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CONTENTS

GOVERNOR'S STATEMENT

Governor's Statement

*Governor's Statement**

Shaktikanta Das

As I set out the first monetary policy statement of the new year, I am reminded of the historical significance of 2023 for the Reserve Bank of India. From being a Joint Stock Company, the Reserve Bank was brought into public ownership on January 1, 1949.[1] Thus, 2023 marks the 75th year of public ownership of the Reserve Bank and its emergence as a national institution. This is an opportune moment to briefly reflect upon the evolution of monetary policy over this period. In the two decades after independence, the Reserve Bank's role was to support the credit needs of the economy under the five-year plans. The following two decades were characterised by bank nationalisation in 1969, oil shocks, monetisation of large budget deficits and sharp rise in money supply and inflation. Monetary targeting was adopted in the mid-1980s to contain growth in money supply and curb inflation pressures. Since the early 1990s, the Reserve Bank focused on market reforms and institution building. A multiple indicator approach was adopted in April 1998 under which a host of indicators were monitored for policy making. In the aftermath of the global financial crisis and the taper tantrum, as inflationary conditions worsened in India, flexible inflation targeting (FIT) was formally adopted in June 2016 to provide a credible nominal anchor for monetary policy. As we know, the primary objective of monetary policy under the FIT framework is to maintain price stability while keeping in mind the objective of growth.

Coming to present times, the unprecedented events of the last three years have put to test monetary policy frameworks globally. In a very short period, monetary policies across the world have veered from one extreme to the other in response to a series of overlapping shocks. In contrast to the Great Moderation era of the 1990s and the early years of this century, monetary policy was confronted with an unprecedented contraction in economic activity followed by a surge in global inflation. This calls for a deeper understanding of the structural changes in the global economy and inflation dynamics, and their implications for the conduct of monetary policy.

In the current unsettled global environment, emerging market economies (EMEs) are facing sharp trade-offs between supporting economic activity and controlling inflation, while preserving policy credibility. As global fault lines emerge in trade, technology and investment flows, there is an urgent need to reinforce global cooperation. The world is looking to India, now at the helm of G-20, to energise global partnership in several critical areas. This reminds me of what Mahatma Gandhi had said: *"I do believe that…India…can make a lasting contribution to the peace and solid progress of the world."*[2]

Decisions and Deliberations of the Monetary Policy Committee (MPC)

The Monetary Policy Committee (MPC) met on 6th, 7th and 8th February 2023. Based on an assessment of the macroeconomic situation and its outlook, the MPC decided by a majority of 4 members out of 6 to increase the policy repo rate by 25 basis points to 6.50 per cent, with immediate effect. Consequently, the standing deposit facility (SDF) rate will stand revised to 6.25 per cent; and the marginal standing facility (MSF) rate and the Bank Rate to 6.75 per cent. The MPC also decided by a majority of 4 out of 6 members to remain focused on withdrawal of accommodation to ensure that inflation remains within the target going forward, while supporting growth.

* Governor's Statement - February 8, 2023.

[1] The ownership of RBI was transferred to the Government through a Central Government notification under "The Reserve Bank (Transfer to Public Ownership) Act, 1948".

[2] Young India, 1927-1928, Unity in Variety, 11th August, 1927.

Let me now explain the MPC's rationale for these decisions on the policy rate and the stance. The global economic outlook does not look as grim now as it did a few months ago. Growth prospects in major economies have improved, while inflation is on a descent, though it still remains well above the target in major economies. The situation remains fluid and uncertain. Reflecting the recent optimism, the IMF has revised upwards the global growth estimates for 2022 and 2023.[3] As price pressures wane, several central banks have opted for slower rate hikes or pauses. The US dollar has retreated sharply from its highest level in two decades. Tighter financial conditions caused by aggressive monetary policy actions, volatile financial markets, debt distress, protracted geopolitical hostilities and fragmentation continue to impart high uncertainty to the outlook for the global economy.

Amidst these volatile global developments, the Indian economy remains resilient. Real GDP growth is estimated at 7.0 per cent in 2022-23, according to the first advance estimate of the National Statistical Office (NSO). Higher *rabi* acreage, sustained urban demand, improving rural demand, robust credit expansion, gains in consumer and business optimism and the government's enhanced thrust on capital expenditure and infrastructure in the Union Budget 2023-24 should support economic activity in the coming year. Weak external demand and the uncertain global environment, however, would be a drag on domestic growth prospects.

Consumer price inflation in India moved below the upper tolerance level during November-December 2022, driven by a strong decline in prices of vegetables. Core inflation, however, remains sticky.

Looking ahead, while inflation is expected to moderate in 2023-24, it is likely to rule above the 4 per cent target. The outlook is clouded by continuing uncertainties from geopolitical tensions, global financial market volatility, rising non-oil commodity prices and volatile crude oil prices. At the same time, economic activity in India is expected to hold up well. The rate hikes since May 2022 are still working their way through the system. On balance, the MPC was of the view that further calibrated monetary policy action is warranted to keep inflation expectations anchored, break the persistence of core inflation and thereby strengthen the medium-term growth prospects. Accordingly, the MPC decided to raise the policy repo rate by 25 basis points to 6.50 per cent. The MPC will continue to maintain strong vigil on the evolving inflation outlook so as to ensure that it remains within the tolerance band and progressively aligns with the target.

Inflation is expected to average 5.6 per cent in Q4:2023-24 while the policy repo rate is 6.50 per cent. Adjusted for inflation, the policy rate still trails its pre-pandemic levels. Liquidity remains in surplus, with an average daily absorption of ₹1.6 lakh crore under the LAF in January 2023. The overall monetary conditions, therefore, remain accommodative and hence, the MPC decided to remain focused on withdrawal of accommodation.

Assessment of Growth and Inflation

Growth

Available data for Q3 and Q4:2022-23 indicate that economic activity in India remains resilient. Urban consumption demand has been firming up, driven by sustained recovery in discretionary spending, especially on services such as travel, tourism and hospitality. Passenger vehicle sales and domestic air passenger traffic posted robust year-on-year (y-o-y) growth. Domestic air passenger traffic crossed pre-pandemic levels for the first time in December 2022. Rural demand continues to show signs of improvement as tractor sales and two-wheeler sales expanded in

[3] According to the International Monetary Fund's January 2023 update of World Economic Outlook, the global growth for 2022 has been revised upwards from 3.2 per cent to 3.4 per cent, while that of 2023 has been raised to 2.9 per cent from 2.7 per cent projected in October 2022.

December. Several high frequency indicators[4] also point towards strengthening of activity.

Investment activity continues to gain traction. Non-food bank credit expanded by 16.7 per cent (y-o-y) as on January 27, 2023. The total flow of resources to the commercial sector has increased by ₹20.8 lakh crore during 2022-23 so far as against ₹12.5 lakh crore a year ago. Indicators of fixed investment – cement output; steel consumption; and production and import of capital goods – registered robust growth in November and December. In several sectors such as cement, steel, mining and chemicals, there are signs that additional capacity is being created in the private sector. According to the RBI's survey, seasonally adjusted capacity utilisation increased to 74.5 per cent in Q2:2022-23. The drag from net external demand, on the other hand, continued as merchandise exports contracted in Q3:2022-23.

On the supply side, agricultural activity remains strong with good *rabi* sowing, higher reservoir levels, good soil moisture, favourable winter temperature and comfortable availability of fertilisers.[5] PMI manufacturing and PMI services remained in expansion at 55.4 and 57.2 respectively, in January 2023.

Turning to the outlook, the expected higher *rabi* output has improved the prospects of agriculture and rural demand. The sustained rebound in contact-intensive sectors should support urban consumption. Broad-based credit growth, improving capacity utilisation, government's thrust on capital spending and infrastructure should bolster investment activity. According to our surveys, manufacturing, services and infrastructure sector firms are optimistic about the business outlook. On the other hand, protracted geopolitical tensions, tightening global financial conditions and slowing external demand may continue as downside risks to domestic output. Taking all these factors into consideration, real GDP growth for 2023-24 is projected at 6.4 per cent with Q1 at 7.8 per cent; Q2 at 6.2 per cent; Q3 at 6.0 per cent; and Q4 at 5.8 per cent. The risks are evenly balanced.

Inflation

Headline CPI inflation moderated by 105 basis points during November-December 2022 from its level of 6.8 per cent in October 2022. This was due to a softening in food inflation on the back of a sharp deflation in vegetable prices, which more than offset the inflationary pressures from cereals, protein-based food items and spices. As a result of this earlier than anticipated and steeper seasonal decline in vegetable prices, inflation for Q3:2022-23 has turned out to be lower than our projections. Core CPI inflation (*i.e.*, CPI excluding food and fuel), however, remained elevated.

Going ahead, the food inflation outlook will benefit from a likely bumper *rabi* harvest led by wheat and oilseeds. *Mandi* arrivals and *kharif* paddy procurement have been robust, resulting in improvement in buffer stocks of rice. All these developments augur favourably for the food inflation outlook in 2023-24.

Considerable uncertainties remain on the likely trajectory of global commodity prices, including price of crude oil. Commodity prices may remain firm with the easing of COVID-19 related restrictions in some parts of the world. The ongoing pass-through of input costs, especially in services, could keep core inflation at elevated levels. The commitment to fiscal consolidation that has been carried forward in the Union Budget 2023-24 and the future trajectory of reducing the gross fiscal deficit will engender an environment of macroeconomic stability. This augurs well for the inflation outlook. Further, the low volatility

[4] Port freight traffic; railway freight traffic; toll collections; E-way bills; diesel consumption; and electricity consumption.

[5] *Rabi* sowing, as on February 3, 2023, was 3.3 per cent higher than a year ago (9.3 per cent higher than normal as on date). As of February 02, 2023, reservoir levels were at 63 per cent of the full capacity and above the decadal average of 53 per cent.

of the Indian rupee relative to peer currencies limits the impact of imported price pressures and other global spillovers. Taking into account these factors and assuming an average crude oil price (Indian basket) of US$ 95 per barrel, inflation is projected at 6.5 per cent in 2022-23, with Q4 at 5.7 per cent. On the assumption of a normal monsoon, CPI inflation is projected at 5.3 per cent for 2023-24, with Q1 at 5.0 per cent, Q2 at 5.4 per cent, Q3 at 5.4 per cent and Q4 at 5.6 per cent. The risks are evenly balanced.

Headline inflation has moderated with negative momentum in November and December 2022, but the stickiness of core or underlying inflation is a matter of concern. We need to see a decisive moderation in inflation. We have to remain unwavering in our commitment to bring down inflation. Thus, monetary policy has to be tailored to ensuring a durable disinflation process. A rate hike of 25 basis points is considered as appropriate at the current juncture. The reduction in the size of the rate hike provides the opportunity to evaluate the effects of the actions taken so far on the inflation outlook and on the economy at large. It also provides elbow room to weigh all incoming data and forecasts to determine appropriate actions and policy stance, going forward. Monetary policy will continue to be agile and alert to the moving parts in the inflation trajectory to effectively address the challenges to the economy.

Liquidity and Financial Market Conditions

As we approach the end of 2022-23, it is worthwhile to recapitulate the key developments on the monetary policy front over the last one year. After the onset of the war in Europe, which drastically altered the growth-inflation dynamics across the world, including India, we have taken a series of steps in the best interest of the Indian economy. We accorded primacy to price stability over growth in April 2022; we instituted a major reform in the monetary policy operating procedure through the introduction of the standing deposit facility (SDF); we restored the width of the policy corridor to its pre-pandemic level; we raised the repo rate by 40 bps and the cash reserve ratio (CRR) by 50 bps in an off-cycle meeting in May; we shifted the policy stance to focus on withdrawal of accommodation; we continued the rate tightening cycle in every meeting of the MPC; and we adopted a nimble and flexible approach to liquidity management by conducting both variable rate reverse repo (VRRR) and variable rate repo (VRR) operations as per requirement. As a result of all these measures, the real policy rate has been nudged into positive territory; the banking system has moved out of the *Chakravyuh*[6] of excess liquidity; inflation is moderating; and economic growth continues to be resilient.

As I make this statement, system liquidity remains in surplus, though of a lower order compared to April 2022. In the period ahead, while higher government expenditure and the anticipated return of forex inflows are likely to augment systemic liquidity, it would get modulated by the scheduled redemption of LTRO and TLTRO[7] funds during February to April 2023. The Reserve Bank will remain flexible and responsive towards meeting the productive requirements of the economy. We will conduct operations on either side of the LAF, depending on the evolving liquidity conditions.

As part of our gradual move towards normalising liquidity and market operations, it has now been decided to restore market hours for the Government Securities market to the pre-pandemic timing of 9 am

[6] *Chakravyuh*: a military formation used to surround enemies, depicted in the Indian epic Mahabharata. It resembles a labyrinth of multiple defensive walls, from which coming out is very difficult and known only to a handful of very skilled warriors.

[7] The Reserve Bank provided low cost funds at the repo rate of up to 3-years maturity to banks during February to April 2020 to improve monetary transmission, mitigate the impact of the COVID-pandemic and alleviate liquidity stress in entities/specific sectors under long-term repo operations (LTROs) and targeted long-term repo operations (TLTROs).

to 5 pm.[8] Moreover, as part of our ongoing endeavour to further develop the government securities market, we propose to permit lending and borrowing of G-secs. This will provide investors with an avenue to deploy their idle securities, enhance portfolio returns and facilitate wider participation. This measure will also add depth and liquidity to the G-sec market; aid efficient price discovery; and work towards a smooth completion of the market borrowing programme of the centre and states.

The pace of transmission of monetary policy actions to lending and deposit rates has strengthened in the current tightening cycle. The weighted average lending rates (WALR) on fresh rupee loans and outstanding loans increased by 137 bps and 80 bps respectively, during May to December 2022. The weighted average domestic term deposit rate on fresh deposits and outstanding deposits increased by 213 bps and 75 bps respectively.

The Indian Rupee has remained one of the least volatile currencies among its Asian peers in calendar year 2022 and continues to be so this year also.[9] Similarly, the depreciation and the volatility of the Indian rupee during the current phase of multiple shocks is far lower than during the global financial crisis and the taper tantrum.[10] In a fundamental sense, the movements of the rupee reflect the resilience of the Indian economy.

External Sector

The current account deficit (CAD) for the first half of 2022-23 stood at 3.3 per cent of GDP. The situation has shown improvement in Q3:2022-23 as imports moderated in the wake of lower commodity prices, resulting in narrowing of the merchandise trade deficit. Further, services exports rose by 24.9 per cent (y-o-y) in Q3:2022-23, driven by software, business and travel services. Global software and IT services spending is expected to remain strong in 2023. Remittance growth for India in H1 of 2022-23 was around 26 per cent – more than twice the World Bank's projection for the year. This is likely to remain robust owing to better growth prospects of the Gulf countries. The net balance under services and remittances are expected to remain in large surplus, partly offsetting the trade deficit. The CAD is expected to moderate in H2:2022-23 and remain eminently manageable and within the parameters of viability.[11]

On the financing side, net foreign direct investment (FDI) flows remain strong at US$ 22.3 billion during April-December 2022 (US$ 24.8 billion in the corresponding period last year). Foreign portfolio flows have shown signs of improvement with positive flows of US$ 8.5 billion during July to February 6, led by equity flows (foreign portfolio flows are, however, negative during the financial year so far). Net inflows under non-resident deposits increased to US$ 3.6 billion during April-November 2022 from US $ 2.6 billion a year ago, boosted by the Reserve Bank's July 6th measures. Foreign exchange reserves have rebounded from US$ 524.5 billion on October 21, 2022 to US$ 576.8 billion as on January 27, 2023 covering around 9.4 months of projected imports for 2022-23.

[8] We had earlier restored market hours from 9.00 am to 5.00 pm in several segments of the money market in December 2022.

[9] Volatility measured in terms of coefficient of variation was 3.5 per cent for INR during calendar year 2022 as compared to 3.7 per cent for Malaysian ringgit, 4.7 per cent for Thai Baht, and 4.8 per cent for Philippine peso.

[10] During the global financial crisis, the Indian Rupee depreciated by 23 per cent against the US dollar between April 1, 2008 and March 3, 2009. Similarly, it depreciated by 22 per cent during the taper tantrum between May 01, 2013 and Aug 28, 2013. However, the extent of Rupee depreciation was lower in each subsequent episode of turbulence. In the initial days of the pandemic, *i.e.*, between February 17, 2020 and April 21, 2020, the Rupee depreciated by only 7 per cent. Even during the period of geopolitical tensions emerging out of Ukraine in 2022, while the Rupee lost 9 per cent against the US dollar between February 24, 2022 and October 19, 2022, it outperformed the currencies of most advanced and many emerging market economies. The 1-month implied volatility of the Rupee touched a high of 25 per cent during the global financial crisis on October 10, 2008 and 20 per cent during the taper tantrum period on August 29, 2013. During the COVID-19 pandemic, however, the implied volatility peaked at 10 per cent on March 24, 2020.

[11] Das, Shaktikanta (2023): "Financial markets in India: In pursuit of stability and development"; Keynote Address at the 22nd FIMMDA-PDAI Annual Conference, Dubai on January 27, 2023.

India's external debt ratios are low by international standards.[12]

Additional Measures

I shall now announce certain additional measures.

Penal Charges on Loans

At present, Regulated Entities (REs) are required to have a policy for levy of penal interest on advances. The REs, however, follow divergent practices on levying of such charges. In certain cases, these charges are founded to be excessive. To further enhance transparency, reasonableness and consumer protection, draft guidelines on levy of penal charges will be issued to obtain comments from stakeholders.

Climate Risk and Sustainable Finance

Recognising the importance of climate related financial risks which may have financial stability implications, the Reserve Bank had issued a Discussion Paper on Climate Risk and Sustainable Finance in July 2022. Based on the feedback received, it has been decided to issue guidelines for REs on (i) a broad framework for acceptance of Green Deposits; (ii) disclosure framework on Climate-related Financial Risks; and (iii) guidance on Climate Scenario Analysis and Stress Testing.

Expanding the Scope of TReDS

For the benefit of MSMEs, the Reserve Bank had introduced a framework in 2014 to facilitate financing of their trade receivables through Trade Receivables Discounting System (TReDS). It is now proposed to expand the scope of TReDs by (i) providing insurance facility for invoice financing; (ii) permitting all entities/institutions undertaking factoring business to participate as financiers in TReDS; and (iii) permitting re-discounting of invoices (that is, developing a secondary market in TReDS). These measures are expected to improve the cash flows of the MSMEs.

Extending UPI for Inbound Travellers to India

UPI has become hugely popular for retail digital payments in India. It is now proposed to permit all inbound travellers to India to use UPI for their merchant payments (P2M) while they are in the country. To begin with, this facility will be extended to travellers from G-20 countries arriving at select international airports.

QR Code based Coin Vending Machine - Pilot project

The Reserve Bank of India will launch a pilot project on QR Code based Coin Vending Machine (QCVM) in 12 cities. These vending machines will dispense coins against debit to the customer's account using UPI instead of physical tendering of banknotes. This will enhance the ease of accessibility to coins. Based on the learnings from the pilot, guidelines will be issued to banks to promote distribution of coins using these machines.

Conclusion

As we begin a new year, it is a good time to reflect upon our journey so far and what lies ahead. When I look back, it is heartening to note that the Indian economy successfully dealt with multiple major shocks in the last three years and has emerged stronger than before. India has the inherent strength, an enabling policy environment, and strong macroeconomic fundamentals and buffers to deal with the future challenges. I am reminded here of the words of Netaji Subhas Chandra Bose: *".....never lose your faith in the destiny of India".*[13]

Thank you. Namaskar.

[12] India's external debt/GDP ratio fell from 19.9 per cent in March 2022 to 19.2 per cent in September. The debt service ratio declined from 5.2 per cent in 2021-22 to 5.0 per cent in September 2022.

[13] "India will be free"- Message of August 17, 1945 to Indians in East Asia - Selected Speeches of Subhas Chandra Bose, Publications Division, Ministry of Information and Broadcasting, Government of India.

MONETARY POLICY STATEMENT FOR 2022-23

Resolution of the Monetary Policy Committee (MPC)
February 6-8, 2023

Monetary Policy Statement, 2022-23 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 (February 8, 2023) decided to:

- Increase the policy repo rate under the liquidity adjustment facility (LAF) by 25 basis points to 6.50 per cent with immediate effect.

Consequently, the standing deposit facility (SDF) rate stands adjusted to 6.25 per cent and the marginal standing facility (MSF) rate and the Bank Rate to 6.75 per cent.

- The MPC also decided to remain focused on withdrawal of accommodation to ensure that inflation remains within the target going forward, 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. The outlook on global growth has improved in recent months, despite the persistence of geopolitical hostilities and the impact of monetary policy tightening by central banks across the world. Nonetheless, global growth is expected to decelerate during 2023. Inflation is exhibiting some softening from elevated levels, prompting central banks to moderate the size and pace of rate actions. However, central banks are reiterating their commitment to bring down inflation close to their targets. Bond yields remain volatile. The US dollar has come off its recent peak, and equity markets have moved higher since the last MPC meeting. Weak external demand in major advanced economies (AEs), the rising incidence of protectionist policies, volatile capital flows and debt distress could, however, weigh adversely on prospects for emerging market economies (EMEs).

Domestic Economy

3. 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. On the supply side, gross value added (GVA) was estimated at 6.7 per cent.

4. High frequency indicators suggest that economic activity has remained strong in Q3 and Q4:2022-23. *Rabi* acreage exceeded last year's area by 3.3 per cent as on February 3, 2023. Industrial production expanded by 7.1 per cent in November, after contracting by 4.2 per cent in October. Capacity utilisation in manufacturing is now above its long period average. Port freight traffic, e-way bills and toll collections were buoyant in December. Purchasing managers' indices (PMIs) for manufacturing as well as services remained in expansion in January, despite some moderation compared to the previous month.

5. Domestic demand has been sustained by strong discretionary spending. Urban demand exhibited resilience as reflected in healthy passenger vehicle sales and domestic air passenger traffic. Rural demand is improving. Investment activity is gradually gaining ground. Non-oil non-gold imports expanded in

* Released on February 8, 2023.

December. Merchandise exports, on the other hand, contracted in December on weak global demand.

6. CPI headline inflation moderated to 5.7 per cent (y-o-y) in December 2022 – after easing to 5.9 per cent in November – on the back of double digit deflation in vegetable prices. On the other hand, inflationary pressures accentuated across cereals, protein-based food items and spices. Fuel inflation edged up primarily from an uptick in kerosene prices. Core CPI (*i.e.*, CPI excluding food and fuel) inflation rose to 6.1 per cent in December due to sustained price pressures in health, education and personal care and effects.

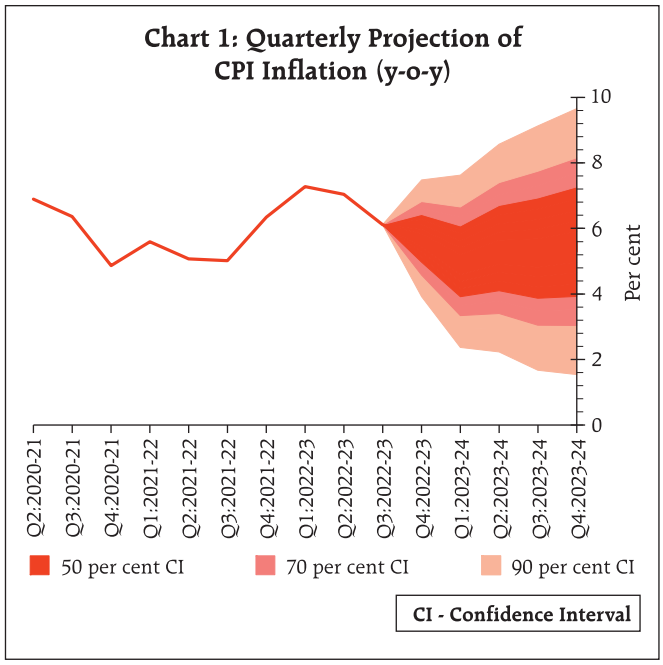
7. The overall liquidity remains in surplus, with average daily absorption under the LAF increasing to ₹1.6 lakh crore during December-January from an average of ₹1.4 lakh crore in October-November. On a y-o-y basis, money supply (M3) expanded by 9.8 per cent as on January 27, 2023, while non-food bank credit rose by 16.7 per cent. India's foreign exchange reserves were placed at US$ 576.8 billion as on January 27, 2023.

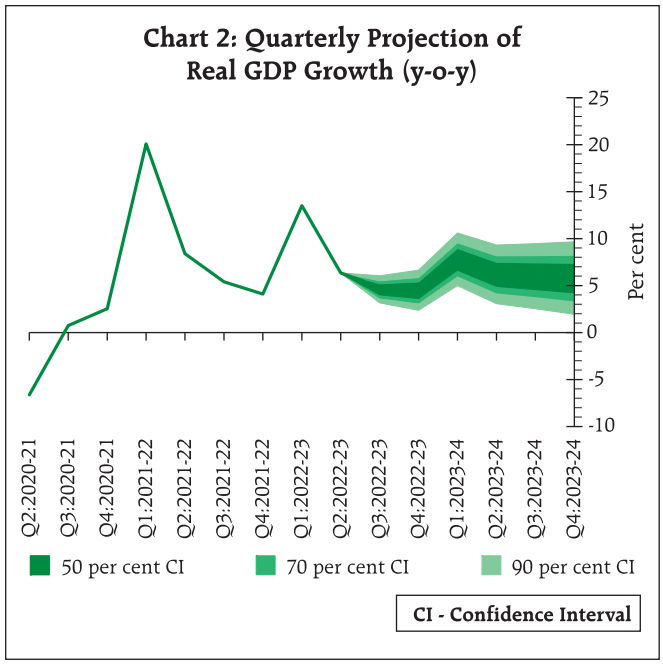
Outlook

8. The outlook for inflation is mixed. While prospects for the *rabi* crop have improved, especially for wheat and oilseeds, risks from adverse weather events remain. The global commodity price outlook, including crude oil, is subject to uncertainties on demand prospects as well as from risks of supply disruptions due to geopolitical tensions. Commodity prices are expected to face upward pressures with the easing of COVID-related mobility restrictions in some parts of the world. The ongoing pass-through of input costs to output prices, especially in services, could continue to exert pressures on core inflation. The Reserve Bank's enterprise surveys point to some softening of input cost and output price pressures in manufacturing. Taking into account these factors and assuming an average crude oil price (Indian basket) of US$ 95 per barrel, inflation is projected at 6.5 per cent in 2022-23, with Q4 at 5.7 per cent. On the assumption of a normal monsoon, CPI inflation is projected at 5.3 per cent for 2023-24, with Q1 at 5.0 per cent, Q2 at 5.4 per cent, Q3 at 5.4 per cent and Q4 at 5.6 per cent, and risks evenly balanced (Chart 1).

9. The stronger prospects for agricultural and allied activities are likely to boost rural demand. The rebound in contact-intensive sectors and discretionary spending is expected to support urban consumption. Businesses and consumers surveyed by the Reserve Bank are optimistic about the outlook. Strong credit growth, resilient financial markets, and the government's continued thrust on capital spending and infrastructure create a congenial environment for investment. On the other hand, external demand is likely to be dented by a slowdown in global activity, with adverse implications for exports. Taking all these factors into consideration, real GDP growth for 2023-24 is projected at 6.4 per cent with Q1 at 7.8 per cent, Q2 at 6.2 per cent, Q3 at 6.0 per cent and Q4 at 5.8 per cent, and risks broadly balanced (Chart 2).

10. The easing of inflation in the last two months was driven by strong deflation in vegetables, which may dissipate with the summer season uptick. Headline inflation excluding vegetables has been rising well above the upper tolerance band and may remain elevated, especially with high core inflation pressures. Inflation, therefore, remains a major risk to the outlook. Domestic economic activity is expected to remain resilient aided by the sustained focus on capital and infrastructure spending in the Union Budget 2023-24, even as continuing fiscal consolidation creates space for private investment. While the policy repo rate increases undertaken since May 2022 are working their way through the system, it is imperative to remain alert on inflation so as to ensure that it remains within the tolerance band and progressively aligns with the target. On balance, the MPC is of the view that further calibrated monetary policy action is warranted to keep inflation expectations anchored, break core inflation persistence and thereby strengthen





medium-term growth prospects. Accordingly, the MPC decided to increase the policy repo rate by 25 basis points to 6.50 per cent. The MPC also decided to remain focused on withdrawal of accommodation to ensure that inflation remains within the target going forward, while supporting growth.

11. Dr. Shashanka Bhide, Dr. Rajiv Ranjan, Dr. Michael Debabrata Patra and Shri Shaktikanta Das voted to increase the policy repo rate by 25 basis points. Dr. Ashima Goyal and Prof. Jayanth R. Varma voted against the repo rate hike.

12. Dr. Shashanka Bhide, Dr. Rajiv Ranjan, Dr. Michael Debabrata Patra and Shri Shaktikanta Das voted to remain focused on withdrawal of accommodation to ensure that inflation remains within the target going forward, while supporting growth. Dr. Ashima Goyal and Prof. Jayanth R. Varma voted against this part of the resolution.

13. The minutes of the MPC's meeting will be published on February 22, 2023.

14. The next meeting of the MPC is scheduled during April 3, 5 and 6, 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; (iii) Payment and Settlement Systems and (iv) Currency Management.

I. Financial Markets

1. Introduction of Securities Lending and Borrowing in Government Securities

A well-functioning market for securities lending and borrowing will add depth and liquidity to the Government securities market, aiding efficient price discovery. It is, therefore, proposed to permit lending and borrowing of Government securities which will augment the existing market for 'special repos'. The system is expected to facilitate wider participation in the securities lending market by providing investors an avenue to deploy idle securities and enhance portfolio returns. Draft Directions will be issued separately for stakeholder comments.

II. Regulation

2. Recovery of Penal Charges on Loans

In terms of extant guidelines, Regulated Entities (REs) have the operational autonomy to formulate Board approved policy for levy of penal interest on advances which shall be fair and transparent. The intent of penal interest was essentially to inculcate a sense of credit discipline among borrowers through negative incentives but such charges are not meant to be used as a revenue enhancement tool over and above the contracted rate of interest. Supervisory reviews have indicated divergent practices amongst REs with regard to levy of penal interest which were excessive in certain cases, leading to customer grievances and disputes.

The extant regulatory guidelines on levy of penal interest have been reviewed in the above context. It has been decided that any penalty for delay/default in servicing of the loan or any other non-compliance of material terms and conditions of loan contract by the borrower shall be in the form of 'penal charges' in a reasonable and transparent manner and shall not be levied in the form of 'penal interest' that is added to the rate of interest being charged on the advances. Further, there shall be no capitalisation of penal charges (*i.e.*, the same shall be recovered separately and shall not be added to the principal outstanding). However, in case of any deterioration in credit risk profile of the borrower, REs shall be free to alter the credit risk premium under extant guidelines on interest rate. Draft guidelines to the above effect shall be placed on RBI website shortly, for comments from stakeholders.

3. Regulatory Initiatives on Climate Risk and Sustainable Finance

Being a full-service central bank with financial stability as part of its mandate, the Reserve Bank recognises that climate change can translate into climate-related financial risks for Regulated Entities (REs) which can have broader financial stability implications. Therefore, to prepare a strategy based on global best practices on mitigating the adverse impacts of climate change, a Discussion Paper (DP) on Climate Risk and Sustainable Finance was placed on RBI website on July 27, 2022, for public comments and feedback. Based on analysis of the feedback received in this regard, it has been decided to issue the following guidelines for REs:

a. Broad framework for acceptance of Green Deposits;

b. Disclosure framework on Climate-related Financial Risks, and;

c. Guidance on Climate Scenario Analysis and Stress Testing.

The guidelines will be issued in a phased manner. Further, the Reserve Bank shall have a dedicated webpage on its website which will consolidate all instructions, press releases, publications, speeches and related RBI communication on climate risk and sustainable finance.

III. Payment and Settlement Systems

4. Expanding the scope of Trade Receivables Discounting System (TReDS)

The guidelines on Trade Receivables Discounting System (TReDS) were issued in December 2014 with the objective of facilitating the financing of trade receivables of MSMEs. Subsequently, three entities started operating TReDS platforms and two more entities have been granted in-principle authorisation. These entities process about ₹60,000 crore worth of transactions annually.

To provide further impetus to TReDS platforms, their scope of activity is proposed to be expanded as stated below. These measures will help in further improving the cash flows of MSMEs.

i. Insurance facility will now be permitted on TReDS. This will encourage financing / discounting of payables of buyers irrespective of their credit ratings. Accordingly, insurance companies will be permitted to participate as a "fourth participant" on TReDS, apart from the MSME sellers, buyers and financiers.

ii. All entities / institutions eligible to undertake factoring business under the Factoring Regulation Act will be permitted to participate as financiers in TReDS.

iii. Secondary market operations will now be enabled on TReDS platforms. This would allow financiers to offload their existing portfolio to other financiers within the same TReDS platform, if required.

5. Extending UPI for Inbound Travellers to India

Unified Payments Interface (UPI) has become a ubiquitous payment instrument for retail electronic payments in India. An enhancement has recently been made to provide UPI access to non-resident Indians who have international mobile numbers linked to their NRE / NRO accounts. It is now proposed to permit all inbound travellers to India also to access UPI for their merchant payments (P2M) while they are in the country. To start with, this facility will be extended to travellers from the G-20 countries, arriving at select international airports. Going forward, this facility will be enabled across all other entry points in the country. Necessary operational instructions will be issued shortly.

IV. Currency Management

6. QR Code based Coin Vending Machine - Pilot project

To improve distribution of coins among members of the public, the Reserve Bank of India is preparing a pilot project on QR Code based Coin Vending Machine (QCVM) in collaboration with a few leading banks. The QCVM is a cashless coin dispensation machine which would dispense coins against a debit to the customer's bank account using Unified Payments Interface (UPI).

Unlike cash-based traditional Coin Vending Machine, the QCVM would eliminate the need for physical tendering of banknotes and their authentication. Customers will also have the option to withdraw coins in required quantity and denominations in QCVMs.

The pilot project is planned to be initially rolled out at 19 locations in 12 cities across the country. These vending machines are intended to be installed at public places such as railway stations, shopping malls, marketplaces to enhance ease and accessibility. Based on the learnings from the pilot tests, guidelines would be issued to banks to promote better distribution of coins using QCVMs.

SPEECH

Financial markets in India: In Pursuit of Stability and Development
Shaktikanta Das

*Financial markets in India: In Pursuit of Stability and Development**

Shaktikanta Das

It is my pleasure to be part of the Annual FIMMDA[1]-PDAI[2] Conference today. I would like to place on record the Reserve Bank's appreciation of the critical role played by FIMMDA and PDAI in the development of financial markets in India over the years, and more recently, in partnering with the RBI in guiding the markets and the economy through the turbulent times of COVID-19, the war in Ukraine and the turmoil in financial markets.

Today, as I speak before keen market players, veterans and experts, I thought this would be an opportune moment to recapture the journey of our financial markets in the last decade or so and reflect on where we are and what we think about the course ahead. An attempt to draw from the past and forge ahead, so to speak.

From the global financial crisis to the Eurozone sovereign debt crisis; from the taper tantrum to Brexit; from unprecedented quantitative easing to among the most accelerated monetary tightening in recent memory; from a pandemic which brought humankind to a standstill to a geopolitical crisis which threatens the world order as it exists today - it would not be an exaggeration to say that the world has moved from one storm to another in the years since the global financial crisis.

Against this backdrop, the journey of Indian financial markets has been driven by two key objectives – stability and development. Crisis management has been a key component of this journey. Nonetheless, the pursuit of developmental reforms, with the key objective of widening and deepening of financial markets was continued even amidst the worst storms.

The Journey so far

Let me take a moment to reflect on the journey of Indian financial markets over the past few decades. Right up to the end of the 1980s, the Indian economy was characterised by an administered interest rate regime, fixed exchange rates, a captive government securities market and current and capital account restrictions. Policy measures during the decade of the 1990s set the stage for a transition to market-determined interest and exchange rates, shift to a multiple indicator approach and eventually to flexible inflation targeting in the conduct of monetary policy, convertibility in the current account and gradual liberalisation of the capital account. The policy measures were bolstered by several key legislative changes: the Foreign Exchange Management Act (FEMA), 1999; the Government Securities Act, 2006; the amendments to the RBI Act in 2006 to give explicit regulatory powers to the Reserve Bank over government securities, derivatives, and money market instruments; and the Payment and Settlement Systems Act, 2007. The Clearing Corporation of India Ltd. was set up in 2001 to provide clearing and guaranteed settlement for money, government securities, forex and derivative markets. A Real Time Gross Settlement System (RTGS) and the NDS-OM platform were operationalised. A Trade Repository was put in place for derivatives. Some of these initiatives became important at a global level only after the G20 rolled out its reforms agenda in the 2009 Pittsburgh Summit.

After the global financial crisis (2008), the Indian financial markets were nascent but growing. The approach to foreign participation in most market segments was cautious. Derivative markets, the markets for the purpose of hedging risks, were limited

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* Keynote Address by Shri Shaktikanta Das, Governor, Reserve Bank of India - January 27, 2023 - at the 22nd FIMMDA-PDAI Annual Conference, Dubai

[1] Fixed Income Money Market and Derivatives Association of India (FIMMDA)

[2] Primary Dealers' Association of India (PDAI)

in terms of participants and products. Meanwhile, the BIS Triennial survey published in 2013 showed that there was growing interest in the Indian Rupee overseas. The onshore and offshore markets for the Rupee, however, remained segmented, with the spreads between the onshore and offshore forex and interest rates being wide.

Headwinds and Tailwinds

Coming to more recent times, many of our policies over the last decade have been guided by the learnings from crisis management as well as the developmental objectives our country aspires to achieve. As the world moved through one storm after another, we were compelled to navigate through the spillovers of major global headwinds.

Equally compelling in guiding policy were the needs of the economy. As the real sector grew over the last decade, expectations from the financial markets also grew. The needs of the economy reflect these developments. To place this in perspective, let's look at some figures. Nominal GDP increased four-fold from ₹64 lakh crore for FY 2010 to ₹273 lakh crore for FY 2023.[3] External trade also increased over four-fold from ₹29 lakh crore to ₹137 lakh crore during the same period.[4] The ratio of trade to GDP[5] has risen to 45 per cent in 2021 from 25 per cent in 2000. Foreign Direct Investment (FDI)[6] in the country has risen sharply by two and a half times since 2010. The flow of resources to the commercial sector in India almost doubled from ₹12 lakh crore in FY 2012 to ₹22 lakh crore in FY 2022.[7] While banks continue to be a dominant source of financing, market borrowings[8] of the commercial sector increased from ₹74,000 crore in FY 2012 to ₹3,16,000 crore in FY 2022. As our economy and financial markets grew, the integration with the world economy and global financial markets has also risen. The growing economy and our aspirations to be and remain among the fastest growing economies has expanded our funding needs. All these necessitate larger and deeper financial markets.

The policy response to headwinds

It is relevant to look at some of our policy responses in recent times, especially to major global headwinds. Each successive episode of turmoil over the last decade and half has posed a specific set of challenges for the economy. Each has warranted a specific response.

In 2008, policy actions were aimed at ensuring comfortable system liquidity; augmenting forex reserves and maintaining a crisis management framework to support the economy through the global financial crisis. Conventional tools such as policy interest rates and cash reserve ratio (CRR) were used. Measures to manage forex liquidity included, *inter alia*, relaxing the interest rate ceiling on foreign currency deposits by non-resident Indians and external commercial borrowings (ECB) for corporates. Unconventional measures included a rupee-dollar swap facility for Indian banks, a refinance window for mutual funds and a special purpose vehicle for supporting nonbanking financial companies.

Post the announcement of early taper of quantitative easing by the Federal Reserve in 2013, the need for restoring confidence of market participants and containing the pressure on the Rupee guided the Reserve Bank's policy responses. Monetary conditions were tightened through unconventional tools. Forex market measures included both direct intervention and administrative measures to manage capital flows. These included import restrictions of non-essential items, opening of a special dollar swap window for

[3] Source: Ministry of Statistics and Programme Implementation

[4] Source: Ministry of Statistics and Programme Implementation, RBI Balance of Payment Statistics

[5] Source: World Bank

[6] Source: Reserve Bank of India

[7] Source: RBI Handbook of Statistics

[8] Market borrowing includes public & rights issues by non-financial entities, gross private placements by non-financial entities and net issuance of commercial papers subscribed to by non-banks.

PSU oil companies, a concessional swap window for Foreign Currency Non-Resident (FCNR-B) deposits, increased overseas borrowing limits of banks, enhanced foreign investment limits in government debt and restrictions on outward investment flows, Liberalised Remittance Scheme (LRS) entitlements as well as exchange-traded derivatives.

The outbreak of the COVID-19 pandemic in March 2020 necessitated swift and focussed policy responses to address the emerging or potential market dislocations. As in the past, policy rates were reduced and systemic liquidity was expanded. But, this time, the policy corridor was asymmetrically widened and the fixed rate reverse repo became the effective anchor for the evolution of short and longer-term interest rates. To improve transmission of policy rates and ensure flow of credit to the affected sectors, unconventional measures were used *viz.*, the Long-Term Repo Operations (LTROs), targeted LTROs and special refinance facilities to All India Financial Institutions. A special liquidity facility for mutual funds aimed at assuaging redemption pressures was also instituted. For the first time, the Reserve Bank pledged its balance sheet to revive the economy through a Government Securities Acquisition Programme (G-SAP) which provided an upfront commitment on the amounts to be purchased. Special open market operations involving simultaneous purchase and sale of securities (Operation Twist) were undertaken for orderly evolution of the yield curve and liquidity management. Forward guidance gained prominence with the emergence of time and state-contingent guidance, with assurances on the Reserve Bank's commitment to maintain congenial financial conditions. Communication became a significant part of our monetary policy toolkit.

The onset of the war in Ukraine again weakened risk sentiment, with commodity prices and inflation rising to multi-decade highs. As major central banks accelerated policy rate hikes and tightened liquidity to tackle inflationary pressures, financial market volatility spiralled, and the Rupee came under considerable pressure. The policy response this time eschewed administrative measures to contain outflows and instead focused on measures to enhance inflows through incentivising non-resident deposits, foreign investments in debt instruments and ECBs. To promote exports and support the increasing global interest in the Rupee, an additional arrangement for invoicing, payment and settlement of exports/ imports in Rupees was put in place.

The point I want to emphasise here is that while there were clear common strands in the Reserve Bank's response to various episodes of turmoil, the response was customised to each episode in terms of policy objectives and choices, and use of toolkits. Every response was a function of the underlying macroeconomic conditions and reflected learnings from earlier crises. In this context, I would like to mention three distinctive features of our policy responses. First, all liquidity management operations by the Reserve Bank, including measures for mutual funds and NBFCs, have always been through banks which are the liquidity conduits for the Reserve Bank even in peace times. Second, the measures entailed no dilution of collateral standards and ensured that the central bank remained cushioned from counterparty risks. Third, most of the measures this time around were time-bound and expired as per their originally defined maturity. Illustratively, the G-SAP was discontinued, relaxations with respect to CRR were allowed to normalise and the liquidity management framework was tweaked in April 2022 to operationalise the standing deposit facility (SDF). This approach has enabled us to get out of a potential liquidity trap, the Chakravyuh.

Interestingly and perhaps paradoxically, the measures to reform and develop financial markets have taken place at an unprecedented pace during a decade of unprecedented challenges. The reforms

were aimed at deepening onshore financial markets and increasing the efficiency of price discovery. The more recent reforms sought to (i) remove market segmentation by simultaneously easing access of non-residents to domestic markets and permitting residents to access offshore markets; (ii) expand the participation base by encouraging non-resident participation in financial markets and retail participation through the provision of easy access, for example through the Retail Direct and FX Retail platforms; (iii) facilitate more sophisticated users to access markets for their hedging needs and to express their views on market movements; (iv) promote innovation through the introduction of a larger suite of products which can be customised to the needs of individual market participants;[9] and (v) ensure fair user conduct through protection of the retail user and a sound, receptive and a customer suitability framework. A robust infrastructure and conduct framework has been put in place through efficient clearing and settlement arrangements, benchmark reforms, transparency requirements and stipulations on market abuse, among others.

India has also come a long way towards achieving higher levels of capital account convertibility. Liberalisation of Foreign Direct Investment (FDI) flows continued over the last decade, with FDI becoming unrestricted except in certain sensitive / strategic sectors. Limits for non-resident investments in domestic market markets were liberalised. The Voluntary Retention Route (VRR) was introduced to facilitate non-resident investment in government and corporate bonds. A Fully Accessible Route (FAR) which places no limit on non-resident investment in specified benchmark government securities was introduced as part of further liberalisation of portfolio debt inflows. The ECB framework was comprehensively liberalised and is now subject only to an overall soft limit and a few "end use" restrictions. Regulations for Overseas Direct Investments (ODI) have also been rationalised and liberalised. The LRS is now available for both current and capital account transactions.

Where do we stand today?

In the aftermath of multiple shocks, the global economy is projected to contract significantly in 2023. The worst for the global economy, both in terms of growth and inflation, seems to be behind us. Lately, with some ebbing of COVID-related restrictions and cooling of inflation in various countries, though still elevated, central banks have started what appears to be a pivot towards lower rate hikes or pauses. At the same time, they continue to emphatically reiterate their resolve to bring inflation down closer to targets. High policy rates for a longer duration appear to be a distinct possibility, going forward. On the growth front, projections are now veering around to a softer recession as against a severe and more widespread recession projected a few months back.

In this hostile and uncertain international environment, the Indian economy remains resilient, drawing strength from its macroeconomic fundamentals. Our financial system remains robust and stable. Banks and corporates are healthier than before the crisis. Bank credit is growing in double digits. India is widely seen as a bright spot in an otherwise gloomy world. Our inflation remains elevated, but there has been a welcome softening during November and December 2022. Core inflation, however, remains sticky and elevated.

On the external front, de-globalisation and protectionism are gaining ground as witnessed during the recent global supply-chain shock. It is thus necessary to build and strengthen bilateral trade relations to deal with such challenges. India

[9] The directions on market making in OTC derivatives which came into effect from January 2022 permitted market makers to offer a variety of derivative products to residents to efficiently design strategies to hedge their risks. Subsequently, several new products, *e.g.*, FX barrier option, binary option, targeted range forwards in the forex market and swaptions and total return swaps in the interest rate market have been introduced.

has recently signed bilateral trade agreements with the UAE and Australia and more such agreements are works in progress. The average current account deficit to GDP ratio stands at 3.3 per cent during H1:2022-23. The slowing global demand is weighing on merchandise exports; but our exports of services and remittances remain strong. The net balance under services and remittances remains in a large surplus, partly offsetting the trade deficit. Consequently, the current account deficit is eminently manageable and within the parameters of viability.

On the financing side, net FDI flows remain strong and foreign portfolio flows have resumed since July 2022, with intermittent outflows from time to time. The size of forex reserves is comfortable and has gone up from USD 524 billion on October 21, 2022 to USD 572 billion as on January 13, 2023. Further, India's external debt ratios are low by international standards. This has enabled the Reserve Bank to eschew measures to control capital flows and take steps to further internationalise the domestic currency, even during episodes of significant capital outflows.

Every global risk-off episode resulted in an appreciating US dollar imposing downward pressures on most other currencies. Comparison of the performance[10] of the Rupee across successive crisis episodes tells its own tale. During the global financial crisis, the Rupee witnessed its worst depreciation - between April 1, 2008 and March 3, 2009 - when it lost 23 per cent against the US dollar. Similarly, it depreciated by 22 per cent during the taper tantrum between May 01, 2013 and Aug 28, 2013. However, the extent of Rupee depreciation was lower in each subsequent episode of turbulence. In the initial days of the pandemic, *i.e.*, between February 17, 2020 and April 21, 2020, the Rupee depreciated by only 7 per cent. Even during the period of geopolitical tensions emerging out of Ukraine in 2022, while the Rupee lost 9 per cent against the US dollar between February 24, 2022 and October 19, 2022, it outperformed the currencies of most advanced and many emerging market economies.

Importantly, the Rupee's performance in terms of volatility remained impressive. For example, the 1-month implied volatility of the Rupee touched a high of 25 per cent during the global financial crisis on October 10, 2008 and 20 per cent during the taper tantrum period on August 29, 2013. During the COVID-19 pandemic, however, the implied volatility peaked at 10 per cent on March 24, 2020 and has remained well anchored[11] thereafter, despite the uncertainties associated with the war and monetary tightening by major central banks. The Government bond market has also remained resilient, with average bid-ask spreads being the lowest among peer nations. The yield curve has also evolved in an orderly manner without any undue volatility, despite the significantly higher government borrowing.

Looking ahead

Today, when we look ahead, we still see challenges, but we can prepare for them with optimism and confidence. The Indian financial markets have developed appreciably over the years. Liquidity in the government securities and the overnight money markets have grown. Bid-ask spreads remain narrow, reflecting efficiency in price discovery. In the forex market, overall trading volumes have grown, and a suite of hedging products have emerged. Volumes in the interest rate swap market have grown consistently and new products in these markets are also developing. Onshore and offshore markets are getting increasingly

[10] Source: Data from Bloomberg has been used to evaluate the performance of Rupee.

[11] Daily average 1-month implied volatility of Rupee was 5 per cent between January 1, 2022 and January 20, 2023 and reached a high of 8 per cent on March 7, 2022.

Source: Bloomberg.

integrated with narrowing of forex and interest rates across the markets. Non-resident participation in markets is growing, *albeit* gradually.

The global economy is still marred by shocks and uncertainty. Financial markets remain volatile and the geopolitical situation continues to be tense. International food, energy and commodity prices have eased but uncertainties do remain. Inflation remains high and broad-based across countries. The IMF has projected contractions in over one-third of the global economy.

In India, we have come a long way in the development of financial markets, but this remains work in progress. The Reserve Bank and stakeholders like FIMMDA and PDAI need to work together and focus on certain specific areas. Secondary market liquidity in g-secs is concentrated in a few securities and tenors. The MIBOR-based OIS remains the only major liquid product in the interest rate derivative market. A term money market remains absent, notwithstanding a host of facilitative policy measures. Access of the retail segment to markets, especially derivative markets, needs to improve further. In the forex markets, while corporates benefit from the tight bid-ask spreads, smaller users continue to face pricing disadvantages notwithstanding regulatory requirements for fair and transparent pricing. Likewise, there remains a need for improvement in ensuring liquidity for retail investors in the government securities markets.

Conclusion

The journey of Indian financial markets through the last decade has been a story of steady progress with stability. We have been steadfast in our commitment and consistent in our approach to keep the ship stable while continuing to move ahead. Going forward, greater challenges will emerge as the footprints of Indian banks increase in the offshore markets, the range of products expand, non-resident participation in domestic markets grows and as capital account convertibility increases. Market participants will have to prepare themselves to manage the changes and the risks associated with globally integrated markets. The achievement of desired outcomes is contingent on financial institutions and market participants taking forward the reform agenda so that we have more vibrant and resilient financial markets.

Thank you.

ARTICLES

*State of the Economy**

The year 2023 will probably be characterised by a milder global slowdown than earlier anticipated but the trajectory remains unpredictable. In India, domestic consumption and investment stand to benefit from stronger prospects for agricultural and allied activities, strengthening business and consumer confidence, and strong credit growth. Supply responses and cost conditions are poised to improve even though inflation witnessed a rebound in January. The Union Budget 2023-24's emphasis on capital expenditure is expected to crowd-in private investment, strengthen job creation and demand, and raise India's potential growth.

We live in an age of perfect uncertainty – everything we know is well known to all – the explosive information revolution ensures it. Everything we do not know is anybody's best guess – as John Kenneth Galbraith wrote nearly three decades ago, "there are two kinds of forecasters: those who don't know, and those who don't know they don't know."[1] Yet, when everyone guesses in the same direction, it usually comes true.

A good example is the last week of January 2023 during which the dialling down of monetary policy moves by the so-called systemic central banks[2] was perfectly anticipated by triumphal financial markets. By executing a pirouette to lower orders of rate increases, they gave us a glimpse of the global economic outlook as seen through their lens. In the first week of February, more than ten central banks from both advanced but mostly emerging economies slowed or paused, followed by five more central banks in the second week, consolidating the view that the year 2023 will probably be characterised by a milder global slowdown than earlier anticipated.

The International Monetary Fund (IMF) in its World Economic Outlook Update released on January 30 also confirmed this somewhat more optimistic view of the future, as set out in the following section. A noteworthy feature of the IMF's forecast is the strength of emerging and developing economies, with Asia in the lead. China and India will generate half of global growth in 2023.

Global inflation may ease grudgingly – from 8.8 per cent in 2022 to 6.6 per cent in 2023, according to the IMF, as re-openings, lower commodity prices and restitution of supply chains boost demand – but may still remain elevated relative to targets at 4.3 per cent in 2024. The risks are slanted to the downside, but a turning point has been passed[3], and the central banks know it. Yet none of them are revealing any mood to ease off in spite of financial markets betting against them in a game-theoretic interaction that they will not just pause but also cut rates later this year.

Central banks know that inflation is on its way down but they are on guard that the irrational exuberance of markets in bidding up financial prices could in fact re-fuel a resurgence of demand and inflation. Hence, remembering the GOAT's costly policy error[4], central banks would rather err on the

* This article has been prepared by G. V. Nadhanael, Madhuresh Kumar, Kunal Priyadarshi, Harshita Keshan, Ramesh K Gupta, Pankaj Kumar, Harendra Behera, Arjit Shivhare, Rashika Arora, Anoop K Suresh, Love K Shandilya, Rohan Bansal, Sudhanshu Goyal, Priyanka Sachdeva, Satyam Kumar, Akshara Awasthi, Yuvraj Kashyap, Anshu Kumari, Ashish S Khobragade, Rajesh Kavediya, Supriya Majumdar, Vivek Kumar, Sourajyoti Sardar, Nivedita Banerjee, Bichitrananda Seth, Sujata Kundu, Shesadri Banerjee, Ipsita Padhi, Saksham Sood, 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.

1 John Kenneth Galbraith, *Wall Street Journal*, January 22, 1993.

2 The US Federal Reserve; the European Central Bank; the Bank of England.

3 Pierre-Olivier Gourinchas, IMF, World Economic Outlook Update Proceedings, January 31, 2023. https://www.imf.org/en/News/Articles/2023/01/31/tr-13123-world-economic-outlook-update.

4 "Paul Volcker is regarded as the greatest of all time (GOAT) central banker. Less known, however, is the serious policy mistake that he made in 1980. With the unemployment rate rising by more than a percentage point to more than 7 per cent in May after a recession began, the Fed decided to reverse course and sharply lower the federal funds rate by more than 7 percentage points. This action was taken despite the fact that inflation reached a peak of 14.7 per cent in April. The Fed had blinked and Volcker's credibility as an inflation fighter took a hit. Inflation expectations stayed stubbornly high and actual inflation remained above 12 per cent through to the end of 1980. With the recession ending in July 1980, the Fed got back into the inflation fighting business and started to raise the federal funds rate again. But this time, to re-establish its credibility, the Fed had to raise the federal funds rate to a crushing level of nearly 20 per cent by the middle of 1981. The ensuing recession that started in July 1981 became the most severe downturn since the second world war." (Frederic Mishkin, Financial Times, September 14, 2022).

side of caution and do more rather than less. If a soft landing is almost assured, rates can always be cut if growth slows more than expected, once low inflation is achieved on a durable basis. As inflation pressures ebb, financial conditions will likely improve, and this will support growth.

Financial markets, on the other hand, are driven by a wager that the descent of inflation will be a once-in-a-generation decline, as revealed in market-based gauges of inflation such as break-even rates and swap curves. Equities are steadying and bonds have rallied while inflation optimism has spread to riskier assets. The US dollar has lost ground and is likely to decline further as macroeconomic conditions improve in the rest of the world.

Can incoming data continue to beat expectations? The heaviest drag from the tightening of monetary policy through 2022 is yet to grip. A global economy on the cusp of recession remains unpredictable. 2023 would still be a challenging year. Central banks will find it difficult to gauge where to pause and ease. The worst of their fears can come true if indeed global growth slows but inflation remains elevated.

Flexibility is called for, including in interpreting the incoming data, especially the labour market – adjusted for still weak labour participation, resignations, the greater incidence of part-time work and the recent large form lay-offs, it may not be as red hot as unemployment rates and earnings data suggest. As more stability in the outlook accrues, it would become important to realistically assess the scars of the repeated shocks of the pandemic and geopolitics on the structural characteristics of inflation. Has the golden mean been shattered, shifting up trend inflation inexorably? Will advanced economies have to accept inflation targets of say 4 per cent while emerging economies have to adopt even higher inflation goals.

Graver risks are building up in the international environment for trade, commerce, financial and technology flows. World trade may be fragmented by forceful moves towards protectionism or friend shoring, with each country seeking control over the production of strategic materials and industries through the use of subsidies and other incentives. Over time, other sectors may turn strategic as muscular trade, industrial and technology policies are unleashed.

The IMF estimates the costs of these developments between 0.2 per cent of global output in a limited fragmentation scenario to almost 7 per cent in a severe scenario – roughly equivalent to the combined annual output of Germany and Japan. If technological decoupling is added to the mix, some countries could see losses of up to 12 per cent of GDP. The IMF has warned that the global flow of goods and capital is levelling off and a surge in restrictions is making the world a much smaller place. Financial regionalisation and a fragmented global payments system can amplify the losses from trade restrictions. With less international risk-sharing, macroeconomic volatility could get amplified, and more severe crises could impose not just greater pressures on national buffers but also weaken the ability of the global community to support countries in crises, including indebtedness.[5]

Keeping to the tradition of looking at macroeconomic prospects as revealed in central bank speak, the last meeting of India's monetary policy committee (MPC) was accompanied by the public release on February 8, 2023 of projections for the Indian economy for 2023-24. In the Delphic part of its forward guidance[6], the MPC pointed to stronger prospects for agricultural and allied activities, the

[5] Kristalina Georgiva, *Confronting Fragmentation Where It Matters Most: Trade, Debt, and Climate Action*, IMF Blog. January 16, 2023

[6] A distinction has been drawn between Odyssean forward guidance, which publicly and explicitly commits the central bank to a future action, and Delphic forward guidance, which forecasts macroeconomic performance with likely monetary policy actions implicit in them (Campbell. J.R., Charles E Evans, Jonas D M Fisher and Alejandro Justiniano, Macroeconomic Effects of Federal Reserve Forward Guidance, Brookings Papers on Economic Activity, Spring 2012)

rebound in contact-intensive sectors and discretionary spending, strengthening business and consumer confidence, strong credit growth, resilient financial markets, and the government's continued thrust on capital spending and infrastructure as factors creating a congenial environment for domestic consumption and investment. In its view, these factors would offset the adverse implications for exports due to the global slowdown.

Accordingly, real GDP growth for 2023-24 was projected at 6.4 per cent. On the outlook for inflation, the MPC cited improving crop prospects while recognising risks from adverse weather events, the uncertainties surrounding the global commodity price outlook, and the ongoing pass-through of input costs to output prices, especially in services, to project CPI inflation at 5.3 per cent for 2023-24, down from 6.5 per cent in 2022-23. In the opinion of the MPC, inflation remains a major risk to the outlook in which domestic economic activity is expected to remain resilient. Accordingly, it judged that it is imperative to remain alert on inflation so as to ensure that it remains within the tolerance band and progressively aligns with the target. Hence, "further calibrated monetary policy action is warranted to keep inflation expectations anchored, break core inflation persistence and thereby strengthen medium-term growth prospects."[7]

In this meeting, the MPC decided to increase the policy repo rate by 25 basis points to 6.50 per cent and retained the stance of withdrawal of accommodation. The MPC's decision needs to be seen in the context of the journey that began in the second half of 2021-22 with the cessation of pandemic-induced liquidity injections, winding down of pandemic facilities, modulation of liquidity through variable rate reverse repo auctions and increases in the cash reserve ratio, all of which prepared the ground for the restoration of normal liquidity management operations and market timings.

Policy rate increases were initially front-loaded but large hikes of 75 basis points that characterised the actions of systemic central banks were eschewed to avoid destabilising domestic economic activity. Inflation peaked in June 2022 and grudgingly eased thereafter. From December 2022, conditions became congenial for calibrating lower orders of rate increases and by February 2023, the policy rate regained positive territory when adjusted for four quarters ahead inflation. Importantly, there have been no backslides or reversals and the size of the rate change has been the best form of forward guidance.

The MPC has been astute in communicating its resolve to bring inflation down to the target. To quote from Governor Shri Shaktikanta Das's monetary policy statement of February 8, 2023, "*We need to see a decisive moderation in inflation. We have to remain unwavering in our commitment to bring down inflation. Thus, monetary policy has to be tailored to ensuring a durable disinflation process…. The reduction in the size of the rate hike provides the opportunity to evaluate the effects of the actions taken so far on the inflation outlook and on the economy at large. It also provides elbow room to weigh all incoming data and forecasts to determine appropriate actions and policy stance, going forward. Monetary policy will continue to be agile and alert to the moving parts in the inflation trajectory to effectively address the challenges to the economy.*"

The impact of monetary policy actions is being reflected in the channels of transmission, but the road ahead is daunting. Over the year ahead, the retreat of inflation is expected to be stubborn and beset by supply shocks. Almost every other component of the consumer price index – statistical and exclusion-based measures – is showing a hardening of price pressures. Households' inflation expectations have flat-lined and

[7] Monetary Policy Statement, 2022-23 Resolution of the Monetary Policy Committee (MPC) February 6-8, 2023.

manufacturing corporations are facing moderation in growth of sales and revenues. With pressures building on profits, capital expenditure remains restrained. Hence, the stance of monetary policy will need to remain disinflationary for consumer spending and business investment to pick up on a durable basis and provide a solid foundation for an acceleration of growth.

Medium-term policies for expanding India's productive potential are emphasising domestic manufacturing and trade policies that incentivise domestic production and reshoring of value chains, or what has been termed as 'productivism'[8]. Revival of activity is already evident across the hinterland night lights luminescence. With digital public goods infrastructure taking centre-stage in India's G20 presidency, the country is ready to take leadership in digital innovations and realise India's techade. Greening of the economy is gathering pace, with the issue of the maiden offering of sovereign green bonds, with plans for a green hydrogen ecosystem, electric vehicles and semi-conductor production, and surging renewables. A more confident India is aiming high with a 2047 vision. In the concluding section, we underscore how the Union Budget 2023-24 makes a sure-footed stride to actualise this vision.

Set against this backdrop, the remainder of the article is structured into four sections. Section II sketches the rapidly evolving developments in the global economy. The evolution of the domestic economy is laid out in Section III. Section IV evaluates the domestic financial conditions, while the last Section sets out concluding remarks.

II. Global Setting

The outlook for the global economy turned less gloomy as moderating inflation assuaged fears of further aggressive monetary tightening. Combined with reopening of some parts of the world from pandemic restrictions, the prospects for a milder slowdown than earlier anticipated have improved. Considerable uncertainty continues to prevail, however, as incoming data are parsed.

In its January 2023 update of the World Economic Outlook (WEO), the IMF revised global growth for 2023 upwards by 20 basis points (bps) to 2.9 per cent *vis-a-vis* its October projection. The revision takes into account positive surprises such as a stronger boost from pent-up demand, faster fall in inflation and the likely easing of financial conditions. Notably, a global recession is no longer the baseline assessment. For advanced economies (AEs), growth for 2023 was revised upward by 10 basis points to 1.2 per cent while for emerging market economies (EMEs), it

Table 1: GDP Growth Projections – Select AEs and EMEs

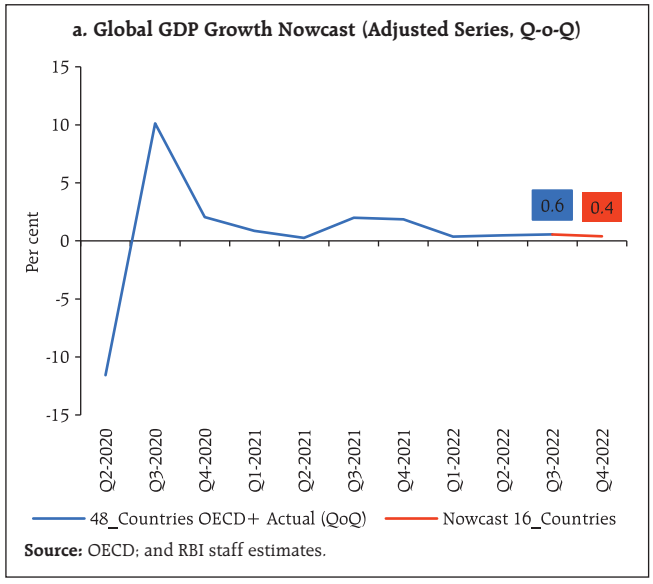
(Per cent)

Projection for Month of projection	2023		2024	
	January 2023	October 2022	January 2023	October 2022
World	2.9	2.7	3.1	3.2
Advanced Economies				
US	1.4	1.0	1.0	1.2
UK	-0.6	0.3	0.9	0.6
Euro area	0.7	0.5	1.6	1.8
Japan	1.8	1.6	0.9	1.3
Emerging Market Economies				
Brazil	1.2	1.0	1.5	1.9
Russia	0.3	-2.3	2.1	1.5
India	6.1	6.1	6.8	6.8
China	5.2	4.4	4.5	4.5
South Africa	1.2	1.1	1.3	1.3

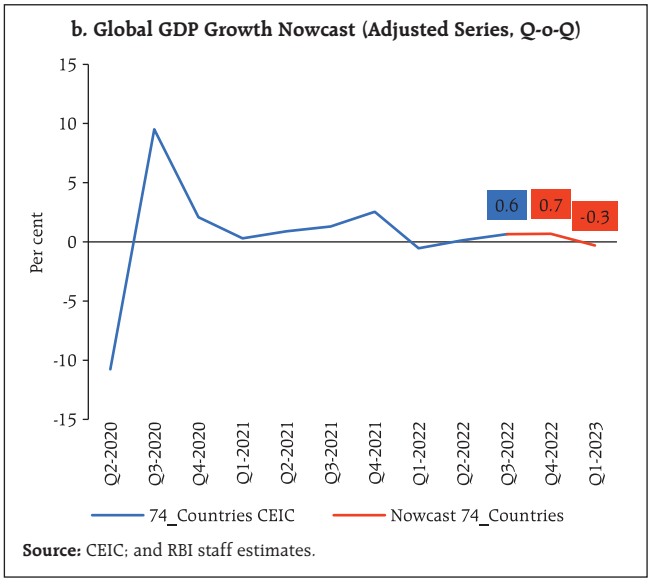
Source: IMF.

[8] Dani Rodrick, July 5, 2022, Project Syndicate.

Chart 1: Global GDP Nowcasts



Source: OECD; and RBI staff estimates.



Source: CEIC; and RBI staff estimates.

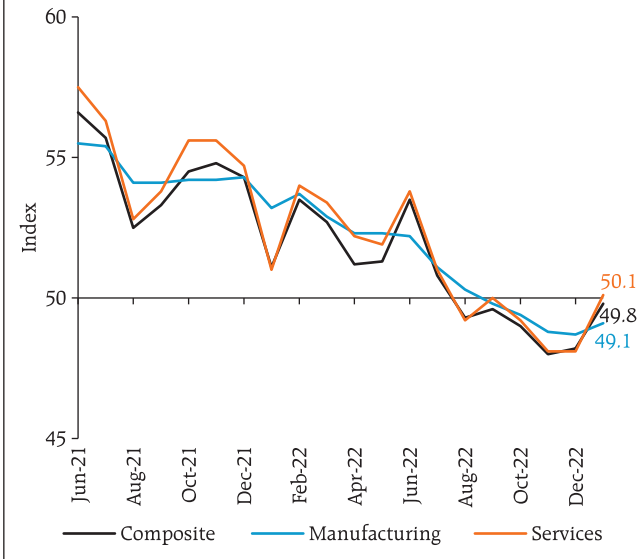
is estimated to be 30 basis points higher at 4.0 per cent in 2023 (as compared with WEO October 2022 projections) [Table 1].

Against this backdrop, our model based nowcast, incorporating data for 74 countries, projects a decline in global growth momentum to -0.3 per cent in Q1: 2023 (Chart: 1a & 1b).

Among high frequency indicators, the global composite purchasing managers' index (PMI) at 49.8 in January 2023 posted an uptick, but remained in contractionary zone for the sixth successive month (Chart 2). The global manufacturing purchasing managers' index at 49.1 in January remained below the neutral mark for the fifth consecutive month, although the contraction showed signs of easing in both output and new orders, with employment posting a slight increase. The services PMI rebounded to expansionary mode after six months.

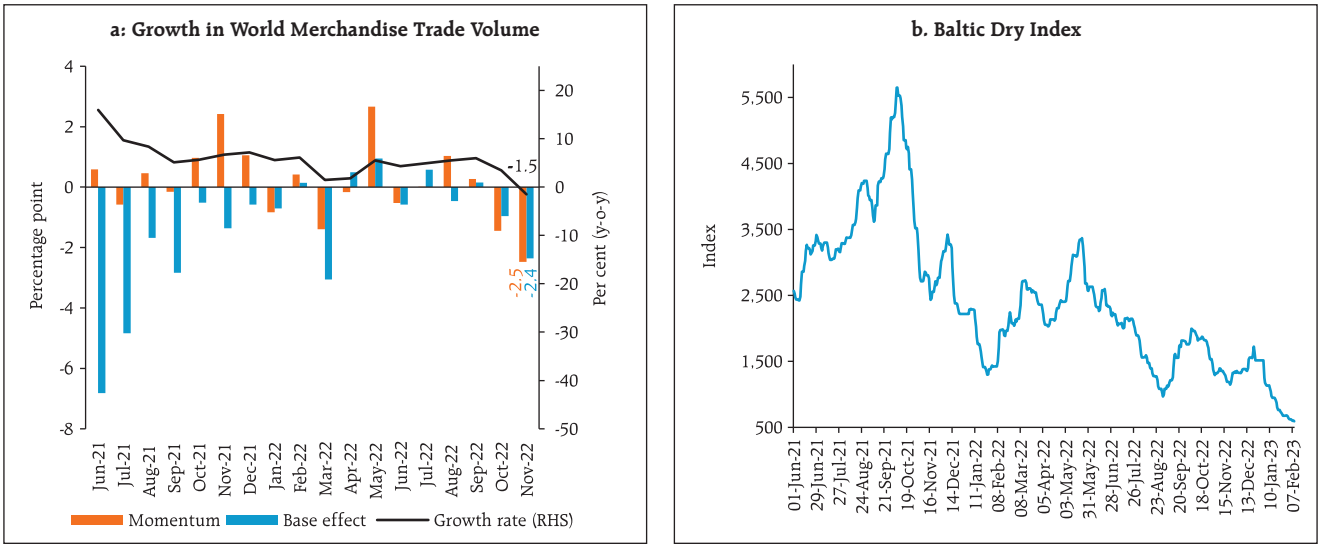
World trade volume contracted in November 2022 by 1.5 per cent (y-o-y) due to steep negative momentum and an unfavourable base effect (Chart 3a). The Baltic Dry Index - a measure of shipping charges for dry bulk commodities - fell precipitously, shedding over 50 per cent of its value in January 2023 as capesize demand remained numb along with weak demand across all vessel segments (Chart 3b). The IMF expects global trade in goods and services to decelerate to 2.4 per cent in 2023 from 5.4 per cent in 2022.

Chart 2: Global PMIs



Source: IHS Markit.

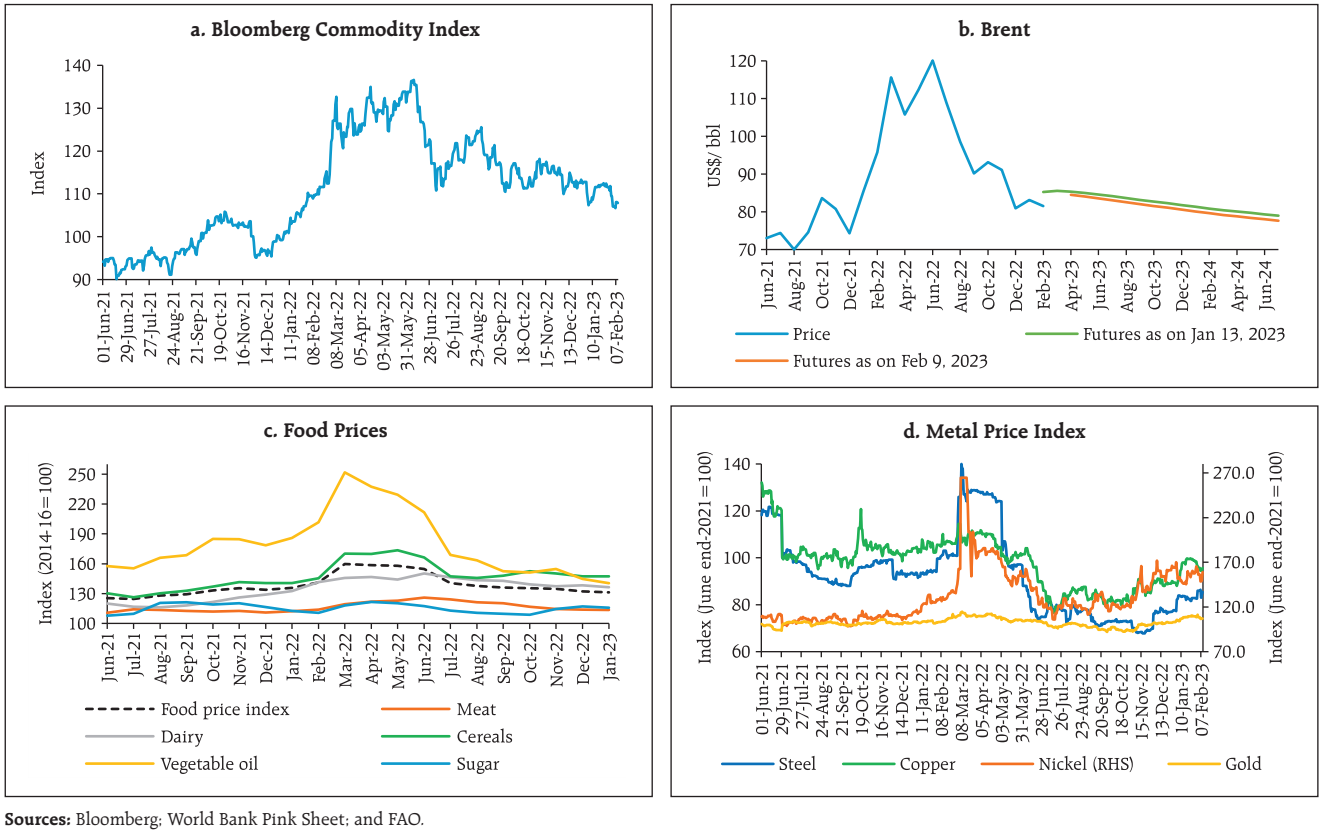
Chart 3: World Trade and Shipping Costs



Sources: CPB Netherlands; and Bloomberg.

Global commodity prices exhibited volatility as the still weak global economic outlook continues to weigh on demand (Chart 4a). Crude oil prices traded at an average of US$ 83 per barrel in January and February (up to February 15, 2023) following the uncertainty lingering around evolving geopolitical

Chart 4: Commodity and Food Prices



Sources: Bloomberg; World Bank Pink Sheet; and FAO.

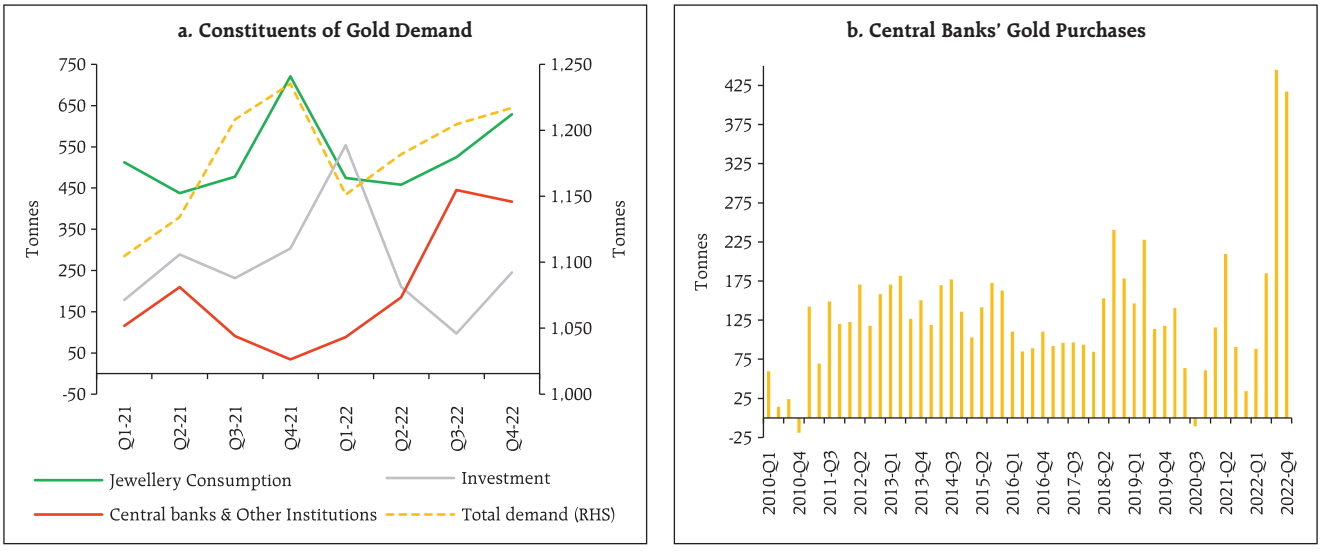
concerns, supply shortages and shutdown of a major export terminal after the earthquake in Turkey (Chart 4b). The Food and Agricultural Organization (FAO) food price index[9] declined for the tenth consecutive month in January, driven down by vegetable oils, dairy and sugar, while prices of cereals and meat remained largely stable (Chart 4c).

Metal prices increased on reopening plans and expectations of higher demand as pandemic restrictions were eased and on higher growth in global electronics industry. Gold prices inched up in January on safe haven demand (Chart 4d). Demand for gold has been increasing from all the major stakeholders, with central banks' purchases of gold reaching the highest levels since 1967 in Q4:2022 (Chart 5a & 5b).

Headline inflation eased across most AEs and EMEs. Although global headline inflation seems to have peaked in Q3:2022, the IMF warned that core inflation stays well above pre-pandemic levels in most economies. In the US, headline CPI inflation moderated marginally to 6.4 per cent in January 2023 from 6.5 per cent a month ago. Inflation based on Personal Consumption Expenditure (PCE) index eased markedly to 5.0 per cent in December 2022 (Chart 6a). In January, inflation slowed in the Euro area and in the UK to 8.5 per cent and 10.1 per cent, respectively. In Japan, CPI (all items less fresh food) inflation soared to a 41-year high of 4.0 per cent in December 2022. Among the EMEs, inflation eased further in Brazil (5.8 per cent), Russia (11.9 per cent), and South Africa (7.2 per cent) in December 2022 (Chart 6b). China, however, registered a 20 basis points increase in CPI inflation to 1.8 per cent in December.

Global equity markets commenced 2023 with renewed optimism as incoming data suggested moderation in inflation and less aggressive rate hikes expectations, with EMEs faring better than AEs (Chart 7a). Markets, however, corrected in early February, especially in EMEs, as investors turned risk averse reflecting the expectation of higher interest rates in AEs especially after the release of robust nonfarm payroll and low unemployment rate data in the US.

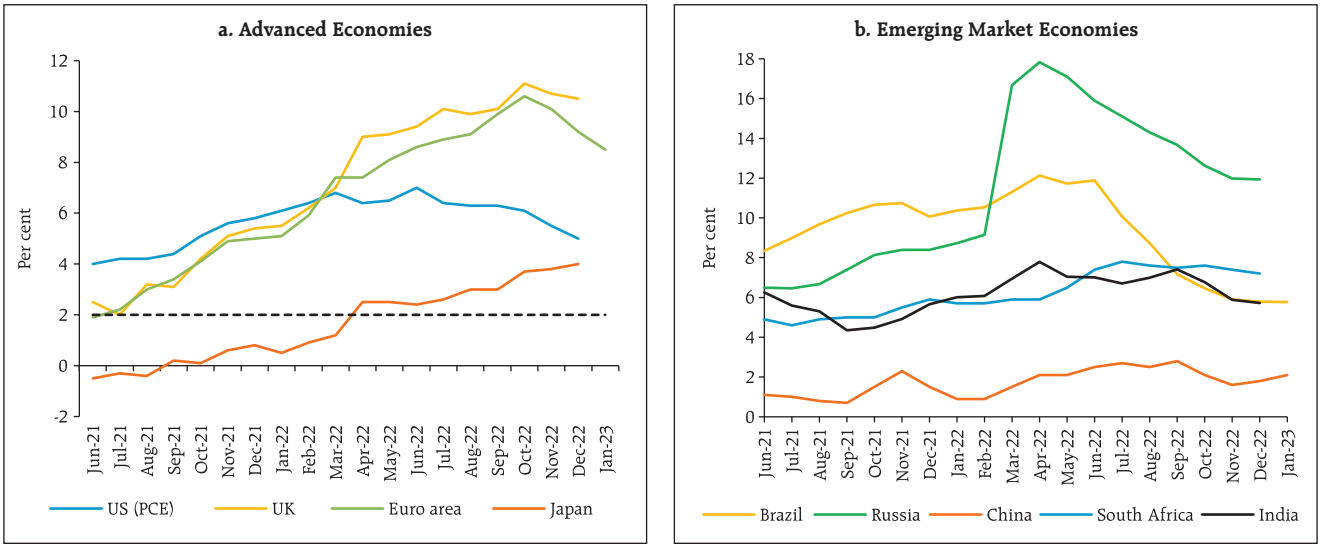
Chart 5: Rising Demand for Gold



Source: Bloomberg.

[9] Sub-indices include cereal, vegetable oil, dairy, meat and sugar price indices.

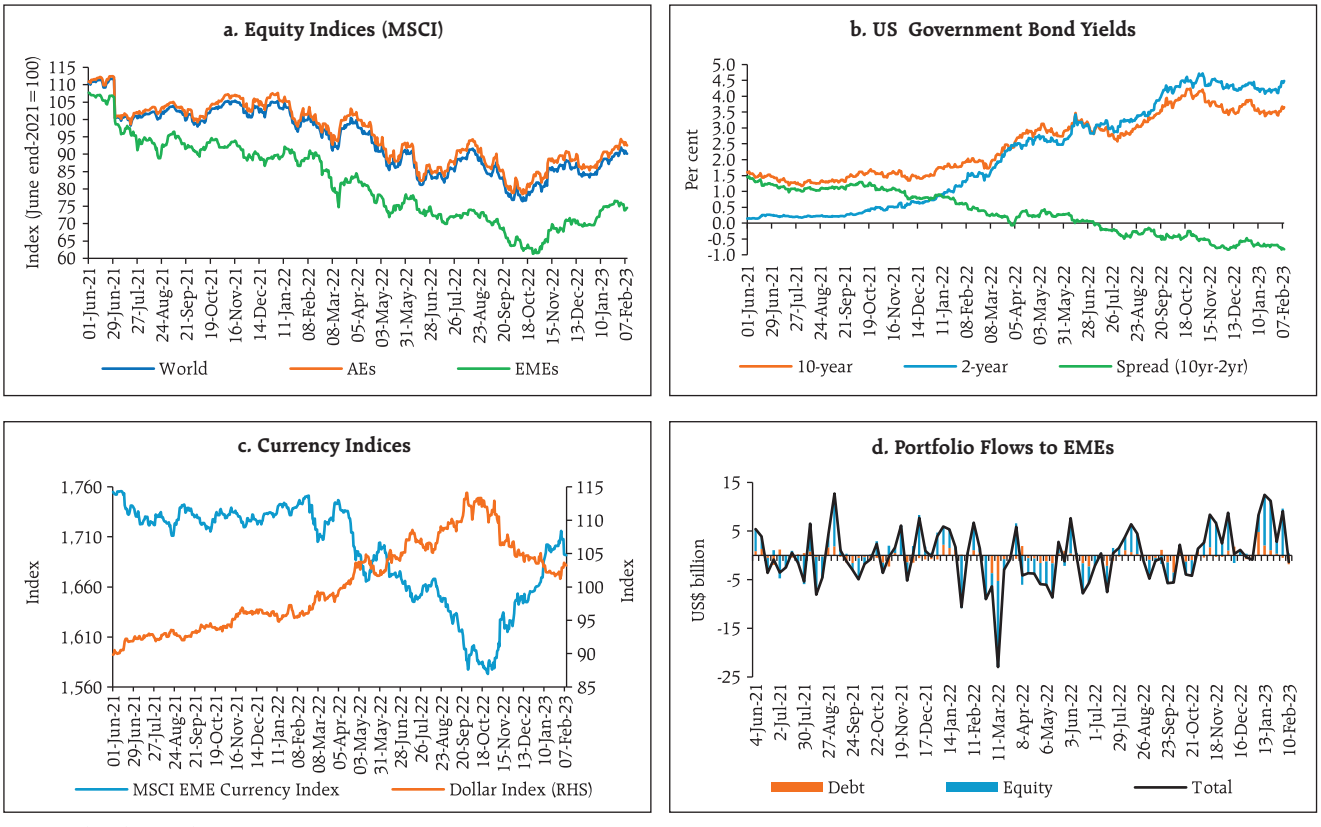
Chart 6: Inflation



Sources: Bloomberg; and OECD.

