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Impact of Monetary Policy Signals on Fixed Income Markets in India

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2.1. Introduction

Various Monetary Policy announcements, made by the Central Bank of a country from time to time, provide necessary signals to the financial system and markets of the economy, thereby influencing the functioning of the financial market and its stakeholders. The fixed-income securities market, dominated by institutional players in India, has experienced significant developments due to several monetary policy announcements (Conventional and Unconventional) made by the Reserve Bank of India (RBI) over the last few years, especially after the onset of the COVID crisis in 2020 and during the rising inflationary pressure in 2022. Such market developments are expected to have a significant impact on the trading and investment activities undertaken by banks and other financial institutions within and across the national border.

This chapter intends to analyze the broader scope and functioning of the fixed-income securities market in India, followed by an examination of the impact of changes in various policy rates, reserve ratios, and other relevant policy announcements on the Indian fixed income securities (Govt. and Non-Govt.) market. The impact may be captured separately in the primary and secondary markets for fixed-income securities. Efforts are made to capture the co-movements among various segments of the financial market during pre and post-policy announcements. Significant regulatory and market reforms (if any) after the policy announcements are also highlighted.

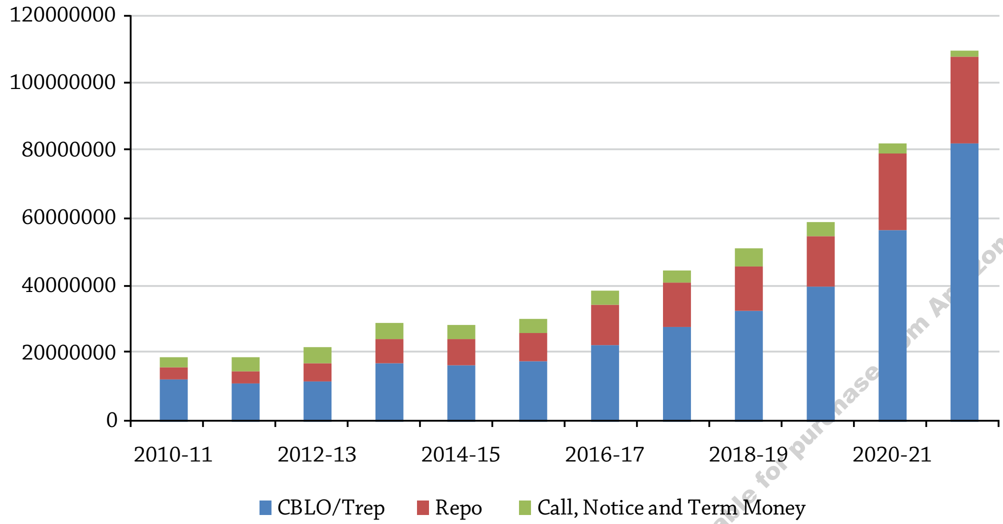
2.2. Fixed Income Securities Markets in India

The financial market, through its two broader segments: i.e. Equity and Debt, plays a very crucial role in the overall growth and development of an economy. In order to finance the budgeted fiscal deficit (the excess of budgeted expenditure over budgeted revenue receipts), various Government entities, viz. the Central Government, State Governments, and Municipal Bodies, devise market borrowing programmes. Under such programmes, the Government (Central and State) decides to issue various debt instruments (short-term and long-term) in the financial market to fulfil their financing requirement over the years. Total outstanding liability (market borrowing) of the Central Govt. (combining T-bills and dated securities) with respect to GDP follows an increasing trend (from 42 percent in 2017-18 to 61 percent in 2021-22) over the last five years, exhibiting the growing importance of the Government securities market for the overall growth of the Indian economy.

At the same time, besides raising equity capital and bank finance, various Non-Govt. entities, viz. Banks, PSUs, FIs, NBFCs, Corporate Bodies, etc., can also supplement their overall financing requirement by raising funds from the debt market, using Public Issue and/or Private Placements channels. The share of outstanding volume in the corporate bond market in terms of GDP is relatively smaller (around 27 percent in 2021-22) than that of the Govt. securities market in India and also the devel-

FIGURE 2.1

Trend in Outstanding Money Market Volume (Rs. Cr.)



Source: Author's own construction based on CCIL Reports.

oped corporate bond market in the rest of the world. But interestingly, the Indian corporate bond market shows consistent growth in terms of total outstanding volume (around two and half times in the last seven years), the total number of instruments offered (one and half times during a similar period), and the total number of issuers (around 2.7 times, from 2000 during 2014-15 to 5300 issuers during 2021-22) (Rabi Sankar 2022). Such estimates clearly indicate a trend for lesser dependence on bank borrowings and a growing importance of market borrowings even for various corporate entities, and also an increasing share of Non-SLR investments made by commercial banks and other financial institutions in India.

Two important segments of fixed income securities market are: Money market, and Dated Securities market. Broader scope and functioning of both the segments of the fixed income securities market are discussed in the following sections.

Money Market

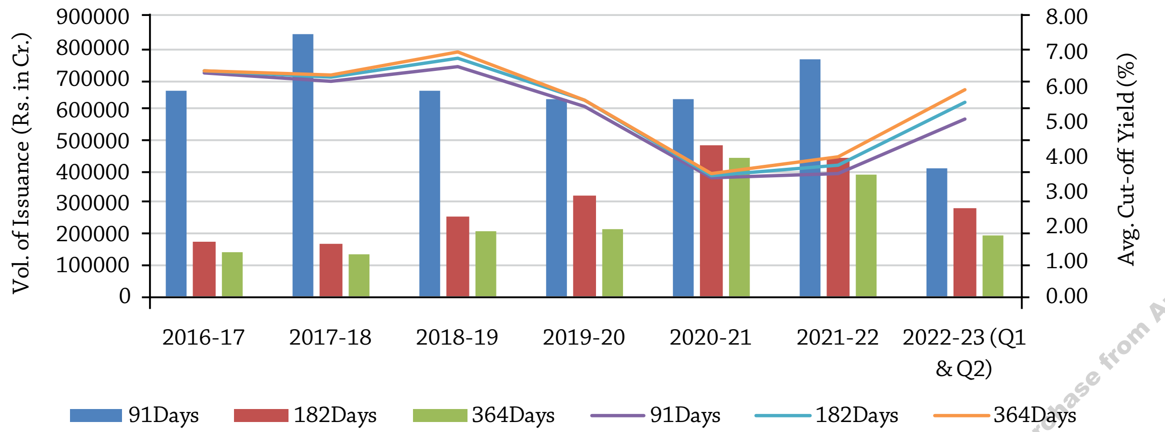
The money market, generally offering fixed income instruments up to a maturity of one year, forms an important part of the financial markets by providing an avenue for equilibrating the surplus funds of lenders and the requirements of borrowers for shorter periods. It also provides a focal point for the central bank's intervention in influencing the liquidity in the financial system and thereby facilitating the implementation of monetary policy effectively.

