725	771413	945680	906590	769363	752731	924004	886132
4.1 Cash in Hand	88732	90640	112768	90492	85926	88258	110431	88146
4.2 Balances with Reserve Bank	699993	680772	832912	816098	683437	664473	813573	797986
5 Assets with the Banking System	315282	296277	376259	388234	243637	232823	314826	323009
5.1 Balances with Other Banks	199434	196853	227365	234118	164240	161886	190072	195668
5.1.1 In Current Account	19733	23926	24940	29876	16691	21250	21710	27045
5.1.2 In Other Accounts	179701	172927	202425	204241	147549	140636	168362	168623
5.2 Money at Call and Short Notice	36905	27515	40131	39207	6982	6053	21711	20448
5.3 Advances to Banks	39340	36348	43544	44408	35802	32138	40586	39919
5.4 Other Assets	39603	35561	65218	70501	36613	32746	62457	66974
6 Investment	4874070	4810498	5340544	5483663	4728948	4670231	5194621	5337558
6.1 Government Securities	4867102	4803361	5333965	5477026	4728179	4669023	5193768	5336711
6.2 Other Approved Securities	6968	7136	6579	6637	769	1209	853	847
7 Bank Credit	12259048	12003700	13734998	13852956	11891314	11643717	13337536	13450269
7a Food Credit	90827	104041	95913	80994	55011	68224	50165	35276
7.1 Loans, Cash-credits and Overdrafts	12016486	11774926	13500963	13611233	11651337	11417404	13106520	13212088
7.2 Inland Bills-Purchased	36070	34151	34384	37032	36055	34138	34366	37020
7.3 Inland Bills-Discounted	155796	146599	153963	159300	154212	145123	151575	156351
7.4 Foreign Bills-Purchased	19537	19676	17315	17307	19157	19269	17142	17161
7.5 Foreign Bills-Discounted	31160	28348	28373	28085	30554	27783	27933	27649

Note: Data in column Nos. (4) & (8) are Provisional.

No. 15: Deployment of Gross Bank Credit by Major Sectors

(₹ Crore)

Sector	Outstanding as on				Growth (%)	
	Mar.25, 2022	2023		Financial year so far	Y-o-Y	
		Feb.25	Jan.27	Feb.24	2022-23	2023
	1	2	3	4	%	%
I. Bank Credit (II+III)	11891314	11643717	13341662	13450706	13.1	15.5
II. Food Credit	55011	68224	50165	35276	-35.9	-48.3
III. Non-food Credit	11836304	11575493	13291496	13415430	13.3	15.9
1. Agriculture & Allied Activities	1461719	1440634	1638079	1655938	13.3	14.9
2. Industry (Micro and Small, Medium and Large)	3156067	3076840	3288720	3291205	4.3	7.0
2.1 Micro and Small	532792	518873	578976	587494	10.3	13.2
2.2 Medium	213996	206949	235162	234858	9.7	13.5
2.3 Large	2409279	2351018	2474582	2468853	2.5	5.0
3. Services	3011975	2920284	3477752	3523813	17.0	20.7
3.1 Transport Operators	155352	148976	166550	168735	8.6	13.3
3.2 Computer Software	20899	20317	21071	20621	-1.3	1.5
3.3 Tourism, Hotels & Restaurants	64378	64304	64909	65234	1.3	1.4
3.4 Shipping	8436	7303	7259	6881	-18.4	-5.8
3.5 Aviation	23979	23890	27824	27819	16.0	16.4
3.6 Professional Services	116742	113845	127711	131443	12.6	15.5
3.7 Trade	696301	683736	777832	798032	14.6	16.7
3.7.1 Wholesale Trade	351213	344335	381139	389231	10.8	13.0
3.7.2 Retail Trade	345088	339401	396692	408801	18.5	20.4
3.8 Commercial Real Estate	291168	288326	313440	312809	7.4	8.5
3.9 Non-Banking Financial Companies (NBFCs) ¹ of which,	1022399	988882	1287906	1309521	28.1	32.4
3.9.1 Housing Finance Companies (HFCs)	282048	273442	309755	307870	9.2	12.6
3.9.2 Public Financial Institutions (PFIs)	137084	129407	181803	178651	30.3	38.1
3.10 Other Services ²	612320	580704	683251	682720	11.5	17.6
4. Personal Loans	3386982	3333416	3958874	4013299	18.5	20.4
4.1 Consumer Durables	27628	26552	36910	37011	34.0	39.4
4.2 Housing	1684424	1661241	1888144	1910531	13.4	15.0
4.3 Advances against Fixed Deposits	83379	79349	109749	113457	36.1	43.0
4.4 Advances to Individuals against share & bonds	6261	6195	6858	6937	10.8	12.0
4.5 Credit Card Outstanding	148416	144646	186783	186856	25.9	29.2
4.6 Education	82723	82887	95226	96164	16.2	16.0
4.7 Vehicle Loans	402689	401800	496662	495922	23.2	23.4
4.8 Loan against gold jewellery	73960	73193	85928	87822	18.7	20.0
4.9 Other Personal Loans	877503	857554	1052614	1078599	22.9	25.8
5. Priority Sector (Memo)						
(i) Agriculture & Allied Activities ³	1484923	1448989	1656599	1686333	13.6	16.4
(ii) Micro & Small Enterprises ⁴	1377848	1381186	1534099	1561345	13.3	13.0
(iii) Medium Enterprises ⁵	351900	347595	393252	390714	11.0	12.4
(iv) Housing	616814	606141	614829	619039	0.4	2.1
(v) Education Loans	58118	58553	59250	59362	2.1	1.4
(vi) Renewable Energy	3842	2750	4617	4642	20.8	68.8
(vii) Social Infrastructure	2483	2545	2499	2449	-1.4	-3.8
(viii) Export Credit	24177	23965	14390	14396	-40.5	-39.9
(ix) Others	37159	40414	48680	50056	34.7	23.9
(x) Weaker Sections including net PSLC- SF/MF	1180928	1142535	1365708	1428627	21.0	25.0

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 Funds (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	Mar. 25, 2022	Outstanding as on			Growth (%)	
		2022		2023	Financial year so far	Y-o-Y
		Feb. 25	Jan. 27	Feb. 24	2022-23	2023
		1	2	3	4	%
2 Industries (2.1 to 2.19)	3156067	3076840	3288720	3291205	4.3	7.0
2.1 Mining & Quarrying (incl. Coal)	49135	47287	56354	57348	16.7	21.3
2.2 Food Processing	173246	168020	173768	177739	2.6	5.8
2.2.1 Sugar	26307	23874	18911	21171	-19.5	-11.3
2.2.2 Edible Oils & Vanaspati	18246	17450	18941	19005	4.2	8.9
2.2.3 Tea	5728	5481	5080	5005	-12.6	-8.7
2.2.4 Others	122965	121215	130836	132558	7.8	9.4
2.3 Beverage & Tobacco	18176	17854	20612	22098	21.6	23.8
2.4 Textiles	224026	221765	219820	222372	-0.7	0.3
2.4.1 Cotton Textiles	90384	90887	86588	88073	-2.6	-3.1
2.4.2 Jute Textiles	3509	3359	3848	4046	15.3	20.5
2.4.3 Man-Made Textiles	38371	37331	39630	39624	3.3	6.1
2.4.4 Other Textiles	91761	90189	89753	90628	-1.2	0.5
2.5 Leather & Leather Products	11573	11309	11494	11480	-0.8	1.5
2.6 Wood & Wood Products	16294	16004	18790	19204	17.9	20.0
2.7 Paper & Paper Products	40565	40341	42674	42608	5.0	5.6
2.8 Petroleum, Coal Products & Nuclear Fuels	107333	97804	150285	146052	36.1	49.3
2.9 Chemicals & Chemical Products	196363	185011	215056	213080	8.5	15.2
2.9.1 Fertiliser	33160	28814	35009	33656	1.5	16.8
2.9.2 Drugs & Pharmaceuticals	61093	58527	66403	66686	9.2	13.9
2.9.3 Petro Chemicals	19622	19357	20878	20467	4.3	5.7
2.9.4 Others	82486	78313	92767	92271	11.9	17.8
2.10 Rubber, Plastic & their Products	72013	70442	77560	77492	7.6	10.0
2.11 Glass & Glassware	5952	5763	7763	7934	33.3	37.7
2.12 Cement & Cement Products	47910	47884	52846	54884	14.6	14.6
2.13 Basic Metal & Metal Product	288531	281539	336682	336959	16.8	19.7
2.13.1 Iron & Steel	187584	185513	229716	228316	21.7	23.1
2.13.2 Other Metal & Metal Product	100946	96025	106966	108643	7.6	13.1
2.14 All Engineering	167966	162456	170022	173395	3.2	6.7
2.14.1 Electronics	38179	37209	40644	41136	7.7	10.6
2.14.2 Others	129787	125247	129378	132260	1.9	5.6
2.15 Vehicles, Vehicle Parts & Transport Equipment	89896	87377	96844	97942	9.0	12.1
2.16 Gems & Jewellery	80512	77890	75160	75547	-6.2	-3.0
2.17 Construction	117724	117235	116511	120428	2.3	2.7
2.18 Infrastructure	1195027	1172319	1185454	1178969	-1.3	0.6
2.18.1 Power	611410	600259	605986	604072	-1.2	0.6
2.18.2 Telecommunications	130318	126059	110506	111184	-14.7	-11.8
2.18.3 Roads	270395	262119	284739	280012	3.6	6.8
2.18.4 Airports	6646	6638	9217	9181	38.1	38.3
2.18.5 Ports	8886	8803	7860	8209	-7.6	-6.7
2.18.6 Railways	10512	13954	10851	10936	4.0	-21.6
2.18.7 Other Infrastructure	156860	154486	156294	155376	-0.9	0.6
2.19 Other Industries	253823	248539	261025	255674	0.7	2.9

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									
	2021-22	2022						2023		
		Jan, 28	Nov, 18	Nov, 25	Dec, 02	Dec, 16	Dec, 30	Jan, 13	Jan, 27	
		1	2	3	4	5	6	7	8	9
Number of Reporting Banks		32	33	33	33	33	33	33	33	
1 Aggregate Deposits (2.1.1.2+2.2.1.2)	126746.8	127431.3	126894.1	127382.3	127292.9	128339.4	130835.1	132887.9	133539.0	
2 Demand and Time Liabilities										
2.1 Demand Liabilities	23533.1	24041.4	25577.6	24931.7	25574.4	26161.0	28819.3	27185.8	26514.9	
2.1.1 Deposits										
2.1.1.1 Inter-Bank	4281.2	5534.4	5568.0	5197.9	5822.7	5522.9	5201.5	6029.5	5760.8	
2.1.1.2 Others	14,413.7	13490.3	14228.8	14221.3	14281.6	14807.4	15609.5	15866.7	15381.7	
2.1.2 Borrowings from Banks	0.0	0.0	404.9	624.7	544.7	624.7	50.0	0.0	0.0	
2.1.3 Other Demand Liabilities	4838.2	5016.7	5376.0	4887.9	4925.4	5206.1	7958.3	5289.6	5372.4	
2.2 Time Liabilities	181808.1	178141.3	171549.2	172191.9	171447.3	172012.1	174159.8	175067.2	176298.1	
2.2.1 Deposits										
2.2.1.1 Inter-Bank	66572.3	61099.8	54040.1	54088.1	54278.4	54295.2	55395.7	55338.6	55159.9	
2.2.1.2 Others	112333.1	113941.1	112665.3	113161.0	113011.3	113532.1	115225.6	117021.2	118157.3	
2.2.2 Borrowings from Banks	899.9	876.9	2433.3	2519.3	1715.3	1734.4	1074.3	1764.1	2032.1	
2.2.3 Other Time Liabilities	2002.7	2223.6	2410.4	2423.5	2442.3	2450.5	2464.2	943.3	948.7	
3 Borrowing from Reserve Bank	0.0	0.0	35.0	35.0	35.0	35.0	0.0	0.0	0.0	
4 Borrowings from a notified bank / Government	58868.2	64328.2	73458.8	73686.9	74853.3	74975.2	79539.1	131532.1	78164.1	
4.1 Demand	12625.5	12684.0	15528.3	15498.3	15914.2	15783.7	17875.0	17952.8	17966.9	
4.2 Time	46242.7	51644.2	57930.5	58188.6	58939.1	59191.5	61664.2	113579.2	60197.2	
5 Cash in Hand and Balances with Reserve Bank	8371.5	9868.9	10229.6	10166.0	10547.0	10820.3	11342.1	11647.2	11360.2	
5.1 Cash in Hand	602.2	705.8	867.6	777.6	846.0	856.4	893.9	1224.4	732.3	
5.2 Balance with Reserve Bank	7769.3	9163.0	9362.0	9388.3	9701.0	9963.9	10448.2	10422.8	10627.9	
6 Balances with Other Banks in Current Account	894.4	1275.4	1560.4	1557.2	1561.1	1555.0	1676.2	1641.3	1850.1	
7 Investments in Government Securities	66350.1	71991.8	73166.1	72325.9	72326.1	72684.3	72306.1	72808.5	72775.3	
8 Money at Call and Short Notice	25325.3	25584.6	17899.7	18018.5	17284.9	17449.4	23466.4	20920.3	21666.8	
9 Bank Credit (10.1+11)	117228.4	110029.1	120186.2	120652.2	120965.0	121585.0	121588.2	122782.6	123897.1	
10 Advances										
10.1 Loans, Cash-Credits and Overdrafts	117209.2	110008.5	120147.3	120612.7	120925.5	121543.5	121546.4	122742.4	123866.2	
10.2 Due from Banks	87632.4	103697.0	117456.0	117682.0	117687.7	118828.7	122854.5	124378.1	125739.6	
11 Bills Purchased and Discounted	19.2	20.6	38.8	39.5	39.5	41.5	41.7	40.3	30.9	