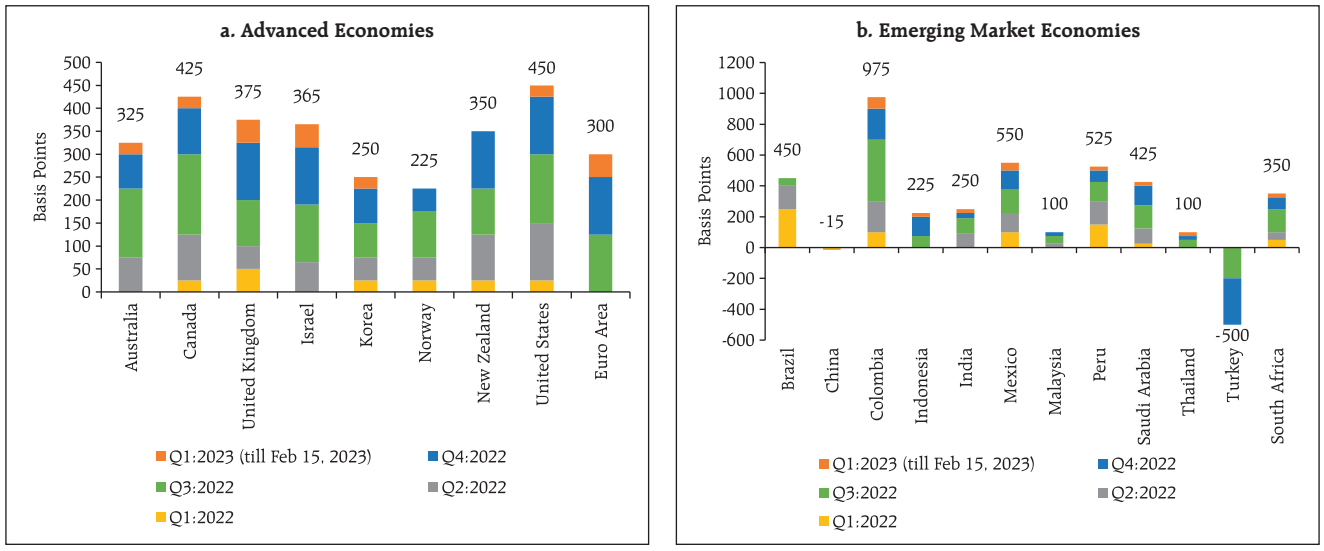
During January 2023, the 10-year G-sec yields softened across major AEs on lower-than-expected inflation prints in most countries, including the US, resulting in the 10-year US treasury yield shedding 37

Chart 7: Financial Markets



Sources: Bloomberg; and IIF.

Chart 8: Change in Key Policy Rate



Source: Bloomberg.

basis points and the 2-year G-sec yield decreasing by 22 bps. This increased the magnitude of yield curve inversion (Chart 7b). In February, however, US bond yields hardened on the higher than anticipated US non-farm payroll data with the 2-year G-sec yield gaining over 20 bps (up to February 08, 2023). The US dollar reversed its rally after peaking in September 2022 and lost 1.4 per cent in January on expectations of less aggressive policy rate hikes. Concomitantly, the MSCI currency index for EMEs gained momentum, rising 2.6 per cent on the back of capital inflows (Chart 7c & 7d).

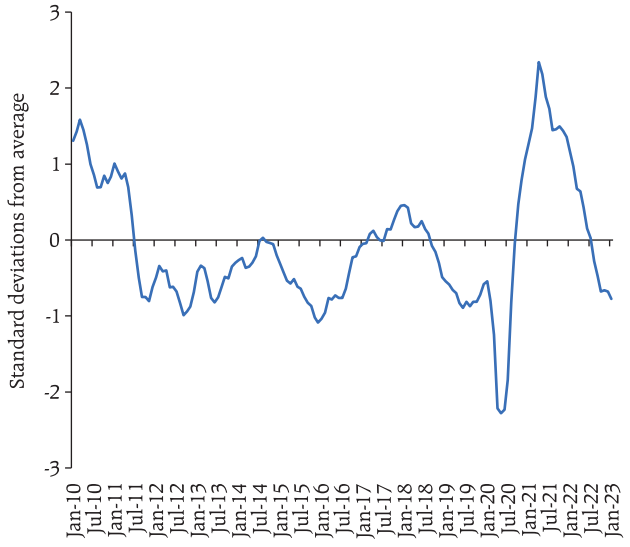
Central banks of most AEs and EMEs slowed the pace of tightening in recent months (Chart 8a). The US Federal Reserve raised the target range of the Federal Funds rate by 25 bps to 4.50-4.75 per cent, reducing the magnitude of its rate hike for the second time in a row. The European Central Bank (ECB) and the Bank of England (BoE) decided to raise their key rates by 50 bps each in February 2023. Canada slowed its pace of tightening as it hiked its policy rate by 25 bps in January and Australia continued hiking its rate by 25 bps in its February meeting. Japan has continued to diverge by maintaining an accommodative stance; however, it expanded its range for 10-year government bonds yield fluctuations.

Most EME central banks have also continued with policy tightening while a few others have paused (Chart 8b). In December, South Africa moderated the pace of hike in its policy rate to 25 bps from 75 bps and Saudi Arabia slowed to 25 bps from 50 bps in its January meeting. Indonesia and Thailand raised their policy rates by 25 bps each in January. Brazil in February and Malaysia, Chile and Hungary in January held their key rates unchanged. China, on the contrary, continued with monetary accommodation.

III. Domestic Developments

Supply responses and overall cost conditions in the Indian economy are poised to improve. Supply chain pressures continued to ease as indicated by our index of supply chain pressure for India (ISPI) [Chart 9].

Chart 9: Index of Supply Chain Pressure for India



Source: RBI staff estimates.

In consonance, the economic activity index (EAI) showed an uptick in activity in November and December 2022 (Chart 10a). Accordingly, our nowcast of GDP for Q3:2022-23 is placed at 4.4 per cent (Chart 10b).

Aggregate Demand

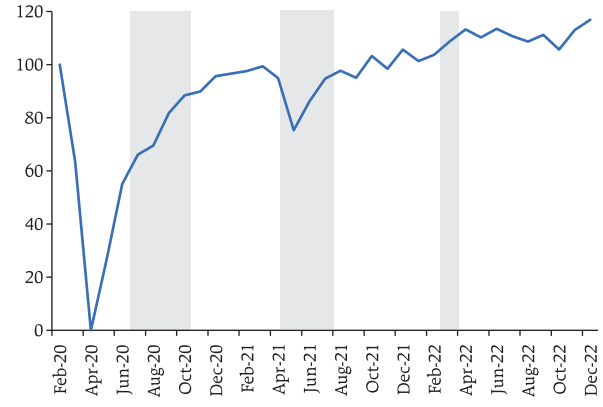
Lead indicators point towards sustained momentum in economic activity. E-way bill volumes and toll collections continued to increase, *albeit* at a moderate pace (Chart 11).

Fuel consumption came off the nine-month high recorded in December due to seasonal factors. Sales of automobiles (passenger and commercial vehicles), sales of two wheelers, and vehicle registrations (transport and non-transport vehicles) picked up, buoyed by higher demand. Better crop prices have aided the pick-up in tractor sales. Sales of motorcycle and three-wheelers also picked up, with the latter more than doubling over January 2022 (Chart 12).

In the tourism sector, average room rates continued to increase even as hotel occupancy rates remained flat. Revenue per available room

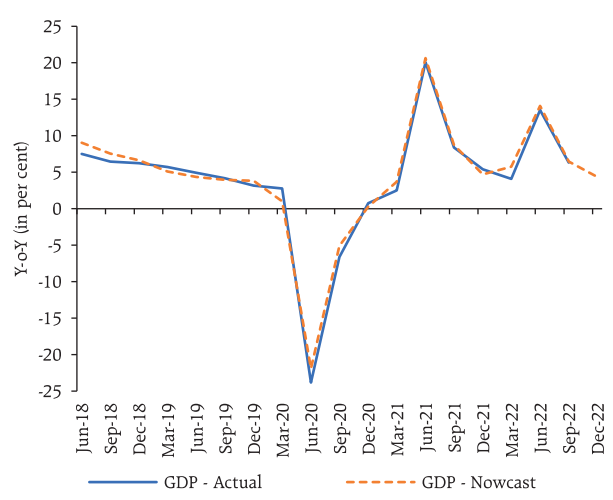
Chart 10: Economic Activity and GDP Nowcast

a: Economic Activity Index



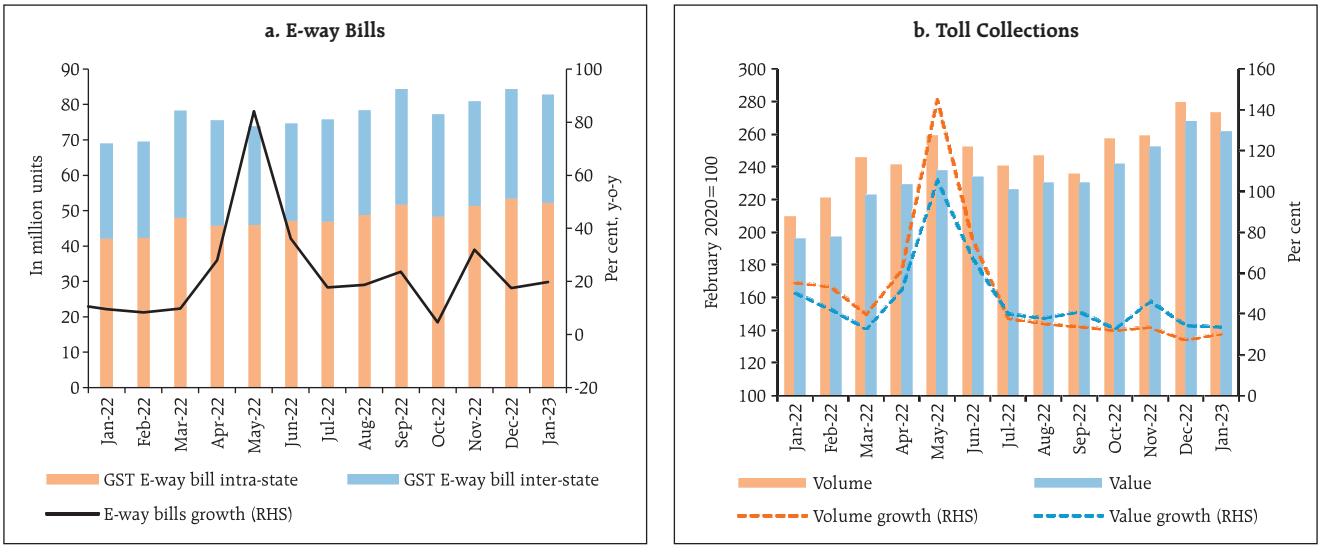
Note: The activity index is constructed by extracting the common trend underlying a set of high frequency indicators of economic activity using a Dynamic Factor Model (DFM). EAI is scaled to 100 for February 2020 and 0 for April 2020. Shaded regions represent periods when daily new confirmed cases exceeded 50,000.
Source: RBI staff estimates.

b: GDP – Actual and Nowcast



Sources: NSO; and RBI staff estimates.

Chart 11: E-way Bills and Toll Collections

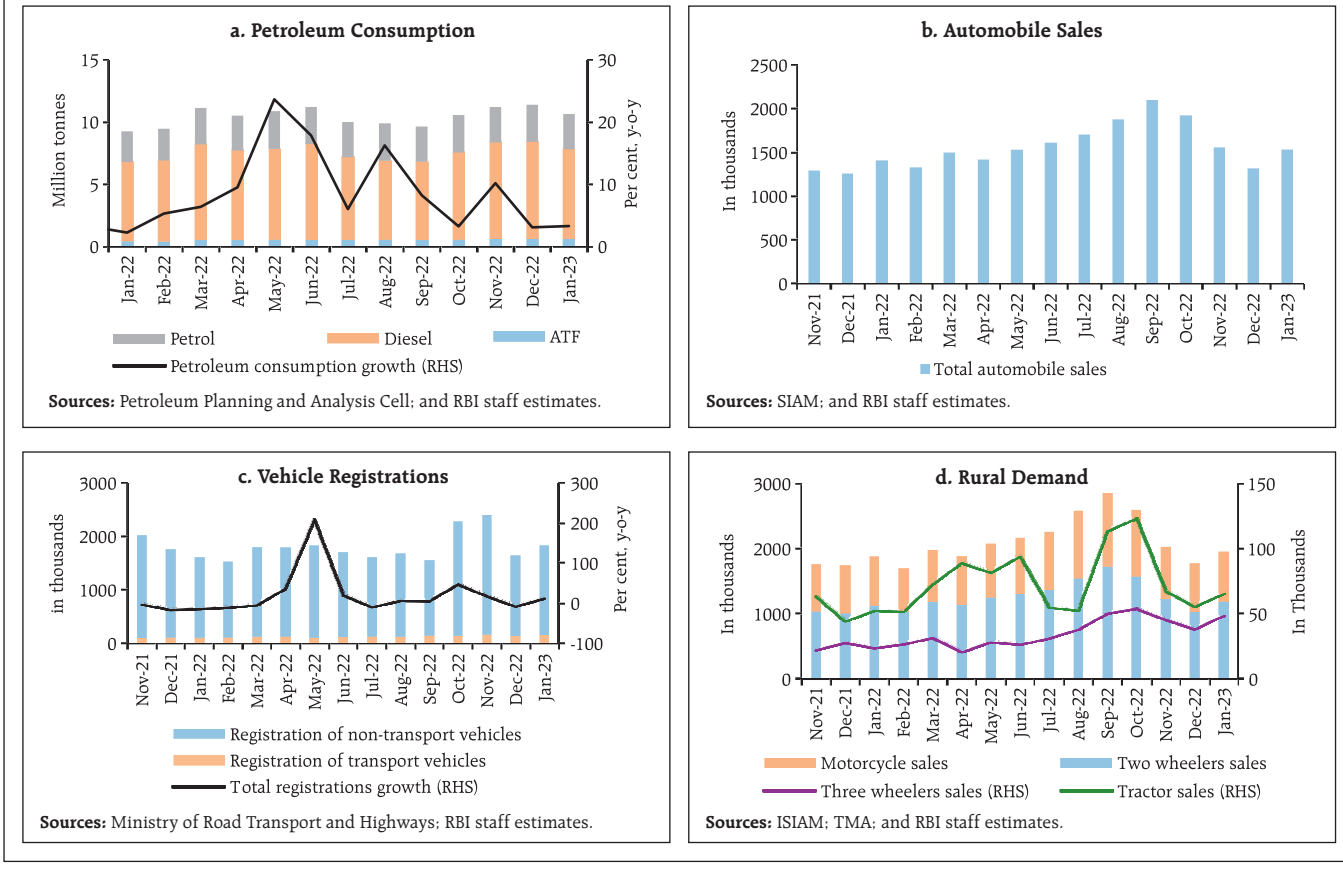


Sources: GSTN; RBI; and RBI staff estimates.

(RevPAR), increased after recording a dip in November (Chart 13).

Households' assessment and outlook for economic conditions reported in the Reserve Bank's

Chart 12: Automobile Sector Indicators



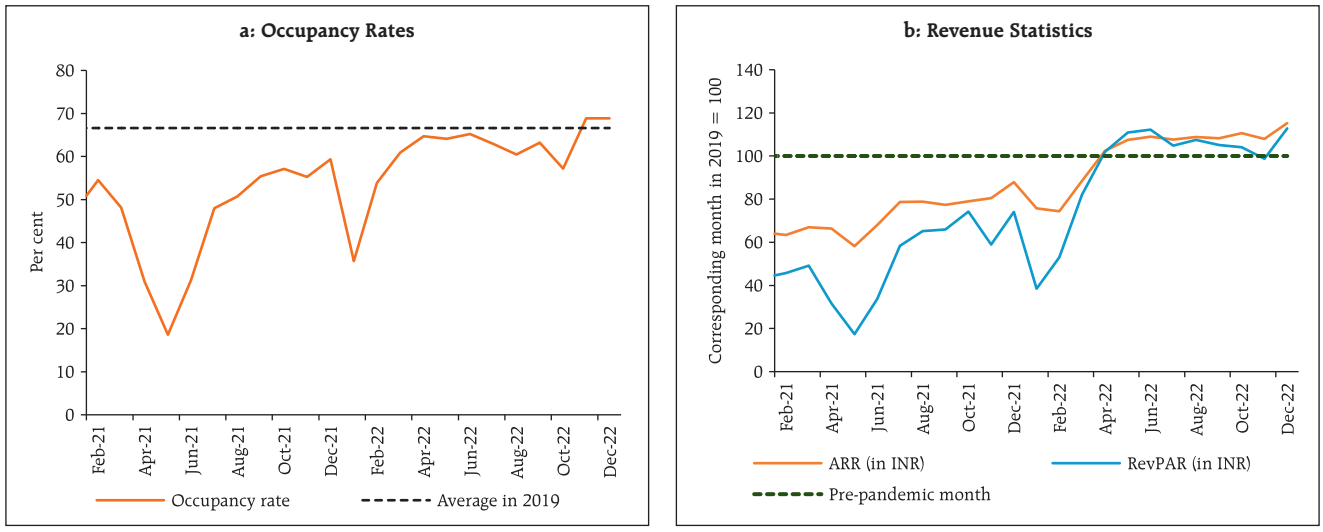
Sources: Petroleum Planning and Analysis Cell; and RBI staff estimates.

Sources: SIAM; and RBI staff estimates.

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

Sources: ISIAM; TMA; and RBI staff estimates.

Chart 13: Hotel Sector Indicators

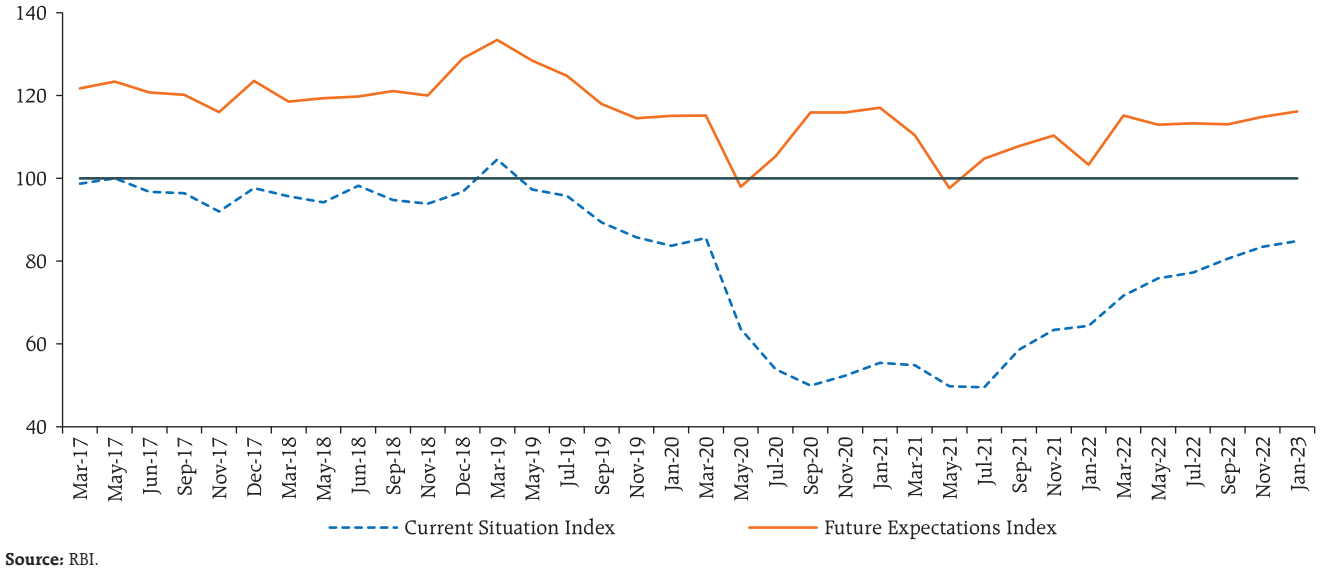


Note: ARR: Average room rate.
Sources: HVS Anarock; and RBI staff estimates.

Consumer Confidence Survey (CCS) point towards rising confidence reflected in the current situation index (CSI) as well as the future expectations index (FEI) over a one-year horizon (Chart 14).

Led by a relatively larger fall in urban unemployment, the all-India unemployment rate eased to 7.1 per cent in January 2023 from 8.3 per cent in December 2022 (Chart 15a). The labour force participation rate (LFPR), however, moderated to 39.8 per cent in January from 40.5 per cent in the previous month, with the employment rate (ER) stayed largely flat (Chart 15b).

Chart 14: Consumer Confidence Indices



Source: RBI.

Chart 15: Labour Market Conditions

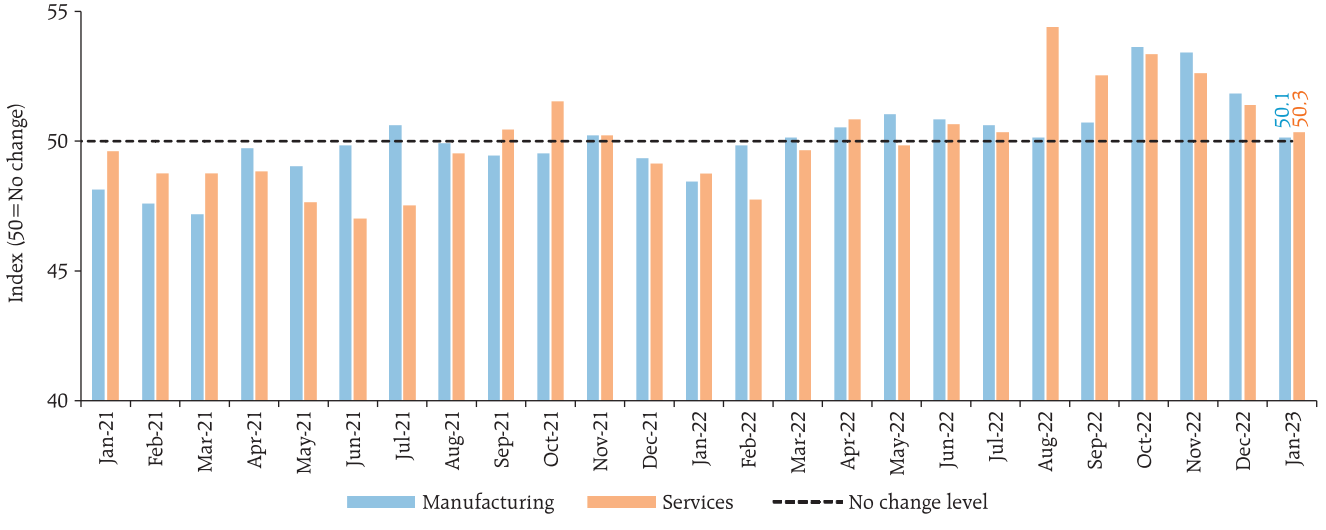
Source: CMIE.

PMI Employment Index remained broadly unchanged in January 2023 (Chart 16).

Demand for work under the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) declined on a y-o-y basis reflecting pick-up in labour demand in other activities especially *Rabi* sowing (Chart 17).

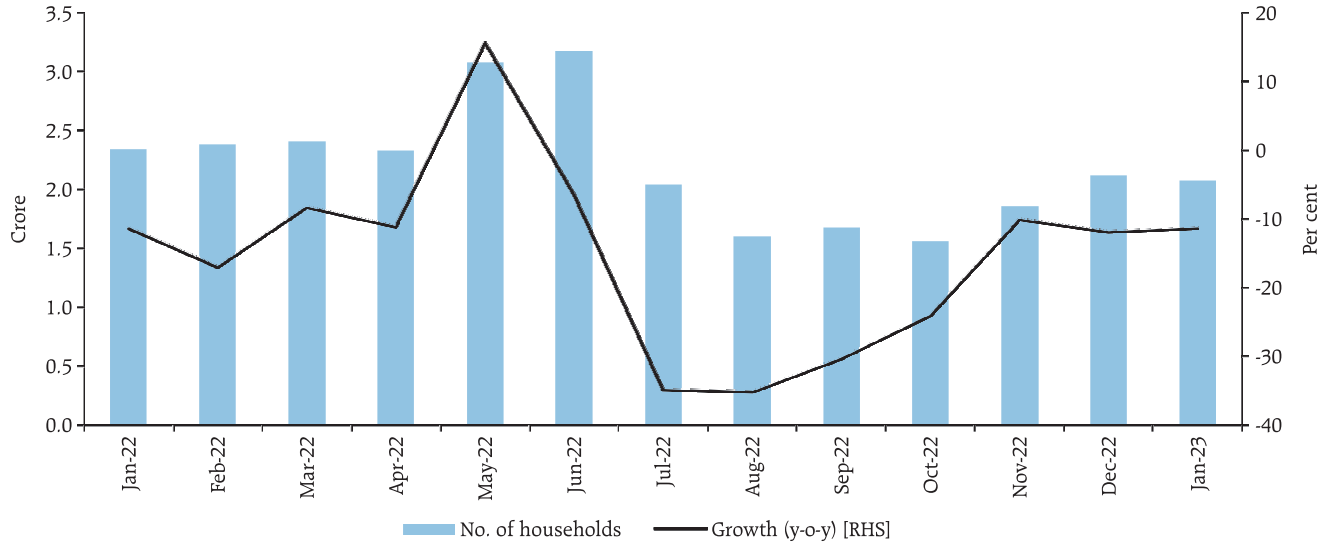
India's merchandise exports at US$ 32.9 billion in January 2023, recorded a contraction of 6.6 per cent y-o-y and 13.5 per cent on a sequential basis

Chart 16: PMI Employment Indices



Note: Purchasing managers' index (PMI) value of above 50 indicates expansion.
Source: S&P Global.

Chart 17: Demand for Work under MGNREGS



Source: Ministry of Rural Development.

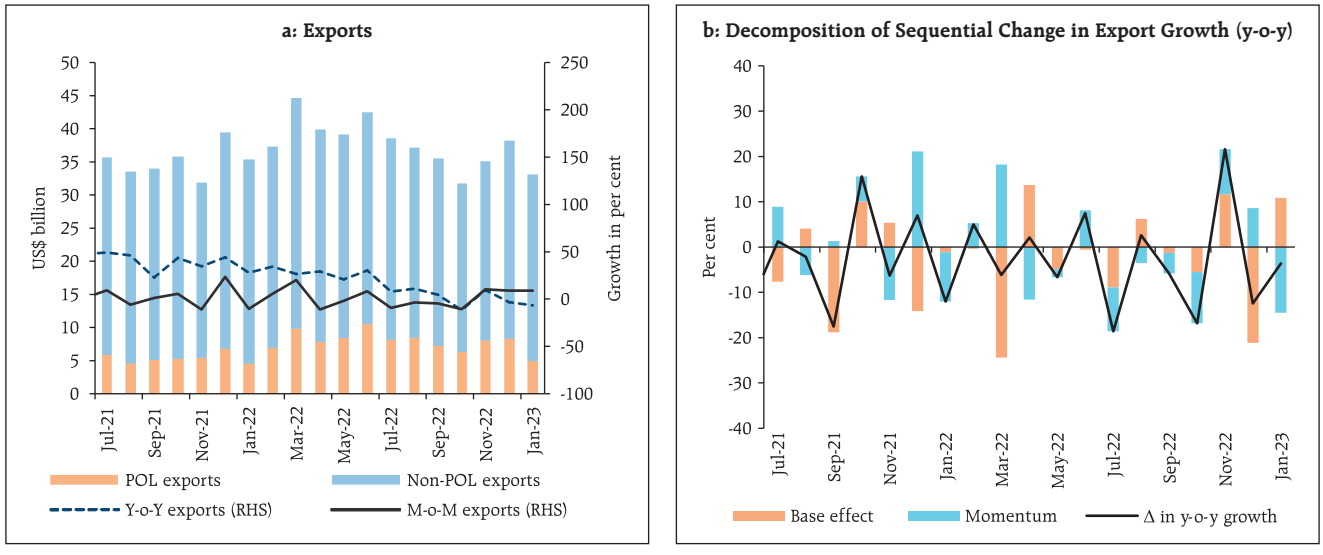
(Chart 18). During April-January 2022-23, cumulative merchandise exports grew by 8.5 per cent to reach US$ 369.3 billion.

Non-oil exports contracted by 8.7 per cent on y-o-y basis in January 2023, with engineering goods, gems and jewellery, and cotton yarn and fabrics accentuating the decline (Chart 19). On the other hand, petroleum products, electronic goods and rice contributed positively to overall exports.

India's services exports at US$ 31.3 billion expanded robustly at 20.4 per cent in December 2022 (US$ 26.0 billion in December 2021) on the back of earnings from software and travel services.

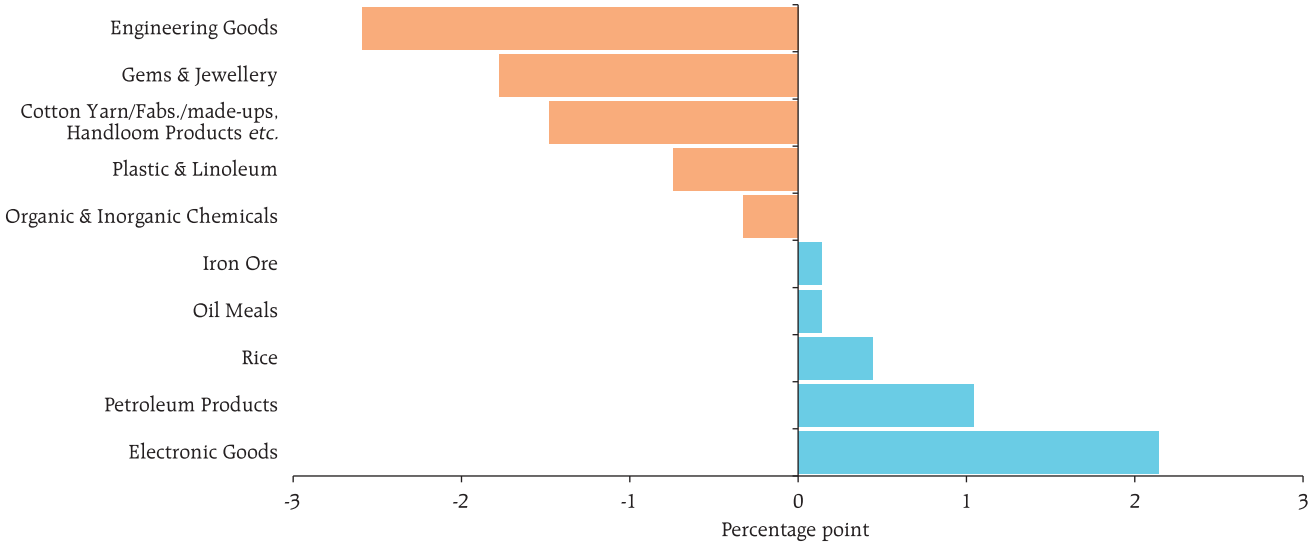
Merchandise imports at US$ 50.7 billion contracted by 3.6 per cent (y-o-y) in January 2023, partly reflecting the fall in prices of crude oil, certain fertilisers and vegetable oils. On a sequential basis, the decline in

Chart 18: Trend in Merchandise Exports of India



Source: DGCI&S.

Chart 19: India's Merchandise Exports – Relative Contributions (December 2022 over December 2021)

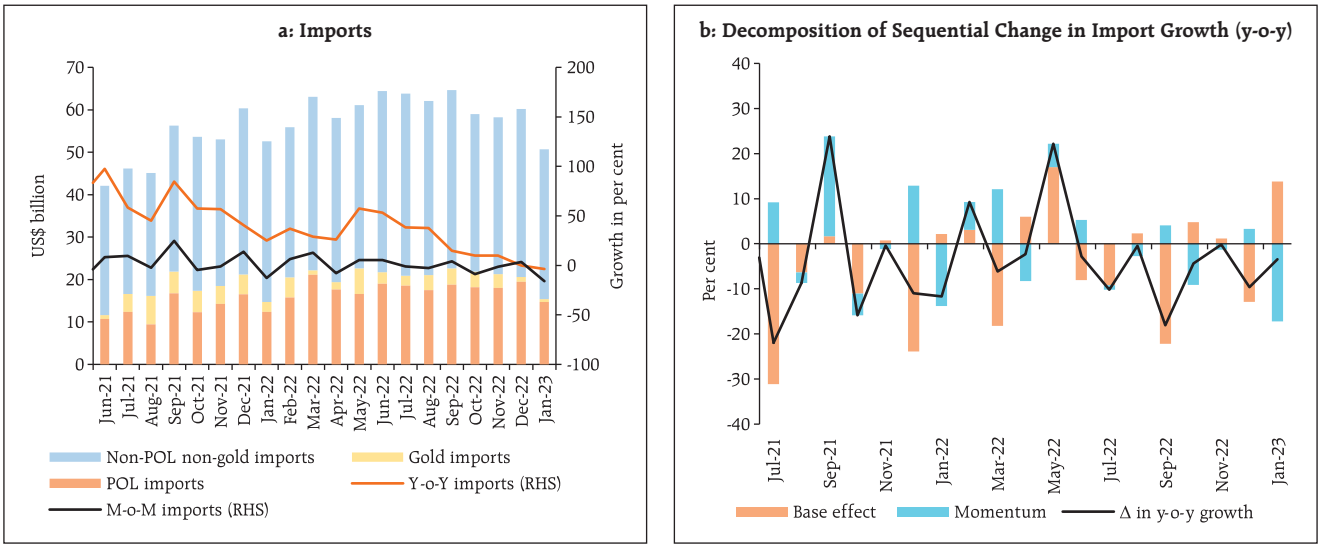


Source: DGCI&S.

imports was even sharper at 15.8 per cent (Chart 20). Gold, electronic goods and pearls and precious stones were the main items that dragged the imports down while petroleum, oil and lubricants (POL), iron and steel and project goods were the commodities that contributed positively (Chart 21).

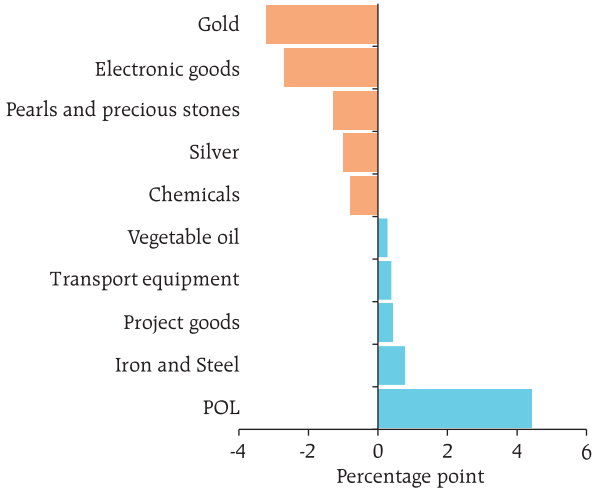
With international gold prices reaching a 9-month high in January 2023, India's gold imports fell to a 20-month low of US$ 697 million declining by 70.8 per cent (y-o-y). After remaining in expansionary zone for 25 consecutive months, non-oil non-gold (NONG) imports contracted by 6.7 per cent in January 2023.

Chart 20: Trend in Merchandise Imports of India



Source: DGCI&S.

Chart 21: India's Merchandise Imports – Relative Contributions (December 2022 over December 2021)

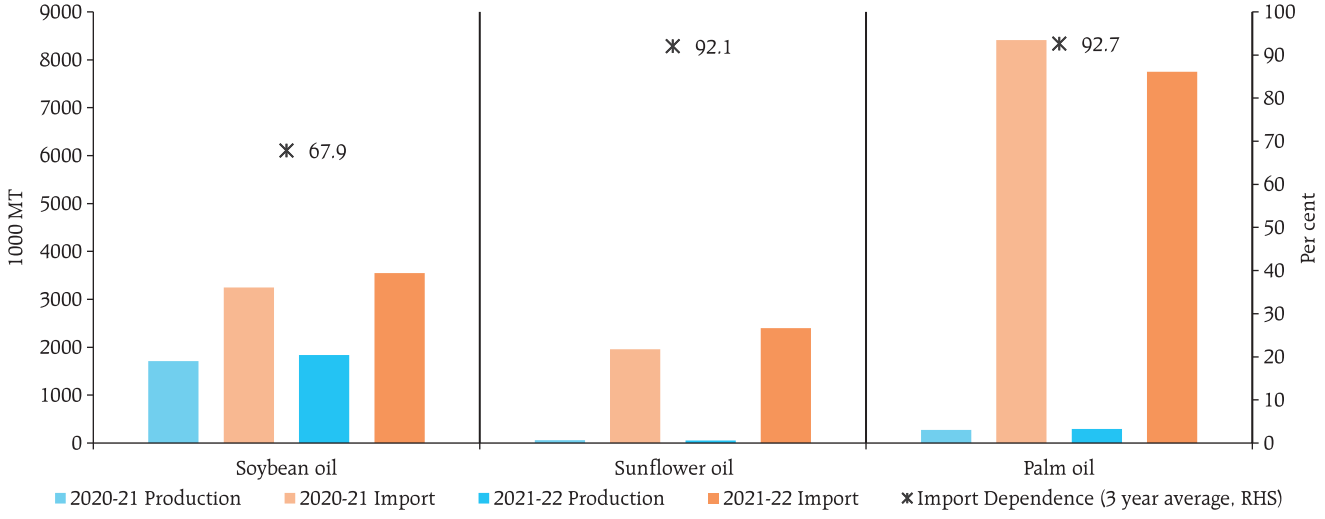


Source: DGCI&S.

Edible oils – for which India is heavily dependent on import[10] – recorded 28 per cent y-o-y growth in volume to reach 15.6 lakh metric tonnes (MT) in December 2022.[11] While palm oil constituted 71 per cent of edible oil imports, sunflower and soybean oil constituted the rest (Chart 22). International palm oil prices, however, jumped sharply in the second week of February after Indonesia, the world's largest exporter, indicated that some export permits will be suspended.[12] During November-December 2022, Indonesia was India's major supplier of refined bleached deodorised (RBD) palmolein and crude palm oil.[13]

On a positive note, mustard seed production is likely to hit a record in the 2022-23 crop year due to highest-ever sowing coverage of 9.8 million hectare and conducive weather conditions in key growing regions. As mustard oil has the largest share in domestic edible oil production, a bumper output of the crop could help reduce imports of other edible oils.[14] Also, the Government's 'National Mission on Edible Oils – Oil Palm', introduced in 2021, is aimed at reducing import

Chart 22: India's Edible Oil Import Dependence



Note: India's edible oils production and imports are for marketing year (October-September).
Source: US Department of Agriculture, Foreign Agricultural Service.

[10] Around 55 per cent of India's domestic demand for edible oil is met through imports.

[11] Solvent Extractors' Association of India.

[12] https://www.reuters.com/markets/commodities/indonesia-suspend-some-palm-oil-export-permits-senior-official-2023-02-06/

[13] Solvent Extractors' Association of India.

[14] https://www.agriwatch.com/newsdetails.php?st=NEWS&commodity_id=11&sid=631435

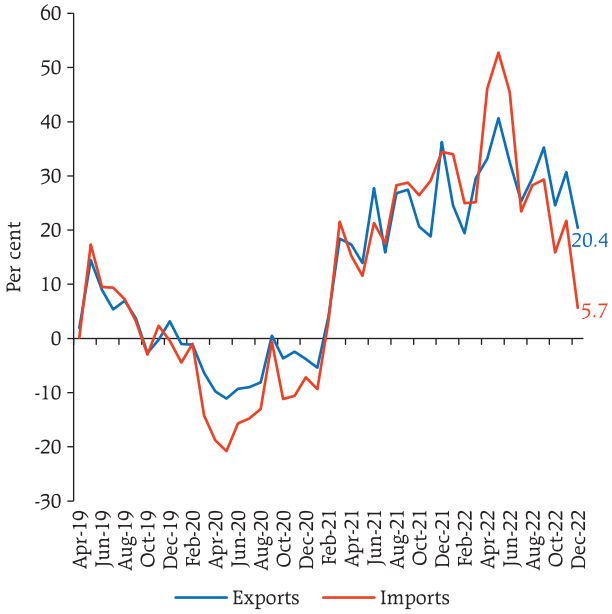
dependence on palm oil by increasing domestic crude palm oil production to 11.20 lakh MT by 2025-26 from 0.27 lakh MT in 2019-20. Due to a sharper decline in imports viz-a-viz exports, the merchandise trade deficit fell to a 12-month low of US$ 17.7 billion in January 2023.

Service imports at US$ 15.8 billion moderated on account of high base and a decline in transport services. Accordingly, net services earnings are estimated at US$ 15.5 billion for December 2022 (Chart 23).

The gross fiscal deficit (GFD) of the central government at 56.6 per cent of revised estimates (RE) during April-December 2022 was higher than in the corresponding period last year (47.7 per cent) due to a pickup in expenditure. Capital outlay grew by 17.6 per cent (y-o-y) while revenue expenditure recorded a modest growth of 9.3 per cent, leading to a marked improvement in the quality of spending (Chart 24).

Gross tax revenue grew by 12.5 per cent during April-December, with collections improving across the board except for excise duty (due to the cut in excise duty on petrol and diesel in May 2022). Direct and indirect taxes increased by 17.6 per cent and 7.2 per cent (y-oy), respectively (Chart 25). Non-tax revenues, however, contracted by 17.4 per cent. Non-debt capital receipts increased by 93.6 per cent (y-o-y), led by the successful initial public offer (IPO) of Life Insurance Corporation (LIC).

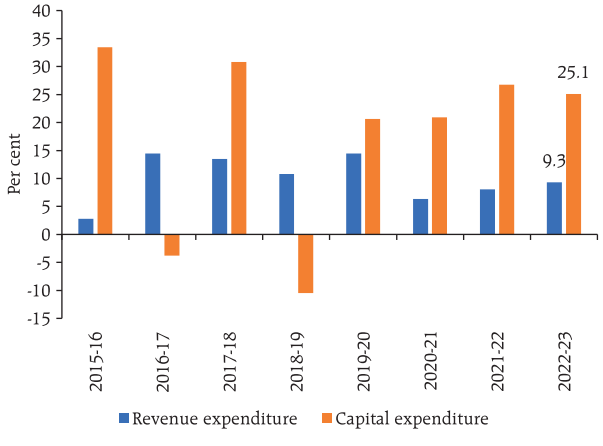
Chart 23: Services Exports and Imports



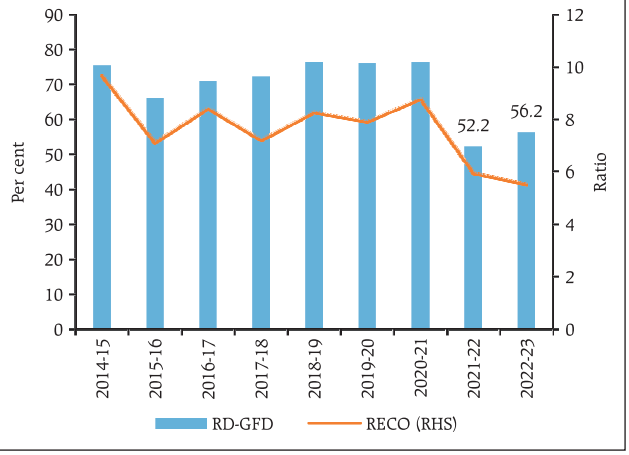
Source: RBI.

Chart 24: Trends in Government Expenditure

a: Expenditure Growth during April-December

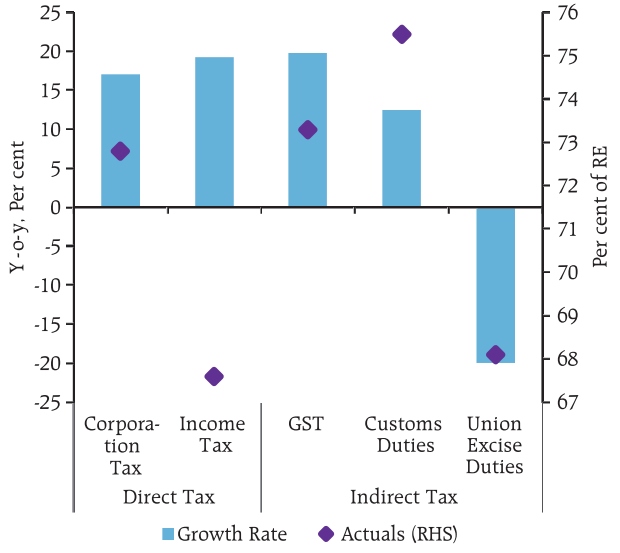


b: Quality of Expenditure during April-December



Notes: 1. RD-GFD: Ratio of revenue deficit to gross fiscal deficit (expressed in per cent terms).
2. RECO: Ratio of revenue expenditure to capital outlay.
Sources: Controller General of Accounts (CGA); and Union Budget Documents.

Chart 25: Tax Revenue during April-December



Sources: CGA; and Union Budget Documents.

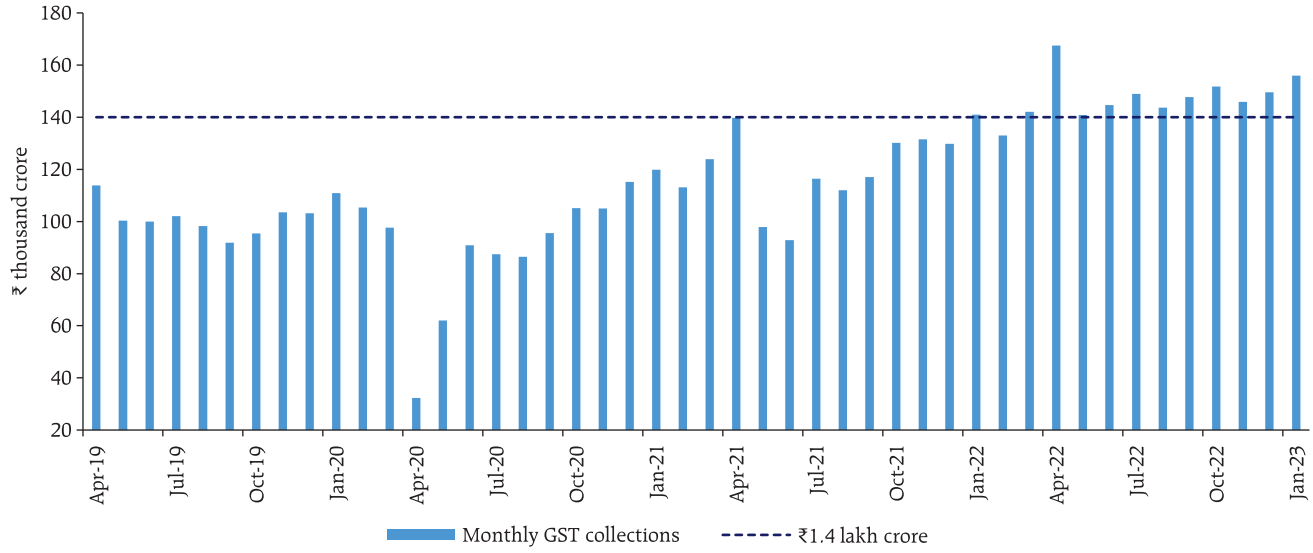
The GST collections (Centre *plus* States) grew by 10.6 per cent (y-o-y) in January 2023 to ₹1.55 lakh crore, highest since April 2022 (Chart 26).

The finances of the States have continued to improve, as reflected by the decline in budgetary deficits during April-November 2022 (Chart 27).[15]

Growth in revenue receipts remained robust, driven by the high growth in SGST collections and tax devolution from the Centre. The pace in the revenue expenditure has also been maintained. Capital expenditure picked up with a growth of 9.3 per cent (y-o-y) in the concerned period (Chart 28). This momentum in capex is expected to sustain in Q4:2022-23 with growth in tax devolution and increased offtake under the Special Assistance to States for Capital Investment 2022-23.

The Union Budget 2023-24 laid emphasis on infrastructure development focusing on capital expenditure which is expected to crowd-in private investment and strengthen job creation and demand. The government adhered to the budgeted fiscal target of 6.4 per cent of GDP in 2022-23 (as per revised estimate, RE). In absolute terms, however, the GFD surpassed budget estimates (BE) by ₹94,123 crore as the increase in revenue expenditure outweighed the increase in receipts. In 2023-24 (BE), the GFD is budgeted at 5.9 per cent of GDP, in line with the medium-term target of bringing GFD below 4.5 per cent by 2025-26.

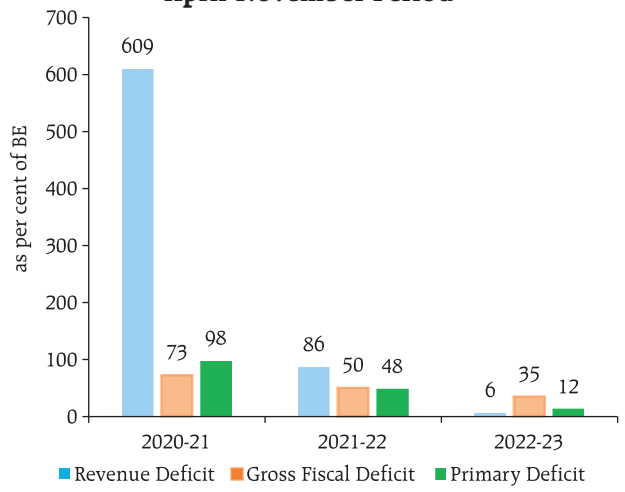
Chart 26: Monthly GST Revenue



Source: Press Information Bureau (PIB), Government of India (GoI).

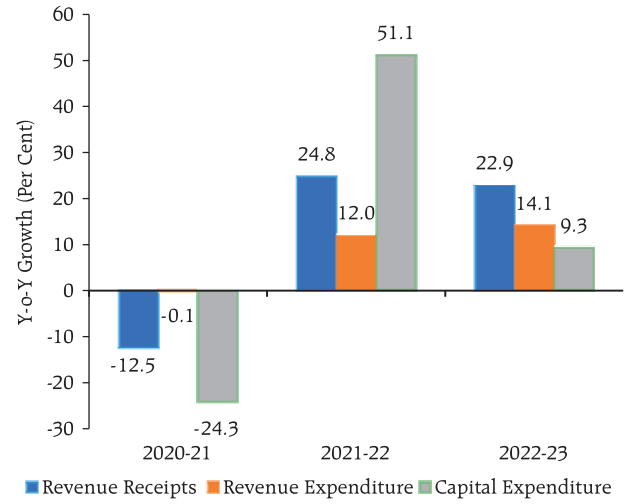
[15] The data pertains to 24 States.

Chart 27: Budgetary Deficits of the States during April-November Period



Note: The data pertains to 24 States.
Sources: Comptroller and Auditor General of India (CAG); and Budget documents of States.

Chart 28: Trends in Revenue and Expenditure of the States during April-November Period



Note: The data pertains to 24 States.
Source: Comptroller and Auditor General of India.

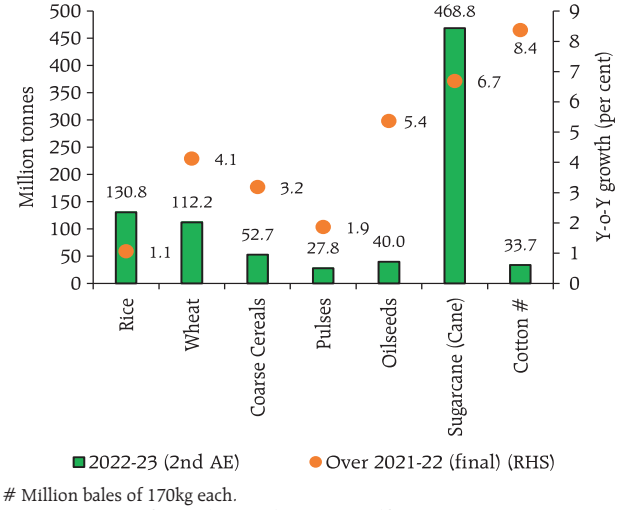
In 2023-24, capital expenditure is budgeted at ₹10 lakh crore which constitute 3.3 per cent of GDP. Effective capital expenditure, which includes capital expenditure of the Centre plus grants-in-aid to States for creation of capital assets, is budgeted at 4.5 per cent of GDP in 2023-24 (BE). By contrast, revenue expenditure is projected to grow by 1.2 per cent. Gross market borrowing through dated securities for 2023-24 is budgeted to increase by 8.6 per cent to ₹15.4 lakh crore while the net market borrowings at ₹11.8 lakh crore is budgeted to increase by 6.6 per cent during 2023-24.

The Union Budget 2023-24 fixed the States' gross fiscal deficit (GFD) limit at 3.5 per cent of gross state domestic product (GSDP), of which 0.5 will be tied to power sector reforms. The Centre has also decided to continue providing interest-free 50-year loans to the States with the enhanced allocation of ₹1.3 trillion during 2023-24 to augment their capital expenditure.

Aggregate Supply

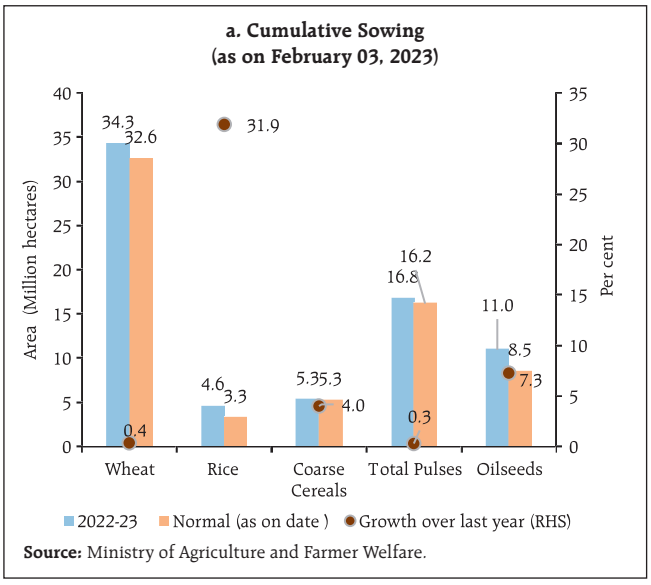
As per the second Advance Estimates (AE) of the agriculture crop production, total foodgrains production in India is projected to reach 323.6 million tonnes in 2022-23, representing a 2.5 per cent increase over the final estimates for 2021-22. The growth of *rabi* crops at 6.2 per cent has more than offset the decline of 1.2 per cent in *kharif* foodgrains production, resulting in a record production. Fresh production records are estimated for wheat (a *rabi* staple), maize, and pulses in the food crop category, as well as oilseeds and sugarcane among commercial crops. Cotton production has recorded the highest growth rate according to the AEs (Chart 29).

Chart 29: Agriculture Production in 2022-23 (2nd AE)

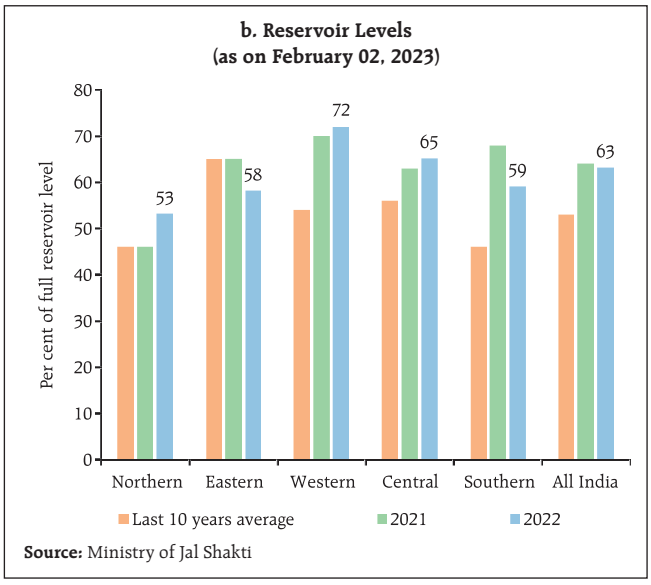


Million bales of 170kg each.
Source: Ministry of Agriculture and Farmers' Welfare.

Chart 30: *Rabi* Crops Sowing and Reservoir Status



Source: Ministry of Agriculture and Farmer Welfare.



Source: Ministry of Jal Shakti

The *Rabi* crop sowing season ended with a record acreage of 72.1 million hectares, with substantial increase under all the crops (Chart 30a). Reservoir levels remained comfortable (Chart 30b).

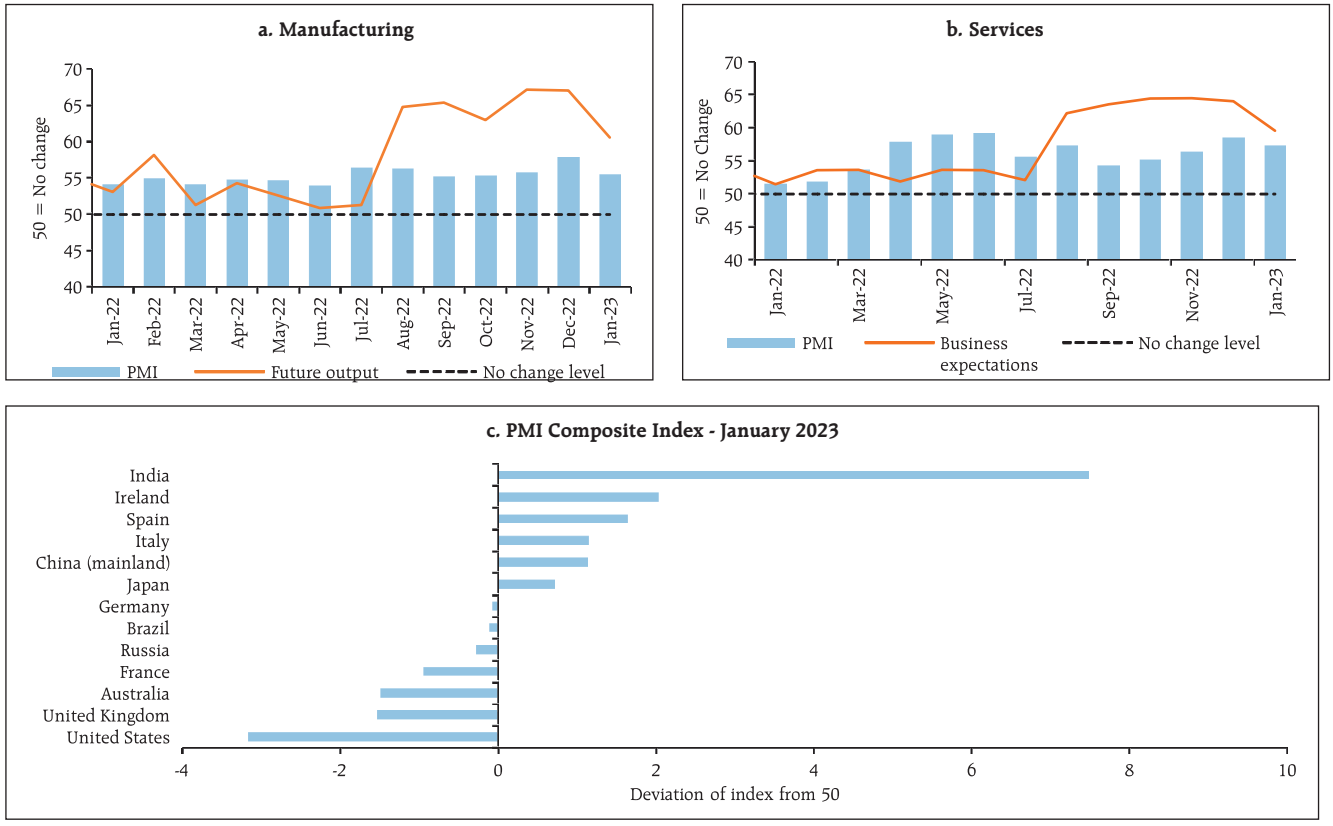
As on February 09, 2023 the cumulative rice procurement (including unmilled paddy) was marginally lower than a year ago, but *mandi* arrivals of paddy in the ongoing *Kharif* marketing season have been higher by 36.9 per cent y-o-y (as on February 09, 2023). As on February 01, 2023 public stocks of rice and wheat remained comfortable at 6.2 and 1.1 times of the buffer norms, respectively. On January 25, 2023 the Government announced the open market sale of 3 million tonnes of wheat through various channels from the central pool. Firstly, as on February 16, 2023. It has already sold 1.3 million metric tonnes of wheat through two e-auctions. Secondly, the Government has also allocated 3 lakh metric tonnes of wheat at a concessional rate to the PSUs/ cooperatives/ Federations, *Kendriya Bhandar* and NCCF/NAFED.

The Union Budget 2023-24 focused on wide-ranging reforms and policies in the agriculture and rural sectors including: (i) an increase in the production and consumption of millets; (ii) diversification and promotion of allied sectors; (iii) boosting logistics infrastructure for last-mile connectivity; (iv) thrust on agricultural exports; (v) cooperative-based development and growth; and (vi) strengthening agricultural extension through digital public infrastructure. The Government also intends to nurture an agri-tech start-up ecosystem through the Agriculture Accelerator Fund to promote innovation and entrepreneurship.

The headline PMI for manufacturing and services at 55.4 and 57.2, respectively, remained in expansionary zone in January 2023 despite a sequential blip (Chart 31a and 31b). The outlook for manufacturing and services remains buoyant, and above the historical average. A cross-country comparison shows that India had the highest PMI readings among major economies (Chart 31c).

Capacity utilisation in the manufacturing sector surpassed its long-term average in Q2:2022-23. Manufacturers expect further improvements

Chart 31: Purchasing Managers' Index (PMI)



Source: S&P Global.

in subsequent quarters. Firms in manufacturing, infrastructure and services sectors exude high optimism on demand conditions up to H1:2023-24, as reflected in the Reserve Bank's outlook surveys (Annex 1).

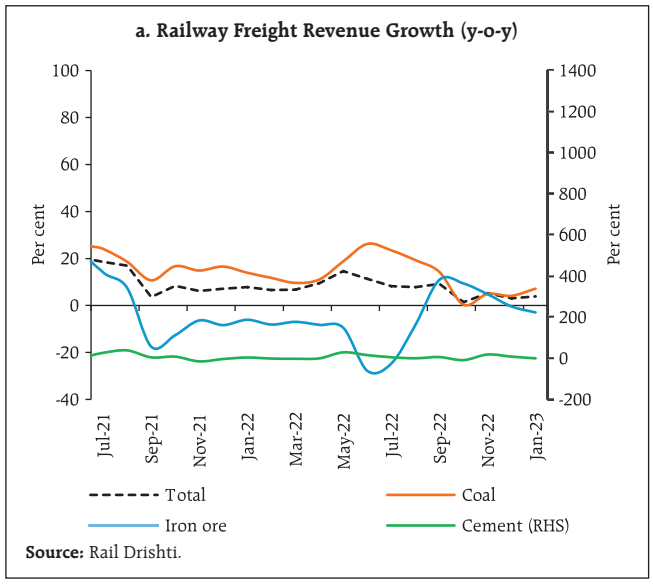
In the services sector, transport indicators recorded expansion, with railway freight earnings growing on both month-on-month (m-o-m) and y-o-y basis in January 2023 enabled by the Indian Railways' Hunger for Cargo initiative (Chart 32a). Cargo traffic at major ports gathered momentum in January due to an upturn in cargo of coking coal and containerised cargo (Chart 32b).

In the construction sector, steel consumption recorded y-o-y growth of 2.7 per cent in January 2023 as compared to 0.5 per cent a year ago. Growth in cement production decelerated over a high base (Chart 33).

High frequency indicators in the service sector point towards positive momentum continuing generally, except for international passenger movement and air cargo traffic (Table 2).

In terms of key policy initiatives at the State level, Tamil Nadu launched the Tamil Nadu Emerging Sector Seed Fund (TNESSF) aimed at providing investments for start-ups in emerging/sunrise sectors. West Bengal introduced a scheme offering various fiscal incentives to the textile sector. Odisha floated a global tender to disinvest 49 per cent of its

Chart 32: Railway and Cargo Traffic

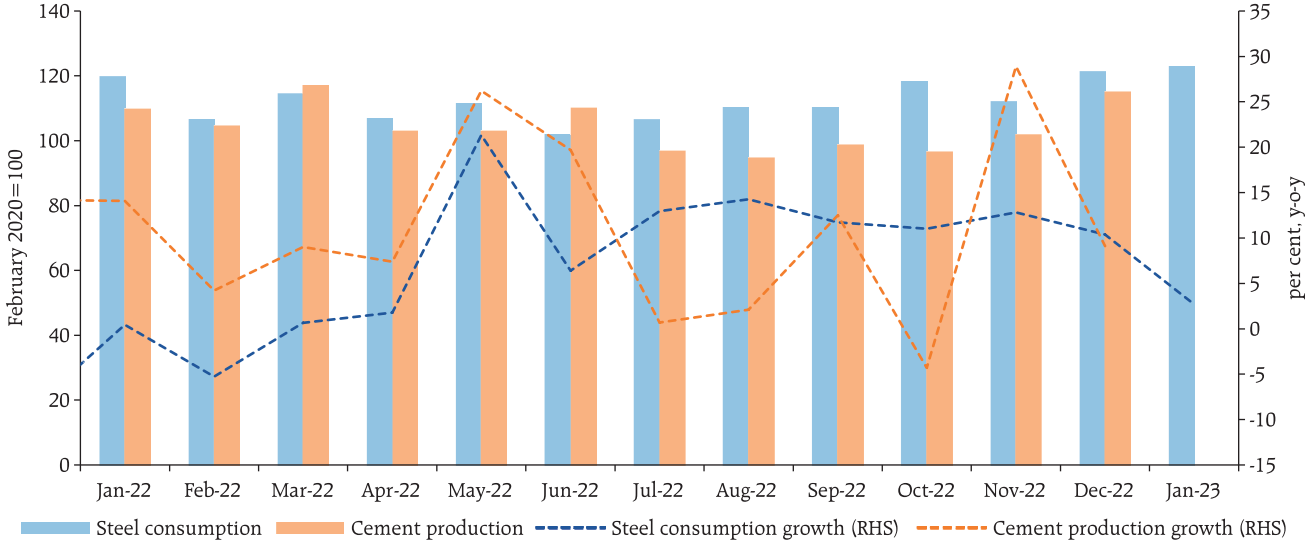


Source: Rail Drishti.

Source: Indian Ports Association.

stake in the Odisha Power Generation Corporation (OPGC). The Uttar Pradesh Government has approved a new scheme to facilitate development of private industrial parks in the State.

Chart 33: Steel Consumption and Cement Production



Sources: Joint Plant Committee; and Office of the Economic Advisor, Ministry of Commerce and Industry.

Table 2: High Frequency Indicators – Services

Services Growth (y-o-y, per cent)

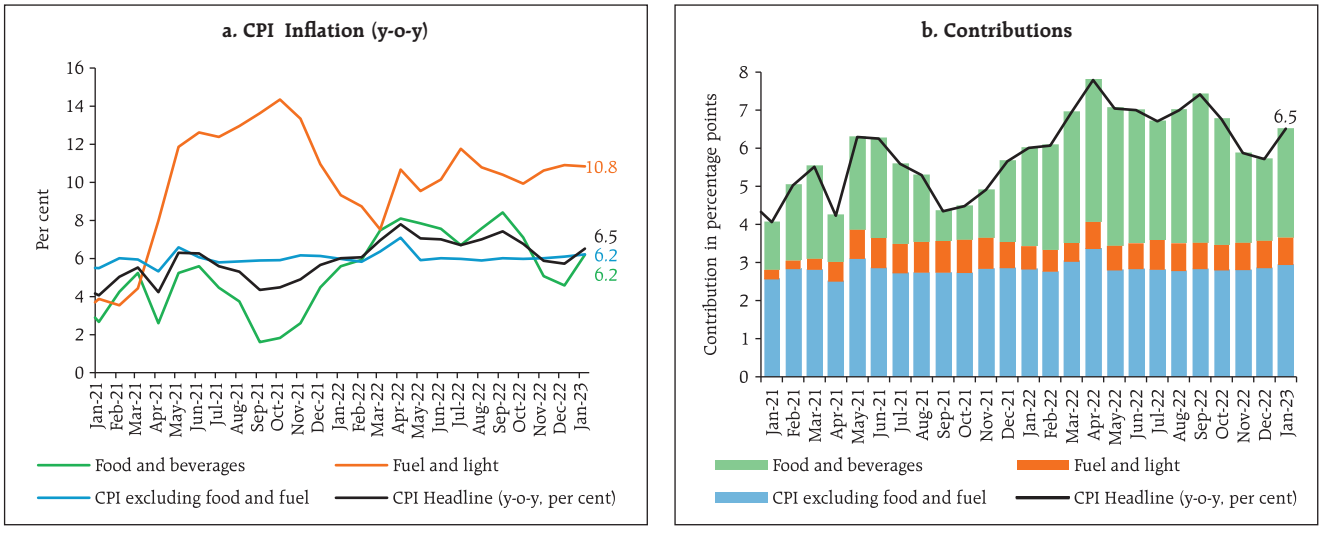
Sector	Indicator	Oct-22	Nov-22	Dec-22	Jan-23
Urban Demand	Passenger Vehicles Sales	28.6	28.1	7.2	17.2
Rural Demand	Two Wheeler Sales	2.3	16.5	3.9	5.0
	Three Wheeler Sales	70.4	103.2	37.6	103.0
	Tractor Sales	6.8	6.5	25.6	24.4
Trade, hotels, transport, communication	Commercial Vehicles Sales	16.6			
	Railway Freight Traffic	1.4	5.2	3.1	3.8
	Port Cargo Traffic	3.1	1.8	10.3	
	Domestic Air Cargo Traffic	-8.3	3.7	-3.6	
	International Air Cargo Traffic	-18.7	-6.0	-7.4	
	Domestic Air Passenger Traffic	30.4	12.6	14.6	
	International Air Passenger Traffic	115.0	97.5	85.9	
	GST E-way Bills (Total)	4.6	32.0	17.5	19.7
	GST E-way Bills (Intra State)	12.0	37.7	23.2	24.1
	GST E-way Bills (Inter State)	-5.9	23.1	8.6	12.8
	Tourist Arrivals	243.2	191.3	204.2	
Construction	Steel Consumption	11.0	12.8	10.3	2.7
	Cement Production	-4.3	28.9	9.1	
PMI Index	Services	55.1	56.4	58.5	57.2

Sources: CMIE; CEIC data; IHS Markit; SIAM; Airports Authority of India; and Joint Plant Committee.

Inflation

As per the provisional data released by the National Statistical Office (NSO) inflation – as measured by y-o-y changes in the all-India consumer price index (CPI) – increased sharply to 6.5 per cent in January 2023 from 5.7 per cent in December 2022 (Chart 34a). The index increased by 46 bps m-o-m, which along with an unfavourable

Chart 34: Trends and Drivers of CPI Inflation



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

base effect (m-o-m change in prices a year ago) of 30 bps, resulted in a rise in headline inflation by around 80 bps between December and January.

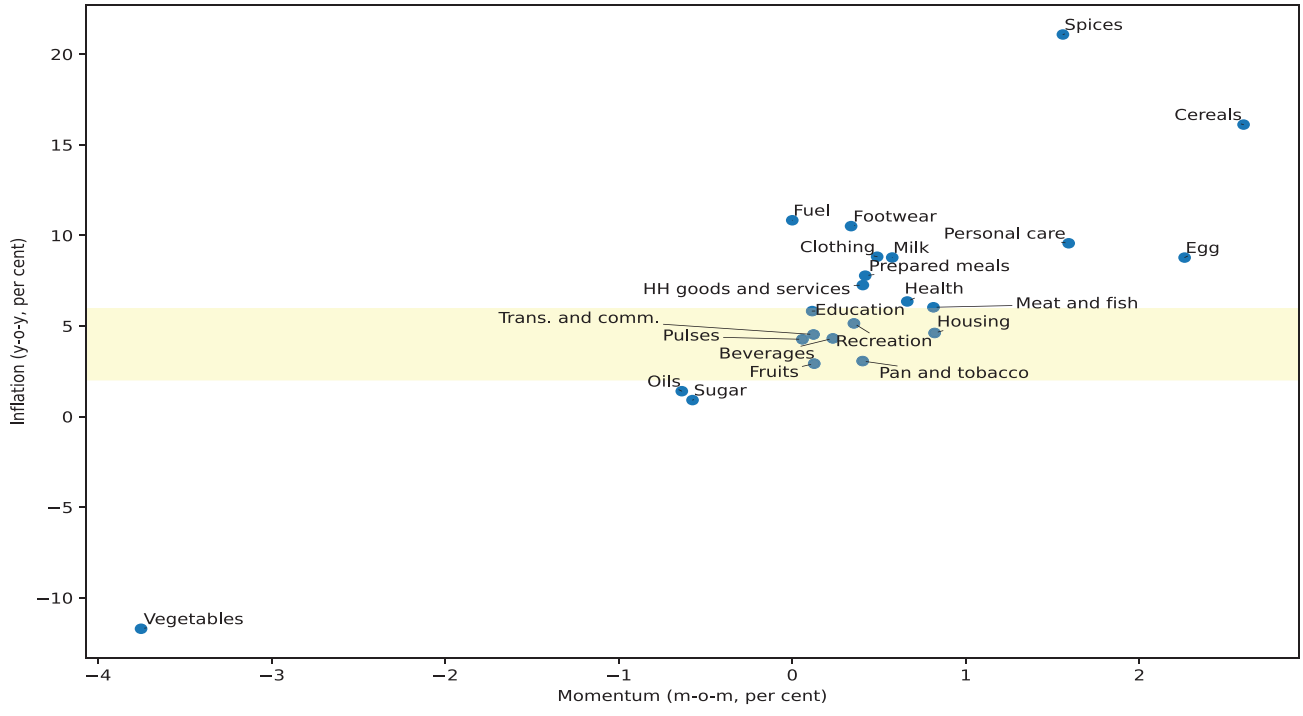
Price pressures mainly emanated from m-o-m increases in the food and beverages group (45 bps) and in the 'core' (CPI excluding food and fuel) group (52 bps). The index for fuel group, however, remained unchanged during the month.

CPI food inflation rose sharply to 6.2 per cent in January from 4.6 per cent a month ago (Chart 34b). Within the food group, inflation rose significantly in cereals to 16.1 per cent - the highest since June 2013 - and in spices, to 21.1 per cent - the highest in the current CPI series (Chart 35). Other sub-groups such as fruits, edible oils, sugar, protein-based food (pulses, eggs, meat, fish and milk), and non-alcoholic beverages posted increases in inflation during the month. Vegetables registered lower deflation in January 2023 *vis-à-vis* December 2022 (Chart 36).

Inflation in the fuel and light group softened marginally to 10.8 per cent in January from 10.9 per cent in December. While inflation in kerosene-PDS and electricity registered some moderation, liquefied petroleum gas (LPG) posted a higher order of price increase than a month ago. The fuel group with a weight of 6.8 per cent in the CPI basket contributed 11.3 per cent of headline inflation in January.

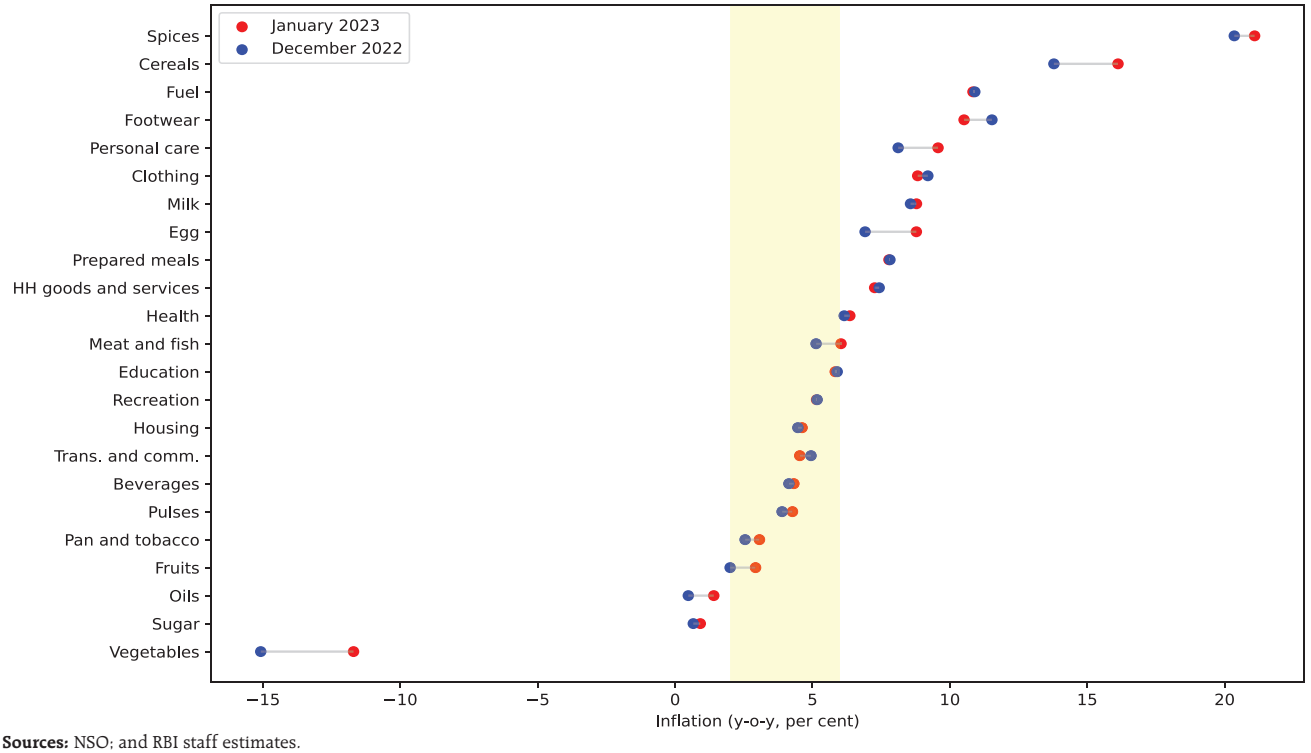
CPI core inflation increased to 6.2 per cent in January from 6.1 per cent in December driven by pick-up in inflation under sub-groups such as pan, tobacco and intoxicants, housing, health, and personal care and effects. On the other hand, clothing and footwear, household goods and services, transport and communication and education sub-groups witnessed a softening of inflation in January.

Chart 35: Annual Inflation (y-oy) and Momentum (m-o-m) across Sub-groups



Sources: NSO; and RBI staff estimates.

Chart 36: Annual Inflation across Sub-groups (January 2023 *vs* December 2022)



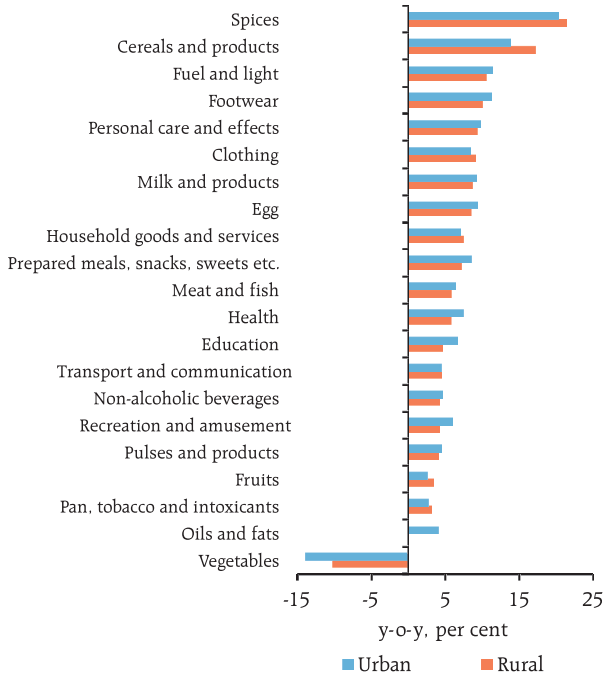
Sources: NSO; and RBI staff estimates.

Rural inflation at 6.85 per cent continued to outpace urban inflation (6.00 per cent) in January 2023. While inflation in cereals, fruits, clothing were higher in rural areas, milk, eggs, meat, and fuel and light registered higher inflation in urban centres (Chart 37).

Among States, Andhra Pradesh, Madhya Pradesh and Telangana experienced inflation in excess of 8 per cent whereas Chhattisgarh, Daman and Diu, Delhi, Goa, Himachal Pradesh, Manipur and Meghalaya recorded inflation below 4 per cent (Chart 38).

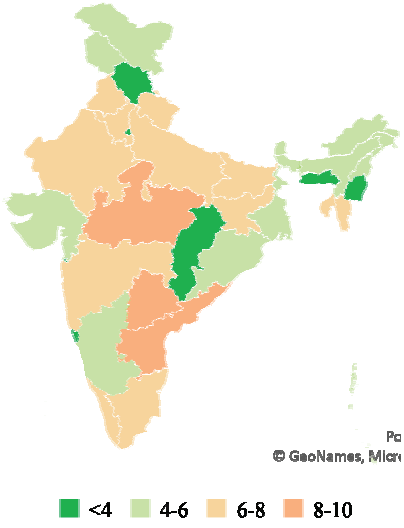
High frequency data on food prices for February 2023 (up to February 13) show that prices continued to increase for rice and wheat. Barring for moong, pulses prices edged down. Edible oil and vegetable prices continued to witness a decline in February (Chart 39).

Chart 37: Inflation in Select Items (Rural *versus* Urban)



Source: NSO.

Chart 38: Spatial Distribution of Inflation January 2023 (CPI- Combined, y-o-y)



Sources: NSO; and RBI Staff Estimates.