Various money market instruments available in India includes: Call-Notice-Term Money, Repos (Repo under LAF & Market Repo; Overnight and Term Repo), Tri-Party Repo (Overnight), Treasury Bills (91-Days, 182-Days, and 364-Days), Certificate of Deposit (CDs), and Commercial Papers (CPs). Indian money market gradually has become quite vibrant, playing a very crucial role in meeting the requirement of short-term liquidity and investments for the concerned players in the economy. Such increasing importance of the short-term segment of Indian financial market can be observed from Figure 2.1. Undoubtedly, the money market in India is primarily dominated by the Tri-Party Repo (TREPS) offered by CCIL, followed by Repo, and then the uncollateralized segment of the money market (i.e. Call, Notice and Term money), the later exhibiting a decreasing share in overall money market volume over the years.

As far as the T-bill segment is concerned, the market is primarily dominated by the 91-Days instrument, with an increasing market share for

FIGURE 2.2

Primary Issuance of Treasury Bills (Amount & Average Cut-off Yield)



Source: Author's own construction based on CCIL Reports.

the other two (182-Days and 364-Days) as well over the years, as exhibited from the Figure 2.2 depicting the volume of their primary issuance. It is evident that the Central Govt. has significantly increased its short-term market borrowing during 2020-21 and 2021-22, especially to tackle the economic instability during the COVID crisis. Interestingly, the average Bid-Cover-Ratio (BCR) for these T-bills auctions is around 5, implying a large volume (five times) of bids received than what are finally accepted, and also reflecting a better market appetite for such instruments.

Debt Market

Debt securities of various tenors, say ranging from one year till forty years, issued by Govt. (Central and States) and Non-Govt. entities, are very crucial for the growth and development of an economy. On the one hand, this market can be an efficient and cost-effective source of long-term funds for the borrowers (Government and Corporate bodies), and on the other hand, it not only offers an avenue to the investors (institutional and retail) to create long-term investments/assets with different risk-return profiles, but also to create trading opportunities for the market players. A developed and liquid secondary market for debt securities is very important to arrive at various benchmark rates at regular intervals, which are necessary to effectively price various interest rate products available in the market.

Profile of outstanding dated securities issued by the Central and State Governments through auctions over last few quarters are exhibited in the following table (Table 2.1). Interestingly, the State Governments on average issue around 40 times higher (3857 securities) than the number of securities issued by the GoI (94 securities), but with an outstanding volume of just half of that of GoI (i.e. INR 72 lakh crores), offering an average spread of around 70 basis points above the average coupon of 7 percent offered in securities issued by the GoI.

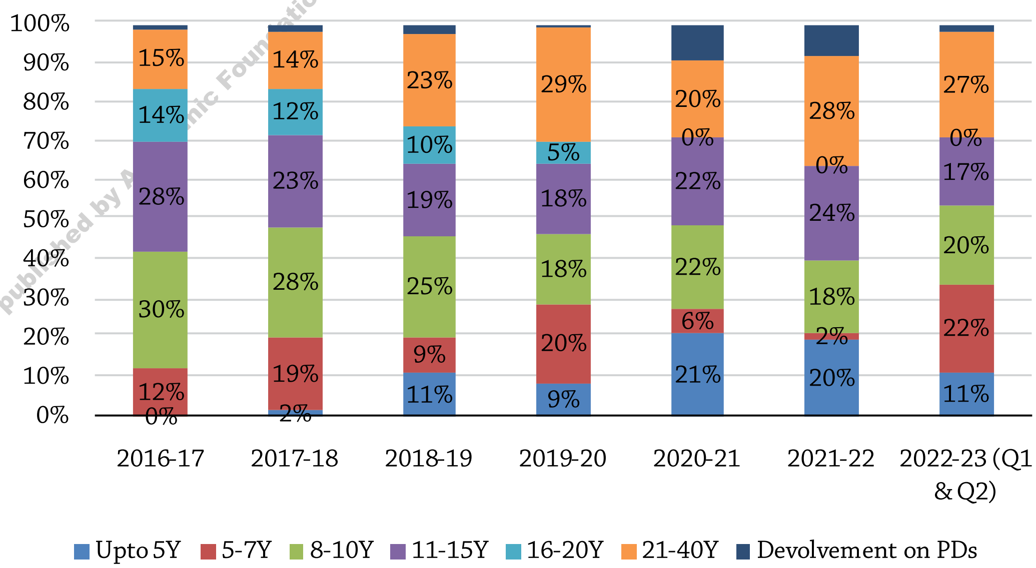
The trend in tenor-wise issuance of GoI securities over the years, as shown in Figure 2.3, clearly indicates the dominance of securities maturing between 5 to 15 years, even with a strong presence of long maturity (21 to 40 years) bonds, especially to meet the demand of institutions with long-term liabilities (such as insurance companies, provident funds, etc.). Interestingly, the percentage share of primary issuance towards devolvement on primary dealers became significant during 2020-21 and 2021-22, possibly due to under subscription and / or due to the intervention of the central bank to control the risk-free yield because of its importance as "a Public Good".

TABLE 2.1
Profile of Outstanding Government Dated Securities (GOI & SDL)

Quarter	*Central Govt. Securities*				*State Govt. Securities*			
Quarter	*No. of Securi-ties*	*Outstand-ing (Rs. lakh crore)*	*Wtd. Avg. Maturity (Years)*	*Wtd. Avg. Coupon*	*No. of Securities*	*Outstand-ing (Rs. lakh crore)*	*Wtd. Avg. Maturity (Years)*	*Wtd. Avg. Coupon*
Q2-FY20	86	58.88	10.57	7.81	3251	29.35	6.58	8.15
Q3-FY20	88	60.81	10.54	7.78	3147	30.47	6.62	8.09
Q4-FY20	86	60.22	10.71	7.77	3465	32.66	6.95	8.03
Q1-FY21	89	62.36	11.01	7.59	3582	34.05	6.83	7.95
Q2-FY21	91	66.57	11.19	7.44	3719	35.65	6.91	7.86
Q3-FY21	94	68.74	11.32	7.21	3842	37.22	7.79	7.09
Q4-FY21	94	71.68	11.30	7.15	3958	39.18	7.23	7.71
Q1-FY22	94	73.83	11.50	7.03	4038	40.29	7.35	7.68
Q2-FY22	96	77.33	10.42	6.98	4121	41.55	7.34	7.64
Q3-FY22	100	79.53	11.70	7.01	4174	42.58	7.35	7.60
Q4-FY22	100	80.60	11.70	6.96	4234	44.10	7.53	7.56
Q1-FY23	101	83.15	11.86	7.02	4270	44.72	7.48	7.57
Q2-FY23	101	86.61	11.96	7.08	4343	45.89	7.55	7.56
Quarterly Avg	94	71.56	11.21	7.29	3857	38.29	7.19	7.73

Source: Author's own construction based on CCIL Quarterly Report on Debt Market.