Prices and Production

No. 18: Consumer Price Index (Base: 2012=100)

Group/Sub group	2021-22			Rural			Urban			Combined		
	Rural	Urban	Combined	Feb.22	Jan.23	Feb.23(P)	Feb.22	Jan.23	Feb.23(P)	Feb.22	Jan.23	Feb.23(P)
	1	2	3	4	5	6	7	8	9	10	11	12
1 Food and beverages	162.8	168.7	165.0	163.9	175.0	174.7	170.2	179.5	179.8	166.2	176.7	176.6
1.1 Cereals and products	146.4	150.4	147.6	148.8	174.0	175.3	152.5	173.3	174.8	150.0	173.8	175.1
1.2 Meat and fish	200.4	206.5	202.6	198.1	208.3	205.0	205.2	215.2	211.7	200.6	210.7	207.4
1.3 Egg	173.3	176.0	174.4	175.5	192.9	182.6	176.4	197.0	184.6	175.8	194.5	183.4
1.4 Milk and products	158.3	159.0	158.6	160.7	174.3	175.8	160.6	175.2	176.9	160.7	174.6	176.2
1.5 Oils and fats	192.2	172.4	184.9	192.6	192.6	188.9	171.5	178.0	175.6	184.9	187.2	184.0
1.6 Fruits	155.3	163.5	159.2	151.4	156.3	161.2	156.4	160.5	166.1	153.7	158.3	163.5
1.7 Vegetables	156.1	192.8	168.5	155.2	142.9	138.7	198.0	175.3	172.1	169.7	153.9	150.0
1.8 Pulses and products	164.1	164.4	164.2	163.9	170.7	170.1	163.2	171.2	171.1	163.7	170.9	170.4
1.9 Sugar and confectionery	117.4	119.1	118.0	118.1	120.3	119.5	120.6	122.7	122.2	118.9	121.1	120.4
1.10 Spices	171.2	167.5	170.0	175.4	210.5	211.9	172.2	204.3	204.8	174.3	208.4	209.5
1.11 Non-alcoholic beverages	167.8	154.7	162.3	170.5	176.9	177.3	156.7	163.7	164.3	164.7	171.4	171.9
1.12 Prepared meals, snacks, sweets	173.0	175.8	174.3	176.3	188.5	189.2	180.0	194.3	195.7	178.0	191.2	192.2
2 Pan, tobacco and intoxicants	190.3	196.5	191.9	191.5	196.9	197.8	196.5	201.6	202.2	192.8	198.2	199.0
3 Clothing and footwear	168.2	158.4	164.3	173.7	188.6	189.2	163.4	176.6	177.4	169.6	183.8	184.5
3.1 Clothing	168.8	160.9	165.7	174.1	189.0	189.6	165.7	178.7	179.4	170.8	184.9	185.6
3.2 Footwear	164.5	144.7	156.3	171.0	186.3	186.9	150.4	165.3	166.2	162.4	177.6	178.3
4 Housing	--	163.0	163.0	--	--	--	165.5	172.1	173.5	165.5	172.1	173.5
5 Fuel and light	164.0	159.8	162.4	167.4	183.2	183.0	163.0	180.1	180.7	165.7	182.0	182.1
6 Miscellaneous	164.1	156.1	160.2	167.3	176.5	177.3	159.4	168.9	169.5	163.5	172.8	173.5
6.1 Household goods and services	161.8	153.5	157.9	165.7	177.2	178.0	157.4	168.0	168.8	161.8	172.9	173.7
6.2 Health	172.0	163.3	168.6	175.3	184.7	185.6	167.2	178.5	179.9	172.2	182.3	183.4
6.3 Transport and communication	157.9	150.0	153.7	161.2	168.2	168.7	153.1	159.5	159.6	156.9	163.6	163.9
6.4 Recreation and amusement	162.7	154.8	158.2	165.5	171.8	172.3	159.5	167.8	168.1	162.1	169.5	169.9
6.5 Education	168.4	160.1	163.5	170.3	177.8	178.2	162.0	171.8	172.2	165.4	174.3	174.7
6.6 Personal care and effects	161.3	160.8	161.1	164.5	178.4	179.7	164.2	178.8	180.1	164.4	178.6	179.9
General Index (All Groups)	164.5	163.1	163.8	166.7	177.8	177.9	165.5	174.9	175.6	166.1	176.5	176.8

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	
			1	2	3	4	5	6
1 Consumer Price Index for Industrial Workers	2016	2.88		123.6		125	132.8	132.7
2 Consumer Price Index for Agricultural Labourers	1986-87	5.89		1075		1095	1170	1171
3 Consumer Price Index for Rural Labourers	1986-87	—		1084		1106	1181	1182

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	
		Feb.	Jan.	Feb.	Jan.
	1	2	3	4	
1 Standard Gold (₹ per 10 grams)		47999		49254	
2 Silver (₹ per kilogram)		65426		63175	
					68305
					66402

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	
			Feb.	Dec.	Jan. (P)	Feb. (P)
			1	2	3	4
1 ALL COMMODITIES		100.000	139.4	145.3	150.5	150.6
1.1 PRIMARY ARTICLES		22.618	160.7	167.5	172.9	174.0
1.1.1 FOOD ARTICLES		15.256	167.3	170.4	174.9	176.1
1.1.1.1 Food Grains (Cereals+Pulses)		3.462	163.5	165.9	184.4	187.0
1.1.1.2 Fruits & Vegetables		3.475	187.6	192.1	173.1	171.2
1.1.1.3 Milk		4.440	156.9	157.8	169.9	171.5
1.1.1.4 Eggs, Meat & Fish		2.402	164.0	167.3	167.0	169.3
1.1.1.5 Condiments & Spices		0.529	159.8	170.3	191.5	195.7
1.1.1.6 Other Food Articles		0.948	168.3	173.8	181.3	181.9
1.1.2 NON-FOOD ARTICLES		4.119	158.1	170.2	171.2	173.4
1.1.2.1 Fibres		0.839	158.4	190.4	188.6	185.3
1.1.2.2 Oil Seeds		1.115	214.4	215.4	199.7	201.9
1.1.2.3 Other non-food Articles		1.960	119.9	123.3	135.4	136.6
1.1.2.4 Floriculture		0.204	217.0	290.2	288.6	321.8
1.1.3 MINERALS		0.833	197.2	225.0	203.9	203.9
1.1.3.1 Metallic Minerals		0.648	193.3	226.9	190.2	190.2
1.1.3.2 Other Minerals		0.185	211.0	218.6	252.0	251.8
1.1.4 CRUDE PETROLEUM & NATURAL GAS		2.410	110.3	125.1	152.4	151.4
1.2 FUEL & POWER		13.152	124.6	138.3	158.0	155.8
1.2.1 COAL		2.138	129.0	130.9	134.3	134.3
1.2.1.1 Coking Coal		0.647	143.0	143.4	143.4	143.4
1.2.1.2 Non-Coking Coal		1.401	119.8	119.8	119.8	119.8
1.2.1.3 Lignite		0.090	170.5	212.6	294.3	294.3
1.2.2 MINERAL OILS		7.950	126.2	142.9	164.4	160.9
1.2.3 ELECTRICITY		3.064	117.4	131.8	157.7	157.7
1.3 MANUFACTURED PRODUCTS		64.231	135.0	138.9	141.1	141.3
1.3.1 MANUFACTURE OF FOOD PRODUCTS		9.122	157.9	160.5	163.6	163.1
1.3.1.1 Processing and Preserving of meat		0.134	142.8	141.0	144.6	142.7
1.3.1.2 Processing and Preserving of fish, Crustaceans, Molluscs and products thereof		0.204	144.1	147.3	146.6	146.8
1.3.1.3 Processing and Preserving of fruit and Vegetables		0.138	122.3	122.5	127.5	126.9
1.3.1.4 Vegetable and Animal oils and Fats		2.643	187.2	190.1	168.7	166.7
1.3.1.5 Dairy products		1.165	149.4	151.9	170.7	171.9
1.3.1.6 Grain mill products		2.010	145.6	147.6	168.3	169.6
1.3.1.7 Starches and Starch products		0.110	133.3	146.7	158.5	159.2
1.3.1.8 Bakery products		0.215	146.2	150.8	166.6	165.7
1.3.1.9 Sugar, Molasses & honey		1.163	122.9	124.8	127.9	127.2
1.3.1.10 Cocoa, Chocolate and Sugar confectionery		0.175	130.5	133.8	138.8	137.9
1.3.1.11 Macaroni, Noodles, Couscous and Similar farinaceous products		0.026	136.7	144.3	148.7	154.6
1.3.1.12 Tea & Coffee products		0.371	171.1	165.8	172.8	167.3
1.3.1.13 Processed condiments & salt		0.163	157.5	163.7	181.6	181.8
1.3.1.14 Processed ready to eat food		0.024	137.0	138.6	140.8	141.5
1.3.1.15 Health supplements		0.225	153.5	164.2	181.8	181.0
1.3.1.16 Prepared animal feeds		0.356	200.9	204.1	209.1	208.9
1.3.2 MANUFACTURE OF BEVERAGES		0.909	126.8	127.6	129.1	130.0
1.3.2.1 Wines & spirits		0.408	123.6	124.9	131.2	131.5
1.3.2.2 Malt liquors and Malt		0.225	130.5	132.7	133.8	134.9
1.3.2.3 Soft drinks; Production of mineral waters and Other bottled waters		0.275	128.6	127.3	122.3	123.7
1.3.3 MANUFACTURE OF TOBACCO PRODUCTS		0.514	160.2	159.8	166.1	166.4
1.3.3.1 Tobacco products		0.514	160.2	159.8	166.1	166.2

No. 21: Wholesale Price Index (Contd.)
 (Base: 2011-12 = 100)

Commodities	Weight	2021-22	2022		2023	
			Feb.	Dec.	Jan. (P)	Feb. (P)
1.3.4 MANUFACTURE OF TEXTILES	4.881	135.2	142.4	137.6	137.2	137.4
1.3.4.1 Preparation and Spinning of textile fibres	2.582	128.2	137.9	124.3	123.7	124.1
1.3.4.2 Weaving & Finishing of textiles	1.509	146.8	151.8	158.4	158.9	159.2
1.3.4.3 Knitted and Crocheted fabrics	0.193	125.5	130.0	126.2	124.1	124.0
1.3.4.4 Made-up textile articles, Except apparel	0.299	138.7	142.3	153.1	152.7	153.0
1.3.4.5 Cordage, Rope, Twine and Netting	0.098	168.5	165.7	151.7	149.3	147.4
1.3.4.6 Other textiles	0.201	126.2	130.9	131.9	131.8	129.0
1.3.5 MANUFACTURE OF WEARING APPAREL	0.814	143.1	144.7	149.6	149.5	149.7
1.3.5.1 Manufacture of Wearing Apparel (woven), Except fur Apparel	0.593	142.0	143.5	148.6	147.9	148.4
1.3.5.2 Knitted and Crocheted apparel	0.221	145.8	147.8	152.1	153.9	153.2
1.3.6 MANUFACTURE OF LEATHER AND RELATED PRODUCTS	0.535	119.2	121.3	121.5	122.0	121.3
1.3.6.1 Tanning and Dressing of leather; Dressing and Dyeing of fur	0.142	103.4	107.2	103.4	104.7	102.1
1.3.6.2 Luggage, Handbags, Saddlery and Harness	0.075	141.5	144.4	141.0	140.3	140.1
1.3.6.3 Footwear	0.318	121.0	122.1	125.0	125.4	125.5
1.3.7 MANUFACTURE OF WOOD AND PRODUCTS OF WOOD AND CORK	0.772	141.0	142.9	143.1	143.3	143.1
1.3.7.1 Saw milling and Planing of wood	0.124	128.8	132.6	139.3	139.2	137.7
1.3.7.2 Veneer sheets; Manufacture of plywood, Laminboard, Particle board and Other panels and Boards	0.493	141.9	143.5	141.2	141.3	141.4
1.3.7.3 Builder's carpentry and Joinery	0.036	193.9	195.2	205.6	204.5	203.2
1.3.7.4 Wooden containers	0.119	134.1	135.9	136.2	137.6	137.7
1.3.8 MANUFACTURE OF PAPER AND PAPER PRODUCTS	1.113	137.5	143.3	148.4	147.9	148.0
1.3.8.1 Pulp, Paper and Paperboard	0.493	141.4	146.2	156.8	156.3	157.5
1.3.8.2 Corrugated paper and Paperboard and Containers of paper and Paperboard	0.314	137.8	142.5	145.2	145.2	143.9
1.3.8.3 Other articles of paper and Paperboard	0.306	131.0	139.3	138.3	136.9	136.9
1.3.9 PRINTING AND REPRODUCTION OF RECORDED MEDIA	0.676	157.8	160.5	177.7	177.8	177.1
1.3.9.1 Printing	0.676	157.8	160.5	177.7	177.8	177.1
1.3.10 MANUFACTURE OF CHEMICALS AND CHEMICAL PRODUCTS	6.465	133.5	139.2	144.0	143.2	143.0
1.3.10.1 Basic chemicals	1.433	143.8	153.2	155.4	152.6	151.8
1.3.10.2 Fertilizers and Nitrogen compounds	1.485	129.6	133.8	147.3	146.2	145.8
1.3.10.3 Plastic and Synthetic rubber in primary form	1.001	140.3	143.9	136.4	138.6	140.7
1.3.10.4 Pesticides and Other agrochemical products	0.454	132.1	139.7	143.8	142.0	141.6
1.3.10.5 Paints, Varnishes and Similar coatings, Printing ink and Mastics	0.491	130.4	137.3	145.9	146.2	145.6
1.3.10.6 Soap and Detergents, Cleaning and Polishing preparations, Perfumes and Toilet preparations	0.612	128.1	128.0	142.3	141.8	141.2
1.3.10.7 Other chemical products	0.692	130.3	137.6	141.1	140.1	138.7
1.3.10.8 Man-made fibres	0.296	106.6	111.1	105.6	105.6	105.9
1.3.11 MANUFACTURE OF PHARMACEUTICALS, MEDICINAL CHEMICAL AND BOTANICAL PRODUCTS	1.993	135.9	137.9	141.8	141.8	142.7
1.3.11.1 Pharmaceuticals, Medicinal chemical and Botanical products	1.993	135.9	137.9	141.8	141.8	142.7
1.3.12 MANUFACTURE OF RUBBER AND PLASTICS PRODUCTS	2.299	124.8	127.3	128.1	128.3	128.7
1.3.12.1 Rubber Tyres and Tubes; Retreading and Rebuilding of Rubber Tyres	0.609	104.3	106.4	113.3	113.3	114.3
1.3.12.2 Other Rubber Products	0.272	101.9	105.1	105.7	105.8	106.3
1.3.12.3 Plastics products	1.418	138.0	140.6	138.8	139.1	139.2
1.3.13 MANUFACTURE OF OTHER NON-METALLIC MINERAL PRODUCTS	3.202	123.7	126.7	134.8	134.6	135.3
1.3.13.1 Glass and Glass products	0.295	139.1	144.7	164.1	164.8	164.2
1.3.13.2 Refractory products	0.223	115.6	119.9	118.9	118.6	118.7
1.3.13.3 Clay Building Materials	0.121	119.3	133.6	137.5	132.9	130.0
1.3.13.4 Other Porcelain and Ceramic Products	0.222	112.9	116.1	118.5	118.7	119.2
1.3.13.5 Cement, Lime and Plaster	1.645	126.4	128.4	137.6	137.6	138.9