Table 3: Petroleum Products Prices

Item	Unit	Domestic Prices			Month-over-month (per cent)	
		Feb-22	Jan-23	Feb-23 ^	Jan-23	Feb-23
Petrol	₹/litre	102.87	102.92	102.92	0.0	0.0
Diesel	₹/litre	90.51	92.72	92.72	0.0	0.0
Kerosene (subsidised)	₹/litre	42.11	53.67	55.79	-9.0	4.0
LPG (non-subsidised)	₹/cylinder	910.13	1063.25	1063.25	0.0	0.0

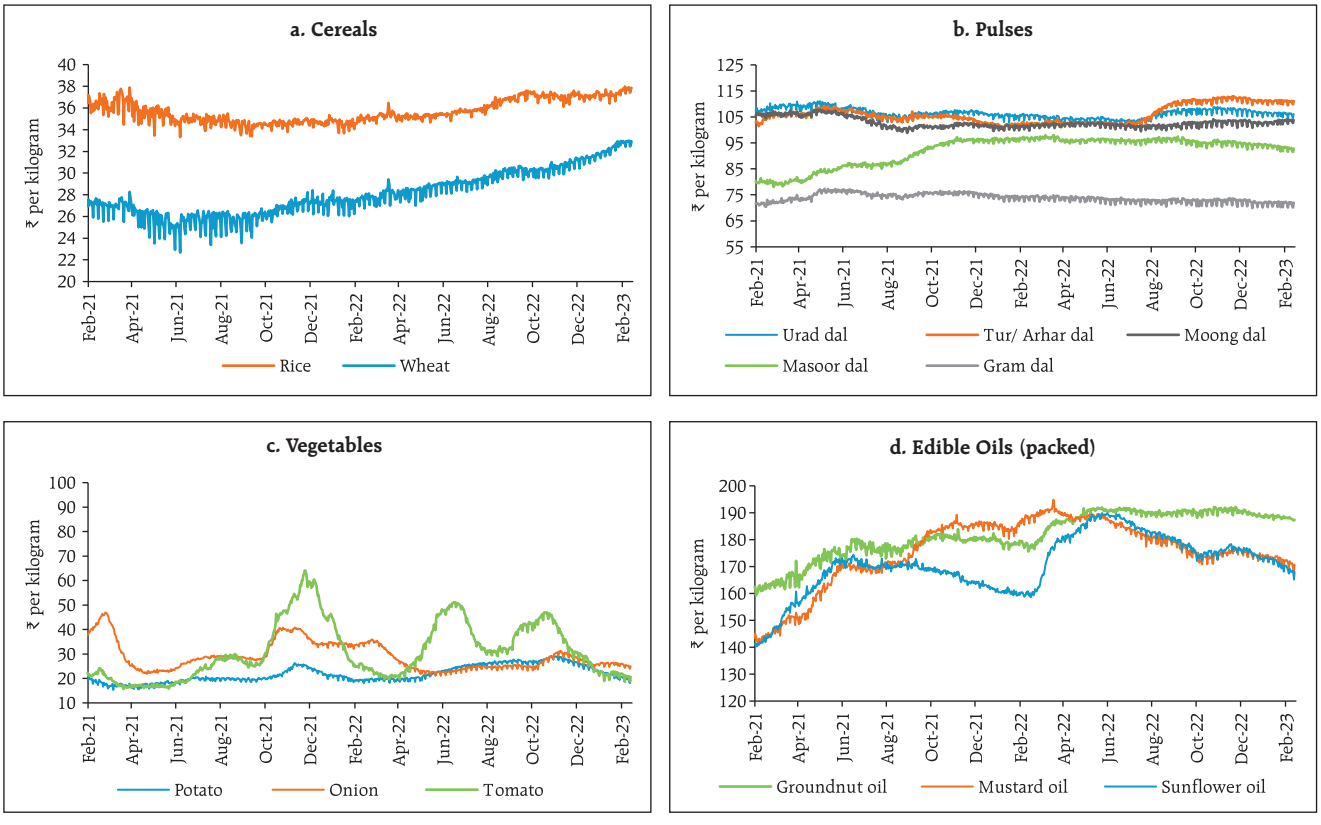
^ : For the period February 1-13, 2023.

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.

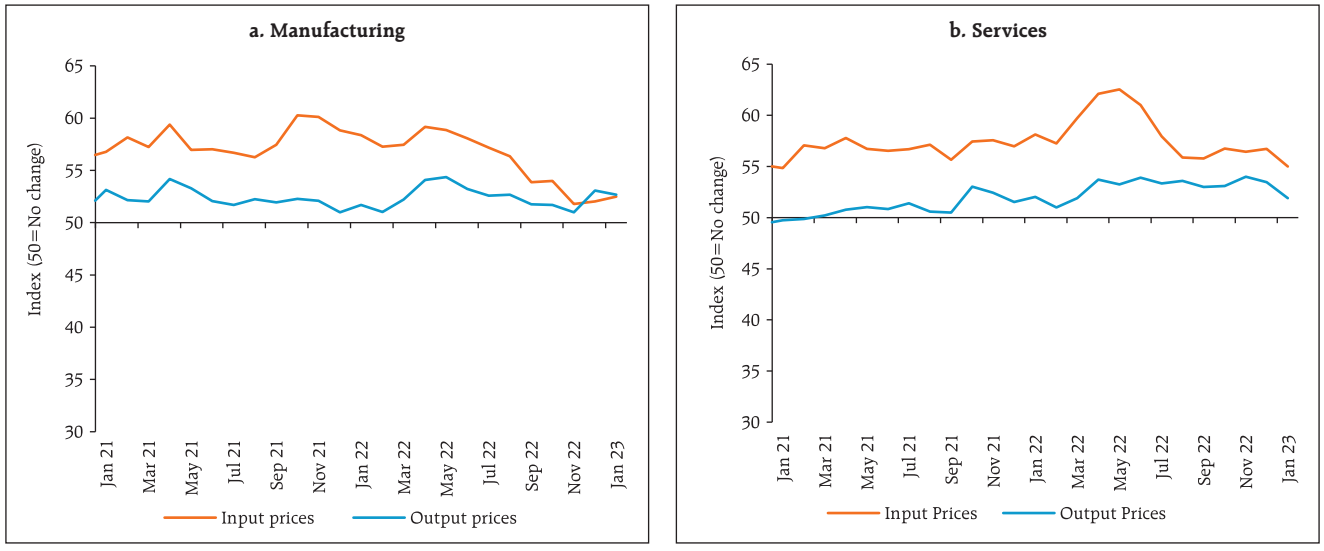
Retail selling prices of petrol and diesel in the four major metros remained steady in February so far. While LPG prices were kept unchanged, kerosene prices increased after declining sharply in January (Table 3).

Chart 39: DCA Essential Commodity Prices



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

Chart 40: PMI: Input and Output Prices



Source: S&P Global.

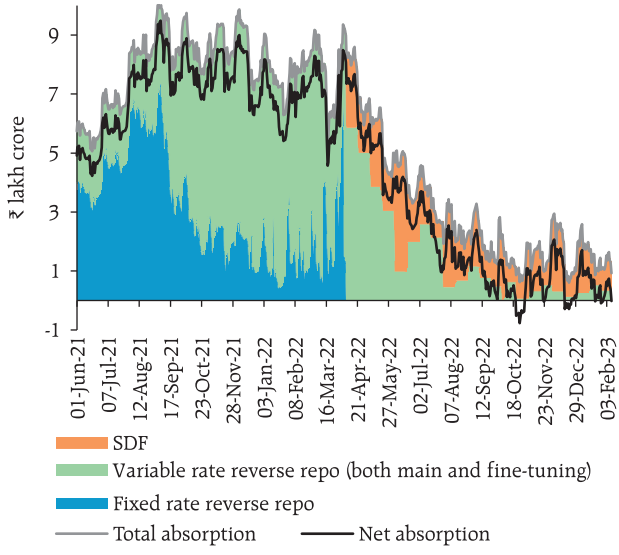
Input costs and selling prices, as reflected in the PMIs, remained in expansionary mode for both manufacturing and services (Chart 40), with the latter witnessing a sequential moderation in the pace of increase.

IV. Financial Conditions

Surplus liquidity moderated in the second half of January 2023 due to outlflows on account of GST collections[16], but government spending at the beginning of February expanded system liquidity again. Overall, average daily absorptions under the liquidity adjustment facility (LAF) narrowed to ₹1.3 lakh crore during January 16 through February 8, 2023 from ₹1.5 lakh crore during mid-December through January 15, 2023 (Chart 41). Of the daily average surplus liquidity during this period, ₹0.4 lakh crore was absorbed through the overnight standing deposit facility (SDF), while the remaining was mopped up through variable rate reverse repo (VRRR) auctions.

Declining surplus liquidity prompted some banks to access the marginal standing facility (MSF), which averaged ₹0.06 lakh crore during the same period. Banks resorting to the MSF in the backdrop of large placement of surplus funds under the SDF is reflective of skewed liquidity distribution in the system. On a net

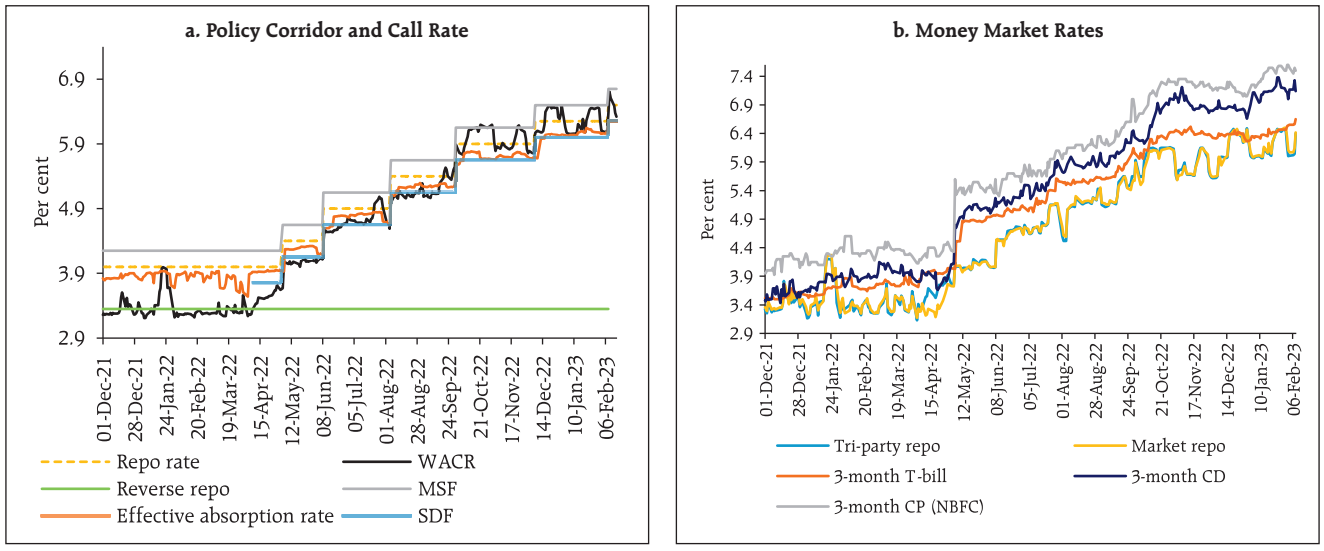
Chart 41: Liquidity Conditions



Source: RBI.

[16] The monthly GST collections of January 2023 at ₹1.56 lakh crore was second highest after ₹1.68 lakh crore in April 2022.

Chart 42: Policy Corridor and Money Market Rates



Sources: RBI; Bloomberg; and RBI staff estimates.

basis (adjusted for injections through repo and MSF), average absorption declined to ₹0.34 lakh crore during the period under review from ₹0.51 lakh crore in the preceding period with net LAF slipping intermittently into deficit mode. The amount parked under the fortnightly VRRR auctions was also lower at ₹0.35 lakh crore for the fortnight beginning January 27, 2023 (₹0.52 lakh crore during the previous auction).

Amidst moderating surplus liquidity conditions and upcoming maturity of long term repo operations, the Reserve Bank, for the first time under the revised liquidity framework, conducted 14-day variable rate repo (VRR) operation on February 10, 2023 for which bids received amounted to ₹1.34 lakh crore, as agianst the notified amount of ₹0.50 lakh crore. Going ahead, the likely increase in government spending as evident from the revised estimates for 2022-23 presented in Union Budget 2023-24 would help offset the expected liquidity drainage from the usual expansion in currency in circulation during February -March and the maturity of LTRO and TLTRO (partially) during March-April 2023.[17]

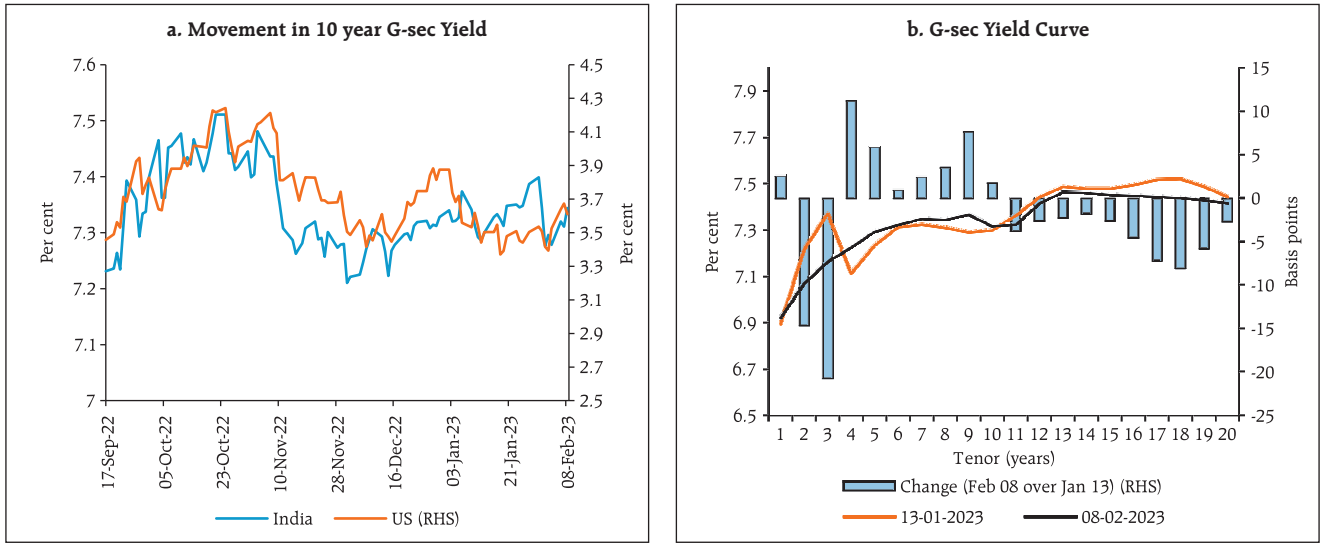
[17] ₹13,517 crore will mature in February-March 2023 and ₹61,131 crore will mature in April 2023.

The weighted average call rate (WACR) briefly touched the upper bound of the LAF corridor towards the end of January 2023, but softened thereafter. During the period under review, the WACR averaged 6.28 per cent, trading (on an average) close to the policy repo rate (Chart 42a). Activity in the call market picked up, with average daily volume at ₹14,420 crores during January 16 through February 8, 2023, up from ₹11,343 crore during December 13, 2022 to January 15, 2023.

Concomitantly, rates in the collateralised segment also firmed up – while the triparty repo rate traded 4 bps below the policy repo rate, market repo rates traded close to the policy repo rate. Across the term money segment, the rate on 3-month treasury bill (T-bill) traded 7 bps below the MSF rate while the 3-month rates for certificates of deposit (CDs) and commercial papers (CPs) for NBFCs ruled 67 bps and 102 bps, respectively, above the MSF rate (Chart 42b).

In the primary market, fund mobilisation through CD issuances was robust at ₹5.2 lakh crore during the year so far (up to January 13), higher than ₹1.3 lakh crore for the corresponding period last year, reflecting banks' additional demand for funds on account of

Chart 43: Developments in the G-sec Market



Sources: Bloomberg; CCIL; and RBI staff estimates.

buoyant credit offtake. CP issuances declined to ₹10.9 lakh crore during the year so far (up to January 15) from ₹17.2 lakh crore in the corresponding period last year, with recourse to bank credit emerging as the preferred mode of funds mobilisation. The average risk premia in the money market (3-month CP *minus* 91-day treasury bill) remained elevated at 110 bps during this period, reflecting the moderation in surplus liquidity.

The 10-year benchmark g-sec yield eased in response to the commitment to fiscal consolidation in the Union Budget 2023-24 and the announcement of lower than anticipated gross market borrowings (Chart 43a). After peaking at an intra-day high of 7.40 per cent, the benchmark yield eased to 7.28 per cent by the end of the trading session on the budget announcement day, *i.e.*, February 1, 2023. Subsequently, the G-sec yield exhibited a hardening bias in tandem with US treasury yields and closed at 7.34 per cent. Across the term structure, g-sec yields moderated sharply at the short end of the yield curve, which is indicative of lower rate hike expectations, going forward (Chart 43b).

Corporate bond yields and spreads hardened across rating categories, particularly for 3-5 years maturities where issuances are mostly concentrated (Table 4). Funds mobilised through corporate bond

Table 4: Financial Markets - Rates and Spread

Instrument	Interest Rates (per cent)			Spread (bps) (Over Corresponding Risk-free Rate)		
	Dec 13, 2022 – Jan 15, 2023	Jan 16, 2023 – Feb 07, 2023	Variation (in bps)	Dec 13, 2022 – Jan 15, 2023	Jan 16, 2023 – Feb 07, 2023	Variation (in bps)
1	2	3	(4 = 3-2)	5	6	(7 = 6-5)
Corporate Bonds						
(i) AAA (1-year)	7.87	7.87	0	91	88	-3
(ii) AAA (3-year)	7.77	7.79	2	59	62	3
(iii) AAA (5-year)	7.76	7.86	10	40	52	12
(iv) AA (3-year)	8.49	8.49	0	130	132	2
(v) BBB-(3-year)	12.14	12.13	-1	496	497	1

Note: Yields and spreads are computed as monthly averages.
Sources: FIMMDA; and Bloomberg.

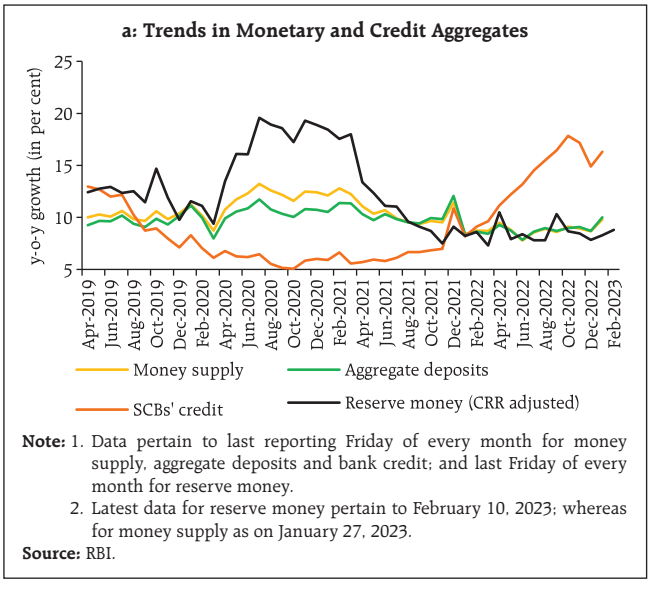
issuances increased to ₹1.37 lakh crore during December from ₹0.77 lakh crore in November 2022. The average risk premia in the bond market (5 year AAA *minus* 5 year g-sec) firmed up to 52 bps during January 16 through February 8, 2023 from 40 bps during December 13, 2022 to January 15, 2023.

Reserve money (RM) excluding the first-round impact of change in cash reserve ratio (CRR) grew by 8.8 per cent (y-o-y) as on February 10, 2023 (7.7 per cent a year ago) [Chart 44a]. Currency in circulation (CiC), the largest component of RM, grew by 8.15 per cent (8.2 per cent last year). Money supply (M3) grew by 9.8 per cent as on January 27, 2023 (8.4 per cent last year), primarily driven by its largest component - aggregate deposits with banks - which grew by 10.0 per cent. Scheduled commercial banks' (SCBs') credit growth remained resilient at 16.3 per cent as on January 27, 2023 (8.2 per cent last year). With the pick-up in deposit mobilisation, the incremental C-D ratio has moderated since mid-December 2022 (Chart 44b).

Banks have revised their external benchmark-based lending rates (EBLRs) upwards by a magnitude of 225 bps during May 2022 to January 2023. The 1-year median marginal cost of funds-based lending rate (MCLR) of SCBs has increased by 120 bps. Consequently, the weighted average lending rates (WALR) on fresh and outstanding rupee loans of SCBs increased to 137 bps and 80 bps, respectively, during May-December 2022. The weighted average domestic term deposit rate (WADTDR) on outstanding deposits of SCBs increased by 75 bps during the same period (Table 5).

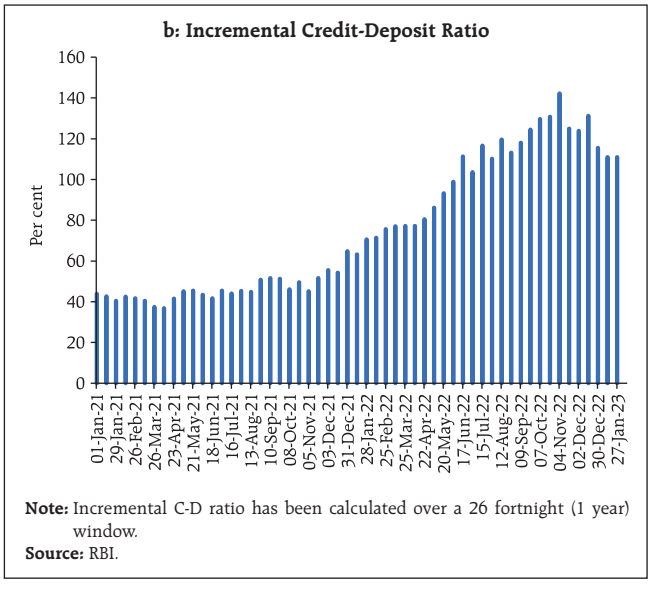
The Government of India revised the rates on various small savings schemes for Q4:2022-23 in the range of 20 to 110 bps on December 30, 2022, with the highest increase in time deposits (Chart 45). The interest rates on post office term deposits of up to 3-year tenor are now closely aligned with formula-based rates. A new scheme, *i.e.*, *Mahila Samman* Savings Certificate, was announced in the Union Budget 2023-24 which would offer a deposit facility up to ₹2 lakh for a tenor of 2 years at a fixed interest rate of 7.5 per cent for female depositors. The term deposit rates offered by banks are, in general, lower than those on small savings deposits of similar maturity for up to 3-year tenor.

Chart 44: Monetary and Credit Conditions



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 February 10, 2023; whereas for money supply as on January 27, 2023.

Source: RBI.



Note: Incremental C-D ratio has been calculated over a 26 fortnight (1 year) window.

Source: RBI.

Table 5: Transmission to Banks' Deposit and Lending Rates

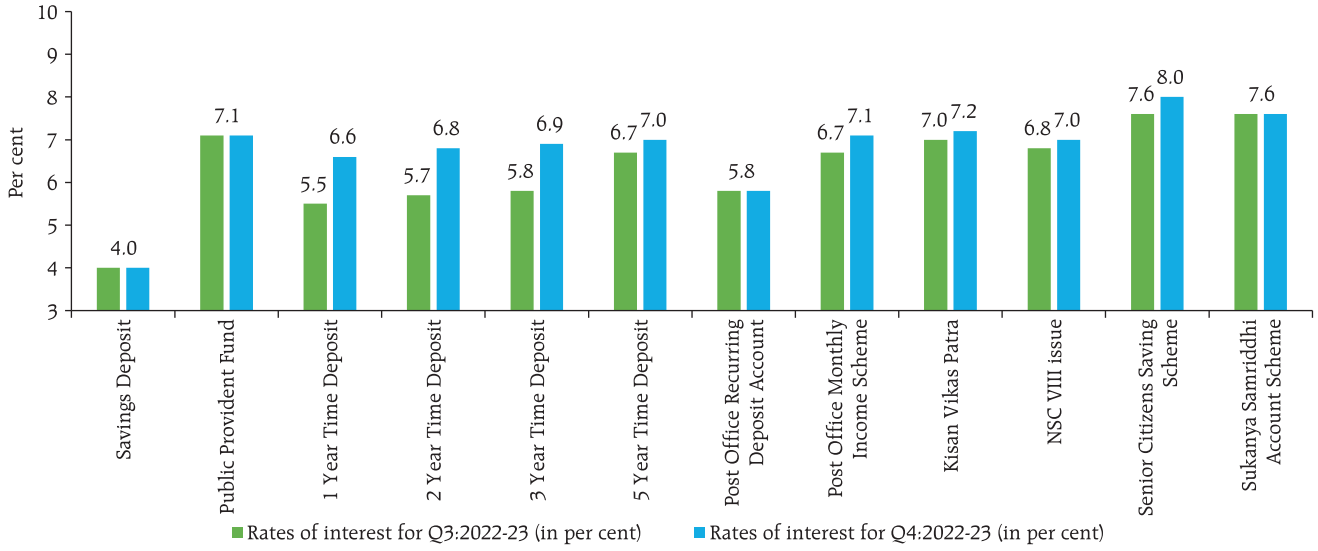
(Variation in basis points)

Period	Repo Rate (bps)	Term Deposit Rates (bps)		Lending Rates (bps)		
		Median Term Deposit Rates (Card Rate)	WADTDR-Outstanding Deposits	1-Year MCLR (Median)	WALR - Fresh Rupee Loans	WALR-Outstanding Rupee Loans
Easing Cycle Feb 2019 to Mar 2022	-250	-208	-188	-155	-232	-150
Tightening Period May 2022 to Jan* 2023	+225	78	75	120	137	80

Note: * Latest data on WALRs and WADTDR pertain to December 2022.
WALR: Weighted Average Lending Rate. WADTDR: Weighted Average Domestic Term Deposit Rate;
MCLR: Marginal Cost of Funds-based Lending Rate.
Source: RBI.

After remaining rangebound in the first half of January 2023, domestic equity markets initially moved higher in the second half, tracking the reduction in windfall tax on crude oil. Sentiments turned negative towards the end of the month, following the unusual price movement in the stocks of a business conglomerate. Overall, with FPIs turning net sellers, the BSE Sensex declined by 2.1 per cent during January 2023 (Chart 46). Nevertheless, the Union Budget 2023-24 announcements relating to increase in capital expenditure and select direct tax reliefs[18], statements by financial sector regulators re-affirming soundness of domestic financial and macroeconomic conditions helped boost market sentiments. The BSE Sensex gained 2.9 per cent during February 2023 (up to February 15, 2023).

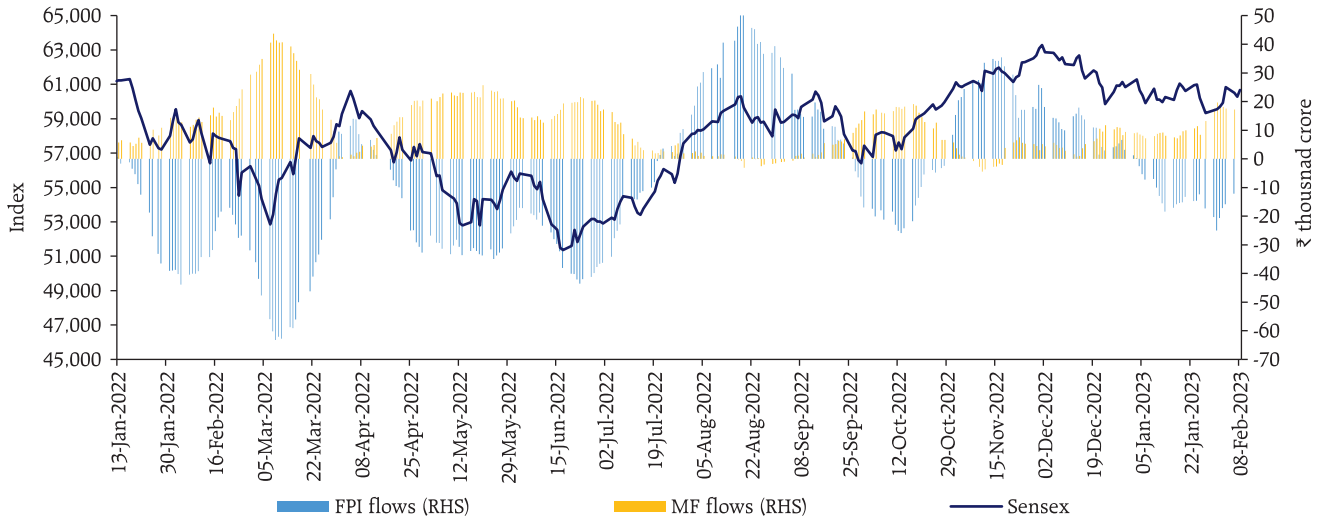
Chart 45: Interest Rates on Small Savings Schemes



Source: Government of India.

[18] The Finance Minister proposed several changes in the new personal income tax regime, such as enhancing the income limit for a rebate of income tax from ₹5 lakh to ₹7 lakh, rationalisation of the tax slabs, provision of standard deduction for the salaried class, reduction of highest surcharge rate from 37 per cent to 25 per cent, *etc.* along with tax benefits for MSMEs, co-operatives, and start-ups. These measures are expected to cost ₹37,000 crore in forgone direct tax revenues.

Chart 46: BSE Sensex and Institutional Flows



Note: FPI and MF flows are represented on 15-days rolling sum basis.
Sources: SEBI; NSDL; and Bloomberg.

The Indian equity market completed its transition to a faster settlement mechanism on January 27, 2023, with all securities in the equity segment moving to T+1 settlement. This marks the culmination of a process that began in September 2021, making India one of the global leaders with the shortest settlement cycles that will help reduce risks associated with settlement, counterparty and operations and also have a positive impact on trading volumes.

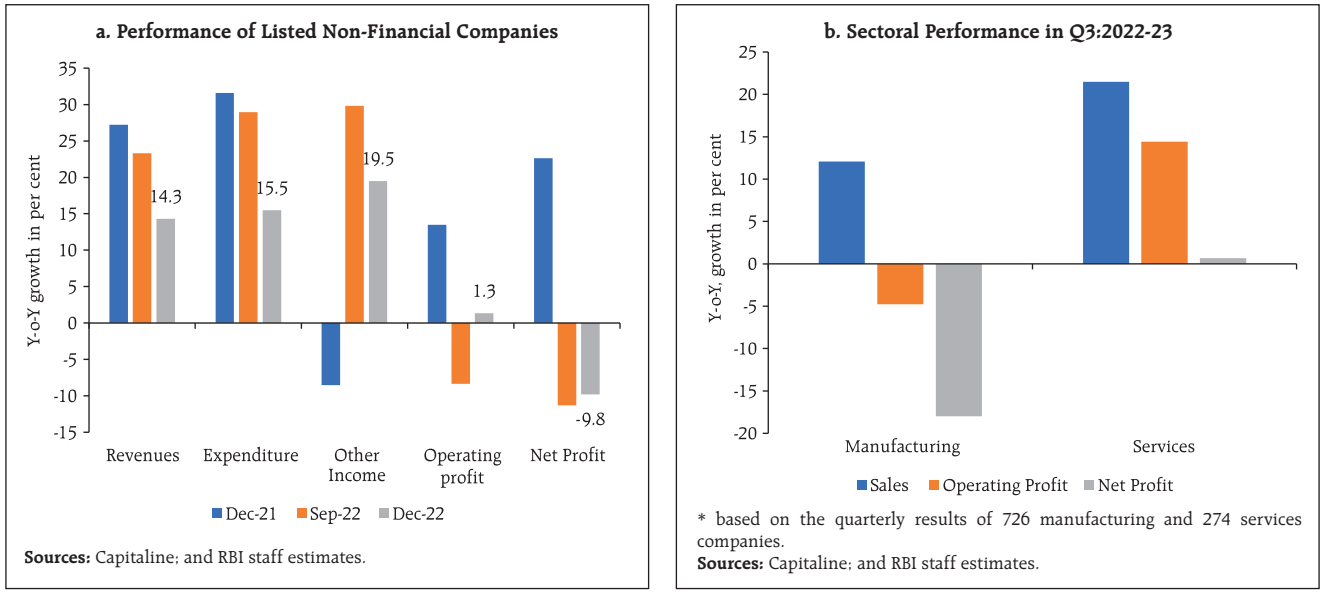
Corporate earnings results declared by 1,109 non-financial sector companies[19] for Q3:2022-23 showed that revenue growth of companies witnessed moderation (Chart 47a). Despite growth in expenditure out-pacing revenue, operating profit improved marginally on a y-o-y basis supported by other income. Operating profit margin showed an improvement on a sequential basis as input cost pressures eased. Other income, which includes the income from treasury management activities of the corporates, exhibited growth. Overall, net profit growth (y-o-y) of non-financial corporates remained negative for the second consecutive quarter. Services sector reported robust growth in sales and operating profit. Higher interest costs and other expenses, primarily in the iron and steel industry, led to a fall in net profits of manufacturing companies by 18.0 per cent (y-o-y) [Chart 47b].

Earnings of banks and other financial sector companies[20] remained robust with strong double-digit expansion in revenues (y-o-y) aided by credit growth (Chart 48). Other income, which *inter alia* includes profit/loss from security transactions, fees and commissions, also registered a sharp increase. With expenditure rising slower than the top-line, operating profits increased. Provisioning costs remained flat on y-o-y basis and in turn aggregate net profits of banks and financial sector companies registered a strong growth.

[19] The early results cover 74.3 per cent of total sale size covered in RBI study on 'Performance of Private Corporate Business Sector during Q3:2021-22'.

[20] Based on results of 862 banks and other financial sector companies which represent around 89 per cent of the market capitalisation.

Chart 47: Corporate Performance



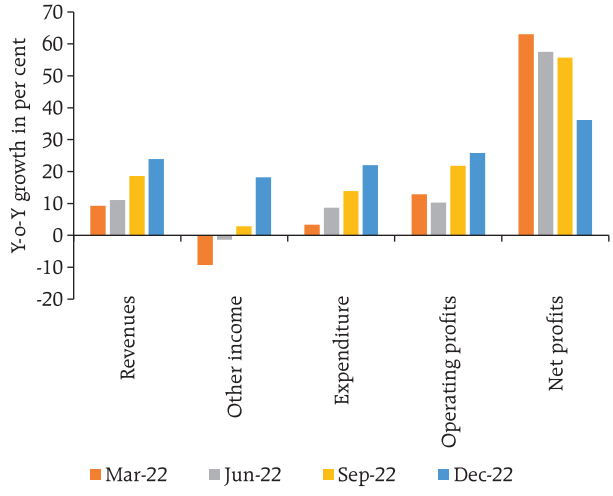
Sources: Capitaline; and RBI staff estimates.

* based on the quarterly results of 726 manufacturing and 274 services companies.

Sources: Capitaline; and RBI staff estimates.

Gross inward foreign direct investment (FDI) moderated to US$ 55.3 billion during April-December 2022 from US$ 61.6 billion a year ago (Chart 49). Net FDI worked out to US$ 22.3 billion during this period compared to US$ 24.8 billion a year ago, mainly reflecting a decline in equity inflows. The bulk of FDI equity inflows were received by manufacturing, financial services, computer services, retail and wholesale trade, and communication services during April-December 2022. The US, Singapore, and Mauritius were the major source countries of FDI during this period.

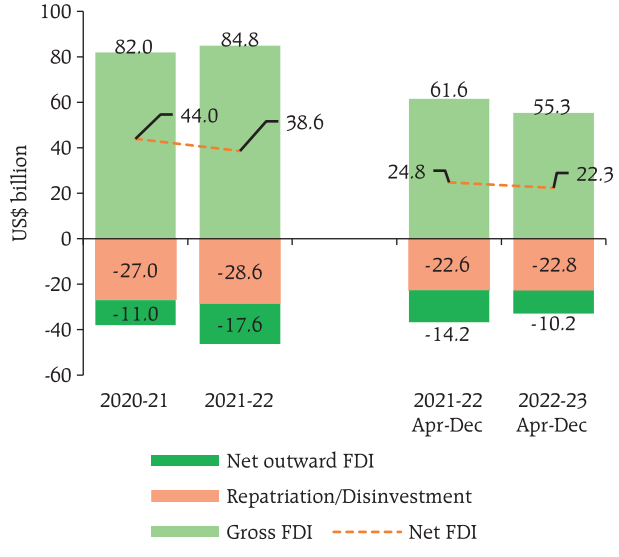
Chart 48: Performance of Listed Financial Companies



Note: Excludes extra-ordinary items.

Sources: CMIE Prowess, and RBI staff estimates.

Chart 49: Foreign Direct Investment



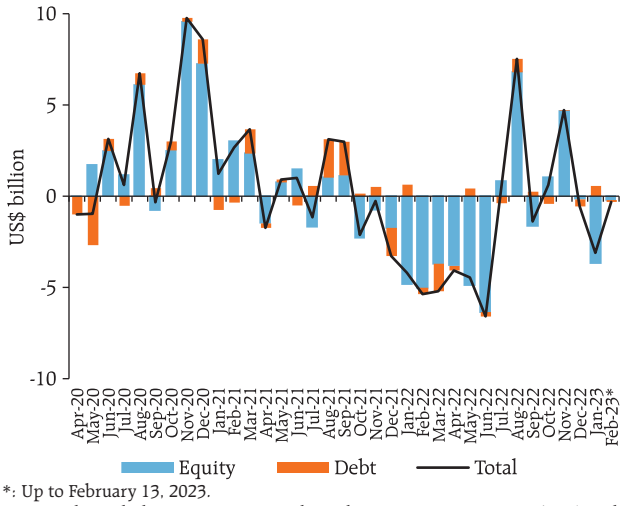
Source: RBI.

The theme of 'Infrastructure and Investment' and 'Green Growth' of the Union Budget augurs well for the FDI outlook in 2023-24. India ranks second in the 'FDI Standout Watchlist' which assesses the FDI trajectory of the world's top 50 FDI destinations.[21]

FPIs turned net sellers in domestic capital markets in January 2023 (Chart 50). Net FPI outflows from India were to the tune of US$ 3.1 billion in January 2023, led by the equity segment. However, the debt segment witnessed inflows of US$ 0.6 billion during January 2023. Financial services, automobile and auto components, and metals and mining sectors attracted the bulk of portfolio investment in the equity market. On the other hand, disinvestment was reported in information technology, consumable fuels and capital goods stocks.

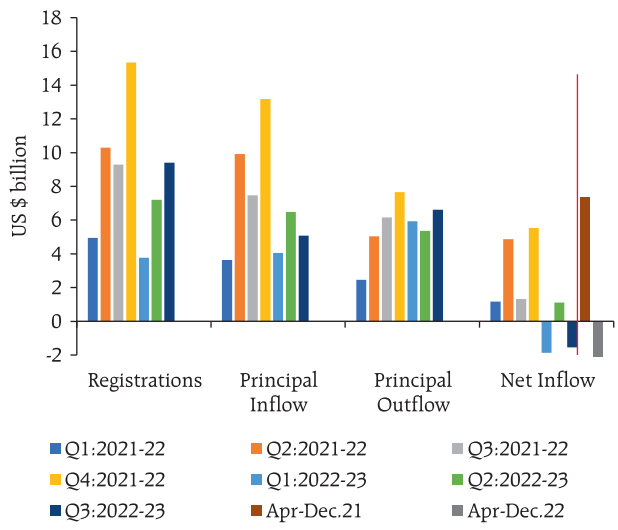
External commercial borrowing (ECB) registration amounts[22] stood at US$ 20.4 billion during April-December 2022 as against US$ 24.5 billion in the corresponding period last year. Intra-year movements show that after a dip in Q1:2022-23, registration amounts picked up, partly supported by the liberalising measures announced by the Reserve Bank on July 6, 2022. Although gross disbursements of ECBs to India were at US$ 15.6 billion during April-December 2022, net ECB turned negative due to higher repayments, and a significant portion of the recent ECB registrations being earmarked to be drawn later (Chart 51).

Chart 50: Net Foreign Portfolio Investment



*: Up to February 13, 2023.
Note: Debt includes investments under voluntary retention route (VRR) and hybrid instruments.
Source: National Securities Depository Limited (NSDL).

Chart 51: ECB Registrations, Inflows and Outflows



Source: RBI.

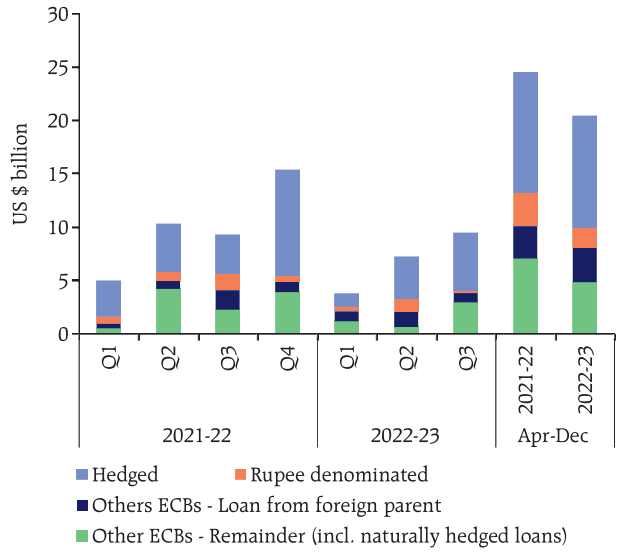
Over three-fourths of the ECB agreement amount during April-December 2022 remained effectively hedged and the remainder included loans with natural hedges (*i.e.*, borrowers' earnings are in foreign currency) [Chart 52].

India's foreign exchange reserves increased by US$ 42.6 billion since end-September 2022 and stood at US$ 575.3 billion as on February 3, 2023, covering more than nine months of imports projected for 2022- 23 (Chart 53).

[21] FDI outlook 2023, fDi Intelligence.

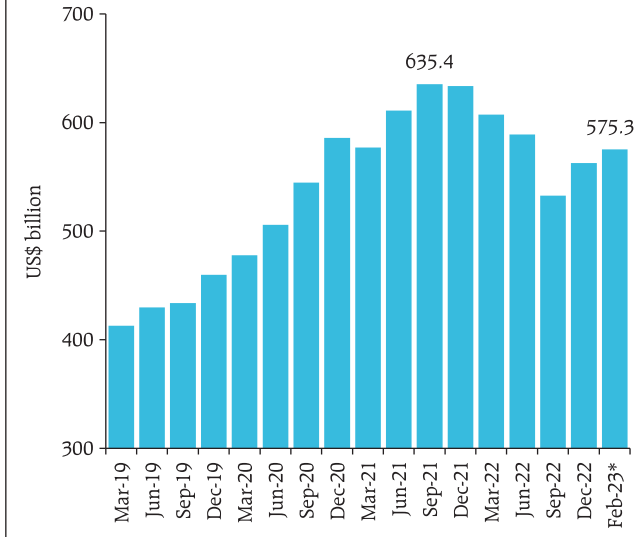
[22] Registration amounts capture the sanctioned borrowing amount through ECB route.

Chart 52: ECB Agreements - Hedging Position



Source: RBI.

Chart 53: Foreign Exchange Reserves

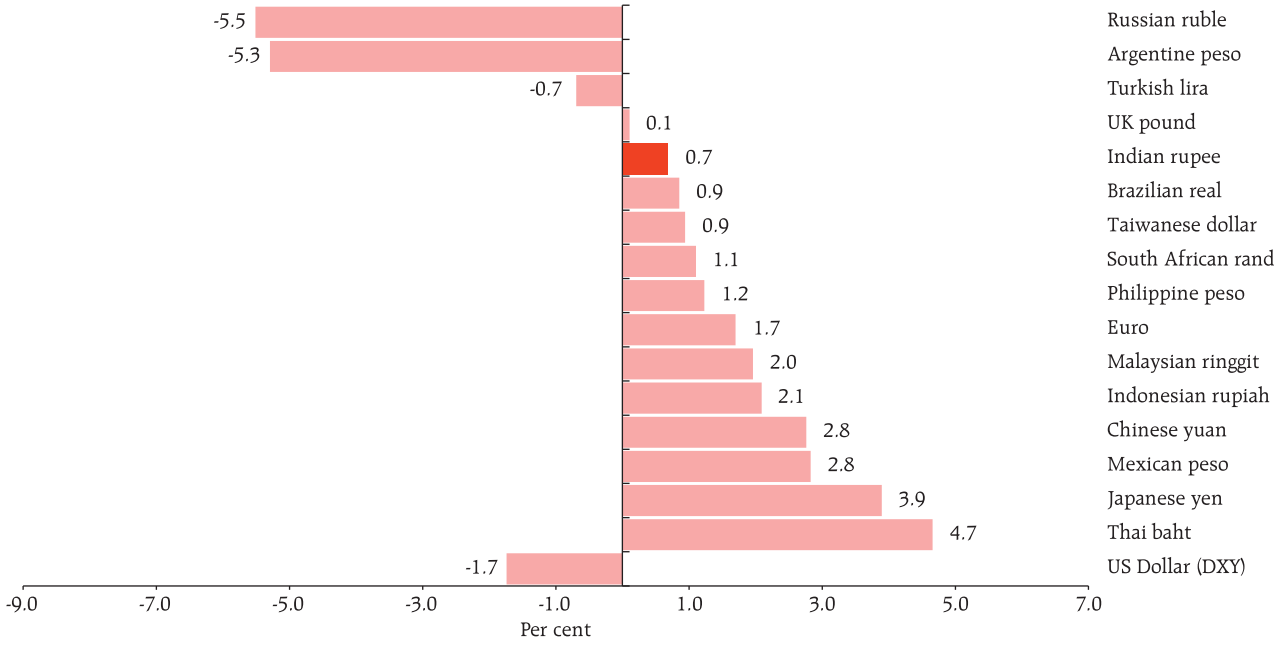


*: Up to February 03, 2023.
Source: RBI.

In the foreign exchange market, the Indian rupee (INR) appreciated by 0.7 per cent *vis-à-vis* the US dollar (m-o-m) in January 2023, as the US Fed adopted a less hawkish stance and the US dollar depreciated by 1.7 per cent (Chart 54). The performance of the rupee was in line with many other EMEs and reserve currencies.

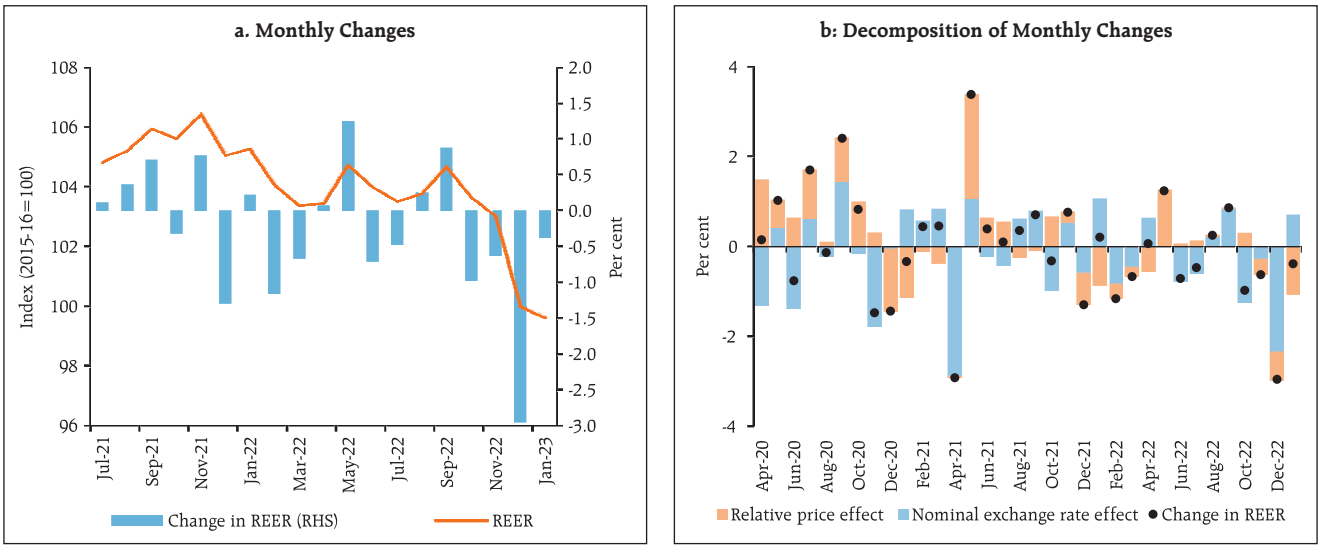
In terms of the 40-currency real effective exchange rate (REER), the INR depreciated by 0.4 per cent in January 2023 (m-o-m) (Chart 55).

Chart 54: Movements of Major Currencies against the US Dollar (January 2023, m-o-m)



Sources: FBIL; IMF; and Thomson Reuters.

Chart 55: Movements in 40-Currency Real Effective Exchange Rate



Source: RBI.

Payment Systems

Digital transactions advanced across various modes and the retail segment continued to gain strong traction, led by the Unified Payments Interface (UPI) [Table 6]. On the supply side, the number of payment acceptance devices deployed under the Payment Infrastructure Development Fund (PIDF) Scheme expanded by 59 per cent during April-December 2022.

The Statement on Developmental and Regulatory Policies of February 8, 2023 proposed measures to expand the scope of activity on the Trade Receivables Discounting System (TReDS) by allowing participation of insurance companies and agencies undertaking factoring business, and the enabling of secondary market operations on the TReDS platforms. It also proposed extension of the UPI (for merchant payments) for all inbound travellers to India while they are in the country. Additionally, the National Payments Corporation of India (NPCI) has enabled onboarding of non-resident Indians from 10 countries on the UPI platform.[23]

Table 6: Growth Rates in Select Payment Systems

(y-o-y in per cent)

Payment System Indicators	Transaction Volume				Transaction Value			
	Dec-21	Dec-22	Jan-22	Jan-23	Dec-21	Dec-22	Jan-22	Jan-23
RTGS	17.9	11.5	15.7	12.6	21.7	5.9	13.9	20.1
NEFT	22.3	29.0	26.2	32.2	6.5	9.4	12.8	15.0
UPI	104.4	71.4	100.5	74.1	98.7	55.0	93.0	56.1
IMPS	24.5	9.7	27.0	7.8	35.6	22.7	34.1	23.4
NACH	-2.7	10.5	28.8	-10.4	5.1	34.5	26.4	14.4
NETC	74.9	27.2	54.8	30.2	59.7	34.3	50.0	33.6
BBPS	137.0	60.4	130.2	59.8	165.2	63.6	148.8	66.6

Source: RBI.

[23] NPCI Circular, January 2023.

As a testament to growing digital adoption, the recently released Reserve Bank's Digital Payments Index (RBI-DPI) showed a growth (y-o-y) of 24.1 per cent in September 2022. Going ahead in 2023, the user penetration rate of digital payments in India is expected to exceed that of the world.[24]

The Union Budget 2023-24 also announced various measures to build robust digital public infrastructure. They include continuing fiscal support of ₹1500 crore to incentivise adoption of digital payment modes, establishing an agriculture accelerator fund, enabling safer access to anonymised data through a National Data Governance Policy, expanding the scope of documents available through DigiLocker[25], creating an 'Entity DigiLocker' for storing and sharing information by businesses, training MSMEs for developing digital capabilities, establishing centres of excellence to promote development of Artificial Intelligence (AI) startups, setting up of 100 labs for developing applications using 5G services and simplifying the know your customer (KYC) process.

Conclusion

We believe that India will decouple from macroeconomic projections of current vintage and also from the rest of the world. In our view, the instrument of decoupling will be the Union Budget by (a) raising India's growth prospects over the period 2023-27; and (b) raising India's potential growth.

Turning to the immediate growth prospects, the Union Budget has won appreciation from all quarters on several counts. Besides the promises kept on consolidation and capital expenditure, the tax changes proposed in the Budget will put at least ₹35,000 crore in the hands of households. The implications of these three aspects on the outlook for growth are profound. First, the saving on taxes will boost spending by households on consumption. With India's marginal propensity to consume (MPC) estimated at 0.54, the tax multiplier works out to be 1.16. Hence, India's real GDP growth would get a boost of 15 basis points in 2023-24 from tax reductions alone.

Second, the increase in the allocation for capital expenditure (including loan assistance to States, railways, logistics and grants-in-aid for creation of capital assets which are excluded under the effective revenue deficit and hence added to the capital account) works out to ₹3.2 lakh crore in 2023-24.[26] This increased capital spending will generate additional output of ₹10.3 lakh crore during 2023-27 - unlike the tax multiplier which has a short-run impact, the dynamic capital expenditure multiplier rises from 1 in the first year to 2.45 in the second year, 3.14 in the third year and peaks at 3.25 in 2026-27. Capex on railways and loan assistance to States will contribute 43 per cent of this increased income while investment in logistics (₹60,000 crore) is expected to generate income of ₹1.95 lakh crore over 2023-27 or 19 per cent of the increased income.

Third, fiscal consolidation can free up productive resources for the private sector and also contribute to lowering the cost of capital. In the Union Budget, total expenditure is budgeted to decline by 0.41 per cent of GDP.[27] This will free up resources for private investment. In conjunction with the expenditure multiplier[28], this can raise the growth rate of the economy in 2023-24 by 10 basis points.

Putting all these together and taking the Economic Survey's growth projection of 6.5 per cent

[24] Source: Statista database accessed as on February 03, 2023.

[25] DigiLocker is a secure cloud-based platform for storage, sharing and verification of citizens' documents and certificates.

[26] The effective capital expenditure of the Union government is budgeted to increase to ₹13.7 lakh crore in 2023-24 (BE) from ₹10.5 lakh crore in 2022-23 (RE).

[27] In 2023-24 (BE) total expenditure is budgeted to decline to 14.92 per cent of GDP from 15.33 per cent of GDP in the previous year, resulting in a decline of 0.41 per cent of GDP.

[28] The expenditure multiplier in an expansionary phase of the business cycle is estimated at (-) 0.22 over four quarters, unlike the positive expenditure multiplier in a period of slowdown when the private sector demand for credit generally weakens (Report on Currency and Finance, 2022).

as the base, the Union Budget's tax, capex and fiscal consolidation proposals can take India's real GDP growth close to 7.0 per cent in 2023-24 if they are effectively implemented.

Turning to India's potential, the Union Budget will expand the productive capacity of the economy by (a) the thrust on capex; (b) the exploitation of new technologies such as digitization and greening the economy; and (c) by seizing the demographic dividend which together can expand the production possibility frontier of the Indian economy. First, besides the sustained emphasis on capex, setting up Skill India Digital Platform, Centers of Excellence for Artificial Intelligence, National Data Governance Policy, and simplification of KYC norms could impart a positive productivity shock and lead to an increase in total factor productivity (TFP) that can raise potential growth by 10 basis points per annum.

Second, the Union Budget speech proposes 12 schemes under the green growth priority with a concrete outlay of ₹85 thousand crore already outlined under four schemes.[29] This could crowd in ₹1.7 lakh crore of private investment (taking a crowd-in factor of 2)[30], bringing the total green investment to ₹2.6 lakh crore and an increase in GDP of ₹3.3 lakh crore or around 100 basis points of potential output up to 2030. Seizing the demographic dividend by skilling youth and teachers alongside setting up physical and digital libraries could raise potential GDP growth by 5 basis points to 15 basis points a year.[31]

The environment of macroeconomic stability engendered by fiscal consolidation and hence reduction of debt is expected to bring down inflation in the medium run, with a consequent reduction in macroeconomic volatility and country risk premium, ushering in a virtuous cycle. Estimates suggest that on a standalone basis, *i.e.,* without taking into account other factors that influence the inflation trajectory, this could lead to a reduction in inflation by an average of 26 basis points per annum over the next five years[32] which, in turn, would push up potential growth by another 10 basis points.[33]

Taking all these factors into account, potential growth is expected to shift upwards from 6.0 per cent (estimated by the IMF in 2022-23[34]) to 6.8 per cent.[35] With the raising of India's potential growth due to measures announced in the Budget, there is likely to be a faster consolidation of Union Government debt to 54.3 per cent of GDP by 2027-28.

In mythologies across civilisations, the sun is depicted as riding a chariot typically drawn by four horses. This is so, for instance, for Apollo in Greece; Ra in Egypt; Sol in Rome. In Indian mythology, however, the sun's chariot is drawn by seven horses. Many interpretations are available as to what the horses signify – various scriptures assign them the seven colours of the rainbow; the seven *vedic* meters or prosodies; and the like. The seventh horse represents dreams, aspirations and the future. It is said that even if the other six horses are injured or exhausted, the seventh horse can take the sun's chariot to its destination. This is the subject of a celebrated book by Dr. Dharamvir Bharati and also of an eponymous film by Shyam Benegal called *Suraj ka Satvan Ghoda (सूरज का सातवाँ घोड़ा).* In our view, the Union Budget 2023-24 is the seventh horse of the sun.

[29] The budget outlines 12 proposals including green hydrogen mission, energy transition, energy storage projects, renewable energy evacuation, green credit programme, PM-PRANAM, GOBARdhan scheme, *Bhartiya Prakritik Kheti* Bio-Input Resource Centres, mangrove initiative for shoreline habitats & tangible incomes (MISHTI), *Amrit Dharohar*, coastal shipping and vehicle replacement.

[30] see IEA (2012), IMF (2021), Inter-American Development Bank (2006), European Commission (2013).

[31] Some of the references include Tilak (1989); Tabar *et al.,* (2016); Gemmell *et al.,* (2016); and De Ridder *et al.,* (2020).

[32] Internal estimates based on Van Bon, N. (2015).

[33] Internal estimates based on Mohaddes and Raissi (2014).

[34] Article IV Consultations, December 2022.

[35] The higher potential growth assessment is based on estimation of impact of different growth supportive measures in the budget individually which are then aggregated, and not in a dynamic model framework to capture cross effects among all these key measures. The assessed increase in potential growth is also likely to materialise over the next few years and not in 2023-24 as the full impact of some of the measures, as mentioned above, would materialise by 2026-27 and even later by 2030.

Annex 1: Major Takeaways from the RBI's Enterprise Surveys

Key takeaways from the Reserve Bank's enterprise surveys[36] conducted during Q3:2022-23 are:

- Firms are upbeat on overall business conditions which are expected to sustain expansion through the first half of 2023-24 (Chart A1 and A2).
- Job opportunities are likely to expand further for both full-time and part-time employees (Chart A3).
- Businesses remain optimistic on production, order books, employment condition, capacity utilisation and the overall business situation.
- Capacity utilisation (CU) and seasonally adjusted CU exceeded the long-term average CU in Q2:2022-23; the improvement is likely to persist (Chart A4 and A5).

Chart A1: Sentiments on Production/Turnover

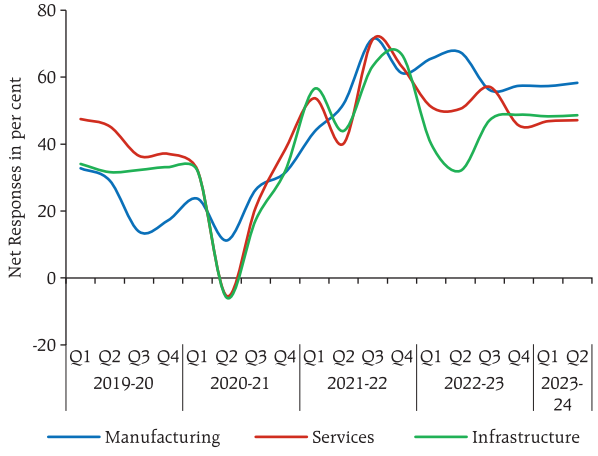


Chart A2: Sentiments on Overall Business Situation

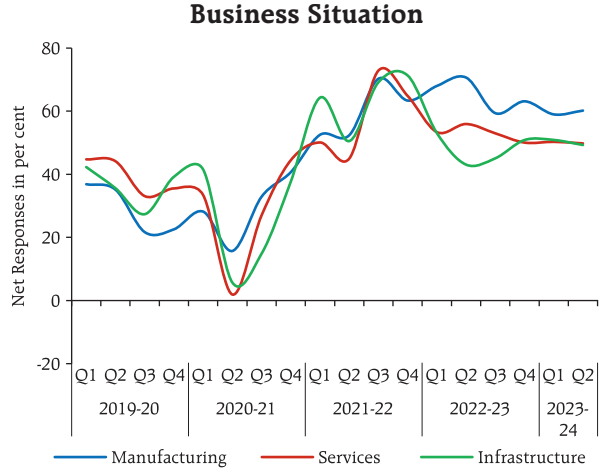


Chart A3: Sentiments on Employment Situation

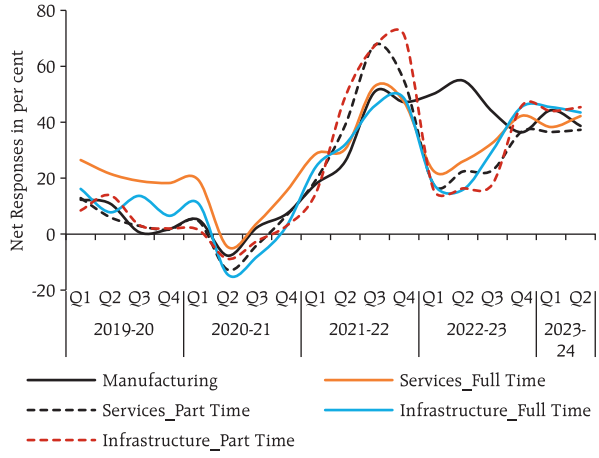
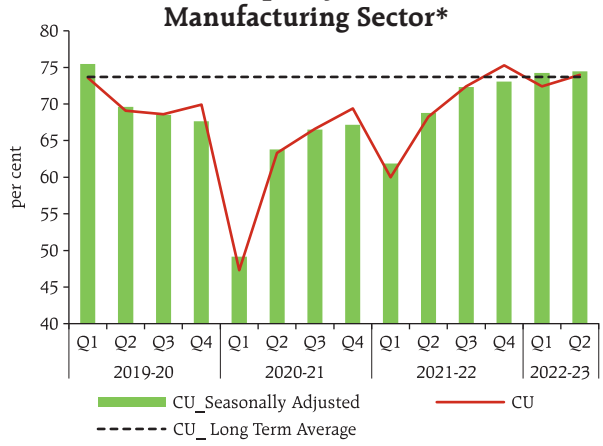


Chart A4: Capacity Utilisation in Manufacturing Sector*



*: long-term CU excludes Q1:2020-21, which encompassed the nation-wide lockdown period.

Source: RBI.

[36] https://www.rbi.org.in/Scripts/BS_PressReleaseDisplay.aspx?prid=55184

Annex 1: Major Takeaways from the RBI's Enterprise Surveys *(Concld.)*

- Senior loan officers expect the recent growth in loan demand from banks to sustain during H1:2023-24 (Chart A6).
- On the back of elevated input cost pressures and return of pricing power, more firms expect rise in selling prices (Charts A7 and A8).

Chart A5: Manufacturers' Sentiments on Capacity Utilisation

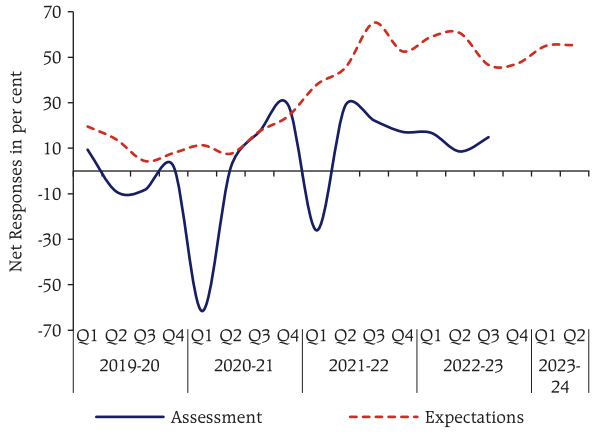


Chart A6: Senior Loan Officers' Expectations on Credit Demand

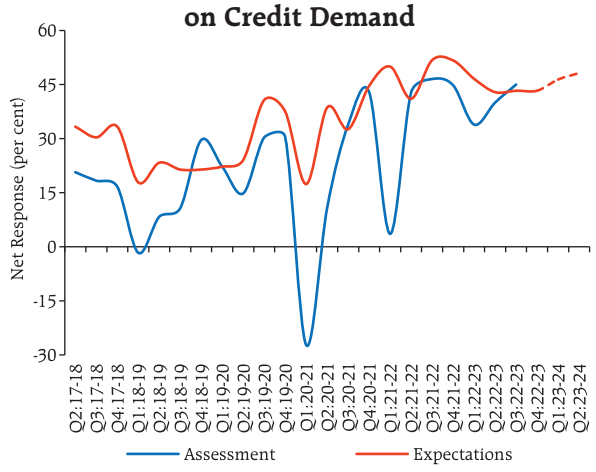


Chart A7: Sentiments on Input Cost

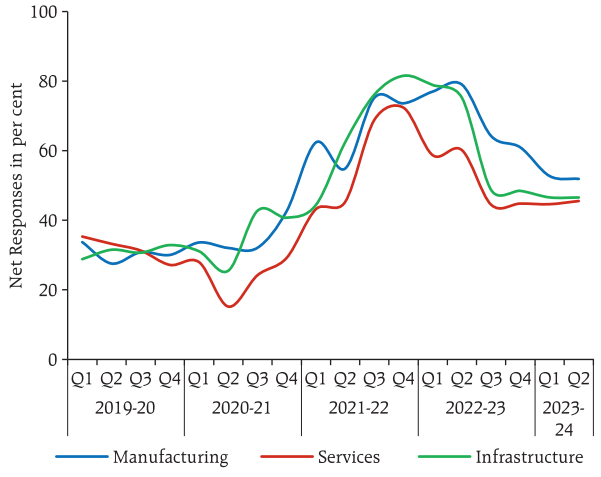
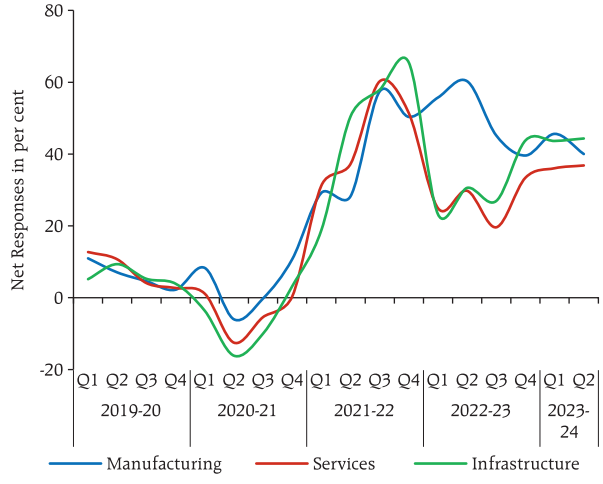


Chart A8: Sentiments on Selling Price



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 value less than zero indicates contraction/pessimism.
Source: RBI.

A Recalibrated Quarterly Projection Model (QPM 2.0) for India

by Joice John, Deepak Kumar, Asish Thomas George, Pratik Mitra, Muneesh Kapur and Michael Debabrata Patra ^

The recalibrated quarterly projection model (QPM 2.0) presented in this article is a forward-looking open economy gap model calibrated to generate forecasts, undertake risk assessment and provide policy analysis for the Indian economy. QPM 2.0 augments QPM 1.0 with fiscal-monetary policy interaction, a more nuanced modelling of domestic fuel pricing dynamics, capital flows, exchange rate dynamics and central bank's forex market interventions for a more informed judgement.

The Reserve Bank of India (RBI)'s Quarterly Projection Model (QPM) is a calibrated, forward-looking, open economy, new-Keynesian gap model incorporating specific characteristics of the Indian economy. Its main purpose is to generate medium-term projections and policy analysis consistent with achieving targets/mandate set under the flexible inflation targeting (FIT) framework. The documentation of its predecessor, *i.e.*, QPM version 1 (QPM 1.0) was published in 2016 (Benes *et al.*, 2016a; b). Armed with the lessons of experience, since then, the model structure and parameters were recalibrated to enhance the model with more India-centric characteristics in order to enrich its performance and relevance.[1]

The major enhancements brought about in version 2 (QPM 2.0) are as follows:

a. fiscal-monetary policy interaction;

b. domestic fuel pricing dynamics (oil prices, exchange rates and fuel taxes);

c. capital flows and exchange rate dynamics; and

d. re-parametrisation, incorporating data till Q4:2019 (pre-COVID period)[2].

The rest of the article is arranged into six sections. Section II provides the model structure. The equations and approach to calibration are explained in section III. Model properties in terms of impulse response functions (IRF) are described in section IV. Historical decompositions of major macroeconomic variables are discussed in section V. Section VI presents forecast performance and Section VII concludes.

II. Model Structure

QPM 2.0 embodies the standard new-Keynesian small open-economy framework. It has 6 blocks, *viz.*, i) an aggregate demand block comprising the output gap and credit conditions; ii) an aggregate supply block modelling inflation, inflation expectations and central bank credibility; iii) short-term interest rates (policy reaction function and operating target) and transmission to long-term interest rates; iv) fiscal block; v) the exchange rate *via* the modified risk-adjusted uncovered interest parity condition, capital flows and forex market intervention; and vi) foreign sector block (Chart 1).

II.1. Fiscal-Monetary Policy Interaction

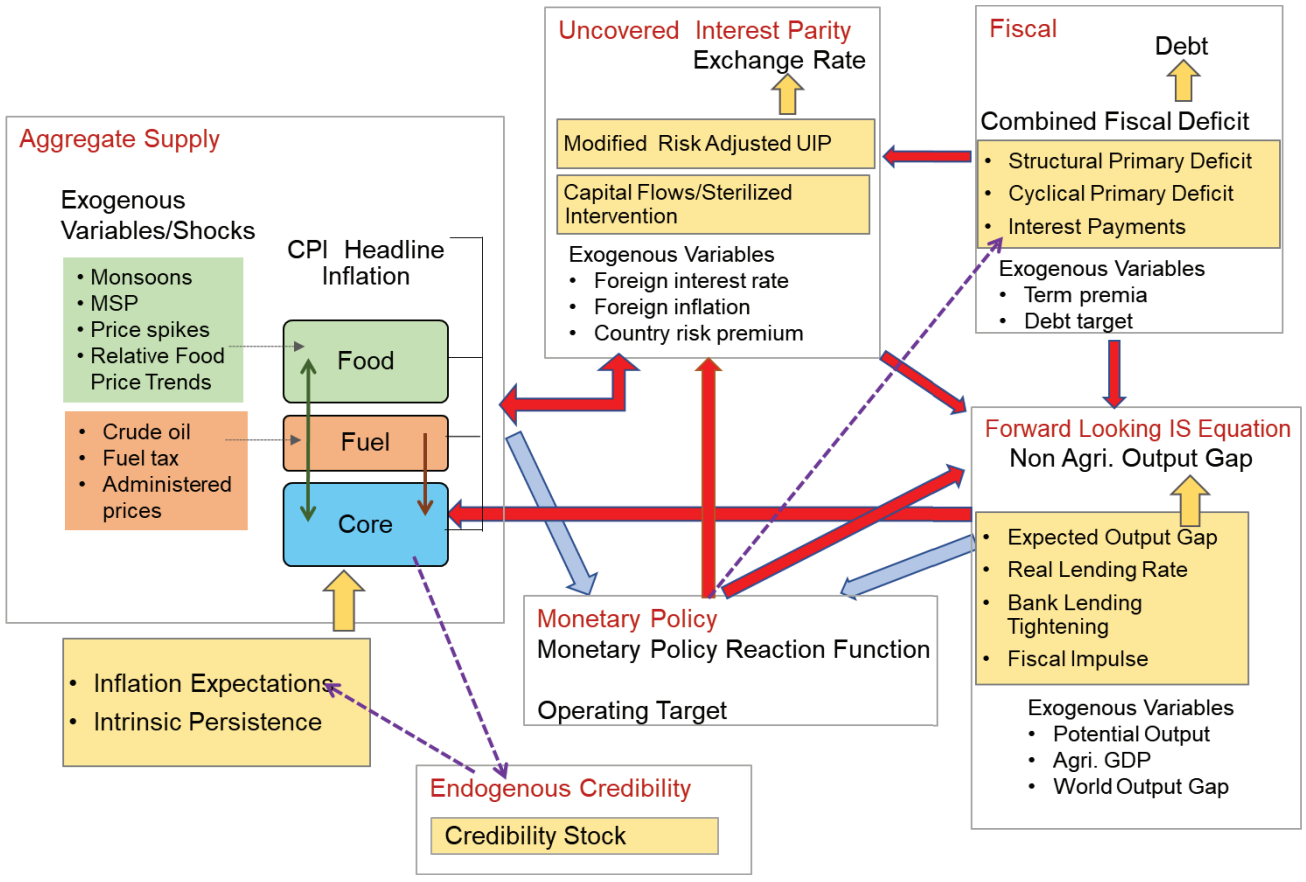
Fiscal policy dynamics can have sizeable effects on output and inflation. Therefore, appropriate modelling of monetary and fiscal policy interaction is vital for improving the understanding of output and inflation behaviour in the context of attaining price stability and sustained growth (Woodford, 2001; Canzoneri *et al.* 2011). Hence, the overall fiscal

^ 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.

[1] This project was carried out under UTKARSH 2022, the medium-term strategy framework of the RBI.

[2] Data for the period after 2019 were not used as extreme volatility induced by COVID-19 and other developments could affect the average model properties.

Chart 1: QPM 2.0 - Structure



Source: John *et al.*, 2022; Benes *et al.*, 2016b

deficit is decomposed into the primary deficit and interest payments. The primary deficit has structural (cyclically adjusted) and cyclical (automatic stabilisers) components. The cyclical component is modelled as a function of the output gap. Unanticipated changes in the structural deficit in the form of government consumption impacting private consumption and thereby domestic economic cycles form fiscal impulses (Blanchard and Perotti, 2002). Debt dynamics incorporate a) the relationship between debt and the overall fiscal deficit and b) the overall deficit that is compatible with a sustainable level of debt (Escolano, 2010). The steady state structural deficit is linked to the steady state debt level and nominal output growth. Deviations from the long-term debt target affect the country risk premium and the exchange rate through the modified risk-adjusted uncovered interest parity (MRUIP) condition. Changes in aggregate demand and the exchange rate affect inflation, leading to changes in monetary policy. At the same time, monetary policy affects the fiscal deficit through interest payments – short-term interest rate affects long-term rate.

II.2. Fuel Pricing

India has a distinctive system of fuel pricing. Some components of fuel consumption like petrol and diesel are priced on the basis of market variables – international crude oil prices and exchange rates. Some items like liquefied petroleum gas (LPG) and kerosene are market determined but with a lagged pass-through. Prices of another set of fuel items like electricity are administered. Prices of petrol and diesel

include a substantial portion of non-*ad valorem* taxes, which impedes the full pass-through of crude oil price changes to inflation. Considering these factors, the fuel section has three different components: a) 'market fuel 1', comprising petrol and diesel prices, is determined by changes in crude oil prices, exchange rates and fuel taxes (excise duty and VAT); b) 'market fuel 2' consisting of LPG and kerosene for which prices are determined by international fuel prices and exchange rates, but with a lag; and c) 'administered fuel' *i.e.*, electricity and other items in the fuel and light subgroup of the CPI. Fuel prices have a substantial role in determining input cost pressures in the economy, which are modelled through spillovers from fuel to non-fuel components of inflation.

II.3. Capital Flows and Exchange Rate Dynamics

The standard approach to capital flows, exchange rates and monetary policy dynamics is based on the 'trilemma' (Mundell, 1963; Fleming, 1962). This was further developed into the new-Keynesian open economy framework, incorporating implications of global financial cycle and dominant currency paradigm (Obstfeld and Rogoff, 2000; Galí and Monacelli, 2005; Gopinath *et al.* 2020; Miranda-Agrippino and Rey, 2022). Volatility in capital flows and exchange rates has implications for macroeconomic management. The orthodox view holds that successful inflation targeting (IT) requires a high degree of exchange rate flexibility. In the context of emerging market economies (EMEs), however, it is observed that it is sub-optimal to overlook the costs associated with volatility in exchange rates due to sudden surges or reversals in capital flows.[3] This has prompted many EMEs to adopt policy tools like forex market interventions for managing exchange rate volatility even under an IT framework (RBI, 2021).

III. Key Behavioural Equations and Calibration

QPM 2.0 has 154 equations (including identities), of which 57 are behavioural equations (Table 1).

III.1. Aggregate Demand: A Forward-Looking IS Curve

Domestic demand is represented by the non-agricultural output gap ($\hat{y}_t^{nag}$), which is defined as the difference between non-agricultural output (y_t^{nag}) and its potential ($\bar{y}_t^{nag}$), expressed in natural logarithms.[4]

$$\hat{y}_t^{nag} = \alpha_1 * E_t(\hat{y}_{t+1}^{nag}) + \alpha_2 * \hat{y}_{t-1}^{nag} - \alpha_3 * \hat{r}_t^m + \alpha_4 * \hat{y}_t^f + \alpha_5 * \hat{Z}_t - \alpha_6 * \eta_t^{BL} + \alpha_7 * FIMP_t - \alpha_8 * \widehat{rfuel}_t + \varepsilon_t^{\hat{y}^{nag}}$$

$$\alpha_1 = 0.1;\ \alpha_2 = 0.5;\ \alpha_3 = 0.25;\ \alpha_4 = 0.25;\ \alpha_5 = 0.06;\ \alpha_6 = 0.4;\ \alpha_7 = 0.25;\ \alpha_8 = 0.01. \quad ...(1)$$

where $\hat{y}_t^{nag}$ is determined by its lagged values ($\hat{y}_{t-1}^{nag}$) and model-based rational expectations ($E_t(\hat{y}_{t+1}^{nag})$), long-term market real interest rate gap ($\hat{r}_t^m$), global demand captured by foreign output gap ($\hat{y}_t^f$), real exchange rate gap ($\hat{z}_t$), bank lending (BL) based on credit conditions (η_t^{BL}), real fuel price gap ($\widehat{rfuel}_t$), fiscal impulse ($FIMP_t$) and shocks to aggregate demand ($\varepsilon_t^{\hat{y}^{nag}}$) (Appendix and Benes *et al.*, 2016b).

Table 1: QPM 2.0 - Dimension

Number of equations	154
of which	
Number of behavioural equations	57
Number of identities	97
Number of variables	154
Number of stochastic shocks	57
Number of measurement equations	33
Number of observed variables	33
Number of parameters	116

Source: Authors' calculations.

[3] In the face of capital flows shocks, the exchange rate tends to move significantly away from its long-run equilibrium, causing exchange rate passthrough to inflation and economic dislocation. Hence, central banks care about the exchange rate in addition to inflation. However, paying attention to the exchange rate using monetary policy tools can undermine the credibility in an inflation targeting regime making monetary policy actions costlier (Blanchard *et al.*, 2016, Ghosh *et al.*, 2016).

[4] All the real trends are system consistent, filtered using Kalman filter. In QPM 2.0, with the incorporation of fuel prices in the aggregate demand equation (equation 1), the world output gap coefficient reflects only the direct effect and has been calibrated accordingly. In QPM 1.0, it reflected the direct effect as well as the indirect impact of crude oil prices.

III.2. Aggregate Supply: Inflation

Considering the unique characteristics of inflation dynamics in India, separate equations are formulated for food, fuel and core[5] components (analogous to the structure of QPM 1.0) (Benes *et al.*, 2016b).

Food inflation (π_t^{food}) depends on its own past (π_{t-1}^{food}). The terms $\left(\pi 4_{t-1}^{headline} - \pi 4_{t-1}^{food}\right)$ and $\left(p_{t+4}^{food} - p_{t+4}^{core} - \overline{rp}_{t+4}^{food}\right)$ ensure that food inflation converges to overall inflation in the long run. In the short run, food inflation is driven by three shocks: monsoon shock ($\varepsilon_t^{monsoon}$); shock to minimum support prices (ε_t^{MSP}); and shock to vegetable prices ($\varepsilon_t^{vegetables}$), each with different short-term effects. The dynamics of these shocks are given by the moving average polynomials $\Gamma_{monsoon}(L)$, $\Gamma_{MSP}(L)$, and $\Gamma_{vegetables}(L)$.

$$\pi_t^{food} = \pi_{t-1}^{food} + \varphi_1\left(\pi 4_{t-1}^{headline} - \pi 4_{t-1}^{food}\right) - \varphi_2\left(p_{t+4}^{food} - p_{t+4}^{core} - \overline{rp}_{t+4}^{food}\right) + \Gamma_{monsoon}(L)\varepsilon_t^{monsoon} + \Gamma_{MSP}(L)\varepsilon_t^{MSP} + \Gamma_{vegetables}(L)\varepsilon_t^{vegetables} + \varepsilon_t^{\pi^{food}}$$

$$\varphi_1 = 0.025;\ \varphi_2 = 0.75 \qquad \ldots(2)$$

Core inflation (π_t^{core}) depends on expected inflation ($E_t{}^h(\pi 4_{t+1}^{core})$), its own past ($\pi_{t-1}^{core}$) to capture the persistence in inflation, the domestic output gap ($\hat{y}_t^{nag}$) and the real exchange rate gap ($\hat{z}_t$). $\left(p_t^{energy,mkt} - p_t^{core} - \overline{rp}_t^{energy,mkt}\right)$, $\left(p_{t+4}^{food} - p_{t+4}^{core} - \overline{rp}_{t+4}^{food}\right)$ represent spillovers from fuel and food components, respectively.[6]

$$\pi_t^{core} = \beta_1 * E_t{}^h(\pi 4_{t+1}^{core}) + (1-\beta_1) * \pi_{t-1}^{core} + \beta_2 * (\hat{y}_t^{nag} + \beta_3 * \hat{z}_t) + \beta_4 * \left(\pi 4_{t-1}^{headline} - \pi 4_{t-1}^{core}\right) + \beta_5\left(p_t^{energy,mkt} - p_t^{core} - \overline{rp}_t^{energy,mkt}\right) + \beta_6\left(p_{t+4}^{food} - p_{t+4}^{core} - \overline{rp}_{t+4}^{food}\right) + \varepsilon_t^{\pi^{core}}$$

$$\beta_1 = 0.33;\ \beta_2 = 0.15;\ \beta_3 = 0.05;\ \beta_4 = 0.01;\ \beta_5 = 0.02;\ \beta_6 = 0.04. \qquad \ldots(3)$$

In the fuel block, inflation (π_t^{fuel}) is determined as the weighted average of petrol and diesel inflation ($\pi_t^{fuel,mkt1}$), LPG and kerosene inflation ($\pi_t^{fuel,mkt2}$) and administered fuel inflation ($\pi_t^{fuel,adm}$).[7]

$$\pi_t^{fuel} = wt_{fuel,mkt1}\,\pi_t^{fuel,mkt1} + wt_{fuel,mkt2}\,\pi_t^{fuel,mkt2} + \left(1 - wt_{fuel,mkt1} - wt_{fuel,mkt2}\right)\pi_t^{fuel,adm}$$

$$wt_{fuel,mkt1} = 0.25;\ wt_{fuel,mkt2} = 0.20. \qquad \ldots(4)$$

Petrol and diesel inflation is determined by changes in the Indian basket of crude oil prices (Δp_t^{oil}), changes in the exchange rate (ΔS_t) and changes in fuel taxes ($\pi_t^{fuel,tax}$).

$$\pi_t^{fuel,mkt1} = \beta_1^{fm1}\pi_{t-1}^{fuel,mkt1} + \beta_2^{fm1}\pi_t^{fuel,tax} + \left(1 - \beta_1^{fm1} - \beta_2^{fm1}\right)4\left(\Delta S_t + \Delta p_t^{oil} - \Delta\bar{Z}_t\right) + \varepsilon_t^{\pi^{fuel,mkt1}}$$

$\beta_1^{fm1} = 0.00$ for immediate and full passthrough and > 0.00 for delayed passthrough

$$\beta_2^{fm1} = 0.47.^{8} \qquad \ldots(5)$$

The changes in tax is assumed to be driven by exogenous factors, *i.e.*,

$$\pi_t^{fuel,tax} = \pi_{t-1}^{fuel,tax} + \varepsilon_t^{\pi^{fuel,tax}} - \varepsilon_{t-1}^{\pi^{fuel,tax}} \qquad \ldots(6)$$

LPG and kerosene inflation is determined by changes in the Indian basket of crude oil prices (Δp_t^{oil}) and changes in the exchange rate (ΔS_t).

$$\pi_t^{fuel,mkt2} = \beta_1^{fm2}\pi_{t-1}^{fuel,mkt2} + \left(1 - \beta_1^{fm2}\right)4\left(\Delta S_t + \Delta p_t^{oil} - \Delta\bar{Z}_t\right) + \varepsilon_t^{\pi^{fuel,mkt2}}$$

[5] Core inflation is defined as inflation excluding food, fuel, petrol and diesel components.