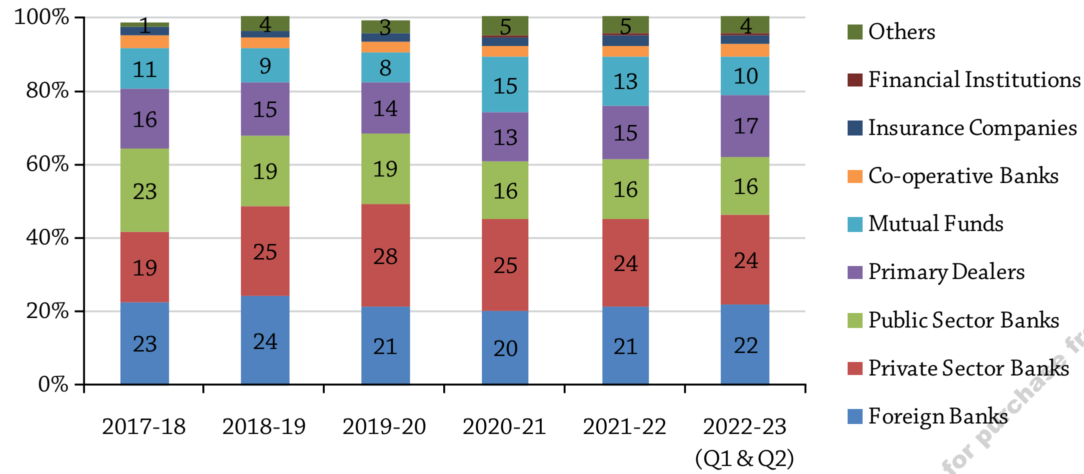
FIGURE 2.3
Tenor-wise Issuance of Central Govt. Securities (% Share)



Source: Author's own construction based on CCIL Reports.

FIGURE 2.4

Institutional Participation (% Share) in Outright Trades in G-Secs



Source: Author's own construction based on CCIL Reports

Even if the primary debt securities markets in India, as supported by the aforesaid facts and figures, are reasonably developed in comparison with many developed and emerging economies worldwide, there are inconsistencies when it comes to the secondary market for debt securities (Govt. & Non-Govt.). Ownership patterns both in Central and State Govt. securities, the nature of the business model of the important market players, rules and regulations of various regulatory bodies and internal trading and investment policies of the institutional players, make the secondary market trading quite different from the primary market exposures. Even if the average outstanding volume for State Development Loans (SDL) is around half of that of the Central Govt. securities, a similar scenario is not observed when it comes to secondary market trading. Secondary market for Govt. securities in India is primarily dominated by the GoI bonds, covering almost an average of 80 percent of the trading volume, leaving only around 4 to 8 percent of trading volume for SDLs. There is also a downward trend in the total volume of trading over the years, possibly due to the fear of booking higher Marked-to-Market (MTM) losses arising from rising interest rate scenarios.

The illiquidity and insufficient development in the secondary market even for Govt. securities in India can be assessed from the combined (Buy & Sell) participation of various institutions in outright trades in Govt. securities, as depicted in Figure 2.4. The figure clearly exhibits the dominance of SCBs (Foreign banks, Private and Public Sector banks), PDs and Mutual Funds, covering almost 80 percent of the trading volumes.

2.3. Monetary Policy Highlights and other Announcements Affecting Fixed Income Securities Market in India

This section of the chapter describes the scope of monetary policy, important tools used, monetary policy announcements since March 2020 till December 2022, and their impact on fixed income securities market in India

Monetary Policy and Role of Central Bank

The central bank of a country plays a very crucial role in the overall growth and development of the economic and financial system of the country. Monetary Policy is the prime tool used by the central bank of an economy to achieve macroeconomic stability in the economy. The aim of this prime tool is to primarily achieve price stability, as captured by inflation numbers (WPI and CPI), over a period of time, while minimising instabilities in output and employment, as projected through the GDP figures.

The Reserve Bank of India (RBI), the central bank of the country, uses various conventional and unconventional monetary policy tools/ instruments (direct or indirect), especially after the COVID-19 crisis started in March 2020, and during the very high inflationary pressure, experienced worldwide in 2022. Conventional monetary policy tools include Liquidity Adjustment Facility (LAF), Repo Rate, Standing Deposit Facility (SDF) Rate, Marginal Standing Facility (MSF) Rate, Bank Rate, Cash Reserve Ratio (CRR), Statutory Liquidity Ratio (SLR), and Open Market Operations (OMOs). Besides the conventional monetary policy tools, primarily focussing on changing the policy interest rates, the central bank of an economy may also adopt several unconventional measures, which majorly include Asset Purchases, offering Term-funding facilities, Negative Interest Rates, and Forward Guidance. The RBI as a part of its unconventional monetary policy measures during the COVID-19 crisis has introduced Long Term Repo Operations (LTROs) and Targeted LTROs (TLTROs), Govt. Securities Acquisition Programmes (G-SAP), Operations Twists (OTs), and Forward Guidance (FG) to combat the liquidity crisis in India.

Monetary Policy Announcements Highlights since COVID Crisis

Announcement (s) made by the central bank of a country in its monetary policy statements regarding any of the monetary policy tools/ instruments is/are very crucial for the overall functioning of the fixed income/debt securities market of the country. RBI's announcements towards changes (rise or fall) in policy rates, rate expectations (Accommodative / Neutral / Hawkish), and liquidity management exercises (viz. changes in CRR, SLR, conducting OMOs, etc.) have a significant impact (direct/indirect) on the fixed income/debt securities market, both primary market issuance and secondary market trading, in India.

Any change (rise or fall) in the policy rate tend to affect the bond yield and therefore the bond value. Accordingly, in rising (falling) interest rates scenarios the value of investments in fixed income securities/bonds tend to fall (increase), leading to an actual/opportunity loss (gain) to the holder of such securities, and thereby affecting the demand and supply of such securities in the market. Besides actual rate announcements, rate expectations of the central bank is also very crucial, especially for long term securities. The longer segment of the risk-free yield curve, especially the steepness/flatness of the curve, typically reflects the rate expectations set by the central bank. Accordingly, whenever the RBI in its monetary policy statement changes its stance, the same gets reflected in the long-end of the bond yield curve. Apart from rate outlook, RBI's signal on liquidity also affect the functioning of the fixed income market, especially the short-term segment. Policy announcements, such as changes in CRR and / or SLR, OMOs, Govt. Securities Acquisition Programme (G-SAP), helps to manage (tighten / loosen) the short-term liquidity, primarily affecting the short-end of the yield curve and thereby shaping (Steepening/Flattening) the entire risk-free yield curve, which is deemed to be a "public good".