No. 21: Wholesale Price Index (Contd.)
 (Base: 2011-12 = 100)

Commodities	Weight	2021-22	2022		2023	
			Feb.	Dec.	Jan. (P)	Feb. (P)
1.3.13.6 Articles of Concrete, Cement and Plaster	0.292	129.2	130.6	135.1	134.5	135.6
1.3.13.7 Cutting, Shaping and Finishing of Stone	0.234	122.2	120.5	126.9	126.8	126.4
1.3.13.8 Other Non-Metallic Mineral Products	0.169	90.6	98.3	106.6	107.4	108.6
1.3.14 MANUFACTURE OF BASIC METALS	9.646	140.1	147.1	143.2	145.0	146.8
1.3.14.1 Inputs into steel making	1.411	150.8	162.4	150.4	150.8	153.8
1.3.14.2 Metallic Iron	0.653	147.7	154.9	157.6	160.8	162.2
1.3.14.3 Mild Steel - Semi Finished Steel	1.274	119.1	122.9	122.0	124.4	124.7
1.3.14.4 Mild Steel -Long Products	1.081	137.4	144.8	145.5	147.8	148.2
1.3.14.5 Mild Steel - Flat products	1.144	157.5	160.3	143.8	143.5	150.1
1.3.14.6 Alloy steel other than Stainless Steel- Shapes	0.067	133.7	143.6	141.3	143.6	144.8
1.3.14.7 Stainless Steel - Semi Finished	0.924	141.7	147.7	142.5	147.8	146.9
1.3.14.8 Pipes & tubes	0.205	155.9	167.1	171.9	174.3	175.2
1.3.14.9 Non-ferrous metals incl. precious metals	1.693	139.7	149.4	143.2	145.4	147.8
1.3.14.10 Castings	0.925	118.9	122.7	133.3	133.7	133.7
1.3.14.11 Forgings of steel	0.271	159.0	165.8	175.7	174.3	175.4
1.3.15 MANUFACTURE OF FABRICATED METAL PRODUCTS, EXCEPT MACHINERY AND EQUIPMENT	3.155	130.5	133.5	138.0	137.7	139.1
1.3.15.1 Structural Metal Products	1.031	123.9	125.3	132.4	131.4	132.0
1.3.15.2 Tanks, Reservoirs and Containers of Metal	0.660	156.2	159.8	156.3	155.6	159.6
1.3.15.3 Steam generators, Except Central Heating Hot Water Boilers	0.145	96.1	93.5	101.2	103.8	103.9
1.3.15.4 Forging, Pressing, Stamping and Roll-Forming of Metal; Powder Metallurgy	0.383	117.5	126.2	135.6	135.6	138.5
1.3.15.5 Cutlery, Hand Tools and General Hardware	0.208	108.2	109.4	113.3	110.8	110.6
1.3.15.6 Other Fabricated Metal Products	0.728	136.5	140.1	144.8	145.9	146.0
1.3.16 MANUFACTURE OF COMPUTER, ELECTRONIC AND OPTICAL PRODUCTS	2.009	113.7	116.4	116.7	117.6	117.0
1.3.16.1 Electronic Components	0.402	106.0	111.5	113.7	115.5	115.7
1.3.16.2 Computers and Peripheral Equipment	0.336	134.7	134.7	135.0	135.0	135.1
1.3.16.3 Communication Equipment	0.310	121.7	128.6	130.7	130.7	130.5
1.3.16.4 Consumer Electronics	0.641	102.1	102.3	100.2	101.8	99.7
1.3.16.5 Measuring, Testing, Navigating and Control equipment	0.181	108.4	112.2	112.5	112.9	113.0
1.3.16.6 Watches and Clocks	0.076	145.6	148.4	151.3	151.5	151.9
1.3.16.7 Irradiation, Electromedical and Electrotherapeutic equipment	0.055	106.1	107.4	108.0	108.0	109.1
1.3.16.8 Optical instruments and Photographic equipment	0.008	98.3	99.7	101.8	100.4	100.3
1.3.17 MANUFACTURE OF ELECTRICAL EQUIPMENT	2.930	122.3	124.8	129.5	130.0	129.6
1.3.17.1 Electric motors, Generators, Transformers and Electricity distribution and Control apparatus	1.298	119.7	121.2	128.1	129.2	126.8
1.3.17.2 Batteries and Accumulators	0.236	121.8	125.1	131.7	131.5	131.6
1.3.17.3 Fibre optic cables for data transmission or live transmission of images	0.133	103.1	106.4	119.1	119.3	119.7
1.3.17.4 Other electronic and Electric wires and Cables	0.428	140.7	146.5	144.1	145.5	148.5
1.3.17.5 Wiring devices, Electric lighting & display equipment	0.263	114.5	115.4	117.7	116.7	116.9
1.3.17.6 Domestic appliances	0.366	128.4	131.3	133.7	133.7	134.0
1.3.17.7 Other electrical equipment	0.206	113.2	113.9	119.7	119.1	120.4
1.3.18 MANUFACTURE OF MACHINERY AND EQUIPMENT	4.789	120.0	122.0	126.3	126.8	127.3
1.3.18.1 Engines and Turbines, Except aircraft, Vehicle and Two wheeler engines	0.638	119.2	121.4	125.9	126.3	127.6
1.3.18.2 Fluid power equipment	0.162	122.1	124.9	129.2	129.9	130.1
1.3.18.3 Other pumps, Compressors, Taps and Valves	0.552	115.1	115.2	117.6	117.5	117.5
1.3.18.4 Bearings, Gears, Gearing and Driving elements	0.340	118.1	119.9	125.1	125.0	125.9
1.3.18.5 Ovens, Furnaces and Furnace burners	0.008	74.2	76.9	81.3	82.3	82.2
1.3.18.6 Lifting and Handling equipment	0.285	120.0	124.1	126.9	127.0	127.6

No. 21: Wholesale Price Index (Concl.)
(Base: 2011-12 = 100)

Commodities	Weight	2021-22	2022		2023	
			Feb.	Dec.	Jan. (P)	Feb. (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	135.5	138.6	144.2	144.5
1.3.18.9 Agricultural and Forestry machinery	0.833	128.4	132.1	138.7	138.2	139.4
1.3.18.10 Metal-forming machinery and Machine tools	0.224	114.2	116.5	121.1	121.2	121.2
1.3.18.11 Machinery for mining, Quarrying and Construction	0.371	78.2	79.4	85.5	85.5	86.2
1.3.18.12 Machinery for food, Beverage and Tobacco processing	0.228	130.1	131.2	125.3	124.7	124.6
1.3.18.13 Machinery for textile, Apparel and Leather production	0.192	125.3	125.9	132.4	131.0	130.9
1.3.18.14 Other special-purpose machinery	0.468	134.7	136.1	142.2	142.8	142.6
1.3.18.15 Renewable electricity generating equipment	0.046	66.6	67.2	69.7	69.4	69.7
1.3.19 MANUFACTURE OF MOTOR VEHICLES, TRAILERS AND SEMI-TRAILERS	4.969	122.7	125.6	128.0	127.7	127.6
1.3.19.1 Motor vehicles	2.600	122.6	125.9	126.0	126.6	126.4
1.3.19.2 Parts and Accessories for motor vehicles	2.368	122.7	125.2	130.1	128.8	128.8
1.3.20 MANUFACTURE OF OTHER TRANSPORT EQUIPMENT	1.648	131.7	133.7	138.2	138.4	139.4
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	103.7	104.3	104.3	106.5
1.3.20.3 Motor cycles	1.302	131.0	133.6	138.6	139.0	140.0
1.3.20.4 Bicycles and Invalid carriages	0.117	137.2	137.9	139.2	138.8	138.5
1.3.20.5 Other transport equipment	0.002	135.9	139.5	158.2	157.2	155.8
1.3.21 MANUFACTURE OF FURNITURE	0.727	150.1	154.7	157.7	157.9	158.3
1.3.21.1 Furniture	0.727	150.1	154.7	157.7	157.9	158.3
1.3.22 OTHER MANUFACTURING	1.064	137.9	140.5	153.1	151.1	153.7
1.3.22.1 Jewellery and Related articles	0.996	136.0	138.9	152.3	150.2	153.1
1.3.22.2 Musical instruments	0.001	192.3	185.1	182.7	185.6	185.6
1.3.22.3 Sports goods	0.012	140.4	144.3	151.9	151.7	151.1
1.3.22.4 Games and Toys	0.005	150.9	152.4	159.3	158.7	158.5
1.3.22.5 Medical and Dental instruments and Supplies	0.049	171.8	169.6	168.0	167.2	166.7
2 FOOD INDEX	24.378	163.8	166.7	170.7	171.2	171.3

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-January		January	
				2021-22	2022-23	2022	2023
	1	2	3	4	5	6	7
General Index	100.00	118.1	131.6	129.9	136.9	139.3	146.5
1 Sectoral Classification							
1.1 Mining	14.37	101.0	113.3	109.2	115.5	124.9	135.9
1.2 Manufacturing	77.63	117.2	131.0	129.6	135.8	139.2	144.3
1.3 Electricity	7.99	157.6	170.1	169.0	186.1	165.6	186.6
2 Use-Based Classification							
2.1 Primary Goods	34.05	118.1	129.5	127.0	137.1	136.5	149.6
2.2 Capital Goods	8.22	75.9	88.7	85.9	97.6	94.9	105.3
2.3 Intermediate Goods	17.22	124.7	143.9	142.7	148.5	153.5	153.6
2.4 Infrastructure/ Construction Goods	12.34	124.7	148.2	145.7	157.1	158.9	171.7
2.5 Consumer Durables	12.84	101.2	113.8	112.3	114.8	118.5	109.6
2.6 Consumer Non-Durables	15.33	142.1	146.7	147.3	146.7	154.4	164.0

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	April - February			
		2022-23 (Revised Estimates)	2022-23 (Actuals)	2021-22 (Actuals)	Percentage to Revised Estimates
					2022-23
	1	2	3	4	5
1 Revenue Receipts	2348413	1980828	1791017	84.3	86.2
1.1 Tax Revenue (Net)	2086662	1732193	1480886	83.0	83.9
1.2 Non-Tax Revenue	261751	248635	310131	95.0	98.8
2 Non-Debt Capital Receipt	83500	58900	36263	70.5	36.3
2.1 Recovery of Loans	23500	20229	22749	86.1	103.5
2.2 Other Receipts	60000	38671	13514	64.5	17.3
3 Total Receipts (excluding borrowings) (1+2)	2431913	2039728	1827280	83.9	83.9
4 Revenue Expenditure	3458959	2903363	2658694	83.9	83.9
<i>of which:</i>					
4.1 Interest Payments	940651	798957	671951	84.9	82.6
5 Capital Expenditure	728274	590227	485181	81.0	80.5
6 Total Expenditure (4+5)	4187232	3493590	3143875	83.4	83.4
7 Revenue Deficit (4-1)	1110546	922535	867677	83.1	79.7
8 Fiscal Deficit (6-3)	1755319	1453862	1316595	82.8	82.7
9 Gross Primary Deficit (8-4.1)	814668	654905	644644	80.4	82.9