[6] Inflation expectations formation and an endogenous credibility building process is modelled similar to QPM 1.0 (Appendix and Benes *et al.*, 2016b). π denotes quarter-on-quarter (annualised) inflation, while $\pi 4$ denotes year-on-year (y-o-y) inflation. The increase in nominal (S_t) and real (Z_t) exchange rates depicts depreciation and *vice versa*. The relative food price trend is modelled similar to QPM 1.0 (Appendix and Benes *et al.*, 2016b).

[7] In QPM 1.0, fuel inflation incorporated two types of fuel *viz.* market and administered. Market fuel inflation was determined by the Indian basket crude oil prices and exchange rate, while the administered component in fuel pricing was largely modelled as an exogenous process (Benes *et al.*, 2016b).

[8] The coefficient 0.47 corresponds to crude oil prices at around US$80 per barrel.

$\beta_1^{fm2} = 0.00$ for immediate and full passthrough and > 0.00 for delayed passthrough ...(7)

Administered fuel inflation is exogenously determined.

$$\pi_t^{fuel,adm} = \pi_{t-1}^{fuel,adm} + \beta_1^{fa}\left(\pi_{t-1}^{core} - \pi_{t-1}^{fuel,adm}\right) + \varepsilon_t^{\pi^{fuel,adm}}$$

$$\beta_1^{fa} = 0.05. \quad ...(8)$$

III.3. Interest Rates Block

The monetary policy repo rate equation follows an inflation forecast-based Taylor-type reaction function with an interest rate smoothing parameter (Benes *et al.*, 2016b).

$$i_t = \lambda_1 i_{t-1} + (1-\lambda_1)\{\bar{r}_t + \pi 4_t^* + \lambda_2 * [E_t(\pi 4_{t+3}^{core}) - \pi 4_t^*] + \lambda_3[E_t(\pi 4_{t+3}^{headline}) - \pi 4_t^*] + \lambda_4 \hat{y}_t{}^{nag}\} + \varepsilon_t^i$$

$$\lambda_1 = 0.88;\ \lambda_2 = 1.50;\ \lambda_3 = 0.50;\ \lambda_4 = 0.50. \quad ...(9)$$

where i_t is the policy repo rate, $\bar{r}_t$ is the natural rate of interest, $\pi 4_t^*$ is the inflation target, $E_t(\pi 4_{t+3}^{core})$ and $E_t(\pi 4_{t+3}^{headline})$ are the three quarters ahead core and headline inflation forecasts, respectively and $\hat{y}_t{}^{nag}$ is the output gap. The reaction function contains both core and headline inflation, *i.e.*, monetary policy reacts not only to demand side developments and the underlying inflationary pressures as reflected in core inflation forecasts, but also to supply side pressures pre-emptively as to prevent the second-round effects of food and fuel prices on core inflation. This specification also enables monetary policy to see through transient supply side shocks.

QPM 2.0 incorporates an additional equation for the operating target of monetary policy – weighted average call money rate (WACR) – as follows:

$$\breve{i}_t = i_t + Spread_t \quad ...(10)$$

where $\breve{i}_t$ is WACR and $Spread_t$ is the wedge between the operating target and the policy rate. The steady state value for $Spread_t$ is taken as 0 indicating that in long run, the policy rate and the operating target converge. The transmission from short-term rate to long-term interest rate – relevant for private credit – depends on the term structure of interest rates as well as term premium (Appendix and Benes *et al.*, 2016b).

III.4 Fiscal Block

The fiscal deficit (as per cent of nominal GDP), (FD_t) is the sum of the primary deficit (PD_t) and interest payments (IP_t), *i.e.*,

$$FD_t = PD_t + IP_t \quad ...(11)$$

The primary deficit is decomposed into structural $(PD^s{}_t)$ and cyclical $(PD^c{}_t)$ components, *i.e.*,

$$PD_t = PD^s{}_t + PD^c{}_t \quad ...(12)$$

The cyclical primary fiscal deficit $(PD^c{}_t)$, the automatic stabiliser, is modelled as a function of the economic cycle measured by the output gap $(\hat{y}^{nag})$.

$$PD^c{}_t = -\xi_1 * \hat{y}_t^{nag} + \varepsilon^{PD^c}{}_t$$

$$\xi_1 = 0.2. \quad ...(13)$$

The structural component of the fiscal deficit $(PD^s{}_t)$ is modelled as the weighted average of the one quarter lag of the structural primary deficit and the primary deficit target $(\overline{PD}_t^s)$. Fuel tax changes affect the primary deficit through changes in revenue, *i.e.*,

$$PD_t^s = \rho^{PD^s} * PD^s{}_{t-1} + \left(1-\rho^{PD^s}\right) * \overline{PD}_t^s - \xi_2(\pi_t^{fuel,tax} - \pi 4_t^*) + \varepsilon^{PD^s}{}_t$$

$$\rho^{PD^s} = 0.80;\ \xi_2 = 0.002. \quad ...(14)$$

The primary deficit target is calibrated in line with the Fiscal Responsibility and Budget Management (FRBM) path of fiscal consolidation:

$$\overline{PD}_t^s = \rho^{\overline{PD}^s} * \overline{PD}^s{}_{t-1} + \left(1-\rho^{\overline{PD}^s}\right) * \overline{PD}_t^s + \varepsilon^{\overline{PD}^s}{}_t$$

$$\rho^{\overline{PD}^s} = 0.70. \quad ...(15)$$

Deviations of the structural primary deficit from its target capture fiscal impulse ($FIMP_t$):

$$FIMP_t = PD_t^s - \overline{PD}_t^s \quad ...(16)$$

Debt accumulation dynamics is modelled as follows:

$$B_t = FD_t + B_{t-1}\left(\frac{1}{\left(1+\frac{\pi 4_t^* + Y4_t^*}{100}\right)}\right) \quad ...(17)$$

where current debt (as per cent of nominal GDP) (B_t) is determined by the current fiscal deficit (FD_t) and the previous level of debt (B_{t-1}) adjusted for nominal GDP growth ($\pi 4_t^* + Y4_t^*$).

The steady state fiscal deficit (FD^*) is related to steady debt dynamics (B^*) as follows:

$$FD^* = B^*\left(1 - \frac{1}{\left(1+\frac{(\pi 4_t^* + Y4_t^*)}{100}\right)} - \frac{i_t^n}{\left(1+\frac{(\pi 4_t^* + Y4_t^*)}{100}\right)} h^{3M} - \frac{i_t^n + prem^{10y^*}}{\left(1+\frac{(\pi 4_t^* + Y4_t^*)}{100}\right)}(1 - h^{3M})\right)$$

$$h^{3M} = 0.05. \quad ...(18)$$

where i_t^n is the nominal natural rate of interest, which is equal to the real natural rate of interest plus the inflation target. For ease of modelling, we assume that government finances the fiscal deficit by issuing two types of bonds, one of short-term maturity (91-day Treasury Bill) and the other with long-term maturity (10-year G-Sec bonds). h^{3M} represents the share of short-term bonds and $(1 - h^{3M})$ represents the share of long-term bonds. $prem^{10y^*}$ represents the average spread between short-term and long-term interest rates.

Finally, the debt target ($\overline{B_t}$) anchors government's behaviour and is represented by the following equation:

$$\overline{B_t} = \rho^{\bar{B}}\overline{B_{t-1}} + \left(1 - \rho^{\bar{B}}\right)B^* + \varepsilon^{\bar{B}}{}_t$$

$$\rho^{\bar{B}} = 0.99. \quad ...(19)$$

Overall interest payments (IP_t) are the sum of interest payments on short-term (IP_t^{3M}) and long-term (IP_t^{10Y}) bonds.

$$IP_t = IP_t^{3M} + IP_t^{10Y} \quad ...(20)$$

Interest payment on short-term bonds is the product of the previous period short-term rate ($\check{\imath}_{t-1}$) and the portion of outstanding debt held as short-term bonds in the previous period ($h^{3M} * B_{t-1}$), adjusted for the changes in nominal GDP growth.

$$IP_t^{3M} = \check{\imath}_{t-1}\, h^{3M} B_{t-1}\, \frac{1}{\left(1+\frac{(\pi 4_t^* + Y4_t^*)}{100}\right)} \quad ...(21)$$

Interest payment on long-term bonds is the product of the previous period interest rate (i_{t-1}^{10y}) and the portion of outstanding debt held as long-term bonds in the previous period ($(1 - h^{3M}) * B_{t-1}$), adjusted for the changes in nominal GDP growth.

$$IP_t^{10Y} = i_{t-1}^{10y} * (1 - h^{3M}) B_{t-1}\, \frac{1}{\left(1+\frac{(\pi 4_t^* + Y4_t^*)}{100}\right)} \quad ...(22)$$

The interest rate (i_t^{10y}) on long-term government securities can be represented as the average of forward-looking short-term interest rates and the term premium ($prem_t^{10y}$).

$$i_t^{10y} = \frac{1}{40}\sum_{i=0}^{39} \widetilde{\imath_{t+i}} + prem_t^{10y} \quad ...(23)$$

The term premium ($prem_t^{10y}$) is assumed to converge to the long-term average spread between short term and long-term interest rates ($prem^{10y^*}$) in the absence of any shock.

$$prem_t^{10y} = \rho^{prem^{10y}} prem_{t-1}^{10y} + \left(1 - \rho^{prem^{10y}}\right) prem^{10y^*} + \varepsilon_t^{prem^{10y}}$$

$$\rho^{prem^{10y}} = 0.75. \quad ...(24)$$

III.5 Modified Risk-adjusted Uncovered Interest Parity (MRUIP)

The uncovered interest rate parity (UIP) condition, wherein interest rate differentials determine the expected exchange rate, has been popularly used in small open economy models for monetary policy analysis. However, the UIP relation has been consistently and decisively rejected in the data (see Froot and Thaler, 1990; Lewis, 1995 and Engel, 1996 for comprehensive surveys). To reflect this empirical disconnect, time varying country risk premia and

purchasing power parity conditions are introduced to moderate the effects of interest rates on exchange rates (Benes *et al.*, 2016b).

Exchange rate dynamics captured through the MRUIP equation have been modified to incorporate features of external sector: a) an adjustment process for capital flows; b) determinants of current account; c) the balance of payments identity relating the current and capital accounts to the accumulation of reserves; and, d) forex interventions.

$$K_t = \varsigma_1 K_{t-1} + \varsigma_2 (rr_t - rr_t^{rw}) - \varsigma_3 \Delta S_t + \varsigma_4 \left(\hat{y}_t^{nag} - \hat{y}_t^{f}\right) + \varepsilon_t^K$$

$$\varsigma_1 = 0.55;\ \varsigma_2 = 0.05;\ \varsigma_3 = 0.20;\ \varsigma_4 = 0.08. \quad ...(25)$$

where K represents capital flows (as per cent of nominal GDP), which are driven by the real interest rate gap ($rr_t - rr_t^{rw}$); changes in nominal exchange rate (ΔS_t); and the difference between domestic and global output gaps $\left(\hat{y}_t^{nag} - \hat{y}_t^{f}\right)$;

$$CA_t = \tau_1 CA_{t-1} + \tau_2 \hat{Z}_t - \tau_3 \hat{y}_t^{nag} - \tau_4 \widehat{Oil}_t + \varepsilon_t^{CA}$$

$$\tau_1 = 0.50;\ \tau_2 = 0.07;\ \tau_3 = 0.10;\ \tau_4 = 0.015. \quad ...(26)$$

where CA is the current account balance (as per cent of nominal GDP), which is determined by $\widehat{Oil}$ representing the crude oil price gap[9], domestic demand conditions ($\hat{y}_t^{nag}$) and the real exchange rate gap ($\hat{Z}_t$).

The change in reserves (as a per cent of nominal GDP *(ΔRes)*) represents the balance of payments identity conditioned by forex interventions (Int) which, in turn, determines the impact of capital flows on the exchange rate.

$$Int(CA_t + K_t) = \Delta Res_t$$

$$Int = 0\ for\ no\ intervention\ and\ 1\ for\ full\ intervention. \quad ...(27)$$

Incorporating the added features, the MRUIP equation is expressed as follows:

$$\gamma_1 * [\breve{\imath}_t - (i_t^f + \sigma_t + \gamma_2 * BIMP_t + \gamma_3 * FIMP_t)] + (1-\gamma_1) * [4\Delta\bar{Z}_{t-1} + (\pi 4_{t-1}^{core} - \pi 4_{t-1}^{f})] + (1 - Int) * \gamma_4 * K_t = 4 * (E_t S_{t+1} - S_t) + \varepsilon_t^S$$

$$\gamma_1 = 0.55;\ \gamma_2 = 2.0;\ \gamma_3 = 2.0;\ Int = 0\ to\ 1;\ \gamma_4 = 3.33. \quad ...(28)$$

$$E_t S_{t+1} = \delta_1 * S_{t+1} + (1-\delta_1) * \{S_{t-1} + 2 * [\Delta\bar{Z}_t + (\pi 4_t^* - \pi 4_t^{*f})/4]\}$$

$$\delta_1 = 0.63. \quad ...(29)$$

where, S_t is exchange rate, $E_t S_{t+1}$ is expected exchange rate, $\breve{\imath}_t$ is short-term nominal interest rate, i_t^f is foreign nominal interest rate[10], σ_t is time-varying country risk premium, $\pi 4_t^f$ is foreign inflation, $\pi 4_t^{core}$ is domestic core inflation, $\Delta\bar{Z}_t$ is change in real exchange rate trend, $\pi 4_t^*$ and $\pi 4_t^{*f}$ are inflation targets of the domestic and foreign economies, $FIMP_t$ is fiscal impulse, $BIMP_t$ is debt impulse and K_t is capital flows.

III.6. Foreign Block

The foreign block in QPM has two parts – the United States (US) block and rest of the world (RoW) block. The US block is a barebone new-Keynesian model with three behavioural equations – the IS curve, the Philips curve and the Taylor rule:

$$\hat{y}_t^{US} = a_1 * E_t(\hat{y}_{t+1}^{US}) + a_2 * \hat{y}_{t-1}^{US} - \alpha_3 * \hat{r}_t^{US} + \varepsilon_t^{\hat{y}^{US}}$$

$$a_1 = 0.25;\ a_2 = 0.55;\ a_3 = 0.20. \quad ...(30)$$

$$\pi_t^{US} = b_1 * E_t{}^h(\pi_{t+1}^{US}) + (1-b_1) * \pi_{t-1}^{US} + b_2 * \hat{y}_t{}^{US} + \varepsilon_t^{\pi^{US}}$$

$$b_1 = 0.75;\ b_2 = 0.10. \quad ...(31)$$

$$i_t{}^{US} = c_1 i_{t-1}{}^{US} + (1-c_1) * \{\bar{r}_t{}^{US} + \pi 4_t^{*US} + c_2 * [E_t(\pi 4_{t+3}^{US}) - \pi 4_t^{*US}] + c_3 * \hat{y}_t{}^{US}\} + \varepsilon_t^{i^{US}}$$

$$c_1 = 0.70;\ c_2 = 1.50;\ c_3 = 0.20. \quad ...(32)$$

[9] Deviation of crude oil price from its long-term trend.

[10] The foreign interest rate (i_t^f) is approximated using fed funds rate ($i_t{}^{US}$).

where $\hat{y}_t^{US}$ is the US output gap, $\hat{r}_t^{US}$ is the US real interest rate gap, π_t^{US} is the US inflation, ${i_t}^{US}$ is the Fed funds rate, $\pi 4_t^{*US}$ is the US inflation target and ${\bar{r}_t}^{US}$ is real natural rate of interest of the US.

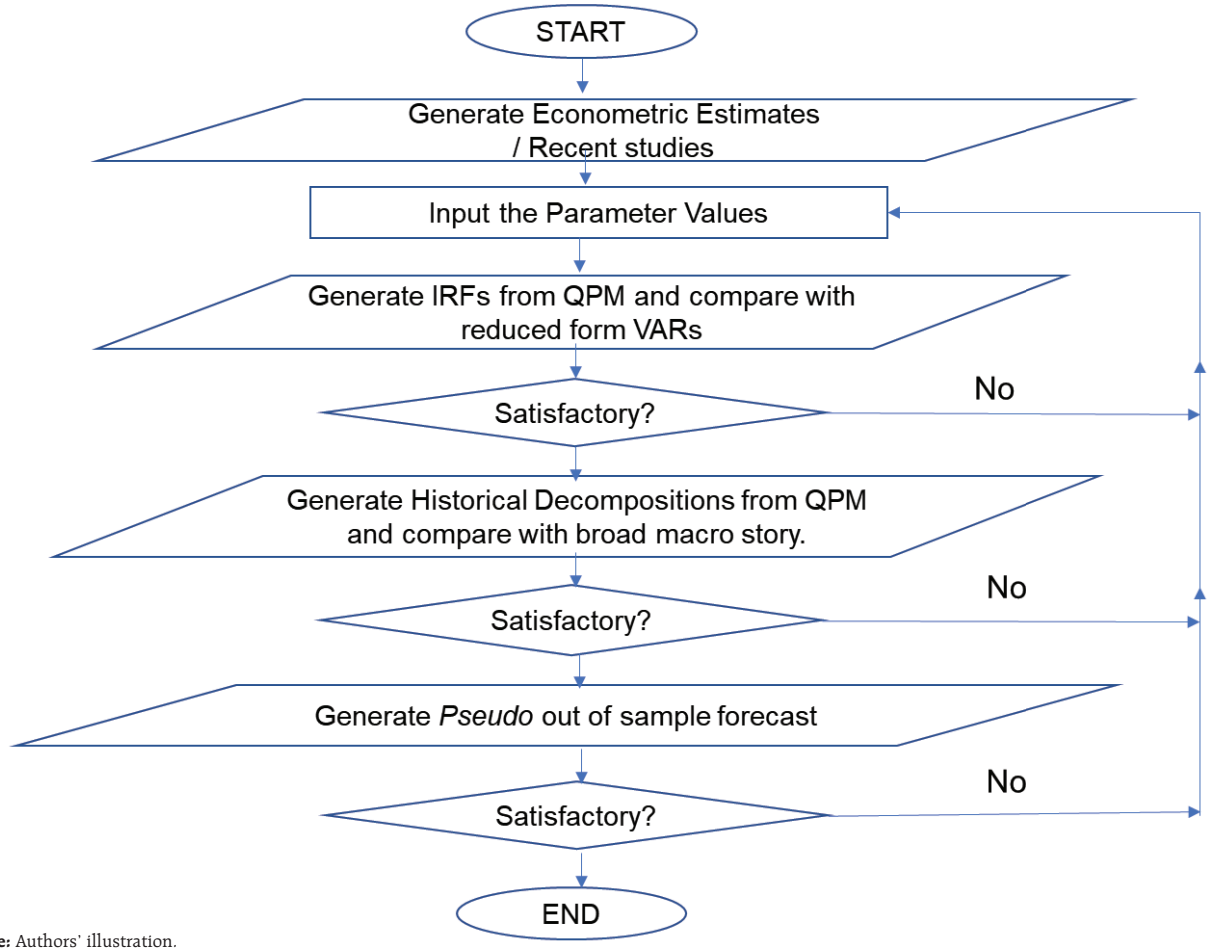
The RoW section of the foreign block incorporates an exogenous equation for crude oil price movements. The forecasts of foreign variables are exogenously provided, based on the information available from agencies like the United States Federal Reserve (US Fed), the International Monetary Fund (IMF) and the International Energy Association (IEA).

III.7. Calibration

The calibration of parameters of QPM 2.0 has been carried out through multiple iterations (Chart 2). This process includes a) generating econometric estimates by using linear regression models, non-linear regression models and vector auto regression (VAR) models; (b) using estimates from other empirical studies (Khundrakpam and Jain, 2012; Misra and Trivedi, 2016; Behera *et al.* 2017; Patra *et al.*, 2018; Kapur, 2018; RBI, 2018; Goyal and Parab, 2019; Raj *et al.*, 2018; RBI, 2019; Patra *et al.*, 2021; Pattanaik *et al.*, 2022); and (c) evaluating the fit by using model generated IRFs, historical decompositions and rolling forecasts.

Model solutions, simulations, historical decompositions and forecasts are carried out using the IRIS toolbox in MATLAB through following steps. First, the model needs to be linearised around a

Chart 2: Flow Chart – QPM 2.0 Calibration



Source: Authors' illustration.

steady state. Second, dynamic solutions involving the forward-looking variables have to be obtained. Third, unobserved variables have to be filtered out from the state-space representation. Fourth, forecasts and policy simulations have to be generated.

Steady states are computed by using a nonlinear Newton-type algorithm. The dynamic model solution is obtained from a nonlinear particle swarm optimizer (PSO), and a generalised Schur decomposition is used to integrate future expectations. The unobserved variables are filtered out by employing a multivariate Kalman filter (MvKF) with an exact nonlinear prediction step. The simulations generated from the model are based on a first-order approximate solution calculated around the steady state. The forecasts are generated by applying equation-selective nonlinear simulator with shanks acceleration.

IV. Model Simulations

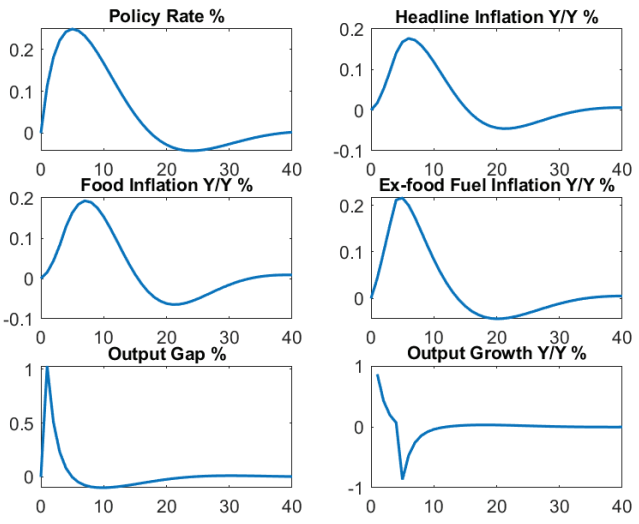
IV.1. Output Gap (Demand) Shock

A positive demand shock of 1 percentage point (ppt) increases core inflation by 20 basis points (bps) at its peak. Headline inflation increases by around 20 bps. Both the output gap and the deviation of inflation from its target require an increase in the real interest rate, which is achieved through a hike in the policy interest rate. These changes dampen demand and over the medium-term, output returns to its potential level. With the elimination of excess demand, inflation returns to the target and all the real variables return to their long-term equilibrium (Chart 3).

IV.2. Core Inflation (Cost-push) Shock

A cost-push shock to core inflation presents monetary policy with a difficult trade-off. The policy rate has to be increased to ensure that inflation returns to target in the medium-term, but this opens up a negative output gap (Chart 4). With the unwinding of the interest rate as inflation falls to target, the output gap closes and output returns to its potential level.

Chart 3: Response to a 1 Percentage Point Increase in the Output Gap

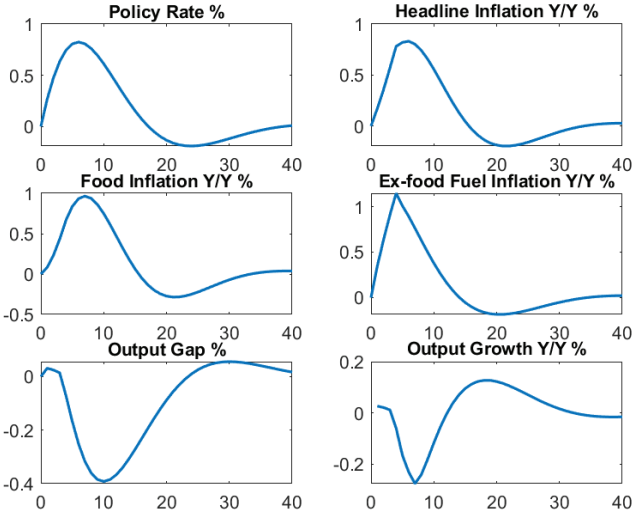


Note: x-axes are quarters; y-axes are percentage points.
Source: Authors' estimates.

IV.3. Policy Rate Shock

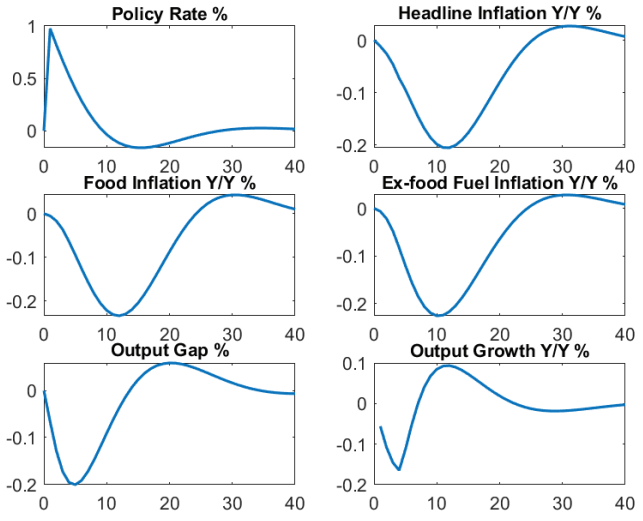
A policy interest rate increase by 1 percentage point results in a fall in domestic demand by around 20 bps and a negative output gap opens up (Chart 5). Along with anchoring of inflation expectations and enhanced

Chart 4: Response to a 1 Percentage Point Increase in Core Inflation



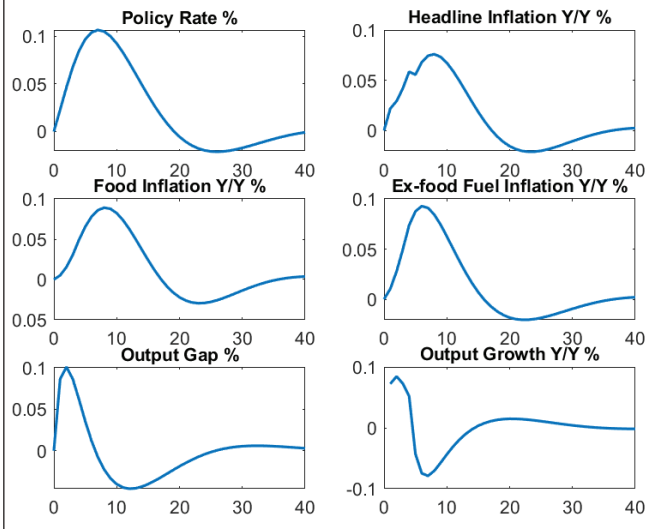
Note: x-axes are quarters; y-axes are percentage points.
Source: Authors' estimates

Chart 5: Response to a 1 Percentage Point Increase in the Policy Rate



Note: x-axes are quarters; y-axes are percentage points.
Source: Authors' estimates

Chart 6: Response to a 1 Per cent Increase in the Exchange Rate



Note: x-axes are quarters; y-axes are percentage points.
Source: Authors' estimates

central bank credibility, this leads to a decline in core inflation by around 25 bps and headline inflation by around 20 bps. These effects, however, hold only in the short run. Over time, as inflation returns to the target, the interest rate decreases, which closes the output gap and neutralises the disinflationary effect of the initial interest rate increase.

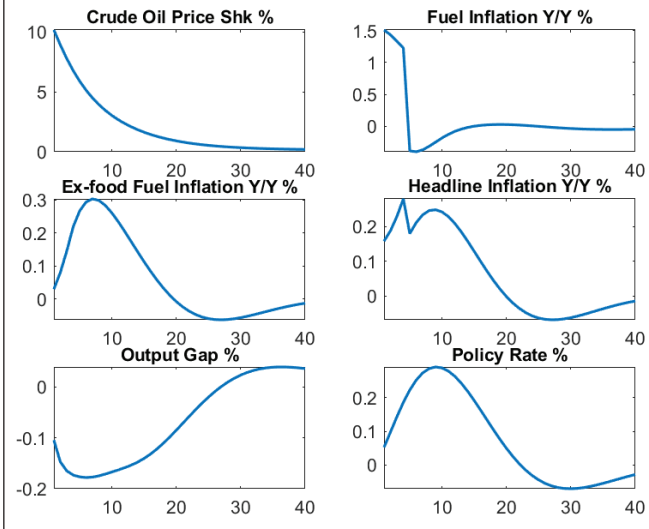
IV.4. Exchange Rate Shock

A depreciation in the exchange rate by 1 per cent leads to increase of around 7 bps in inflation *via* an exchange rate pass-through (ERPT) of 7 per cent (Chart 6). The output gap initially increases as a result of gains in external competitiveness. The increase in inflation and the output gap warrants monetary tightening. This leads to undershooting of the output gap, creating negative growth responses in the medium-term.

IV.5. Crude Oil Price Shock

An increase in global crude oil prices has direct effects on petrol, diesel, LPG and kerosene prices. The increase in market fuel prices induces a cost push shock and core inflation goes up. Higher crude oil prices also induce depreciation of the Indian Rupee (INR). This will have additional second round effects on inflation. Together, an increase in crude oil price by 10 per cent results in inflation increasing up by 30 bps at its peak (Chart 7). Aggregate demand slows down as

Chart 7: Response to a 10 Per cent Increase in the Crude Oil Price



Note: x-axes are quarters; y-axes are percentage points/Per cent.
Source: Authors' estimates

firms take a hit on their profit margins, cash flows and investment. The increase in inflationary pressures, however, warrants a monetary policy response to bring inflation back to target.

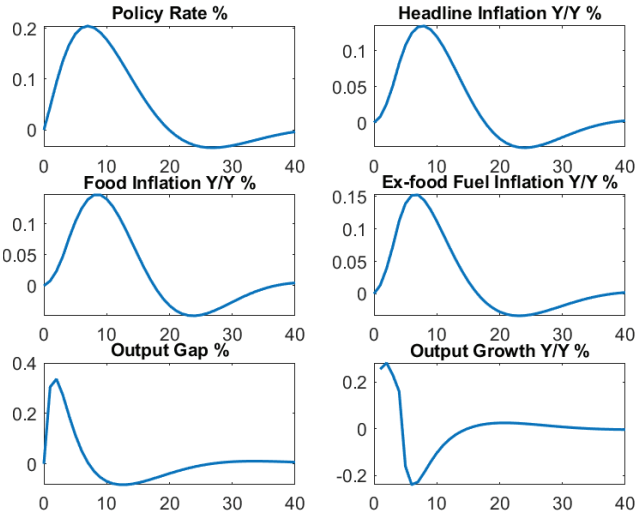
IV.6. World Output Gap (Demand) Shock

An increase in world demand by 1 percentage point leads to increase in domestic demand by 30 bps (Chart 8), which pushes up inflation. The increase in world demand also raises international crude oil prices. With India being an importer of crude oil, the higher crude oil prices exert additional pressure on headline and core inflation. The increase in domestic demand and inflation warrants tightening of monetary policy.

IV.7. Fuel Tax Shock

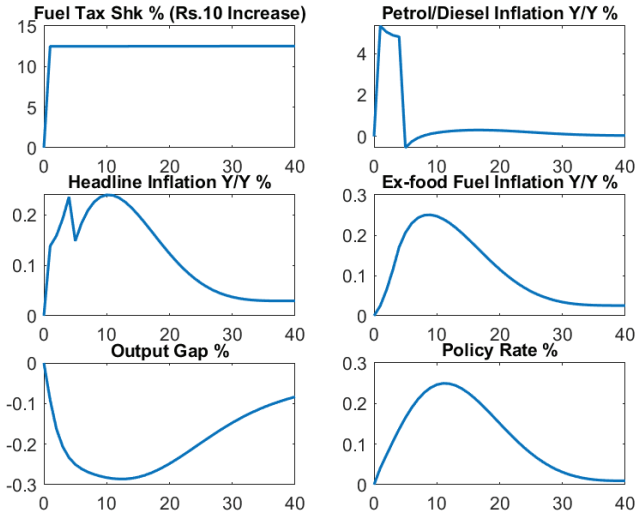
Fuel tax increases are sporadic and non-mean reverting. Hence, in QPM 2.0, the shocks to fuel taxes are assumed not to revert to their original values unless and until they are reversed exogenously. An increase in the fuel tax by ₹10 per litre leads to an increase in fuel prices and hence core inflation through the cost push channel. Inflation goes up by 25 bps (Chart 9). Inflationary pressures remain entrenched in the system due to the non-reversal of the increases. Demand conditions also remain subdued for a longer period for the same reason. The policy rate needs to increase to anchor inflationary expectations and neutralise second-round effects.

Chart 8: Response to a 1 Percentage Point Increase in the World Output Gap



Note: x-axes are quarters; y-axes are percentage points.
Source: Authors' estimates

Chart 9: Response to a ₹10 per litre Increase in the Fuel Taxes



Note: x-axes are quarters; y-axes are percentage points/Per cent.
Source: Authors' estimates

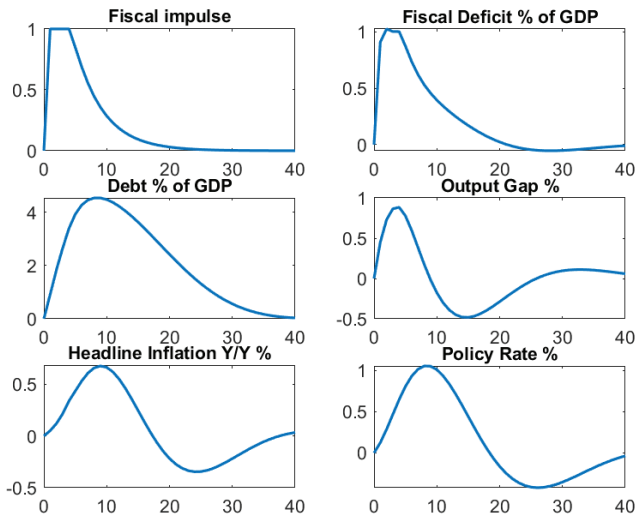
IV.8. Structural Primary Fiscal Deficit Shock

An increase in the structural primary fiscal deficit by 1 percentage point of GDP contributes to demand and opens up a positive output gap (Chart 10). The overall fiscal deficit goes up by the same amount, leading to accumulation of debt, which contributes to depreciation of the INR through country risk premium. The positive output gap and currency depreciation lead to higher inflation, warranting monetary policy action.

IV.9. Capital Flow Shock

The impact of capital flow shock (one percentage point of GDP) is conditional on the RBI's decision to intervene and sterilise. In case of a capital outflow

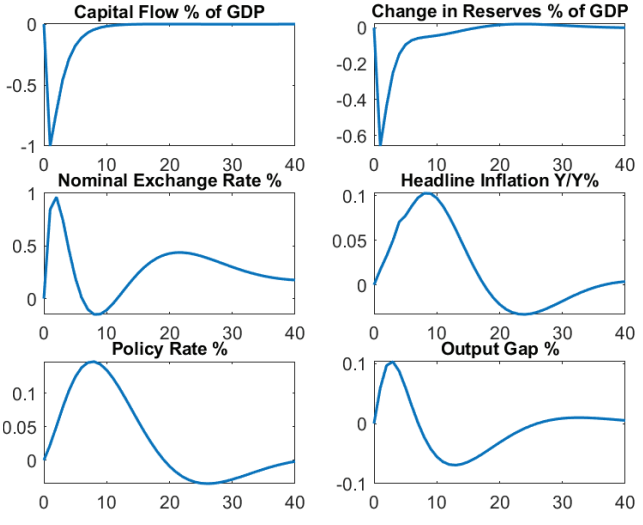
Chart 10: Response to a 1 Percentage Point Increase in the Structural Primary Deficit



Note: x-axes are quarters; y-axes are percentage points.
Source: Authors' estimates

shock, assuming the RBI intervenes and sterilises 70 per cent, the reserves will deplete by 0.7 percentage point of nominal GDP. In this scenario, the exchange rate could depreciate by close to 1 per cent, inducing inflation of around 10 bps (Chart 11).

Chart 11: Response to a 1 Percentage Point Decline in Capital Flows



Note: x-axes are quarters; y-axes are percentage point/Per cent.
Source: Authors' estimates

If the central bank decides not to intervene, there will be no depletion of reserves; however, the depreciation could be higher, leading to higher inflation and higher policy rates and imparting volatility to the exchange rate, inflation and policy rate. On the other hand, if the central bank chooses to intervene fully, an equal amount of reserves will be depleted and the exchange rate will remain more or less unchanged, warranting no monetary policy rate changes but with volatility in reserves.

V. Historical Decompositions

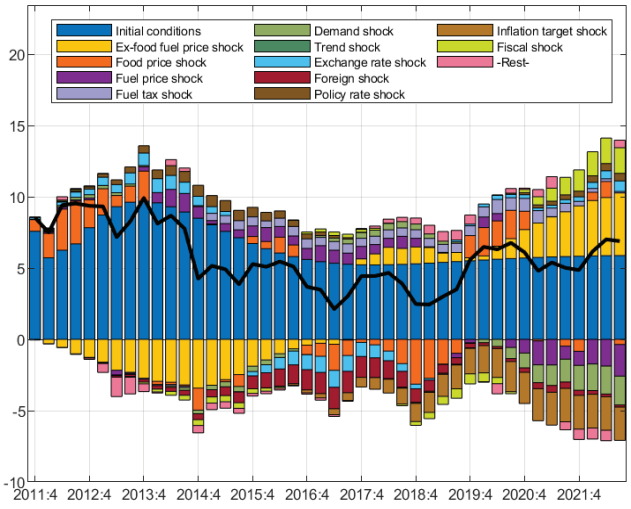
A historical decomposition (HD) of the major macro variables for the period 2011-2022 helps to understand the role of various shocks and policies in driving the trajectory of macroeconomic developments.

V.1. Headline Inflation

Prior to 2014 – the period which laid down the initial conditions of the FIT – headline inflation was in double digits. Food price shocks emanating from the monsoon and MSP, the lack of a nominal anchor, exchange rate depreciation and high fuel prices drove inflation up during that period (Chart 12). During 2014 to 2016, when a *de facto* FIT framework was pursued, the factors that contributed to high inflation during the pre-2014 period dissipated. Cost push shocks became disinflationary on the back of benign global commodity prices and exchange rate stability was restored as the external environment turn favourable. From 2014 onwards, fuel taxes started to contribute positively to inflation, offsetting the negative impact of the crude oil price decline. Owing to these factors, inflation steered close to 4 per cent by the time FIT was institutionalised in 2016.

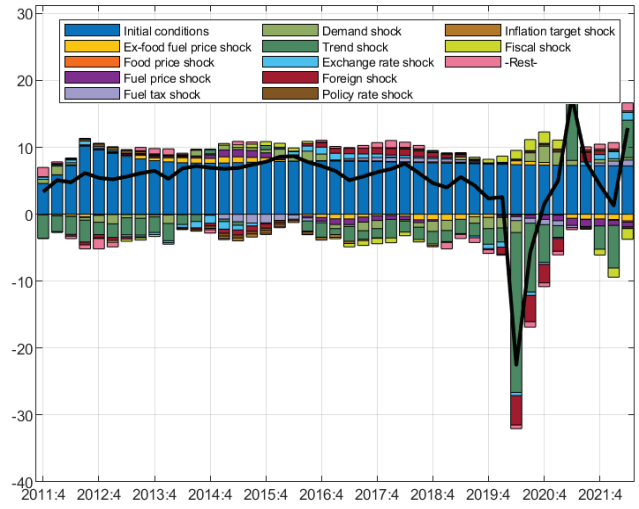
From 2016 onwards, the nominal anchor set out by the FIT contributed favourably to inflation. Fiscal prudence also contributed to the disinflationary process. Up till Q3:2019, food price shocks led to a fall in inflation. Fuel price shocks were also favourable during this period.

Chart 12: Historical Shock Decomposition of Headline Inflation



Source: Authors' estimates

Chart 13. Historical Shock Decomposition of GDP Growth



Source: Authors' estimates

During the 2020-22 period, food price and cost-push shocks emanating from persistent supply chain disruptions due to the COVID pandemic and the war in Ukraine exerted upside pressure on headline inflation, partly offset by subdued demand conditions.

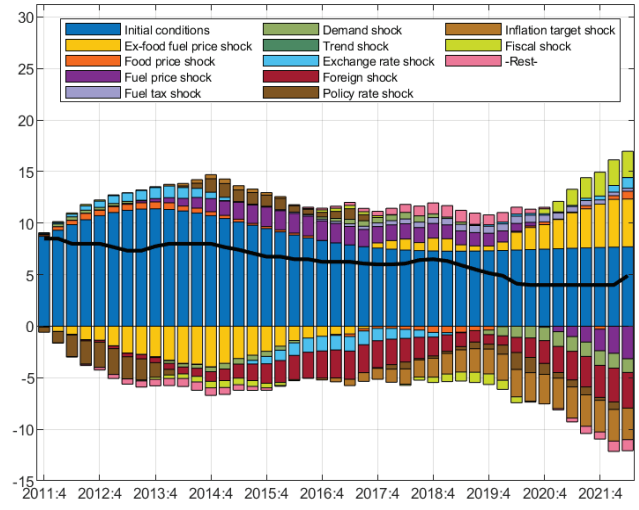
V.2. GDP Growth

The HD of GDP growth suggests that potential output shocks and structural factors were mostly responsible for the GDP growth slowdown during 2016-19 (Chart 13). The pandemic induced lockdown, supply chain bottlenecks and weak external demand adversely impacted domestic output and demand during 2020-22.

V.3. Policy Repo Rate

In the 2014-16 period, the stability in the exchange rate, favourable cost-push shocks and a conducive external environment contributed negatively to the policy rate. During the FIT period (2016 -2019), favourable food and fuel price shocks, external developments and fiscal prudence supported a lower policy rate environment (Chart 14). Most interestingly, the nominal anchor set out by the FIT contributed negatively to the policy rate during this phase. In other words, in the absence of a nominal anchor, the policy rate could have been higher in order to achieve the same level of inflation. This indicates that with an explicit nominal anchor, the monetary policy rates can afford to be raised less than otherwise for disinflating the economy.

Chart 14. Historical Shock Decomposition of Policy Repo Rate



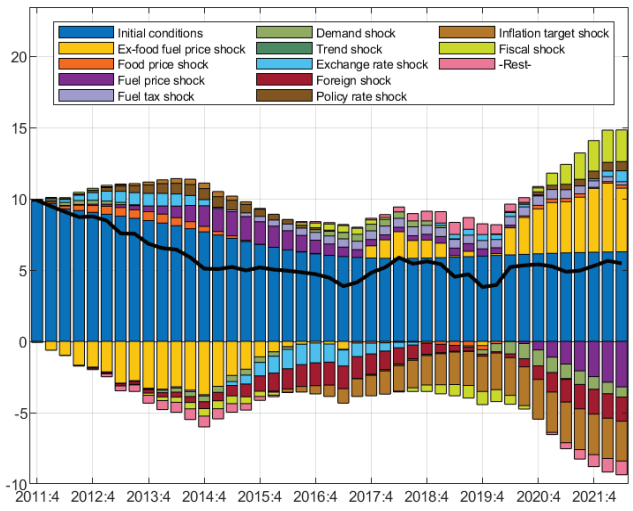
Source: Authors' estimates

During 2020-22, a large negative output gap due to the pandemic caused monetary policy to follow an accommodative stance. From May 2022, the policy repo rate has been increased in a calibrated manner in view of headline inflation ruling above the target along with elevated core inflation.

V.4. Core Inflation

HD of core inflation is similar to that of headline inflation. The institution of the FIT regime, benign crude oil prices, fiscal prudence and favourable external environment provided cushions to core inflation during 2016-19, which more than offset the upside pressures from the increase in fuel taxes (Chart 15). Pandemic induced supply chain disruptions and cost push shocks led to elevated core inflation in 2020-22.

Chart 15. Historical Shock Decomposition of Core Inflation

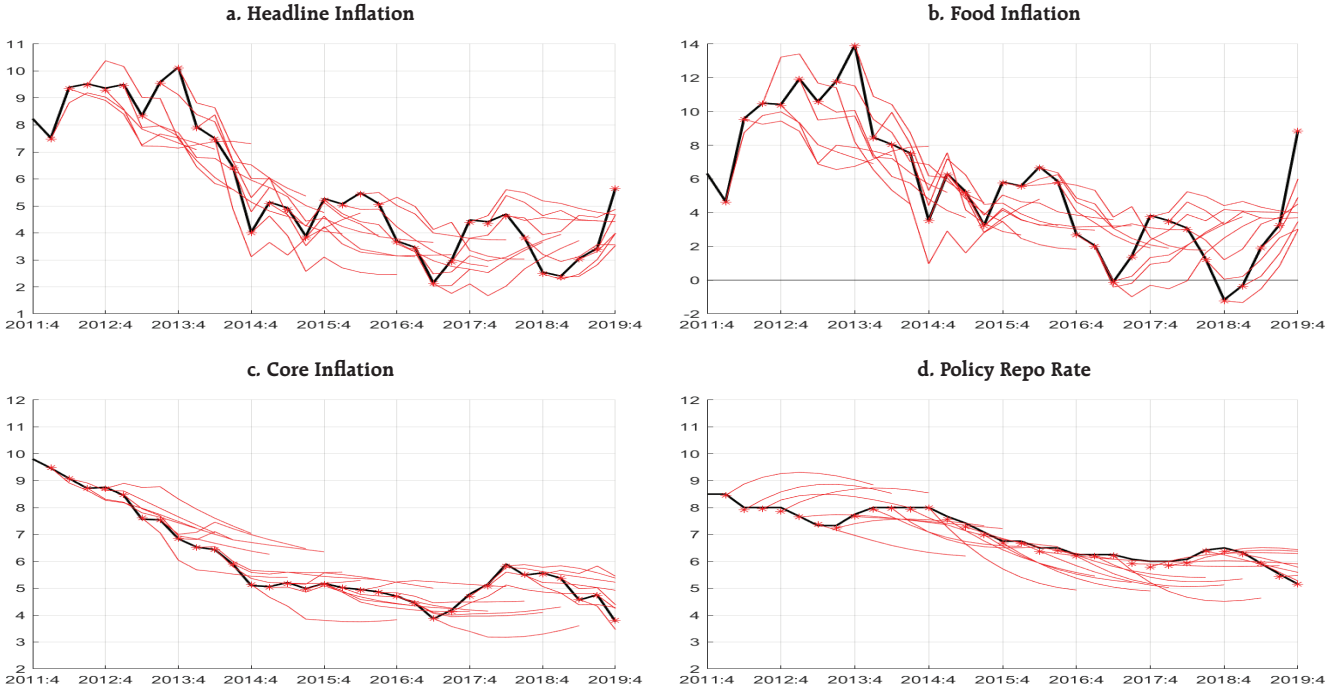


Source: Authors' estimates

VI. Forecast Performance

This section evaluates the forecast performance of QPM 2.0 by generating *pseudo* out-of-sample forecasts of up to 8 quarters ahead and calculating the *pseudo* out-of-sample root mean square errors (RMSE) of major macroeconomic variables for the period from 2011 to 2019 (Chart 16).

Chart 16: Actual *Versus* Pseudo Out-of-sample Forecasts (per cent)



Source: Authors' estimates

The hairline charts indicate that the forecasts of food inflation and headline inflation appear to be directionally consistent. Core inflation and policy rate forecasts seem to be less noisy than food and headline inflation forecasts.

A formal evaluation of the forecast is conducted by generating the *pseudo* out-of-sample RMSEs over various forecast horizons (Table 2).

The RMSEs of the headline inflation forecasts in the short to medium horizon (1-4 quarters) are marginally higher than that of time series forecasts and are comparable with that of the Survey of Professional Forecasters (SPF) (John *et al.*, 2020; Raj *et al.*, 2020). RMSEs of the best time series forecasts are 0.2 to 0.6 percentage points lower in 1-4 quarters. This behaviour is expected as large macroeconomic models tend to produce larger errors in the short-term relative to models based on time series and full information matrices. This is also the reason why the QPM uses forecasts from short-term forecasters as its initial condition. The forecast performance substantially improves in the medium horizon (5-8 quarters), which matters for the monetary policy decision. In the eight-quarter ahead forecasts, QPM turns out to be better than time series models (John e*t al.*, 2020) by a substantial margin.

The RMSEs of core inflation forecasts are substantially lower than that of the headline inflation, as expected. As in the case of headline inflation, RMSEs of core inflation forecasts from QPM are higher than time series forecasts and comparable to SPF forecasts over the 1-4 quarter horizon (John *et al.*, 2020). In the medium horizon, however, QPM 2.0's forecast accuracy is better than time series model forecasts (John *et al.*, 2020) by considerable margins.

Table 2: *Pseudo* Out-of-sample RMSEs

(percentage points)

Variable / Horizon (Quarters)	0	1	2	3	4	5	6	7	8
Headline Inflation (Per cent, y-o-y)	0.05	0.80	1.07	1.40	1.61	1.50	1.34	1.30	1.21
Food Inflation (Per cent, y-o-y)	0.05	1.60	2.04	2.59	2.91	2.63	2.48	2.55	2.32
Core Inflation (Per cent, y-o-y)	0.03	0.32	0.54	0.73	0.96	0.98	0.99	0.99	0.96
Policy Rate (Per cent)	0.09	0.34	0.58	0.73	0.82	0.91	0.92	0.88	0.79

Source: Authors' estimates.

VII. Conclusion

Given the transmission lags which characterise the impact of monetary policy on output and inflation, forward-looking responses to expected inflation and output are warranted to maximize welfare. Both inflation and output are also shaped by expectations of future interest rates, as also inflation expectations of households and firms. Thus, inflation and output are the outcome of a complex web of interactions and feedback mechanisms in the economy. Accordingly, consistent and reliable forecasts of inflation and output are important as they assume the role of intermediate target of monetary policy. It is in this context that theoretically consistent and empirically well-founded models adapting country-specific features are at the heart of monetary policy formulation among modern central banks.

In India, the adoption of a flexible inflation targeting framework has been underpinned by a Quarterly Projection Model, which fulfils the requirement set out in Section 45ZM of the RBI Act of setting out inflation forecasts for 6-18 months in a half-yearly Monetary Policy Report (MPR).

QPM 2.0 takes that endeavour to the next level by enriching the existing new-Keynesian monetary model (QPM 1.0) with fiscal-monetary policy interactions, a more nuanced modelling of India-specific fuel pricing, capital flows, exchange rate dynamics and central bank's forex market interventions. The QPM 2.0 thus takes monetary policy modelling closer to a general equilibrium framework that is more representative of India's macroeconomic dynamics and helps to

generate internally consistent forecasts and policy scenarios. This provides policymakers with relevant information and scenarios for a more informed judgement.

Historical decompositions generated from QPM 2.0 show that the inflationary surge in the wake of the pandemic and the war in Ukraine was triggered by successive supply shocks but as their impact waned, rising demand unleashed by the strengthening domestic recovery enabled pass-through of pent-up input costs, adding persistence to elevated inflationary pressures (Patra *et al.*, 2022). The disinflation strategy adopted during this period has been strongly supported by improved precision in forecasts generated by QPM 2.0 relative to competing models.

References

Behera, H. K., Pattanaik, S., & Kavediya, R. (2017). Natural interest rate: Assessing the stance of India's monetary policy under uncertainty. *Journal of Policy Modeling*, *39*(3), 482-498.

Benes, M.J., Clinton, K., George, A., John, J., Kamenik, O., Laxton, M.D., Mitra, P., Nadhanael, G.V., Wang, H. & Zhang, F. (2016a). *Inflation-forecast targeting for India: An outline of the analytical framework.* RBI Working Paper Series No. 7/2016.

Benes, M.J., Clinton, K., George, A., Gupta, P., John, J., Kamenik, O., Laxton, M.D., Mitra, P., Nadhanael, G.V., Portillo, R. and Wang, H. (2016b). *Quarterly projection model for India: Key elements and properties.* RBI Working Paper Series No. 8/2016.

Blanchard, O., & Perotti, R. (2002). An empirical characterization of the dynamic effects of changes in government spending and taxes on output. *the Quarterly Journal of economics*, *117*(4), 1329-1368.

Blanchard, O., Ostry, J. D., Ghosh, A. R., & Chamon, M. (2016). Capital flows: expansionary or contractionary?. *American Economic Review*, *106*(5), 565-569.

Canzoneri, M., Cumby, R., & Diba, B. (2010). The interaction between monetary and fiscal policy. *Handbook of monetary economics*, *3*, 935-999.

Fleming, J.M. (1962). Domestic Financial Policies under fixed and under floating exchange rates. *Staff Papers-International Monetary Fund*, 369-380.

Engel, C. (1996). The forward discount anomaly and the risk premium: A survey of recent evidence. *Journal of empirical finance*, *3*(2), 123-192.

Escolano, J.(2010). *A practical guide to public debt dynamics, fiscal sustainability, and cyclical adjustment of budgetary aggregates* (No. 2010/002). Washington, DC: International Monetary Fund.

Froot, K. A., & Thaler, R. H. (1990). Anomalies: foreign exchange. *Journal of economic perspectives*, *4*(3), 179-192.

Gali, J., & Monacelli, T. (2005). Monetary policy and exchange rate volatility in a small open economy. *The Review of Economic Studies*, *72*(3), 707-734.

Ghosh, A. R., Ostry, J. D., & Chamon, M. (2016). Two targets, two instruments: Monetary and exchange rate policies in emerging market economies. *Journal of International Money and Finance*, *60*, 172-196.

Gopinath, G., Boz, E., Casas, C., Díez, F. J., Gourinchas, P. O., & Plagborg-Møller, M. (2020). Dominant currency paradigm. *American Economic Review*, *110*(3), 677-719.

Goyal, A., & Parab, P. (2019). *Inflation convergence and anchoring of expectations in India* (No. 2019-023). Indira Gandhi Institute of Development Research, Mumbai, India.

John, J., Kumar, D., & Patra, M.D. (2022). *Monetary policy: Confronting supply-driven inflation*, RBI Bulletin, June

John, J., Singh, S., & Kapur, M. (2020). *Inflation forecast combinations–The Indian experience*, RBI Working Paper Series No. 11/2020.

Khundrakpam, J. K., & Jain, R. (2012) *Monetary policy transmission in India: A peep inside the black box.* Reserve Bank of India Working Paper No. 11/2012.

Lewis, K. K. (1995). Puzzles in international financial markets. *Handbook of international economics*, *3*, 1913-1971.

Miranda-Agrippino, S., & Rey, H. (2022). The Global Financial Cycle, Editor(s): Gopinath, G., Helpman, E., & Rogoff, K. *Handbook of International Economics*, Elsevier, 1-43,

Misra, S., & Trivedi, P. (2016). Structural fiscal balance: An empirical investigation for India. *RBI Occasional Papers, 35.*

Mundell, R. A. (1963). Capital mobility and stabilization policy under fixed and flexible exchange rates. *Canadian Journal of Economics and Political Science*, *29*(4), 475-485.

Obstfeld, M., & Rogoff, K. (2000). New directions for stochastic open economy models. *Journal of international economics*, *50*(1), 117-153.

Patra, M. D., Behera, H. K., & 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., & John, J. (2022). Anatomy of inflation's ascent in India. RBI Bulletin, December.

Patra, M. D., Khundrapakam, J & John, J. (2018). *Non-linear, asymmetric and time varying exchange rate pass-through: Recent evidence from India.* RBI Working Paper Series No. 2/2018.

Pattanaik, S., Behera, H. K., & Sharma S. (2022). Revisiting India's natural rate of interest. RBI Bulletin, June.

Kapur, M. (2018). Macroeconomic policies and transmission dynamics in India. *Available at SSRN 3253802.*

Raj, J., Kapur, M., Das, P., George, A.T., Wahi, G. & Kumar, P. (2019). *Inflation forecasts: Recent experience in India and a cross-country assessment.* Mint Street Memo No. 19, Reserve Bank of India.

Raj, J., Pattanaik, S., Bhattacharya, I., & Abhilasha. (2018). *Forex market operations and liquidity management*, RBI Bulletin, August.

RBI. (2018), *Macroeconomics of crude oil prices.* Box I.1, Monetary Policy Report, October.

RBI. (2019), *Output gap and core inflation.* Box I.1, Monetary Policy Report, April.

RBI. (2021), *Capital flow and exchange rate shocks: Macroeconomic implications.* Box I.1, Monetary Policy Report, October.

Woodford, M. (2001). Fiscal Requirements for Price Stability. *Journal of Money, Credit and Banking*, *33*(3), 669-728.

Appendix

Bank-Lending (BL) Condition

BL variable[11] captures frictions in the transmission mechanism of monetary policy on account of bank credit supply conditions. BL not only affects the output gap but is also affected by it. Deviations of the BL from its equilibrium level are, therefore, modelled proportional to future output gap ($\hat{y}_{t+4}^{nag}$) and adjusted for the shock (ε_t^{BL}):

$$BL_t - \overline{BL}_t = -\kappa_1 \cdot \hat{y}_{t+4}^{nag} + \varepsilon_t^{BL}.$$

$$\kappa_1 = 5. \qquad \ldots(33)$$

The output gap is affected by a distributed lag of ε_t^{BL}, denoted by η_t^{BL}, which takes the following form:

$$\eta_t^{BL} = \theta \cdot (0.04\varepsilon_{t-1}^{BL} + 0.08\varepsilon_{t-2}^{BL} + 0.12\varepsilon_{t-3}^{BL} + 0.16\varepsilon_{t-4}^{BL} + 0.20\varepsilon_{t-5}^{BL} + 0.16\varepsilon_{t-6}^{BL} + 0.12\varepsilon_{t-7}^{BL} + 0.08\varepsilon_{t-8}^{BL} + 0.04\varepsilon_{t-9}^{BL}).$$

$$\theta = 1. \qquad \ldots(34)$$

Inflation Expectations

Inflation expectations are determined by the following process:

$$E_t{}^h(\pi 4_{t+1}^{core}) = (1 - c_t) * \pi 4_{t-1}^{core} + c_t * \pi 4_{t+1}^{core} + \eta_t^{E(\pi 4^{core})}$$

$$\eta_t^{E(\pi 4^{core})} = \rho^{\eta^{E(\pi 4^{core})}} \cdot \eta_{t-1}^{E(\pi 4^{core})} + \varepsilon_t^{E(\pi 4^{core})}.$$

$$\rho^{\eta^{E(\pi 4^{core})}} = 0.4. \qquad \ldots(35)$$

Inflation expectations are a weighted sum of one-quarter lagged year-on-year core inflation, and the model-based rational expectation of year-on-year inflation one quarter ahead. The weights depend on the stock of policy credibility (c_t). c_t can range from 0 (no credibility), in which case expectations are completely backward looking, to 1 (perfect credibility), in which case inflation expectations are perfectly forward looking.

[11] The increase in BL variable depicts tightening of bank lending condition and *vice versa.*

Credibility Stock Building

Credibility, as noted above, is modelled as a stock (c_t) measured between 0 and 1. Credibility changes non-linearly *i.e.,* at lower levels of credibility, monetary policy needs to be sufficiently aggressive to achieve the disinflation. However, as credibility stock increases, the policy reactions can be lower to achieve the same quantum of disinflation.

Credibility can improve only gradually over time, especially, in the initial periods of FIT. Credibility responds to a signal (ξ_t), that is good – if inflation has been converging to the target (π^{good}), and that is bad – if rising towards a high-inflation state (π^{bad}).

$$c_t = \rho^c \cdot c_{t-1} + (1 - \rho^c) \cdot \xi_t.$$

$$\rho^c = 0.95. \qquad \ldots(36)$$

The credibility signal weighs the relative likelihood of inflation converging to the target. It is higher if the current realised inflation is closer to the target. The error under the bad (good) regime is defined as the difference between the realised inflation and the expected inflation under the bad (good) regime.

$$\xi_t = \frac{(\epsilon_t^{bad})^2}{(\epsilon_t^{bad})^2 + (\epsilon_t^{good})^2}. \qquad \ldots(37)$$

$$\epsilon_t^{bad} = \pi 4_t - [\rho^{\epsilon} \cdot \pi 4_{t-1} + (1 - \rho^{\epsilon}) \cdot \pi^{bad}]. \qquad \ldots(38)$$

$$\epsilon_t^{good} = \pi 4_t - [\rho^{\epsilon} \cdot \pi 4_{t-1} + (1 - \rho^{\epsilon}) \cdot \pi^{good}].$$

$$\rho^{\epsilon} = 0.5;\ \pi^{bad} = 8.0;\ \pi^{good} = 4.0\,. \qquad \ldots(39)$$

ρ^{ϵ} is taken to be 0.5 assuming an equal weight for past and expected inflation under the bad (good) regime. The good regime is characterized by 4.0 per cent inflation and the bad regime is characterised by the high levels of inflation (8 per cent).

Long run Interest Rates

The relation between the short-term rate ($\tilde{\imath}_t$) and the long-term rate (i_t^m) depends on term structure (i_t^4) as well as term premium (i_t^{RISK}).

$$i_t^m = \rho^{i^m} . i_{t-1}^m + \left(1 - \rho^{i_t^m}\right) \cdot (i_t^4 + i_t^{RISK}) + \varepsilon_t^{i^m}$$

$$\rho^{i^m} = 0.1. \quad \ldots(40)$$

The term structure of interest rate (i_t^4) is the 4 quarter ahead average of short term rates and term premium is the weighted average of past value as well as the steady state value for i_t^{RISK}.

Long-term real interest rate (r_t^m) is long-term rate (i_t^m) minus expected inflation $(E_t{}^h(\pi 4_{t+1}^{core})$ and real interest rate gap $(\hat{r}_t^m)$ is the deviation of real interest rate (r_t^m) from the natural rate of interest $(\bar{r}_t^m)$.

$$r_t^m = i_t^m - E_t{}^h(\pi 4_{t+1}^{core}) \quad \ldots(41)$$

$$\hat{r}_t^m = r_t^m - \bar{r}_t^m \quad \ldots(42)$$

Relative Food Price Trends

$$\overline{rp}_t^{food} = \rho^{\overline{rp}^{food}} \overline{rp}_{t-1}^{food} + (1 - \rho^{\overline{rp}^{food}}) \overline{rp}^{food^*} + \eta_t^{\overline{rp}^{food}} + \theta \cdot \varepsilon_t^{MSP} + \varepsilon_{1,t}^{\overline{rp}^{food}} \quad \ldots(43)$$

$$\eta_t^{\overline{rp}^{food}} = \rho^{\eta^{\overline{rp}^{food}}} \cdot \eta_{t-1}^{\overline{rp}^{food}} + \left(1 - \rho^{\eta^{\overline{rp}^{food}}}\right) \cdot \varepsilon_{2,t}^{\overline{rp}^{food}} . \quad \ldots(44)$$

$$\rho^{\overline{rp}^{food}} = 0.9;\ \theta = 0.4;\ \rho^{\eta^{\overline{rp}^{food}}} = 0.9.$$

The relative food price trend $(\overline{rp}_t^{food})$ depends on its past value $(\overline{rp}_{t-1}^{food})$, steady state level $(\overline{rp}^{food^*})$, a moving average process $(\eta_t^{\overline{rp}^{food}})$, shocks to MSPs (ε_t^{MSP}) and idiosyncratic shocks $(\varepsilon_{1,t}^{\overline{rp}^{food}})$.

*Union Budget 2023-24: An Assessment**

by Saksham Sood, Ipsita Padhi, Anoop K. Suresh, Bichitrananda Seth and Samir Ranjan Behera

The Union Budget 2023-24 envisages capital expenditure as a key lever of growth and commits to credible fiscal consolidation for strengthening macro-stability. Public debt levels have moderated as the government resorted to prudent fiscal management notwithstanding the challenges induced by the pandemic. Budget proposals for infrastructure creation, digitisation, green transition and youth empowerment are expected to yield dividends beyond the near-term by lifting the economy's growth potential.

Introduction

The Union Budget 2023-24 comes at a time when India is being viewed globally as a bright spot, in an otherwise uninspiring global economic landscape. It strikes the right chords through measures aimed at accelerating growth and job creation while promoting macroeconomic stability. The Budget adopts seven priorities that complement each other *viz.,* inclusive development, infrastructure and investment, reaching the last mile, unleashing the potential, green growth, youth power and financial sector to guide its policy objectives. These initiatives would lift the economy's potential, providing productivity benefits into the long-term.

According due attention to fiscal prudence, the union government has managed to adhere to the budgeted fiscal deficit target of 6.4 per cent of GDP in 2022-23 (RE) despite the supply-side disruptions emanating largely from the war in Europe. In 2023-24, the gross fiscal deficit is budgeted to further consolidate to 5.9 per cent of GDP. The government has also reiterated its commitment to reduce the fiscal deficit to below 4.5 per cent of GDP by 2025-26, which was first announced in the Union Budget 2021-22.

The Budget proposes measures to simplify the tax structure and widen the tax base through measures aimed at reducing the compliance burden of the taxpayers, formalisation of the supply chains and improvement in the ease of doing business. Redrawing of the personal income tax slabs will help boost consumption, especially at a time when global recessionary fears continue. On the expenditure front, revenue expenditure growth has been contained at 1.2 per cent, while capital expenditure is budgeted to increase to 3.3 per cent of GDP in 2023-24 (BE) as against an average of 1.7 per cent during 2010-20. Furthermore, to incentivise States to undertake capital expenditure, the scheme for providing financial assistance to the States for capital expenditure[1] has been extended to 2023-24 (BE) with an enhanced allocation of ₹1.3 lakh crore.[2]

Against this backdrop, the rest of the article is divided into seven sections. Section II discusses the underlying dynamics of the fiscal deficit. Section III and IV make an assessment of the trends in receipts and expenditure of the union government. Section V delineates the outstanding liabilities of the union government. Section VI discusses the major sources of financing the fiscal deficit whereas Section VII dwells upon the transfer of resources to States. Section VIII sets out the concluding observations.

* The authors are from Department of Economic and Policy Research. The authors are thankful to Dr. Deba Prasad Rath and Dr. GV Nadhanael for their valuable inputs and to Supriya Abhinav Sutar for data support. 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] Under the Scheme for Special Assistance to States for Capital Investment, the Centre provides 50-year interest free loans to States for spending on capital investment projects.

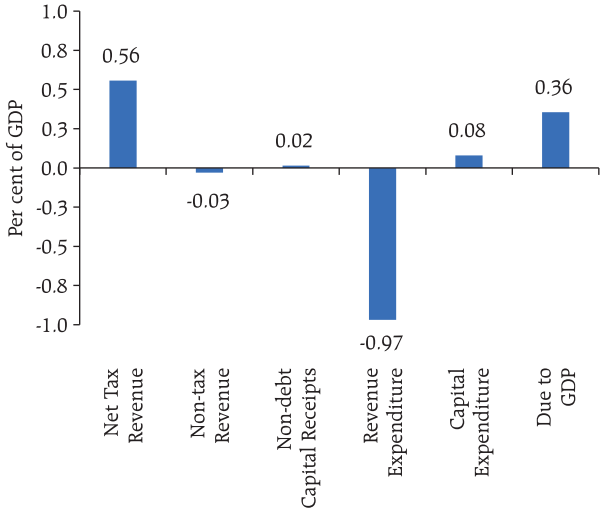
[2] For detailed budget proposals please refer to Annex 2.

II. Fiscal Deficit – The Underlying Dynamics

The government adhered to the budgeted fiscal target of 6.4 per cent of GDP in 2022-23 (RE).[3] In absolute terms, however, the gross fiscal deficit (GFD) surpassed budget estimates by ₹94,123 crore as the increase in revenue expenditure outweighed the higher receipts. Revenue expenditure surpassed the budget estimates by ₹2.6 lakh crore while capital expenditure fell short by ₹21,972 crore, resulting in a net increase in total expenditure by ₹2.4 lakh crore. On the receipts side, net tax revenue overshot the budgeted target by ₹1.5 lakh crore and non-debt capital receipts are estimated to exceed the budget estimates by ₹4,209 crore. This was partly offset by lower non-tax collections, which witnessed a shortfall of ₹7,900 crore (Chart 1).

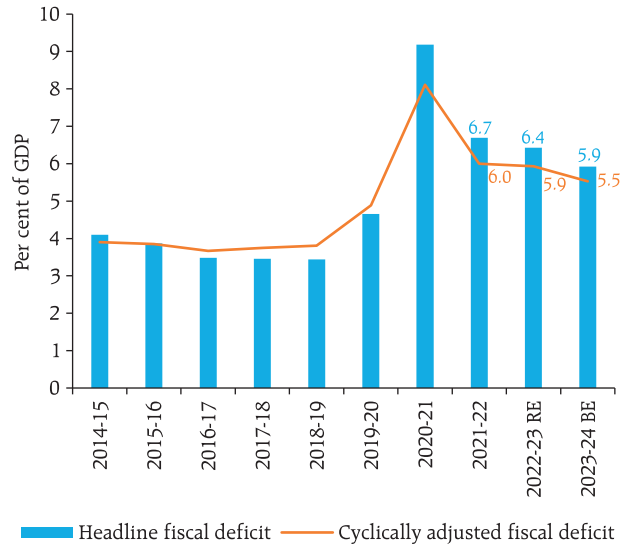
For 2023-24, the GFD is budgeted at 5.9 per cent of GDP[4] - a consolidation of 51 basis points over 2022-23 (RE). Considering the underlying economic cycle, the cyclically-adjusted fiscal deficit for 2023-24 stands lower at 5.5 per cent (Chart 2).[5] Further, the government remains committed to attain the medium-term target of achieving GFD of below 4.5 per cent by 2025-26. The consolidation in 2023-24 is sought to be achieved through containment of revenue expenditure to 11.6 per cent of GDP, even as capital expenditure is budgeted to rise to a high of 3.3 per cent of GDP (Table 1). Fiscal consolidation can free up productive resources for the private sector and contribute to lowering the cost of capital, thereby raising the growth rate of the economy in 2023-24.

Chart 1: Contribution to Attainment of Fiscal Deficit Target in 2022-23 RE *vis-a-vis* BE



Source: Union Budget Documents; and RBI staff estimates.

Chart 2: Cyclically Adjusted Fiscal Deficit



Source: Union Budget Documents; and RBI staff estimates.

Decomposition of GFD

The revenue deficit, which pre-empted around 70 per cent of the GFD during 2018-19 to 2020-21,

[3] In 2016-17, the budgeted fiscal deficit target (3.5 per cent of GDP) was adhered to by the Union Government. However, from 2017-18 to 2020-21 the Union Government was unable to meet its budgeted fiscal deficit target.

[4] Nominal GDP for 2023-2024 (BE) has been projected at ₹3,01,75,065 crore assuming 10.5 per cent growth over the preceding year (*viz.*, ₹2,73,07,751 crore as per the first advance estimates for 2022-23 released by the Ministry of Statistics and Programme Implementation, Government of India on January 06, 2023).

[5] Cyclically adjusted fiscal deficit is the fiscal deficit that would prevail if the economy operates at full employment. It is computed as the difference between cyclically adjusted expenditure (E^*) and cyclically adjusted revenue (R^*) such that $R^* = R\left(\frac{Y^*}{Y}\right)^{\epsilon_r}$, $E^* = E\left(\frac{Y^*}{Y}\right)^{\epsilon_e}$ where R and E are actual revenue and expenditure; Y is actual output; Y^* is potential output and ϵ_r and ϵ_e are the elasticities of revenue and expenditure with respect to the output gap (Fedelino et al., 2009). Tax revenue elasticity is estimated at 1.5 and expenditure elasticity is assumed to be zero due to absence of expenditure related automatic stabilizers.

Table 1: Key Indicators[6]

(Per cent of GDP)

	2021-22	2022-23		2023-24
	Actuals	BE	RE	BE
1	2	3	4	5
1. Fiscal Deficit	6.7	6.4	6.4	5.9
2. Revenue Deficit	4.4	3.8	4.1	2.9
3. Primary Deficit	3.3	2.8	3.0	2.3
4. Gross Tax Revenue	11.4	10.7	11.1	11.1
5. Non-Tax Revenue	1.5	1.0	1.0	1.0
6. Revenue Expenditure	13.5	12.4	12.7	11.6
7. Capital Expenditure	2.5	2.9	2.7	3.3
of which: Capital Outlay	*2.3*	*2.4*	*2.3*	*2.8*
8. Debt	59.6	61.0	57.8	57.8
9. Effective Revenue Deficit	3.3	2.6	2.9	1.7

Note: 1. Capital outlay is capital expenditure *less* loans and advances.
2. Effective revenue deficit is the difference between revenue deficit and grant-in-aid for creation of capital assets.

Source: Union Budget Documents.

is estimated to decline to 63.3 per cent in 2022-23 (RE) and further to 48.7 per cent in 2023-24 (BE). On the other hand, the contribution of growth-inducing capital outlay is budgeted to rise to 46.9 per cent in 2023-24 from an average of 36.5 per cent of GFD during 2010-11 to 2019-20 (Chart 3).

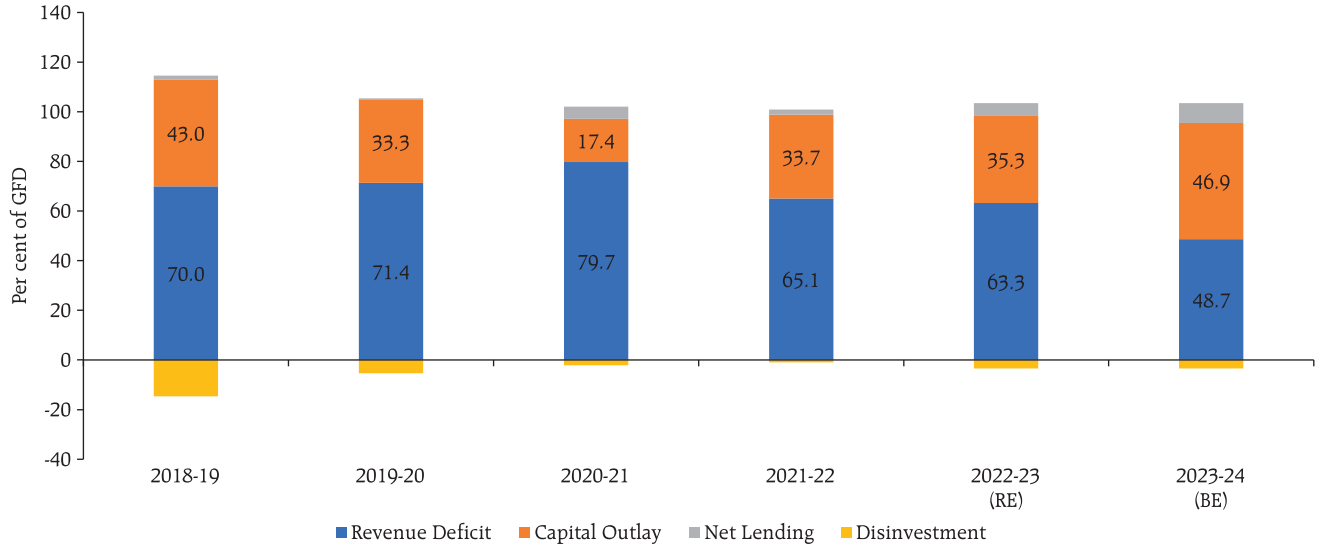
III. Receipts

Total receipts comprising net tax revenues, non-tax revenues and non-debt capital receipts, stood at 8.91 per cent of GDP in 2022-23 (RE), marginally exceeding the budgeted level of 8.85 per cent as tax revenues surpassed budget estimates, outweighing the shortfall in non-tax receipts. For 2023-24, total receipts are budgeted to rise to 9.0 per cent of GDP.

Tax Revenues

Gross tax revenues exhibited robust performance in 2022-23 (RE), despite the macroeconomic consequences of the war in Ukraine. Gross tax revenue exceeded the budget estimates by ₹2.9 lakh crore, on account of higher than budgeted collections in corporation tax, income tax and GST. In 2023-24, gross tax revenue is budgeted to increase by 10.4 per cent, with a budgeted buoyancy of 0.99 that is close to the trend level (proxied by the average for 2010-11 to 2018-19) [Table 2].

Chart 3: Decomposition of GFD



Source: Union Budget Documents.

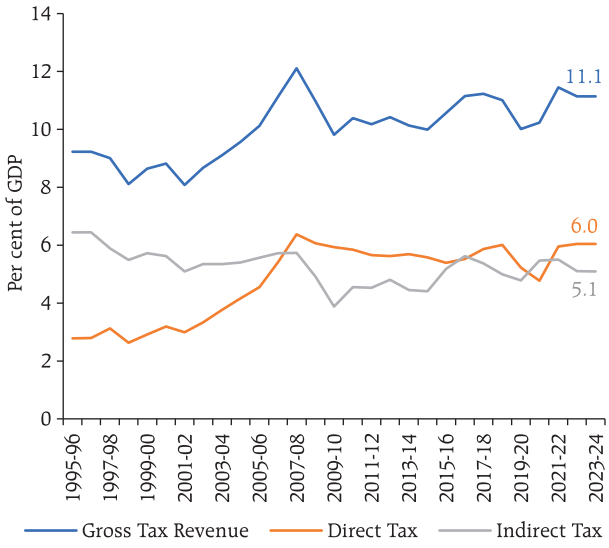
6 For details please refer to Annex 1

Table 2: Tax Buoyancy

	Average Tax Buoyancy (2010-11 to 2018-19)	2021-22	2022-23 (BE)	2022-23 (RE)	2023-24 (BE)
1	2	3	4	5	6
1. Gross Tax Revenue	1.11	1.72	0.86	0.80	0.99
2. Direct Taxes	1.03	2.51	1.22	1.11	1.00
(i) Corporation Tax	0.92	2.85	1.20	1.12	1.00
(ii) Income Tax	1.27	2.21	1.28	1.13	1.00
3. Indirect taxes	1.25	1.04	0.51	0.46	0.99
(i) GST	-	1.39	1.40	1.45	1.14
(ii) Customs Duty	0.31	2.47	1.14	0.33	1.05
(iii) Excise Duty	0.91	0.04	-1.34	-1.23	0.57

Note: '-': Not Applicable. Tax buoyancy is defined as the responsiveness of tax revenue to changes in nominal GDP and to discretionary changes in tax policies; calculations for 2022-23 (BE) are made over 2021-22 (RE).
Source: RBI staff estimates based on Union Budget Documents.

Chart 4: Tax-GDP Ratio



Source: Union Budget Documents; and RBI staff estimates.

Direct Taxes

After registering a growth of 17.2 per cent in 2022-23 (RE), direct taxes are budgeted to grow by 10.5 per cent to reach 6.0 per cent of GDP in 2023-24 (Chart 4). Several direct tax changes have been proposed in the Budget to simplify and rationalise various provisions, to reduce the compliance burden and provide tax relief to citizens. Under personal income tax, the Budget proposes the following major changes to the new tax regime – (i) an increase in rebate limit to ₹7 lakh from ₹5 lakh, (ii) a reduction in the number of slabs to five from six and an increase in the tax exemption limit to ₹3 lakh from ₹2.5 lakh and (iii) extension of standard deduction benefit for salaried class and pensioners to the new tax regime. The highest surcharge rate was also brought down from 37 per cent to 25 per cent in the new tax regime, which would result in a reduction of the maximum tax rate to 39 per cent from the current rate at 42.74 per cent.

Indirect Taxes

Indirect tax collections in 2022-23 (RE) exceeded the BE by ₹55,247 crore, as GST collections exceeded budget estimates by ₹74,000 crore, offsetting the shortfall in customs (₹3,000 crore) and excise duty collections (₹15,000 crore). While the cut in excise duty on fuel in May 2022 contributed to lower excise duty collections in 2022-23 (RE), GST collections recorded a buoyancy of 1.45, reflecting the improvement in economic activity and the impact of efforts to increase the tax base and improve compliance. In 2023-24 (BE), indirect taxes are budgeted to grow by 10.4 per cent with GST, customs and excise budgeted to increase by 12.0 per cent, 11.0 per cent and 5.9 per cent, respectively.

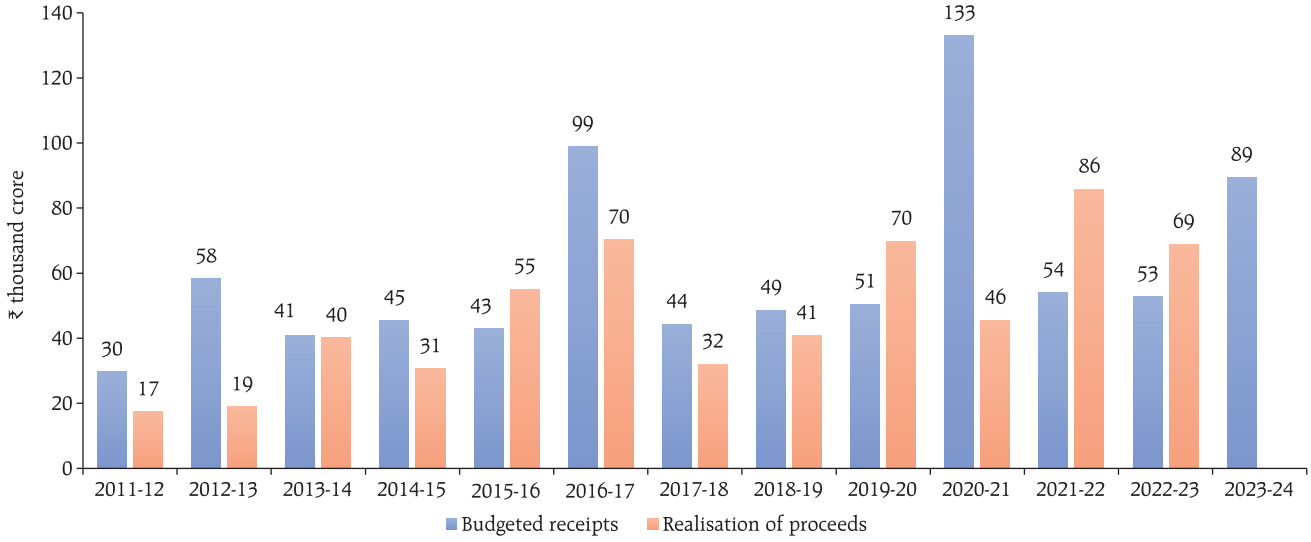
The tax changes (direct and indirect) proposed in the Budget are expected to increase disposable income by ₹35,000 crore. This is estimated to increase the real GDP growth by 15 basis points in 2023-24 by boosting personal consumption.[7]

Non-Tax Revenues

Receipts from non-tax sources fell short of budgeted targets in 2022-23 (RE) by ₹7,900 crore as the lower than budgeted surplus transfer by the Reserve Bank was partly offset by higher interest receipts, dividends from public sector enterprises and spectrum revenues (Chart 5). In 2023-24, non-tax revenues are budgeted to increase by 15.2 per cent to ₹3.0 lakh crore.