Since the onset of the COVID crisis, in March 2020, the RBI has made several monetary policy announcements affecting the fixed-income market in India. In order to take care of the COVID situation in India and to inject more liquidity into the system, the RBI in its monetary policy announcement in March 2020 (RBI, 2020b) reduced the policy repo rate by 75 basis points (from 5.15 percent to 4.40 percent), followed by further reduction of the same by another 40 bps in May 2020 (RBI, 2020c) policy announcement, with the decision to continue with the accommodative stance as long as it is necessary to revive growth and mitigate the impact of COVID-19 on the economy, while ensuring that inflation remains within the target going forward. It was also decided (in March 2020) for a one-time reduction of the CRR of all banks by 100 basis points to 3.0 per cent of their NDTL, available for a period of one year ending on March 26, 2021, to release primary liquidity of about INR 1,37,000 crores uniformly across the banking system. The central bank remain accommodative and kept the policy rates unchanged (Repo Rate, Reverse Repo Rate and MSF Rate respectively at 4 percent, 3.35 percent, and 4.25 percent) till its February 2022 policy announcement (RBI, 2022b). The RBI changed its stance to remain accommodative while focusing on withdrawal of accommodation in its MPC meeting in April 2022 (RBI, 2022c), and introduced the standing deposit facility (SDF) rate (at 3.75 percent) to represent the floor of the LAF corridor, keeping the Repo rate unchanged at 4 percent. Revisions on the maintenance of Statutory Liquidity Ratio (SLR), and SLR holdings in HTM were also initiated in April 2022 (RBI 2022d; RBI 2022e). The episode of rate hikes started with the RBI's unscheduled monetary policy announcement (RBI, 2022.f) of a sudden but expected hike in the policy rate by 40 bps (from 4 to 4.40 percent), coupled with a rise in CRR by 50 basis points (from 4 percent to 4.50 percent) in May 2022 (RBI 2022g). Subsequently, the central bank changed its stance on the withdrawal of accommodation, and hiked the policy repo rate by 50 basis points in each of its monetary policy announcements in June, August and September 2022 (RBI 2022h; RBI 2022i; RBI 2022j), followed by a hike in the policy rate by 35 basis points and 25 bps respectively in its December 2022 (RBI 2022k), and February 2023 (RBI 2023) policy announcement, lifting the repo rate at the level of 6.50 percent (SDF rate and MSF rate respectively at 6.25 and 6.75 percent, keeping the width of the LAF corridor unchanged at 50 bps).

Unlike conventional tools, the primary focus of RBI's unconventional monetary policy tools used during the COVID crisis was to stimulate economic activity by providing liquidity to specific sectors and entities experiencing liquidity stress during the said period, compressing the term premium, and guiding the market in restoring normalcy and maintaining financial stability (Talwar et. al. 2021).

In order to facilitate monetary policy transmission and to support the credit offtake in India, the RBI, as a measure of extended-term lending, introduced the Long Term Repo Operations (LTROs) (RBI 2020a), providing long-term (up to 3 years) liquidity to banks at the prevailing policy repo rate against the Govt. securities of 1 and 3 years maturities. Accordingly, several LTRO auctions were conducted during February-March 2020, augmenting system liquidity by around 1.25 lakh crores (Source: RBI). Subsequently, targeted long-term repo operations (TLTROs) were introduced to provide liquidity to specific sectors and entities (e.g. NBFCs and MFIs) experiencing liquidity stress. The RBI conducted four TLTRO auctions of INR 25,000 crores each of three years tenors, during March-April 2020, providing liquidity of around 1 lakh crore to banks exclusively for the deployment in investment grade corporate bonds, CPs, and non-convertible debentures, meeting certain pre-defined criteria. In October 2020, the RBI introduced On-Tap TLTROs (with a tenor of up to 3 years) for a total amount of up to INR 1 lakh crore, to be deployed not only in corporate bonds, CPs, and non-convertible debentures issued by the entities (to begin with 5 specific sectors, and subsequently to 26 stressed sectors) but also to extend bank loans and advances to these sectors, at a floating rate linked to the policy repo rate.

Under the initiative of the Asset Purchase Programme (APP), the RBI, during 2020-21, undertook a net Open Market Operations (OMO) Purchase of Govt. securities (GOI and SDL) of around INR 3 lakh crores. In addition to the normal OMOs, the RBI also conducted special OMOs, known as Operation Twist (OT), comprising simultaneous purchase of long-term and sale of short-term securities, primarily to compress the term premium and reduce the steepness of the risk-free yield curve. The RBI conducted around 20 such operations of INR 10000 crores each till February 2021. The central bank through its Forward Guidance (FG) mechanism during the COVID crisis continued to follow its communication strategy to support the accommodative stance of the RBI's monetary policy committee (MPC). The RBI also highlighted the need for cooperative solutions and emphasized financial market stability and the orderly evolution of the yield curve.

Impact of Monetary Policy Announcements on Fixed Income Markets

This report intends to study the impact of monetary policy signals, given through the changes/revisions made by the central bank in its monetary policy instruments (since the onset of the COVID crisis in March 2020 till February 2023), on the fixed income market in India (Sobrun, 2015) . The functioning in the primary and secondary market for the Govt. (Central and State) and Non-Govt. securities, and also the interest rate swap (Overnight Index Swap – OIS) are studied during this three years (2020-2022) period, highlighting pre and post-monetary policy announcements scenarios. Besides analysing the impact of changes in policy rates, an effort is also made to capture the impact of a few other amendments/modifications made or proposed by the RBI, affecting the fixed-income market in India.

Impact of Changes in Policy Rates

The Indian economy has experienced a two-phase reduction (by 75 bps and 40 bps) in the policy repo rate immediately after the onset of the COVID crisis during March to May 2020, followed by six consecutive hikes in the policy rates during April 2022 to February 2023, pushing the policy repo rate at the level of 6.50 percent, still with RBI's stance of withdrawal of accommodation (in its February 2023 policy announcement), indicating further possible rate hikes in the near future. Indian fixed-income markets (money and securities market; spot and derivatives market) have experienced a reasonable impact due to such changes, especially during the episodes of successive rate hikes.

Even if the RBI, as in the case of other central banks worldwide, immediately after the onset of the COVID crisis, reduced the policy rate by 115 basis points to inject more liquidity and to support the growth of the economy, the economy and the financial market had to wait to witness the RBI's rate hikes scenarios. These long-awaited announcements have a significant impact on the Indian economy in general, and on the Indian financial market in particular. The SDF was announced (in April 2022) majorly to absorb the surplus liquidity, removing the collateral constraints of RBI, giving more flexibility to liquidity management, and making the overnight call rate close to the policy rate. The daily weighted average call money rates going below 3.30 percent before the introduction of SDF experienced an increase of roughly 35 to 40 basis points till the announcement of the first policy rate hike in May 2022. The rate hike in the lower bound of the LAF corridor by 40 basis points, bringing back the monetary policy rate corridor from 90 bps to 50 bps, has given an indication for possible hikes in the policy repo rate in the near future. The impact of the successive hikes in the policy rates on the fixed-income securities market is summarised below

First, the immediate impact of the reduction in the policy rate by 75 bps in March 2020 is dual in nature in the short and long-term segments of the yield curve. Even after the rate cut, all the short-term rates (till 1 year), immediately after the policy announcements, experienced a positive change (around 15 to 35 bps), and a marginal fall (by 3 to 6 bps) in the long-term GOI yield. The impact of the subsequent rate cut in RBI's May 2020 policy announcement was found to be marginal across all tenors. Accordingly, the central bank's announcements of rate cuts, even though injecting additional liquidity in the system, couldn't affect the fixed income market to a greater extent.