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					
		Feb. 25	Jan. 20	Jan. 27	Feb. 3	Feb. 10	Feb. 17	Feb. 24	
		1	2	3	4	5	6	7	8
1 91-day									
1.1 Banks		5310	4923	12822	11152	11150	14486	14214	16434
1.2 Primary Dealers		16705	15781	16909	18178	19252	20701	20144	22121
1.3 State Governments		31320	58638	44463	44263	39063	38923	29723	27121
1.4 Others		72109	80823	108660	105059	101022	94045	92044	87550
2 182-day									
2.1 Banks		70130	58219	68470	68345	69316	69399	70142	69416
2.2 Primary Dealers		63669	49488	49675	56129	57433	58893	63489	63459
2.3 State Governments		15763	8826	12568	12568	11268	11268	9268	7568
2.4 Others		69259	49752	76449	75749	78102	81938	84150	88604
3 364-day									
3.1 Banks		112386	116951	103244	103202	101899	106964	102122	96616
3.2 Primary Dealers		160461	125294	176369	179052	167652	167949	166299	158712
3.3 State Governments		22836	20551	46607	45637	45725	46030	46233	46233
3.4 Others		118392	117697	135272	131829	142858	138149	143374	151423
4 14-day Intermediate									
4.1 Banks									
4.2 Primary Dealers									
4.3 State Governments		289362	367557	147808	161017	132353	219868	216844	239122
4.4 Others		659	976	1045	1211	1337	718	1123	1678
Total Treasury Bills		758339	706943	851509	851164	844740	848746	841202	835256
(Excluding 14 day Intermediate T Bills) #									

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

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		Competitive	Non-Competitive								
		1	2	3	4	5	6	7	8	9	10				
91-day Treasury Bills															
2022-23															
Jan. 25	7000	68	17705	49	38	6951	49	7000	98.41		6.4731				
Feb. 1	7000	50	14425	2528	30	6972	2528	9500	98.39		6.5588				
Feb. 8	7000	95	19061	1030	50	6970	1030	8000	98.36		6.6699				
Feb. 15	7000	85	27804	4033	18	6967	4033	11000	98.35		6.7292				
Feb. 22	7000	67	20559	1435	14	6963	1435	8398	98.33		6.8154				
182-day Treasury Bills															
2022-23															
Jan. 25	12000	135	21704	44	101	11956	44	12000	96.69		6.8693				
Feb. 1	12000	111	23735	244	76	11956	244	12200	96.66		6.9298				
Feb. 8	12000	107	27697	69	74	11931	69	12000	96.62		7.0157				
Feb. 15	12000	118	24330	21	86	11979	21	12000	96.57		7.1232				
Feb. 22	12000	162	32924	2069	46	11931	2069	14000	96.54		7.1800				
364-day Treasury Bills															
2022-23															
Jan. 25	10000	180	34542	144	19	9986	144	10130	93.56		6.9048				
Feb. 1	10000	101	25363	93	57	9994	93	10087	93.49		6.9775				
Feb. 8	10000	152	23278	327	83	9978	327	10306	93.42		7.0628				
Feb. 15	10000	185	25900	219	79	9983	219	10202	93.34		7.1594				
Feb. 22	10000	152	24991	23	60	9977	23	10000	93.25		7.2563				

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
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
February	16, 2023	4.55-6.35	6.32
February	17, 2023	4.55-6.45	6.32
February	20, 2023	4.60-6.80	6.61
February	21, 2023	4.85-6.70	6.58
February	22, 2023	4.85-6.70	6.63
February	23, 2023	4.60-6.60	6.55
February	24, 2023	4.50-6.80	6.71
February	27, 2023	4.60-6.85	6.67
February	28, 2023	4.60-6.75	6.65
March	1, 2023	4.60-6.40	6.36
March	2, 2023	4.60-6.80	6.34
March	3, 2023	4.90-6.35	6.30
March	4, 2023	5.20-6.25	5.72
March	6, 2023	4.00-6.40	6.30
March	8, 2023	5.30-6.50	6.35
March	9, 2023	4.80-6.47	6.35
March	10, 2023	4.80-6.40	6.31
March	13, 2023	4.85-6.65	6.34
March	14, 2023	4.85-6.65	6.32
March	15, 2023	4.85-6.42	6.34

Note: Includes Notice Money.

No. 27: Certificates of Deposit

Item	2022		2023		
	Feb. 25		Jan. 13	Jan. 27	Feb. 10
	1	2	3	4	5
1 Amount Outstanding (₹ Crore)	127618.40	292289.01	279788.46	269679.45	280336.78
1.1 Issued during the fortnight (₹ Crore)	19096.55	28381.24	17509.69	19835.23	32563.25
2 Rate of Interest (per cent)	3.86-5.62	6.74-7.85	6.82-7.30	7.07-7.35	7.09-8.04

No. 28: Commercial Paper

Item	2022		2023		
	Feb. 28		Jan. 15	Jan. 31	Feb. 15
	1	2	3	4	5
1 Amount Outstanding (₹ Crore)	364645.30	381154.85	363889.15	368908.25	364530.10
1.1 Reported during the fortnight (₹ Crore)	44435.25	45026.90	51481.60	43347.15	58975.35
2 Rate of Interest (per cent)	3.64-11.51	6.37-12.75	6.56-13.10	6.70-16.31	6.77-12.51

No. 29: Average Daily Turnover in Select Financial Markets

(₹ Crore)

Item	2021-22	2022		2023				
		Feb. 25	Jan. 20	Jan. 27	Feb. 3	Feb. 10	Feb. 17	Feb. 24
		1	2	3	4	5	6	7
1 Call Money	14515	16146	22692	24030	24142	22365	27945	29916
2 Notice Money	2122	383	5976	244	4730	197	332	278
3 Term Money	515	334	800	317	858	298	720	482
4 Triparty Repo	618526	823707	750771	636660	769293	634268	753913	760332
5 Market Repo	383844	492832	532332	450512	628200	565484	633578	618929
6 Repo in Corporate Bond	4373	358	3205	8260	6981	2269	2892	1064
7 Forex (US \$ million)	67793	87562	87392	97941	97033	80089	84899	80089
8 Govt. of India Dated Securities	51300	39524	70669	60310	88138	79199	74271	62050
9 State Govt. Securities	5570	3982	3684	6547	3518	5869	3721	6700
10 Treasury Bills								
10.1 91-Day	4690	2800	4784	1535	3401	4366	3279	2664
10.2 182-Day	3440	3479	3075	2134	3192	3614	3193	4854
10.3 364-Day	3530	1353	2712	1422	1425	3131	2929	1905
10.4 Cash Management Bills								
11 Total Govt. Securities (8+9+10)	68530	51137	84923	71947	99673	96179	87393	78173
11.1 RBI	-	615	781	674	84	84	537	46

No. 30: New Capital Issues by Non-Government Public Limited Companies

(Amount in ₹ Crore)

Security and Type of Issue	2021-22		2021-22 (Apr.-Feb.)		2022-23 (Apr.-Feb.) *		Feb. 2022		Feb. 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
1 Equity Shares	164	138894	148	137840	200	42201	13	6944	17	570
1A Premium	154	136893	139	135911	184	39583	12	6894	16	435
1.1 Public	121	112567	111	112393	141	37520	9	6831	7	85
1.1.1 Premium	119	111314	109	111171	138	36236	8	6800	7	64
1.2 Rights	43	26327	37	25448	59	4681	4	113	10	485
1.2.1 Premium	35	25580	30	24739	46	3347	4	94	9	371
2 Preference Shares	—	—	—	—	—	—	—	—	—	—
2.1 Public	—	—	—	—	—	—	—	—	—	—
2.2 Rights	—	—	—	—	—	—	—	—	—	—
3 Bonds & Debentures	28	11589	27	11412	31	8735	1	104	—	—
3.1 Convertible	—	—	—	—	—	—	—	—	—	—
3.1.1 Public	—	—	—	—	—	—	—	—	—	—
3.1.2 Rights	—	—	—	—	—	—	—	—	—	—
3.2 Non-Convertible	28	11589	27	11412	31	8735	1	104	—	—
3.2.1 Public	28	11589	27	11412	31	8735	1	104	—	—
3.2.2 Rights	—	—	—	—	—	—	—	—	—	—
4 Total(1+2+3)	192	150484	175	149252	231	50936	14	7048	17	570
4.1 Public	149	124157	138	123804	172	46255	10	6936	7	85
4.2 Rights	43	26327	37	25448	59	4681	4	113	10	485

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	
				Feb.	Oct.	Nov.	Dec.	Jan.	Feb.
		1	2	3	4	5	6	7	
1 Exports	₹ Crore	3147021	278666	260213	285450	313935	293044	305620	
	US \$ Million	422004	37154	31602	34892	38069	35781	36996	
1.1 Oil	₹ Crore	503850	51734	51863	66154	68779	63017	64688	
	US \$ Million	67472	6898	6299	8086	8341	7694	7831	
1.2 Non-oil	₹ Crore	2643171	226932	208350	219296	245155	230028	240932	
	US \$ Million	354533	30256	25304	26805	29729	28087	29166	
2 Imports	₹ Crore	4572775	419255	476879	480132	505653	428448	439799	
	US \$ Million	613052	55898	57916	58688	61318	52314	53239	
2.1 Oil	₹ Crore	1207803	118171	134561	147698	160344	130697	140061	
	US \$ Million	161810	15755	16342	18054	19444	15958	16955	
2.2 Non-oil	₹ Crore	3364972	301084	342318	332433	345309	297750	299738	
	US \$ Million	451242	40143	41574	40635	41874	36356	36284	
3 Trade Balance	₹ Crore	-1425753	-140589	-216666	-194682	-191719	-135404	-134179	
	US \$ Million	-191048	-18744	-26314	-23797	-23249	-16533	-16243	
3.1 Oil	₹ Crore	-703953	-66437	-82698	-81545	-91565	-67681	-75373	
	US \$ Million	-94339	-8858	-10043	-9968	-11104	-8264	-9124	
3.2 Non-oil	₹ Crore	-721800	-74152	-133968	-113137	-100154	-67723	-58807	
	US \$ Million	-96709	-9886	-16270	-13829	-12145	-8269	-7119	

Source: DGCI&S and Ministry of Commerce & Industry.

No. 32: Foreign Exchange Reserves

Item	Unit	2022		2023					
				Apr. 1	Feb. 24	Mar. 3	Mar. 10	Mar. 17	Mar. 24
		1	2	3	4	5	6	7	
1 Total Reserves	₹ Crore	4592504	4641716	4610849	4594592	4727502	4773649	4754265	
	US \$ Million	606475	560942	562400	560003	572801	578778	578449	
1.1 Foreign Currency Assets	₹ Crore	4087017	4103554	4075251	4060163	4170825	4204245	4189132	
	US \$ Million	539727	495906	497087	494863	505348	509728	509691	
1.2 Gold	₹ Crore	323596	345484	344595	343961	364051	375117	371500	
	US \$ Million	42734	41751	42033	41923	44109	45480	45200	
	Volume (Metric Tonnes)	760.42	790.16	791.1	791.1	792.82	794.63	794.63	
1.3 SDRs	SDRs Million	13657	13667	13667	13667	13667	13667	13667	
	₹ Crore	142960	150492	148993	148673	150366	151923	151164	
	US \$ Million	18879	18187	18174	18121	18219	18419	18392	
1.4 Reserve Tranche Position in IMF	₹ Crore	38931	42186	42010	41795	42261	42364	42468	
	US \$ Million	5136	5098	5107	5096	5125	5151	5165	

* Difference, if any, is due to rounding off.