7 For details, refer to the article on "State of the Economy" RBI Bulletin (February 2023).

Chart 5: Spectrum Revenues - Actual *vis-a-vis* BE

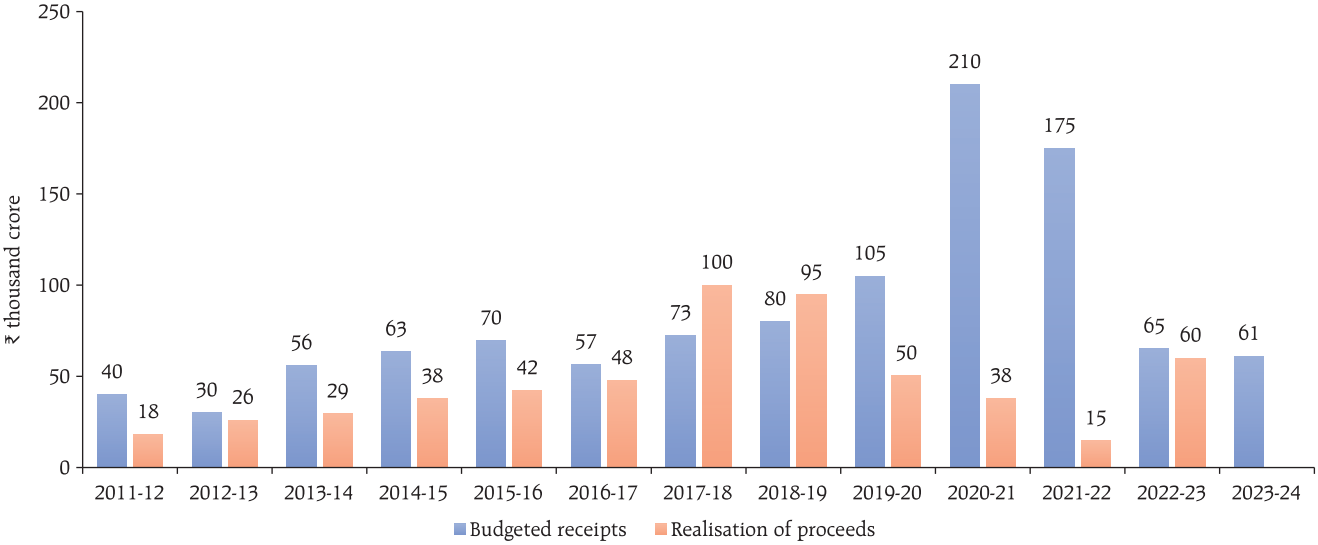


Source: Union Budget Documents.

Non-debt Capital Receipts

In 2022-23 (RE), disinvestment receipts[8] are placed at ₹60,000 crore, as against the budgeted target of ₹65,000 crore of which only ₹38,671 crore has been garnered till end December 2022. In 2023-24 (BE), the disinvestment target has been pegged at ₹61,000 crore (Chart 6). Recoveries of loans and advances exceeded budget estimates in 2022-23 (RE) by ₹9,209 crore, outweighing the shortfall in disinvestment receipts. In 2023-24, recovery in loans is budgeted to decline by 2.1 per cent over 2022-23 (RE).

Chart 6: Disinvestment - Actual *vis-a-vis* BE



Source: Union Budget Documents.

[8] Disinvestment receipts refers to miscellaneous capital receipts, which include disinvestment and other receipts.

IV. Expenditure

Total expenditure is budgeted to grow by 7.5 per cent in 2023-24, lower than the 10.4 per cent growth recorded in 2022-23 (RE). In 2023-24, revenue expenditure is budgeted to grow by only 1.2 per cent as expenditure on major subsidies is budgeted to contract by 28.2 per cent due to the rationalisation of food subsidy and softening of urea prices. Noteworthy from the point of view of reviving investment and growth is the continued thrust provided to capital expenditure in the post pandemic period as the capital expenditure is budgeted to increase to 3.3 per cent of GDP in 2023-24 from an average of 1.7 per cent during 2010-20 (Table 3).

In 2023-24, capital expenditure is budgeted at ₹10 lakh crore, which is close to three times the amount spent in 2019-20. Ministry-wise allocation of capital expenditure indicates that the Ministry of Railways and Road Transport and Highways account for almost half of the budgeted capital expenditure for 2023-24 (Chart 7). The increase in effective capital expenditure (capital expenditure *plus* grants-in-aid for creation of capital assets), through its multiplier effect, will generate additional output of ₹10.3 lakh crore during 2023-27 of which railways and loan assistance to States will contribute 43 per cent, while investment in logistics will contribute 19 per cent.[9]

Next, we decompose the total expenditure of the union government into committed expenditure, which includes establishment expenditure[10], interest payments, grants recommended by the Finance Commission and GST compensation to States; and discretionary expenditure which includes central sector schemes, centrally sponsored schemes and transfers to States (excluding Finance Commission grants and GST compensation). Prior to the pandemic, the share of committed expenditure was higher than discretionary expenditure. However, with the end of GST compensation regime and introduction of interest free loans to States for capital expenditure,

Table 3: Expenditure of Central Government

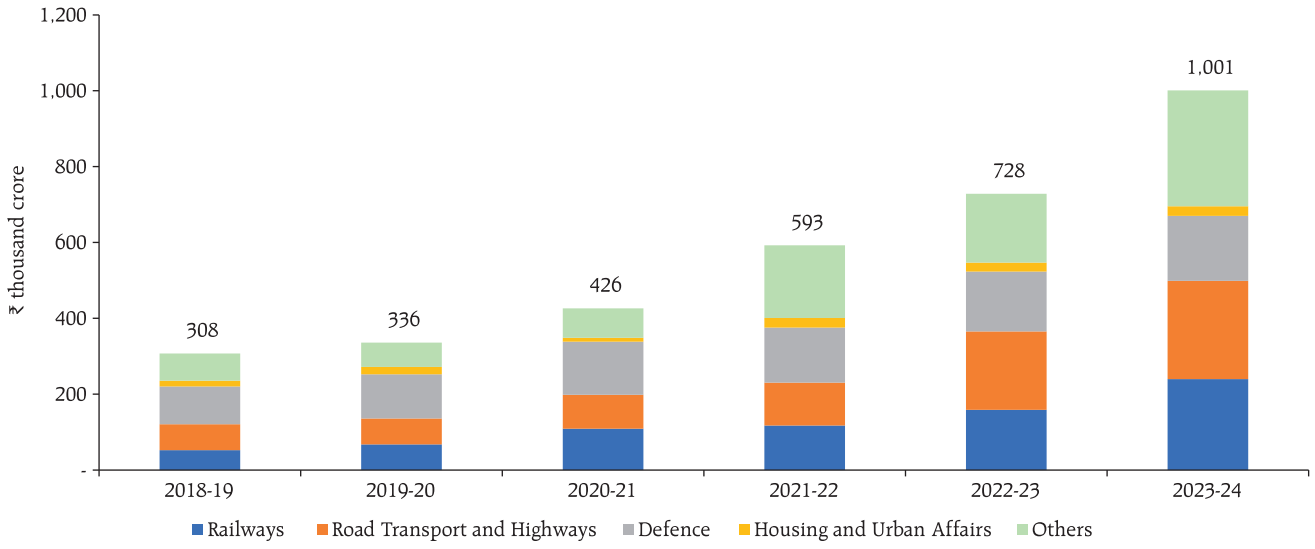
	₹ thousand crore				Growth Rate (per cent)		
	2021-22	2022-23 (BE)	2022-23 (RE)	2023-24 (BE)	2022-23 (BE)	2022-23 (RE)	2023-24 (BE)
1	2	3	4	5	6	7	8
1. Total Expenditure	3,794	3,945	4,187	4,503	4.0	10.4	7.5
2. Revenue Expenditure *(of which)*	3,201	3,195	3,459	3,502	-0.2	8.1	1.2
(i) Interest Payments	805	941	941	1,080	16.8	16.8	14.8
(ii) Major Subsidies	446	318	522	375	-28.8	16.9	-28.2
Food	289	207	287	197	-28.4	-0.6	-31.3
Fertilizer	154	105	225	175	-31.6	46.5	-22.3
Petroleum	3	6	9	2	69.8	167.9	-75.4
(iii) MGNREGA	98	73	89	60	-25.9	-9.2	-32.9
(iv) PM-KISAN	67	68	60	60	1.8	-10.2	0.0
(v) Defence (Revenue)	229	233	260	270	1.9	13.5	4.1
3. Capital Expenditure	593	750	728	1,001	26.5	22.8	37.4
(i) Capital Outlay	534	610	620	837	14.2	16.0	35.0
4. Effective Capital Expenditure	836	1,068	1,054	1,371	27.8	26.1	30.1

Note: Effective capital expenditure is the sum of capital expenditure and grants-in-aid for creation of capital assets.
Source: Union Budget Documents.

[9] For details, refer to the article "State of the Economy" RBI Bulletin (February 2023).

[10] Establishment expenditure includes expenditure on salaries, wages, pensions and office expenses.

Chart 7: Ministry-wise Capital Expenditure



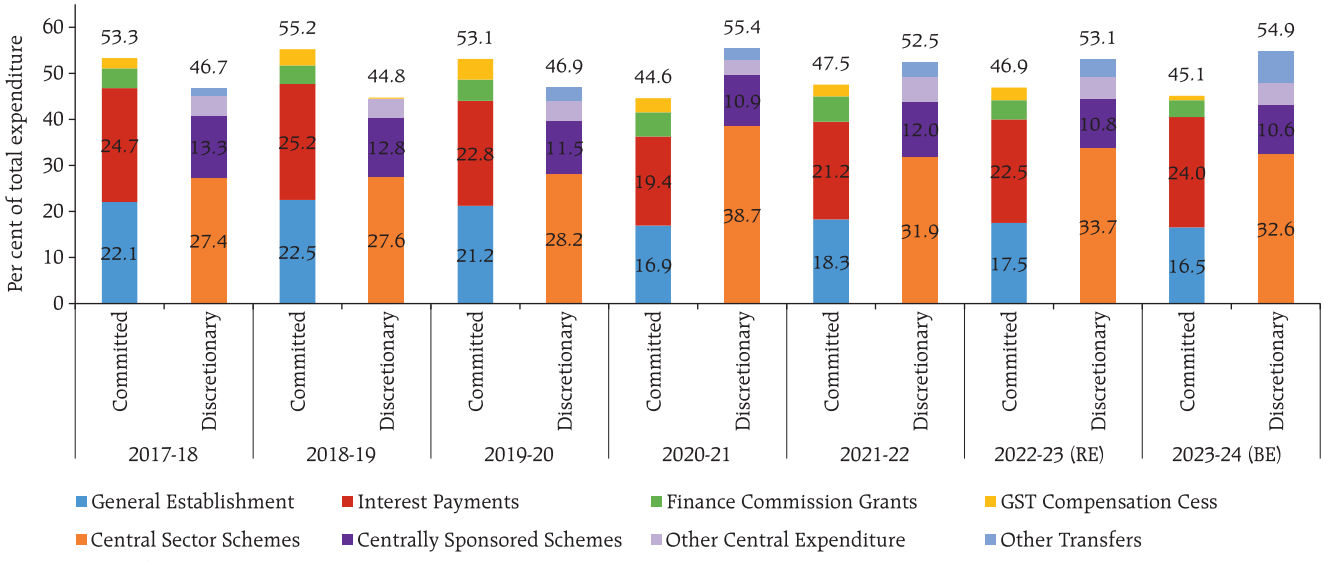
Source: Union Budget Documents.

the share of committed expenditure stands reduced to 45.1 per cent of total expenditure in 2023-24 (BE) (Chart 8).

V. Outstanding Debt

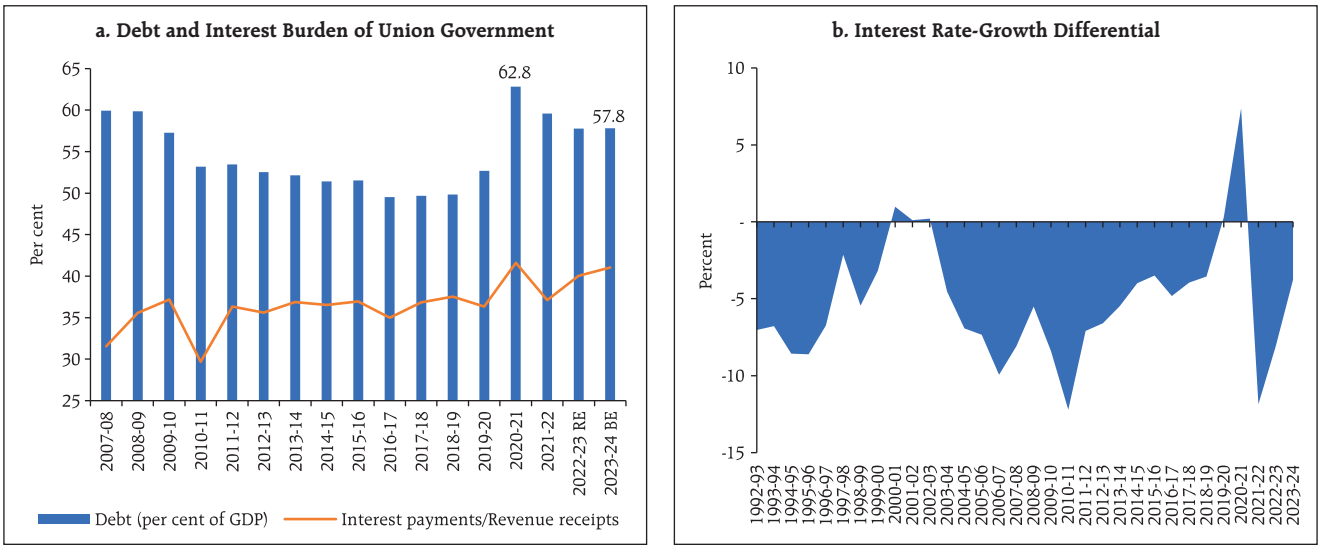
After peaking at 62.8 per cent of GDP in 2020-21 due to the impact of the pandemic, the total outstanding debt of the Union government is budgeted to consolidate to 57.8 per cent of GDP in 2023-24 (BE). The ratio of interest payments to revenue receipts, however, is budgeted to increase to 41.0 per cent (Chart 9a). The interest rate growth differential (IRGD), an indicator of debt sustainability, continues to remain favourable, even though its magnitude has

Chart 8: Committed *vis-a-vis* Discretionary Expenditure



Source: Union Budget Documents.

Chart 9: Outstanding Liabilities and Interest Rate Growth Differential



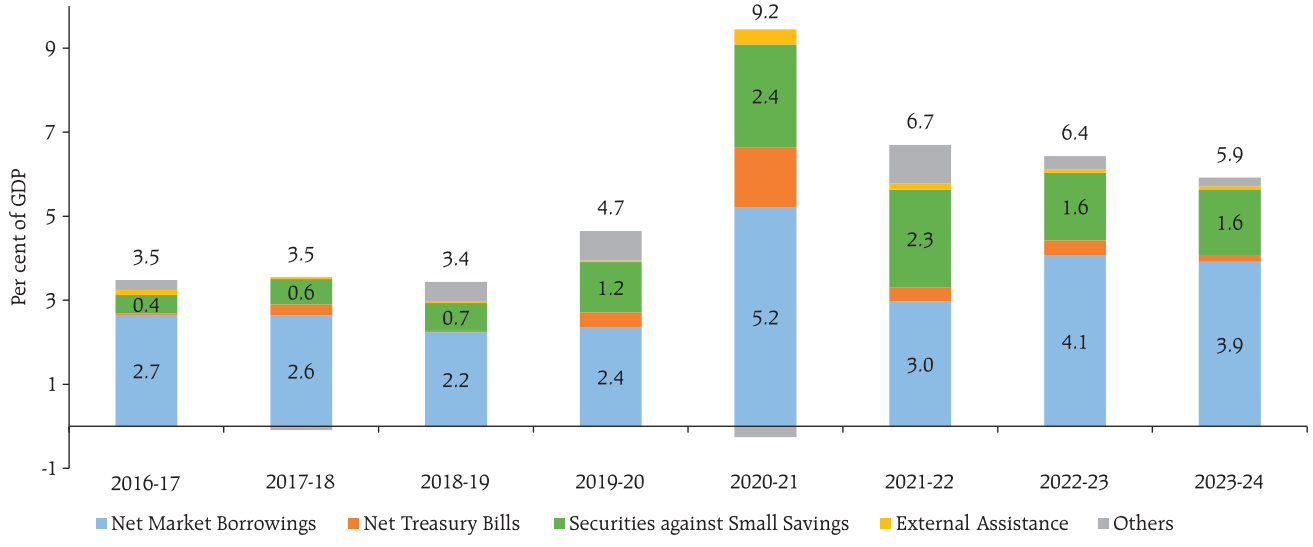
Sources: Union Budget Documents and Staff calculations.

declined in the recent years (Chart 9b). However, as the union government debt still remains elevated *vis-à-vis* pre-pandemic trend, there is a need to stay on the path of fiscal consolidation.

VI. Gross Fiscal Deficit Financing

As per the revised estimates (RE) for 2022-23, the budgeted fiscal deficit target of 6.4 per cent of the GDP is likely to be met. In 2023-24 (BE) gross fiscal deficit (GFD) is budgeted at 5.9 per cent of GDP. Market borrowings are the main source of financing GFD for the union government, followed by securities issued against small savings (Chart 10). In 2023-24, gross and net market borrowings are budgeted at ₹15.4 lakh crore and ₹11.8 lakh crore, up from ₹14.2 lakh

Chart 10: Sources of Financing Gross Fiscal Deficit



Source: Union Budget Documents.

Table 4: Market Borrowings of Union Government

(₹ crore)

	Gross Market Borrowings	Net Market Borrowings
2018-19	5,71,000 (3.0)	4,22,735 (2.2)
2019-20	7,10,000 (3.5)	4,73,968 (2.4)
2020-21	12,60,116 (6.4)	10,32,907 (5.2)
2021-22	9,68,382 (4.1)	7,04,097 (3.0)
2022-23 (RE)	14,21,000 (5.2)	11,08,183 (4.1)
2023-24 (BE)	15,43,000 (5.1)	11,80,911 (3.9)

Note: Figures in parentheses are as per cent of GDP.
Source: Union Budget Documents.

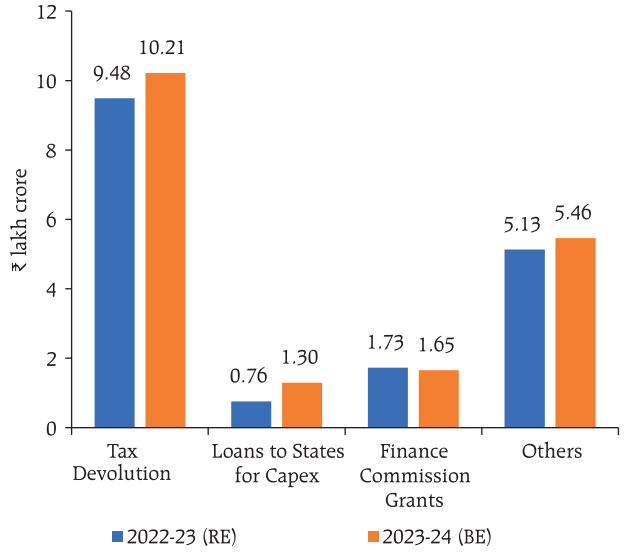
crore and ₹11.1 lakh crore, respectively in 2022-23 (RE) (Table 4). The gradual downscaling in the market borrowing requirements (as per cent of GDP) of the union government towards pre-pandemic level will open up space for private investment.

VII. Resource Transfer from Centre to States

The Centre has fixed States' gross fiscal deficit at 3.5 per cent of the gross state domestic product (GSDP) for 2023-24, of which 0.5 per cent will be tied to power sector reforms. The gross transfer to the States is budgeted to increase in 2023-24 (BE), largely due to enhanced tax devolution and an increase in allocation for special assistance to States for capital expenditure (Chart 11, Annex 3). The Finance Commission Grants are expected to decline in 2023-24, primarily due to lower transfers under Post-Devolution Revenue Deficit Grants, while the transfers to the local bodies and health sector have seen a sharp rise (Chart 12).

To spur States' investment in infrastructure and incentivise them to undertake complementary policy actions, the Centre has decided to continue with the 50-year interest-free loan to States for one more

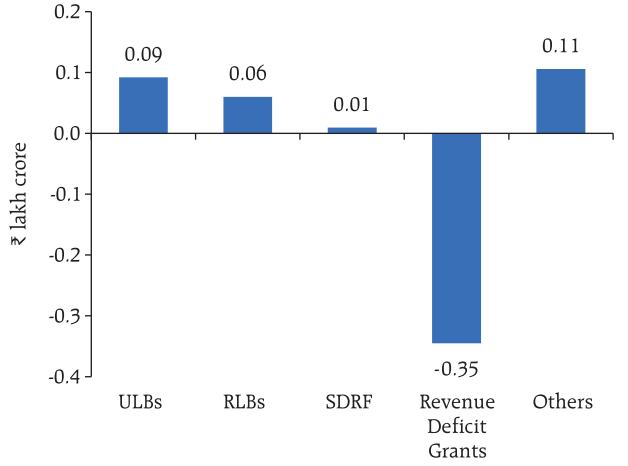
Chart 11: Resource Transfer to States



Source: Union Budget Documents.

year with an enhanced allocation of ₹1.3 lakh crore.[11] The loan amount will have to be spent in 2023-24. While most of the loan will be at the discretion of the States, a part of it will be contingent on States

Chart 12: Y-o-Y Change in Finance Commission Grants in 2023-24 (BE)



Note: ULBs: Urban local bodies; RLBs: Rural local bodies; SDRF: State Disaster Response Fund.
Source: Union Budget Documents.

[11] In 2022-23 (BE), this amount was budgeted at ₹1 lakh crore, however as per 2022-23 (RE) the allocation stands at ₹76,000 crore.

increasing their actual capital expenditure. A part of the outlay will also be linked to, or allocated for, scrapping old government vehicles, urban planning reforms and actions, financing reforms in urban local bodies (to make them creditworthy for municipal bonds), housing for police personnel above or as part of police stations, constructing Unity Malls, children and adolescents' libraries and digital infrastructure, and States' share of capital expenditure of central schemes. The Union Budget also proposes to incentivise cities to improve their creditworthiness for municipal bonds through property tax governance reforms and ring-fencing user charges on urban infrastructure. Additionally, an Urban Infrastructure Development Fund (UIDF) is proposed to be established. It will be managed by the National Housing Bank and used by public agencies to create urban infrastructure in Tier 2 and Tier 3 cities.

VIII. Conclusion

The Union Budget 2023-24 aims to strengthen growth momentum (through higher capital expenditure) and promote macroeconomic stability by strengthening the economic foundations with commitment to fiscal consolidation. While higher capital expenditure would generate multiplier effects and crowd-in private investment, fiscal consolidation would free up productive resources for the private sector. Further, infrastructure development, supported by integrated and coordinated planning, measures to promote digitisation and green economy, and skilling initiatives to harness the demographic dividend are expected to yield dividends beyond the near-term and raise the economy's growth potential in the medium-run, as expounded in the accompanying article on "State of the Economy".

Annex 1: Union Budget 2023-24: Key Fiscal Indicators

	₹ thousand crore					Per cent of GDP		Growth Rate	
	2020-21	2021-22	2022-23 (BE)	2022-23 (RE)	2023-24 (BE)	2022-23 (RE)	2023-24 (BE)	2022-23 (RE)	2023-24 (BE)
1	2	3	4	5	6	7	8	9	10
1. Direct Tax	945	1,408	1,420	1,650	1,823	6.0	6.0	17.2	10.5
(i) Corporation	458	712	720	835	923	3.1	3.1	17.3	10.5
(ii) Income	470	673	680	790	873	2.9	2.9	17.4	10.5
2. Indirect Tax	1,082	1,301	1,338	1,393	1,538	5.1	5.1	7.1	10.4
(i) GST	549	698	780	854	957	3.1	3.2	22.3	12.0
(ii) Customs	135	200	213	210	233	0.8	0.8	5.1	11.0
(iii) Excise	392	395	335	320	339	1.2	1.1	-18.9	5.9
3. Gross tax revenue (1+2)	2,027	2,709	2,758	3,043	3,361	11.1	11.1	12.3	10.4
4. Assignment to States	595	898	817	948	1,021	3.5	3.4	5.6	7.7
5. NCCD Transfers	6	6	6	8	9	0.0	0.0	30.5	9.7
6. Net tax Revenue (3-4-5)	1,426	1,805	1,935	2,087	2,331	7.6	7.7	15.6	11.7
7. Non-tax Revenue	208	365	270	262	302	1.0	1.0	-28.3	15.2
(i) Dividends and Profits	97	161	114	84	91	0.3	0.3	-47.7	8.4
(ii) Interest Receipts	17	22	18	25	25	0.1	0.1	12.6	0.7
8. Revenue Receipts (6+7)	1,634	2,170	2,204	2,348	2,632	8.6	8.7	8.2	12.1
9. Non-debt Capital Receipts	58	39	79	84	84	0.3	0.3	112.1	0.6
(i) Disinvestment Receipts	38	15	65	60	61	0.2	0.2	309.9	1.7
(ii) Recovery of Loans	20	25	14	24	23	0.1	0.1	-5.0	-2.1
10. Total Receipts (ex. borrowings) (8+9)	1,692	2,209	2,284	2,432	2,716	8.9	9.0	10.1	11.7
11. Revenue Expenditure	3,084	3,201	3,195	3,459	3,502	12.7	11.6	8.1	1.2
(i) Interest Payments	680	805	941	941	1,080	3.4	3.6	16.8	14.8
(ii) Major Subsidies	708	446	318	522	375	1.9	1.2	16.9	-28.2
Food	541	289	207	287	197	1.1	0.7	-0.6	-31.3
Fertilizer	128	154	105	225	175	0.8	0.6	46.5	-22.3
Petroleum	38	3	6	9	2	0.0	0.0	167.9	-75.4
12. Capital Expenditure (i + ii)	426	593	750	728	1,001	2.7	3.3	22.8	37.4
(i) Capital Outlay	316	534	610	620	837	2.3	2.8	16.0	35.0
(ii) Loans & Advances	110	58	140	108	164	0.4	0.5	85.1	51.6
13. Total Expenditure (11+12)	3,510	3,794	3,945	4,187	4,503	15.3	14.9	10.4	7.5
14. Fiscal Deficit (13-10)	1,818	1,585	1,661	1,755	1,787	6.4	5.9	10.8	1.8

Source: Union Budget Documents.

Annex 2: Highlights of the Union Budget 2023-24

The economic agenda presented in the Budget focuses on three things: first, facilitating ample opportunities for citizens, especially the youth, to fulfil their aspirations; second, providing strong impetus to growth and job creation; and third, strengthening macro-economic stability. Following four opportunities can be transformative to service the above-mentioned focus areas.

1. Economic Empowerment of Women: Facilitation of the women self-help groups (SHGs), mobilised by DAY-NRLM (*Aajivika* – National Rural Livelihood Mission) to attain next level of economic empowerment through formation of large producer enterprises or collectives.
2. PM *VIshwakarma KAushal Samman* (PM VIKAS): Scheme to integrate traditional artisans and craftspeople with micro, small and medium-scale enterprises (MSMEs) value chains.
3. Tourism: Promotion of tourism on mission mode with active participation of States, convergence of government programmes and public-private partnerships.
4. Green Growth: Implementation of programmes for green fuel, green energy, green farming and green mobility for efficient use of energy across various economic sectors.

The Budget has announced seven priorities. The major policy actions proposed by the Budget under each priority are listed below.

Priority 1: Inclusive Development

Agriculture and Cooperation

- Establishment of an Agriculture Accelerator Fund to provide innovative and affordable solutions, promote use of modern technologies and encourage young entrepreneurs in rural areas.
- An open-source, open standard and interoperable public good digital infrastructure is proposed for agricultural sector which will enable inclusive, farmer centric solutions and support for growth of agri-tech industry and start-ups.
- Targeted agriculture credit of ₹20 lakh crore with focus on animal husbandry, dairy and fisheries.
- Set-up of *Atmanirbhar* Clean Plant Program to boost the availability of disease-free, quality planting material for high-value horticultural crops.
- Indian Institute of Millet Research, Hyderabad will be supported as the Centre of Excellence (CoE) to enable India to become Global hub for millets.
- Massive decentralization of storage capacity to help farmers realize remunerative prices through sale at appropriate times.

Health, Education and Skilling

- 157 new nursing colleges will be established.
- A Mission to eliminate Sickle Cell Anaemia by 2047 will be launched.
- Promotion of research and innovation in pharmaceuticals through Centers of Excellence (CoE) will be undertaken.
- Facilitation of joint public and private medical research through selected Indian Council of Medical Research (ICMR) labs.
- Re-envision of teachers' training through innovative pedagogy and curriculum transaction. The District Institutes of Education and Training will be developed as vibrant institutes of excellence for this purpose.

Annex 2: Highlights of the Union Budget 2023-24 *(Contd.)*

- A National Digital Library for children and adolescents will be set-up for facilitating availability of quality books across geographies, languages, genres and levels, and device agnostic accessibility. States will be encouraged to set up physical libraries at Panchayat and ward levels. To inculcate financial literacy, financial sector regulators and organizations will be encouraged to provide age-appropriate reading material to these libraries.

Priority 2: Reaching the Last Mile

- Launch of the Aspirational Blocks Programme covering 500 blocks for saturation of essential government services across multiple domains.
- *Pradhan Mantri* PVTG Development Mission will be launched to improve socio-economic conditions of the particularly vulnerable tribal groups (PVTGs).
- Recruitment of 38,800 teachers and support staff for the 740 *Eklavya* Model Residential Schools which serves tribal students.
- Financial assistance of ₹5,300 crores will be given for micro-irrigation under Upper Bhadra Project for drought-prone central area of Karnataka.
- Provision of free food grains to all *Antyodaya* and priority households for one year, under *Pradhan Mantri Garib Kalyan Anna Yojana* (PMGKAY).
- Enhancement of outlay for PM *Aawas Yojana* by 66 per cent.

Priority 3: Infrastructure and Investment

- The capital investment outlay has been increased by 33 per cent to ₹10 lakh crore, which will account for 3.3 per cent of the GDP. The direct capital investment by the Centre is complemented by the provision made for creation of capital assets through Grants-in-Aid to States.; taking the 'Effective Capital Expenditure' of the Centre to 4.5 per cent of GDP.
- The special assistance to the States for capital expenditure in the form of 50-year interest free loan will be continued for one more year with enhanced outlay of ₹1.3 lakh crore.
- Infrastructure Finance Secretariat will assist all stakeholders for more private investment in infrastructure.
- One hundred critical transport infrastructure projects, for end-to-end connectivity, last and first mile connectivity for ports, coal, steel, fertilizer, and food grains sectors will be taken up on priority basis.
- Fifty additional airports, heliports, water aerodromes and advance landing grounds will be revived for improving regional air connectivity.

Urban Development

- Cities will be incentivized to improve their credit worthiness for municipal bonds. through property tax governance reforms and ring-fencing user charges on urban infrastructure
- An Urban Infrastructure Development Fund (UIDF) will be established through use of priority sector lending shortfall which will be managed by the National Housing Bank and will be used by public agencies to create urban infrastructure in Tier 2 and Tier 3 cities.
- All cities and towns will be enabled for 100 per cent mechanical desludging of septic tanks and sewers for transition from manhole to machine-hole mode.

Priority 4: Unleashing the Potential

- Under Mission *Karmayogi*, the government has also launched an integrated online training platform, iGOT *Karmayogi*, to provide continuous learning opportunities for lakhs of government employees to upgrade their skills.

Annex 2: Highlights of the Union Budget 2023-24 *(Contd.)*

- For realizing the vision of 'Make AI in India and Make AI work for India', three centres of excellence for Artificial Intelligence will be set-up in top educational institutions.
- To unleash innovation and research by start-ups and academia, a National Data Governance Policy will be brought out. This will enable access to anonymized data.
- The know your customer (KYC) process will be simplified adopting a 'risk-based' instead of 'one size fits all' approach. The financial sector regulators will also be encouraged to have a KYC system fully amenable to meet the needs of Digital India.
- A one stop solution for reconciliation and updation of identity and address of individuals maintained by various government agencies, regulators and regulated entities will be established using DigiLocker service and Aadhaar as foundational identity.
- For the business establishments required to have a Permanent Account Number (PAN), the PAN will be used as the common identifier for all digital systems of specified government agencies. This will bring ease of doing business; and it will be facilitated through a legal mandate.
- For obviating the need for separate submission of same information to different government agencies, a system of 'Unified Filing Process' will be set-up.
- *Vivad se Vishwas* I scheme is aimed at less stringent contract execution for MSMEs.
- *Vivad se Vishwas* II scheme is aimed at easier settlement of contractual disputes of government and government undertakings for MSMEs.
- To better allocate scarce resources for competing development needs, the financing of select schemes will be changed, on a pilot basis, from 'input-based' to 'result-based'.
- For efficient administration of justice, Phase-3 of the E-Courts project will be launched with an outlay of ₹7,000 crore.
- Fintech services in India have been facilitated by our digital public infrastructure including Aadhaar, PM *Jan Dhan Yojana*, Video KYC, India Stack and unified payment interface (UPI). To enable more Fintech innovative services, the scope of documents available in DigiLocker for individuals will be expanded.
- An Entity DigiLocker will be set up for use by MSMEs, large business and charitable trusts. This will be towards storing and sharing documents online securely, whenever needed, with various authorities, regulators, banks and other business entities.
- One hundred labs for developing applications using 5G services will be set up in engineering institutions to realise a new range of opportunities, business models, and employment potential.

Priority 5: Green Growth

- To facilitate transition of the economy to low carbon intensity and reduce dependence on fossil fuel imports, National Green Hydrogen Mission was recently launched with an outlay of ₹19,700 crore.
- The budget provides ₹35,000 crore for priority capital investments towards energy transition and net zero objectives, and energy security by Ministry of Petroleum and Natural Gas. Battery Energy Storage Systems with capacity of 4,000 MWH will be supported with Viability Gap Funding.

Annex 2: Highlights of the Union Budget 2023-24 *(Contd.)*

- The Inter-state transmission system for evacuation and grid integration of 13 GW renewable energy from Ladakh will be constructed with investment of ₹20,700 crore including central support of ₹8,300 crore.
- To incentivize environmentally sustainable and responsive actions by companies, individuals and local bodies, a Green Credit Programme will be notified under the Environment (Protection) Act.
- PM Programme for Restoration, Awareness, Nourishment and Amelioration of Mother Earth (PM-PRANAM) will be launched to incentivize States and Union Territories to promote alternative fertilizers and balanced use of chemical fertilizers.
- With a total investment of ₹10,000 crore, 500 new 'waste to wealth' plants under GOBARdhan (Galvanizing Organic Bio-Agro Resources Dhan) scheme will be established for promoting circular economy.
- 10,000 Bio-Input Resource Centres will be set-up to facilitate 1 crore farmers to adopt natural farming over the next 3 years.
- Afforestation initiative for mangrove forests will be launched titled 'Mangrove Initiative for Shoreline Habitats & Tangible Incomes'(MISHTI).
- A new scheme, *Amrit Dharohar*, will be implemented over the next three years to encourage optimal use of wetlands, and enhance bio-diversity, carbon stock, eco-tourism opportunities and income generation for local communities.
- Coastal shipping will be promoted for both freight and passengers through PPP mode with viability gap funding.

Priority 6: Youth Power

Skilling

- *Pradhan Mantri Kaushal Vikas Yojana* 4.0 will be launched to skill lakhs of youth within next three years. The scheme will also cover new age courses for Industry 4.0 like coding, artificial intelligence (AI), robotics, mechatronics, internet of things (IoT), 3D printing, drones, and soft skills. To skill youth for international opportunities, 30 Skill India International Centres will be set up.
- A unified Skill India Digital platform to further strengthen the digital skilling ecosystem will be launched.
- Direct Benefit Transfer under a pan-India National Apprenticeship Promotion Scheme will be rolled out to benefit 47 lakh youth in next 3 years.

Tourism

- States will be encouraged to set up a Unity Mall for promotion and sale of their own ODOPs (One District One Product), geographical indications (GI) products and other handicraft products.
- At least 50 destinations to be selected and developed as a complete package for domestic and foreign tourists.

Priority 7: Financial Sector

- Expanded corpus of ₹9,000 crore under a revamped credit guarantee scheme for MSMEs is proposed to enable additional collateral-free guarantee credit of ₹2 lakh crore.
- A national financial information registry will be set up to serve as the central repository of financial and ancillary information. This will facilitate efficient flow of credit, promote financial inclusion, and foster financial stability. A new legislative framework will govern this

Annex 2: Highlights of the Union Budget 2023-24 *(Contd.)*

credit public infrastructure, and it will be designed in consultation with the Reserve Bank.

- To meet the needs of *Amrit Kaal* and to facilitate optimum regulation in the financial sector, public consultation, as necessary and feasible, will be brought to the process of regulation-making and issuing subsidiary directions.
- To simplify, ease and reduce cost of compliance, financial sector regulators will be requested to carry out a comprehensive review of existing regulations. For this, they will consider suggestions from public and regulated entities. Time limits to decide the applications under various regulations will also be laid down.
- Gujarat International Finance Tec-City (GIFT) International Financial Services Centre (IFSC): To enhance business activities in GIFT IFSC, the following measures will be taken:
  - Delegating powers under the special economic zone (SEZ) Act to International Financial Services Centres Authority (IFSCA) to avoid dual regulation.
  - Setting up a single window information technology (IT) system for registration and approval from International Financial Services Centre Authority (IFSCA), SEZ authorities, Goods and Services Tax Network (GSTN), Reserve Bank of India (RBI), Securities and Exchange Board of India (SEBI) and Insurance Regulatory Development Authority of India (IRDAI).
  - Permitting acquisition financing by IFSC Banking Units of foreign banks.
  - Establishing a subsidiary of Export Import (EXIM) Bank for trade re-financing.
  - Amending IFSCA Act for statutory provisions for arbitration, ancillary services, and avoiding dual regulation under SEZ Act.
  - Recognizing offshore derivative instruments as valid contracts.
- To improve bank governance and to enhance investors' protection, certain amendments to the Banking Regulation Act, the Banking Companies Act and the Reserve Bank of India Act are proposed.
- To build capacity of functionaries and professionals in the securities market, SEBI will be empowered to maintain standards for education in the National Institute of Securities Markets.
- A Central Data Processing Centre will be setup for faster handling of administrative work under the Companies Act.
- An integrated IT portal will be established for investors to reclaim unclaimed shares and unpaid dividends from the Investor Education and Protection Fund Authority.
- Digital payments continue to find wide acceptance. In 2022, they recorded an increase of 76 per cent in transactions and 91 per cent in value. Fiscal support for this digital public infrastructure will be continued in 2023-24.
- A one-time new small savings scheme, *Mahila Samman* Savings Certificate, will be made available for a two-year period up to March 2025. This will offer deposit facility up to ₹2 lakh in the name of women or girls for a tenor of 2 years at fixed interest rate of 7.5 per cent with partial withdrawal option.
- The maximum deposit limit for Senior Citizen Savings Scheme will be enhanced from ₹15 lakh to ₹30 lakh. The maximum deposit limit

Annex 2: Highlights of the Union Budget 2023-24 *(Contd.)*

for Monthly Income Account Scheme will be enhanced from ₹4.5 lakh to ₹9 lakh for single account and from ₹9 lakh to ₹15 lakh for joint account.

Fiscal Management

- Fifty-year interest free loan to States: The entire fifty-year loan to States has to be spent on capital expenditure within 2023-24. Most of this will be at the discretion of States, but a part will be conditional on States increasing their actual capital expenditure. Parts of the outlay will also be linked to, or allocated for, the following purposes:
  - Scrapping old government vehicles.
  - Urban planning reforms and actions.
  - Financing reforms in urban local bodies to make them creditworthy for municipal bonds.
  - Housing for police personnel above or as part of police stations.
  - Constructing Unity Malls.
  - Children and adolescents' libraries and digital infrastructure.
  - State share of capital expenditure of central schemes.
- States will be allowed a fiscal deficit of 3.5 per cent of gross state domestic product (GSDP) of which 0.5 per cent will be tied to power sector reforms.

Tax Proposals

Indirect Tax Proposals

- The Union Budget proposes to reduce the number of basic customs duty rates on goods, other than textiles and agriculture, from 21 to 13. As a result, there are minor changes in the basic custom duties, cesses and surcharges on some items including toys, bicycles, automobiles and naphtha.

Sector Specific Indirect Tax Proposals

- Green mobility: The Budget proposes to exempt excise duty on GST-paid compressed biogas contained in blended compressed natural gas. Customs duty exemption is being extended to import of capital goods and machinery required for manufacture of lithium-ion cells for batteries used in electric vehicles.
- Electronics: The Budget proposes to provide relief in customs duty on import of certain parts and inputs like camera lens and continue the concessional duty on lithium-ion cells for batteries for another year. The basic customs duty on parts of open cells of television panels is reduced by 2.5 per cent.
- Electrical: The basic customs duty on electric kitchen chimney is being increased from 7.5 per cent to 15 per cent and that on heat coils is proposed to be reduced from 20 per cent to 15 per cent.
- Chemicals and Petrochemicals: To facilitate energy transition and support the Ethanol Blending Programme, basic customs duty exemption is given to Denatured ethyl alcohol. Basic customs duty is also being reduced on acid grade fluorspar and crude glycerin.
- Marine Products: To enhance the export competitiveness of marine products, reduction in duties on key inputs for domestic manufacture of shrimp feed is proposed.
- Lab Grown Diamonds: To sustain India's global leadership in cutting and polishing of diamonds, the Budget has proposed to reduce basic customs duty on seeds used to manufacture Lab Grown Diamonds (LGDs).

Annex 2: Highlights of the Union Budget 2023-24 *(Contd.)*

- Precious Metals: The Budget proposes to increase the duties on articles made from gold and platinum. The import duty on silver dore, bars and articles are also increased.
- Compounded Rubber: The basic customs duty rate on compounded rubber is being increased from 10 per cent to '25 per cent or ₹30/kg' whichever is lower.
- Cigarettes: National Calamity Contingent Duty (NCCD) on specified cigarettes is proposed to be revised upwards by about 16 per cent.

Direct Tax Proposals

- MSMEs and Professionals: The Budget proposes to enhance the limits of presumptive taxation to ₹3 crore for Micro Enterprises and ₹75 lakh for professionals with cash payments less than 5 per cent.
- Cooperatives: In line with the new manufacturing companies, the new co-operatives that commence manufacturing activities shall also benefit from a lower tax rate of 15 per cent. The threshold limit for cooperatives to withdraw cash without tax deducted at source (TDS) increased to ₹3 crore.
- An opportunity would be provided to sugar co-operatives to claim payments made to sugarcane farmers for the period prior to the assessment year 2016-17 as an expenditure. This is expected to provide them with a relief of almost ₹10,000 crores.
- The proposal has been made for a higher limit of ₹2 lakh per member for penalty exemption of cash deposits to and loans in cash by Primary Agricultural Co-operative Societies (PACS) and Primary Co-operative Agriculture and Rural Development Banks (PCARDBs).
- Start-Ups: The date of incorporation for income tax benefits to start-ups has been extended till March 31, 2024. It is also proposed to provide the benefit of carry forward of losses on change of shareholding of start-ups from seven year of incorporation to ten years.
- Appeals: To reduce the pendency of appeals, it is proposed to deploy about 100 Joint Commissioners for disposal of small appeals.
- Better targeting of Tax Concessions: The budget proposed to cap deduction from capital gains on investment in residential house under sections 54 and 54F to ₹10 crore.
- Rationalisation: Income of Authorities, Boards and Commissions set up by statutes of the Union or State for the purpose of housing, development of cities, towns and villages, and regulating and developing an activity is proposed to be exempted from income tax.

Personal Income Tax

- It is proposed to increase the rebate limit to ₹7 lakh in the new tax regime. Thus, no income tax for persons with income up to ₹7 lakh in the new tax regime.
- The budget proposed to change the tax structure under the new personal income tax regime by reducing the number of slabs to five and increasing the tax exemption limit to ₹3 lakh. The revised new tax regime is as follows:

Income	Tax rate
₹ 0-3 lakh	Nil
₹ 3-6 lakh	5 per cent
₹ 6-9 lakh	10 per cent
₹ 9-12 lakh	15 per cent
₹ 12-15 lakh	20 per cent
Above ₹ 15 lakh	30 per cent

Annex 2: Highlights of the Union Budget 2023-24 *(Concld.)*

- The standard deduction of ₹50,000 to salaried people and deduction up to ₹15,000 for pensioners under the new tax regime.
- It is also proposed to reduce the highest surcharge rate from 37 per cent to 25 per cent in the new tax regime. This would result in reduction of the maximum tax rate from 42.74 per cent to 39 per cent.
- The limit for tax exemption on leave encashment on retirement of non-government salaried employees is proposed to be increased from the current ₹3 lakh to ₹25 lakh.
- The new income tax regime will be made as the default tax regime. However, citizens will continue to have the option to avail the benefit of the old tax regime.

Annex 3: Resource Transfers from Centre to States and UTs with Legislature

		2021-2022	2022-2023 (RE)	2023-2024 (BE)	2021-2022	2022-2023 (RE)	2023-2024 (BE)	2021-2022	2022-2023 (RE)	2023-2024 (BE)
		₹ crore			As per cent of Gross Transfers			Y-o-Y Growth (Per cent)		
I	Devolution of States Share in Taxes	898,392	948,406	1,021,448	52.7	55.4	54.8	51.0	5.6	7.7
II	Some Important Items of Transfer *of which:*	202,808	125,177	183,613	11.9	7.3	9.9	23.0	-38.3	46.7
	1. Back-to-Back Loans to States in lieu of GST Compensation Shortfall	147,866	-	-	8.7	0.0	0.0	34.2	-	-
	2. Externally Aided Projects-Loan	23,083	29,580	24,550	1.4	1.7	1.3	-13.8	28.1	-17.0
	3. Special Assistance as Loan to States for Capital Expenditure	14,186	76,000	130,000	0.8	4.4	7.0	19.9	435.7	71.1
III	Finance Commission Grants *of which:*	207,435	173,257	165,480	12.2	10.1	8.9	12.7	-16.5	-4.5
	1. Grant for local bodies - Urban Bodies	16,147	15,026	24,222	0.9	0.9	1.3	-39.5	-6.9	61.2
	2. Grant for local bodies - Rural Bodies	40,312	41,000	47,018	2.4	2.4	2.5	-33.6	1.7	14.7
	3. Grants-in-Aid for SDRF	17,747	18,635	19,573	1.0	1.1	1.1	-20.3	5.0	5.0
	4. Post Devolution Revenue Deficit Grants	118,452	86,201	51,673	6.9	5.0	2.8	59.3	-27.2	-40.1
IV	Total Transfer to States [other than I+II+III]	345,847	395,334	426,996	20.3	23.1	22.9	6.3	14.3	8.0
	1. Under Centrally Sponsored Schemes (Revenue)	334,581	346,992	364,270	19.6	20.3	19.6	8.5	3.7	5.0
	2. Under Central Sector Schemes (Revenue)	9,994	46,687	60,942	0.6	2.7	3.3	-38.1	367.2	30.5
	3. Under Other Categories of Expenditure (Revenue)	1,270	1,552	1,681	0.1	0.1	0.1	26.6	22.2	8.3
	4. Capital Transfers	2	102	103	0.0	0.0	0.0	-5.0	5268.4	1.0
V	Transfer to Delhi, Puducherry and Jammu and Kashmir	51,128	68,654	65,337	3.0	4.0	3.5	0.9	34.3	-4.8
VI	Gross Transfers to States/UTs (I+II+III+IV+V)	1,705,610	1,710,828	1,862,874	100.0	100.0	100.0	29.2	0.3	8.9
VII	Less Recovery of Loans and Advances	17,569	9,105	8,296	1.0	0.5	0.4	9.1	-48.2	-8.9
VIII	Net Transfers (VI-VII)	1,688,041	1,701,723	1,854,578	99.0	99.5	99.6	29.5	0.8	9.0
IX	Gross Transfers / GDP (per cent)	7.2	6.3	6.2	-	-	-	-	-	-
X	Net Transfers / GDP (per cent)	7.1	6.2	6.1	-	-	-	-	-	-

Source: Union Budget Documents.

*ESG Disclosures and Performances: Cross-Country Evidence**

*by Saurabh Ghosh^ and Siddhartha Nath^*

We present a cross-country empirical analysis indicating that the Environmental, Social and Governance (ESG) indices performed better than their broad market counterparts. In the literature there are debates surrounding whether ESG activities are in the interest of shareholders or the outcome of agency problems. Our article fits at the heart of this debate and suggests that the ESG indices withstood the unanticipated shock (COVID19) better than the broad market indices. In the backdrop of these findings, we discuss some policy options to encourage undertaking of ESG initiatives by the Indian corporates.

Introduction

The term "Environmental, Social and Governance (ESG)" risks refer to the risks that the governments, corporates and financial institutions are exposed to due to large scale trends, *e.g.*, climate change, resource scarcity, demographic shifts *etc.* In the context of corporate finance, discussions on ESG frequently include how companies integrate and manage these risks as part of their business models, and to what extent investors integrate them into their decisions. The growing emphasis on ESG risks by the public authorities across the globe shows the paramount importance of managing these risks to ensure sustainable growth process. The most effective way to institutionalise this practice would be to integrate these principles into the investment policy and practices.

Public authorities across the globe are paying increasing attention to the integration of these principles into their regulatory frameworks (BIS, 2021). Building on the recommendations of the Task Force on Climate-Related Financial Disclosures (TCFD), the International Sustainability Standards Board (ISSB) released its first set of proposed sustainability standards for comment. These standards also include industry-based disclosure requirements derived from the Sustainability Accounting Standards Board (SASB). Most of the large economies around the world including India have already come a long way by making sustainability disclosures mandatory for listed corporations. However, transparency and reporting standards of these disclosures continue to remain as a challenge for broad-based implementation of this policy (Bouye *et. al.* (2021)).

While it is almost unanimous that better disclosure standards will benefit regulators in the long-term, there are some debates relating to their short-term consequences. A large body of available literature (Cai *et. al.* (2016), Liang and Renneboog (2017a and 2017b))[1] suggests that the ESG related performances by the corporations in a country are associated with the country's economic development, legal systems promoting competition, civil liberties, political rights, harmony, autonomy *etc.* At the firm-level, higher ESG considerations are associated with better corporate governance, higher institutional ownership, balanced gender-political leaning of the board members *etc.*, (Gillan *et. al.* (2021)). In the context of business, increasing ESG considerations are generally found to be associated with goodwill, reputation and positive consumer perception (Schiller (2018), Dai *et. al.* (2020)). This provides a company with fair justifications why they might choose to integrate these principles into their business models. Despite these evidences favouring ESG considerations, there are debates surrounding

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* Views expressed in this article are solely of the authors' and do not represent the views of the Reserve Bank of India.

[1] See Gillan *et. al.*, (2021) for a comprehensive review of literature.

whether ESG activities are in the broader interest of shareholders or the outcome of agency problems (Gillan et. al., (2021)). Moreover, undertaking ESG initiatives by the corporations might be mixed with scepticism, especially by the smaller, capital starved entities. In fact, a branch of literature suggests that higher disclosures of ESG risks and stricter screening by the authorities may lead to lower stock prices and higher cost of raising capital for a firm (Heinkel *et. al.*, (2001), Chava (2014), Ng and Rezaee (2015) *etc.*), potentially discouraging them from undertaking ESG disclosures and initiatives.

Our article fits at the heart of this debate, and the evidences presented in this article suggest that the stock price indices of companies leading in ESG initiatives have generally outperformed the broad market indices over the long-term in most of the advanced and emerging market economies. This means that undertaking ESG considerations may be associated with better financial market returns than not undertaking such considerations.

The rest of this article is organised as following: Section 2 explains the data used for our analysis, followed by cross-country exploratory data analysis in Section 3. In Section 4, we use two empirical models (difference-and-difference and Market Model) to substantiate that stock prices of companies that led in terms of ESG initiatives performed better than the overall market during the COVID-19 pandemic. Finally, Section 5 concludes the paper.

II. Data

We have used Morgan Stanley Capital International (MSCI) ESG indices for our analysis. We chose 18 countries for our analysis, 10 emerging economies, *viz.*, Brazil, China, India, Indonesia, South Korea, Malaysia, Russia, South Africa, Taiwan and Thailand: and 8 advanced economies, *viz.*, Australia, Canada, Hong Kong, Japan, Sweden, Switzerland, UK and USA. The sample period for our analysis ranges from September 2010 to August 2021.

MSCI ESG leaders' indices are constructed on the basis of ESG ratings for the companies given by MSCI. MSCI ESG ratings for the companies measure a company's exposure and resilience to those long-run ESG risks that are financially relevant. MSCI ESG ratings are designed to pick up certain risks that are overlooked by the conventional assessment of financial risks, which could impact the financial performance, once they materialise[2]. Along with the exposure of a company to certain risks, MSCI ESG ratings also look at how the company is managing those risks[3]. Companies are provided ratings based on these aspects and ESG ratings help identifing companies that are leading or lagging within their industry peers. As a result, MSCI ESG indices are designed to facilitate integration of ESG considerations into an investor's investment decisions.

To assess companies' and the sectors' exposure to and management of ESG related risks, MSCI collects data from a variety of sources that are mostly publicly available, *e.g.*, academia, government, NGO databases, Transparency International, US EPA, and World Bank (MSCI, 2022). Company specific information are collected from various disclosures from the companies, government databases on ESG compliances and controversies, media reports, NGOs, stakeholder sources *etc.* MSCI identifies 35 'key issues' under 10 broad themes covering all pillars; environmental, social and governance (Table 1 in the Annex). The final ESG rating of a company is defined as a weighted average of ratings on individual key issues. Company ratings are then normalised relative to their industry peers. The weights are defined for

[2] For example, how water shortages in the near-future can pose threat to a mining company is captured by the ESG ratings, but it is not captured by the conventional financial indicators, or the stock prices.

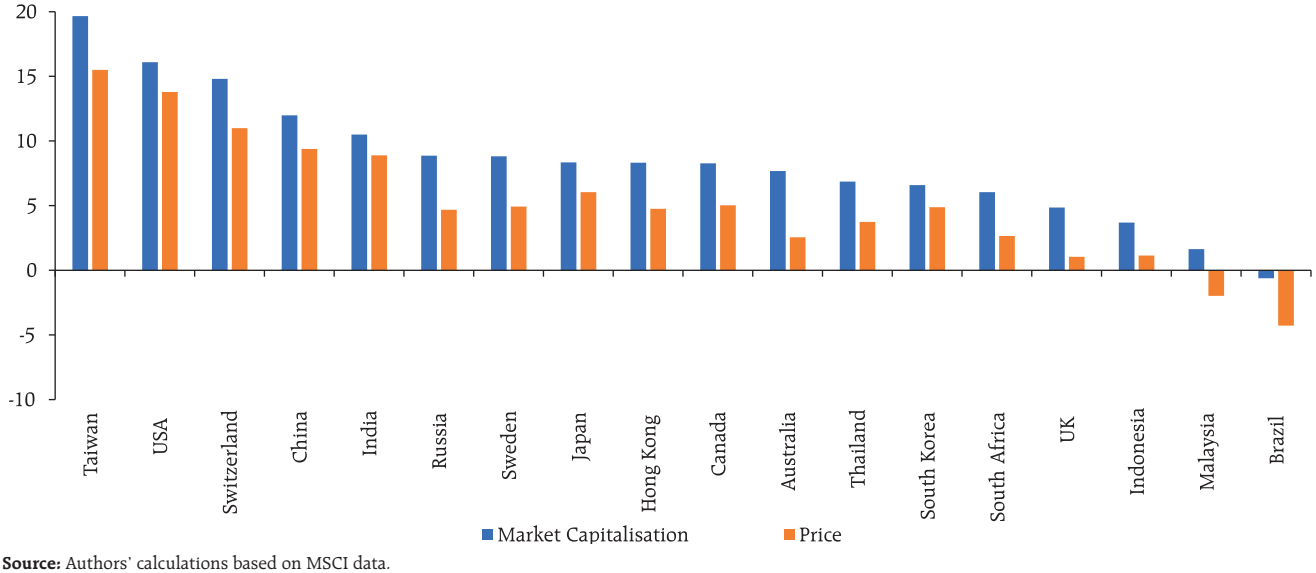
[3] ESG disclosures have been made compulsory for large manufacturing companies for major economics including EU, China, and India. In addition to their disclosures into their annual report/director's reports, MSCI gathers information on the company's exposures to risks from several independent sources such as news articles, reports on disputes, other business/academia reports etc. while building the ESG ratings. This is expected to minimise the chances of biases that may arise due to 'moral hazard' etc.

an industry by considering both the positive and negative impacts of that industry's operations on environment and society, and the timeline within which these impacts are expected to materialise. For instance, a key issue identified as "High Impact" and "Short Term" would be weighted three times higher than a key issue identified as "Low Impact" and "Long Term". The industry weights are applied on each company's score on each of the key issues to arrive at the aggregate performance of that company, which is then normalised within its own industry, and provided ratings between best (AAA) and worst (CCC). The index compositions *i.e.*, the number of constituents/companies and the weights of top constituents in both in MSCI broad and MSCI ESG Leaders index for the sample countries are provided in Table 2 in the Annex.

There is one caveat that needs to be mentioned. For most of the countries, the Broad MSCI index is generally a superset , as they mostly include companies that are in MSCI ESG leaders' index. Notwithstanding this shortcoming, we continue with this study, as it is difficult to get watertight compartmentalised indices with only ESG leaders or non-ESG-leaders, and as it does not alter any of our conclusions.

MSCI provides both price and market capitalisation indices consisting of the companies which lead in terms of ESG considerations. These companies are also referred to as the ESG leaders within the countries[4]. Alongside the ESG indices, we have also used the MSCI broad market indices based on both market capitalisation and prices in this article. For all the countries in our sample, the growth in ESG market capitalisation indices were higher than the growth in ESG leaders' price indices (Chart 1). These gaps suggest that all the countries (except Malaysia and Brazil) have experienced growth in the volume, or the number of shares issued by the ESG leaders in their countries. We would, however, focus on the ESG price indices in the remaining part of this article because of two reasons. First, ESG market

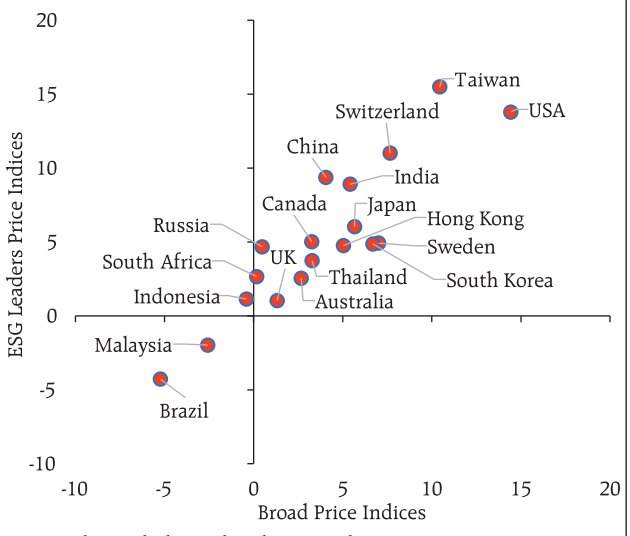
Chart 1: Compound Average Annual Return: Sep 2010-Aug 2021: ESG Leader Index (Per cent)



Source: Authors' calculations based on MSCI data.

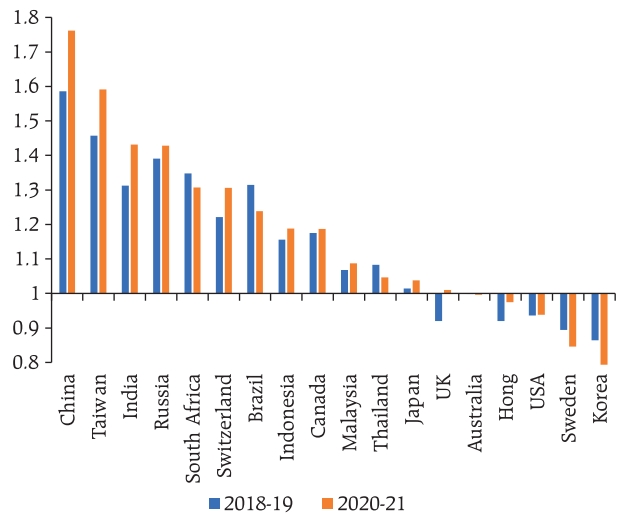
[4] The market capitalisation, or the ESG Gross index measure the overall size of the market, *i.e.*, each outstanding share being multiplied by their respective market prices for each period, and then aggregated across all the shares. ESG leaders' price indices are the company-level market capitalisation weighted aggregate price indices for ESG leaders. The ESG market capitalization and ESG price indices represent the market capitalisation and price indices for the set of industries that are leaders in ESG considerations.

Chart 2: Average Annual Return Sep 2010-Aug 2021



Source: Authors' calculations based on MSCI data.

Chart 3: ESG Price Index relative to Broad Price Index (2010=1)



Source: Authors' calculations based on MSCI data.

capitalization and the ESG price indices moved quite closely among the sample countries (Chart 1), and second, price movement captures forward-looking investors' expectations about the ESG leaders' better than the number of issuances.

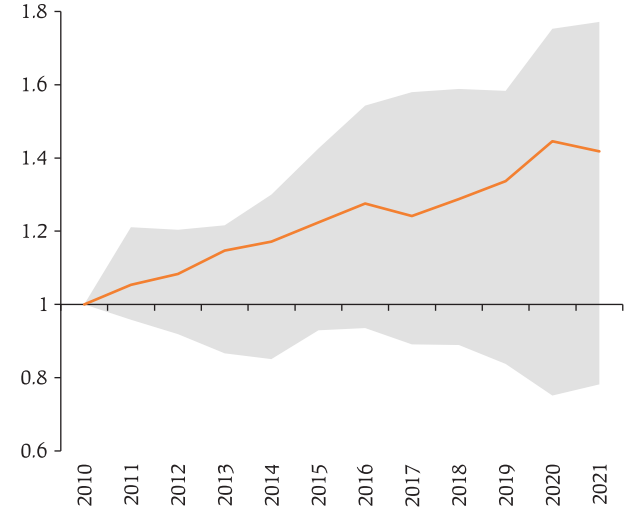
III. Exploratory Data Analysis

Cross-Country Evidence

The average annual returns in ESG price indices were consistent with the returns in broad price indices (Chart 2). The ESG leaders' indices have outperformed the broad indices for most of the countries in our sample (Chart 3). In chart 3, we normalised each indicator with respect to 2010, and then took the ratio between ESG indices and the Broad market indices. A higher ratio indicates that the ESG leaders' index has outperformed the broad index. This suggests that the companies which managed and disclosed their ESG related risks better were associated with higher prices for their equities, compared to a larger set of listed companies.

India ranks ahead of all the countries except China and Taiwan in terms of the relative returns in ESG leaders' index. The relative growth in India's ESG index was also among the topers during this period within the set of 18 countries in our sample as shown in Chart 4, where the orange line indicates India's ESG leaders' index relative to India's broad market index, both rebased to 2010[5]. The lower end of the shaded

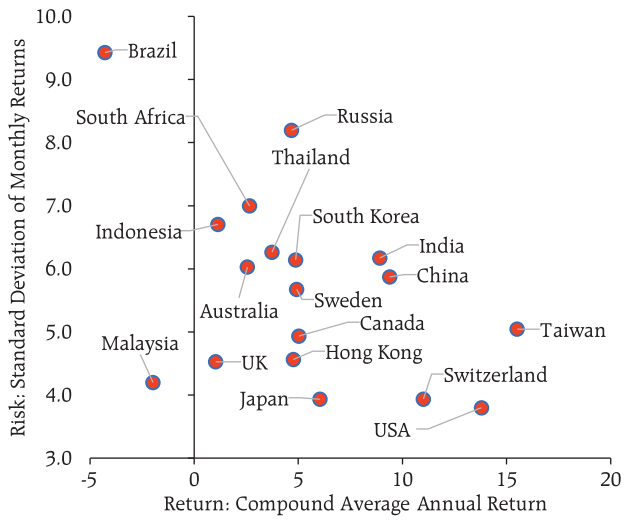
Chart 4: Relative growth in ESG Price Indices in India: Global Perspective



Source: Authors' calculations based on MSCI data.

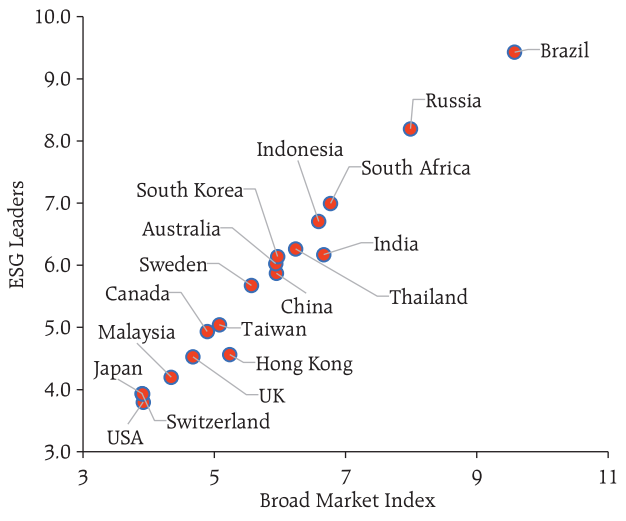
[5] 2010 is the year since when we could obtain ESG indices for all the countries in our sample. MSCI reported ESG indices only some of these countries prior to 2010. Hence, for better comparability, we have used 2010 as the starting point for all the countries.

Chart 5: Return *vs.* Risk in the ESG Leaders Price Index: Sep 2010-Aug 2021



Source: Authors' calculations based on MSCI data.

Chart 6: Standard Deviation of Monthly Returns (Per cent) in Price Indices: Sep 2010-Aug 2021



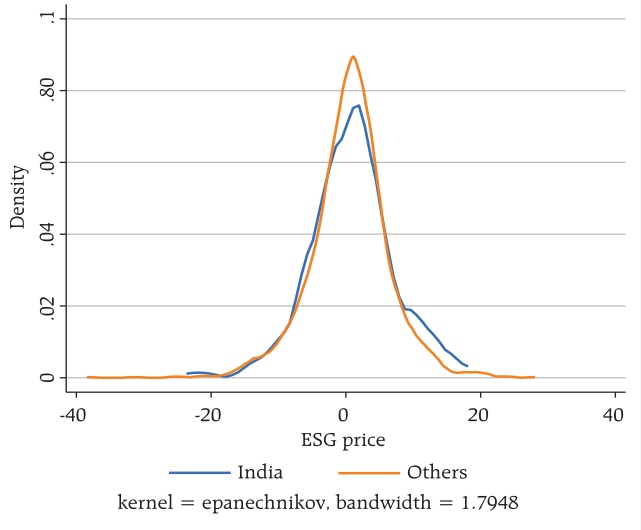
Source: Authors' calculations based on MSCI data.

boundaries indicates the minimum value of this measure among the sample countries and the upper end of the shaded boundaries indicates the maximum value.

During the sample period, there is no clear association between the average annual returns and the average risks in the ESG leaders' price indices among the set of countries (Chart 5).

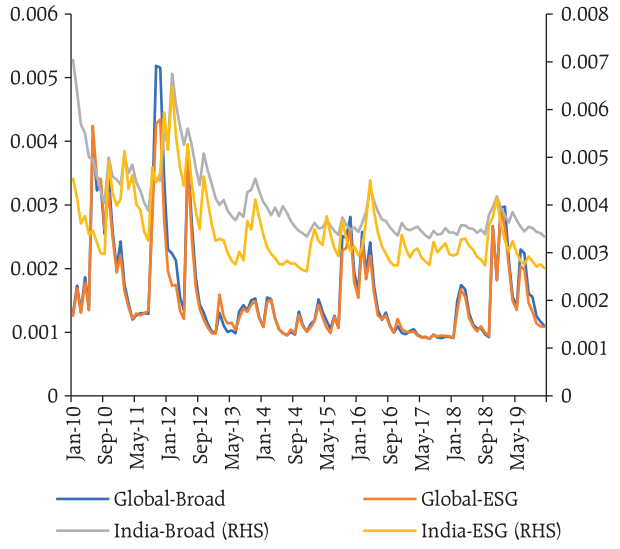
The risks in ESG indices, however, were broadly in line with the risks in the broad indices across countries (Chart 6). In general, the risk in both broad indices and ESG indices were higher in EMEs as compared with the AEs. India is not an exception, where risks in both ESG and the broad indices were higher than majority of the countries (Chart 6). A Kernel Density plot for the monthly ESG returns for India, and for all other countries in our sample (excluding India) suggests that India's monthly ESG returns generally have a fat right tail, indicating larger probability of higher return (Chart 7). For India the return distribution was rather Platykurtic compared to the rest of the world, which explains why the standard deviation of the monthly ESG index return was more for India. We also analyse the volatility clustering of broad and ESG indices using a GARCH (1,1) equation. Our finding indicates that volatility, in general, was lower in the AEs as compared to EMEs both in the Broad and the ESG indices. For India, ESG index's GARCH volatility was lower than the volatility in the Broad index returns (Chart 8), though the clustering patterns were similar in both the series.

Chart 7: Kernel Density Plot for Monthly ESG Index returns



Source: Authors' calculations based on MSCI data.

Chart 8: GARCH Volatility Measures



Source: Authors' calculations based on MSCI data.

In line with the volatility clustering, we attempt to quantify the transmission of broad market risks to the price indices of ESG leaders. In Table 1, we first classify the broad market returns into two categories, "extreme" and "normal" as shown in the first column. To do this, first we observe the monthly returns in broad market index of a single country between September 2010 and August 2021 and observe both the average and standard deviation for the whole period for each country separately. We called a monthly return an "extreme" one if the return for a period is either above or below the one-standard deviation band around the average for that country. Similarly, we categorise the returns in ESG leaders' index. Thereafter, we calculate in how many instances, an "extreme" event in broad market index has also coincided with "extreme" events in the ESG leaders' index. For instance, for India, 78 per cent (*i.e.*, 23 out of 30) of the "extreme" events in the broad index translated into "extreme" events in the ESG leader's index. This serves as a measure of risk transmission from broad market index to ESG leaders' index. Table 1 suggests that this measure of risk transmission was among the

Table 1: Correspondence Between Events in Broad and ESG Leaders Indices

(Per cent)

Events in Broad Index	Extreme		Normal		Percent of 'Extreme' events in Broad Indices translated into 'Extreme' events in ESG Indices
Events in ESG Index	Extreme	Normal	Extreme	Normal	
Brazil	29	2	2	68	95
China	25	5	4	67	85
India	**23**	**7**	**2**	**68**	**78**
Indonesia	27	2	2	70	95
South Korea	25	7	5	64	79
Malaysia	22	4	8	66	85
Russia	20	3	5	71	87
South Africa	30	5	5	61	87
Taiwan	24	5	1	70	84
Thailand	23	5	0	72	81
Australia	19	3	4	74	86
Canada	20	5	2	73	82
Hong Kong	22	8	5	66	74
Japan	24	2	0	73	91
Sweden	23	2	2	73	91
Switzerland	27	2	2	70	95
UK	24	3	4	69	89
USA	22	2	2	74	91

Notes:
Sample covers between September 2010 to August 2021.
'Extreme' events are 1 standard deviation above and below the average monthly returns. Event otherwise are classified as 'normal'.

lowest in case of India within the selected countries. Percentage of 'Extreme' events in Broad Indices that got translated into 'Extreme' events in ESG Indices is around 86 per cent on average for our sample set of countries. This suggests that the companies included in the MSCI-ESG index were rather insulated from the broad market price fluctuations to some extent. In case of India, this proportion 78 percent, less than the average of other countries, indicating that the stocks in ESG-index were to some extent shielded from the extreme price movements in the broad markets.

The major takeaways from this section are that companies with ESG disclosures have generally performed better, in terms of their returns and volatilities, relative to a broader set of companies across countries.

IV. Empirical Findings

The stylised facts presented so far suggest that stock price indices' return for ESG leaders have generally exceeded the broad market in the long-term. Empirically, a robust validation of this fact requires us to see the returns around a purely exogenous shock like the COVID-19 pandemic. We do this through two different approaches; first, estimating a difference-in-difference or 'double difference' model and second, by estimating the cumulative average returns (CAR) from a 'Market Model' on country-wise returns in ESG leaders' and broad market indices between September 2010 and October 2020.

(a) Difference-in-difference Model

The double differencing would suggest the difference in returns in ESG leaders post-COVID-19 *vis-a-vis* the non-ESG leaders, after accounting for the shocks that might have impacted both sets of firms. In this vein, we used a pooled dataset consisting of monthly returns on country-ESG leaders' (our treatment group that follows and discloses ESG related information) with the broad market indices (control group) between September 2010 and October 2020. The sample countries remained same as discussed in the data section. We created a dummy variable called "*ESG*" that took value 1 corresponding to the observation on ESG leaders index returns, and 0, corresponding to the broad market returns.

We chose the post-COVID outbreak period for this impact analysis as January-October 2020 for the following reasons: after the initial outbreak of COVID-19 and associated lockdowns in almost all the major countries worldwide between January-May 2020, the second major spike took place around the end of October 2020 in most of Europe and USA. Although the actual dates of the surge may slightly vary between the countries in Western Europe and USA, pre-November 2020 broadly serves as a reasonable timeline for the impact of first wave across the globe. Post-October 2020, several waves of infections have taken place in most of the countries, but at different points in time, making it difficult to estimate a pure pandemic shock. We, on the other hand, use January 2020 as the starting point of the global outbreak of COVID-19 pandemic and create another dummy variable, "*COVID*" that assumed value 1 corresponding to all the months since January 2020, zero for the earlier months.

This research design will help us to identify whether following ESG rules and disclosing them are associated with firms to withstand unanticipated shocks better than the others across countries. The empirical estimation of this effect is done by estimating the following regression model:

$$\Delta \log(Index_{itk}) = ESG + COVID + \beta * ESG * COVID + \sum_{i=2}^{n} Country_i + u_{itk} \quad \ldots (1)$$

The coefficient β of the interaction term ESG*COVID would measure by how much the returns in ESG indices may have differed from

the returns in broad indices during COVID-19 period, as compared to the pre-COVID period. The β term represents the causal impact of ESG disclosures in the difference-in-difference set-up. Subscripts *i, t and k* represent country, month and the indices (ESG or broad). The estimation results are presented in Table 2.

It suggests that monthly returns in ESG indices generally exceeded that of the broad indices during an unanticipated shock (*e.g.*, COVID), as the Esg*Covid coefficient is positive and significant at conventional statistical levels. This result could be interpreted as following ESG rules and disclosure could causing better stock performance. For brevity, we do not report the coefficient of country fixed dummies, which we introduced to control for estimates across different countries. The coefficient of the COVID dummy is negative and statistically significant which indicates that the monthly returns on both ESG leaders' and in broad indices on average were lower during the COVID-19 pandemic as compared to the pre-pandemic periods. The ESG coefficient is positive and significant, which indicates that on average ESG indices perform better than the broad market index.

Table 2: Difference-in-difference Estimate of ESG Return Differentials during COVID-19

	Clustered: Year	Clustered: Country	Clustered: Year-Country
	(1)	(2)	(3)
Esg	0.11* (0.048)	0.11** (0.045)	0.11*** (0.037)
Covid	-1.41*** (0.41)	-1.41*** (0.42)	-1.41*** (0.39)
Esg*Covid	0.24*** (0.048)	0.24* (0.11)	0.24** (0.12)
Constant	-0.12 (0.81)	-0.12** (0.042)	-0.12 (0.74)
Number of observations	4392	4392	4392
Root MSE	5.85	5.85	5.85

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

(b) Market Model

The abovementioned difference-in-difference estimates could have a few limitations. First, we do not have any explicit index that capture only the non-ESG leaders. Therefore, some of the companies that are present in the ESG leaders' indices are also present in the broad market indices. Second, in some of the stylised facts presented earlier, we show that the ESG leaders' indices have broadly outperformed the broad market indices and this gap significantly vary across countries, and therefore the assumption that the control group and the treatment group followed common trends before COVID-19 pandemic may not be strictly satisfied. We therefore follow a second methodology where we test how the ESG indices withstood the COVID-19 shock using the *Market Model* (for detailed discussion on Market models, see MacKinlay (1997)).

The pandemic provided a time-test for the ESG indices on their resilience to adverse shocks. To test this, in this sub-section, we estimate the cumulative returns in ESG price indices with respect to the returns in broad indices. Precisely, we regress the monthly returns in MSCI ESG leaders' price indices on the monthly returns of MSCI broad market indices between September 2010 and December 2019. We use a panel data of monthly returns of both ESG leaders' and the broad indices, for all the 18 countries. Our regression controls for the country fixed-effects and the year specific unobserved shocks through dummy variables. To account for country-heterogeneity, we also include interactions between the monthly returns in MSCI broad market index and the country-specific dummy variables. The estimation results are presented in Table 3 in the Annex. The estimated model takes the following form:

$$\Delta \log(ESG_{it}) = \sum_{i=1}^{n} \alpha_i D_i + \beta_1 \Delta \log(Broad_{it}) + \sum_{i=1}^{n} \beta_i \Delta \log(Broad_{it})\, D_i + u_{it} \quad \ldots(2)$$

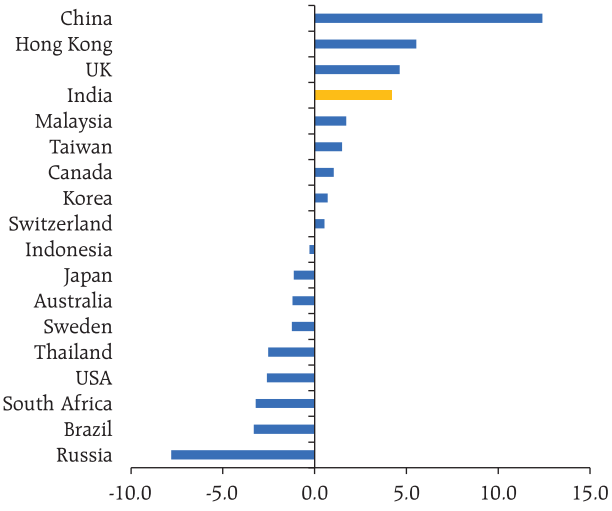
where ESG_{it} and $Broad_{it}$ are the MSCI ESG leaders' indices and the MSCI broad indices for country i in month t. D_i represents the dummy variable for the i[th] country, n is the number of countries, and u_{it} represent the error term of the regression. Hausman specification test following Hausman (1978) fails to reject the fact that the consistent estimators from random effect model is not systematically different from a fixed effect estimator provided by model (1) above.

In our estimates, we use data up to December 2019, which is the last month before the outbreak of COVID-19 pandemic globally. Using the model estimates, and the observed valued of MSCI broad indices, we obtain the fitted values of the monthly returns in MSCI ESG leaders' indices for each country between January and October, 2020. Using the fitted values, we construct the predicted ESG leaders' index. The Cumulative Average Return (CAR) is the percentage difference between the values for observed/actual ESG leaders' index and the predicted ESG leaders' index.

Our estimates suggest that the CAR by India's ESG leaders was more than 4 percentage points higher than what is predicted by the market model (Chart 9). This figure stands next only to China, Hong Kong and UK. This suggests, in the aftermath of the initial COVID-19 shock, the ESG leaders have significantly outperformed the rest of the market in several economies, and India is among the top performing countries on the basis of this criterion.

ESG disclosures require companies to go extra miles, beyond their traditional assessment of financial risks. This requires disclosing additional information on risks to the companies, and how the companies are managing them. However, empirical evidences, both from difference-in-difference and 'market model' suggest that despite disclosing additional risks to the investors, the gains to the ESG leaders for a large number of countries (Chart 9) are significant. In fact, the cross-country evidences suggest that undertaking ESG considerations and its proper disclosure may indeed be associated with better financial performances and reduced information asymmetries.

Chart 9: Cumulative Average Return (Actual *minus* Predicted): Between Dec-19 and Oct-20



Source: MSCI data and Authors' calculations.

V. Conclusion

Public authorities around the world are placing increasing emphasis on ESG risks, indicating their importance in ensuring long-term economic growth. Incorporating these principles into investment practices and policy is the best way to make this practice more enduring. Several major economies, including India, have already made sustainability disclosures for publicly traded companies a requirement, and developed ESG ratings for both the companies and the broader market. In this study, we find empirical evidence across countries indicating

that ESG disclosures are associated with better stock returns and reduced volatility in stock prices.

Using COVID-19 as an unanticipated shock, our findings from difference-and-difference research design indicate that ESG leaders' index outperformed the broad index for a sample of 18 countries. Market model, as an alternative specification, also supports the superior performance of the ESG indices during an unanticipated shock for most countries. The market model framework gives a ranking of the countries in terms of the ESG indices performances, and India ranks high among the sample countries. These findings broadly underline the fact that ESG disclosures may be associated with improved corporate outlook both in the short and long-run.

There could be a large number of policy implications from these findings. Availability of data is the most critical challenge for computing ESG metrics and impact assessments. Public policy could play an important role in streamlining and standardising ESG reporting for corporations. In the years to come, green bonds and green finances are going to play an important role in resources allocation. Evidence of higher yields (or even lower green premium) for these bonds could be due to lack of data, information, and liquidity. It is possible to reduce this gap by developing a credible ESG database, rating, and communication mechanism. If such database is implemented properly, a credible ESG performer may find the cost of raising capital from the bond market at a lower rate than a less credible ESG performer. Therefore, ESG disclosures may be gradually streamlined across all industrial, service activities and in the large informal sector in emerging markets.

In the EMEs, including India, banks play a major role in reducing asymmetric information and in financial intermediation. In the post-COVID era, ESG related risks could be integrated with the banks' risk management framework, and authentic disclosure is the prerequisite for the same. As authentic data disclosure would play a major role in standardisation, interoperability and analysis, effective oversight of the board of directors and senior management on ESG risks could play an important role in establishing credibility. Such disclosures would eventually culminate into databases that will enable effective monitoring, stress testing and forward-looking analysis. We took an early shot to analyse the available data, found empirical evidence of resilience of ESG leaders, and noted policy suggestion that would facilitate data driven and state contingent decision making.

References:

BIS (2021), "Sustainable finance data for central banks", Irving Fisher Committee (IFC) on Central Bank Statistics, Report No. 14, December.

Bouye, E., Klingebiel, D., Ruiz, M. (2021), "Environmental, Social, and Governance Investing: A Primer for Central Banks' Reserve Managers", World Bank, Washington, DC. © World Bank

Cai, Y., Pan, C.H., Statman, M., 2016. Why do countries matter so much in corporate social performance? J. Corp. Finan. 41, 591–609.

Chava, S., 2014. Environmental externalities and cost of capital. Manag. Sci. 60 (9), 2223–2247.

Dai, R., Liang, H., Ng, L., 2020. Socially responsible corporate customers. J. Finan. Econ. forthcoming. In press.

Gillan, S. L., Koch, A. and Starks, L. T., (2021), "Firms and social responsibility: A review of ESG and CSR research in corporate finance", Journal of Corporate Finance 66, 101889

Hausman, J. A. (1978), "Specification Tests in Econometrics", Econometrica. 46 (6):, November, 1251–1271.

Heinkel, R., Kraus, A., Zechner, J., 2001. The effect of green investment on corporate behavior. J. Financ. Quant. Anal. 36 (4), 431–449

Liang, H., Renneboog, L., 2017a. Corporate donations and shareholder value. Oxf. Rev. Econ. Policy 33 (2), 278–316.

Liang, H., Renneboog, L., 2017b. On the foundations of corporate social responsibility. J. Financ. 72 (2), 853–910.

MacKinlay, A. C. (1997), "Event Studies in Economics and Finance", *Journal of Economic Literature*, *35*(1), 13–39.

MSCI (2022), "ESG Ratings Methodology", April.

Ng, A.C., Rezaee, Z., 2015. Business sustainability performance and cost of equity capital. J. Corp. Finan. 34, 128–149.