Second, GOI Yield Curve shifted Upward in the range of 10 to 30 bps and 20 to 50 bps respectively after the introduction of SDF at 3.75 percent and the first hike in RBI Repo Rate by 40 bps, with an average rise in GOI Yield till 10 Years respectively at around 25 bps and 35 bps. This exhibits the market sentiment of rising interest rates, across the yield curve, with a greater shock in short-term yields (Tanweer A. 2019), as summarized in Table 2.2. But unlike the impact observed during the first hike (by 40 bps) in the repo rate in May 2022, the decision of MPC to further hike the repo rate by 50 bps both in the month of June and August 2022 hardly depicts any major impact on the prevailing market rates including yield on central Govt. securities. The reasons were very obvious. The impact of the second and third

TABLE 2.2

Change in Market Rates (in bps) Post RBI Monetary Policy Announcements

Change in Rates (in bps) Post RBI Monetary Policy Announcements								
Date	*Mar-20*	*May-20*	*Apr-22*	*May-22*	*Jun-22*	*Aug-22*	*Sep-22*	*Dec-22*
Policy Repo Rate	-75	-40	0	40	50	50	50	35
Call	36	2	16	41	49	52	22	NA
O-N MIBOR	21	-10	32	41	50	51	7	35
3M TB	31	-12	10	-1	1	0	-9	3
6M TB	32	7	15	23	4	7	-10	8
12M TB	26	3	22	41	-4	3	-7	10
3M GOI	14	-7	15	50	-5	10	-26	10
6M GOI	8	-4	17	39	-7	9	-34	7
1Y GOI	1	0	20	23	-10	8	-24	4
5Y GOI	-6	-6	29	37	-8	17	8	6
10Y GOI	-6	1	24	29	-1	20	13	4
15Y GOI	-5	-1	13	27	-5	18	11	3
40Y GOI	-3	-6	16	22	-2	13	8	3
CD_14D	-41	34	28	44	15	11	-13	9
CD_12M	29	3	18	68	-8	-1	-17	11

Source: Author's own construction based on FBIL data.

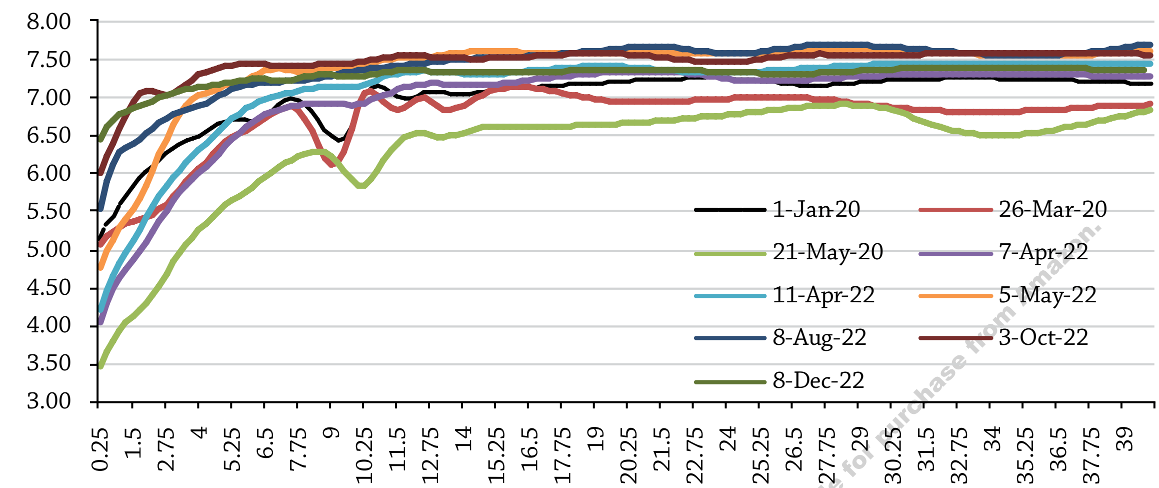
possible hikes in the repo rate were well anticipated and therefore had already been factored into the market expectations, as seen from the shift of the risk-free yield curve after the first hike till the further hike in the repo rate. The impact of the December 2022 monetary policy announcement on the yields on GoI securities was again found to be marginal (around 5 bps), again depicting a scenario where the impact of rate hikes was already factored into by the market. It is also evident that in the recent episodes of policy tightening, long-term yields are found to be influenced more by global factors (increasing US yields) than domestic monetary policy (Albagli, 2018; Abhilasha.et.al. 2023). Figure 2.5, not considered as a controlled experiment, also depicts a similar scenario where the impact of rate hikes is already factored into by the market before the RBI's policy announcements.

Third, historical movement of risk-free rates (20-Days Moving Average) for a few selected tenors during 2020 and 2022, as depicted in the Figure 2.6, clearly exhibits various phases of changes (Fall and Rise) in RBI's policy rates during the period. The market sentiment of possible hikes in the policy rate well before (during November 2021 and March 2022) the RBI's announcement of the first rate hike in May 2022, a sharp rise in GOI yields (steeper rise in short-term rates) during April and May 2022 announcements; differential impact on short-term and long-term yields during July and September 2022; rise in risk-free rates (almost for all tenors) but at a slower pace during September and October 2022, followed by almost a stability thereafter even after RBI's rate hike in December 2022 are clearly observed from the Figure 2.6.