No. 33: Non-Resident Deposits

Scheme	Outstanding					Flows	
	2021-22	2022		2023		2021-22	2022-23
		Feb.	Jan.	Feb.	Apr.-Feb.	Apr.-Feb.	
	1	2	3	4	5	6	
1 NRI Deposits	139022	139572	136821	135540	2350	6402	
1.1 FCNR(B)	16918	17293	18207	18402	-3180	1484	
1.2 NR(E)RA	100801	101116	95490	94135	2462	1426	
1.3 NRO	21303	21163	23125	23003	3069	3491	

No. 34: Foreign Investment Inflows

(US\$ Million)

Item	2021-22	2021-22	2022-23	2022	2023	
		Apr.-Feb.	Apr.-Feb.	Feb.	Jan.	Feb.
		1	2	3	4	5
1.1 Net Foreign Direct Investment (1.1.1–1.1.2)	38587	35535	27668	4657	4133	1857
1.1.1 Direct Investment to India (1.1.1.1–1.1.2)	56231	51085	40505	5169	4868	2975
1.1.1.1 Gross Inflows/Gross Investments	84835	77681	66436	7178	6177	4787
1.1.1.1.1 Equity	59684	55008	44960	4700	4138	2932
1.1.1.1.1.1 Government (SIA/FIPB)	1698	1638	683	18	29	1
1.1.1.1.1.2 RBI	42932	38706	35196	3366	3434	2113
1.1.1.1.1.3 Acquisition of shares	14143	13836	7774	1234	592	736
1.1.1.1.1.4 Equity capital of unincorporated bodies	910	828	1308	82	82	82
1.1.1.1.2 Reinvested earnings	19347	17604	17611	1743	1743	1743
1.1.1.1.3 Other capital	5805	5069	3865	736	296	112
1.1.1.2 Repatriation/Disinvestment	28605	26596	25931	2009	1309	1812
1.1.1.2.1 Equity	27189	25463	23842	1726	1244	1758
1.1.1.2.2 Other capital	1416	1132	2089	284	64	53
1.1.2 Foreign Direct Investment by India (1.1.2.1+1.1.2.2+1.1.2.3–1.1.2.4)	17644	15551	12837	512	735	1118
1.1.2.1 Equity capital	10061	9007	7991	267	571	770
1.1.2.2 Reinvested Earnings	3379	3097	3801	282	282	282
1.1.2.3 Other Capital	7604	6475	4263	335	142	374
1.1.2.4 Repatriation/Disinvestment	3400	3028	3217	372	259	308
1.2 Net Portfolio Investment (1.2.1+1.2.2+1.2.3–1.2.4)	-16777	-11784	-6952	-5788	-3038	-426
1.2.1 GDRs/ADRs	–	–	–	–	–	–
1.2.2 FIIs	-14071	-9387	-7024	-5480	-3103	-681
1.2.3 Offshore funds and others	–	–	–	–	–	–
1.2.4 Portfolio investment by India	2706	2398	-72	309	-65	-254
1 Foreign Investment Inflows	21809	23750	20716	-1131	1095	1431

No. 35: Outward Remittances under the Liberalised Remittance Scheme (LRS) for Resident Individuals

(US\$ Million)

Item	2021-22	2022		2023	
		Feb.	Dec.	Jan.	Feb.
		1	2	3	4
1 Outward Remittances under the LRS	19610.77	1823.35	2068.26	2728.17	2101.38
1.1 Deposit	830.05	54.20	60.49	73.14	61.16
1.2 Purchase of immovable property	112.90	8.07	13.26	14.98	16.10
1.3 Investment in equity/debt	746.57	60.39	119.58	160.05	132.15
1.4 Gift	2336.29	201.36	202.76	223.22	245.31
1.5 Donations	16.55	3.28	0.87	0.66	0.80
1.6 Travel	6909.04	980.45	1137.93	1493.17	1070.71
1.7 Maintenance of close relatives	3302.37	282.61	274.79	342.47	323.43
1.8 Medical Treatment	37.79	3.69	4.36	6.27	3.93
1.9 Studies Abroad	5165.33	216.07	237.65	395.87	229.34
1.10 Others	153.88	13.23	16.59	18.34	18.45

**No. 36: Indices of Nominal Effective Exchange Rate (NEER) and
Real Effective Exchange Rate (REER) of the Indian Rupee**

Item	2021-22	2022-23	2022		2023	
			March	February	March	March
	1	2	3	4	5	
40-Currency Basket (Base: 2015-16=100)						
1 Trade-weighted						
1.1 NEER	93.13	91.27	92.74	88.82	89.55	
1.2 REER	104.64	102.68	103.32	99.51	99.95	
2 Export-weighted						
2.1 NEER	93.55	93.03	93.71	90.76	91.42	
2.2 REER	103.46	100.94	102.20	97.79	98.01	
6-Currency Basket (Trade-weighted)						
1 Base: 2015-16 = 100						
1.1 NEER	87.03	85.98	86.42	82.83	83.38	
1.2 REER	102.27	102.02	100.92	98.29	98.94	
2 Base: 2020-21 = 100						
2.1 NEER	98.39	97.20	97.70	93.64	94.27	
2.2 REER	100.42	100.18	99.10	96.52	97.16	

No. 37: External Commercial Borrowings (ECBs) – Registrations

(Amount in US\$ Million)

Item	2021-22	2022		2023	
		Feb	Jan	Feb	4
	1	2	3		
1 Automatic Route					
1.1 Number	1086	71	74	69	
1.2 Amount	28851	805	777	644	
2 Approval Route					
2.1 Number	18	2	1	0	
2.2 Amount	11035	1523	1000	0	
3 Total (1+2)					
3.1 Number	1104	73	75	69	
3.2 Amount	39886	2328	1777	644	
4 Weighted Average Maturity (in years)	8.00	6.30	7.90	5.20	
5 Interest Rate (per cent)					
5.1 Weighted Average Margin over 6-month LIBOR or reference rate for Floating Rate Loans	1.71	1.40	2.16	1.53	
5.2 Interest rate range for Fixed Rate Loans	0.00-10.50	0.00-12.00	0.00-11.30	0.01-10.50	

Borrower Category

I. Corporate Manufacturing	12244	491	291	160
II. Corporate-Infrastructure	17023	1324	192	156
a.) Transport	1597	1308	0	37
b.) Energy	8215	7	2	111
c.) Water and Sanitation	10	0	0	0
d.) Communication	1258	0	0	1
e.) Social and Commercial Infrastructure	0	0	0	0
f.) Exploration,Mining and Refinery	4691	0	150	0
g.) Other Sub-Sectors	1252	9	40	7
III. Corporate Service-Sector	1570	129	236	66
IV. Other Entities	609	0	1000	0
a.) units in SEZ	9	0	0	0
b.) SIDBI	0	0	0	0
c.) Exim Bank	600	0	1000	0
V. Banks	100	0	0	0
VI. Financial Institution (Other than NBFC)	4	0	0	0
VII. NBFCs	7995	372	35	216
a). NBFC- IFC/AFC	5621	273	0	0
b). NBFC-MFI	93	0	35	0
c). NBFC-Others	2282	99	0	216
VIII. Non-Government Organization (NGO)	0	0	0	0
IX. Micro Finance Institution (MFI)	0	0	0	0
X. Others	341	12	23	46

No. 38: India's Overall Balance of Payments

(US\$ Million)

Item	Oct-Dec 2021			Oct-Dec 2022 (P)		
	Credit	Debit	Net	Credit	Debit	Net
	1	2	3	4	5	6
Overall Balance of Payments(1+2+3)	427124	426659	465	404167	393098	11069
1 CURRENT ACCOUNT (1.1+ 1.2)	205567	227734	-22167	227491	245734	-18243
1.1 MERCHANDISE	108927	168677	-59750	105609	178328	-72720
1.2 INVISIBLES (1.2.1+1.2.2+1.2.3)	96640	59057	37583	121883	67406	54477
1.2.1 Services	67016	39207	27809	83422	44702	38719
1.2.1.1 Travel	2599	4335	-1735	8123	6910	1213
1.2.1.2 Transportation	8948	10037	-1089	8758	9409	-651
1.2.1.3 Insurance	844	644	200	783	797	-13
1.2.1.4 G.n.i.e.	223	264	-41	185	282	-97
1.2.1.5 Miscellaneous	54402	23927	30475	65572	27304	38268
1.2.1.5.1 Software Services	31740	3384	28356	37599	4058	33541
1.2.1.5.2 Business Services	15312	13722	1590	21198	15125	6073
1.2.1.5.3 Financial Services	1354	1535	-181	1949	1292	657
1.2.1.5.4 Communication Services	801	276	524	842	329	514
1.2.2 Transfers	23528	2216	21312	30867	2400	28467
1.2.2.1 Official	132	267	-135	58	232	-174
1.2.2.2 Private	23396	1949	21447	30809	2168	28641
1.2.3 Income	6096	17634	-11538	7594	20304	-12710
1.2.3.1 Investment Income	4449	16839	-12391	5878	19437	-13559
1.2.3.2 Compensation of Employees	1647	794	853	1716	867	850
2 CAPITAL ACCOUNT (2.1+2.2+2.3+2.4+2.5)	221424	198925	22500	176675	146497	30178
2.1 Foreign Investment (2.1.1+2.1.2)	147690	148973	-1283	95253	88553	6700
2.1.1 Foreign Direct Investment	19608	15050	4559	17002	14913	2089
2.1.1.1 In India	19032	10192	8840	16107	8796	7311
2.1.1.1.1 Equity	12259	9936	2324	10246	7932	2315
2.1.1.1.2 Reinvested Earnings	5072		5072	5067		5067
2.1.1.1.3 Other Capital	1701	257	1444	794	865	-71
2.1.1.2 Abroad	576	4857	-4281	895	6117	-5222
2.1.1.2.1 Equity	576	2573	-1997	895	3563	-2668
2.1.1.2.2 Reinvested Earnings	0	845	-845	0	1079	-1079
2.1.1.2.3 Other Capital	0	1439	-1439	0	1475	-1475
2.1.2 Portfolio Investment	128082	133924	-5842	78251	73641	4611
2.1.2.1 In India	127509	132213	-4704	77433	72916	4517
2.1.2.1.1 FIIs	127509	132213	-4704	77433	72916	4517
2.1.2.1.1.1 Equity	115423	119516	-4093	71477	65940	5537
2.1.2.1.1.2 Debt	12086	12697	-611	5956	6976	-1020
2.1.2.1.2 ADR/GDRs	0	0	0	0	0	0
2.1.2.2 Abroad	573	1711	-1138	818	724	93
2.2 Loans (2.2.1+2.2.2+2.2.3)	29433	19410	10023	25903	24110	1793
2.2.1 External Assistance	2692	1399	1293	3088	1584	1504
2.2.1.1 By India	13	16	-3	8	22	-14
2.2.1.2 To India	2680	1383	1297	3080	1562	1518
2.2.2 Commercial Borrowings	6111	6365	-254	4629	7089	-2460
2.2.2.1 By India	352	241	111	439	316	123
2.2.2.2 To India	5759	6124	-365	4190	6773	-2583
2.2.3 Short Term to India	20629	11645	8984	18186	15437	2749
2.2.3.1 Buyers' credit & Suppliers' Credit >180 days	12003	11645	357	17744	15437	2307
2.2.3.2 Suppliers' Credit up to 180 days	8626	0	8626	442	0	442
2.3 Banking Capital (2.3.1+2.3.2)	25913	17707	8206	36230	21795	14435
2.3.1 Commercial Banks	25913	17501	8412	36230	21649	14580
2.3.1.1 Assets	11213	6154	5058	18145	6135	12009
2.3.1.2 Liabilities	14700	11346	3353	18085	15514	2571
2.3.1.2.1 Non-Resident Deposits	12141	10809	1332	16928	14359	2569
2.3.2 Others	0	206	-206	0	145	-145
2.4 Rupee Debt Service	0	0	0	0	1	-1
2.5 Other Capital	18389	12835	5554	19289	12038	7251
3 Errors and Omissions	132	0	132	0	866	-866
4 Monetary Movements (4.1+ 4.2)	0	465	-465	0	11069	-11069
4.1 I.M.F.	0	0	0	0	0	0
4.2 Foreign Exchange Reserves (Increase - / Decrease +)		465	-465	0	11069	-11069

Note: P: Preliminary.

No. 39: India's Overall Balance of Payments

(₹ Crore)