Schiller, C., 2018. Global Supply-Chain Networks and Corporate Social Responsibility. Unpublished working paper

Annex

Table 1: MSCI Key Issues

3 Pillars	10 Themes	35 ESG Key Issues	
Environment	**Climate Change**	Carbon Emissions Product Carbon Footprint	Financing Environmental Impact Climate Change Vulnerability
	Natural Capital	Water Stress Biodiversity & Land Use	Raw Material Sourcing
	Pollution & Waste	Toxic Emissions & Waste Packaging Material & Waste	Electronic Waste
	Environmental Opportunities	Opportunities in Clean Tech Opportunities in Green Building	Opportunities in Renewable Energy
Social	**Human Capital**	Labor Management Health & Safety	Human Capital Development Supply Chain Labor Standards
	Product Liability	Product Safety & Quality Chemical Safety Consumer Financial Protection	Privacy & Data Security Responsible Investment Health & Demographic Risk
	Stakeholder Opposition	Controversial Sourcing Community Relations	
	Social Opportunities	Access to Communications Access to Finance	Access to Health Care Opportunities in Nutrition & Health
Governance	**Corporate Governance**	Ownership & Control Board	Pay Accounting
	Corporate Behavior	Business Ethics Tax Transparency	

Source: MSCI ESG Ratings Methodology, April 2022.

Table 2: Broad Composition of MSCI Indices

Country/Region	Number of Constituents		Index Weight (in per cent) of top 10 constituents (common in both indices)	
	ESG Leaders	Broad	ESG Leaders	Broad
Brazil	28	49	60.52	24.02
China	163	739	68.98	36.98
India	40	106	72.78	39.50
Indonesia	8	23	100.00*	35.27
Malaysia	26	35	67.92	51.38
South Africa	27	37	65.25	53.04
South Korea	42	111	65.31	18.82
Taiwan	45	86	75.90	59.39
Emerging Markets	**469**	**1,393**	**37.94**	**20.26**
Australia	36	61	63.84	30.61
Canada	42	88	60.42	31.26
Japan	134	699	30.88	14.19
Switzerland	41	41	74.56	73.65
UK	44	81	68.64	31.48
USA	268	626	33.89	16.87
Europe	**202**	**429**	**31.08**	**15.70**
World	**711**	**1,540**	**23.03**	**11.52**

Note: As on May 31, 2022.

*: Only for 8 constituents.

Table 3: Coefficients of Monthly Returns in ESG indices on Broad Indices

	(1)	(2)
Dependent Variable: Δlog(ESG Index)		
Δlog(Broad Index)	0.96*** (0.016)	
Broad Index Interacted with country dummies		
Brazil		0.97*** (0.0016)
China		0.93*** (0.0038)
India		0.89*** (0.0020)
Indonesia		1.00*** (0.0027)
South Korea		0.97*** (0.0022)
Malaysia		0.95*** (0.0029)
Russia		0.91*** (0.0015)
South Africa		1.04*** (0.0016)
Taiwan		0.91*** (0.0021)
Thailand		0.99*** (0.0017)
Australia		1.03*** (0.0022)
Canada		1.01*** (0.0022)
Hong Kong		0.75*** (0.0039)
Japan		1.00*** (0.0045)
Sweden		1.01*** (0.0027)
Switzerland		0.97*** (0.0046)
UK		0.96*** (0.0038)
USA		0.97*** (0.0042)
N	2016	2016
R^2	0.9220	0.9262
RMSE	1.54	1.51

Notes: Regressions include country-fixed effects, dummy variables for each year, and 12 separate dummy variables in indicate 12 months, that account for possible seasonality in the returns.

Standard errors in parentheses

Meanings of the * values: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

*Bankers' Sentiments on Credit Demand – Post Pandemic Recovery**

*by Haridwar Yadav^ and Supriya Majumdar^*

The Bank Lending Survey provides sentiments of banks on loan demand, loan terms, and their outlook in the near term across major sectors which acts as a lead indicator for actual credit growth. This article studies the evolution of bankers' sentiments in India during the pandemic. Even though bankers' sentiments on lending conditions were significantly impacted by the pandemic, especially during the first and second waves (April-June 2020 and April-June 2021), respectively, it exhibited a quick improvement thereafter. Lenders' sentiments also co-move significantly with credit growth and borrowers' perceptions in the manufacturing sector.

Introduction

Outlook on credit demand is an important input for policy making in a bank dominated economy like India. Bank credit depends on several factors like macroeconomic outlook, liquidity conditions, borrowers' creditworthiness, uncertainty associated with the concerned sector, expected return including risk premium, portfolio mix and risk management abilities, among others. Many of these are directly observable and therefore bankers' perceptions on credit demand, and terms and conditions, collected through the dedicated Bank Lending Survey (BLS)[1], is usually supplement the information on bank credit. The BLS provides lender's perspective on credit market conditions qualitatively, especially the impact of changing economic or financial conditions on loan demand and loan terms and conditions set by the banks for different sectors of the economy.

In order to mitigate the impact of the COVID-19 crisis, central banks across the globe undertook a range of credit measures / schemes to support firms and households. The Reserve Bank of India (RBI) announced several measures, such as, reduction in policy rate and cash reserve ratio (CRR), increase in marginal standing facility (MSF) borrowing from 2 per cent of statutory liquidity ratio (SLR) to 3 per cent, special refinance facilities to NABARD, SIDBI and NHB, increase in borrowing limit of the states from 3 per cent to 5 per cent of the gross state domestic product (GSDP) among several other measures. These policy measures helped the economy to stage a quick turnaround in employment and consumption which also led to an increase in credit demand.

Bank lending surveys, which play a crucial role in policy making, were used by a majority of the central banks to capture sentiments of banks and financial institutions on credit demand and terms and conditions during these challenging times when there were lacunae in credible data. The survey facilitated the measurement of the impact of the pandemic as well as evaluation of the timing and pace of the expected recovery process as perceived by the banks. In this article, we look at how the bankers' sentiments evolved during the pandemic across successive waves.

The rest of the article is structured in the following sections. Section II presents the sample frame, questionnaire, and methodology of the survey. Section III provides the key findings of the survey during 2019-22. Section IV discusses its relationship with official statistics and other surveys and Section V offers the perceptions of banks on post-COVID recovery process. Section VI concludes the article.

^ The authors are from the Department of Statistics and Information Management.

* The views expressed in this article are those of the authors and do not represent the views of the Reserve Bank of India. The latest round of the survey data was released on February 8, 2023 on the Bank's website (https://www.rbi.org.in/Scripts/PublicationsView.aspx?id=21736). The previous article, the first on the Bank Lending Survey, giving its background, international experience time series data and methodological aspects was published in December 2020 issue of the RBI Bulletin (https://rbi.org.in/Scripts/BS_ViewBulletin.aspx?Id=19963).

[1] This is also known as senior loan officers' survey or credit condition survey internationally.

II. Sample Frame, Questionnaire and Methodology

The Reserve Bank conducts bank lending survey broadly in line with similar surveys done by other central banks across the world. The survey captures senior loan officers' expectations on future credit demand along with adjustments in its terms and conditions and also seeks feedback on prevailing credit market conditions. It covers a panel of top 30 scheduled commercial banks (SCBs), which account for more than 90 per cent of the total outstanding credit of all SCBs. This panel is updated for each financial year by factoring in banking business/ mergers based on credit outstanding at the end of the previous financial year. The target respondents are heads of various credit departments or senior credit officers of various sectors in banks. The survey questionnaire is e-mailed to the banks during the quarter for which assessment is to be made and a two weeks' time is generally given to respond to the survey. The banks participate in the survey voluntarily and the response rate is generally more than 90 per cent.

The survey tracks outlook of banks for two quarters – assessment of credit demand and terms and conditions for the current quarter in which the survey is conducted *vis-a-vis* the previous quarter and expectations for the ensuing quarter *vis-a-vis* the current quarter. The questionnaire consists of qualitative questions with answers on a 5-point scale covering broad economic sectors, *viz.*, agriculture, mining and quarrying, manufacturing, services, infrastructure and retail loans as well as for "all sectors". In case of loan demand, responses are solicited on changes in the current quarter and expectations for the next quarter on a 5-point scale (*viz.*, substantial increase, moderate increase, similar (no change), moderate decrease and substantial decline). Similarly, responses on loan terms and conditions are also marked on a 5-point scale (*viz.*, considerable easing, somewhat easing, similar (no change), somewhat tightening, considerable tightening). The loan terms and conditions are specific to an approved loan, terms agreed between lender and borrower and laid down in the loan contract. It covers both price and non-price aspects and includes agreed spread over the relevant reference/interest rate, the size of the loan and other non-interest charges (*e.g.*, fee, collateral or guarantee requirement, loan covenants, agreed loan maturity). Loan terms are conditional on borrower's characteristics and may also change with bank's loan approval criteria.

The responses on a 5-point scale collected through the survey and compiled into a single number called the 'Net Response' (NR)[2], also known as balance statistic (BS) score or net balance, is the weighted difference between the proportions of positive and negative responses. NR can take values ranging from –100 to +100: positive values of NR indicate optimism for the parameter/sector (*e.g.*, banks expecting increase in loan demand or easing of loan terms and conditions), whereas a value below zero reflects pessimism (*e.g.*, anticipating lower loan demand or tightening of loan terms and conditions). Thus, the net response helps in quantifying qualitative responses that indicate the direction of the change in sentiments; however, it does not strictly estimate the magnitude of change.

III. Key Survey Findings

Initiated in 2017, the survey completed its 22nd round with its recent data release in February 2023. Trends in bankers' perceptions on loan demand and its terms and conditions during the two waves of COVID-19 are set out below.

[2] Net Response (NR) = {1*P2 + 0.5*P1 + 0*P0 + (-0.5)*P(-1) + (-1)*P(-2)}, where, P2 = per cent of banks reporting loan demand as 'Substantial increase' or loan terms and conditions as 'Considerable easing', P1 = per cent of banks reporting loan demand as 'Moderate Increase' or loan terms and conditions as 'Somewhat easing', P0 = per cent of banks reporting loan demand or loan terms and conditions to remain 'Same/No Change', P(-1) = per cent of banks reporting loan demand as 'Moderate decrease' or loan terms and conditions as 'Somewhat tightening' and P(-2) = per cent of banks reporting loan demand as 'Substantial decrease' or loan terms and conditions as 'Considerable tightening'.

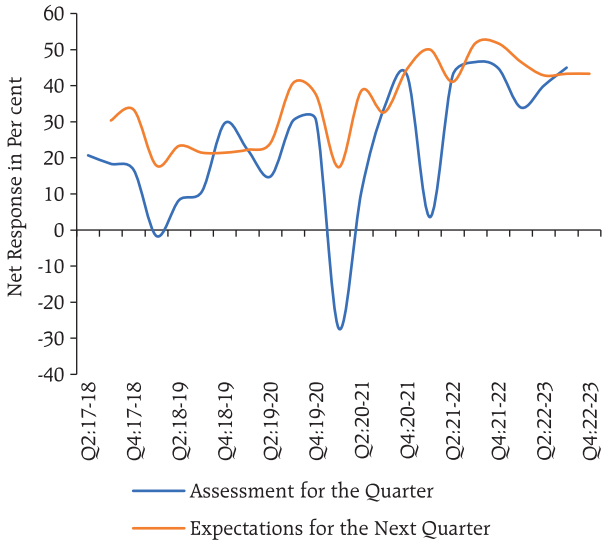
III.1 Loan Demand Conditions

(i) First Wave of COVID-*19*

During Q4:2019-20 (January-March 2020), the round before the first wave of COVID-19, banks had indicated lower optimism on credit demand for all sectors (Chart 1). The usual survey for January-March 2020 was carried out much before imposition of lockdown on March 25, 2020 in India and thereby, banks did not anticipate the shrinkage in the economy in advance as they could not foresee the full impact of the severe and unexpected nature of the pandemic witnessed later.

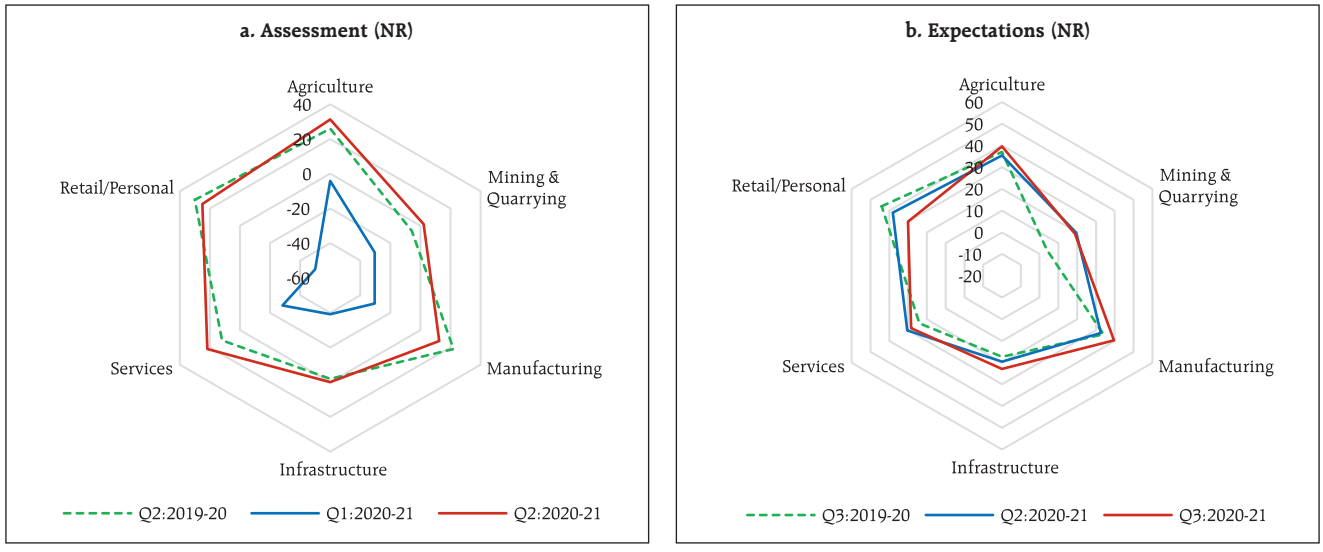
The first wave of COVID-19 during Q1:2020-21 (April-June 2020) resulted in a significant shrinkage in loan demand across all sectors, which had led to a drastic decline in the sentiments among Indian banks in terms of assessment. The NRs for all the sectors were negative in the assessed quarter (Chart 2, Annex Chart A1-A6). However, in terms of expectations it largely remained unaffected. In Q2:2020-21, bankers assessed a quick recovery of loan demand across the sectors. While mining and quarrying and infrastructure sectors recorded lower optimism as compared with other sectors, maximum recovery was observed in personal loans segment which had earlier witnessed the sharpest drop. Banks also expected a continued improvement in loan demand during Q3:2020-21. Thus, while assessments mirrored the overall economic conditions during the first

Chart 1: Loan Demand for All Sectors



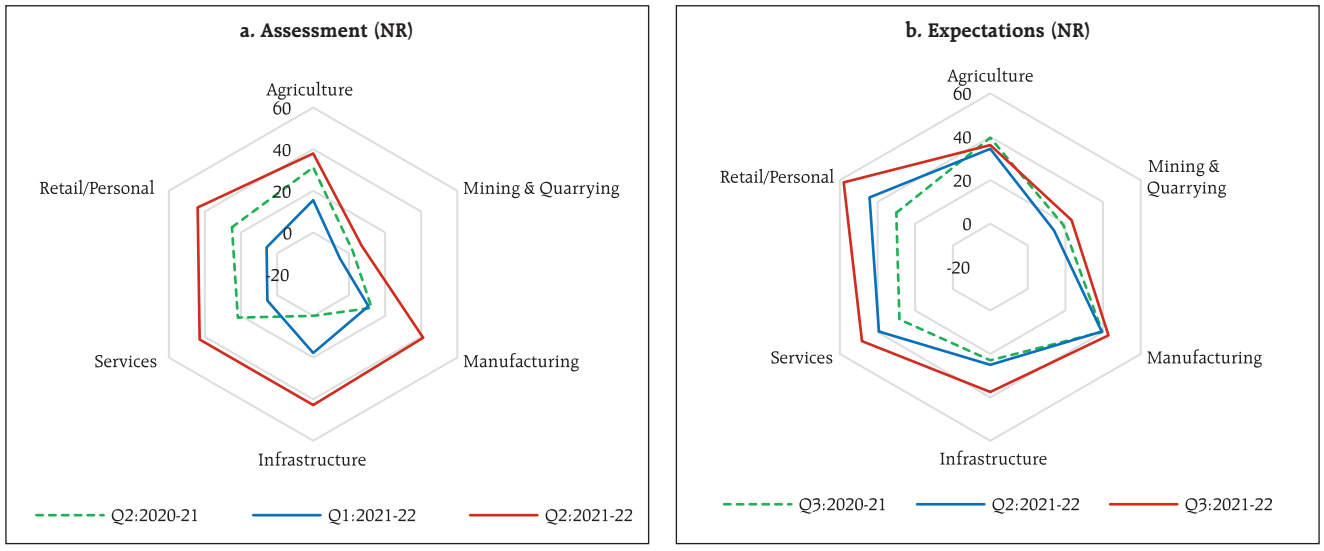
Source: RBI.

Chart 2: Sector-wise Loan demand during the First Wave of COVID-19



Source: RBI.

Chart 3: Sector-wise Loan demand during the Second Wave of COVID-19



Source: RBI.

wave of the pandemic, expectations of credit demand remained unaffected.

(ii) Second Wave of COVID-19

During the second wave of COVID-19 in Q1:2021-22 (April-June 2021), sentiments of banks on loan demand contracted significantly across all sectors (Chart 3, Annex Chart A1-A6). However, the extent of decline was much lower as compared with the first wave of the pandemic as the NRs for all the sectors, except mining and quarrying continued to remain positive. Similar to the first wave, bankers' assessment on loan demand recovered quickly across all the sectors in the next quarter (Q2:2021-22). A sharp recovery was observed in personal loans segment and services sector in the quarter. Bankers' expectations on credit demand were also upbeat for Q3:2021-22 and in fact were higher than that of the previous quarters for most of the sectors.

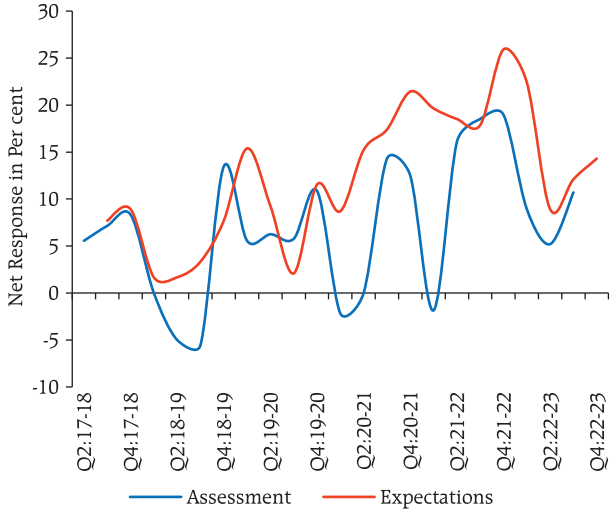
III.2 Loan Terms and Conditions

The COVID-19 pandemic resulted in a significant downward movement in the sentiments regarding loan terms and conditions among Indian banks during both the waves of the pandemic especially for assessment. Expectations, however, remained largely unaffected (Chart 4).

(i) First Wave of COVID-19

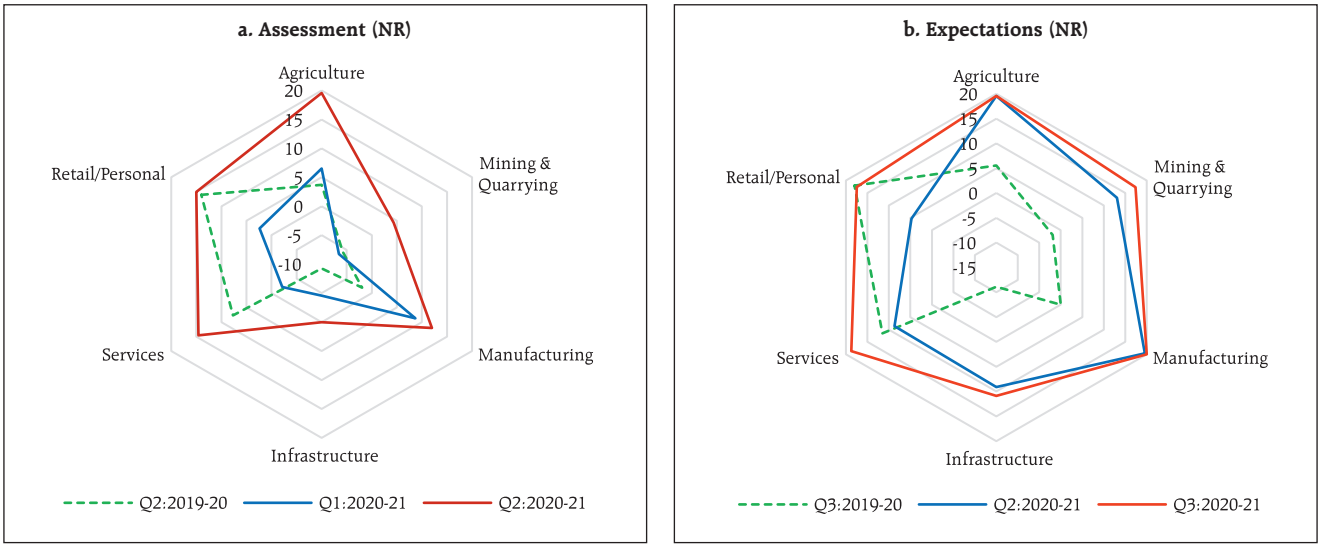
In the first wave of COVID-19 in Q1:2020-21, NRs on terms and conditions for agriculture, retail loans and manufacturing sector were in the positive terrain, indicating easy loan

Chart 4: Loan Terms and Conditions for 'All Sectors'



Source: RBI.

Chart 5: Sector-wise Loan Terms and Conditions during the First Wave of COVID-19



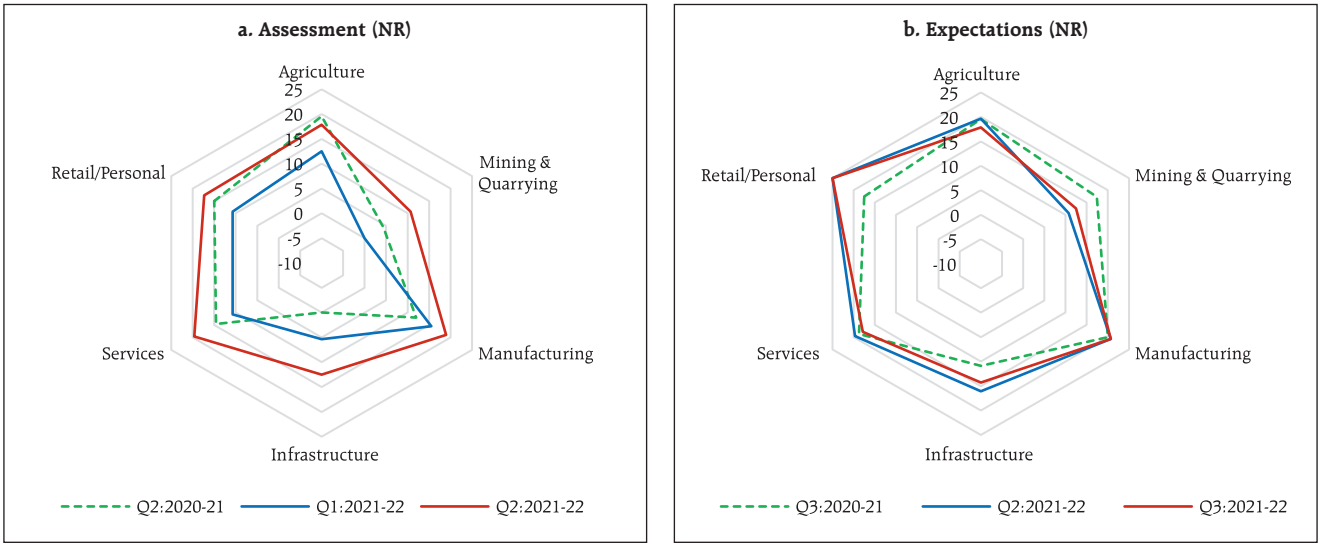
Source: RBI.

terms and conditions in these sectors. For infrastructure and mining and quarrying sector, however, more banks reported some tightening of loan terms. The sentiments on loan terms and conditions for all the sectors indicated easing in Q2:2020-21. Bankers also expected further easing in loans' terms and conditions during Q3:2020-21 (Chart 5).

(ii) Second Wave of COVID-19

Even though the bankers' sentiments on loan terms deteriorated during the second wave as reflected in a fall in value of NRs for all loan segments, it remained in positive territory during the second wave of the pandemic, indicating easier terms and conditions in comparison with the first wave (Chart 6). Furthermore, easing in

Chart 6: Sector-wise Loan Terms and Conditions during the Second Wave of COVID-19



Source: RBI.

the sentiments on loan terms and conditions was recorded by banks in the next quarter Q2:2021-22 for all the major sectors.

IV. Relationship of BLS with Official Statistics and Other Surveys

This section compares the survey results with trends in actual credit as well as other surveys to understand whether information available from these surveys can provide lead information to policy makers.

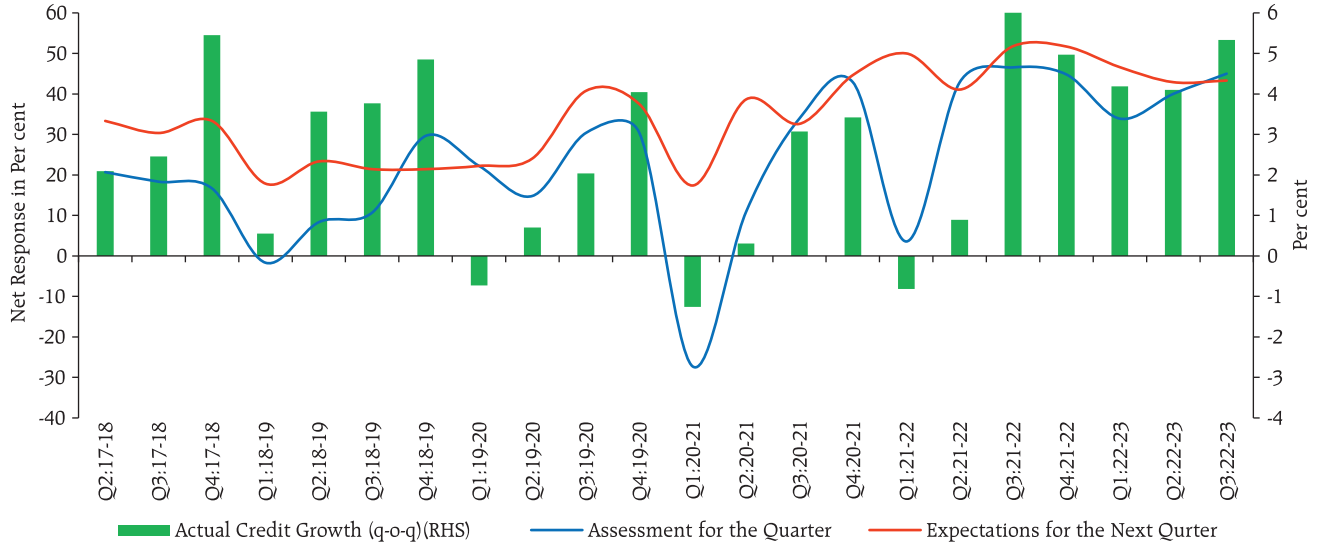
IV.1 Bank Lending Survey and Actual Bank Credit

Bankers' assessment of changes in loan demand in terms of net responses closely tracks the growth in actual credit extended by SCBs. Bankers' perceptions of loan demand broadly capture turning points in credit growth cycle. However, compared to the assessment, their expectations have generally been more upbeat (Chart 7). The correlation coefficient between the NRs for assessment and the actual credit growth is 0.49 whereas it is 0.23 between the NRs for expectations and the actual credit growth.

IV.2 Manufacturing Sector - Assessment of Credit Conditions by Borrowers and Lenders

The BLS captures lender's perspectives (supply side view) of loan demand and its terms and conditions whereas RBI's quarterly Industrial Outlook Survey (IOS)[3] pursues manufacturers' demand side perspectives on availability of finance from banks and other domestic sources.[4] The IOS collects assessment and expectations on availability of finance on a 3-point scale (improve / worsen / no change) and results thereof are presented in the form of net responses. Loan demand from manufacturing sector assessed by bankers in the BLS and availability of finance from banks and other sources assessed by manufacturer in the IOS indicate similar directional changes across the study period (Chart 8).

Chart 7: BLS Loan Demand for 'All Sectors' and Actual Credit Growth

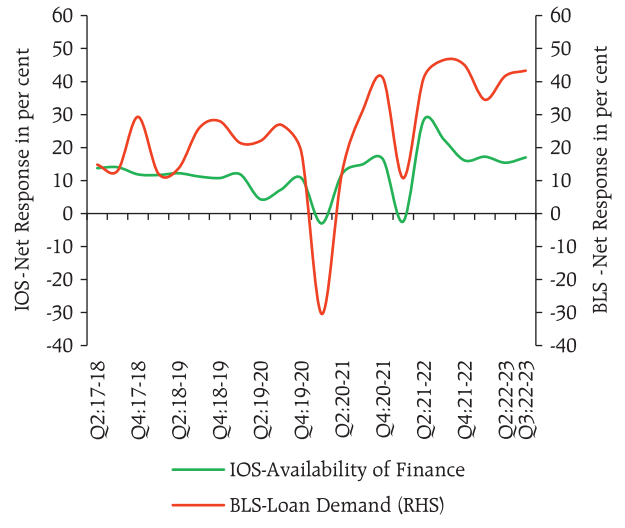


Source: RBI.

[3] The IOS data are released on the RBI website (https://www.rbi.org.in/Scripts/PublicationsView.aspx?id=21734) on a quarterly basis, the latest was on February 8, 2023).

[4] Parameters canvassed among manufacturers in the IOS are 'Availability of finance (from banks and other domestic sources *viz.*, financial institutions, capital markets etc.)', 'Availability of Finance (from internal accruals)' and 'Availability of Finance (from overseas)'.

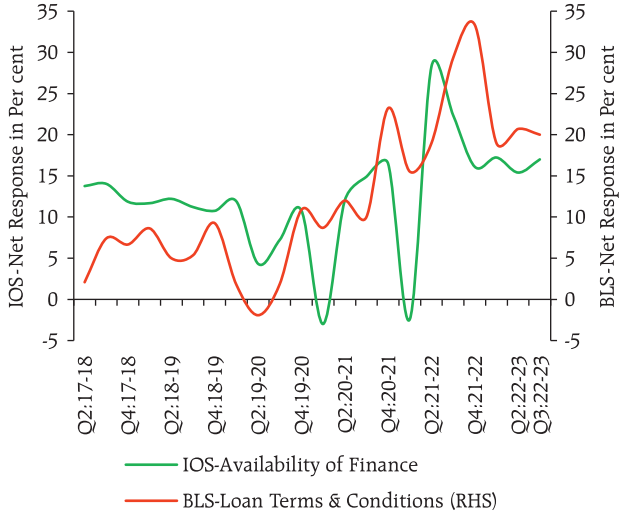
Chart 8: BLS-Manufacturing Sector Loan Demand and IOS-Availability of Finance



Source: RBI.

Bankers' assessment of loan terms and conditions for manufacturing sector is generally in line with manufacturers' sentiments on availability of finance (Chart 9). Co-movement of the Net Reponses stemming from the two surveys indicates that the loan officers' assessments are largely in line with industry expectations.

Chart 9: BLS-Manufacturing Sector Loan Terms and Conditions and IOS-Availability of Finance



Source: RBI.

V. Perception of Banks on Post-COVID Recovery

V.1 Cross Country Experiences[5]

As the bank lending surveys play an important role to support monetary policy decisions, major central banks used these surveys as instruments to capture the sentiments of the banks on the COVID-19 impact. The Federal Reserve of New York in their April 2020 Round of the Survey reported - "Many banks also provided written comments about the coronavirus (COVID-19) pandemic in addition to answering the standardised survey questions. In these comments, banks reported that the changes in standards and demand across loan categories reported for the first quarter occurred late in March as the economic outlook shifted when news emerged about the rapid global spread of COVID-19." The euro area bank lending survey results showed that sentiments on credit demand and loan terms and conditions reached a trough in the first quarters of 2020-21 and 2021-22, similar to the first and second wave of COVID-19 in India. The Bank of Japan's Senior Loan Officer Opinion Survey on bank lending practices at large Japanese banks also reflected that sentiments of the banks reached to lowest levels during various waves of the COVID-19 pandemic. The Bank of England in its Credit Condition Survey reflected that banks' sentiment on secured as well as unsecured loan demand reached to a trough during the second quarter of 2020 before reviving in the next quarters.

V.2 The Indian Context

Since Q1:2020-21 survey round, a separate block was introduced for assessing the banks' outlook on credit and its terms and conditions for two more subsequent quarters. Thus, data on expectations were collected for a total of three quarters which became extremely useful for policy decisions during the uncertain times. Moreover, expectations were

[5] Respective websites of the Central Banks (given in references)

also captured for the same quarter over successive survey rounds, enabling policy makers to observe the change in expectations in response to dynamically evolving pandemic and economic scenario. Using this additional block, we look at the expectations on credit demand and loan terms and how they shaped up during post-COVID recovery.

(i) Credit Demand Conditions

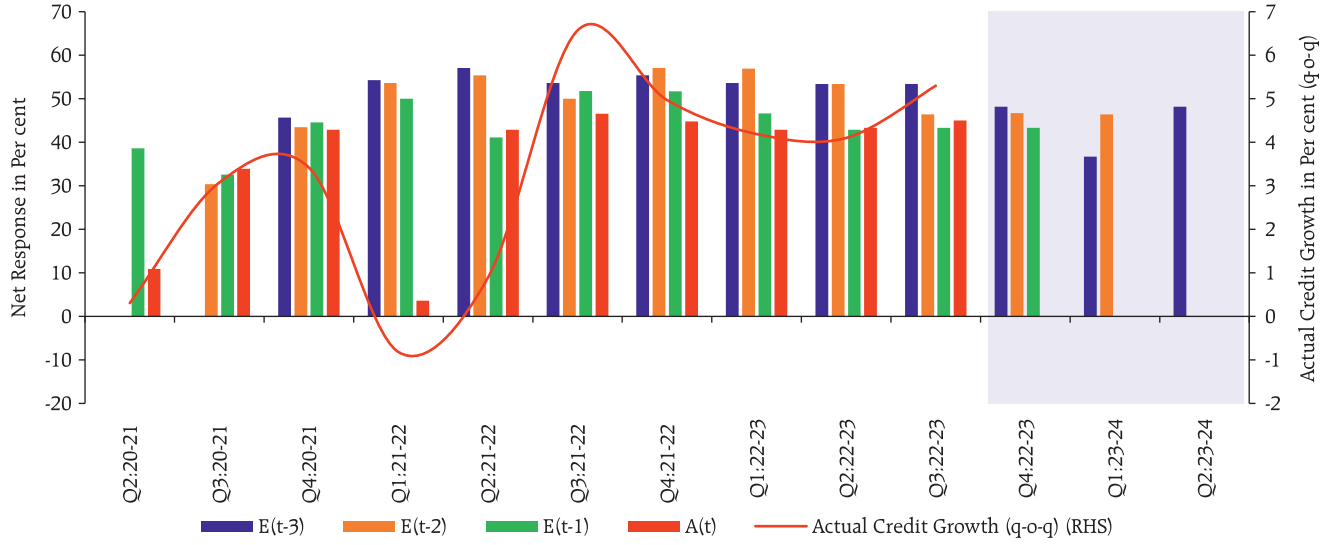
Stimulus packages and measures announced by the Government of India and the Reserve Bank boosted the recovery in banks' sentiments on credit demand during the first two waves of the pandemic. Though the sentiments began firming up after the first wave, these were again clouded due to the second wave, though they reverted quickly (Chart 10)[6]. The banks' sentiments were also observed to be in sync with the SCBs actual credit growth. It is observed that bankers tend to be more optimistic in terms of two- and three-quarter ahead expectations and the one quarter ahead expectations were able to capture the actual credit growth more closely.

Turning to the recent period, we observe that bankers are highly optimistic of credit demand across all the main sectors in the coming quarters, *viz.*, Q4:2022-23 to Q2:2023-24, as reflected in their higher NRs (Annex Chart A1-A6).

(ii) Loan Terms and Conditions

In terms of loan terms and conditions, after decline during the first wave, expectations indicated easing of credit terms and conditions. However, the sentiments were down again due to the second wave, though there was a quick revival. Data for more recent period indicated bankers are expecting easier terms and conditions for loans, going forward (Chart 11).

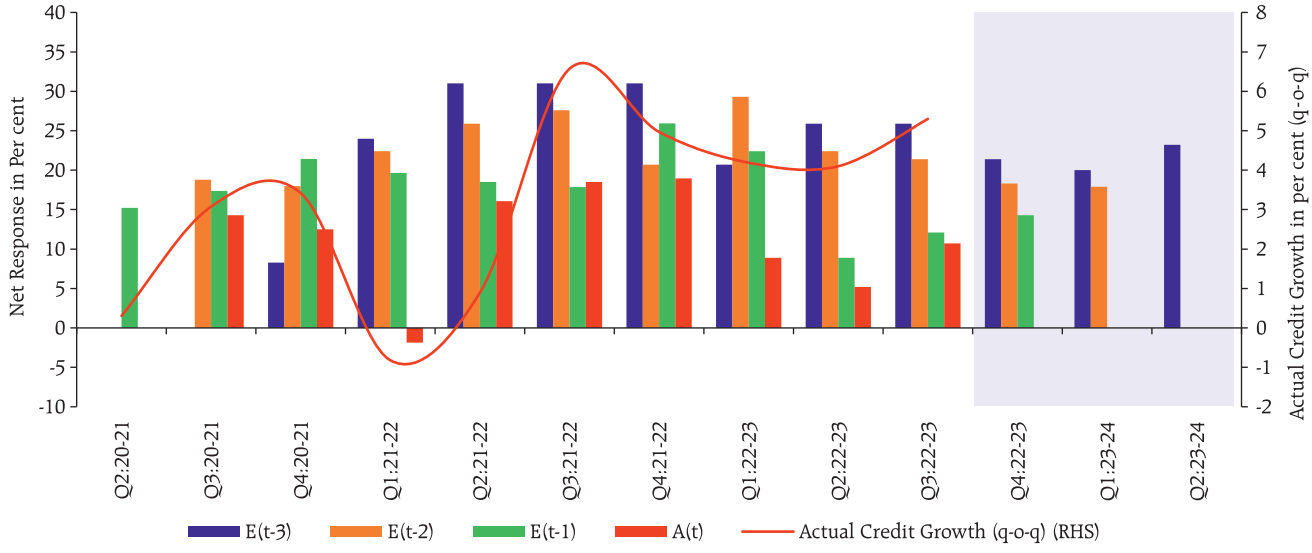
Chart 10: Assessment and Expectations on Loan Demand in Various Rounds



Source: RBI.

[6] A(t): Assessment for the current quarter (t), E(t-1)/ E(t-2)/ E(t-3): Expectations for the quarter (t) captures at one (-1)/ two (-2)/ three (-3) quarter before.

Chart 11: Assessment and expectations on Terms and Conditions in Various Rounds



Source: RBI.

VI. Conclusion

This article looks at the results of the Bank Lending Survey over successive rounds to understand how the sentiments responded to various shocks during the pandemic period. We find that assessment of lending conditions reacted to the pandemic in a pessimistic way, both during the first and second waves. However, the assessment of credit conditions improved significantly within a quarter indicating that policy measures were effective in instilling confidence during uncertain times. Among sectors, outlook on retail/personal loans were the most severely hit during both the waves of the pandemic, but they recorded a sharper recovery exhibiting fast catch-up.

Information from the Bank Lending Survey tracks actual credit growth with reasonable accuracy and captures the turning points. Hence, it could be a useful tool for policymakers to gauge the underlying trends in credit market, as the survey results are available in advance by almost one quarter ahead. Also, the lenders' perception in the BLS broadly corroborates with the borrowers' perceptions in the Industrial Outlook Survey, which indicate that the suppliers' assessment is in sync with the demand side of the credit conditions, again proving its usefulness.

Going forward, bankers are positive on credit demand in the ensuing quarters. Expectations on terms and conditions for loans also point to easing in successive quarters.

References

Bank of England (2022), "Bank of England Credit Conditions Survey", Quarterly Bulletin, Q1. https://www.bankofengland.co.uk/credit-conditions-survey/2022/2022-q1

Bank of Japan, "Senior Loan Officer Opinion Survey on Bank Lending Practices at Large Japanese Banks". https://www.boj.or.jp/en/statistics/dl/loan/loos/index.htm/#p01.

Berg, Jesper., Van Rixtel, Adrian A.R.J.M., Ferrando, Annalisa., de Bondt, Gabe and Scopel, Silvia., (2005), "The Bank Lending Survey for the Euro Area". ECB Occasional Paper No. 23, February 2005. https://ssrn.com/abstract=752072.

Board of Governors of the Federal reserve (2022), "Senior Loan Officer Opinion Survey on Bank Lending Practices", July. https://www.federalreserve.gov/data/sloos.htm.

Cunningham, Thomas J., (2006), "The Predictive Power of the Senior Loan Officer Survey: Do Lending Officers Know Anything Special?", Federal Reserve Bank of Atlanta Working Paper, November.

European Central Bank (2022), "The Euro Area Bank Lending Survey - First Quarter of 2022", Q1. *https://www.ecb.europa.eu/stats/ecb_surveys/bank_lending_survey/html/ecb.blssurvey2022q1~fd61911ffd.en.html.*

Faruqui, Umar, Paul Gilbert, and Wendy Kei., (2008), "Bank of Canada's Senior Loan Officer Survey", Bank of Canada Review, Autumn, https://www.bankofcanada.ca/wp-content/uploads/2010/06/faruqui.pdf.

Filardo, Andrew J. and Siklos, Pierre L., (2020), "The cross-border credit channel and lending standards surveys", Journal of International Financial Markets, Institutions and Money, Vol.67.

Köhler-Ulbrich, Petra., Hempell, Hannah S., Scopel, Silvia., (2016), "The euro area bank lending survey: Role, development and use in monetary policy preparation", European Central Bank Occasional Paper Series, No.179, September.

Reserve Bank of India, Database on Indian Economy, https://dbie.rbi.org.in.

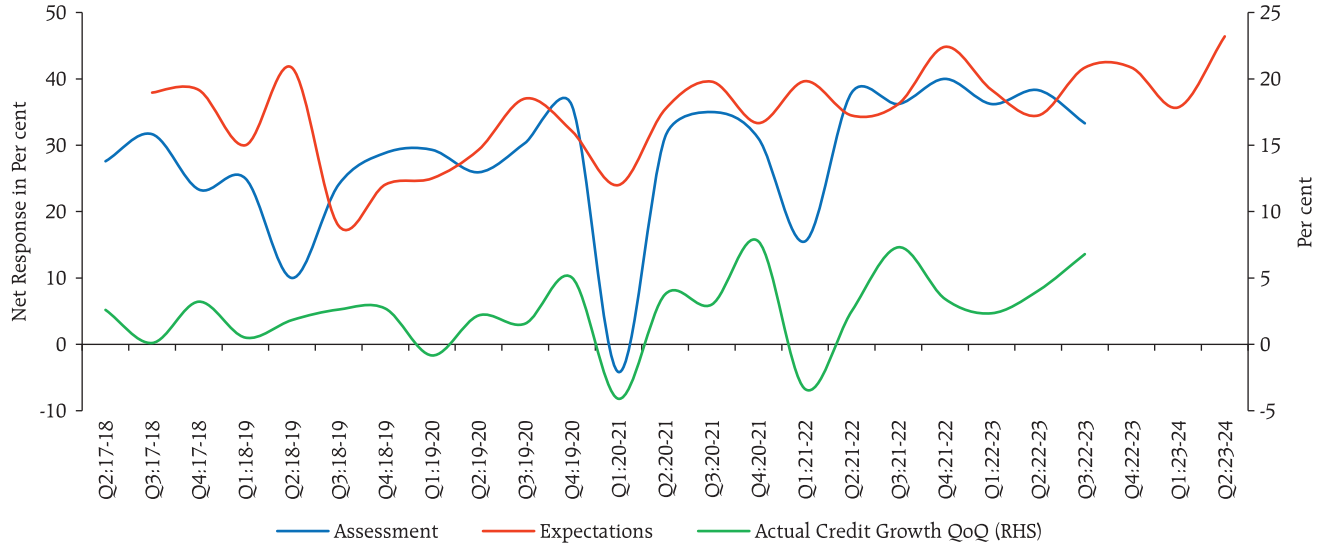
Reserve Bank of India (2009), "Report of the Working Group on Surveys", Reserve Bank of India Bulletin, September.

Reserve Bank of India (2021), "Annual Report of the RBI for the Year 2020-21", May.

Reserve Bank of India (2022), "Annual Report of the RBI for the Year 2021-22", May.

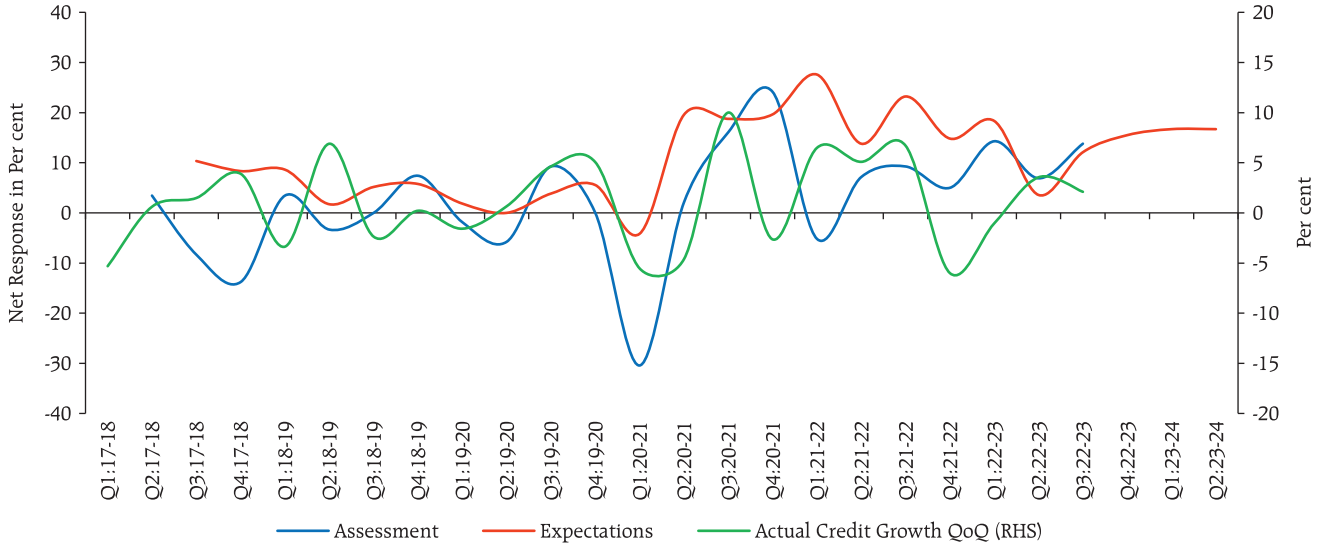
Annex

Chart A1: BLS Loan Demand for 'Agriculture' and Actual Credit Growth



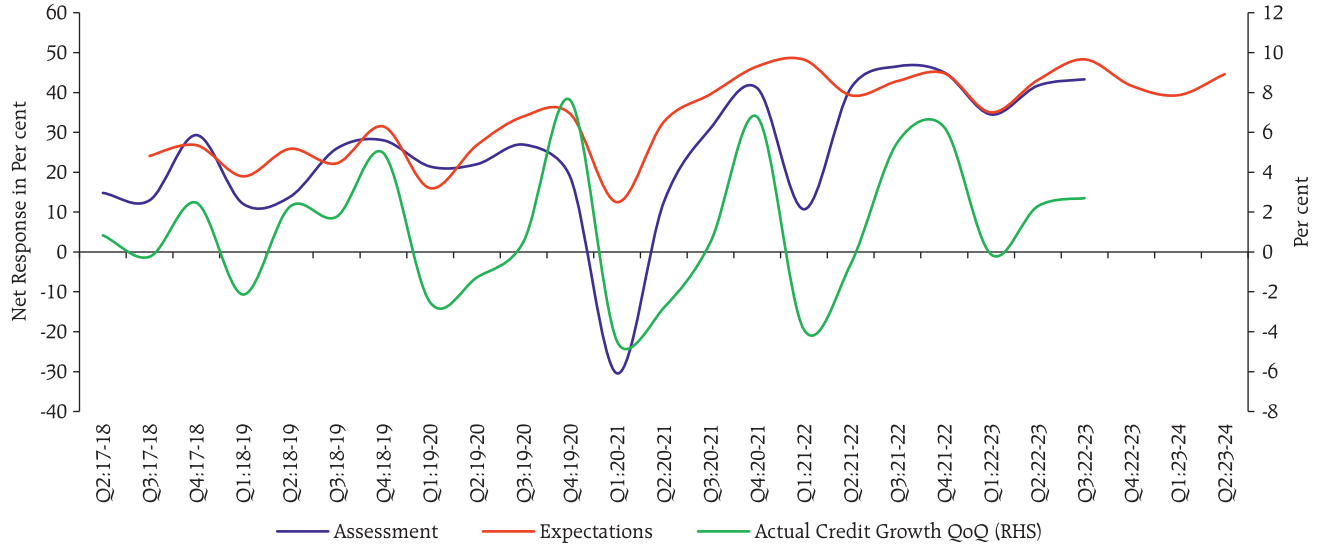
Source: RBI.

Chart A2: BLS Loan Demand for 'Mining and Quarrying' and Actual Credit Growth



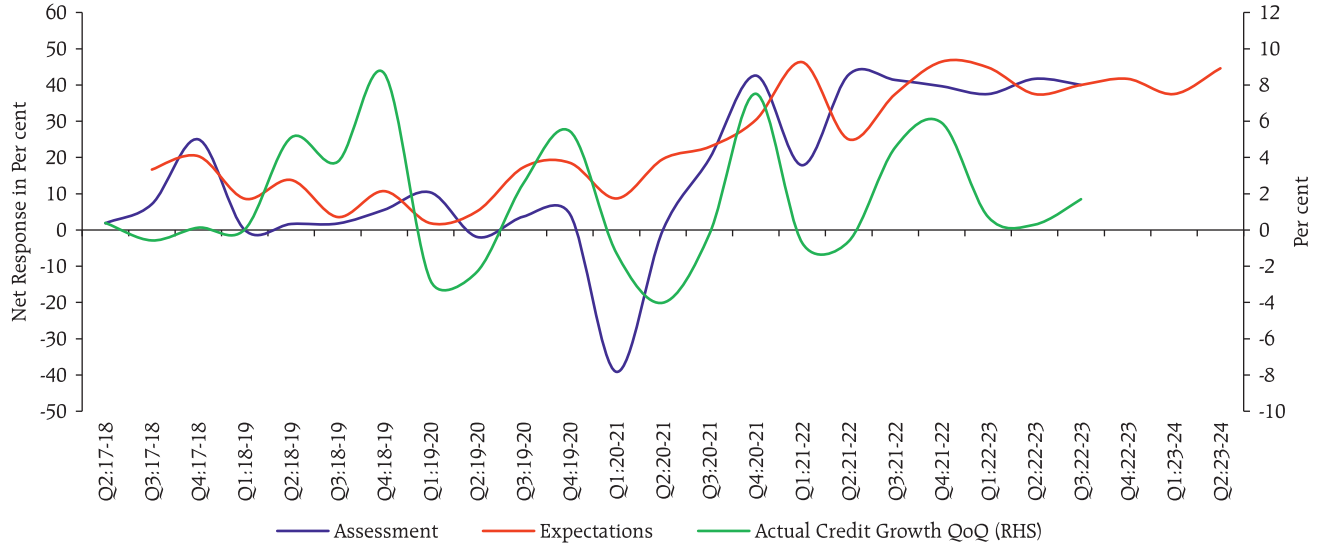
Source: RBI.

Chart A3: BLS Loan Demand for 'Manufacturing' and Actual Credit Growth



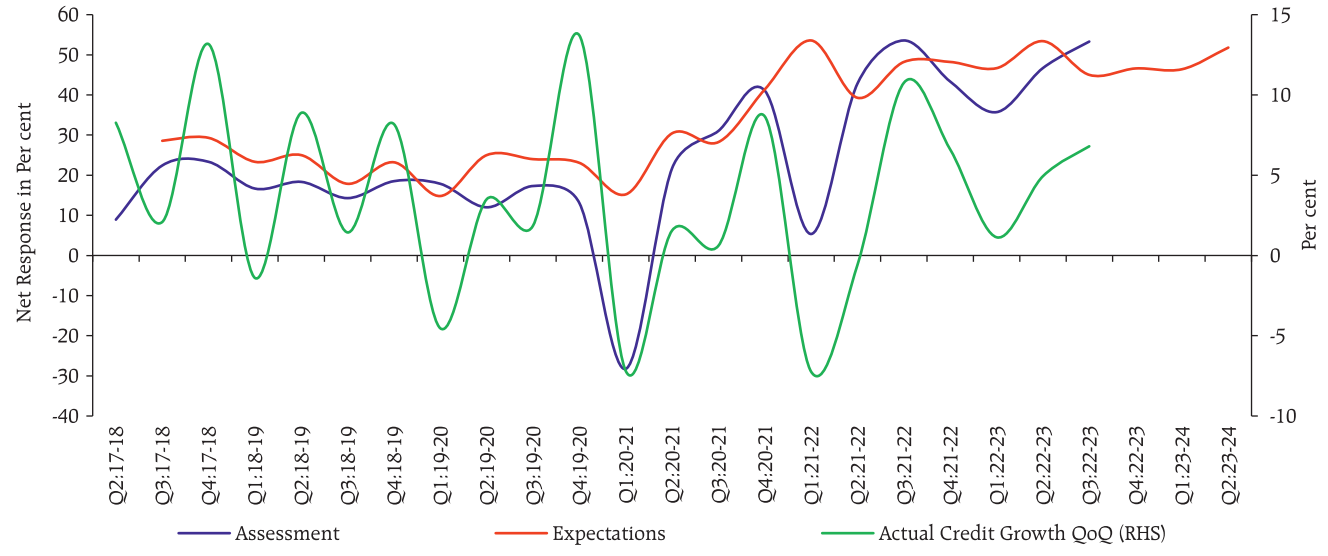
Source: RBI.

Chart A4: BLS Loan Demand for 'Infrastucture' and Actual Credit Growth



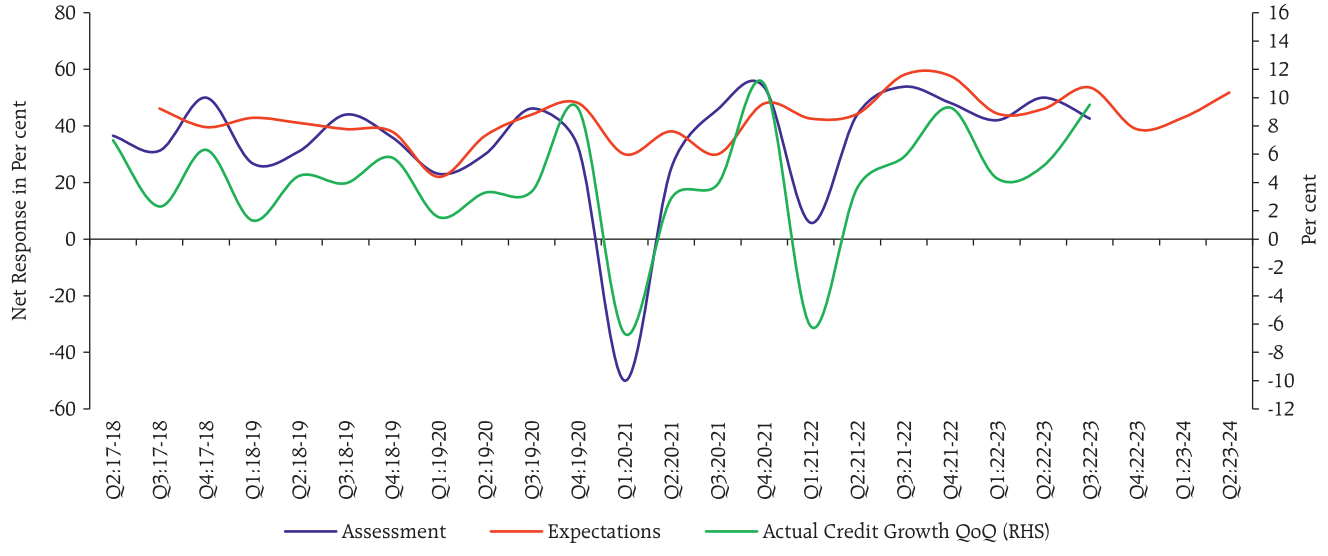
Source: RBI.

Chart A5: BLS Loan Demand for 'Services' and Actual Credit Growth



Source: RBI.

Chart A6: BLS Loan Demand for 'Personal loan' and Actual Credit Growth



Source: RBI.

The Long Shadow of Federal Reserve's Actions: Monetary Policy and Uncertainty Spillovers to India *

*by Bhanu Pratap^ and Thangzason Sonna^*

This study analyses the transmission of global monetary policy shocks to the Indian economy. Using a sign-restricted vector autoregression (SRVAR) framework to identify US monetary policy (MP) shocks, we find that surprise changes in US monetary policy strongly influences domestic output and inflation. Underlining the time-varying nature of such shocks, US MP surprises were found to have a cost-push effect in the pre-2008 period compared to a significant demand-pull effect after 2008. Moreover, US MP uncertainty also tends to lower domestic aggregate demand. These findings indicate important implications for major central banks in setting their monetary policy stance.

I. Introduction

In a world of interconnected financial markets and globalized finance, transmission of shocks from one market or region to another takes place almost instantaneously. Such financial market linkages give rise to connected economies where macroeconomic fundamentals, such as business cycles and inflation, move in tandem. Furthermore, changes in macroeconomic policy stance in one country/region, especially those harbouring international financial centres, also seem to send ripple effects across borders.

The current global situation, in the aftermath of once-in-a-century pandemic, underlines the complexity of such macroeconomic and policy developments that can have cross-border implications. While economic recovery was getting entrenched, sustained inflationary pressures have forced the withdrawal and reversal of ultra-accommodative monetary policy by systemically important central banks. With the potential to undo all gains, a mammoth geopolitical shock in the form of the Ukraine-Russia war shook the world accelerating the shift to a tighter monetary policy regime. Central Banks, led by the US Federal Reserve (US Fed) and European Central Bank (ECB), embarked on an aggressive and synchronized policy tightening which reflected a policy stance aimed at bringing down inflation and maintaining their credibility (RBI, 2023).

Financial markets in India are now closely interwoven with the global financial system such that the synchronicity between global and Indian economy has become stronger over the last decade. In the past, such as during the "taper tantrum" episode, India witnessed significant fluctuations in capital flows, excessive exchange rate pressures, financial market volatility and slowdown in GDP growth, cross-border trade, and domestic investments.

In this backdrop, this study analyses the impact of monetary policy actions of the US Fed on the Indian economy. Actions of the US Fed have a significant bearing on the global economy with its influence on financial conditions across the globe. Additionally, uncertainty around US monetary policy also seems to affect emerging market economies (EMEs). While much of the empirical literature uses cross-country panel data to analyse policy spillovers between advanced and EMEs, analysing country-specific transmission of global policy shocks is important given the considerable heterogeneity across emerging economies and the need to design appropriate policies. Our study, therefore, aims to add to the literature on the transmission of global spillovers to the Indian economy by shedding light on the impact

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of US Federal Reserve's policy stance on domestic macroeconomic fundamentals, namely output growth and inflation.

In doing so, we utilize quarterly macro-financial data on the US and Indian economy for the period 1997-2019. We identify US monetary policy shocks using a sign-restricted vector autoregression (SRVAR) model and use impulse response analysis to shed light on US MP spillovers. Our findings suggest that the Indian economy has been prone to significant spillovers from changes in the stance of monetary policy in the US; however, the nature of impact has changed over the years. In particular, we find that prior to the global financial crisis (GFC) of 2008, US monetary policy shocks led to lower domestic output growth and an increase in inflation, indicative of a cost-push effect on the domestic economy in line with an exchange rate channel of global spillovers. In the post-2008 period, however, surprise changes in US monetary policy seem to lower domestic aggregate demand leading to lower growth and inflation in India. However, the overall impact of US Fed's policy in the post-2008 period -- an era synonymous with the pursuit of unconventional monetary policy -- has been relatively lower and less persistent. Finally, we also find evidence for spillovers due to uncertainty surrounding monetary policy in the US. This suggests that it is not only the actions of US Fed but also the uncertainty around those actions that can have a bearing on the domestic economy.

The paper has been organised into five sections. After this brief introduction, Section II provides a short summary of global and Indian literature on policy spillovers. Section III describes our data and the empirical methodology. In section IV, we present our main results based on impulse responses and variance decomposition derived from the SRVAR model. Finally, based on the main findings, we conclude in Section V by drawing policy implications and contours for future research.

II. Brief Review of Literature

Financial spillovers are said to occur when fluctuations in the price of an asset in one country (or region) trigger changes in the prices of the same asset or other assets in another country (or region). The conventional channels through which financial spillovers are typically deemed to occur involve direct and indirect changes in financial prices; cross-border balance sheet exposures; information or confidence effects (including fundamentals-driven changes in expectations); trade linkages; and spillovers related to monetary and fiscal policy (D'Auria et al., 2014; Agenor et al., 2018; Agenor and Pereira da Silva, 2022).

These channels may be interlinked and work simultaneously to cause an impact that is different from what could be achieved if each channel works independently. The impact of cross-border spillovers is most often heterogeneous depending on structural characteristics of the source and the host economy. The impact of cross-border financial spillovers is thus contingent upon the type of shock that generates fluctuations in asset prices in the source country; the economic channels, real and/or financial, through which the shock is transmitted internationally; the amplification or mitigation mechanisms operating in the source and recipient countries; the nature of macroeconomic and macroprudential policy regime in source and recipient countries; and the scope for policymakers in recipient countries to respond in a timely fashion (Agenor et al., 2018; RBI, 2010).

II.1 Global Context

The pre-eminence of advance economy (AE) monetary policy in influencing global financial cycle, particularly with the US Fed at the pilot seat, has been well researched and documented (Rey, 2015 and 2018; Rajan and Mishra, 2015). Since the US dollar serves as a global reserve currency, the impact of monetary policy actions by other systematically important central banks on financial conditions in emerging

markets have been marginal compared with that by the US Fed. The literature has also observed that the intensity of these effects are heterogenous over time and across countries – stronger in the post-GFC period and larger for countries that are perceived as riskier investments (IMF, 2021).

Studies have observed that the US monetary policy shocks affect the global economy primarily through global asset prices and capital flows. The US dollar, as the dominant currency of the international monetary system, consigns a special role to US monetary policy (Miranda-Agrippino and Rey, 2020; Jordà et al., 2019; Habib and Venditti, 2019). Often, contractions in US monetary policy are followed by significant deleveraging of global financial intermediaries, especially in the EMEs, a rise in aggregate risk aversion, a contraction in global asset prices and in global credit, a widening of corporate bond spreads, and a retrenchment in gross capital flows. Studies have also shown that US monetary policy shocks transmit across border almost irrespective of the exchange rate regime of the recipient country (Dees and Galesi, 2021; Georgiadis, 2017).

During the 2013 "taper tantrum" episode, mere announcement by the then US Fed Chairman Ben S. Bernanke on the possibility of tapering of asset purchases by the US Fed not only led to an increase in domestic interest rates but also raised emerging market yields, caused portfolio outflows, and depreciated emerging market currencies[1].

Almost all the changes in emerging market domestic yields can be accounted for by changes in the term premium suggesting that the perceived riskiness of holding emerging market bonds rises after a surprise tightening of US monetary policy (IMF, 2021). This is consistent with the finding that countries with higher sovereign risk are relatively more sensitive to cross-border spillovers (Adrian *et al.*, 2013). These findings suggest that perception of risk *i.e.*, the risk channel has emerged as an important channel in the transmission of the spillovers. On the other hand, the release of good news about the US economy, even as it is accompanied by expectations of tighter US monetary policy, is relatively benign for financial conditions in emerging markets (IMF, 2021).

Considering this line of thought, recent studies show that all instances of increases in US interest rate do not lead to financial crisis in EMEs (for example, see Hoek *et al.*, 2021). This differential impact of U.S. monetary policy changes on EMEs has been ascribed to two key factors. First, reason for the increase in US policy rate. From an EME perspective, if the rise in US interest rates is driven by improved growth prospects, then the impact is likely to be benign as benefits from higher US GDP leading to an increased export demand and investor confidence will outweigh the costs from higher interest costs. However, 'hawkish' policy changes *i.e.*, rate increases driven by worries about inflation are likely to be highly disruptive for EMEs. Second, the impact is conditional on domestic vulnerabilities, such that financial conditions in economies susceptible to macroeconomic weaknesses tend to be more sensitive to a given rise in U.S. interest rates (Hoek *et al.*, 2020).

On the contrary, there have also been studies which found that better fundamentals did not provide insulation, particularly, in the case of the "taper talk" of 2013. A more important determinant has been the size of the country's financial market, such that countries with larger markets experienced more pressure on the exchange rate, foreign reserves, and equity prices (Eichengreen and Gupta, 2015). On the other hand, AEs with strong manufacturing sector are particularly sensitive to spillovers due to the international trade channel through commodity prices and global value chains (Miranda-Agrippino *et al.*, 2020). Lastly, there

[1] See Chairman Ben S. Bernanke's testimony before the Joint Economic Committee, U.S. Congress, Washington, D.C., on May 22, 2013: https://www.federalreserve.gov/newsevents/testimony/bernanke20130522a.htm.

has been a growing interdependence between AEs and EMEs as well. Typically, spillovers running from AEs to the rest of the world are referred as global spillovers while those emanating from the rest of the world and impacting AEs are commonly referred as global spillbacks. Seen this way, the quantum of global spillbacks over the past 25 years are about one-fifth of the global spillovers running from AEs to EMEs. However, such spillback effects have increased significantly over time because of the evolving interdependence between these two blocks (Arezki and Yang, 2020)[2].

II.2 Indian context

In the recent past, several empirical studies on the impact of US monetary policy spillovers have been done in the Indian context. These studies have analysed the transmission of cross-border spillovers to India dissecting important channels for such transmission and the policy experience in receiving and dealing with global spillovers.

For instance, according to Patra *et al.* (2016a), quantitative easing (QE) by the US Fed had significantly altered monetary conditions in India, particularly, QE1 that had the largest impact. They conclude that QE-related spillovers worked mainly through the portfolio rebalancing channel followed by the liquidity channel. Further, assessing the impact of unconventional monetary policies on domestic transmission of monetary policy, Patra *et al.* (2016b) observe that monetary policy transmission through money and credit markets tends to remain unaffected by global spillovers. Transmission through debt market, however, was impacted. The study also observed that Indian foreign exchange and equity markets were highly sensitive to global spillovers but there was no strong evidence of domestic monetary policy losing traction because of such spillovers.

Similarly, Mohanty and Banerjee (2021) observe that US monetary tightening adversely affects the net worth of domestic firms and reduces domestic credit relative to external credit. They also find that contractionary US monetary policy, mainly working through the financial channel of the exchange rate, leads to a significant downturn in the domestic credit and business cycle in India. Using high-frequency financial market data in a time-varying parameter model framework, Lakdawala (2021) finds that US monetary policy decisions has a significant effect on Indian equity markets with this effect getting stronger over time. The study also identified both surprise changes in the policy rate as well as uncertainty - announcements about large scale asset purchases (QEs) - to be the channel through which the spillovers are transmitted. The study also found that Indian stock response to US monetary policy was uniformly sensitive to portfolio decisions of foreign institutional investors, as also exchange rate being sensitive to US monetary policy and the global financial cycle working through volatility and risk aversion.

The current policy environment, especially in the advanced world, reflects the dilemma of policymakers in terms of nurturing economic growth or tackling the unprecedented inflationary bout. Maintaining a fine policy balance is likely to be tricky in the current policy landscape amidst heightened uncertainty. Policymakers in the advanced world must also tread with caution with their choice of delivering macroeconomic and financial stability at home *vis-à-vis* generating spillovers for the rest of the world.

III. Data and Empirical Methodology

III.1 Data

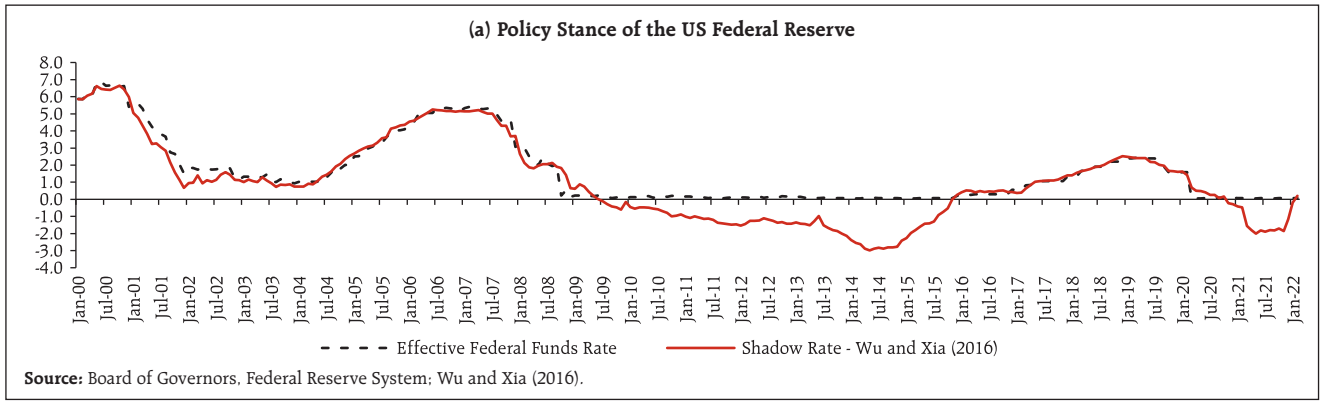
We use quarterly data on the US and the Indian economy for our analysis. For the domestic block, economic activity is proxied by gross domestic product (GDP) by expenditure in constant prices

[2] For instance, while there are large spillover effects on China from major AEs, there are also spillback effects to these economies from China given that it is a major component of the global supply chain. Therefore, any mishap in China, as seen repeatedly during the Covid-19 pandemic, can create global supply bottlenecks.

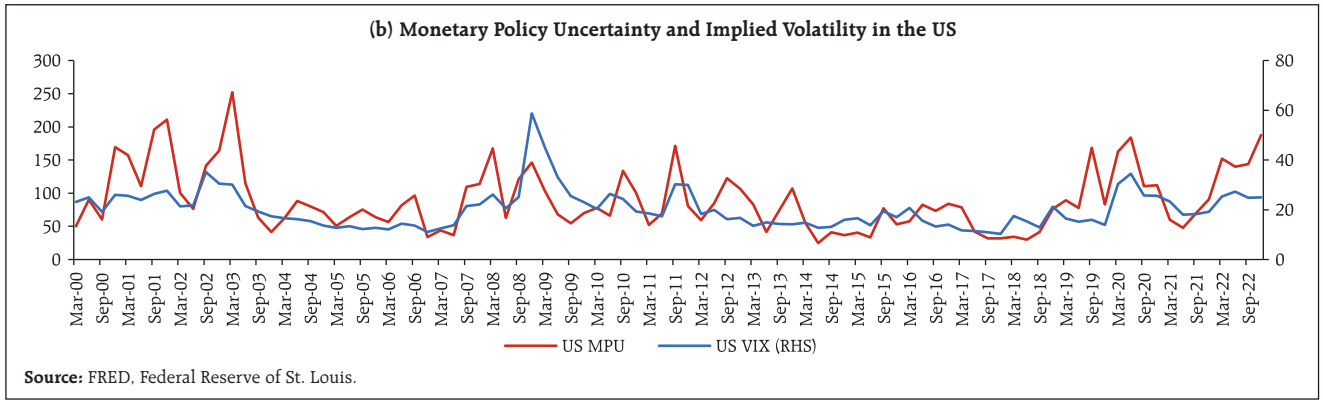
whereas consumer price index for all items is taken as a measure of inflation. Both are measured in year-on-year percentage change terms. We also include the Nifty 50 index of the National Stock Exchange (NSE) and nominal exchange rate of the Indian Rupee against the US Dollar in the domestic block of our empirical model.

For the foreign block, the implied stock market volatility in the form of US CBOE VIX index is taken as a proxy for risk perception in the US. On the monetary policy front, the federal funds rate remained near zero from December 2008 to December 2015, as well as during the Covid-19 pandemic period. In both these instances, the US Fed relied on unconventional policy tools, such as large-scale asset purchases under the quantitative easing programmes and forward guidance, to influence long-term interest rates and provide stimulus to the economy. Given the *zero lower bound* on policy rate, literature suggests using shadow policy rates to characterize the stance of monetary policy of the US Fed. In this context, Wu and Xia (2016) propose a shadow rate to summarize the US Fed's monetary policy stance. The proposed shadow rate, constructed using one-month forward rates for ¼, ½, 1, 2, 5, 7 and 10 years hence, is not bounded below by 0 per cent. Since the shadow rate accounts for the overall stance of monetary policy, including the period of unconventional monetary policy during 2008-2015, we use the shadow interest rate of Wu and Xia (2016) as a proxy for monetary policy stance of the US Fed (Chart 1a). Finally, to account for uncertainty related to US monetary policy, we leverage the news-based US monetary policy uncertainty indicator proposed by Baker et al. (2016). Increases in uncertainty around monetary policy generally leads to heightened risk perception in the US (see Chart 1b).

Chart 1: Monetary Policy and Risk Perception in the USA



Source: Board of Governors, Federal Reserve System; Wu and Xia (2016).



Source: FRED, Federal Reserve of St. Louis.

The data is sourced from the Federal Reserve Economic Database (FRED) of the Federal Reserve Bank of St. Louis, CEIC Database and Wu and Xia (2016). Details of the variables and data used in our study have been provided in Table 1.

III.2 Sign-restricted Vector Autoregression (SRVAR) Model

To understand the transmission of monetary policy shocks from advanced economies (AEs), in particular the US, we use a sign-restricted vector autoregression model (SRVAR) model. Illustratively, consider the reduced-form VAR (1) model with n endogenous variables specified as follows:

$$y_t = A \cdot y_{t-1} + \varepsilon_t \; for \; t = 1, 2, 3 \ldots, T.$$

where, y_t is an $n \times 1$ vector of variables, A is an $n \times n$ matrix of coefficients and ε_t is a set of errors with zero mean, no serial correlation and variance-covariance matrix $\sum = E[\varepsilon_t \varepsilon_t']$. Since reduced form forecast errors are related to structural innovations, such that $B\varepsilon_t = e_t$ where B is an $n \times n$ matrix of structural parameters and e_t are normally distributed structural shocks with zero mean and unit variance, the structural parameters can be recovered from the following $B \cdot B' = \sum = E[\varepsilon_t \varepsilon_t']$. To recover the structural shocks from the estimated $\hat{\varepsilon}_t$, we impose various sign-restrictions on the impulse response of interest. These relatively weak prior beliefs on the impulse responses usually take the form of "shock to *x* does not increase/decrease *y* for *m* months after the shock".

In our case, a quarterly data sample for period 1997Q1-2019Q4 is used to estimate the SRVAR model for the Indian economy. We estimate the model using Markov chain Monte Carlo (MCMC) sampling technique with 5000 draws taken from the posterior, 1000 burn-in draws and 4000 subdraws to generate impulse responses on which the penalty algorithm is applied. The optimal length is selected using the Bayesian Information Criterion (BIC).

Imposing minimal sign restrictions to identify monetary policy shocks from the US, we choose to remain agnostic about the response of key macroeconomic fundamentals of the domestic economy. Our identification method based on sign-restrictions uses the Uhlig (2005) penalty function approach implemented within a Bayesian framework[3].

In line with existing literature, we assume that a US monetary policy shock leads to an increase in the US VIX index, a fall in domestic equity markets and a depreciation of the rupee-dollar exchange rate. We also assume that the monetary policy shock remains in effect until four quarters after the shock while remaining agnostic to the directional responses of domestic output and prices. The sign-restrictions to identify US monetary policy shocks in our model are summarized in Table 2.

Table 1: Variables and Data Sources

S. No.	Variable	Description	Source
	Domestic Block		
1.	Real Gross Domestic Product	Y-o-Y (%)	FRED, St. Louis
2.	Consumer Price Inflation	Y-o-Y (%)	FRED, St. Louis
3.	Equity Index (Nifty 50)	Y-o-Y (%)	CEIC Database
4.	Exchange Rate (INR-USD)	In logs	CEIC Database
	Foreign Block		
1.	US Monetary Policy	Shadow Rate	Wu and Xia (2016)
2.	US Implied Volatility	CBOE VIX Index	FRED, St. Louis
3.	US Monetary Policy Uncertainty	US MPU	FRED, St. Louis

Table 2: Sign Restrictions for the identification of US Monetary Policy Shock

Variables	Foreign Block		Domestic Block			
	US MP	US VIX	Output	Inflation	Equity Prices	INR-USD
Restrictions	≥ 0	≥ 0	?	?	≤ 0	≥ 0

Source: Authors' calculations.

[3] Model estimation and identification was implemented using the *VARsignR* package (Danne, 2015).

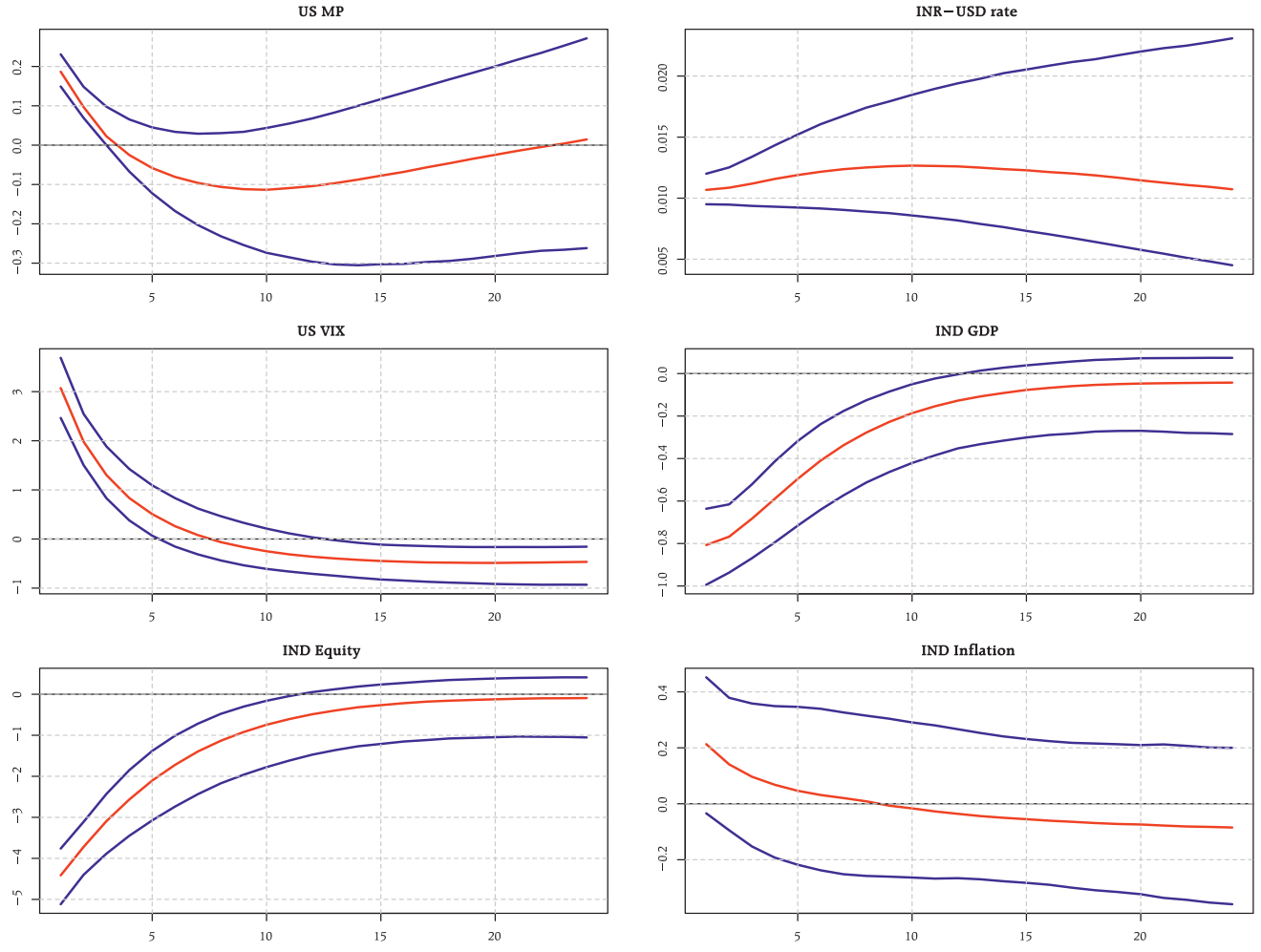
IV. Empirical Results

Spillovers arising due to domestic monetary and fiscal decisions in systematically important countries, such as the US, affect financial markets, bank credit and the real economy in other economies. Even if these changes are optimal from the perspective of the US domestic economy, they may have undesirable effects on foreign economies. It has been argued that the actions of US Fed, whether intended or unintended, has played a major role in propagating credit and asset price booms in the global economy. Similarly, various forms of ultra-accommodative monetary policy pursued by major central banks since the GFC have exerted significant spillovers on other countries by influencing their interest rates and credit conditions. In this section, we present our results on the impact of US monetary policy shocks on the Indian economy using impulse response analysis and forecast error variance decomposition from our SRVAR model.

IV.1 Spillovers from US Monetary Policy

Based on the Uhlig (2005) penalty function approach, the dynamic responses of domestic macroeconomic variables to monetary policy shocks in the US are provided below in Chart 2. The chart shows the median estimate for impulse responses of

Chart 2: Spillovers Impact of US Monetary Policy Shocks – Full Sample



Source: Authors' calculations.