Fourth, nature of trading volume in the fixed-income securities of different maturities may reflect the inflation outlook. The market may prefer to trade mostly in short and medium-term securities in case of a rising inflationary expectation, and vice versa. The secondary market for G-Sec. has deepened in terms of trading activity immediately after the rate hikes. Outright trade volume experienced a gradual rise, almost for all maturities, immediately after the announcements, followed by a decline thereafter. An important reason for higher volumes

FIGURE 2.5

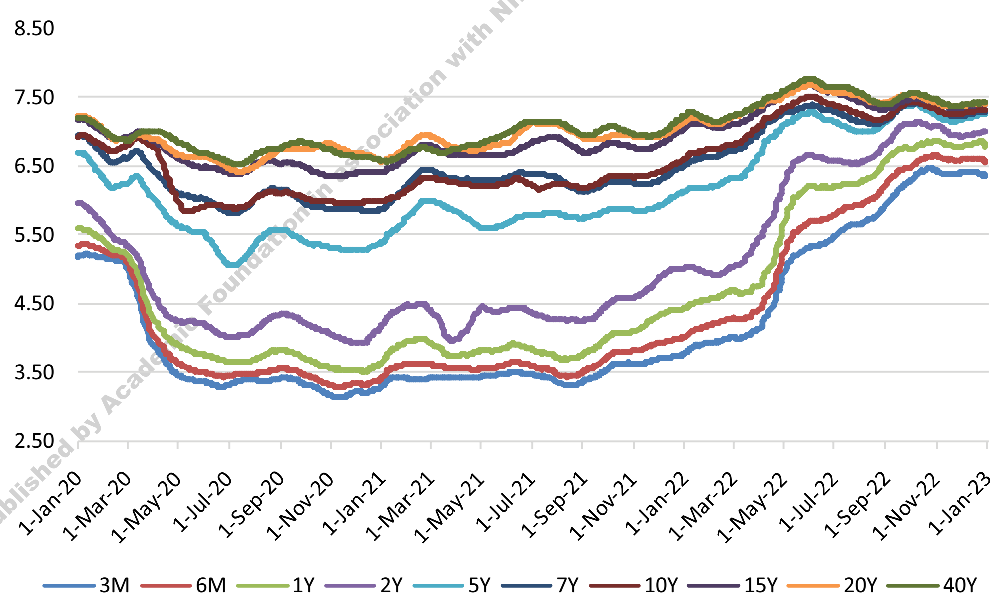
FBIL GOI Yield Curve (after Announcement of Policy Rates)



Source: Author's own construction based on FBIL data.

FIGURE 2.6

Historical Movement of GOI Yields of Various Tenors

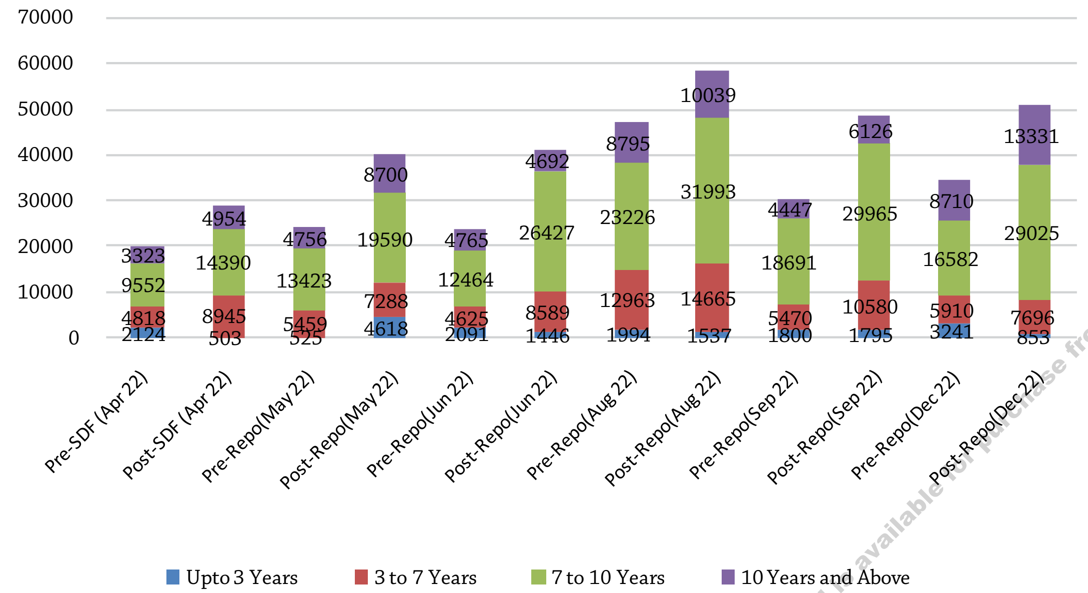


Source: Author's own construction based on FBIL data.

in all maturity segments could be fresh holding without selling existing positions, especially due to the sudden rise in bond yields, and therefore relatively cheaper bond prices. But the volumes of outright trade in Central Govt. securities have experienced a subsequent fall, possibly due to the slight downward trend in the bond yield sometime after the announcements of rate hikes, especially for mid-term and long-term positions, creating an opportunity for the bond traders to book some profits by selling some of their positions. RBI's announcements on changes in HTM dispensations also contribute to such a rise in securities holding

FIGURE 2.7

Maturity-wise Outright Traded Volume Settled by CCIL (Pre and Post Rate Announcement)



Source: Author's own construction based on CCIL Reports.

positions. Figure 2.7 exhibit a downward trend in the overall volume of outright trades in Govt. securities during September and December 2022 announcement, but still with around 50 percent rise in the volume immediately after the rate hikes.

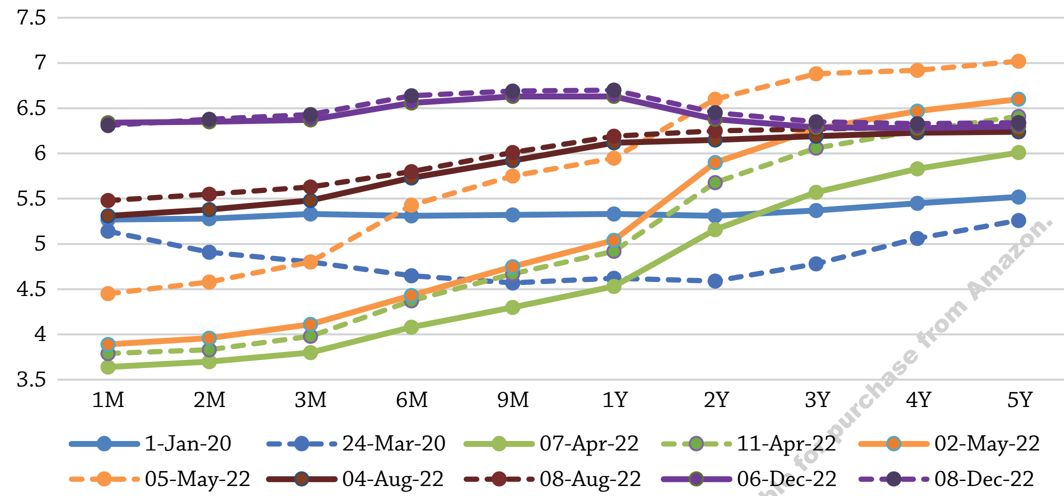
Fifth, Corporate Bond Yield Spreads (Daily CB spread, published by FIMMDA), compensating for credit and liquidity risk, also experience a significant rise after the first hike in the policy rate in May 2022 (Smolyansky and Suarez 2021). The impact of changes in policy rates on the yield spreads started weakening over subsequent policy announcements.