Item	Oct-Dec 2021			Oct-Dec 2022 (P)		
	Credit	Debit	Net	Credit	Debit	Net
	1	2	3	4	5	6
Overall Balance of Payments(1+2+3)	3200360	3196873	3487	3322449	3231457	90992
1 CURRENT ACCOUNT (1.1+ 1.2)	1540277	1706367	-166090	1870090	2020055	-149965
1.1 MERCHANDISE	816171	1263865	-447694	868155	1465946	-597791
1.2 INVISIBLES (1.2.1+1.2.2+1.2.3)	724106	442502	281604	1001935	554109	447826
1.2.1 Services	502141	293771	208370	685767	367473	318293
1.2.1.1 Travel	19476	32478	-13002	66776	56807	9970
1.2.1.2 Transportation	67048	75208	-8160	71994	77348	-5354
1.2.1.3 Insurance	6327	4826	1501	6438	6548	-110
1.2.1.4 G.n.i.e.	1668	1976	-309	1520	2317	-797
1.2.1.5 Miscellaneous	407623	179283	228340	539038	224454	314584
1.2.1.5.1 Software Services	237819	25352	212467	309080	33356	275723
1.2.1.5.2 Business Services	114730	102817	11913	174257	124338	49919
1.2.1.5.3 Financial Services	10149	11503	-1354	16021	10624	5397
1.2.1.5.4 Communication Services	6000	2071	3929	6924	2701	4223
1.2.2 Transfers	176292	16607	159685	253741	19726	234014
1.2.2.1 Official	991	2002	-1011	478	1907	-1429
1.2.2.2 Private	175301	14605	160696	253262	17819	235443
1.2.3 Income	45673	132125	-86452	62427	166910	-104482
1.2.3.1 Investment Income	33333	126174	-92841	48318	159784	-111466
1.2.3.2 Compensation of Employees	12340	5951	6389	14109	7126	6984
2 CAPITAL ACCOUNT (2.1+2.2+2.3+2.4+2.5)	1659091	1490505	168586	1452359	1204279	248080
2.1 Foreign Investment (2.1.1+2.1.2)	1106614	1116227	-9613	783028	727953	55075
2.1.1 Foreign Direct Investment	146921	112764	34157	139765	122591	17174
2.1.1.1 In India	142606	76370	66235	132411	72310	60101
2.1.1.1.1 Equity	91856	74446	17411	84230	65203	19027
2.1.1.1.2 Reinvested Earnings	38004	0	38004	41657	0	41657
2.1.1.1.3 Other Capital	12745	1925	10821	6524	7107	-583
2.1.1.2 Abroad	4315	36393	-32078	7353	50281	-42928
2.1.1.2.1 Equity	4315	19279	-14964	7353	29287	-21934
2.1.1.2.2 Reinvested Earnings	0	6329	-6329	0	8871	-8871
2.1.1.2.3 Other Capital	0	10786	-10786	0	12123	-12123
2.1.2 Portfolio Investment	959694	1003463	-43770	643263	605362	37901
2.1.2.1 In India	955401	990645	-35244	636539	599406	37133
2.1.2.1.1 FIIs	955401	990645	-35244	636539	599406	37133
2.1.2.1.1.1 Equity	864845	895510	-30665	587580	542060	45520
2.1.2.1.1.2 Debt	90555	95135	-4580	48959	57346	-8387
2.1.2.1.2 ADR/GDRs	0	0	0	0	0	0
2.1.2.2 Abroad	4293	12818	-8525	6723	5955	768
2.2 Loans (2.2.1+2.2.2+2.2.3)	220533	145432	75101	212938	198199	14739
2.2.1 External Assistance	20174	10483	9690	25384	13021	12363
2.2.1.1 By India	95	120	-26	63	180	-117
2.2.1.2 To India	20079	10363	9716	25321	12841	12480
2.2.2 Commercial Borrowings	45789	47692	-1902	38055	58276	-20221
2.2.2.1 By India	2638	1806	833	3608	2599	1010
2.2.2.2 To India	43151	45886	-2735	34447	55677	-21231
2.2.3 Short Term to India	154570	87257	67313	149499	126902	22597
2.2.3.1 Buyers' credit & Suppliers' Credit >180 days	89934	87257	2677	145866	126902	18964
2.2.3.2 Suppliers' Credit up to 180 days	64636	0	64636	3633	0	3633
2.3 Banking Capital (2.3.1+2.3.2)	194158	132675	61483	297825	179162	118663
2.3.1 Commercial Banks	194158	131130	63028	297825	177967	119858
2.3.1.1 Assets	84016	46113	37902	149160	50436	98724
2.3.1.2 Liabilities	110142	85016	25126	148665	127531	21135
2.3.1.2.1 Non-Resident Deposits	90969	80991	9978	139159	118040	21119
2.3.2 Others	0	1546	-1546	0	1195	-1195
2.4 Rupee Debt Service	0	0	0	0	4	-4
2.5 Other Capital	137786	96171	41615	158568	98961	59607
3 Errors and Omissions	992	0	992	0	7123	-7123
4 Monetary Movements (4.1+ 4.2)	0	3487	-3487	0	90992	-90992
4.1 I.M.F.	0	0	0	0	0	0
4.2 Foreign Exchange Reserves (Increase - / Decrease +)	0	3487	-3487	0	90992	-90992

Note: P: Preliminary.

No. 40: Standard Presentation of BoP in India as per BPM6

Item	(US\$ Million)					
	Oct-Dec 2021			Oct-Dec 2022 (P)		
	Credit	Debit	Net	Credit	Debit	Net
1 Current Account (1.A+1.B+1.C)	205556	227712	-22156	227486	245714	-18227
1.A Goods and Services (1.A.a+1.A.b)	175944	207884	-31940	189030	223030	-34000
1.A.a Goods (1.A.a.1 to 1.A.a.3)	108927	168677	-59750	105609	178328	-72720
1.A.a.1 General merchandise on a BOP basis	108811	154622	-45811	105247	170206	-64959
1.A.a.2 Net exports of goods under merchanting	116	0	116	362	0	362
1.A.a.3 Nonmonetary gold		14055	-14055		8123	-8123
1.A.b Services (1.A.b.1 to 1.A.b.13)	67016	39207	27809	83422	44702	38719
1.A.b.1 Manufacturing services on physical inputs owned by others	129	17	112	553	108	446
1.A.b.2 Maintenance and repair services n.i.e.	68	394	-326	55	255	-200
1.A.b.3 Transport	8948	10037	-1089	8758	9409	-651
1.A.b.4 Travel	2599	4335	-1735	8123	6910	1213
1.A.b.5 Construction	750	592	158	1129	573	556
1.A.b.6 Insurance and pension services	844	644	200	783	797	-13
1.A.b.7 Financial services	1354	1535	-181	1949	1292	657
1.A.b.8 Charges for the use of intellectual property n.i.e.	238	2363	-2125	318	3435	-3116
1.A.b.9 Telecommunications, computer, and information services	32638	3813	28825	38538	4590	33947
1.A.b.10 Other business services	15312	13722	1590	21198	15125	6073
1.A.b.11 Personal, cultural, and recreational services	834	1205	-371	997	1155	-158
1.A.b.12 Government goods and services n.i.e.	223	264	-41	185	282	-97
1.A.b.13 Others n.i.e.	3079	286	2793	835	770	65
1.B Primary Income (1.B.1 to 1.B.3)	6096	17634	-11538	7594	20304	-12710
1.B.1 Compensation of employees	1647	794	853	1716	867	850
1.B.2 Investment income	3067	16552	-13485	3746	18994	-15249
1.B.2.1 Direct investment	1750	11634	-9884	1784	11461	-9677
1.B.2.2 Portfolio investment	88	1941	-1853	69	2853	-2784
1.B.2.3 Other investment	82	2975	-2892	146	4579	-4433
1.B.2.4 Reserve assets	1147	2	1144	1746	101	1645
1.B.3 Other primary income	1382	287	1094	2132	443	1689
1.C Secondary Income (1.C.1+1.C.2)	23516	2194	21322	30862	2379	28483
1.C.1 Financial corporations, nonfinancial corporations, households, and NPISHs	23396	1949	21447	30809	2168	28641
1.C.1.1 Personal transfers (Current transfers between resident and/ non-resident households)	22443	1359	21084	29973	1548	28425
1.C.1.2 Other current transfers	953	590	363	836	619	216
1.C.1.3 General government	121	245	-125	53	212	-158
1.C.2 General government	227	430	-202	127	188	-62
2 Capital Account (2.1+2.2)	221209	198982	22226	176553	157398	19155
2.1 Gross acquisitions (DR.)/disposals (CR.) of non-produced nonfinancial assets	19608	15050	4559	17002	14913	2089
2.2 Capital transfers	19032	10192	8840	16107	8796	7311
3 Financial Account (3.1 to 3.5)	221209	198982	22226	176553	157398	19155
3.1 Direct Investment (3.1A+3.1B)	19608	15050	4559	17002	14913	2089
3.1.A Direct Investment in India	19032	10192	8840	16107	8796	7311
3.1.A.1 Equity and investment fund shares	17331	9936	7396	15314	7932	7382
3.1.A.1.1 Equity other than reinvestment of earnings	12259	9936	2324	10246	7932	2315
3.1.A.1.2 Reinvestment of earnings	5072	5072	5067	5067	5067	5067
3.1.A.2 Debt instruments	1701	257	1444	794	865	-71
3.1.A.2.1 Direct investor in direct investment enterprises	1701	257	1444	794	865	-71
3.1.B Direct Investment by India	576	4857	-4281	895	6117	-5222
3.1.B.1 Equity and investment fund shares	576	3418	-2842	895	4642	-3747
3.1.B.1.1 Equity other than reinvestment of earnings	576	2573	-1997	895	3563	-2668
3.1.B.1.2 Reinvestment of earnings		845	-845		1079	-1079
3.1.B.2 Debt instruments	0	1439	-1439	0	1475	-1475
3.1.B.2.1 Direct investor in direct investment enterprises		1439	-1439		1475	-1475
3.2 Portfolio Investment	128082	133924	-5842	78251	73641	4611
3.2.A Portfolio Investment in India	127509	132213	-4704	77433	72916	4517
3.2.1 Equity and investment fund shares	115423	119516	-4093	71477	65940	5537
3.2.2 Debt securities	12086	12697	-611	5956	6976	-1020
3.2.B Portfolio Investment by India	573	1711	-1138	818	724	93
3.3 Financial derivatives (other than reserves) and employee stock options	4851	6752	-1902	5509	5955	-446
3.4 Other investment	68668	42792	25876	75792	51821	23971
3.4.1 Other equity (ADRs/GDRs)	0	0	0	0	0	0
3.4.2 Currency and deposits	12141	11015	1125	16928	14505	2424
3.4.2.1 Central bank (Rupee Debt Movements; NRG)	0	206	-206	0	145	-145
3.4.2.2 Deposit-taking corporations, except the central bank (NRI Deposits)	12141	10809	1332	16928	14359	2569
3.4.2.3 General government			0		0	0
3.4.2.4 Other sectors			0		0	0
3.4.3 Loans (External Assistance, ECBs and Banking Capital)	22575	14456	8120	27018	15963	11055
3.4.3.A Loans to India	22211	14199	8012	26572	15625	10947
3.4.3.B Loans by India	365	257	108	447	338	109
3.4.4 Insurance, pension, and standardized guarantee schemes	70	89	-19	30	38	-8
3.4.5 Trade credit and advances	20629	11645	8984	18186	15437	2749
3.4.6 Other accounts receivable/payable - other	13253	5586	7667	13628	5878	7751
3.4.7 Special drawing rights			0		0	0
3.5 Reserve assets	0	465	-465	0	11069	-11069
3.5.1 Monetary gold			0		0	0
3.5.2 Special drawing rights n.a.			0		0	0
3.5.3 Reserve position in the IMF n.a.			0		0	0
3.5.4 Other reserve assets (Foreign Currency Assets)	0	465	-465	0	11069	-11069
4 Total assets/liabilities	221209	198982	22226	176553	157398	19155
4.1 Equity and investment fund shares	138824	141421	-2597	94043	85231	8811
4.2 Debt instruments	69132	51510	17622	68882	55220	13662
4.3 Other financial assets and liabilities	13253	6051	7202	13628	16947	-3318
5 Net errors and omissions	132		132	132	866	-866

Note: P: Preliminary.

No. 41: Standard Presentation of BoP in India as per BPM6

Item	(₹ Crore)					
	Oct-Dec 2021			Oct-Dec 2022 (P)		
	Credit	Debit	Net	Credit	Debit	Net
1 Current Account (1.A+1.B+1.C)						
1.A Goods and Services (1.A.a+1.A.b)						
1.A.a Goods (1.A.a.1 to 1.A.a.3)						
1.A.a.1 General merchandise on a BOP basis	1540189	1706202	-166013	1870049	2019887	-149838
1.A.a.2 Net exports of goods under merchanting	1318312	1557635	-239324	1553922	1833419	-279497
1.A.a.3 Nonmonetary gold	815302	1158554	-343253	865182	1399175	-533992
0	869	0	869	2973	0	2973
1.A.a.11	0	105311	-105311	0	66771	-66771
1.A.b Services (1.A.b.1 to 1.A.b.13)						
1.A.b.1 Manufacturing services on physical inputs owned by others	502141	293771	208370	685767	367473	318293
1.A.b.2 Maintenance and repair services n.i.e.	967	127	839	4547	885	3663
1.A.b.3 Transport	506	2950	-2444	451	2097	-1646
1.A.b.4 Travel	67048	75208	-8160	71994	77348	-5354
1.A.b.5 Construction	19476	32478	-13002	66776	56807	9970
1.A.b.6 Insurance and pension services	5621	4437	1183	9284	4710	4575
1.A.b.7 Financial services	6327	4826	1501	6438	6548	-110
1.A.b.8 Charges for the use of intellectual property n.i.e.	10149	11503	-1354	16021	10624	5397
1.A.b.9 Telecommunications, computer, and information services	1784	17709	-15926	2616	28234	-25618
1.A.b.10 Other business services	244549	28566	215983	316797	37734	279063
1.A.b.11 Personal, cultural, and recreational services	114730	102817	11913	174257	124338	49919
1.A.b.12 Government goods and services n.i.e.	6250	9030	-2780	8199	9498	-1299
1.A.b.13 Others n.i.e.	1668	1976	-309	1520	2317	-797
23068	2142	20925	6865	6334	531	
1.B Primary Income (1.B.1 to 1.B.3)						
1.B.1 Compensation of employees	45673	132125	-86452	62427	166910	-104482
1.B.2 Investment income	12340	5951	6389	14109	7126	6984
1.B.2.1 Direct investment	22980	124021	-101040	30791	156142	-125352
1.B.2.2 Portfolio investment	13111	87172	-74062	14664	94217	-79553
1.B.2.3 Other investment	661	14541	-13881	569	23452	-22883
1.B.2.4 Reserve assets	617	22289	-21672	1203	37645	-36442
1.B.3 Other primary income	8592	18	8574	14355	829	13527
10353	2153	8199	17527	3641	13886	
1.C Secondary Income (1.C.1+1.C.2)						
1.C.1 Financial corporations, nonfinancial corporations, households, and NPISHs	176205	16442	159763	253700	19559	234141
1.C.1.1 Personal transfers (Current transfers between resident and/ non-resident households)	175301	14605	160696	253262	17819	235443
1.C.1.2 Other current transfers	168163	10186	157977	246394	12727	233667
1.C.2 General government	7138	4419	2719	6868	5092	1776
903	1837	-933	438	1740	-1302	
2 Capital Account (2.1+2.2)						
2.1 Gross acquisitions (DR.)/disposals (CR.) of non-produced nonfinancial assets	1704	3220	-1516	1043	1549	-506
2.2 Capital transfers	707	1241	-535	190	307	-117
998	1979	-981	852	1242	-390	
3 Financial Account (3.1 to 3.5)						
3.1 Direct Investment (3.1A+3.1B)						
3.1.A Direct Investment in India	1657474	1490938	166537	1451356	1293890	157467
3.1.A.1 Equity and investment fund shares	146921	112764	34157	139765	122591	17174
3.1.A.1.1 Equity other than reinvestment of earnings	142606	76370	66235	132411	72310	60101
3.1.A.1.2 Reinvestment of earnings	129860	74446	55415	125887	65203	60684
3.1.A.2 Debt instruments	91856	74446	17411	84230	65203	19027
3.1.A.2.1 Direct investor in direct investment enterprises	38004	0	38004	41657	0	41657
3.1.B Direct Investment by India	12745	1925	10821	6524	7107	-583
3.1.B.1 Equity and investment fund shares	12745	1925	10821	6524	7107	-583
3.1.B.1.1 Equity other than reinvestment of earnings	4315	36393	-32078	7353	50281	-42928
3.1.B.1.2 Reinvestment of earnings	4315	25608	-21293	7353	38158	-30805
3.1.B.2 Debt instruments	4315	19279	-14964	7353	29287	-21934
3.1.B.2.1 Direct investor in direct investment enterprises	0	6329	-6329	0	8871	-8871
3.2 Portfolio Investment	0	10786	-10786	0	12123	-12123
3.2.A Portfolio Investment in India	959694	1003463	-43770	643263	605362	37901
3.2.1 Equity and investment fund shares	955401	990645	-35244	636539	599406	37133
3.2.2 Debt securities	864845	895510	-30665	587580	542060	45520
3.2.B Portfolio Investment by India	90555	95135	-4580	48959	57346	-8387
3.3 Financial derivatives (other than reserves) and employee stock options	4293	12818	-8525	6723	5955	768
3.4 Other investment						
3.4.1 Other equity (ADRs/GDRs)	36345	50593	-14248	45283	48951	-3668
3.4.2 Currency and deposits	514515	320631	193885	623046	425994	197052
3.4.2.1 Central bank (Rupee Debt Movements; NRG)	0	0	0	0	0	0
3.4.2.2 Deposit-taking corporations, except the central bank (NRI Deposits)	90969	80991	9978	139159	118040	21119
3.4.2.3 General government	0	0	0	0	0	0
3.4.2.4 Other sectors	0	0	0	0	0	0
3.4.3 Loans (External Assistance, ECBs and Banking Capital)	169152	108314	60838	222105	131224	90881
3.4.3.A Loans to India	166419	106388	60031	218433	128445	89988
3.4.3.B Loans by India	2733	1926	807	3671	2779	893
3.4.4 Insurance, pension, and standardized guarantee schemes	522	668	-146	250	315	-65
3.4.5 Trade credit and advances	154570	87257	67313	149499	126902	22597
3.4.6 Other accounts receivable/payable - other	99302	41855	57447	112033	48318	63715
3.4.7 Special drawing rights	0	0	0	0	0	0
3.5 Reserve assets						
3.5.1 Monetary gold	0	0	0	0	0	0
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	0	0	0	0	0
3.5.4 Other reserve assets (Foreign Currency Assets)	0	3487	-3487	0	90992	-90992
4 Total assets/liabilities						
4.1 Equity and investment fund shares	1657474	1490938	166537	1451356	1293890	157467
4.2 Debt instruments	1040181	1059643	-19462	773077	700643	72434
4.3 Other financial assets and liabilities	517992	385953	132039	566247	453937	112310
5 Net errors and omissions						
	992	0	992	0	7123	-7123