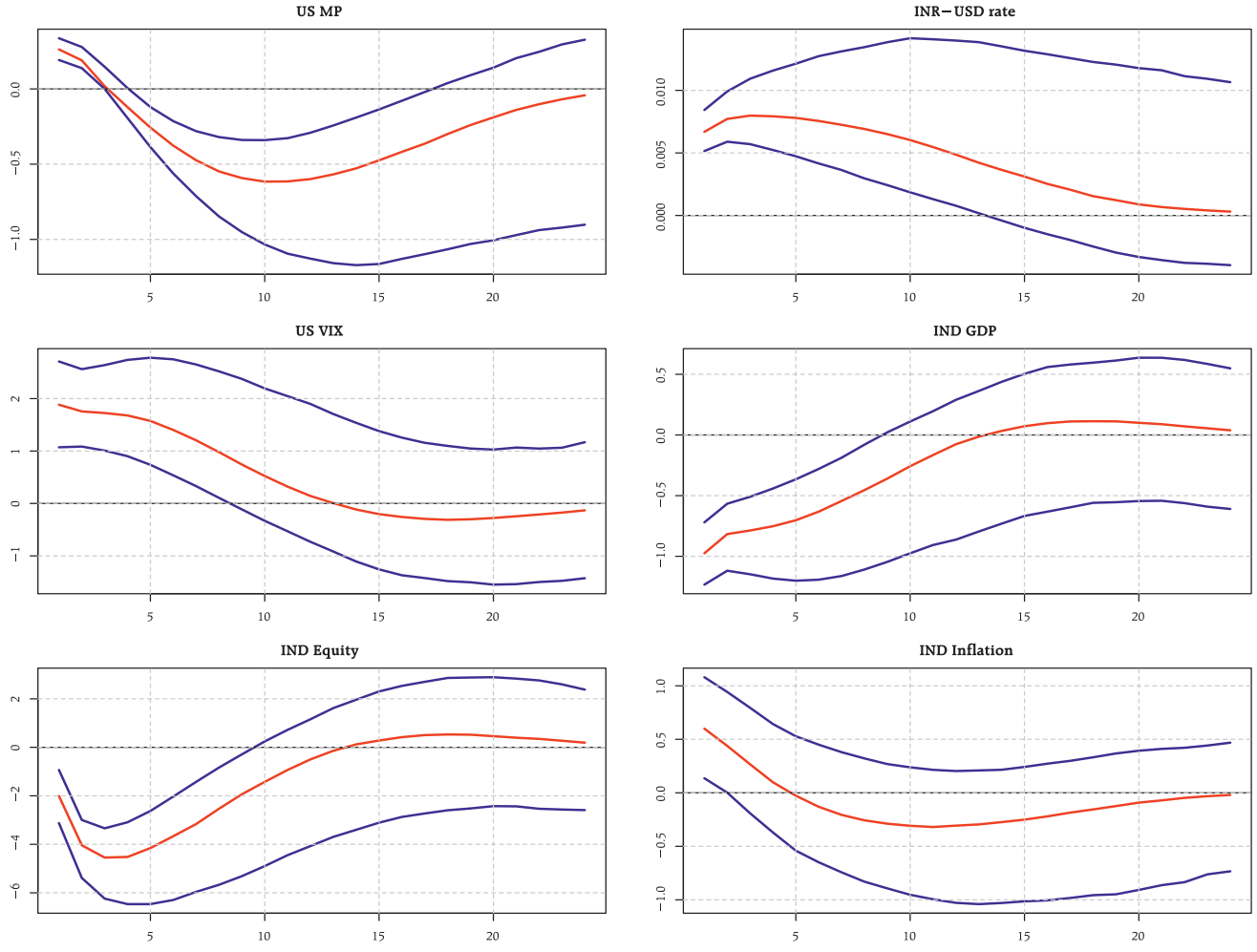
domestic economic activity and inflation (solid red line) to a one standard deviation shock to US policy rate. The blue lines indicate the 68 per cent confidence bands. These results correspond to estimation over the full data sample *i.e.*, from 1997Q1 to 2019Q4. It is evident from the impulse responses that the domestic economy faces an immediate decline in output due to a contractionary US monetary policy shock. The effect is found to persist for almost 12 quarters. The decrease in output is accompanied by an increase in domestic inflation, however, the effect is not statistically significant. The data also suggests that a contractionary US monetary policy shock leads to an increase in global risk aversion (VIX index), which in turn causes domestic equity prices to fall alongside a depreciation of the domestic currency.

Next, we divide our sample into two subsample period, from 1997Q1 to 2007Q4 and from 2008Q1 to 2019Q4. The former period reflects the period prior to the GFC and use of mainly conventional policy instruments. The latter period, on the other hand, is characterized by the use of both conventional and unconventional policy tools by the US Fed. Note that, Wu and Xia (2016) use monthly data from 2008-09 to 2013-14 to estimate the effects of unconventional monetary policies on the US economy. However, given data constraints, we estimate our model over a larger subsample which includes a period of ultra-accommodative monetary policy stance followed by a calibrated normalisation of policy in the US. We estimate our model separately for these two subsamples and present the impulse responses below.

Chart 3 and 4 present the impulse responses over the two subsamples, 1997Q1:2007Q4 and 2008Q1:2019Q4, respectively. Estimates from the pre-2008 sample suggests that a contractionary US monetary policy shock leads to a decline in domestic output and an increase in inflation. Further, we find that responses of domestic output and inflation, in addition to being statistically significant, are larger for the pre-2008 sample as compared to the full sample. The response of domestic output, however, is less persistent in this case as it is rendered statistically insignificant after 8-9 quarters. The fall in output coupled with an increase in inflation, suggests that the cross-border transmission of US monetary policy shocks were driven by the *exchange rate channel* in the pre-2008 period (see Caldara et al., 2022). Given that majority of global trade is invoiced in US dollar, depreciation of the domestic currency can lead to an increase in cost of capital for Indian firms. Moreover, crude oil, which acts as an intermediate good, would also get costlier leading to an instantaneous ratcheting up of costs. Overall, such an increase in cost of capital for domestic firms highlights the cost-push effects of an unanticipated tightening of US monetary policy.

On the other hand, in case of post-2008 sample, we find that US monetary policy shocks cause a decline in domestic economic activity as well as domestic inflation. The fall in output growth and inflation is statistically significant and persistent, with output growth and inflation continuing to decrease for more than four quarters. As suggested in the literature, US monetary policy spillovers to EMEs, especially those from unconventional policies, have been primarily driven by the *financial channel*. This channel captures the tightening of long-term interest rates in the US that accompanies policy tightening by the US Fed. Higher long-term yields allows global investors to switch from foreign assets to US assets, thereby hardening foreign financial conditions followed by a reduction in GDP and inflation in EMEs. The responses of domestic output growth and inflation in the post-GFC period, therefore, supports the transmission of global policy spillovers through the financial channel. Overall, our results indicate that US monetary policy after the GFC seems to affect aggregate demand in the domestic economy.

Chart 3: Spillovers from US Monetary Policy - Pre-2008 Sample



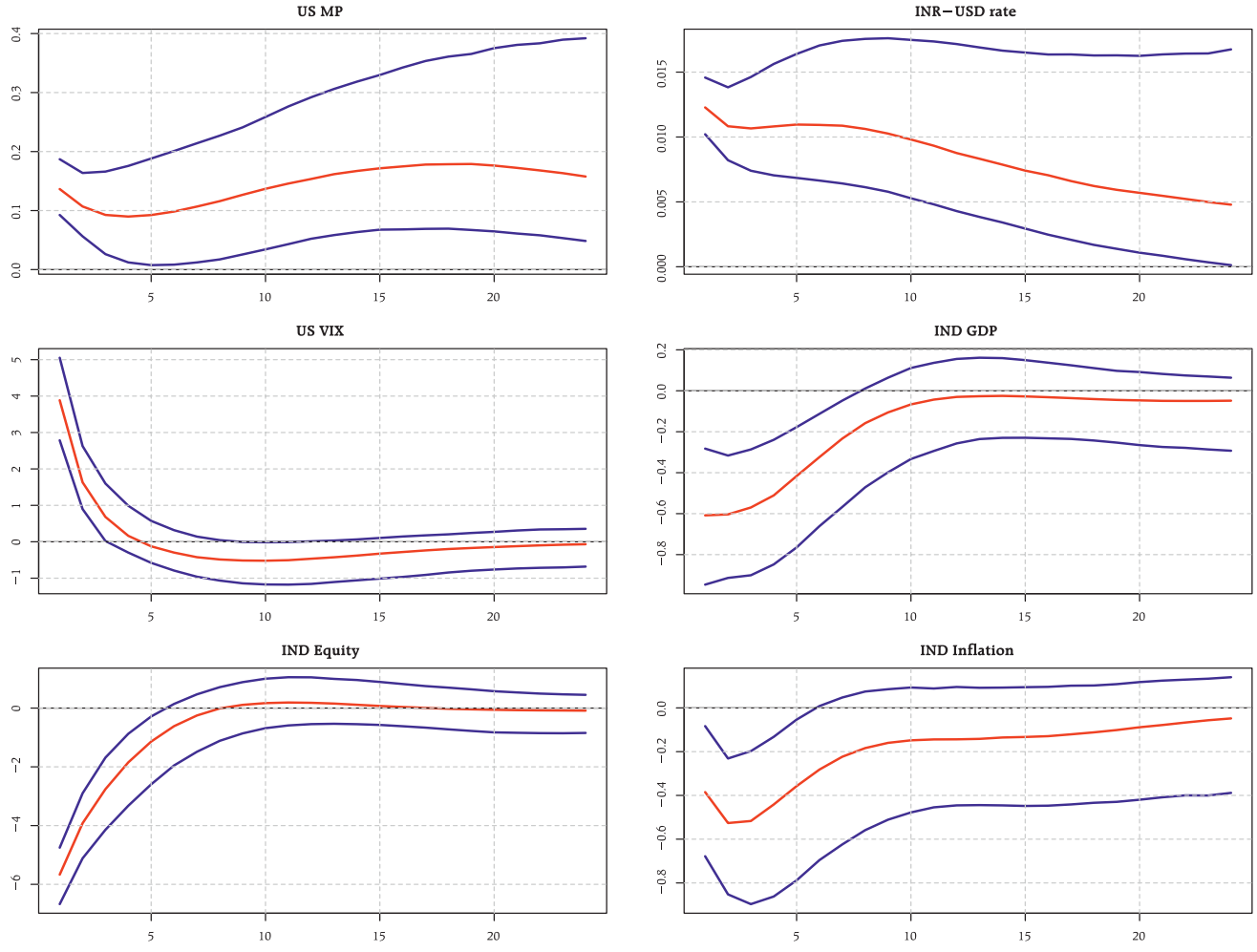
Source: Authors' calculations.

The impulse responses presented in Chart 3 and Chart 4 underline the changing nature and transmission of US monetary policy shocks to the Indian economy. In case of pre-2008 period, synonymous with the use of conventional monetary policy tools in the US, unanticipated changes in the US Fed's policy stance reduced output growth and increased domestic inflation, thereby exhibiting a cost-push shock to the domestic economy through the exchange rate channel. In the post-2008 period, marked by the pursuit of unconventional monetary policies in the US, policy spillovers to India take the form of an aggregate demand shock leading to a decrease in domestic output growth and inflation in line with the financial channel of global spillovers.

IV.2 Spillovers from US Monetary Policy Uncertainty

Cross-border policy spillovers can also be driven by market participants' perception of changes in economic fundamentals and the stance of monetary policy in the source country. It can also be driven by policy announcements (or lack thereof) rather than the actual realisation of these changes. Such changes in policy perception can be captured by indicators that measure uncertainty around economic policy. Therefore, to ascertain the impact of uncertainty

Chart 4: Spillovers from US Monetary Policy – Post-2008 Sample

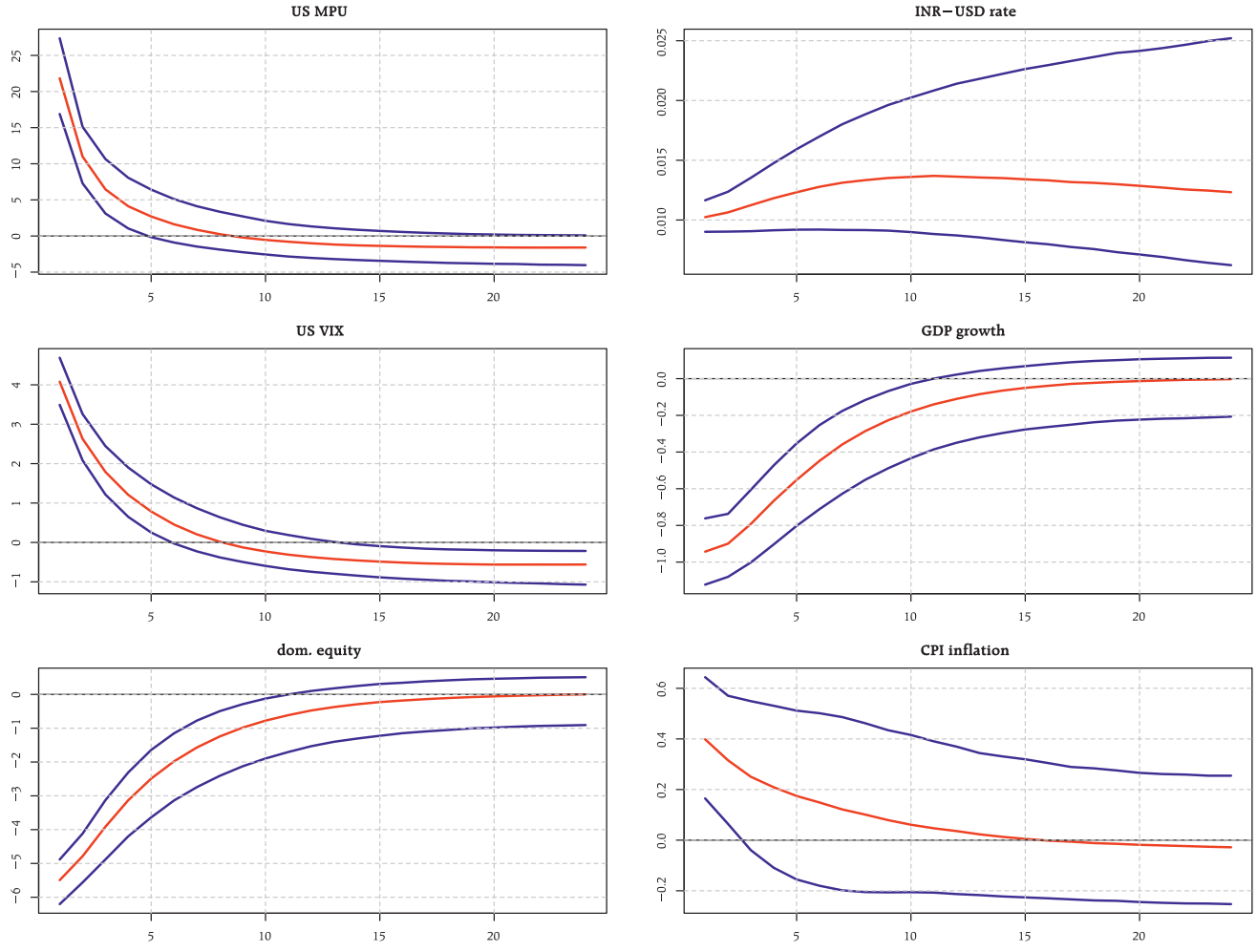


Source: Authors' calculations.

around monetary policy in the US, we estimate our SRVAR model by replacing US shadow interest rate with the news-based US monetary policy uncertainty (MPU) index proposed by Baker et al. (2016). We impose similar sign restrictions as earlier and estimate the model over the full data sample. The resulting impulse response to a one standard deviation shock to US MPU are given in Chart 5.

As observed in Chart 5, unanticipated increases in US monetary policy uncertainty leads to a fall in domestic output growth along with a rise in domestic inflation. The effect of the shock on domestic GDP growth and inflation are also larger and more persistent as compared to US monetary policy shocks discussed in the previous subsection. This suggests that heightened uncertainty in the context of US monetary policy is akin to a negative supply-side shock for the Indian economy which shows in the form of accelerated inflation along with a persistent decline in output growth. Overall, global monetary policy uncertainty tends to worsen the inflation-output trade-off for domestic monetary policy.

Chart 5: Spillovers from US Monetary Policy Uncertainty – Full Sample



Source: Authors' calculations.

V. Conclusion

The global economic system today is staring in the eyes of a deadly storm amidst a global pandemic that has affected millions of lives and livelihoods, a bounce back of high inflation, heightened uncertainty due to geopolitical tensions and a rollback of ultra-accommodative policy support across the globe.

In this scenario, matters for emerging market economies are further complicated by the fact that they not only have to support domestic economy but must also safeguard themselves against spillovers from AEs. Our study uses quarterly macro-financial data on the US and Indian economy to shed light on the effects of US monetary policy actions as well as monetary policy uncertainty on the domestic economy. Importantly, we show that monetary policy actions (or uncertainty) of the US Fed can have detrimental effects on the domestic business cycle. In the context of the sharp policy tightening being observed across the globe, our paper suggests that major central banks should be wary of the negative impact of their policy actions as well as communication. In the globalized world of today, destabilization in one region or group of countries can derail the process of global economic recovery from the pandemic. Thus, the global economy would be

better served if major central banks strive to minimize disruptions caused by their policy actions through transparent communication on the future path of their policy.

References

Adrian, T., Crump, R. K. & Moench, E. (2013). Pricing the Term Structure with Linear Regressions. Journal of Financial Economics, Pages 110-138, October.

Agénor, P. R., Alper, K., & da Silva, L. P. (2018). External shocks, financial volatility and reserve requirements in an open economy. *Journal of International Money and Finance*, *83*, 23-43.

Arezki, R., & Liu, Y. (2020). On the (Changing) asymmetry of global spillovers: Emerging markets vs. advanced economies. *Journal of International Money and Finance*, *107*, 102219.

Baker, S. R., Bloom, N., & Davis, S. J. (2016). Measuring economic policy uncertainty. *The quarterly journal of economics*, 131(4), 1593-1636.

Banerjee, S., & Basu, P. (2016). Indian economy during the era of quantitative easing: A dynamic stochastic general equilibrium perspective. In *Monetary Policy in India* (pp. 549580). Springer, New Delhi.

Banerjee, S., & Mohanty, M. S. (2021). *US monetary policy and the financial channel of the exchange rate: evidence from India.* BIS Working Paper No. 945, Monetary and Economic Department, Bank for International Settlements, Geneva, Switzerland.

Danne, Christian, 2015. "VARsignR: Estimating VARs using sign restrictions in R," *MPRA Paper 68429*, University Library of Munich, Germany.

D'Auria, F., Linden, S., Monteiro, D., & Zeugner, S. (2014). Cross-border spillovers in the euro area. *Quarterly Report on the Euro Area (QREA)*, *13*(4), 7-22.

Dées, S., & Galesi, A. (2021). The Global Financial Cycle and US monetary policy in an interconnected world. *Journal of International Money and Finance*, *115*, 102395.

Eichengreen, B., & Gupta, P. (2015). Tapering talk: The impact of expectations of reduced Federal Reserve security purchases on emerging markets. *Emerging Markets Review*, *25*, 1-15.

Eichengreen, B., Gupta, P., & Choudhary, R. (2022). The Taper This Time. *Indian Public Policy Review*, *3*(1 (Jan-Feb)), 1-17.

Georgiadis, G. (2017). To bi, or not to bi? Differences between spillover estimates from bilateral and multilateral multi-country models. *Journal of International Economics*, *107*, 118.

Habib, M. M. & Venditti, F. (2019). The Global Capital Flows Cycle: Structural Drivers and Transmission Channels. *Working Paper Series*, European Central Bank, May.

Hoek, J., Kamin, S. B., & Yoldas, E. (2020). When is bad news good news? US monetary policy, macroeconomic news, and financial conditions in emerging markets. *International Finance Discussion Paper* No. 1269, Board of Governors of the Federal Reserve System, USA.

Hoek, J., Yoldas, E., & Kamin, S. (2021). Are Rising US Interest Rates Destabilizing for Emerging Market Economies?. FEDS Notes June 2021, Board of Governors of the Federal Reserve System, USA.

IMF (2021). World Economic Outlook, April 2021. International Monetary Fund, Washington, USA.

Jordà, Ò., Schularick, M., Taylor, A. M., & Ward, F. (2019). Global financial cycles and risk premiums. *IMF Economic Review*, *67*(1), 109-150.

Lakdawala, A. (2021). The growing impact of US monetary policy on emerging financial markets: Evidence from India. *Journal of International Money and Finance*, *119*, 102478.

Miranda-Agrippino, S., & Rey, H. (2020). US monetary policy and the global financial cycle. *The Review of Economic Studies*, *87*(6), 2754-2776.

Miranda-Agrippino, S., Nenova, T. & Rey, H. (2020). Global Footprints of Monetary Policy. Discussion Papers, Centre for Macroeconomics (CFM).

Patra, M. D., Khundrakpam, J. K., Gangadaran, S., Kavediya, R., & Anthony, J. M. (2016). Responding to QE taper from the receiving end. *Macroeconomics and Finance in Emerging Market Economies*, *9*(2), 167-189.

Patra, M. D., Pattanaik, S., John, J., & Behera, H. K. (2016). Monetary policy transmission in India: Do global spillovers matter?. *Reserve Bank Occasional Papers*, *37*(1&2), Reserve Bank of India, Mumbai, India.

Patra, M.D. (2022). Taper 2022: Touchdown in Turbulence. Keynote Address at the IMC Chamber of Commerce and Industry, Mumbai, March 11, 2022, Reserve Bank of India, Mumbai.

Pierre-Richard, A., & Pereira da Silva Luiz, A. (2022). Financial spillovers, spillbacks, and the scope for international macroprudential policy coordination. *International Economics and Economic Policy*, 79-127.

RBI. (2010). Report on Currency and Finance, Reserve Bank of India, Mumbai, India.

RBI. (2023). Monetary Policy Statement delivered by Governor Shri Shaktikantha Das, Reserve Bank of India on February 08, 2023 in Mumbai, India.

Rey, H. (2013). Dilemma not Trilemma: The Global Financial Cycle and Monetary Policy Independence. Proceedings - Economic Policy Symposium - Jackson Hole, Federal Reserve of Kansas City Economic Symposium, Pages 285-333.

Rey, H. (2018). National Monetary Authorities and the Global Financial Cycle. *Lecture delivered at the Sixteenth LK Jha Memorial Lecture*, Reserve Bank of India, Mumbai.

Uhlig, H. (2005). What are the effects of monetary policy on output? Results from an agnostic identification procedure. *Journal of Monetary Economics*, *52*(2), 381-419.

CURRENT STATISTICS

Contents

Notes: .. = Not available.
– = Nil/Negligible.
P = Preliminary/Provisional. PR = Partially Revised.

No. 1: Select Economic Indicators

Item	2021-22	2021-22		2022-23	
		Q1	Q2	Q1	Q2
	1	2	3	4	5
1 Real Sector (% Change)					
1.1 GVA at Basic Prices	8.1	18.1	8.3	12.7	5.6
1.1.1 Agriculture	3.0	2.2	3.2	4.5	4.6
1.1.2 Industry	9.8	40.4	6.6	6.0	-3.1
1.1.3 Services	8.8	15.5	10.0	17.5	9.0
1.1a Final Consumption Expenditure	7.0	10.2	10.2	21.3	7.7
1.1b Gross Fixed Capital Formation	15.8	62.5	14.6	20.1	10.4
	2021-22	**2021**		**2022**	
		Nov.	**Dec.**	**Nov.**	**Dec.**
	1	2	3	4	5
1.2 Index of Industrial Production	11.4	1.0	1.0	7.3	4.3
2 Money and Banking (% Change)					
2.1 Scheduled Commercial Banks					
2.1.1 Deposits	8.9	8.9	10.3	9.8	9.2
2.1.2 Credit #	9.6	6.9	9.3	17.3	14.9
2.1.2.1 Non-food Credit #	9.7	7.1	9.4	17.7	15.3
2.1.3 Investment in Govt. Securities	6.0	3.6	2.8	10.7	10.6
2.2 Money Stock Measures					
2.2.1 Reserve Money (M0)	13.0	12.8	14.7	11.0	10.3
2.2.2 Broad Money (M3)	8.8	9.5	11.4	8.9	8.7
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	5.0	5.3	5.3
3.4 Credit-Deposit Ratio	72.2	71.0	71.3	75.0	75.0
3.5 Incremental Credit-Deposit Ratio #	77.2	37.3	56.1	128.6	111.5
3.6 Investment-Deposit Ratio	28.7	29.0	28.4	29.3	28.7
3.7 Incremental Investment-Deposit Ratio	19.7	17.7	12.9	39.7	28.9
4 Interest Rates (%)					
4.1 Policy Repo Rate	4.00	4.00	4.00	5.90	6.25
4.2 Fixed Reverse Repo Rate	3.35	3.35	3.35	3.35	3.35
4.3 Standing Deposit Facility (SDF) Rate *	-	-	-	5.65	6.00
4.4 Marginal Standing Facility (MSF) Rate	4.25	4.25	4.25	6.15	6.50
4.5 Bank Rate	4.25	4.25	4.25	6.15	6.50
4.6 Base Rate	7.25/8.80	7.30/8.80	7.25/8.80	8.10/8.80	8.10/9.40
4.7 MCLR (Overnight)	6.45/7.00	6.50/7.00	6.50/7.00	7.05/8.05	7.30/8.15
4.8 Term Deposit Rate >1 Year	5.00/5.60	4.90/5.50	4.90/5.60	6.10/7.25	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	3.35	3.32	6.13	6.38
4.11 91-Day Treasury Bill (Primary) Yield	3.84	3.53	3.66	6.40	6.31
4.12 182-Day Treasury Bill (Primary) Yield	4.27	3.83	3.97	6.73	6.74
4.13 364-Day Treasury Bill (Primary) Yield	4.58	4.13	4.27	6.87	6.89
4.14 10-Year G-Sec Par Yield (FBIL)	6.86	6.33	6.47	7.29	7.34
5 Reference Rate and Forward Premia					
5.1 INR-US$ Spot Rate (Rs. Per Foreign Currency)	76.18	74.71	74.30	81.53	82.79
5.2 INR-Euro Spot Rate (Rs. Per Foreign Currency)	84.01	83.85	84.05	84.87	88.15
5.3 Forward Premia of US$ 1-month (%)	5.67	3.69	3.96	2.21	2.17
3-month (%)	4.46	3.80	4.15	2.16	2.17
6-month (%)	4.10	4.71	4.71	2.26	2.22
6 Inflation (%)					
6.1 All India Consumer Price Index	5.51	4.9	5.7	5.9	5.7
6.2 Consumer Price Index for Industrial Workers	5.13	4.8	5.6	5.4	5.5
6.3 Wholesale Price Index	12.97	14.9	14.3	5.8	5.0
6.3.1 Primary Articles	10.25	10.2	13.8	5.5	2.4
6.3.2 Fuel and Power	32.50	44.4	38.1	17.4	18.1
6.3.3 Manufactured Products	11.10	12.3	10.7	3.6	3.4
7 Foreign Trade (% Change)					
7.1 Imports	55.43	56.8	40.5	9.8	-0.2
7.2 Exports	44.62	34.6	44.3	9.7	-3.1

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						
	2021-22	2022		2023			
		Jan.	Dec. 30	Jan. 6	Jan. 13	Jan. 20	Jan. 27
	1	2	3	4	5	6	7
1 Issue Department							
1.1 Liabilities							
1.1.1 Notes in Circulation	3107637	3004604	3203051	3225329	3252059	3249112	3261992
1.1.2 Notes Held in Banking Department	15	16	15	13	10	19	19
1.1/1.2 Total Liabilities (Total Notes Issued) or Assets	**3107652**	**3004619**	**3203066**	**3225342**	**3252070**	**3249132**	**3262010**
1.2 Assets							
1.2.1 Gold	128208	114864	129184	130632	131852	134029	135652
1.2.2 Foreign Securities	2978927	2889257	3073515	3094378	3119720	3114638	3125922
1.2.3 Rupee Coin	518	498	367	333	497	465	436
1.2.4 Government of India Rupee Securities	–	–	–	–	–	–	–
2 Banking Department							
2.1 Liabilities							
2.1.1 Deposits	1794574	1929291	1439225	1399746	1344611	1341640	1374659
2.1.1.1 Central Government	101	100	100	100	101	101	101
2.1.1.2 Market Stabilisation Scheme							
2.1.1.3 State Governments	42	42	42	42	42	42	42
2.1.1.4 Scheduled Commercial Banks	683437	681336	841612	830148	800904	861612	813573
2.1.1.5 Scheduled State Co-operative Banks	7123	7560	8648	9055	8317	8452	8592
2.1.1.6 Non-Scheduled State Co-operative Banks	4121	3766	4403	4520	4450	4443	4337
2.1.1.7 Other Banks	37589	36681	45114	44305	44847	44728	44453
2.1.1.8 Others	988819	1139410	457383	425587	407855	350431	429497
2.1.1.9 Financial Institution Outside India	73343	60395	81922	85989	78095	71830	74063
2.1.2 Other Liabilities	1359254	1300073	1506375	1496017	1515004	1517021	1543823
2.1/2.2 Total Liabilities or Assets	**3153828**	**3229365**	**2945600**	**2895763**	**2859616**	**2858662**	**2918482**
2.2 Assets							
2.2.1 Notes and Coins	15	16	15	13	10	19	19
2.2.2 Balances Held Abroad	1243853	1387051	1075884	1040773	1020375	1021574	1052101
2.2.3 Loans and Advances							
2.2.3.1 Central Government	–	–	–	–	–	–	–
2.2.3.2 State Governments	670	716	4450	17380	16688	19058	16745
2.2.3.3 Scheduled Commercial Banks	94299	94286	127472	96723	95937	96401	121622
2.2.3.4 Scheduled State Co-op.Banks	–	–	–	–	–	–	–
2.2.3.5 Industrial Dev. Bank of India	–	–	–	–	–	–	–
2.2.3.6 NABARD	24927	24770	–	–	–	–	–
2.2.3.7 EXIM Bank	–	–	–	–	–	–	–
2.2.3.8 Others	8077	811	17789	16125	1662	3469	9175
2.2.3.9 Financial Institution Outside India	72741	30404	81790	86108	78656	72197	74372
2.2.4 Bills Purchased and Discounted							
2.2.4.1 Internal	–	–	–	–	–	–	–
2.2.4.2 Government Treasury Bills	–	–	–	–	–	–	–
2.2.5 Investments	1491042	1497144	1409345	1407260	1412703	1408700	1404238
2.2.6 Other Assets	218203	194167	228855	231380	233584	237243	240211
2.2.6.1 Gold	201354	181597	212643	215026	217034	220617	223290

* Data are provisional.

No. 3: Liquidity Operations by RBI

(₹ Crore)

Date	Liquidity Adjustment Facility						Standing Liquidity Facilities	OMO (Outright)		Net Injection (+)/ Absorption (-) (1+3+5+7+9-2-4-6-8)
	Repo	Reverse Repo	Variable Rate Repo	Variable Rate Reverse Repo	MSF	SDF		Sale	Purchase	
	1	2	3	4	5	6	7	8	9	10
Dec. 1, 2022	-	-	-	-	0	220379	–	790	-	-221169
Dec. 2, 2022	-	-	-	31234	987	246265	–	1640	-	-278152
Dec. 3, 2022	-	-	-	-	563	13987	–	-	-	-13424
Dec. 4, 2022	-	-	-	-	7	3257	–	-	-	-3250
Dec. 5, 2022	-	-	-	-	518	227361	-	1875	-	-228718
Dec. 6, 2022	-	-	-	-	7	158653	-	945	-	-159591
Dec. 7, 2022	-	-	-	-	13	229671	-5000	1125	-	-235783
Dec. 8, 2022	-	-	-	-	29	208605	-625	-	-	-209201
Dec. 9, 2022	-	-	-	-	5	219063	-3400	290	-	-222748
Dec. 10, 2022	-	-	-	-	42	5790	-	-	-	-5748
Dec. 11, 2022	-	-	-	-	59	7336	-	-	-	-7277
Dec. 12, 2022	-	-	-	-	35	204788	–	370	-	-205123
Dec. 13, 2022	-	-	-	-	2969	208870	–	135	-	-206036
Dec. 14, 2022	-	-	-	-	215	177306	–	1285	-	-178376
Dec. 15, 2022	-	-	-	-	39	162303	565	1360	-	-163059
Dec. 16, 2022	-	-	-	13453	21103	65736	3000	-	-	-55086
Dec. 17, 2022	-	-	-	-	930	17563	–	-	-	-16633
Dec. 18, 2022	-	-	-	-	5	2432	–	-	-	-2427
Dec. 19, 2022	-	-	-	-	5645	54697	3129	-	-	-45923
Dec. 20, 2022	-	-	-	-	7091	69829	2966	-	-	-59772
Dec. 21, 2022	-	-	-	-	2449	46987	-61	-	-	-44599
Dec. 22, 2022	-	-	-	-	937	59487	–	-	-	-58550
Dec. 23, 2022	-	-	-	-	2101	61426	-450	5	-	-59780
Dec. 24, 2022	-	-	-	-	54	17846	–	-	-	-17792
Dec. 25, 2022	-	-	-	-	25	3066	–	-	-	-3041
Dec. 26, 2022	-	-	-	-	406	75574	–	-	-	-75168
Dec. 27, 2022	-	-	-	-	279	82556	-505	-	-	-82782
Dec. 28, 2022	-	-	-	-	8901	98806	–	-	-	-89905
Dec. 29, 2022	-	-	-	-	5440	86536	506	-	-	-80590
Dec. 30, 2022	-	-	-	27084	33224	120779	–	-	-	-114639
Dec. 31, 2022	-	-	-	-	269	50364	-	-	-	-50095

SDF: Standing Deposit Facility; MSF: Marginal Standing Facility.

No. 4: Sale/ Purchase of U.S. Dollar by the RBI

i) Operations in OTC segment

Item	2021-22	2021	2022	
		Dec.	Nov.	Dec.
	1	2	3	4
1 Net Purchase/ Sale of Foreign Currency (US $ Million) (1.1–1.2)	17312	-2917	4361	3842
1.1 Purchase (+)	113991	7475	22281	12817
1.2 Sale (–)	96679	10392	17920	8975
2 ₹ equivalent at contract rate (₹ Crore)	134629	-20809	33929	29295
3 Cumulative (over end-March) (US $ Million)	17312	37413	-29978	-26136
(₹ Crore)	134629	285996	-249702	-220407
4 Outstanding Net Forward Sales (–)/ Purchase (+) at the end of month (US $ Million)	65791	49106	8493	10968

ii) Operations in currency futures segment

Item	2021-22	2021	2022	
		Dec.	Nov.	Dec.
	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	10	0
1.2 Sale (–)	2370	0	10	0
2 Outstanding Net Currency Futures Sales (–)/ Purchase (+) at the end of month (US $ Million)	0	0	0	(-)150

No. 4 A : Maturity Breakdown (by Residual Maturity) of Outstanding Forwards of RBI (US $ Million)

Item	As on December 31, 2022		
	Long (+)	Short (-)	Net (1-2)
	1	2	3
1. Upto 1 month	1140	5473	-4333
2. More than 1 month and upto 3 months	3806	125	3681
3. More than 3 months and upto 1 year	7731	1246	6485
4. More than 1 year	5135	0	5135
Total (1+2+3+4)	**17812**	**6844**	**10968**

No. 5: RBI's Standing Facilities

(₹ Crore)

Item	As on the Last Reporting Friday							
	2021-22	2022						2023
		Jan. 28	Aug. 26	Sep. 23	Oct. 21	Nov. 18	Dec. 30	Jan. 27
	1	2	3	4	5	6	7	8
1 MSF	11	38	4034	9657	51134	3250	33224	27370
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	–	734	0	910	1022	1801	2376	1675
4 Others								
4.1 Limit	76000	76000	76000	76000	76000	76000	76000	76000
4.2 Outstanding	32401	24401	40159	31039	20249	10850	15400	7500
5 Total Outstanding (1+2.2+3.2+4.2)	32412	25173	44193	41606	72405	15901	51000	36545

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	2021	2022		
		Dec. 31	Nov. 18	Dec. 16	Dec. 30
	1	2	3	4	5
1 Currency with the Public (1.1 + 1.2 + 1.3 – 1.4)	3035689	2881115	3093618	3127695	3122236
1.1 Notes in Circulation	3105703	2959237	3189066	3211867	3203037
1.2 Circulation of Rupee Coin	27270	26921	28469	28641	28857
1.3 Circulation of Small Coins	743	743	743	743	743
1.4 Cash on Hand with Banks	98028	105786	124807	113734	110416
2 Deposit Money of the Public	2271436	2257098	2262770	2237429	2404868
2.1 Demand Deposits with Banks	2212992	2206052	2192060	2173283	2341936
2.2 'Other' Deposits with Reserve Bank	58444	51045	70709	64145	62932
3 M_1 (1 + 2)	**5307125**	**5138213**	**5356388**	**5365124**	**5527104**
4 Post Office Saving Bank Deposits	188433	179437	196440	196440	196440
5 M_2 (3 + 4)	**5495558**	**5317650**	**5552828**	**5561564**	**5723544**
6 Time Deposits with Banks	15186605	14975823	16043534	16119395	16332131
7 M_3 (3 + 6)	**20493729**	**20114036**	**21399921**	**21484519**	**21859235**
8 Total Post Office Deposits	1012241	969847	1088490	1088490	1088490
9 M_4 (7 + 8)	**21505970**	**21083883**	**22488411**	**22573009**	**22947725**

No. 7: Sources of Money Stock (M_3)

(₹ Crore)

Sources	Outstanding as on March 31/last reporting Fridays of the month/reporting Fridays				
	2021-22	2021	2022		
		Dec. 31	Nov. 18	Dec. 16	Dec. 30
	1	2	3	4	5
1 Net Bank Credit to Government	**6477629**	**6100716**	**6612762**	**6525131**	**6565472**
1.1 RBI's net credit to Government (1.1.1–1.1.2)	1450596	1194335	1226047	1097957	1170253
1.1.1 Claims on Government	1490991	1526753	1423456	1422205	1412098
1.1.1.1 Central Government	1489324	1520076	1417773	1410153	1407648
1.1.1.2 State Governments	1667	6677	5683	12052	4450
1.1.2 Government deposits with RBI	40394	332418	197409	324248	241845
1.1.2.1 Central Government	40352	332375	197366	324205	241802
1.1.2.2 State Governments	42	42	42	42	42
1.2 Other Banks' Credit to Government	5027033	4906381	5386715	5427174	5395219
2 Bank Credit to Commercial Sector	**12616520**	**12290942**	**13679367**	**13888869**	**14045877**
2.1 RBI's credit to commercial sector	16571	2094	14661	14282	19852
2.2 Other banks' credit to commercial sector	12599950	12288848	13664706	13874587	14026025
2.2.1 Bank credit by commercial banks	11891314	11582087	12947813	13154442	13305854
2.2.2 Bank credit by co-operative banks	690201	688991	699569	702806	702681
2.2.3 Investments by commercial and co-operative banks in other securities	18435	17769	17324	17339	17491
3 Net Foreign Exchange Assets of Banking Sector (3.1 + 3.2)	**4854063**	**4849508**	**4571803**	**4761560**	**4746428**
3.1 RBI's net foreign exchange assets (3.1.1–3.1.2)	4442479	4550652	4316211	4505968	4490835
3.1.1 Gross foreign assets	4442720	4550897	4316456	4506213	4491094
3.1.2 Foreign liabilities	241	245	246	246	259
3.2 Other banks' net foreign exchange assets	411583	298856	255593	255593	255593
4 Government's Currency Liabilities to the Public	**28013**	**27664**	**29212**	**29384**	**29600**
5 Banking Sector's Net Non-monetary Liabilities	**3482496**	**3154794**	**3493223**	**3720427**	**3528143**
5.1 Net non-monetary liabilities of RBI	1308500	1307042	1381545	1511272	1494789
5.2 Net non-monetary liabilities of other banks (residual)	2173996	1847752	2111678	2209154	2033355
M_3 (1+2+3+4–5)	**20493729**	**20114036**	**21399921**	**21484519**	**21859235**

No. 8: Monetary Survey

(₹ Crore)

Item	Outstanding as on March 31/last reporting Fridays of the month/reporting Fridays				
	2021-22	2021	2022		
		Dec. 31	Nov. 18	Dec. 16	Dec. 30
	1	2	3	4	5
Monetary Aggregates					
NM_1 (1.1 + 1.2.1+1.3)	5307125	5138213	5356388	5365124	5527104
NM_2 (NM_1 + 1.2.2.1)	12081049	11814053	12512152	12550677	12807909
NM_3 (NM_2 + 1.2.2.2 + 1.4 = 2.1 + 2.2 + 2.3 – 2.4 – 2.5)	20634885	20243385	21732947	21794816	22147115
1 Components					
1.1 Currency with the Public	3035689	2881115	3093618	3127695	3122236
1.2 Aggregate Deposits of Residents	17266157	17041253	18093758	18141179	18521503
1.2.1 Demand Deposits	2212992	2206052	2192060	2173283	2341936
1.2.2 Time Deposits of Residents	15053166	14835201	15901698	15967895	16179568
1.2.2.1 Short-term Time Deposits	6773925	6675840	7155764	7185553	7280805
1.2.2.1.1 Certificates of Deposit (CDs)	176718	84894	252530	274311	291491
1.2.2.2 Long-term Time Deposits	8279241	8159360	8745934	8782342	8898762
1.3 'Other' Deposits with RBI	58444	51045	70709	64145	62932
1.4 Call/Term Funding from Financial Institutions	274594	269971	474861	461797	440444
2 Sources					
2.1 Domestic Credit	20080599	19381230	21384192	21525125	21705225
2.1.1 Net Bank Credit to the Government	6477629	6100716	6612762	6525131	6565472
2.1.1.1 Net RBI credit to the Government	1450596	1194335	1226047	1097957	1170253
2.1.1.2 Credit to the Government by the Banking System	5027033	4906381	5386715	5427174	5395219
2.1.2 Bank Credit to the Commercial Sector	13602969	13280514	14771430	14999993	15139752
2.1.2.1 RBI Credit to the Commercial Sector	39581	26864	14661	14282	19852
2.1.2.2 Credit to the Commercial Sector by the Banking System	13563389	13253650	14756769	14985711	15119900
2.1.2.2.1 Other Investments (Non-SLR Securities)	952181	958477	1069274	1086427	1073325
2.2 Government's Currency Liabilities to the Public	28013	27664	29212	29384	29600
2.3 Net Foreign Exchange Assets of the Banking Sector	4705191	4753021	4471445	4580773	4595397
2.3.1 Net Foreign Exchange Assets of the RBI	4442479	4550652	4316211	4505968	4490835
2.3.2 Net Foreign Currency Assets of the Banking System	262711	202369	155234	74805	104562
2.4 Capital Account	3021858	2976677	3404225	3501354	3507288
2.5 Other items (net)	1157060	941854	747678	839112	675819

No. 9: Liquidity Aggregates

(₹ Crore)

Aggregates	2021-22	2021	2022		
		Dec.	Oct.	Nov.	Dec.
	1	2	3	4	5
1 NM_3	**20630753**	**20243385**	**21712620**	**21732947**	**22147115**
2 Postal Deposits	596588	572353	594633	594633	594633
3 L_1 (1 + 2)	**21227341**	**20815738**	**22307253**	**22327580**	**22741748**
4 Liabilities of Financial Institutions	49578	24644	58446	58400	65601
4.1 Term Money Borrowings	1824	1984	1518	1423	963
4.2 Certificates of Deposit	39170	15360	49270	49270	56570
4.3 Term Deposits	8584	7299	7657	7706	8069
5 L_2 (3 + 4)	**21276919**	**20840382**	**22365698**	**22385979**	**22807349**
6 Public Deposits with Non-Banking Financial Companies	70564	66542	..	..	78061
7 L_3 (5 + 6)	**21347483**	**20906924**	..	..	**22885411**

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	2021	2022		
		Dec. 31	Nov. 18	Dec. 16	Dec. 30
	1	2	3	4	5
1 Components					
1.1 Currency in Circulation	3133716	2986901	3218425	3241429	3232652
1.2 Bankers' Deposits with the RBI	876726	764828	869931	867014	899777
1.2.1 Scheduled Commercial Banks	823632	716432	814570	810927	841612
1.3 'Other' Deposits with the RBI	58444	51045	70709	64145	62932
Reserve Money (1.1 + 1.2 + 1.3 = 2.1 + 2.2 + 2.3 – 2.4 – 2.5)	4068887	3802775	4159065	4172588	4195361
2 Sources					
2.1 RBI's Domestic Credit	906895	531501	1195188	1148509	1169715
2.1.1 Net RBI credit to the Government	1450596	1194335	1226047	1097957	1170253
2.1.1.1 Net RBI credit to the Central Government (2.1.1.1.1 + 2.1.1.1.2 + 2.1.1.1.3 + 2.1.1.1.4 – 2.1.1.1.5)	1448972	1187700	1220407	1085948	1165846
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	1519509	1417416	1409918	1407281
2.1.1.1.3.1 Central Government Securities	1488816	1519509	1417416	1409918	1407281
2.1.1.1.4 Rupee Coins	508	567	357	235	367
2.1.1.1.5 Deposits of the Central Government	40352	332375	197366	324205	241802
2.1.1.2 Net RBI credit to State Governments	1624	6634	5641	12009	4408
2.1.2 RBI's Claims on Banks	-583282	-689698	-45520	36270	-20391
2.1.2.1 Loans and Advances to Scheduled Commercial Banks	-560272	-664928	-45520	36270	-20391
2.1.3 RBI's Credit to Commercial Sector	39581	26864	14661	14282	19852
2.1.3.1 Loans and Advances to Primary Dealers	–	–	1801	1741	2376
2.1.3.2 Loans and Advances to NABARD	23010	24770	–	–	–
2.2 Government's Currency Liabilities to the Public	28013	27664	29212	29384	29600
2.3 Net Foreign Exchange Assets of the RBI	4442479	4550652	4316211	4505968	4490835
2.3.1 Gold	322213	292779	326887	336282	341827
2.3.2 Foreign Currency Assets	4120283	4257890	3989341	4169703	4149026
2.4 Capital Account	1254092	1221533	1480042	1574332	1580164
2.5 Other Items (net)	54408	85509	-98496	-63060	-85375

No. 11: Reserve Money - Components and Sources

(₹ Crore)

Item	2021-22	Outstanding as on March 31/ last Fridays of the month/ Fridays					
		2021	2022				
		Dec. 24	Dec. 2	Dec. 9	Dec. 16	Dec. 23	Dec. 30
	1	2	3	4	5	6	7
Reserve Money (1.1 + 1.2 + 1.3 = 2.1 + 2.2 + 2.3 + 2.4 + 2.5 – 2.6)	4068887	3744266	4150211	4144023	4172588	4174957	4195361
1 Components							
1.1 Currency in Circulation	3133716	2996038	3221993	3244575	3241429	3242470	3232652
1.2 Bankers' Deposits with RBI	876726	697251	862988	835124	867014	868177	899777
1.3 'Other' Deposits with RBI	58444	50977	65231	64325	64145	64310	62932
2 Sources							
2.1 Net Reserve Bank Credit to Government	1450596	1091480	1318497	1264172	1097957	1106385	1170253
2.2 Reserve Bank Credit to Banks	-560272	-622634	-182157	-155913	36270	21544	-20391
2.3 Reserve Bank Credit to Commercial Sector	16571	2130	19799	10694	14282	19849	19852
2.4 Net Foreign Exchange Assets of RBI	4442479	4595536	4403884	4479156	4505968	4497489	4490835
2.5 Government's Currency Liabilities to the Public	28013	27539	29384	29384	29384	29384	29600
2.6 Net Non- Monetary Liabilities of RBI	1308500	1349785	1439196	1483470	1511272	1499694	1494789

No. 12: Commercial Bank Survey

(₹ Crore)

Item	Outstanding as on last reporting Fridays of the month/ reporting Fridays of the month				
	2021-22	2021	2022		
		Dec. 31	Nov. 18	Dec. 16	Dec. 30
	1	2	3	4	5
1 Components					
1.1 Aggregate Deposits of Residents	16331874	16101231	17155518	17202880	17581221
1.1.1 Demand Deposits	2072747	2066651	2050865	2032432	2201751
1.1.2 Time Deposits of Residents	14259128	14034581	15104653	15170448	15379470
1.1.2.1 Short-term Time Deposits	6416607	6315561	6797094	6826702	6920761
1.1.2.1.1 Certificates of Deposits (CDs)	176718	84894	252530	274311	291491
1.1.2.2 Long-term Time Deposits	7842520	7719019	8307559	8343746	8458708
1.2 Call/Term Funding from Financial Institutions	274594	269971	474861	461797	440444
2 Sources					
2.1 Domestic Credit	17575002	17146425	19117789	19384474	19487073
2.1.1 Credit to the Government	4728179	4607365	5085790	5126768	5095190
2.1.2 Credit to the Commercial Sector	12846823	12539060	14031999	14257705	14391883
2.1.2.1 Bank Credit	11891314	11582087	12947813	13154442	13305854
2.1.2.1.1 Non-food Credit	11836304	11493407	12895573	13099868	13251881
2.1.2.2 Net Credit to Primary Dealers	11522	6589	23052	24960	20813
2.1.2.3 Investments in Other Approved Securities	769	869	822	838	854
2.1.2.4 Other Investments (in non-SLR Securities)	943218	949514	1060312	1077464	1064363
2.2 Net Foreign Currency Assets of Commercial Banks (2.2.1–2.2.2–2.2.3)	262711	202369	155234	74805	104562
2.2.1 Foreign Currency Assets	465464	417913	367987	294204	332964
2.2.2 Non-resident Foreign Currency Repatriable Fixed Deposits	133439	140623	141836	151499	152563
2.2.3 Overseas Foreign Currency Borrowings	69314	74921	70916	67900	75839
2.3 Net Bank Reserves (2.3.1+2.3.2–2.3.3)	1268887	1475543	972531	876263	960618
2.3.1 Balances with the RBI	683437	716432	814570	810927	841612
2.3.2 Cash in Hand	85926	94182	112441	101606	98615
2.3.3 Loans and Advances from the RBI	-499524	-664928	-45520	36270	-20391
2.4 Capital Account	1743595	1730974	1900013	1902851	1902953
2.5 Other items (net) (2.1+2.2+2.3–2.4–1.1–1.2)	756537	722161	715162	768015	627636
2.5.1 Other Demand and Time Liabilities (net of 2.2.3)	571535	557811	638855	688438	676799
2.5.2 Net Inter-Bank Liabilities (other than to PDs)	26533	29768	17359	28347	29580

No. 13: Scheduled Commercial Banks' Investments

(₹ Crore)

Item	As on March 25, 2022	2021	2022		
		Dec. 31	Nov. 18	Dec. 16	Dec. 30
	1	2	3	4	5
1 SLR Securities	4728948	4608235	5086612	5127607	5096044
2 Other Government Securities (Non-SLR)	-	-	172062	187971	170410
3 Commercial Paper	55315	53140	58106	51418	54045
4 Shares issued by					
4.1 PSUs	7642	8397	9512	9420	9402
4.2 Private Corporate Sector	73814	73060	70661	70695	70997
4.3 Others	5152	5007	4910	4853	4881
5 Bonds/Debentures issued by					
5.1 PSUs	117860	115386	99952	100708	102017
5.2 Private Corporate Sector	326188	341692	324422	328748	326724
5.3 Others	148753	147470	94250	89445	98504
6 Instruments issued by					
6.1 Mutual funds	34404	38153	40974	46345	36748
6.2 Financial institutions	174090	167086	185463	187863	190633

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	2021	2022		2021-22	2021	2022	
		Dec.	Nov.	Dec.		Dec.	Nov.	Dec.
	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**	**254662**	**322059**	**329579**	**258649**	**250071**	**318826**	**326294**
1.1 Demand and Time Deposits from Banks	194143	190557	200485	220832	190570	186315	197978	218463
1.2 Borrowings from Banks	38369	37900	67257	51598	38317	37883	67114	51284
1.3 Other Demand and Time Liabilities	30162	26204	54317	57150	29762	25873	53734	56548
2 Liabilities to Others	**17832517**	**17590424**	**18946352**	**19369144**	**17380755**	**17144557**	**18508511**	**18926865**
2.1 Aggregate Deposits	16899634	16670399	17749945	18157327	16465313	16241854	17329371	17733784
2.1.1 Demand	2117513	2109712	2123876	2245951	2072747	2066651	2078973	2201751
2.1.2 Time	14782121	14560688	15626069	15911376	14392567	14175203	15250398	15532033
2.2 Borrowings	278985	274394	500784	445126	274594	269971	495442	440444
2.3 Other Demand and Time Liabilities	653898	645630	695623	766691	640848	632732	683697	752638
3 Borrowings from Reserve Bank	**94299**	**102489**	**96704**	**127472**	**94299**	**102489**	**96669**	**127472**
3.1 Against Usance Bills /Promissory Notes	–	–	–	–	–	–	–	–
3.2 Others	94299	102489	96704	127472	94299	102489	96669	127472
4 Cash in Hand and Balances with Reserve Bank	788725	830772	936542	962644	769363	810615	915324	940227
4.1 Cash in Hand	88732	96489	109526	101119	85926	94182	106483	98615
4.2 Balances with Reserve Bank	699993	734284	827015	861524	683437	716432	808841	841612
5 Assets with the Banking System	**315282**	**288521**	**375572**	**382420**	**243637**	**226892**	**317123**	**317527**
5.1 Balances with Other Banks	199434	192939	240469	230710	164240	156132	199953	190298
5.1.1 In Current Account	19733	19597	38399	23357	16691	16055	35353	19998
5.1.2 In Other Accounts	179701	173342	202070	207353	147549	140077	164599	170301
5.2 Money at Call and Short Notice	36905	32002	25749	38501	6982	12048	11935	18843
5.3 Advances to Banks	39340	30206	46031	47615	35802	28572	45530	45874
5.4 Other Assets	39603	33373	63324	65595	36613	30139	59706	62511
6 Investment	**4874070**	**4752766**	**5217161**	**5241312**	**4728948**	**4608235**	**5072239**	**5096044**
6.1 Government Securities	4867102	4745699	5210634	5234523	4728179	4607365	5071422	5095190
6.2 Other Approved Securities	6968	7067	6527	6789	769	869	817	854
7 Bank Credit	**12259048**	**11938940**	**13386156**	**13695835**	**11891314**	**11582087**	**13002265**	**13305854**
7a Food Credit	90827	124496	100376	99690	55011	88680	54657	53972
7.1 Loans, Cash-credits and Overdrafts	12016486	11716596	13152140	13454349	11651337	11361984	12771064	13067327
7.2 Inland Bills-Purchased	36070	34172	33936	35326	36055	34159	33918	35310
7.3 Inland Bills-Discounted	155796	136359	155857	159217	154212	135027	153738	156955
7.4 Foreign Bills-Purchased	19537	20865	16315	18911	19157	20446	16148	18727
7.5 Foreign Bills-Discounted	31160	30947	27908	28033	30554	30471	27397	27535

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	2021	2022		Financial year so far	Y-o-Y
		Dec.31	Nov.18	Dec.30	2022-23	2022
	1	2	3	4	%	%
I. Bank Credit (II+III)	**11891314**	**11582087**	**12947813**	**13304393**	**11.9**	**14.9**
II. Food Credit	**55011**	**88679**	**52239**	**53972**	**-1.9**	**-39.1**
III. Non-food Credit	**11836304**	**11493408**	**12895574**	**13250421**	**11.9**	**15.3**
1. Agriculture & Allied Activities	**1461719**	**1462086**	**1595185**	**1630871**	**11.6**	**11.5**
2. Industry (Micro and Small, Medium and Large)	**3156067**	**3027972**	**3294514**	**3291537**	**4.3**	**8.7**
2.1 Micro and Small	532792	509395	556127	579070	8.7	13.7
2.2 Medium	213996	205853	224624	237564	11.0	15.4
2.3 Large	2409279	2312723	2513763	2474903	2.7	7.0
3. Services	**3017258**	**2931207**	**3315747**	**3504664**	**16.2**	**19.6**
3.1 Transport Operators	155352	147467	161037	164451	5.9	11.5
3.2 Computer Software	20899	21049	21210	22404	7.2	6.4
3.3 Tourism, Hotels & Restaurants	64378	63457	65092	63588	-1.2	0.2
3.4 Shipping	8436	7475	7206	7307	-13.4	-2.2
3.5 Aviation	23979	14420	24445	28930	20.6	100.6
3.6 Professional Services	116742	112954	124321	126739	8.6	12.2
3.7 Trade	696301	675374	733730	768167	10.3	13.7
3.7.1 Wholesale Trade	351213	343121	353789	376414	7.2	9.7
3.7.2 Retail Trade	345088	332253	379941	391753	13.5	17.9
3.8 Commercial Real Estate	291168	294019	304276	309031	6.1	5.1
3.9 Non-Banking Financial Companies (NBFCs) [1]	1022399	974300	1218791	1320299	29.1	35.5
of which,						
3.9.1 Housing Finance Companies (HFCs)	282048	267204	307661	311071	10.3	16.4
3.9.2 Public Financial Institutions (PFIs)	137084	108726	178024	181330	32.3	66.8
3.10 Other Services [2]	617603	620693	655639	693750	12.3	11.8
4. Personal Loans	**3381699**	**3274532**	**3800330**	**3935144**	**16.4**	**20.2**
4.1 Consumer Durables	27628	25102	35658	36640	32.6	46.0
4.2 Housing	1684424	1634687	1843862	1898411	12.7	16.1
4.3 Advances against Fixed Deposits	78730	80026	96188	109937	39.6	37.4
4.4 Advances to Individuals against share & bonds	6161	5968	6758	6806	10.5	14.0
4.5 Credit Card Outstanding	147789	141751	173424	180090	21.9	27.0
4.6 Education	82723	81933	91069	92754	12.1	13.2
4.7 Vehicle Loans	402689	388737	468088	484747	20.4	24.7
4.8 Loan against gold jewellery	73942	75761	83755	84256	13.9	11.2
4.9 Other Personal Loans	877613	840568	1001529	1041502	18.7	23.9
5. Priority Sector (Memo)						
(i) Agriculture & Allied Activities [3]	1484923	1457894	1631458	1673097	12.7	14.8
(ii) Micro & Small Enterprises [4]	1377848	1372858	1457114	1526256	10.8	11.2
(iii) Medium Enterprises [5]	351900	340564	369403	386473	9.8	13.5
(iv) Housing	616814	587417	613395	617924	0.2	5.2
(v) Education Loans	58118	59599	58887	58998	1.5	-1.0
(vi) Renewable Energy	3538	2112	4177	4782	35.2	126.5
(vii) Social Infrastructure	2483	2650	2394	2473	-0.4	-6.7
(viii) Export Credit	23621	25954	15506	15673	-33.6	-39.6
(ix) Others	37159	39615	50219	52093	40.2	31.5
(x) Weaker Sections including net PSLC- SF/MF	1180928	1141715	1361042	1381194	17.0	21.0

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 Fund (MFs), Banking and Finance other than NBFCs and MFs and other services which are not indicated elsewhere under services.

3 "Agriculture and Allied Activities" under the priority sector also include priority sector lending certificates (PSLCs).

4 "Micro and Small Enterprises" under the priority sector include credit to micro and small enterprises in industry and services sectors and also include PSLCs.

5 "Medium Enterprises" under the priority sector include credit to medium enterprises in industry and services sectors.

No. 16: Industry-wise Deployment of Gross Bank Credit

(₹ Crore)

Industry	Outstanding as on				Growth (%)	
	Mar. 25, 2022	2021	2022		Financial year so far	Y-o-Y
		Dec. 31	Nov.18	Dec. 30	2022-23	2022
	1	2	3	4	%	%
2 Industries (2.1 to 2.19)	3156067	3027972	3294514	3291537	4.3	8.7
2.1 Mining & Quarrying (incl. Coal)	49135	48973	52338	53331	8.5	8.9
2.2 Food Processing	173246	167771	159064	174703	0.8	4.1
2.2.1 Sugar	26307	21374	16868	17882	–32.0	–16.3
2.2.2 Edible Oils & Vanaspati	18246	17944	16710	18806	3.1	4.8
2.2.3 Tea	5728	5993	5985	5419	–5.4	–9.6
2.2.4 Others	122965	122459	119501	132596	7.8	8.3
2.3 Beverage & Tobacco	18176	17351	20057	19974	9.9	15.1
2.4 Textiles	224026	217149	211566	217966	–2.7	0.4
2.4.1 Cotton Textiles	90384	87516	81723	84820	–6.2	–3.1
2.4.2 Jute Textiles	3509	2909	3731	3864	10.1	32.8
2.4.3 Man-Made Textiles	38371	37961	38689	39737	3.6	4.7
2.4.4 Other Textiles	91761	88762	87423	89544	–2.4	0.9
2.5 Leather & Leather Products	11573	11213	11311	11629	0.5	3.7
2.6 Wood & Wood Products	16294	15852	17697	18418	13.0	16.2
2.7 Paper & Paper Products	40565	40244	41565	42468	4.7	5.5
2.8 Petroleum, Coal Products & Nuclear Fuels	107333	107041	148211	163677	52.5	52.9
2.9 Chemicals & Chemical Products	196363	187453	215902	217102	10.6	15.8
2.9.1 Fertiliser	33160	30462	33894	33761	1.8	10.8
2.9.2 Drugs & Pharmaceuticals	61093	57744	65792	66499	8.8	15.2
2.9.3 Petro Chemicals	19622	21888	23121	21087	7.5	–3.7
2.9.4 Others	82486	77360	93095	95755	16.1	23.8
2.10 Rubber, Plastic & their Products	72013	67527	75954	77626	7.8	15.0
2.11 Glass & Glassware	5952	5921	6607	7117	19.6	20.2
2.12 Cement & Cement Products	47910	47949	51177	53224	11.1	11.0
2.13 Basic Metal & Metal Product	288531	276737	311249	329646	14.2	19.1
2.13.1 Iron & Steel	187584	179811	211112	223934	19.4	24.5
2.13.2 Other Metal & Metal Product	100946	96926	100137	105712	4.7	9.1
2.14 All Engineering	167966	158894	170101	172177	2.5	8.4
2.14.1 Electronics	38179	38149	40027	39743	4.1	4.2
2.14.2 Others	129787	120745	130074	132434	2.0	9.7
2.15 Vehicles, Vehicle Parts & Transport Equipment	89896	85991	93061	96797	7.7	12.6
2.16 Gems & Jewellery	80512	72065	73749	77604	–3.6	7.7
2.17 Construction	117724	115383	118548	117229	–0.4	1.6
2.18 Infrastructure	1195027	1137078	1234559	1197256	0.2	5.3
2.18.1 Power	611410	595098	624479	609091	–0.4	2.4
2.18.2 Telecommunications	130318	109049	128906	114852	–11.9	5.3
2.18.3 Roads	270395	252608	283074	284203	5.1	12.5
2.18.4 Airports	6646	7583	9072	8956	34.8	18.1
2.18.5 Ports	8886	9441	8188	7834	–11.8	–17.0
2.18.6 Railways	10512	10100	11290	11201	6.6	10.9
2.18.7 Other Infrastructure	156860	153201	169550	161119	2.7	5.2
2.19 Other Industries	253823	247379	281798	243592	–4.0	–1.5

Note : With effect from January 2019, sectoral credit data are based on revised format due to which values and growth rates of some of the existing components published earlier have undergone some changes.

No. 17: State Co-operative Banks Maintaining Accounts with the Reserve Bank of India

(₹ Crore)

Item	Last Reporting Friday (in case of March)/Last Friday/ Reporting Friday								
	2020-21	2021	2022						
		Nov, 26	Sep, 30	Oct, 07	Oct, 21	Oct, 28	Nov, 04	Nov, 18	Nov, 25
	1	2	3	4	5	6	7	8	9
Number of Reporting Banks	32	33	32	33	33	33	33	33	33
1 Aggregate Deposits (2.1.1.2+2.2.1.2)	**125859.6**	**126631.3**	**124590.8**	**126562.6**	**126803.0**	**126637.1**	**126360.6**	**126894.1**	**127382.3**
2 Demand and Time Liabilities									
2.1 Demand Liabilities	**23736.9**	**23568.9**	**24874.3**	**26059.9**	**26251.7**	**25889.7**	**25512.5**	**25577.6**	**24931.7**
2.1.1 Deposits									
2.1.1.1 Inter-Bank	4896.9	5294.8	6051.1	6093.9	6012.5	6211.1	5886.2	5568.0	5197.9
2.1.1.2 Others	13,899.4	13473.5	12836.4	14253.5	14361.5	14276.2	14104.1	14228.8	14221.3
2.1.2 Borrowings from Banks	0.0	150.0	699.7	799.6	749.5	399.7	399.9	404.9	624.7
2.1.3 Other Demand Liabilities	4940.6	4650.6	5287.2	4912.9	5128.3	5002.6	5122.2	5376.0	4887.9
2.2 Time Liabilities	**179957.5**	**175629.1**	**172837.7**	**172577.1**	**171821.7**	**171886.4**	**171587.7**	**171549.2**	**172191.9**
2.2.1 Deposits									
2.2.1.1 Inter-Bank	65333.7	59386.8	56993.6	55836.1	54914.6	55727.0	54916.2	54040.1	54088.1
2.2.1.2 Others	111960.2	113157.7	111754.4	112309.1	112441.5	112360.9	112256.5	112665.3	113161.0
2.2.2 Borrowings from Banks	630.0	910.1	1580.1	2080.1	2120.1	1441.3	2016.3	2433.3	2519.3
2.2.3 Other Time Liabilities	2033.7	2174.4	2509.7	2351.8	2345.5	2357.3	2398.6	2410.4	2423.5
3 Borrowing from Reserve Bank	0.0	0.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0
4 Borrowings from a notified bank / Government	63559.8	62398.8	70718.0	70049.4	68792.2	76583.1	75852.3	73458.8	73686.9
4.1 Demand	15691.8	12380.4	13633.4	13623.2	16862.7	15999.9	15799.9	15528.3	15498.3
4.2 Time	47868.0	50018.4	57084.6	56426.3	51929.6	60583.2	60052.4	57930.5	58188.6
5 Cash in Hand and Balances with Reserve Bank	**8151.1**	**9075.7**	**10969.0**	**10137.6**	**10492.0**	**10490.1**	**10600.3**	**10229.6**	**10166.0**
5.1 Cash in Hand	570.3	691.6	821.6	809.9	758.5	814.7	802.1	867.6	777.6
5.2 Balance with Reserve Bank	7580.8	8384.1	10147.4	9327.7	9733.5	9675.4	9798.1	9362.0	9388.3
6 Balances with Other Banks in Current Account	**1148.1**	**1215.4**	**1520.6**	**1396.1**	**1352.8**	**1407.8**	**1364.8**	**1560.4**	**1557.2**
7 Investments in Government Securities	**64455.2**	**73814.2**	**72520.1**	**73255.5**	**73448.2**	**74182.9**	**73637.4**	**73166.1**	**72325.9**
8 Money at Call and Short Notice	**28835.7**	**21853.7**	**18267.2**	**17881.7**	**15981.1**	**21439.7**	**21003.3**	**17899.7**	**18018.5**
9 Bank Credit (10.1+11)	**114631.6**	**107879.4**	**121551.1**	**121730.1**	**120921.6**	**120927.0**	**120809.3**	**120186.2**	**120652.2**
10 Advances									
10.1 Loans, Cash-Credits and Overdrafts	**114612.1**	**107858.5**	**121528.1**	**121709.0**	**120901.6**	**120906.9**	**120769.5**	**120147.3**	**120612.7**
10.2 Due from Banks	89429.1	99264.9	115486.6	115443.1	115130.2	117333.9	117079.2	117456.0	117682.0
11 Bills Purchased and Discounted	19.5	20.8	23.1	21.1	20.1	20.1	39.7	38.8	39.5

Prices and Production

No. 18: Consumer Price Index (Base: 2012=100)

Group/Sub group	2021-22			Rural			Urban			Combined		
	Rural	Urban	Combined	Dec.21	Nov.22	Dec.22(P)	Dec.21	Nov.22	Dec.22(P)	Dec.21	Nov.22	Dec.22(P)
	1	2	3	4	5	6	7	8	9	10	11	12
1 Food and beverages	**162.8**	**168.7**	**165.0**	**165.8**	**176.6**	**174.4**	**172.2**	**181.3**	**178.6**	**168.2**	**178.3**	**175.9**
1.1 Cereals and products	146.4	150.4	147.6	147.4	166.9	168.8	151.6	168.4	170.2	148.7	167.4	169.2
1.2 Meat and fish	200.4	206.5	202.6	197.0	207.2	206.9	202.2	213.4	212.8	198.8	209.4	209.0
1.3 Egg	173.3	176.0	174.4	176.5	180.2	189.1	180.0	183.2	192.0	177.9	181.4	190.2
1.4 Milk and products	158.3	159.0	158.6	159.8	172.3	173.4	160.0	172.3	173.8	159.9	172.3	173.5
1.5 Oils and fats	192.2	172.4	184.9	195.8	194.0	194.0	173.5	180.0	179.2	187.6	188.9	188.6
1.6 Fruits	155.3	163.5	159.2	152.0	159.1	156.7	158.3	162.6	159.5	154.9	160.7	158.0
1.7 Vegetables	156.1	192.8	168.5	172.3	171.6	150.2	219.5	205.5	178.7	188.3	183.1	159.9
1.8 Pulses and products	164.1	164.4	164.2	164.5	170.2	170.5	164.2	171.0	171.3	164.4	170.5	170.8
1.9 Sugar and confectionery	117.4	119.1	118.0	120.6	121.5	121.2	121.9	123.4	123.1	121.0	122.1	121.8
1.10 Spices	171.2	167.5	170.0	171.7	204.8	207.5	168.2	198.8	200.5	170.5	202.8	205.2
1.11 Non-alcoholic beverages	167.8	154.7	162.3	169.7	176.4	176.8	156.5	162.1	162.8	164.2	170.4	171.0
1.12 Prepared meals, snacks, sweets	173.0	175.8	174.3	175.1	186.9	187.6	178.2	192.4	193.3	176.5	189.5	190.2
2 Pan, tobacco and intoxicants	**190.3**	**196.5**	**191.9**	**190.8**	**195.5**	**195.9**	**196.8**	**200.6**	**201.0**	**192.4**	**196.9**	**197.3**
3 Clothing and footwear	**168.2**	**158.4**	**164.3**	**171.2**	**186.9**	**187.8**	**160.7**	**174.7**	**175.7**	**167.0**	**182.1**	**183.0**
3.1 Clothing	168.8	160.9	165.7	171.8	187.2	188.1	163.3	176.7	177.7	168.5	183.1	184.0
3.2 Footwear	164.5	144.7	156.3	167.3	185.2	185.9	146.7	163.5	164.3	158.7	176.2	176.9
4 Housing	**--**	**163.0**	**163.0**	**--**	**--**	**--**	**163.4**	**171.8**	**170.7**	**163.4**	**171.8**	**170.7**
5 Fuel and light	**164.0**	**159.8**	**162.4**	**165.6**	**181.9**	**182.8**	**161.7**	**180.3**	**180.9**	**164.1**	**181.3**	**182.1**
6 Miscellaneous	**164.1**	**156.1**	**160.2**	**166.0**	**174.6**	**175.5**	**157.8**	**167.4**	**168.2**	**162.0**	**171.1**	**172.0**
6.1 Household goods and services	161.8	153.5	157.9	163.9	175.5	176.4	156.0	166.9	167.2	160.2	171.4	172.1
6.2 Health	172.0	163.3	168.6	174.0	182.3	183.5	165.1	175.8	177.2	170.6	179.8	181.1
6.3 Transport and communication	157.9	150.0	153.7	160.1	167.5	167.8	151.8	158.9	159.3	155.7	163.0	163.3
6.4 Recreation and amusement	162.7	154.8	158.2	164.5	170.8	171.2	157.6	166.7	167.1	160.6	168.5	168.9
6.5 Education	168.4	160.1	163.5	169.7	176.9	177.3	160.6	171.5	171.8	164.4	173.7	174.1
6.6 Personal care and effects	161.3	160.8	161.1	162.8	173.4	175.7	162.4	173.8	176.0	162.6	173.6	175.8
General Index (All Groups)	**164.5**	**163.1**	**163.8**	**167.0**	**177.8**	**177.1**	**165.2**	**175.0**	**174.1**	**166.2**	**176.5**	**175.7**

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	2021	2022	
				Dec.	Nov.	Dec.
	1	2	3	4	5	6
1 Consumer Price Index for Industrial Workers	2016	2.88	123.6	125.4	132.5	132.3
2 Consumer Price Index for Agricultural Labourers	1986-87	5.89	1075	1097	1167	1167
3 Consumer Price Index for Rural Labourers	1986-87	–	1084	1106	1178	1179

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	2021	2022	
		Dec.	Nov.	Dec.
	1	2	3	4
1 Standard Gold (₹ per 10 grams)	47999	47890	51874	53941
2 Silver (₹ per kilogram)	65426	61280	60968	66698

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	2021	2022		
			Dec.	Oct.	Nov. (P)	Dec. (P)
	1	2	3	4	5	6
1 ALL COMMODITIES	**100.000**	**139.4**	**143.3**	**152.9**	**152.1**	**150.4**
1.1 PRIMARY ARTICLES	**22.618**	**160.7**	**168.4**	**181.2**	**177.7**	**172.4**
1.1.1 FOOD ARTICLES	**15.256**	**167.3**	**176.7**	**186.1**	**180.2**	**174.5**
1.1.1.1 Food Grains (Cereals+Pulses)	3.462	163.5	165.1	179.6	181.9	184.2
1.1.1.2 Fruits & Vegetables	3.475	187.6	226.9	230.8	202.0	173.4
1.1.1.3 Milk	4.440	156.9	157.3	166.7	167.0	168.3
1.1.1.4 Eggs,Meat & Fish	2.402	164.0	161.5	167.8	166.7	166.9
1.1.1.5 Condiments & Spices	0.529	159.8	165.9	191.2	193.0	191.5
1.1.1.6 Other Food Articles	0.948	168.3	170.3	180.0	182.8	181.3
1.1.2 NON-FOOD ARTICLES	**4.119**	**158.1**	**164.6**	**166.0**	**168.2**	**170.7**
1.1.2.1 Fibres	0.839	158.4	164.6	193.1	193.6	188.1
1.1.2.2 Oil Seeds	1.115	214.4	210.1	189.0	199.7	200.0
1.1.2.3 Other non-food Articles	1.960	119.9	123.8	127.5	131.3	134.4
1.1.2.4 Floriculture	0.204	217.0	309.8	298.5	247.6	288.6
1.1.3 MINERALS	**0.833**	**197.2**	**204.7**	**196.8**	**196.7**	**198.7**
1.1.3.1 Metallic Minerals	0.648	193.3	200.9	182.6	182.6	183.5
1.1.3.2 Other Minerals	0.185	211.0	218.2	246.6	246.2	252.0
1.1.4 CRUDE PETROLEUM & NATURAL GAS	**2.410**	**110.3**	**109.3**	**170.7**	**171.2**	**152.7**
1.2 FUEL & POWER	**13.152**	**124.6**	**133.8**	**158.0**	**159.6**	**158.0**
1.2.1 COAL	**2.138**	**129.0**	**130.9**	**134.3**	**134.3**	**134.3**
1.2.1.1 Coking Coal	0.647	143.0	143.4	143.4	143.4	143.4
1.2.1.2 Non-Coking Coal	1.401	119.8	119.8	119.8	119.8	119.8
1.2.1.3 Lignite	0.090	170.5	212.6	294.3	294.3	294.3
1.2.2 MINERAL OILS	**7.950**	**126.2**	**134.0**	**166.4**	**172.4**	**164.4**
1.2.3 ELECTRICITY	**3.064**	**117.4**	**135.3**	**152.9**	**144.0**	**157.7**
1.3 MANUFACTURED PRODUCTS	**64.231**	**135.0**	**136.5**	**141.9**	**141.5**	**141.1**
1.3.1 MANUFACTURE OF FOOD PRODUCTS	**9.122**	**157.9**	**156.6**	**163.7**	**164.6**	**163.3**
1.3.1.1 Processing and Preserving of meat	0.134	142.8	143.7	140.9	139.4	142.5
1.3.1.2 Processing and Preserving of fish, Crustaceans, Molluscs and products thereof	0.204	144.1	149.1	139.2	140.1	142.7
1.3.1.3 Processing and Preserving of fruit and Vegetables	0.138	122.3	120.9	127.4	127.4	127.5
1.3.1.4 Vegetable and Animal oils and Fats	2.643	187.2	180.1	173.3	174.8	169.2
1.3.1.5 Dairy products	1.165	149.4	148.3	168.2	168.4	169.6
1.3.1.6 Grain mill products	2.010	145.6	146.5	165.1	165.9	167.4
1.3.1.7 Starches and Starch products	0.110	133.3	138.3	163.6	160.7	158.1
1.3.1.8 Bakery products	0.215	146.2	150.0	163.4	163.5	166.1
1.3.1.9 Sugar, Molasses & honey	1.163	122.9	125.1	127.3	128.1	127.7
1.3.1.10 Cocoa, Chocolate and Sugar confectionery	0.175	130.5	132.0	135.4	136.4	138.3
1.3.1.11 Macaroni, Noodles, Couscous and Similar farinaceous products	0.026	136.7	131.4	162.5	159.8	148.7
1.3.1.12 Tea & Coffee products	0.371	171.1	175.4	178.5	177.0	172.7
1.3.1.13 Processed condiments & salt	0.163	157.5	157.4	178.0	178.4	181.8
1.3.1.14 Processed ready to eat food	0.024	137.0	136.3	142.9	142.0	140.4
1.3.1.15 Health supplements	0.225	153.5	153.1	183.8	182.2	181.8
1.3.1.16 Prepared animal feeds	0.356	200.9	199.5	206.5	212.4	208.8
1.3.2 MANUFACTURE OF BEVERAGES	**0.909**	**126.8**	**127.2**	**129.1**	**128.8**	**129.5**
1.3.2.1 Wines & spirits	0.408	123.6	124.1	129.7	130.0	131.4
1.3.2.2 Malt liquors and Malt	0.225	130.5	131.1	135.1	133.8	134.3
1.3.2.3 Soft drinks; Production of mineral waters and Other bottled waters	0.275	128.6	128.5	123.3	122.9	122.9
1.3.3 MANUFACTURE OF TOBACCO PRODUCTS	**0.514**	**160.2**	**161.9**	**164.2**	**165.4**	**164.3**
1.3.3.1 Tobacco products	0.514	160.2	161.9	164.2	165.4	164.3

No. 21: Wholesale Price Index (Contd.)

(Base: 2011-12 = 100)

Commodities	Weight	2021-22	2021	2022		
			Dec.	Oct.	Nov. (P)	Dec. (P)
1.3.4 MANUFACTURE OF TEXTILES	**4.881**	**135.2**	**139.2**	**142.5**	**140.3**	**138.4**
1.3.4.1 Preparation and Spinning of textile fibres	2.582	128.2	133.4	132.0	128.6	125.5
1.3.4.2 Weaving & Finishing of textiles	1.509	146.8	149.7	160.1	159.5	158.9
1.3.4.3 Knitted and Crocheted fabrics	0.193	125.5	127.5	132.5	130.6	127.6
1.3.4.4 Made-up textile articles, Except apparel	0.299	138.7	141.1	155.2	154.1	153.2
1.3.4.5 Cordage, Rope, Twine and Netting	0.098	168.5	167.1	156.2	151.9	151.7
1.3.4.6 Other textiles	0.201	126.2	129.3	130.4	130.6	131.5
1.3.5 MANUFACTURE OF WEARING APPAREL	**0.814**	**143.1**	**144.7**	**149.3**	**149.4**	**149.9**
1.3.5.1 Manufacture of Wearing Apparel (woven), Except fur Apparel	0.593	142.0	143.2	147.9	147.8	148.6
1.3.5.2 Knitted and Crocheted apparel	0.221	145.8	148.7	153.3	153.5	153.6
1.3.6 MANUFACTURE OF LEATHER AND RELATED PRODUCTS	**0.535**	**119.2**	**119.8**	**122.2**	**122.6**	**121.7**
1.3.6.1 Tanning and Dressing of leather; Dressing and Dyeing of fur	0.142	103.4	104.3	103.9	105.2	104.0
1.3.6.2 Luggage, HandbAgs, Saddlery and Harness	0.075	141.5	142.6	140.8	141.9	141.0
1.3.6.3 Footwear	0.318	121.0	121.4	126.0	125.8	125.1
1.3.7 MANUFACTURE OF WOOD AND PRODUCTS OF WOOD AND CORK	**0.772**	**141.0**	**142.5**	**142.9**	**143.3**	**143.7**
1.3.7.1 Saw milling and Planing of wood	0.124	128.8	131.2	138.7	138.5	139.3
1.3.7.2 Veneer sheets; Manufacture of plywood, Laminboard, Particle board and Other panels and Boards	0.493	141.9	143.1	141.1	141.0	141.3
1.3.7.3 Builder's carpentry and Joinery	0.036	193.9	194.5	205.7	206.6	206.6
1.3.7.4 Wooden containers	0.119	134.1	135.9	136.0	139.2	139.2
1.3.8 MANUFACTURE OF PAPER AND PAPER PRODUCTS	**1.113**	**137.5**	**141.2**	**152.8**	**151.2**	**148.2**
1.3.8.1 Pulp, Paper and Paperboard	0.493	141.4	145.3	159.3	158.3	156.6
1.3.8.2 Corrugated paper and Paperboard and Containers of paper and Paperboard	0.314	137.8	139.3	150.1	148.3	145.3
1.3.8.3 Other articles of paper and Paperboard	0.306	131.0	136.5	145.2	142.7	137.8
1.3.9 PRINTING AND REPRODUCTION OF RECORDED MEDIA	**0.676**	**157.8**	**162.6**	**172.4**	**171.8**	**176.8**
1.3.9.1 Printing	0.676	157.8	162.6	172.4	171.8	176.8
1.3.10 MANUFACTURE OF CHEMICALS AND CHEMICAL PRODUCTS	**6.465**	**133.5**	**136.8**	**146.3**	**145.3**	**144.2**
1.3.10.1 Basic chemicals	1.433	143.8	149.3	159.9	158.3	156.2
1.3.10.2 Fertilizers and Nitrogen compounds	1.485	129.6	131.1	148.0	148.1	147.6
1.3.10.3 Plastic and Synthetic rubber in primary form	1.001	140.3	142.6	140.6	137.5	136.0
1.3.10.4 Pesticides and Other agrochemical products	0.454	132.1	133.2	144.5	144.9	143.5
1.3.10.5 Paints, Varnishes and Similar coatings, Printing ink and Mastics	0.491	130.4	137.0	145.7	146.2	146.0
1.3.10.6 Soap and Detergents, Cleaning and Polishing preparations, Perfumes and Toilet preparations	0.612	128.1	130.9	142.8	142.8	142.3
1.3.10.7 Other chemical products	0.692	130.3	134.1	143.3	142.1	141.1
1.3.10.8 Man-made fibres	0.296	106.6	109.2	109.4	106.8	105.7
1.3.11 MANUFACTURE OF PHARMACEUTICALS, MEDICINAL CHEMICAL AND BOTANICAL PRODUCTS	**1.993**	**135.9**	**136.6**	**141.2**	**141.6**	**141.7**
1.3.11.1 Pharmaceuticals, Medicinal chemical and Botanical products	1.993	135.9	136.6	141.2	141.6	141.7
1.3.12 MANUFACTURE OF RUBBER AND PLASTICS PRODUCTS	**2.299**	**124.8**	**127.1**	**129.2**	**128.5**	**128.5**
1.3.12.1 Rubber Tyres and Tubes; Retreading and Rebuilding of Rubber Tyres	0.609	104.3	106.5	113.2	113.7	113.6
1.3.12.2 Other Rubber Products	0.272	101.9	104.6	105.7	105.9	105.9
1.3.12.3 Plastics products	1.418	138.0	140.3	140.6	139.3	139.2
1.3.13 MANUFACTURE OF OTHER NON-METALLIC MINERAL PRODUCTS	**3.202**	**123.7**	**125.1**	**133.5**	**134.2**	**134.7**
1.3.13.1 Glass and Glass products	0.295	139.1	143.9	158.7	159.9	163.4
1.3.13.2 Refractory products	0.223	115.6	119.0	119.1	119.1	118.9
1.3.13.3 Clay Building Materials	0.121	119.3	120.9	136.5	139.3	137.5
1.3.13.4 Other Porcelain and Ceramic Products	0.222	112.9	114.3	117.5	118.5	118.5
1.3.13.5 Cement, Lime and Plaster	1.645	126.4	127.1	136.7	137.3	137.6

No. 21: Wholesale Price Index (Contd.)