Sixth, derivatives being an instrument, playing a crucial role in price discovery, current movements in the Overnight Index Swap (OIS) rates are expected to capture the unanticipated component of the market sentiment towards possible changes in the spot rates (here GOI yields). Accordingly, the shifts in the OIS curve post RBI's monetary policy announcements are expected to provide an indication of future market reactions on bond yields. The following figure (Figure 2.8) exhibits the shift in the OIS curve during pre and post-monetary policy announcements in March 2020, and from April to December 2022. The figure clearly indicates the impact of changes in policy rates, which happened in March 2020, April and May 2022, on the OIS curve. Since the OIS market had already factored the future market sentiment immediately after the first rate hike in May 2022, almost double the expectation observed in the G-sec market, no major rate change is observed, except a fall in the 5-year OIS rate by 22 bps, after the second hike in the policy repo rate in June 2022. As expected, the impact of subsequent rate hikes on the OIS curve was found to be marginal.

The historical movement of MIBOR OIS rates for various tenors (1 Month to 5 Years) during January 2020 and December 2022 is shown in the following figure (Figure 2.9). The figure clearly indicates the three phases of movements in the OIS rates: a declining phase till May June 2020, followed by a phase of rising rates but at a slower pace till March 2022, and thereafter a phase of a sharp rise in the OIS rates, especially for the shorter tenors. This rising trend, maybe with a slower pace, in the OIS rates almost for all the tenors till the first rate hike in April 2022 shows that the future market sentiment of a possible rise in the interest rates has been already captured in the OIS market even with RBI's accommodative stance till

FIGURE 2.8

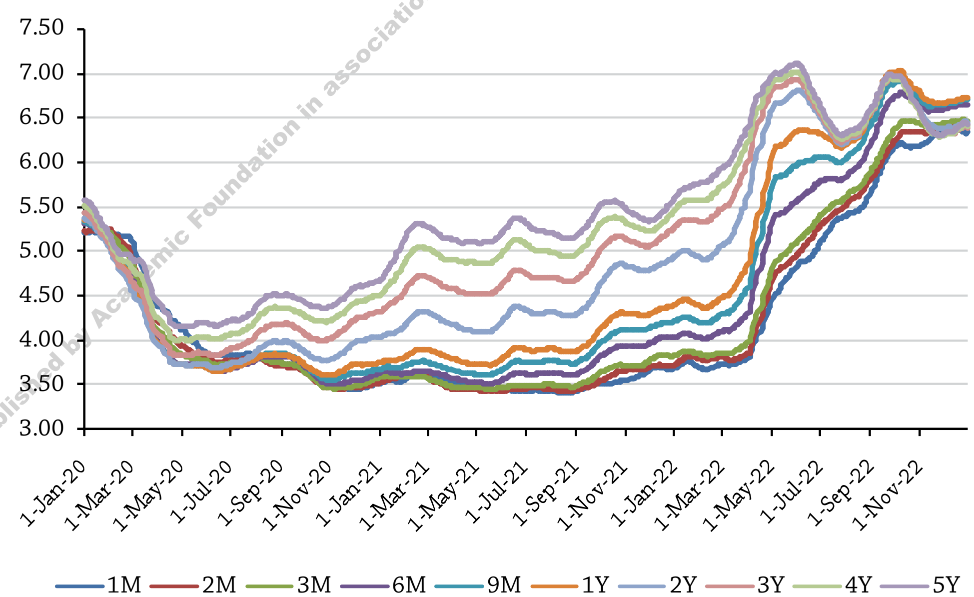
OIS Curve during (Pre & Post) RBI Announcement of Changes in Policy Rates



Source: Author's own construction based on FBIL data.

FIGURE 2.9

Historical Movement of MIBOR OIS Rates (20-day Moving Average)



Source: Author's own construction based on FBIL data

April 2022. Further, stability in the OIS curves, possibly observed after the December 2022 rate hike, may indicate a situation of small or no hikes in the policy rate in the near future, subject to a scenario of having the inflation numbers within the prescribed range.

Seventh, various interest rates in fixed income market (viz. T-Bill rates, GOI Yields, and OIS

TABLE 2.3

Changes in Correlation between Market Rates of Different Tenors during 2020-22

	Correlation between Various Market Rates during Different Periods (2020-22)						
	Jan-May 2020	*Jun-Dec 2020*	*Jan-Dec 2021*	*Jan-Mar 2022*	*Apr-Jun 2022*	*Jul-Sep 2022*	*Oct-Dec 2022*
3M T-bill & …							
1Y GOI	0.98	0.69	0.72	0.74	0.97	0.85	0.63
5Y GOI	0.86	0.39	0.46	0.76	0.88	0.30	-0.37
10Y GOI	0.77	0.13	0.61	0.85	0.86	-0.38	-0.40
40Y GOI	0.52	0.15	0.50	0.35	0.87	-0.59	-0.34
3M OIS	0.98	0.77	0.57	0.66	0.97	0.94	0.72
1Y OIS	0.95	0.56	0.77	0.66	0.96	0.61	-0.43
5Y OIS	0.92	-0.21	0.64	0.81	0.85	0.17	-0.43
1Y GOI & …							
5Y GOI	0.90	0.58	0.57	0.81	0.89	0.66	-0.05
10Y GOI	0.75	0.44	0.67	0.83	0.90	-0.14	-0.07
40Y GOI	0.56	0.34	0.22	0.23	0.90	-0.57	-0.06
3M OIS	0.98	0.64	0.76	0.54	0.97	0.93	0.63
1Y OIS	0.97	0.51	0.78	0.58	0.95	0.89	-0.14
5Y OIS	0.96	-0.09	0.61	0.76	0.84	0.57	-0.17
5Y GOI & …							
10Y GOI	0.84	0.66	0.82	0.92	0.98	0.55	0.98
40Y GOI	0.78	0.71	0.41	0.53	0.96	0.01	0.92
3M OIS	0.86	0.19	0.37	0.59	0.93	0.47	0.02
1Y OIS	0.88	0.44	0.61	0.73	0.95	0.89	0.95
5Y OIS	0.95	0.34	0.78	0.85	0.97	0.92	0.96
10Y GOI & …							
40Y GOI	0.61	0.67	0.50	0.36	0.98	0.80	0.94
3M OIS	0.71	0.08	0.45	0.56	0.91	-0.29	0.00
1Y OIS	0.69	0.57	0.70	0.62	0.92	0.17	0.93
5Y OIS	0.75	0.65	0.81	0.90	0.94	0.48	0.95

Source: Author's own construction based on FBIL data.