Note: P: Preliminary.

No. 42: India's International Investment Position

(US\$ Million)

Item	As on Financial Year /Quarter End							
	2021-22		2021		2022			
			Dec.		Sep.		Dec.	
	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
	1	2	3	4	5	6	7	8
1. Direct investment Abroad/in India	211573	521632	208096	514112	217335	510150	222557	510719
1.1 Equity Capital *	132765	493987	130904	487895	136255	481972	140002	482118
1.2 Other Capital	78807	27645	77192	26217	81080	28178	82554	28601
2. Portfolio investment	10642	270484	9716	284708	10983	245793	10890	245679
2.1 Equity	1110	156381	6113	172794	6312	137013	8624	140469
2.2 Debt	9533	114103	3603	111914	4671	108779	2266	105209
3. Other investment	90974	486635	76447	481692	85917	477453	79570	493790
3.1 Trade credit	18561	118147	12849	113439	24675	123520	26125	126252
3.2 Loan	10474	195290	8856	194917	8084	188463	8628	194842
3.3 Currency and Deposits	42081	140994	34796	143502	33528	135621	27093	136132
3.4 Other Assets/Liabilities	19858	32203	19946	29833	19630	29850	17723	36564
4. Reserves	607309		633614		532664		562721	
5. Total Assets/Liabilities	920498	1278751	927873	1280511	846899	1233395	875737	1250187
6. Net IIP (Assets - Liabilities)	-358253		-352638		-386496		-374451	

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	
		Feb.	Jan.	Feb.		Feb.	Jan.	Feb.
	1	2	3	4	5	6	7	8
A. Settlement Systems								
Financial Market Infrastructures (FMIs)								
1 CCIL Operated Systems (1.1 to 1.3)	33.01	2.92	3.66	3.51	206873112	17994586	21571346	22281370
1.1 Govt. Securities Clearing (1.1.1 to 1.1.3)	12.22	1.10	1.17	1.27	142072939	12914111	14383734	14888685
1.1.1 Outright	6.22	0.58	0.60	0.68	8793301	721038	785714	895740
1.1.2 Repo	3.08	0.25	0.35	0.38	51015712	4221392	5556922	6436404
1.1.3 Tri-party Repo	2.92	0.27	0.21	0.21	82263926	7971681	8041098	7556541
1.2 Forex Clearing	19.91	1.73	2.40	2.11	59775826	4540145	6553596	6602897
1.3 Rupee Derivatives @	0.88	0.10	0.10	0.13	5024347	540330	634016	789788
B. Payment Systems								
I Financial Market Infrastructures (FMIs)								
1 Credit Transfers - RTGS (1.1 to 1.2)	2078.39	180.29	204.18	200.50	128657516	10324618	12546467	12053579
1.1 Customer Transactions	2063.73	179.15	202.99	199.35	113319292	9277356	11028450	10566198
1.2 Interbank Transactions	14.66	1.13	1.19	1.14	15338225	1047262	1518016	1487381
II Retail								
2 Credit Transfers - Retail (2.1 to 2.6)	577934.74	55305.52	92396.07	88613.03	42728006	3806484	4738328	4650034
2.1 AePS (Fund Transfers) @	9.76	0.51	0.32	0.31	575	28	23	22
2.2 APBS \$	12573.33	651.67	1112.35	2584.03	133345	13152	19956	35514
2.3 IMPS	46625.25	4209.31	4745.08	4478.13	4171037	384404	477491	468647
2.4 NACH Cr \$	18757.82	1536.56	1354.13	1527.38	1281685	104998	131620	134032
2.5 NEFT	40407.29	3632.58	4798.31	4675.61	28725463	2477059	2810180	2775972
2.6 UPI @	459561.30	45274.89	80385.88	75347.57	8415900	826843	1299059	1235847
2.6.1 of which USSD @	11.99	0.68	1.79	1.51	177	10	19	17
3 Debit Transfers and Direct Debits (3.1 to 3.3)	12189.49	1089.30	1360.36	1360.85	1034444	90746	115658	115315
3.1 BHIM Aadhaar Pay @	227.73	15.23	13.01	11.50	6113	506	468	454
3.2 NACH Dr \$	10754.74	948.20	1202.79	1210.19	1026641	90056	114953	114630
3.3 NETC (linked to bank account) @	1207.02	125.87	144.56	139.16	1689	184	236	231
4 Card Payments (4.1 to 4.2)	61782.93	4840.47	5103.61	4588.51	1701851	143111	183460	168378
4.1 Credit Cards (4.1.1 to 4.1.2)	22398.82	1884.24	2593.52	2323.20	971638	86041	127682	118684
4.1.1 PoS based \$	11124.59	963.40	1409.19	1255.88	380643	32500	48934	44611
4.1.2 Others \$	11274.23	920.84	1184.33	1067.32	590994	53541	78748	74073
4.2 Debit Cards (4.2.1 to 4.2.1)	39384.11	2956.23	2510.09	2265.31	730213	57070	55778	49693
4.2.1 PoS based \$	22967.10	1845.45	1742.51	1581.95	451550	36376	37520	33432
4.2.2 Others \$	16417.00	1110.78	767.59	683.36	278663	20694	18258	16261
5 Prepaid Payment Instruments (5.1 to 5.2)	65782.75	5551.16	6129.40	6050.89	279416	22923	22193	22399
5.1 Wallets	53013.86	4386.09	4873.96	4929.04	220183	17259	17899	18356
5.2 Cards (5.2.1 to 5.2.2)	12768.89	1165.07	1255.44	1121.85	59233	5664	4294	4043
5.2.1 PoS based \$	1116.16	126.61	64.59	63.07	19546	3360	774	792
5.2.2 Others \$	11652.73	1038.46	1190.86	1058.78	39687	2304	3520	3251
6 Paper-based Instruments (6.1 to 6.2)	6999.12	581.98	573.17	538.79	6650333	615321	570639	554113
6.1 CTS (NPCI Managed)	6999.12	581.98	573.17	538.79	6650333	615321	570639	554113
6.2 Others	0.00	—	—	—	—	—	—	—
Total - Retail Payments (2+3+4+5+6)	724689.03	67368.43	105562.61	101152.07	52394049	4678585	5630279	5510239
Total Payments (1+2+3+4+5+6)	726767.42	67548.71	105766.79	101352.56	181051565	15003203	18176745	17563818
Total Digital Payments (1+2+3+4+5)	719768.30	66966.73	105193.62	100813.78	174401233	14387882	17606106	17009704

PART II - Payment Modes and Channels

System	Volume (Lakh)				Value (₹ Crore)			
	FY 2021-22	2022		2023		FY 2021-22	2023	
		Feb.	Jan.	Feb.	Feb.		Feb.	Jan.
	1	2	3	4	5	6	7	8
A. Other Payment Channels								
1 Mobile Payments (mobile app based) (1.1 to 1.2)	506842.31	48292.44	86642.24	82667.18	14961371	1391254	2105417	2068090
1.1 Intra-bank \$	40805.69	3626.98	4884.25	5107.77	2726363	246931	345334	353815
1.2 Inter-bank \$	466036.62	44665.47	81757.99	77559.40	12235007	1144324	1760083	1714274
2 Internet Payments (Netbanking / Internet Browser Based) @ (2.1 to 2.2)	40825.85	3274.19	3544.67	3319.04	83255958	6792274	7327328	7380904
2.1 Intra-bank @	9576.46	780.51	889.79	834.55	52139336	4169926	4089462	4172937
2.2 Inter-bank @	31249.39	2493.68	2654.88	2484.49	31116622	2622349	3237866	3207966
B. ATMs								
3 Cash Withdrawal at ATMs \$ (3.1 to 3.3)	65240.43	5296.66	5749.82	5471.86	3111946	256463	272135	263673
3.1 Using Credit Cards \$	62.37	5.29	8.13	7.39	3130	264	385	358
3.2 Using Debit Cards \$	64851.61	5263.17	5708.93	5433.00	3097739	255218	270588	262090
3.3 Using Pre-paid Cards \$	326.45	28.20	32.76	31.47	11076	981	1161	1225
4 Cash Withdrawal at PoS \$ (4.1 to 4.2)	91.17	2.19	2.44	2.18	728	20	25	22
4.1 Using Debit Cards \$	79.42	2.15	2.43	2.17	557	20	25	22
4.2 Using Pre-paid Cards \$	11.75	0.04	0.02	0.01	171	0	0	0
5 Cash Withdrawal at Micro ATMs @	11126.04	928.46	963.46	918.44	299776	24975	26203	25483
5.1 AePS @	11126.04	928.46	963.46	918.44	299776	24975	26203	25483

PART III - Payment Infrastructures (Lakh)

System	As on March 2022	2022		2023			
		Feb.	Jan.	Feb.			
				1	2		
Payment System Infrastructures							
1 Number of Cards (1.1 to 1.2)	9912.93	10067.74	10280.33	10374.87			
1.1 Credit Cards	736.27	717.08	824.52	833.66			
1.2 Debit Cards	9176.66	9350.66	9455.81	9541.22			
2 Number of PPIs @ (2.1 to 2.2)	15553.69	15652.06	16029.29	16109.65			
2.1 Wallets @	12787.93	12942.28	13244.34	13335.10			
2.2 Cards @	2765.76	2709.78	2784.95	2774.55			
3 Number of ATMs (3.1 to 3.2)	2.52	2.47	2.58	2.57			
3.1 Bank owned ATMs \$	2.20	2.16	2.21	2.21			
3.2 White Label ATMs \$	0.31	0.31	0.37	0.36			
4 Number of Micro ATMs @	9.16	8.51	14.75	15.59			
5 Number of PoS Terminals	60.70	58.34	76.57	77.58			
6 Bharat QR @	49.72	48.27	50.57	52.22			
7 UPI QR *	1727.34	1600.19	2442.34	2500.89			