(Base: 2011-12 = 100)

Commodities	Weight	2021-22	2021	2022		
			Dec.	Oct.	Nov. (P)	Dec. (P)
1.3.13.6 Articles of Concrete, Cement and Plaster	0.292	129.2	129.8	134.3	134.8	134.9
1.3.13.7 Cutting, Shaping and Finishing of Stone	0.234	122.2	120.2	125.9	126.1	127.1
1.3.13.8 Other Non-Metallic Mineral Products	0.169	90.6	96.6	105.4	106.6	106.6
1.3.14 MANUFACTURE OF BASIC METALS	**9.646**	**140.1**	**141.9**	**145.6**	**143.5**	**143.0**
1.3.14.1 Inputs into steel making	1.411	150.8	153.6	155.8	152.6	150.4
1.3.14.2 Metallic Iron	0.653	147.7	145.2	164.2	157.2	157.6
1.3.14.3 Mild Steel - Semi Finished Steel	1.274	119.1	118.2	126.1	123.8	122.1
1.3.14.4 Mild Steel -Long Products	1.081	137.4	139.0	147.9	145.0	145.7
1.3.14.5 Mild Steel - Flat products	1.144	157.5	160.6	148.7	146.4	143.9
1.3.14.6 Alloy steel other than Stainless Steel- Shapes	0.067	133.7	130.7	149.0	144.7	141.4
1.3.14.7 Stainless Steel - Semi Finished	0.924	141.7	142.8	146.1	143.2	142.0
1.3.14.8 Pipes & tubes	0.205	155.9	161.8	175.6	174.4	171.7
1.3.14.9 Non-ferrous metals incl. precious metals	1.693	139.7	143.8	141.1	140.7	141.9
1.3.14.10 Castings	0.925	118.9	120.7	130.6	131.7	132.6
1.3.14.11 Forgings of steel	0.271	159.0	160.6	173.4	172.6	175.7
1.3.15 MANUFACTURE OF FABRICATED METAL PRODUCTS, EXCEPT MACHINERY AND EQUIPMENT	**3.155**	**130.5**	**133.1**	**137.7**	**138.3**	**137.9**
1.3.15.1 Structural Metal Products	1.031	123.9	124.8	131.3	133.2	132.7
1.3.15.2 Tanks, Reservoirs and Containers of Metal	0.660	156.2	162.1	157.0	156.5	156.3
1.3.15.3 Steam generators, Except Central Heating Hot Water Boilers	0.145	96.1	94.8	103.1	102.7	98.7
1.3.15.4 Forging, Pressing, Stamping and Roll-Forming of Metal; Powder Metallurgy	0.383	117.5	122.6	135.3	135.9	134.7
1.3.15.5 Cutlery, Hand Tools and General Hardware	0.208	108.2	109.6	113.2	113.3	113.3
1.3.15.6 Other Fabricated Metal Products	0.728	136.5	138.3	144.2	144.4	144.9
1.3.16 MANUFACTURE OF COMPUTER, ELECTRONIC AND OPTICAL PRODUCTS	**2.009**	**113.7**	**113.5**	**117.1**	**116.9**	**117.1**
1.3.16.1 Electronic Components	0.402	106.0	107.5	115.6	115.6	115.1
1.3.16.2 Computers and Peripheral Equipment	0.336	134.7	134.9	134.9	134.9	135.0
1.3.16.3 Communication Equipment	0.310	121.7	120.5	129.6	129.6	130.7
1.3.16.4 Consumer Electronics	0.641	102.1	100.8	100.4	99.5	100.2
1.3.16.5 Measuring, Testing, Navigating and Control equipment	0.181	108.4	108.5	113.5	113.5	112.5
1.3.16.6 Watches and Clocks	0.076	145.6	145.6	151.6	153.1	151.3
1.3.16.7 Irradiation, Electromedical and Electrotherapeutic equipment	0.055	106.1	109.2	111.6	111.6	112.2
1.3.16.8 Optical instruments and Photographic equipment	0.008	98.3	98.4	101.6	101.6	101.7
1.3.17 MANUFACTURE OF ELECTRICAL EQUIPMENT	**2.930**	**122.3**	**123.6**	**129.2**	**128.8**	**129.5**
1.3.17.1 Electric motors, Generators, Transformers and Electricity distribution and Control apparatus	1.298	119.7	120.8	128.1	126.6	127.7
1.3.17.2 Batteries and Accumulators	0.236	121.8	123.8	133.1	133.2	133.5
1.3.17.3 Fibre optic cables for data transmission or live transmission of images	0.133	103.1	100.4	119.9	120.4	118.5
1.3.17.4 Other electronic and Electric wires and Cables	0.428	140.7	143.1	141.4	142.7	144.0
1.3.17.5 Wiring devices, Electric lighting & display equipment	0.263	114.5	115.6	117.5	117.9	117.8
1.3.17.6 Domestic appliances	0.366	128.4	130.8	134.7	134.6	133.9
1.3.17.7 Other electrical equipment	0.206	113.2	113.9	117.5	117.8	119.7
1.3.18 MANUFACTURE OF MACHINERY AND EQUIPMENT	**4.789**	**120.0**	**121.1**	**126.5**	**126.6**	**126.7**
1.3.18.1 Engines and Turbines, Except aircraft, Vehicle and Two wheeler engines	0.638	119.2	121.4	126.9	126.6	125.7
1.3.18.2 Fluid power equipment	0.162	122.1	123.1	127.4	128.3	129.2
1.3.18.3 Other pumps, Compressors, Taps and Valves	0.552	115.1	116.4	117.1	117.1	117.5
1.3.18.4 Bearings, Gears, Gearing and Driving elements	0.340	118.1	119.5	124.4	123.9	124.5
1.3.18.5 Ovens, Furnaces and Furnace burners	0.008	74.2	73.0	79.9	80.9	81.2
1.3.18.6 Lifting and Handling equipment	0.285	120.0	122.7	125.9	126.1	126.4

No. 21: Wholesale Price Index (Concld.)

(Base: 2011-12 = 100)

Commodities	Weight	2021-22	2021	2022		
			Dec.	Oct.	Nov. (P)	Dec. (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	130.6	141.7	142.6	142.5
1.3.18.9 Agricultural and Forestry machinery	0.833	128.4	130.5	138.0	138.8	138.6
1.3.18.10 Metal-forming machinery and Machine tools	0.224	114.2	114.6	121.2	121.1	121.1
1.3.18.11 Machinery for mining, Quarrying and Construction	0.371	78.2	78.5	85.2	85.7	86.5
1.3.18.12 Machinery for food, Beverage and Tobacco processing	0.228	130.1	131.0	129.8	127.8	125.3
1.3.18.13 Machinery for textile, Apparel and Leather production	0.192	125.3	125.8	132.6	132.2	133.6
1.3.18.14 Other special-purpose machinery	0.468	134.7	136.2	141.2	141.6	142.2
1.3.18.15 Renewable electricity generating equipment	0.046	66.6	66.8	70.3	70.3	69.7
1.3.19 MANUFACTURE OF MOTOR VEHICLES, TRAILERS AND SEMI-TRAILERS	**4.969**	**122.7**	**124.1**	**128.1**	**128.0**	**127.5**
1.3.19.1 Motor vehicles	2.600	122.6	123.5	125.8	126.4	125.7
1.3.19.2 Parts and Accessories for motor vehicles	2.368	122.7	124.7	130.6	129.8	129.4
1.3.20 MANUFACTURE OF OTHER TRANSPORT EQUIPMENT	**1.648**	**131.7**	**133.1**	**137.3**	**137.5**	**137.9**
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	103.8	104.3	106.1	104.4
1.3.20.3 Motor cycles	1.302	131.0	132.8	137.4	137.6	138.3
1.3.20.4 Bicycles and Invalid carriages	0.117	137.2	138.0	140.4	140.2	139.2
1.3.20.5 Other transport equipment	0.002	135.9	137.4	153.4	154.3	157.7
1.3.21 MANUFACTURE OF FURNITURE	**0.727**	**150.1**	**154.3**	**156.2**	**156.1**	**157.2**
1.3.21.1 Furniture	0.727	150.1	154.3	156.2	156.1	157.2
1.3.22 OTHER MANUFACTURING	**1.064**	**137.9**	**136.7**	**144.9**	**146.9**	**152.5**
1.3.22.1 Jewellery and Related articles	0.996	136.0	134.8	143.4	145.7	151.7
1.3.22.2 Musical instruments	0.001	192.3	195.7	194.5	193.9	182.7
1.3.22.3 Sports goods	0.012	140.4	142.5	151.7	152.0	151.9
1.3.22.4 Games and Toys	0.005	150.9	151.1	159.0	159.3	159.3
1.3.22.5 Medical and Dental instruments and Supplies	0.049	171.8	171.1	170.5	168.0	168.0
2 FOOD INDEX	**24.378**	**163.8**	**169.2**	**177.7**	**174.3**	**170.3**

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-November		November	
				2021-22	2022-23	2021	2022
	1	2	3	4	5	6	7
General Index	100.00	118.1	131.6	127.6	134.6	128.0	137.1
1 Sectoral Classification							
1.1 Mining	14.37	101.0	113.3	105.8	110.8	111.8	122.7
1.2 Manufacturing	77.63	117.2	131.0	127.2	133.6	128.9	136.7
1.3 Electricity	7.99	157.6	170.1	170.2	186.9	147.9	166.7
2 Use-Based Classification							
2.1 Primary Goods	34.05	118.1	129.5	125.0	134.6	126.5	132.5
2.2 Capital Goods	8.22	75.9	88.7	83.9	96.4	82.1	99.1
2.3 Intermediate Goods	17.22	124.7	143.9	140.2	147.2	141.3	145.6
2.4 Infrastructure/ Construction Goods	12.34	124.7	148.2	143.0	153.6	141.5	159.6
2.5 Consumer Durables	12.84	101.2	113.8	110.3	116.6	106.6	112.0
2.6 Consumer Non-Durables	15.33	142.1	146.7	144.6	141.0	147.9	161.1

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 - December			
	2022-23 (Revised Estimates)	2022-23 (Actuals)	2021-22 (Actuals)	Percentage to Revised Estimates	
				2022-23	2021-22
	1	2	3	4	5
1 Revenue Receipts	**2348413**	**1769994**	**1733223**	**75.4**	**83.4**
1.1 Tax Revenue (Net)	2086662	1555692	1473809	74.6	83.5
1.2 Non-Tax Revenue	261751	214302	259414	81.9	82.7
2 Non-Debt Capital Receipt	**83500**	**55106**	**28469**	**66.0**	**28.5**
2.1 Recovery of Loans	23500	16435	19105	69.9	86.9
2.2 Other Receipts	60000	38671	9364	64.5	12.0
3 Total Receipts (excluding borrowings) (1+2)	**2431913**	**1825100**	**1761692**	**75.0**	**80.9**
4 Revenue Expenditure	3458959	2328132	2129414	67.3	67.2
of which:					
4.1 Interest Payments	940651	680853	565864	72.4	69.5
5 Capital Expenditure	728274	489944	391644	67.3	65.0
6 Total Expenditure (4+5)	**4187232**	**2818076**	**2521058**	**67.3**	**66.9**
7 Revenue Deficit (4-1)	**1110546**	**558138**	**396191**	**50.3**	**36.4**
8 Fiscal Deficit (6-3)	**1755319**	**992976**	**759366**	**56.6**	**47.7**
9 Gross Primary Deficit (8-4.1)	**814668**	**312123**	**193502**	**38.3**	**24.9**

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	2021	2022					
		Dec. 31	Nov. 25	Dec. 2	Dec. 9	Dec. 16	Dec. 23	Dec. 30
	1	2	3	4	5	6	7	8
1 91-day								
1.1 Banks	5310	9354	16804	14896	15637	14258	14138	14180
1.2 Primary Dealers	16705	26882	23433	21138	22793	21908	19208	15538
1.3 State Governments	31320	103016	45031	43031	42231	44231	45431	47131
1.4 Others	72109	106541	105524	107985	106618	107950	112385	117108
2 182-day								
2.1 Banks	70130	56154	68750	65891	67923	63346	63319	62858
2.2 Primary Dealers	63669	32988	53570	51829	52290	52369	51974	45722
2.3 State Governments	15763	6458	27598	26098	26098	24513	23513	22513
2.4 Others	69259	19711	81725	79438	71875	69941	65133	68212
3 364-day								
3.1 Banks	112386	115964	108145	109624	109049	104092	100142	108294
3.2 Primary Dealers	160461	117965	183977	179436	178688	182441	187924	187403
3.3 State Governments	22836	21643	45396	44390	46295	46400	46500	42776
3.4 Others	118392	99125	136944	138787	137740	135924	135026	130815
4 14-day Intermediate								
4.1 Banks								
4.2 Primary Dealers								
4.3 State Governments	289362	139739	194863	152813	123956	174753	185087	188391
4.4 Others	659	761	1582	390	898	763	455	1019
Total Treasury Bills (Excluding 14 day Intermediate T Bills) #	758339	715802	896896	882543	877237	867372	864693	862547

14D intermediate T-Bills are non-marketable unlike 91D, 182D and 364D T-Bills. These bills are 'intermediate' by nature as these are liquidated to replenish shortfall in the daily minimum cash balances of State Governments

Note: Primary Dealers (PDs) include banks undertaking PD business.

No. 25: Auctions of Treasury Bills

(Amount in ₹ Crore)

Date of Auction	Notified Amount	Bids Received			Bids Accepted			Total Issue (6+7)	Cut-off Price	Implicit Yield at Cut-off Price (per cent)
		Number	Total Face Value		Number	Total Face Value				
			Competitive	Non-Competitive		Competitive	Non-Competitive			
	1	2	3	4	5	6	7	8	9	10
91-day Treasury Bills										
2022-23										
Nov. 30	10000	146	45182	1045	29	9955	1045	11000	98.43	6.3977
Dec. 7	10000	167	61321	6234	37	9966	6234	16200	98.42	6.4474
Dec. 14	10000	170	64308	11239	22	9961	11239	21200	98.43	6.3977
Dec. 21	10000	146	56943	3739	26	9961	3739	13700	98.43	6.3940
Dec. 28	10000	129	47976	3245	15	9955	3245	13200	98.45	6.3099
182-day Treasury Bills										
2022-23										
Nov. 30	6000	146	21712	20	36	5980	20	6000	96.76	6.7254
Dec. 7	6000	130	19356	19	51	5981	19	6000	96.73	6.7880
Dec. 14	6000	148	22610	379	52	5972	379	6350	96.74	6.7529
Dec. 21	6000	137	21032	18	34	5982	18	6000	96.74	6.7599
Dec. 28	6000	119	19738	32	17	5968	32	6000	96.75	6.7400
364-day Treasury Bills										
2022-23										
Nov. 30	6000	156	18716	1104	54	5980	1104	7084	93.59	6.8678
Dec. 7	6000	198	24777	1953	51	5952	1953	7905	93.55	6.9194
Dec. 14	6000	187	31302	137	39	5967	137	6105	93.59	6.8678
Dec. 21	6000	154	26179	124	36	5977	124	6100	93.56	6.9000
Dec. 28	6000	161	23890	90	22	5986	90	6076	93.57	6.8907

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
December 1, 2022	4.30-5.85	5.76
December 2, 2022	4.30-5.85	5.79
December 3, 2022	5.15-5.55	5.39
December 5, 2022	4.50-5.80	5.76
December 6, 2022	4.15-5.80	5.76
December 7, 2022	4.30-6.15	6.07
December 8, 2022	4.30-6.15	6.09
December 9, 2022	4.30-6.18	6.10
December 12, 2022	4.30-6.15	6.08
December 13, 2022	4.30-6.20	6.08
December 14, 2022	4.40-6.15	6.09
December 15, 2022	4.30-6.40	6.19
December 16, 2022	4.30-6.60	6.39
December 17, 2022	5.10-6.10	5.81
December 19, 2022	4.30-6.60	6.50
December 20, 2022	4.30-6.60	6.49
December 21, 2022	4.30-6.60	6.44
December 22, 2022	4.30-6.60	6.49
December 23, 2022	4.30-6.55	6.46
December 26, 2022	4.30-6.55	6.46
December 27, 2022	4.30-6.75	6.31
December 28, 2022	4.30-6.50	6.29
December 29, 2022	4.30-6.60	6.36
December 30, 2022	4.30-6.65	6.49
December 31, 2022	5.15-6.20	5.97
January 2, 2023	4.30-6.25	6.16
January 3, 2023	4.30-6.15	6.08
January 4, 2023	4.30-6.25	6.06
January 5, 2023	4.30-6.10	6.06
January 6, 2023	4.30-6.10	6.05
January 7, 2023	5.15-6.05	5.74
January 9, 2023	4.40-6.12	6.06
January 10, 2023	4.55-6.12	6.06
January 11, 2023	4.55-6.12	6.06
January 12, 2023	4.55-6.15	6.06
January 13, 2023	4.55-6.30	6.21

Note: Includes Notice Money.

No. 27: Certificates of Deposit

Item	2021	2022			
	Dec. 31	Nov. 18	Dec. 2	Dec. 16	Dec. 30
	1	2	3	4	5
1 Amount Outstanding (₹ Crore)	84702.40	257555.16	274602.72	272570.90	293983.09
1.1 Issued during the fortnight (₹ Crore)	17497.20	25534.76	32831.31	31706.05	35845.62
2 Rate of Interest (per cent)	3.74-5.31	6.64-7.28	6.77-7.20	6.71-7.59	6.65-7.88

No. 28: Commercial Paper

Item	2021	2022			
	Dec. 31	Nov. 15	Nov. 30	Dec. 15	Dec. 31
	1	2	3	4	5
1 Amount Outstanding (₹ Crore)	350068.65	381455.70	362307.65	363736.15	359673.30
1.1 Reported during the fortnight (₹ Crore)	87182.55	55158.95	66918.15	65701.70	54575.60
2 Rate of Interest (per cent)	3.50-12.31	6.21-13.78	6.50-12.01	6.34-13.75	6.58-13.75

No. 29: Average Daily Turnover in Select Financial Markets

(₹ Crore)

Item	2021-22	2021	2022					
		Dec. 31	Nov. 25	Dec. 2	Dec. 9	Dec. 16	Dec. 23	Dec. 30
	1	2	3	4	5	6	7	8
1 Call Money	14515	13822	19325	15885	16362	17828	18447	19107
2 Notice Money	2122	3125	192	4526	492	5409	164	4418
3 Term Money	515	640	332	944	282	853	717	867
4 Triparty Repo	618526	834645	710250	760797	579566	719115	684319	790750
5 Market Repo	383844	402671	489094	550005	438455	524436	502373	600368
6 Repo in Corporate Bond	4373	0	473	312	1723	2879	2006	208
7 Forex (US $ million)	67793	75085	73613	95133	72719	84489	80619	75159
8 Govt. of India Dated Securities	51300	37640	56440	66339	73928	57167	43412	33290
9 State Govt. Securities	5570	6397	4989	3496	2972	2951	4207	3177
10 Treasury Bills								
10.1 91-Day	4690	4503	5431	2839	3878	3307	3669	2219
10.2 182-Day	3440	1706	2761	3823	1731	1530	3493	2854
10.3 364-Day	3530	2120	2061	1553	1998	1451	2998	2836
10.4 Cash Management Bills								
11 Total Govt. Securities (8+9+10)	68530	52366	71681	78050	84508	66406	57779	44376
11.1 RBI	–	1662	1994	736	1131	1310	1036	34

No. 30: New Capital Issues by Non-Government Public Limited Companies

(Amount in ₹ Crore)

Security & Type of Issue	2021-22		2021-22 (Apr.-Dec.)		2022-23 (Apr.-Dec.) *		Dec. 2021		Dec. 2022 *	
	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**	**124**	**130082**	**162**	**40509**	**30**	**18258**	**21**	**5235**
1A Premium	154	136893	117	128289	150	38170	28	17906	20	5070
1.1 Public	121	112567	96	104847	122	36957	20	15681	18	5119
1.1.1 Premium	119	111314	95	103702	119	35737	20	15444	18	4989
1.2 Rights	43	26327	28	25236	40	3552	10	2577	3	116
1.2.1 Premium	35	25580	22	24587	31	2433	8	2462	2	80
2 Preference Shares	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**
2.1 Public	–	–	–	–	–	–	–	–	–	–
2.2 Rights	–	–	–	–	–	–	–	–	–	–
3 Bonds & Debentures	**28**	**11589**	**24**	**10717**	**24**	**6872**	**4**	**1584**	**2**	**249**
3.1 Convertible	–	–	–	–	–	–	–	–	–	–
3.1.1 Public	–	–	–	–	–	–	–	–	–	–
3.1.2 Rights	–	–	–	–	–	–	–	–	–	–
3.2 Non-Convertible	28	11589	24	10717	24	6872	4	1584	2	249
3.2.1 Public	28	11589	24	10717	24	6872	4	1584	2	249
3.2.2 Rights	–	–	–	–	–	–	–	–	–	–
4 Total(1+2+3)	**192**	**150484**	**148**	**140799**	**186**	**47381**	**34**	**19843**	**23**	**5484**
4.1 Public	149	124157	120	115563	146	43829	24	17266	20	5368
4.2 Rights	43	26327	28	25236	40	3552	10	2577	3	116

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	2021	2022				
			Dec.	Aug.	Sep.	Oct.	Nov.	Dec.
		1	2	3	4	5	6	7
1 Exports	₹ Crore	3147021	295989	294599	283946	260213	285453	313687
	US $ Million	422004	39270	37031	35391	31602	34892	38039
1.1 Oil	₹ Crore	503850	50912	67589	58296	51863	66154	68885
	US $ Million	67472	6755	8496	7266	6299	8086	8353
1.2 Non-oil	₹ Crore	2643171	245077	227010	225650	208350	219299	244803
	US $ Million	354533	32515	28535	28125	25304	26806	29686
2 Imports	₹ Crore	4572775	454721	493688	518793	485856	476301	496308
	US $ Million	613052	60330	62056	64662	59006	58220	60185
2.1 Oil	₹ Crore	1207803	124324	139209	150772	149621	147700	160344
	US $ Million	161810	16495	17498	18792	18171	18054	19444
2.2 Non-oil	₹ Crore	3364972	330397	354479	368021	336235	328601	335964
	US $ Million	451242	43835	44558	45870	40835	40166	40741
3 Trade Balance	₹ Crore	-1425753	-158731	-199089	-234847	-225644	-190848	-182621
	US $ Million	-191048	-21060	-25025	-29271	-27404	-23328	-22145
3.1 Oil	₹ Crore	-703953	-73411	-71619	-92476	-97758	-81547	-91459
	US $ Million	-94339	-9740	-9003	-11526	-11872	-9968	-11091
3.2 Non-oil	₹ Crore	-721800	-85320	-127469	-142371	-127886	-109301	-91161
	US $ Million	-96709	-11320	-16023	-17745	-15531	-13360	-11055

Source: DGCI&S and Ministry of Commerce & Industry.

No. 32: Foreign Exchange Reserves

Item	Unit	2022			2023			
		Jan. 28	Dec. 23	Dec. 30	Jan. 6	Jan. 13	Jan. 20	Jan. 27
		1	2	3	4	5	6	7
1 Total Reserves	**₹ Crore**	**4727298**	**4663730**	**4656002**	**4645635**	**4652927**	**4654872**	**4702189**
	US $ Million	**629755**	**562808**	**562851**	**561583**	**572000**	**573727**	**576761**
1.1 Foreign Currency Assets	₹ Crore	4249350	4130758	4121067	4106795	4112093	4108235	4149889
	US $ Million	566077	498490	498188	496441	505519	506358	509018
1.2 Gold	₹ Crore	296461	339492	341827	345658	348887	354646	358942
	US $ Million	39493	40969	41323	41784	42890	43712	44027
	Volume (Metric Tonnes)	755.42	786.28	787.37	787.37	787.37	787.37	787.37
1.3 SDRs	SDRs Million	13657	13662	13662	13662	13662	13662	13662
	₹ Crore	142706	150729	150400	150698	149382	149543	150649
	US $ Million	19011	18190	18182	18217	18364	18432	18478
1.4 Reserve Tranche Position in IMF	₹ Crore	38780	42751	42708	42485	42565	42447	42709
	US $ Million	5174	5159	5159	5141	5227	5226	5238

* Difference, if any, is due to rounding off.

No. 33: Non-Resident Deposits

(US$ Million)

Scheme	Outstanding				Flows	
	2021-22	2021	2022		2021-22	2022-23
		Dec.	Nov.	Dec.	Apr.-Dec.	Apr.-Dec.
	1	2	3	4	5	6
1 NRI Deposits	**139022**	**141908**	**134500**	**134485**	**3075**	**5408**
1.1 FCNR(B)	16918	18154	16719	17558	-2319	640
1.2 NR(E)RA	100801	102916	95318	94469	2925	1813
1.3 NRO	21303	20838	22463	22458	2469	2955

No. 34: Foreign Investment Inflows

(US$ Million)

Item	2021-22	2021-22	2022-23	2021	2022	
		Apr.-Dec.	Apr.-Dec.	Dec.	Nov.	Dec.
	1	2	3	4	5	6
1.1 Net Foreign Direct Investment (1.1.1–1.1.2)	**38587**	**24810**	**22341**	**1351**	**-2428**	**1954**
1.1.1 Direct Investment to India (1.1.1.1–1. 1.1.2)	**56231**	**38977**	**32492**	**2851**	**-172**	**3637**
1.1.1.1 Gross Inflows/Gross Investments	**84835**	**61554**	**55274**	**6249**	**4335**	**6514**
1.1.1.1.1 Equity	59684	43838	37717	3991	2491	4491
1.1.1.1.1.1 Government (SIA/FIPB)	1698	1574	653	25	4	90
1.1.1.1.1.2 RBI	42932	30646	29649	3044	2089	3988
1.1.1.1.1.3 Acquisition of shares	14143	10953	6445	842	319	333
1.1.1.1.1.4 Equity capital of unincorporated bodies	910	664	971	80	80	80
1.1.1.1.2 Reinvested earnings	19347	14118	14115	1691	1691	1691
1.1.1.1.3 Other capital	5805	3598	3442	567	153	332
1.1.1.2 Repatriation/Disinvestment	**28605**	**22577**	**22783**	**3397**	**4507**	**2877**
1.1.1.2.1 Equity	27189	22012	20814	3312	4210	2439
1.1.1.2.2 Other capital	1416	565	1969	86	297	437
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**	**14167**	**10151**	**1501**	**2255**	**1683**
1.1.2.1 Equity capital	10061	7929	6523	1022	1457	1272
1.1.2.2 Reinvested Earnings	3379	2534	2574	282	282	282
1.1.2.3 Other Capital	7604	5989	3701	389	1030	342
1.1.2.4 Repatriation/Disinvestment	3400	2285	2647	192	513	214
1.2 Net Portfolio Investment (1.2.1+1.2.2+1.2.3–1.2.4)	**-16777**	**-1562**	**-3238**	**-3736**	**4750**	**-436**
1.2.1 GDRs/ADRs	–	–	–	–	–	–
1.2.2 FIIs	-14071	218	-2978	-3356	4727	-554
1.2.3 Offshore funds and others	–	–	–	–	–	–
1.2.4 Portfolio investment by India	2706	1780	260	379	-24	-119
1 Foreign Investment Inflows	**21809**	**23248**	**19103**	**-2385**	**2323**	**1519**

No. 35: Outward Remittances under the Liberalised Remittance Scheme (LRS) for Resident Individuals

(US$ Million)

Item	2021-22	2021	2022		
		Dec.	Oct.	Nov.	Dec.
	1	2	3	4	5
1 Outward Remittances under the LRS	**19610.77**	**1773.56**	**1924.09**	**1992.70**	**2068.26**
1.1 Deposit	830.05	56.64	64.28	60.72	60.49
1.2 Purchase of immovable property	112.90	10.77	15.28	17.17	13.26
1.3 Investment in equity/debt	746.57	54.30	111.41	86.58	119.58
1.4 Gift	2336.29	214.59	208.11	220.90	202.76
1.5 Donations	16.55	2.69	1.68	0.98	0.87
1.6 Travel	6909.04	884.10	973.50	1030.64	1137.93
1.7 Maintenance of close relatives	3302.37	281.46	280.67	305.35	274.79
1.8 Medical Treatment	37.79	3.33	4.02	4.76	4.36
1.9 Studies Abroad	5165.33	253.69	217.87	211.65	237.65
1.10 Others	153.88	11.99	47.27	53.95	16.59

No. 36: Indices of Nominal Effective Exchange Rate (NEER) and Real Effective Exchange Rate (REER) of the Indian Rupee

Item	2020-21	2021-22	2022		2023
			January	December	January
	1	2	3	4	5
40-Currency Basket (Base: 2015-16=100)					
1 Trade-weighted					
1.1 NEER	93.92	93.13	93.94	89.49	89.24
1.2 REER	103.46	104.66	105.29	100.00	99.62
2 Export-weighted					
2.1 NEER	93.59	93.55	94.70	90.68	90.66
2.2 REER	102.96	103.48	104.18	98.40	98.24
6-Currency Basket (Trade-weighted)					
1 Base: 2015-16 = 100					
1.1 NEER	88.45	87.03	87.60	83.71	83.17
1.2 REER	101.84	102.27	102.96	99.40	99.20
2 Base: 2020-21 = 100					
2.1 NEER	100.00	98.39	99.03	94.64	94.03
2.2 REER	100.00	100.42	101.10	97.61	97.41

No. 37: External Commercial Borrowings (ECBs) – Registrations

(Amount in US$ Million)

Item	2021-22	2021	2022	
		Dec	Nov	Dec
	1	2	3	4
1 Automatic Route				
1.1 Number	1086	139	92	99
1.2 Amount	28851	4374	5203	2768
2 Approval Route				
2.1 Number	18	1	0	0
2.2 Amount	11035	1175	0	0
3 Total (1+2)				
3.1 Number	1104	140	92	99
3.2 Amount	39886	5549	5203	2768
4 Weighted Average Maturity (in years)	8.00	5.30	4.70	7.20
5 Interest Rate (per cent)				
5.1 Weighted Average Margin over 6-month LIBOR or reference rate for Floating Rate Loans	1.71	1.01	1.62	1.68
5.2 Interest rate range for Fixed Rate Loans	0.00-10.50	0.00-10.25	0.00-11.80	0.00-10.35
Borrower Category				
I. Corporate Manufacturing	12244	442	2116	522
II. Corporate-Infrastructure	17023	2584	2971	28
a.) Transport	1597	109	0	0
b.) Energy	8215	959	1192	6
c.) Water and Sanitation	10	0	14	0
d.) Communication	1,258	5	1,515	22
e.) Social and Commercial Infrastructure	0	0	0	0
f.) Exploration,Mining and Refinery	4691	1100	250	0
g.) Other Sub-Sectors	1252	411	0	0
III. Corporate Service-Sector	1570	291	13	36
IV. Other Entities	609	500	0	0
a.) units in SEZ	9	0	0	0
b.) SIDBI			0	0
c.) Exim Bank	600	500	0	0
V. Banks	100	0	0	0
VI. Financial Institution (Other than NBFC)	4	0	0	0
VII. NBFCs	7995	1690	81	2148
a). NBFC- IFC/AFC	5621	1275	0	1418
b). NBFC-MFI	93	17	31	3
c). NBFC-Others	2282	398	50	727
VIII. Non-Government Organization (NGO)	0	0	0	0
IX. Micro Finance Institution (MFI)	0	0	0	0
X. Others	341	42	22	34

No. 38: India's Overall Balance of Payments

(US$ Million)

Item	Jul-Sep 2021			Jul-Sep 2022(P)		
	Credit	Debit	Net	Credit	Debit	Net
	1	2	3	4	5	6
Overall Balance of Payments(1+2+3)	**405412**	**374223**	**31189**	**378470**	**408849**	**-30379**
1 CURRENT ACCOUNT (1.1+ 1.2)	**194262**	**203996**	**-9734**	**225210**	**261601**	**-36391**
1.1 MERCHANDISE	**104769**	**149280**	**-44511**	**111973**	**195519**	**-83546**
1.2 INVISIBLES (1.2.1+1.2.2+1.2.3)	**89494**	**54717**	**34777**	**113237**	**66082**	**47155**
1.2.1 Services	61418	35839	25579	79986	45554	34432
1.2.1.1 Travel	2147	3919	-1772	5775	7539	-1764
1.2.1.2 Transportation	7581	8181	-600	9533	11337	-1804
1.2.1.3 Insurance	795	575	220	756	586	170
1.2.1.4 G.n.i.e.	217	198	19	183	219	-36
1.2.1.5 Miscellaneous	50678	22965	27713	63738	25872	37866
1.2.1.5.1 Software Services	29965	3184	26781	36228	3546	32681
1.2.1.5.2 Business Services	13858	12457	1401	19141	13964	5178
1.2.1.5.3 Financial Services	1303	1463	-160	2113	1600	514
1.2.1.5.4 Communication Services	766	275	491	803	399	403
1.2.2 Transfers	21154	2163	18991	27462	2711	24751
1.2.2.1 Official	18	239	-221	52	292	-240
1.2.2.2 Private	21135	1924	19212	27410	2419	24991
1.2.3 Income	6922	16714	-9792	5789	17817	-12028
1.2.3.1 Investment Income	5425	15960	-10535	4159	16962	-12803
1.2.3.2 Compensation of Employees	1497	754	743	1630	854	775
2 CAPITAL ACCOUNT (2.1+2.2+2.3+2.4+2.5)	**209849**	**170227**	**39622**	**153260**	**146342**	**6918**
2.1 Foreign Investment (2.1.1+2.1.2)	**132472**	**119898**	**12575**	**99726**	**86757**	**12969**
2.1.1 Foreign Direct Investment	20541	11844	8697	18048	11611	6437
2.1.1.1 In India	19375	6475	12900	16844	7803	9041
2.1.1.1.1 Equity	13806	6259	7548	10699	7111	3588
2.1.1.1.2 Reinvested Earnings	4668		4668	4667		4667
2.1.1.1.3 Other Capital	900	216	684	1478	692	786
2.1.1.2 Abroad	1167	5369	-4203	1204	3808	-2603
2.1.1.2.1 Equity	1167	2824	-1658	1204	1782	-577
2.1.1.2.2 Reinvested Earnings	0	845	-845	0	865	-865
2.1.1.2.3 Other Capital	0	1700	-1700	0	1161	-1161
2.1.2 Portfolio Investment	111931	108054	3877	81678	75146	6532
2.1.2.1 In India	110448	105904	4544	81375	74473	6901
2.1.2.1.1 FIIs	110448	105904	4544	81375	74473	6901
2.1.2.1.1.1 Equity	95335	94718	618	72212	66210	6003
2.1.2.1.1.2 Debt	15112	11186	3926	9163	8264	899
2.1.2.1.2 ADR/GDRs	0	0	0	0	0	0
2.1.2.2 Abroad	1483	2150	-666	303	673	-370
2.2 Loans (2.2.1+2.2.2+2.2.3)	**25723**	**17888**	**7834**	**27520**	**22027**	**5493**
2.2.1 External Assistance	2418	1290	1129	2020	1523	497
2.2.1.1 By India	13	16	-3	11	22	-11
2.2.1.2 To India	2406	1273	1132	2009	1501	508
2.2.2 Commercial Borrowings	9283	4941	4342	5351	5463	-112
2.2.2.1 By India	282	249	33	359	100	258
2.2.2.2 To India	9001	4692	4309	4993	5363	-370
2.2.3 Short Term to India	14021	11658	2364	20149	15041	5108
2.2.3.1 Buyers' credit & Suppliers' Credit >180 days	9615	11658	-2043	17152	15041	2111
2.2.3.2 Suppliers' Credit up to 180 days	4407	0	4407	2997	0	2997
2.3 Banking Capital (2.3.1+2.3.2)	**20817**	**20457**	**360**	**15567**	**24013**	**-8447**
2.3.1 Commercial Banks	20473	20457	17	15567	24012	-8445
2.3.1.1 Assets	10097	9858	239	134	10646	-10512
2.3.1.2 Liabilities	10376	10598	-222	15433	13366	2067
2.3.1.2.1 Non-Resident Deposits	8574	9357	-783	13993	11504	2490
2.3.2 Others	344	0	344	0	2	-2
2.4 Rupee Debt Service	0	2	-2	0	1	-1
2.5 Other Capital	30837	11983	18855	10447	13543	-3096
3 Errors & Omissions	**1301**	0	**1301**	0	**906**	**-906**
4 Monetary Movements (4.1+ 4.2)	0	**31189**	**-31189**	**30379**	0	**30379**
4.1 I.M.F.	0	0	0	0	0	0
4.2 Foreign Exchange Reserves (Increase - / Decrease +)		31189	-31189	30379	0	30379

Note : P : Preliminary

No. 39: India's Overall Balance of Payments

(₹ Crore)

Item	Jul-Sep 2021			Jul-Sep 2022(P)		
	Credit	Debit	Net	Credit	Debit	Net
	1	2	3	4	5	6
Overall Balance of Payments(1+2+3)	**3003766**	**2772683**	**231083**	**3020039**	**3262450**	**-242411**
1 CURRENT ACCOUNT (1.1+ 1.2)	**1439323**	**1511443**	**-72120**	**1797085**	**2087469**	**-290384**
1.1 MERCHANDISE	**776248**	**1106039**	**-329791**	**893502**	**1560163**	**-666661**
1.2 INVISIBLES (1.2.1+1.2.2+1.2.3)	**663075**	**405404**	**257671**	**903583**	**527306**	**376277**
1.2.1 Services	455057	265535	189522	638258	363505	274753
1.2.1.1 Travel	15905	29037	-13132	46081	60160	-14079
1.2.1.2 Transportation	56168	60613	-4445	76071	90467	-14396
1.2.1.3 Insurance	5894	4263	1631	6035	4676	1360
1.2.1.4 G.n.i.e.	1607	1467	141	1463	1751	-288
1.2.1.5 Miscellaneous	375483	170154	205328	508608	206451	302156
1.2.1.5.1 Software Services	222016	23589	198426	289082	28298	260784
1.2.1.5.2 Business Services	102675	92295	10380	152740	111423	41317
1.2.1.5.3 Financial Services	9652	10836	-1184	16862	12764	4098
1.2.1.5.4 Communication Services	5676	2035	3641	6405	3185	3219
1.2.2 Transfers	156732	16028	140704	219132	21632	197501
1.2.2.1 Official	137	1774	-1638	413	2327	-1914
1.2.2.2 Private	156596	14254	142342	218719	19305	199414
1.2.3 Income	51286	123840	-72554	46193	142170	-95977
1.2.3.1 Investment Income	40194	118251	-78057	33190	135354	-102164
1.2.3.2 Compensation of Employees	11092	5589	5503	13003	6816	6187
2 CAPITAL ACCOUNT (2.1+2.2+2.3+2.4+2.5)	**1554807**	**1261241**	**293567**	**1222954**	**1167748**	**55206**
2.1 Foreign Investment (2.1.1+2.1.2)	**981510**	**888342**	**93168**	**795775**	**692288**	**103487**
2.1.1 Foreign Direct Investment	152195	87755	64439	144014	92649	51365
2.1.1.1 In India	143550	47973	95577	134406	62266	72140
2.1.1.1.1 Equity	102293	46371	55922	85373	56743	28630
2.1.1.1.2 Reinvested Earnings	34589	0	34589	37239	0	37239
2.1.1.1.3 Other Capital	6668	1602	5066	11795	5523	6271
2.1.1.2 Abroad	8645	39782	-31137	9608	30382	-20774
2.1.1.2.1 Equity	8645	20927	-12282	9608	14216	-4608
2.1.1.2.2 Reinvested Earnings	0	6259	-6259	0	6900	-6900
2.1.1.2.3 Other Capital	0	12596	-12596	0	9267	-9267
2.1.2 Portfolio Investment	829315	800587	28729	651761	599639	52122
2.1.2.1 In India	818325	784660	33664	649339	594268	55071
2.1.2.1.1 FIIs	818325	784660	33664	649339	594268	55071
2.1.2.1.1.1 Equity	706356	701779	4577	576224	528326	47898
2.1.2.1.1.2 Debt	111968	82881	29087	73116	65943	7173
2.1.2.1.2 ADR/GDRs	0	0	0	0	0	0
2.1.2.2 Abroad	10991	15927	-4936	2422	5371	-2949
2.2 Loans (2.2.1+2.2.2+2.2.3)	**190583**	**132537**	**58046**	**219602**	**175768**	**43834**
2.2.1 External Assistance	17919	9554	8364	16119	12152	3968
2.2.1.1 By India	95	120	-26	87	177	-89
2.2.1.2 To India	17824	9434	8390	16032	11975	4057
2.2.2 Commercial Borrowings	68777	36608	32169	42702	43593	-891
2.2.2.1 By India	2087	1844	242	2861	799	2062
2.2.2.2 To India	66691	34764	31927	39841	42795	-2953
2.2.3 Short Term to India	103887	86375	17512	160781	120023	40757
2.2.3.1 Buyers' credit & Suppliers' Credit >180 days	71239	86375	-15136	136866	120023	16843
2.2.3.2 Suppliers' Credit up to 180 days	32649	0	32649	23914	0	23914
2.3 Banking Capital (2.3.1+2.3.2)	**154236**	**151566**	**2670**	**124217**	**191617**	**-67400**
2.3.1 Commercial Banks	151690	151566	124	124217	191604	-67387
2.3.1.1 Assets	74810	73041	1769	1070	84951	-83881
2.3.1.2 Liabilities	76881	78525	-1645	123147	106652	16494
2.3.1.2.1 Non-Resident Deposits	63530	69328	-5798	111661	91794	19867
2.3.2 Others	2545	0	2545	0	13	-13
2.4 Rupee Debt Service	0	15	-15	0	10	-10
2.5 Other Capital	228478	88781	139697	83360	108064	-24704
3 Errors & Omissions	**9636**	0	**9636**	0	**7233**	**-7233**
4 Monetary Movements (4.1+ 4.2)	0	**231083**	**-231083**	**242411**	0	**242411**
4.1 I.M.F.	0	0	0	0	0	0
4.2 Foreign Exchange Reserves (Increase - / Decrease +)	0	231083	-231083	242411	0	242411

Note : P: Preliminary

No. 40: Standard Presentation of BoP in India as per BPM6

(US$ Million)

Item	Jul-Sep 2021			Jul-Sep 2022(P)		
	Credit	Debit	Net	Credit	Debit	Net
	1	2	3	4	5	6
1 Current Account (1.A+1.B+1.C)	**194262**	**203974**	**-9712**	**225206**	**261577**	**-36371**
1.A Goods and Services (1.A.a+1.A.b)	**166187**	**185119**	**-18932**	**191959**	**241073**	**-49114**
1.A.a Goods (1.A.a.1 to 1.A.a.3)	**104769**	**149280**	**-44511**	**111973**	**195519**	**-83546**
1.A.a.1 General merchandise on a BOP basis	104254	133258	-29004	111660	185742	-74082
1.A.a.2 Net exports of goods under merchanting	515	0	515	313	0	313
1.A.a.3 Nonmonetary gold		16022	-16022		9777	-9777
1.A.b Services (1.A.b.1 to 1.A.b.13)	**61418**	**35839**	**25579**	**79986**	**45554**	**34432**
1.A.b.1 Manufacturing services on physical inputs owned by others	75	16	59	311	28	283
1.A.b.2 Maintenance and repair services n.i.e.	74	418	-345	50	542	-492
1.A.b.3 Transport	7581	8181	-600	9533	11337	-1804
1.A.b.4 Travel	2147	3919	-1772	5775	7539	-1764
1.A.b.5 Construction	716	715	0	858	833	26
1.A.b.6 Insurance and pension services	795	575	220	756	586	170
1.A.b.7 Financial services	1303	1463	-160	2113	1600	514
1.A.b.8 Charges for the use of intellectual property n.i.e.	202	2189	-1987	324	2224	-1900
1.A.b.9 Telecommunications, computer, and information services	30823	3651	27172	37111	4140	32971
1.A.b.10 Other business services	13858	12457	1401	19141	13964	5178
1.A.b.11 Personal, cultural, and recreational services	713	1243	-530	917	1654	-737
1.A.b.12 Government goods and services n.i.e.	217	198	19	183	219	-36
1.A.b.13 Others n.i.e.	2915	813	2102	2913	889	2024
1.B Primary Income (1.B.1 to 1.B.3)	**6922**	**16714**	**-9792**	**5789**	**17817**	**-12028**
1.B.1 Compensation of employees	1497	754	743	1630	854	775
1.B.2 Investment income	4413	15740	-11328	3321	16856	-13535
1.B.2.1 Direct investment	2046	9816	-7770	1907	9939	-8032
1.B.2.2 Portfolio investment	111	2859	-2748	55	2917	-2862
1.B.2.3 Other investment	62	3064	-3002	146	3954	-3808
1.B.2.4 Reserve assets	2193	1	2193	1213	46	1167
1.B.3 Other primary income	1012	220	792	838	106	732
1.C Secondary Income (1.C.1+1.C.2)	**21153**	**2141**	**19012**	**27458**	**2688**	**24770**
1.C.1 Financial corporations, nonfinancial corporations, households, and NPISHs	21135	1924	19212	27410	2419	24991
1.C.1.1 Personal transfers (Current transfers between resident and/ non-resident households)	20237	1356	18881	26686	1750	24935
1.C.1.2 Other current transfers	899	568	331	724	669	55
1.C.2 General government	18	217	-199	48	268	-220
2 Capital Account (2.1+2.2)	**189**	**202**	**-13**	**136**	**122**	**15**
2.1 Gross acquisitions (DR.)/disposals (CR.) of non-produced nonfinancial assets	62	132	-71	6	36	-30
2.2 Capital transfers	128	70	58	130	85	45
3 Financial Account (3.1 to 3.5)	**209660**	**201236**	**8424**	**183506**	**146243**	**37263**
3.1 Direct Investment (3.1A+3.1B)	**20541**	**11844**	**8697**	**18048**	**11611**	**6437**
3.1.A Direct Investment in India	19375	6475	12900	16844	7803	9041
3.1.A.1 Equity and investment fund shares	18475	6259	12216	15366	7111	8255
3.1.A.1.1 Equity other than reinvestment of earnings	13806	6259	7548	10699	7111	3588
3.1.A.1.2 Reinvestment of earnings	4668		4668	4667		4667
3.1.A.2 Debt instruments	900	216	684	1478	692	786
3.1.A.2.1 Direct investor in direct investment enterprises	900	216	684	1478	692	786
3.1.B Direct Investment by India	1167	5369	-4203	1204	3808	-2603
3.1.B.1 Equity and investment fund shares	1167	3669	-2502	1204	2646	-1442
3.1.B.1.1 Equity other than reinvestment of earnings	1167	2824	-1658	1204	1782	-577
3.1.B.1.2 Reinvestment of earnings		845	-845		865	-865
3.1.B.2 Debt instruments	0	1700	-1700	0	1161	-1161
3.1.B.2.1 Direct investor in direct investment enterprises		1700	-1700		1161	-1161
3.2 Portfolio Investment	**111931**	**108054**	**3877**	**81678**	**75146**	**6532**
3.2.A Portfolio Investment in India	110448	105904	4544	81375	74473	6901
3.2.1 Equity and investment fund shares	95335	94718	618	72212	66210	6003
3.2.2 Debt securities	15112	11186	3926	9163	8264	899
3.2.B Portfolio Investment by India	1483	2150	-666	303	673	-370
3.3 Financial derivatives (other than reserves) and employee stock options	**5367**	**5806**	**-439**	**7454**	**7308**	**145**
3.4 Other investment	**71821**	**44344**	**27478**	**45948**	**52178**	**-6230**
3.4.1 Other equity (ADRs/GDRs)	0	0	0	0	0	0
3.4.2 Currency and deposits	8918	9357	-439	13993	11505	2488
3.4.2.1 Central bank (Rupee Debt Movements; NRG)	344	0	344	0	2	-2
3.4.2.2 Deposit-taking corporations, except the central bank (NRI Deposits)	8574	9357	-783	13993	11504	2490
3.4.2.3 General government			0			0
3.4.2.4 Other sectors			0			0
3.4.3 Loans (External Assistance, ECBs and Banking Capital)	23600	17330	6270	8945	19494	-10549
3.4.3.A Loans to India	23306	17065	6241	8576	19372	-10796
3.4.3.B Loans by India	294	265	29	369	122	247
3.4.4 Insurance, pension, and standardized guarantee schemes	55	13	42	59	1	59
3.4.5 Trade credit and advances	14021	11658	2364	20149	15041	5108
3.4.6 Other accounts receivable/payable - other	7365	5986	1379	2801	6137	-3335
3.4.7 Special drawing rights	17862		17862	0		0
3.5 Reserve assets	0	**31189**	**-31189**	**30379**	0	**30379**
3.5.1 Monetary gold			0			0
3.5.2 Special drawing rights n.a.		17862	-17862		0	0
3.5.3 Reserve position in the IMF n.a.			0			0
3.5.4 Other reserve assets (Foreign Currency Assets)	0	13326	-13326	30379	0	30379
4 Total assets/liabilities	**209660**	**201236**	**8424**	**183506**	**146243**	**37263**
4.1 Equity and investment fund shares	121882	112614	9267	96598	83949	12649
4.2 Debt instruments	62552	51447	11104	53728	56158	-2430
4.3 Other financial assets and liabilities	25227	37175	-11947	33180	6137	27043
5 Net errors and omissions	**1301**		**1301**		**906**	**-906**

Note : P : Preliminary

No. 41: Standard Presentation of BoP in India as per BPM6

(₹ Crore)

Item	Jul-Sep 2021			Jul-Sep 2022(P)		
	Credit	Debit	Net	Credit	Debit	Net
	1	2	3	4	5	6
1 Current Account (1.A+1.B+1.C)	**1439319**	**1511278**	**-71958**	**1797054**	**2087284**	**-290229**
1.A Goods and Services (1.A.a+1.A.b)	**1231305**	**1371574**	**-140270**	**1531760**	**1923668**	**-391908**
1.A.a Goods (1.A.a.1 to 1.A.a.3)	**776248**	**1106039**	**-329791**	**893502**	**1560163**	**-666661**
1.A.a.1 General merchandise on a BOP basis	772435	987331	-214896	891001	1482147	-591146
1.A.a.2 Net exports of goods under merchanting	3812	0	3812	2501	0	2501
1.A.a.3 Nonmonetary gold	0	118708	-118708	0	78016	-78016
1.A.b Services (1.A.b.1 to 1.A.b.13)	**455057**	**265535**	**189522**	**638258**	**363505**	**274753**
1.A.b.1 Manufacturing services on physical inputs owned by others	558	118	440	2480	223	2256
1.A.b.2 Maintenance and repair services n.i.e.	546	3100	-2554	396	4323	-3927
1.A.b.3 Transport	56168	60613	-4445	76071	90467	-14396
1.A.b.4 Travel	15905	29037	-13132	46081	60160	-14079
1.A.b.5 Construction	5302	5299	3	6848	6643	205
1.A.b.6 Insurance and pension services	5894	4263	1631	6035	4676	1360
1.A.b.7 Financial services	9652	10836	-1184	16862	12764	4098
1.A.b.8 Charges for the use of intellectual property n.i.e.	1499	16220	-14721	2589	17749	-15161
1.A.b.9 Telecommunications, computer, and information services	228370	27051	201318	296127	33035	263092
1.A.b.10 Other business services	102675	92295	10380	152740	111423	41317
1.A.b.11 Personal, cultural, and recreational services	5279	9207	-3928	7319	13197	-5878
1.A.b.12 Government goods and services n.i.e.	1607	1467	141	1463	1751	-288
1.A.b.13 Others n.i.e.	21601	6027	15574	23247	7093	16154
1.B Primary Income (1.B.1 to 1.B.3)	**51286**	**123840**	**-72554**	**46193**	**142170**	**-95977**
1.B.1 Compensation of employees	11092	5589	5503	13003	6816	6187
1.B.2 Investment income	32694	116622	-83928	26500	134507	-108007
1.B.2.1 Direct investment	15161	72730	-57569	15219	79312	-64093
1.B.2.2 Portfolio investment	820	21184	-20364	442	23280	-22838
1.B.2.3 Other investment	461	22703	-22242	1162	31551	-30389
1.B.2.4 Reserve assets	16251	5	16246	9677	364	9313
1.B.3 Other primary income	7500	1629	5871	6690	846	5843
1.C Secondary Income (1.C.1+1.C.2)	**156729**	**15863**	**140865**	**219101**	**21446**	**197656**
1.C.1 Financial corporations, nonfinancial corporations, households, and NPISHs	156596	14254	142342	218719	19305	199414
1.C.1.1 Personal transfers (Current transfers between resident and/ non-resident households)	149936	10045	139891	212941	13968	198973
1.C.1.2 Other current transfers	6659	4209	2451	5779	5337	442
1.C.2 General government	133	1609	-1476	382	2141	-1759
2 Capital Account (2.1+2.2)	**1402**	**1497**	**-95**	**1089**	**971**	**118**
2.1 Gross acquisitions (DR.)/disposals (CR.) of non-produced nonfinancial assets	457	981	-524	50	289	-239
2.2 Capital transfers	946	516	430	1039	682	357
3 Financial Account (3.1 to 3.5)	**1553408**	**1490992**	**62417**	**1464307**	**1166962**	**297345**
3.1 Direct Investment (3.1A+3.1B)	**152195**	**87755**	**64439**	**144014**	**92649**	**51365**
3.1.A Direct Investment in India	143550	47973	95577	134406	62266	72140
3.1.A.1 Equity and investment fund shares	136882	46371	90511	122612	56743	65869
3.1.A.1.1 Equity other than reinvestment of earnings	102293	46371	55922	85373	56743	28630
3.1.A.1.2 Reinvestment of earnings	34589	0	34589	37239	0	37239
3.1.A.2 Debt instruments	6668	1602	5066	11795	5523	6271
3.1.A.2.1 Direct investor in direct investment enterprises	6668	1602	5066	11795	5523	6271
3.1.B Direct Investment by India	8645	39782	-31137	9608	30382	-20774
3.1.B.1 Equity and investment fund shares	8645	27186	-18541	9608	21116	-11508
3.1.B.1.1 Equity other than reinvestment of earnings	8645	20927	-12282	9608	14216	-4608
3.1.B.1.2 Reinvestment of earnings	0	6259	-6259	0	6900	-6900
3.1.B.2 Debt instruments	0	12596	-12596	0	9267	-9267
3.1.B.2.1 Direct investor in direct investment enterprises	0	12596	-12596	0	9267	-9267
3.2 Portfolio Investment	**829315**	**800587**	**28729**	**651761**	**599639**	**52122**
3.2.A Portfolio Investment in India	818325	784660	33664	649339	594268	55071
3.2.1 Equity and investment fund shares	706356	701779	4577	576224	528326	47898
3.2.2 Debt securities	111968	82881	29087	73116	65943	7173
3.2.B Portfolio Investment by India	10991	15927	-4936	2422	5371	-2949
3.3 Financial derivatives (other than reserves) and employee stock options	**39762**	**43017**	**-3256**	**59477**	**58316**	**1161**
3.4 Other investment	**532137**	**328550**	**203587**	**366643**	**416358**	**-49714**
3.4.1 Other equity (ADRs/GDRs)	0	0	0	0	0	0
3.4.2 Currency and deposits	66075	69328	-3253	111661	91807	19854
3.4.2.1 Central bank (Rupee Debt Movements; NRG)	2545	0	2545	0	13	-13
3.4.2.2 Deposit-taking corporations, except the central bank (NRI Deposits)	63530	69328	-5798	111661	91794	19867
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)	174857	128400	46456	71377	155555	-84177
3.4.3.A Loans to India	172675	126436	46239	68430	154579	-86150
3.4.3.B Loans by India	2181	1964	217	2948	975	1973
3.4.4 Insurance, pension, and standardized guarantee schemes	405	97	308	471	4	467
3.4.5 Trade credit and advances	103887	86375	17512	160781	120023	40757
3.4.6 Other accounts receivable/payable - other	54566	44349	10217	22353	48968	-26615
3.4.7 Special drawing rights	132346	0	132346	0	0	0
3.5 Reserve assets	**0**	**231083**	**-231083**	**242411**	**0**	**242411**
3.5.1 Monetary gold	0	0	0	0	0	0
3.5.2 Special drawing rights n.a.	0	132346	-132346	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	98737	-98737	242411	0	242411
4 Total assets/liabilities	**1553408**	**1490992**	**62417**	**1464307**	**1166962**	**297345**
4.1 Equity and investment fund shares	903041	834377	68664	770814	669876	100938
4.2 Debt instruments	463455	381183	82272	428729	448118	-19389
4.3 Other financial assets and liabilities	186912	275432	-88520	264764	48968	215796
5 Net errors and omissions	**9636**	**0**	**9636**	**0**	**7233**	**-7233**

Note : P: Preliminary

No. 42: India's International Investment Position

(US$ Million)

Item	As on Financial Year /Quarter End							
	2021-22		2021		2022			
			Sep.		Jun.		Sep.	
	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
	1	2	3	4	5	6	7	8
1. Direct investment Abroad/in India	211573	521647	203814	506710	214230	517254	216834	510106
1.1 Equity Capital *	132765	493987	128062	480743	134357	489548	135799	481956
1.2 Other Capital	78807	27660	75752	25967	79873	27706	81034	28150
2. Portfolio investment	10642	270425	8578	291215	10614	246342	10983	245720
2.1 Equity	1110	156381	4590	177034	8153	135476	6312	137013
2.2 Debt	9533	114043	3988	114181	2461	110866	4671	108707
3. Other investment	90974	486588	84498	469430	77434	483115	86995	481281
3.1 Trade credit	18561	118145	11815	104418	21146	123184	24753	128323
3.2 Loan	10474	195245	10816	192116	6543	191557	8084	188488
3.3 Currency and Deposits	42081	140994	42302	142904	30242	137445	33528	135621
3.4 Other Assets/Liabilities	19858	32203	19565	29991	19504	30929	20630	28850
4. Reserves	607309		635363		589155		532664	
5. Total Assets/Liabilities	920498	1278660	932253	1267355	891433	1246712	847475	1237108
6. Net IIP (Assets - Liabilities)	-358162		-335102		-355279		-389633	

Note: * Equity capital includes share of investment funds and reinvested earnings.

Payment and Settlement Systems

No.43: Payment System Indicators

PART I - Payment System Indicators - Payment & Settlement System Statistics

System	Volume (Lakh)				Value (₹ Crore)			
	FY 2021-22	2021	2022		FY 2021-22	2021	2022	
		Dec.	Nov.	Dec.		Dec.	Nov.	Dec.
	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	3.13	3.67	3.42	206873112	20703988	22488758	22326077
1.1 Govt. Securities Clearing (1.1.1 to 1.1.3)	12.22	1.10	1.26	1.19	142072939	14801512	15457897	15144169
1.1.1 Outright	6.22	0.48	0.66	0.60	8793301	651103	759097	711065
1.1.2 Repo	3.08	0.30	0.36	0.36	51015712	5075401	6039868	6125370
1.1.3 Tri-party Repo	2.92	0.31	0.23	0.23	82263926	9075009	8658933	8307734
1.2 Forex Clearing	19.91	1.96	2.33	2.16	59775826	5516604	6577286	6670289
1.3 Rupee Derivatives @	0.88	0.07	0.08	0.07	5024347	385873	453575	511620
B. Payment Systems								
I Financial Market Infrastructures (FMIs)	–	–	–	–	–	–	–	–
1 Credit Transfers - RTGS (1.1 to 1.2)	2078.39	192.78	206.46	215.03	128657516	12966991	12291749	13736057
1.1 Customer Transactions	2063.73	191.50	205.30	213.80	113319292	11418233	10691727	12180091
1.2 Interbank Transactions	14.66	1.29	1.16	1.23	15338225	1548758	1600022	1555966
II Retail								
2 Credit Transfers - Retail (2.1 to 2.6)	577934.74	56422.79	84557.58	90675.95	42728006	4076395	4527540	4928331
2.1 AePS (Fund Transfers) @	9.76	0.65	0.51	0.32	575	36	29	21
2.2 APBS $	12573.33	1082.20	1065.62	1157.66	133345	14987	9460	20670
2.3 IMPS	46625.25	4429.86	4634.80	4858.37	4171037	396411	454679	486552
2.4 NACH Cr $	18757.82	1483.71	1373.88	1515.84	1281685	113132	141901	157435
2.5 NEFT	40407.29	3763.38	4388.30	4854.81	28725463	2724980	2730878	2981681
2.6 UPI @	459561.30	45662.99	73094.47	78288.95	8415900	826848	1190593	1281971
2.6.1 of which USSD @	11.99	1.12	1.79	1.92	177	16	19	21
3 Debit Transfers and Direct Debits (3.1 to 3.3)	12189.49	1064.54	1316.60	1357.72	1034444	91163	110181	116425
3.1 BHIM Aadhaar Pay @	227.73	19.59	14.52	12.71	6113	611	475	446
3.2 NACH Dr $	10754.74	937.92	1164.17	1198.55	1026641	90426	109479	115737
3.3 NETC (linked to bank account) @	1207.02	107.03	137.91	146.46	1689	126	227	242
4 Card Payments (4.1 to 4.2)	61782.93	5611.80	4955.95	5223.54	1701851	160398	170386	185149
4.1 Credit Cards (4.1.1 to 4.1.2)	22398.82	2112.59	2347.73	2556.47	971638	93907	114794	126524
4.1.1 PoS based $	11124.59	1093.48	1319.99	1449.35	380643	36713	46296	51772
4.1.2 Others $	11274.23	1019.10	1027.75	1107.12	590994	57195	68498	74752
4.2 Debit Cards (4.2.1 to 4.2.1)	39384.11	3499.21	2608.22	2667.08	730213	66491	55592	58625
4.2.1 PoS based $	22967.10	2202.51	1779.41	1859.31	451550	43062	37237	39573
4.2.2 Others $	16417.00	1296.71	828.81	807.77	278663	23429	18355	19052
5 Prepaid Payment Instruments (5.1 to 5.2)	65782.75	7008.04	6075.20	6354.65	279416	25878	22808	22648
5.1 Wallets	53013.86	5659.18	4730.07	5012.71	220183	21195	17342	18400
5.2 Cards (5.2.1 to 5.2.2)	12768.89	1348.86	1345.14	1341.94	59233	4683	5466	4248
5.2.1 PoS based $	1116.16	99.63	77.72	61.58	19546	1893	1039	722
5.2.2 Others $	11652.73	1249.23	1267.42	1280.37	39687	2790	4428	3527
6 Paper-based Instruments (6.1 to 6.2)	6999.12	660.33	586.94	608.13	6650333	640955	581120	621387
6.1 CTS (NPCI Managed)	6999.12	660.33	586.94	608.13	6650333	640955	581120	621387
6.2 Others	0.00	–	–	–	–	–	–	–
Total - Retail Payments (2+3+4+5+6)	724689.03	70767.50	97492.27	104220.00	52394049	4994790	5412034	5873940
Total Payments (1+2+3+4+5+6)	726767.42	70960.28	97698.73	104435.03	181051565	17961781	17703784	19609997
Total Digital Payments (1+2+3+4+5)	719768.30	70299.95	97111.79	103826.90	174401233	17320825	17122664	18988610

PART II - Payment Modes and Channels

System	Volume (Lakh)				Value (₹ Crore)			
	FY 2021-22	2021	2022		FY 2021-22	2021	2022	
		Dec.	Nov.	Dec.		Dec.	Nov.	Dec.
	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	49877.80	79124.20	84909.51	14961371	1433961	1993302	2125480
1.1 Intra-bank $	40805.69	3927.19	5342.59	5557.30	2726363	254443	355045	373813
1.2 Inter-bank $	466036.62	45950.61	73781.61	79352.22	12235007	1179518	1638256	1751667
2 Internet Payments (Netbanking / Internet Browser Based) @ (2.1 to 2.2)	40726.59	3593.75	3487.32	3664.00	83159996	8602920	7808859	8591147
2.1 Intra-bank @	9583.32	848.88	870.33	949.32	52142582	5691255	4606598	4923803
2.2 Inter-bank @	31143.27	2744.87	2616.98	2714.68	31017413	2911666	3202261	3667344
B. ATMs								
3 Cash Withdrawal at ATMs $ (3.1 to 3.3)	65240.43	5923.80	5608.36	5891.49	3111946	280371	265635	280461
3.1 Using Credit Cards $	62.37	5.90	7.59	8.13	3130	295	367	392
3.2 Using Debit Cards $	64851.61	5889.14	5568.41	5850.03	3097739	279100	264180	278923
3.3 Using Pre-paid Cards $	326.45	28.76	32.36	33.33	11076	977	1089	1146
4 Cash Withdrawal at PoS $ (4.1 to 4.2)	91.17	3.78	2.30	2.38	728	35	23	24
4.1 Using Debit Cards $	79.42	3.71	2.28	2.37	557	35	23	24
4.2 Using Pre-paid Cards $	11.75	0.07	0.02	0.02	171	0	0	0
5 Cash Withrawal at Micro ATMs @	11126.04	940.20	944.92	934.53	299776	25208	25541	25484
5.1 AePS @	11126.04	940.20	944.92	934.53	299776	25208	25541	25484

PART III - Payment Infrastructures (Lakh)

System	As on March 2022	2021	2022	
		Dec.	Nov.	Dec.
	1	2	3	4
Payment System Infrastructures				
1 Number of Cards (1.1 to 1.2)	9912.93	10066.90	10283.34	10206.53
1.1 Credit Cards	736.27	689.49	806.06	811.87
1.2 Debit Cards	9176.66	9377.42	9477.28	9394.66
2 Number of PPIs @ (2.1 to 2.2)	15553.69	15111.90	16098.32	16234.69
2.1 Wallets @	12787.93	12511.00	13269.83	13346.64
2.2 Cards @	2765.76	2600.90	2828.48	2888.05
3 Number of ATMs (3.1 to 3.2)	2.52	2.45	2.55	2.57
3.1 Bank owned ATMs $	2.20	2.15	2.20	2.20
3.2 White Label ATMs $	0.31	0.30	0.36	0.37
4 Number of Micro ATMs @	9.16	7.27	13.34	14.19
5 Number of PoS Terminals	60.70	54.98	73.52	75.50
6 Bharat QR @	49.72	46.47	48.25	49.59
7 UPI QR *	1727.34	1440.10	2302.87	2379.44

@: New inclusion w.e.f. November 2019
#: Data reported by Co-operative Banks, LABs and RRBs included with effect from December 2021.
$: Inclusion separately initiated from November 2019 - would have been part of other items hitherto.
*: New inclusion w.e.f. September 2020; Includes only static UPI QR Code

Note : 1. Data is provisional.
2. ECS (Debit and Credit) has been merged with NACH with effect from January 31, 2020.
3. The data from November 2019 onwards for card payments (Debit/Credit cards) and Prepaid Payment Instruments (PPIs) may not be comparable with earlier months/ periods, as more granular data is being published along with revision in data definitions.
4. Only domestic financial transactions are considered. The new format captures e-commerce transactions; transactions using FASTags, digital bill payments and card-to-card transfer through ATMs, etc.. Also, failed transactions, chargebacks, reversals, expired cards/ wallets, are excluded.

Occasional Series

No. 44: Small Savings

(₹ Crore)

Scheme		2020-21	2021		2022	
			Feb.	Dec.	Jan.	Feb.
		1	2	3	4	5
1 Small Savings	**Receipts**	**181237**	**14405**	**18175**	**14893**	**13932**
	Outstanding	**1259585**	**1224772**	**1397878**	**1412766**	**1426737**
1.1 Total Deposits	**Receipts**	**132687**	**10143**	**13855**	**10676**	**9753**
	Outstanding	**867494**	**847119**	**969847**	**980523**	**990274**
1.1.1 Post Office Saving Bank Deposits	Receipts	39748	2252	4475	3018	3568
	Outstanding	205888	194738	226701	229719	233287
1.1.2 MGNREG	Receipts					
	Outstanding					
1.1.3 National Saving Scheme, 1987	Receipts	276	-23	-366	-15	-20
	Outstanding	3419	3037	3200	3185	3165
1.1.4 National Saving Scheme, 1992	Receipts	166	57	2	-1	-777
	Outstanding	175	40	150	149	-628
1.1.5 Monthly Income Scheme	Receipts	12211	1135	1228	1146	933
	Outstanding	221379	220277	232747	233892	234825
1.1.6 Senior Citizen Scheme 2004	Receipts	21009	1950	1929	1615	1490
	Outstanding	97051	94750	114134	115749	117239
1.1.7 Post Office Time Deposits	Receipts	41470	3798	3926	3438	3217
	Outstanding	207557	203597	241034	244474	247690
1.1.7.1 1 year Time Deposits	Outstanding	108205	107099	116043	116819	117578
1.1.7.2 2 year Time Deposits	Outstanding	7473	7418	7931	7967	7996
1.1.7.3 3 year Time Deposits	Outstanding	7227	7267	6983	6964	6944
1.1.7.4 5 year Time Deposits	Outstanding	84652	81813	110077	112724	115172
1.1.8 Post Office Recurring Deposits	Receipts	17807	974	2662	1475	1338
	Outstanding	132029	130683	151885	153359	154697
1.1.9 Post Office Cumulative Time Deposits	Receipts	0	0	-1	0	4
	Outstanding	-25	-24	-25	-25	-22
1.1.10 Other Deposits	Receipts	0	0	0	0	0
	Outstanding	21	21	21	21	21
1.2 Saving Certificates	**Receipts**	**34860**	**3647**	**3978**	**3691**	**3583**
	Outstanding	**286863**	**282483**	**321027**	**324713**	**328337**
1.2.1 National Savings Certificate VIII issue	Receipts	17361	1843	1860	1626	1585
	Outstanding	135348	133016	150513	152139	153724
1.2.2 Indira Vikas Patras	Receipts	-3	0	0	0	0
	Outstanding	159	157	158	158	158
1.2.3 Kisan Vikas Patras	Receipts	-7911	-470	-426	-193	940
	Outstanding	-6776	-6194	-8455	-8648	-7708
1.2.4 Kisan Vikas Patras - 2014	Receipts	25340	2274	2544	2258	1019
	Outstanding	147942	145422	168720	170978	171996
1.2.5 National Saving Certificate VI issue	Receipts	41	0	0	0	23
	Outstanding	-114	-147	-114	-114	-90
1.2.6 National Saving Certificate VII issue	Receipts	32	0	0	0	16
	Outstanding	-74	-103	-74	-74	-58
1.2.7 Other Certificates	Outstanding	10378	10332	10279	10274	10315
1.3 Public Provident Fund	**Receipts**	**13690**	**615**	**342**	**526**	**596**
	Outstanding	**105228**	**95170**	**107004**	**107530**	**108126**

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)

Central Government Dated Securities					
Category	2021		2022		
	Sep.	Dec.	Mar.	Jun.	Sep.
	1	2	3	4	5
(A) Total (in ₹. Crore)	**8235318**	**8439811**	**8529036**	**8784931**	**9098788**
1 Commercial Banks	37.82	35.40	35.93	36.16	36.44
2 Non-Bank PDs	0.35	0.27	0.29	0.33	0.38
3 Insurance Companies	24.18	25.74	25.89	26.34	25.94
4 Mutual Funds	2.91	3.08	2.91	2.32	2.58
5 Co-operative Banks	1.50	1.82	1.81	1.84	1.80
6 Financial Institutions	1.17	1.69	0.94	1.09	0.98
7 Corporates	0.72	1.37	1.47	1.52	1.58
8 Foreign Portfolio Investors	1.81	1.66	1.56	1.43	1.38
9 Provident Funds	3.77	4.33	4.60	4.77	4.66
10 RBI	16.98	16.92	16.62	16.06	15.28
11. Others	8.79	7.73	7.97	8.18	8.98
11.1 State Governments	1.67	1.69	1.82	1.84	1.83

State Governments Securities					
Category	2021		2022		
	Sep.	Dec.	Mar.	Jun.	Sep.
	1	2	3	4	5
(B) Total (in ₹. Crore)	**4153508**	**4257578**	**4410250**	**4472011**	**4589128**
1 Commercial Banks	35.94	34.41	34.39	34.22	34.37
2 Non-Bank PDs	0.44	0.40	0.38	0.41	0.36
3 Insurance Companies	27.50	28.85	28.42	28.39	27.71
4 Mutual Funds	1.97	1.91	1.82	1.89	2.08
5 Co-operative Banks	3.60	4.07	4.04	4.06	3.89
6 Financial Institutions	1.72	1.73	1.72	1.73	1.71
7 Corporates	1.32	1.70	1.82	1.98	1.85
8 Foreign Portfolio Investors	0.03	0.02	0.02	0.02	0.02
9 Provident Funds	18.27	20.66	20.79	20.52	20.18
10 RBI	0.85	0.83	0.80	0.79	0.79
11. Others	8.38	5.40	5.81	5.99	7.05
11.1 State Governments	0.18	0.19	0.20	0.21	0.21

Treasury Bills					
Category	2021		2022		
	Sep.	Dec.	Mar.	Jun.	Sep.
	1	2	3	4	5
(C) Total (in ₹. Crore)	**763582**	**692869**	**757198**	**1022053**	**920205**
1 Commercial Banks	50.22	47.01	49.04	51.37	50.91
2 Non-Bank PDs	1.33	1.53	4.20	2.49	2.12
3 Insurance Companies	4.12	6.29	6.58	5.34	5.46
4 Mutual Funds	17.72	13.72	14.01	14.86	11.98
5 Co-operative Banks	1.32	1.49	1.79	1.34	1.48
6 Financial Institutions	2.12	2.36	3.53	3.73	4.17
7 Corporates	2.40	3.13	3.47	4.27	3.86
8 Foreign Portfolio Investors	0.15	0.72	0.49	0.40	0.53
9 Provident Funds	0.37	0.85	0.21	1.70	3.21
10 RBI	2.63	0.00	0.00	0.00	0.00
11. Others	17.62	22.89	16.69	14.50	16.27
11.1 State Governments	12.64	18.92	11.54	10.99	12.27

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 December-2022					
		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	299.72	31	1810.66	31	2129.80	20
2	Arunachal Pradesh	-	-	-	-	-	-
3	Assam	-	-	-	-	-	-
4	Bihar	-	-	-	-	-	-
5	Chhattisgarh	-	-	-	-	-	-
6	Goa	-	-	-	-	-	-
7	Gujarat	-	-	-	-	-	-
8	Haryana	332.38	12	780.54	7	-	-
9	Himachal Pradesh	-	-	201.66	4	-	-
10	Jammu & Kashmir UT	-	-	817.65	25	686.88	10
11	Jharkhand	-	-	-	-	-	-
12	Karnataka	-	-	-	-	-	-
13	Kerala	34.57	8	704.61	8	-	-
14	Madhya Pradesh	-	-	-	-	-	-
15	Maharashtra	-	-	-	-	-	-
16	Manipur	-	-	209.75	30	56.55	16
17	Meghalaya	68.70	12	17.45	7	-	-
18	Mizoram	-	-	85.27	13	-	-
19	Nagaland	-	-	152.58	28	59.40	10
20	Odisha	-	-	-	-	-	-
21	Puducherry	-	-	-	-	-	-
22	Punjab	929.68	9	-	-	-	-
23	Rajasthan	4951.31	31	-	-	-	-
24	Tamil Nadu	-	-	-	-	-	-
25	Telangana	524.27	25	1082.18	18	355.15	5
26	Tripura	-	-	-	-	-	-
27	Uttar Pradesh	-	-	-	-	-	-
28	Uttarakhand	35.08	1	-	-	-	-
29	West Bengal	-	-	-	-	-	-

Notes: 1. SDF is availed by State Governments against the collateral of Consolidated Sinking Fund (CSF), Guarantee Redemption Fund (GRF) & Auction Treasury Bills (ATBs) balances and other investments in government securities.
2. WMA is advance by Reserve Bank of India to State Governments for meeting temporary cash mismatches.
3. OD is advanced to State Governments beyond their WMA limits.
4. Average Availed is the total accommodation (SDF/WMA/OD) availed divided by number of days for which accommodation was extended during the month.
5. - : Nil.

Source: Reserve Bank of India.

No. 48: Investments by State Governments

(₹ Crore)

Sr. No	State/Union Territory	As on end of December 2022			
		Consolidated Sinking Fund (CSF)	Guarantee Redemption Fund (GRF)	Government Securities	Auction Treasury Bills (ATBs)
	1	2	3	4	5
1	Andhra Pradesh	9918	976	0	0
2	Arunachal Pradesh	2193	3	0	1700
3	Assam	4485	74	0	0
4	Bihar	7999	-	0	0
5	Chhattisgarh	6117	-	1	208
6	Goa	816	393	0	0
7	Gujarat	9649	573	0	0
8	Haryana	1451	1456	0	0
9	Himachal Pradesh	-	-	0	0
10	Jammu & Kashmir UT	-	-	0	0
11	Jharkhand	1031	-	0	0
12	Karnataka	12943	311	0	33907
13	Kerala	2565	-	0	0
14	Madhya Pradesh	-	1097	0	0
15	Maharashtra	57286	1208	0	22000
16	Manipur	60	120	0	0
17	Meghalaya	937	65	8	0
18	Mizoram	348	65	0	0
19	Nagaland	1526	40	0	0
20	Odisha	15621	1749	101	39930
21	Puducherry	453	-	0	1023
22	Punjab	6342	0	0	0
23	Rajasthan	-	-	129	9000
24	Tamil Nadu	7991	-	18	3252
25	Telangana	6775	1475	0	0
26	Tripura	830	16	0	1400
27	Uttarakhand	4222	173	0	0
28	Uttar Pradesh	4194	-	116	0
29	West Bengal	10880	796	239	0
	Total	**176631**	**10588**	**611**	**112420**

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	
						October		November		December			
		Gross Amount Raised	Net Amount Raised	Gross Amount Raised	Net Amount Raised	Gross Amount Raised	Net Amount Raised	Gross Amount Raised	Net Amount Raised	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	2500	1625	2913	2038	-	-437	45303	37721
2	Arunachal Pradesh	767	767	563	530	-	-50	-	-	559	559	559	489
3	Assam	15030	14230	12753	10753	1700	1700	2400	2400	800	800	12900	12600
4	Bihar	27285	24685	28489	24334	6000	6000	6000	3750	6000	5000	25000	20922
5	Chhattisgarh	13000	10500	4000	913	-	-	-	-	-	-	-	-
6	Goa	3354	3054	2000	1450	200	200	150	-	300	300	1050	550
7	Gujarat	44780	33280	31054	13554	7000	5000	3000	700	2000	1000	26000	13800
8	Haryana	30000	25550	30500	20683	2500	1400	3500	2950	1500	950	28000	18420
9	Himachal Pradesh	6000	3755	4000	1875	-	-200	2000	2000	1000	1000	8000	6440
10	Jammu & Kashmir UT	9328	6020	8562	5373	800	660	500	500	1495	895	5545	4306
11	Jharkhand	9400	8900	5000	3191	-	-500	1000	1000	2000	1500	3000	1500
12	Karnataka	69000	61900	59000	49000	-	-3500	16000	14000	16000	13500	32000	24000
13	Kerala	28566	23066	27000	18120	2500	1500	4000	2364	1500	650	16936	7450
14	Madhya Pradesh	45573	38773	22000	13900	2000	1500	2000	2000	-	-	12000	9500
15	Maharashtra	69000	50022	68750	40790	11000	9000	-	-1000	-	-1563	45000	23753
16	Manipur	1302	1044	1476	1326	-	-	-	-	122	122	872	597
17	Meghalaya	1777	1587	1608	1298	300	300	413	263	440	440	1753	1503
18	Mizoram	944	677	747	447	100	100	100	100	150	150	990	875
19	Nagaland	1721	1366	1727	1222	-	-	146	-54	300	300	1322	872
20	Odisha	3000	500	0	-6473	-	-1000	-	-500	-	-	-	-4500
21	Puducherry	1390	790	1374	841	-	-100	-	-	300	200	700	500
22	Punjab	32995	23467	25814	12428	4650	3650	5300	4800	2245	1745	31900	22546
23	Rajasthan	57359	44273	51149	38243	4500	3230	1000	-500	1251	751	29251	19169
24	Sikkim	1292	1292	1511	1471	200	165	277	277	-	-	877	807
25	Tamil Nadu	87977	76796	87000	72500	6000	1750	4000	3000	6000	4850	49000	34003
26	Telangana	43784	38782	45716	39256	3000	2375	2500	1875	2500	2187	28000	22582
27	Tripura	1916	1631	300	0	-	-	-	-90	-	-100	-	-315
28	Uttar Pradesh	75500	59185	62500	42355	9000	6024	-	-	-	-78	14000	2213
29	Uttarakhand	6200	5208	3200	1800	500	500	-	-	-	-650	500	-150
30	West Bengal	59680	50180	67390	45199	6000	4000	-	-2500	7000	5000	37000	20500
	Grand Total	798816	651777	701626	492483	70450	45330	57199	39373	53462	39071	457458	302652

- : 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**
Per cent of GDP	*4.8*	*9.8*	*7.5*	*10.3*	*8.1*
I. Financial Assets	**398076.7**	**567753.2**	**517351.0**	**924069.3**	**2407250.2**
Per cent of GDP	*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**
Per cent of GDP	*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**
Per cent of GDP	*15.5*	*12.1*	*8.8*	*12.5*	*12.0*
I. Financial Assets	**805869.5**	**612224.3**	**651241.3**	**1092617.4**	**3161952.5**
Per cent of GDP	*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**
Per cent of GDP	*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 (Concld.)

(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**
Per cent of GDP	*10.1*	*6.4*	*7.2*	*9.6*	*8.3*
I. Financial Assets	**382780.7**	**547346.2**	**834009.6**	**796341.7**	**2560478.2**
Per cent of GDP	*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**
Per cent of GDP	*-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**
Per cent of GDP	*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**
Per cent of GDP	*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**
Per cent of GDP	*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**
Per cent of GDP	*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 (Concld.)

(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**
Per cent of GDP	*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**
Per cent of GDP	*36.3*	*35.6*	*36.0*	*35.3*
Loans (Borrowings) from				
(a) Banking Sector	6052640.2	6186806.3	6506966.5	6660289.7
of which:				
i. Commercial Banks	5514625.2	5650354.1	5967806.6	6120170.8
ii. Co-operative Banks	536604.9	535027.3	537720.1	538664.3
(b) Other Financial Institutions	1582341.0	1637174.6	1697700.1	1704437.4
of which:				
i. Non-Banking Financial Companies	755399.6	784279.7	813759.5	782743.2
ii. Housing Finance Companies	721510.0	745913.7	775408.5	812844.7

Notes: 1. Data have been compiled for select financial instruments only (loans from Banking Sector, NBFCs and HFCs) for which data are available.
2. Data as ratios to GDP have been calculated based on the Provisional Estimates of National Income 2021-22 released on May 31, 2022.
3. Figures in the columns may not add up to the total due to rounding off.

Explanatory Notes to the Current Statistics

Table No. 1

1.2& 6: Annual data are average of months.
3.5 & 3.7: Relate to ratios of increments over financial year so far.
4.1 to 4.4, 4.8,4.9 &5: Relate to the last friday of the month/financial year.
4.5, 4.6 & 4.7: Relate to five major banks on the last Friday of the month/financial year.
4.10 to 4.12: Relate to the last auction day of the month/financial year.
4.13: Relate to last day of the month/ financial year
7.1&7.2: Relate to Foreign trade in US Dollar.

Table No. 2

2.1.2: Include paid-up capital, reserve fund and Long-Term Operations Funds.
2.2.2: Include cash, fixed deposits and short-term securities/bonds, e.g., issued by IIFC (UK).

Table No. 4

Maturity-wise position of outstanding forward contracts is available at http://nsdp.rbi.org.in under ''Reserves Template''.

Table No. 5

Special refinance facility to Others, i.e. to the EXIM Bank, is closed since March 31, 2013.

Table No. 6

For scheduled banks, March-end data pertain to the last reporting Friday.
2.2: Exclude balances held in IMF Account No.1, RBI employees' provident fund, pension fund, gratuity and superannuation fund.

Table Nos. 7 & 11

3.1 in Table 7 and 2.4 in Table 11: Include foreign currency denominated bonds issued by IIFC (UK).

Table No. 8

NM_2 and NM_3 do not include FCNR (B) deposits.
2.4: Consist of paid-up capital and reserves.
2.5: includes other demand and time liabilities of the banking system.

Table No. 9

Financial institutions comprise EXIM Bank, SIDBI, NABARD and NHB.
L_1 and L_2 are compiled monthly and L_3 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 & 1.1.1.1.1.4: 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 (WLAOs). 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**.

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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.

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