@: 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

Notes : 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		2021-22	2021		2022	
			Mar.	Jan.	Feb.	Mar.
			1	2	3	4
1 Small Savings			Receipts	34767	14893	13932
			Outstanding	1259585	1412766	1426737
1.1 Total Deposits			Receipts	20375	10676	9753
1.1.1 Post Office Saving Bank Deposits			Outstanding	1012241	867494	980523
			Receipts	41329	11150	3018
			Outstanding	247216	205888	229719
1.1.2 MGNREG			Receipts			
			Outstanding			
1.1.3 National Saving Scheme, 1987			Receipts	-1524	382	-15
			Outstanding	1894	3419	3185
1.1.4 National Saving Scheme, 1992			Receipts	-352	135	-1
			Outstanding	-177	175	149
1.1.5 Monthly Income Scheme			Receipts	14441	1102	1146
			Outstanding	235820	221379	233892
1.1.6 Senior Citizen Scheme 2004			Receipts	22281	2301	1615
			Outstanding	119333	97051	115749
1.1.7 Post Office Time Deposits			Receipts	43725	3960	3438
			Outstanding	251282	207557	244474
1.1.7.1 1 year Time Deposits			Outstanding	118282	108205	116819
1.1.7.2 2 year Time Deposits			Outstanding	8008	7473	7967
1.1.7.3 3 year Time Deposits			Outstanding	6918	7227	6964
1.1.7.4 5 year Time Deposits			Outstanding	118074	84652	112724
1.1.8 Post Office Recurring Deposits			Receipts	24840	1346	1475
			Outstanding	156869	132029	153359
1.1.9 Post Office Cumulative Time Deposits			Receipts	7	-1	0
			Outstanding	-19	-25	-25
1.1.10 Other Deposits			Receipts	2	0	0
			Outstanding	23	21	21
1.2 Saving Certificates			Receipts	4334	3691	3583
			Outstanding	286863	324713	328337
1.2.1 National Savings Certificate VIII issue			Receipts	19696	2332	1626
			Outstanding	155043	135348	152139
1.2.2 Indira Vikas Patras			Receipts	-16	2	0
			Outstanding	143	159	158
1.2.3 Kisan Vikas Patras			Receipts	-1115	-582	-193
			Outstanding	-7891	6776	8648
1.2.4 Kisan Vikas Patras - 2014			Receipts	26619	2520	2258
			Outstanding	174560	147942	170978
1.2.5 National Saving Certificate VI issue			Receipts	92	33	0
			Outstanding	-22	-114	-114
1.2.6 National Saving Certificate VII issue			Receipts	31	29	0
			Outstanding	-44	-74	-74
1.2.7 Other Certificates			Outstanding	11400	10378	10274
1.3 Public Provident Fund			Receipts	10058	526	596
			Outstanding	118347	105228	107530

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
(A) Total (in ₹. Crore)	8439811	8529036	8784931	9098788	9373372
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) Total (in ₹. Crore)	4257578	4410250	4472011	4589128	4712902
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
(C) Total (in ₹. Crore)	692869	757198	1022053	920205	839931
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
1 Total Disbursements	4515946	5040747	5410887	6353359	7453320	8008684
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
2 Total Receipts	4528422	5023352	5734166	6397162	7193029	7944834
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
3 Gross Fiscal Deficit [1 - (2.1 + 2.2)]	997097	1102729	1449230	2600335	2441333	2420614
3A Sources of Financing: Institution-wise						
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
3B Sources of Financing: Instrument-wise						
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
4 Total Disbursements as per cent of GDP	26.4	26.7	27.0	32.1	31.5	31.0
5 Total Receipts as per cent of GDP	26.5	26.6	28.6	32.3	30.4	30.8
6 Revenue Receipts as per cent of GDP	19.8	20.1	19.2	18.6	20.7	21.3
7 Tax Receipts as per cent of GDP	17.4	17.3	16.1	16.1	17.0	17.6
8 Gross Fiscal Deficit as per cent of GDP	5.8	5.8	7.2	13.1	10.3	9.4

....: 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 February-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	442.41	27	1718.11	27	1337.41	13
2	Arunachal Pradesh	-	-	-	-	-	-
3	Assam	915.78	7	-	-	-	-
4	Bihar	-	-	-	-	-	-
5	Chhattisgarh	74.85	6	-	-	-	-
6	Goa	-	-	-	-	-	-
7	Gujarat	-	-	-	-	-	-
8	Haryana	422.02	5	-	-	-	-
9	Himachal Pradesh	-	-	-	-	-	-
10	Jammu & Kashmir UT	-	-	839.21	26	178.17	9
11	Jharkhand	-	-	-	-	-	-
12	Karnataka	-	-	-	-	-	-
13	Kerala	72.86	7	1055.70	7	-	-
14	Madhya Pradesh	-	-	-	-	-	-
15	Maharashtra	-	-	-	-	-	-
16	Manipur	-	-	159.34	21	37.44	3
17	Meghalaya	110.72	9	209.00	8	78.73	8
18	Mizoram	-	-	57.45	8	14.38	1
19	Nagaland	-	-	-	-	-	-
20	Odisha	-	-	-	-	-	-
21	Puducherry	-	-	-	-	-	-
22	Punjab	1548.57	27	-	-	-	-
23	Rajasthan	4901.00	24	311.03	4	-	-
24	Tamil Nadu	-	-	-	-	-	-
25	Telangana	651.36	28	1418.16	25	736.51	11
26	Tripura	-	-	-	-	-	-
27	Uttar Pradesh	-	-	-	-	-	-
28	Uttarakhand	239.81	9	447.37	9	525.78	2
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 amount 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 February 2023			
		Consolidated Sinking Fund (CSF)	Guarantee Redemption Fund (GRF)	Government Securities	Auction Treasury Bills (ATBs)
1	2	3	4	5	
1	Andhra Pradesh	10037	989	0	0
2	Arunachal Pradesh	2222	4	0	1800
3	Assam	4932	75	0	0
4	Bihar	8102	-	0	0
5	Chhattisgarh	6187	-	0	4008
6	Goa	825	397	1	0
7	Gujarat	9749	580	0	0
8	Haryana	1476	1471	0	0
9	Himachal Pradesh	-	-	0	0
10	Jammu & Kashmir UT	-	-	0	0
11	Jharkhand	1050	-	0	0
12	Karnataka	13106	312	0	24269
13	Kerala	2591	-	0	0
14	Madhya Pradesh	-	1108	0	0
15	Maharashtra	57891	1218	0	13000
16	Manipur	60	122	0	0
17	Meghalaya	946	66	8	0
18	Mizoram	369	66	0	0
19	Nagaland	1544	40	0	0
20	Odisha	15763	1772	102	25848
21	Puducherry	459	-	0	1100
22	Punjab	6392	0	0	0
23	Rajasthan	-	-	129	7900
24	Tamil Nadu	8096	-	18	2373
25	Telangana	6854	1501	0	0
26	Tripura	840	16	0	625
27	Uttarakhand	4257	174	0	0
28	Uttar Pradesh	4748	-	116	0
29	West Bengal	11082	806	239	0
	Total	179579	10716	612	80922

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	
						December		January		February			
		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	-	-437	3000	1834	3557	1807	51860	41362
2	Arunachal Pradesh	767	767	563	530	559	559	-	-	-	-	559	489
3	Assam	15030	14230	12753	10753	800	800	800	800	2400	2400	16100	15800
4	Bihar	27285	24685	28489	24334	6000	5000	-	-1300	6000	5500	31000	25122
5	Chhattisgarh	13000	10500	4000	913	-	-	-	-2000	-	-	-	-2000
6	Goa	3354	3054	2000	1450	300	300	300	150	-	-	1350	700
7	Gujarat	44780	33280	31054	13554	2000	1000	2500	1000	5000	4000	33500	18800
8	Haryana	30000	25550	30500	20683	1500	950	2500	1360	6000	4660	36500	24440
9	Himachal Pradesh	6000	3755	4000	1875	1000	1000	1500	1500	1300	1011	10800	8951
10	Jammu & Kashmir UT	9328	6020	8562	5373	1495	895	700	200	500	500	6745	5006
11	Jharkhand	9400	8900	5000	3191	2000	1500	-	-	1000	-	4000	1500
12	Karnataka	69000	61900	59000	49000	16000	13500	4000	4000	-	-1000	36000	27000
13	Kerala	28566	23066	27000	18120	1500	650	4103	1603	2000	1000	23039	10053
14	Madhya Pradesh	45573	38773	22000	13900	-	-	-	-2000	13000	11000	25000	18500
15	Maharashtra	69000	50022	68750	40790	-	-1563	5000	4063	-	-3375	50000	24440
16	Manipur	1302	1044	1476	1326	122	122	150	150	200	200	1222	947
17	Meghalaya	1777	1587	1608	1298	440	440	-	-80	-	-	1753	1423
18	Mizoram	944	677	747	447	150	150	100	100	100	100	1190	1075
19	Nagaland	1721	1366	1727	1222	300	300	193	193	248	248	1763	1313
20	Odisha	3000	500	0	-6473	-	-	-	-500	-	-1500	-	-6500
21	Puducherry	1390	790	1374	841	300	200	-	-302	500	500	1200	698
22	Punjab	32995	23467	25814	12428	2245	1745	500	-	4200	3700	36600	26246
23	Rajasthan	57359	44273	51149	38243	1251	751	1500	500	4000	3826	34751	23495
24	Sikkim	1292	1292	1511	1471	-	-	-	-	437	437	1314	1244
25	Tamil Nadu	87977	76796	87000	72500	6000	4850	10000	8000	9000	6600	68000	48603
26	Telangana	43784	38782	45716	39256	2500	2187	3500	2666	3500	2250	35000	27498
27	Tripura	1916	1631	300	0	-	-100	-	-	-	-	-	-315
28	Uttar Pradesh	75500	59185	62500	42355	-	-78	7000	7000	12500	12500	33500	21713
29	Uttarakhand	6200	5208	3200	1800	-	-650	500	500	750	-350	1750	-
30	West Bengal	59680	50180	67390	45199	7000	5000	4000	3200	1000	500	42000	24200
	Grand Total	798816	651777	701626	492483	53462	39071	51846	32637	77192	56514	586496	391803

- : 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
Net Financial Assets (I-II)	238613.6	476724.8	386450.4	530769.8	1632558.5
<i>Per cent of GDP</i>	4.8	9.8	7.5	10.3	8.1
I. Financial Assets	398076.7	567753.2	517351.0	924069.3	2407250.2
<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
II. Financial Liabilities	159463.1	91028.5	130900.6	393299.5	774691.7
<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
Net Financial Assets (I-II)	600422.5	573643.2	481433.5	719844.5	2375343.7
<i>Per cent of GDP</i>	15.5	12.1	8.8	12.5	12.0
I. Financial Assets	805869.5	612224.3	651241.3	1092617.4	3161952.5
<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
II. Financial Liabilities	205447.0	38581.1	169807.8	372772.9	786608.8
<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
Net Financial Assets (I-II)	519781.2	358325.2	453302.7	636259.8	1967668.9
<i>Per cent of GDP</i>	10.1	6.4	7.2	9.6	8.3
I. Financial Assets	382780.7	547346.2	834009.6	796341.7	2560478.2
<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
II. Financial Liabilities	-137000.5	189021.0	380706.9	160081.8	592809.2
<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
Financial Assets (a+b+c+d)	16315506.3	16632816.5	17010694.5	17180616.2
<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
Financial Liabilities (a+b)	6370092.6	6461087.5	6591954.6	6985220.6
<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
Financial Assets (a+b+c+d)	18039169.4	18606364.4	19333484.1	20168953.3
<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
Financial Liabilities (a+b)	7190710.8	7229335.1	7399186.1	7772003.0
<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
Financial Assets (a+b+c+d)	20508115.7	21057343.4	21673261.7	22104312.7
<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
Financial Liabilities (a+b)	7634981.2	7823980.9	8204666.6	8364727.1
<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

- NM₂ and NM₃ 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.
L₁ and L₂ are compiled monthly and L₃ 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

Name of Publication	Price	
	India	Abroad
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 Karyanvyan: 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).
 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.

General Instructions

1. All communications should be addressed to:
Director, Division of Reports and Knowledge Dissemination,
Department of Economic and Policy Research (DRKD, DEPR),
Reserve Bank of India, Amar Building, Ground Floor,
Sir P. M. Road, Fort, P. B. No.1036, Mumbai - 400 001.
Telephone: 022- 2260 3000 Extn: 4002, Email: spsdepr@rbi.org.in.
2. Publications are available for sale between 10:30 am to 3:00 pm (Monday to Friday).
3. Publications will not be supplied on a cash-on-delivery basis.
4. Publications once sold will not be taken back.
5. Back issues of the publication are generally not available.
6. Wherever concessional price is not indicated, a discount of 25 per cent is available for students, faculty, academic/education institutions, public libraries, and book sellers in India provided the proof of eligibility is submitted.
7. Subscription should be made preferably by NEFT and transaction details including payer's name, subscription number (if any), account number, date and amount should be emailed to spsdepr@rbi.org.in, or sent by post.
 - a. Details required for NEFT transfer are as follows:

Beneficiary Name	Department of Economic and Policy Research, RBI
Name of the Bank	Reserve Bank of India
Branch and address	Fort, Mumbai
IFSC of Bank Branch	RBISOMBPA04
Type of Account	Current Account
Account Number	41-8024129-19
- b. In case of subscription through non-digital modes, please send the demand draft/cheque payable at Mumbai in favour of Reserve Bank of India, Mumbai.
8. Complaints regarding 'non-receipt of publication' may be sent within a period of two months.