rates of various tenors) generally exhibits a reasonable degree of co-movement among them. But the degree and even direction of such co-movements may change in scenarios like changes in policy rates. A similar situation is observed in India, between January 2020 and December 2022, as shown in Table 2.3. The table captures the pair-wise correlation between the risk-free rates and OIS rates of a few selected tenors (3-Months, 1-Year, 5-Year, 10-Year, and 40-Year) for different periods (divided based on the periods of RBI's policy announcements) during January 2020 till December 2022. The underlying principle here is that the closer the tenors of the two rates, the higher would be the degree of positive association. Even if the association between the rates are mostly positive (with some exception, especially during October to December 2022), the degree of such association changes from time to time, especially whenever there are policy announcements. Accordingly, positive and stronger correlations between all possible rates are observed during January to May 2020 (with Rate cuts during Initial COVID periods), and during April to June 2022 (with Initial hikes in policy rates and RBI's stance of withdrawal of accommodation). Since the market sentiment of possible rate hikes was mostly captured during the first three policy announcements (April, May and June 2022), the subsequent policy announcements might not affect the market sentiment and therefore the market rates significantly, as also exhibited by the low correlation estimates during the said periods. Even if the degree of association between the spot rates of different tenors was weak during the second phase of the policy announcements, some significant positive associations between the risk-free yields and OIS rates are observed during the said period. These clearly strengthen the possible role of the swap market to discover futures interest rates, and therefore the inflation outlook.

Impact of Unconventional Monetary Policy Measures during COVID Crisis

In response to the unconventional monetary policy surprises by the RBI, after the onset of the COVID-19 crisis, the fixed-income securities market in India has also reacted reasonably as in the case of other economies worldwide. Accordingly, the introduction of LTROs, G-SAPs, and OTs by the RBI are found to have a significant impact on the yield on Govt. securities, especially of few maturities.

The introduction of LTROs, TLTROs, and On-Tap TLTROs in India during the COVID crisis during 2020-21 resulted in the injection of ample liquidity into the system, facilitating the transmission of monetary policy. Such operations are likely to create arbitrage opportunities for banks and other FIs, bringing down yields on G-Secs and corporate bonds of comparable maturities and reducing the lending rates benchmarked to risk-free yields. Accordingly, the G-Sec. yield for a few maturities experienced a negative impact after the announcements of various LTROs (Das et al., 2020). At the same time, various APPs (Outright and Special OMOs) also resulted in the moderation of long-term risk-free yield, which not only reduced the cost of borrowing for the Govt. in the year 2020-21, but also got reflected in other financial market instruments that are priced based on the concerned risk-free yield.

It is found that such unconventional tools (viz. LTROs, OTs), which directly intervene the bond market could be very useful tools in facilitating the transmission of monetary policy signals when the conventional measures of monetary policy transmission fail to perform as expected (Das et al., 2020). In response to the policy rate cut supplemented by RBI's effective unconventional measures adopted during the COVID crisis, the market experienced not only a decline in the risk-free yield but also a considerable compression in the corporate bond yield spreads across the maturity spectrum and rating categories (Talwar, 2021). Such lower interest rates regime facilitated especially the lowest investment grades (i.e. BBB) issuers to raise funds from the corporate bond market, resulting to a rise in the total corporate bond issuance during 2020-21 almost by 20 percent.

Impact of Increase in CRR

Besides hiking the repo rate, the central bank has decided to increase the CRR primarily to absorb the excess liquidity (to an estimated level of INR 87000 crores, as per RBI estimate) from banks, and to control the rising inflationary pressure in the Indian economy. RBI's move to introduce the SDF at the level of 3.75 percent led to a situation where a significant portion of daily surplus liquidity had been parked under the SDF in the month of April 2022, which, despite differences in market timings of various overnight segments and lack of access for all institutions to the SDF, has resulted in the weighted average call money rate (WACR) dipping below the SDF rate. The hike in the CRR, absorbing the surplus liquidity, is also expected to narrow down the spread between the repo rate and the overnight rate, by pushing the latter closer to the former, roughly by 40 bps (from 3.65 percent to 4.05 percent). Theoretically, a hike in CRR leads to less amount of money available in the hands of banks for investment in securities, causing a fall in the demand and therefore the price of securities, which results into rising in bond yields. Therefore, both hikes in repo rate and CRR may cause a bearish market for debt securities in India, leading to a good return on investments and better Net Interest Income (NII) for the banks, but with a possible hit on their trading profits, at least for the next few quarters.

Impact of Hike in SLR Component in HTM

RBI, since the onset of the COVID crisis, started increasing the upper limit of investments in SLR securities in HTM. Accordingly, the said limit was initially increased from 19.50 percent to 22 percent of NDTL (on September 1 2020), to accommodate securities acquired on or after September 1 2020, up to March 31, 2022. The same limit got further enhanced to 23 percent (on April 8 2022), to accommodate investment in SLR securities acquired between April 1 2022, and March 31 2024, but with a precondition to restoring the original level of 19.50 percent by March 31, 2025 in a phased manner. Such limit is enhanced primarily to accommodate banks to park their safer (i.e. free from credit risk) investments in a further safer (i.e. free from market risk) zone during the tough time of insufficient credit growth and adverse market condition (e.g. in rising interest rate scenarios). If banks decide to utilize the additional limit, at least up to some extent, this may create some additional demand for fresh, long-term, investments in SLR securities. On the other hand, this may have an adverse impact on the size of banks' trading portfolio, and therefore the growth and liquidity in the secondary market for Govt. securities. Therefore, such policy announcements may allow banks to increase the size of their investments in HTM, and possibly reduce the market risk in their trading book and the capital requirement. Such a hike in the SLR cap in HTM may be considered a preparatory step toward the withdrawal of the HTM limit, as proposed in the RBI review paper (RBI 2022a) on prudential norms for the classification and valuation of investments. Increasing the limit for HTM investments, without any provision of capturing permanent diminution (if any) of HTM positions, as currently followed by Indian commercial banks, may cause an economic loss for the bank, and also affect the development of the secondary market for debt instruments.

2.4. Concluding Observations

In order to ensure economic and financial stability, the Central Bank of a country tries to achieve the target of low and stable inflation, keeping in mind the objective of growth, through its monetary policy, using various conventional and unconventional tools. In order to manage the economic and financial instability arising due to the COVID pandemic, followed by the ongoing Russia-Ukraine war, the Reserve Bank of India (RBI) through its regular policy (Monetary Developmental and Regulatory) initiatives, attempted to control inflation and ensure price stability, and also to support the short-term liquidity in the banking and financial system of the country. Accordingly, along with most of the economies worldwide, India also experienced reduction in policy rates and injection of additional liquidity in the market primarily to support growth during the peak of the COVID pandemic (March 2020 onwards); followed by various episodes of hikes in policy rates and withdrawal of excess liquidity from the market (April 2022 onwards) to control the prevailing inflationary. The signals coming from these Monetary, Developmental and Regulatory policies of the central bank have a significant impact on the functioning and growth of the financial market, more specifically the fixed income (Money, Securities, and Interest Rate Derivatives) market, mostly driven by institutional players which are very important for the growth and development of an economy and the financial system of a country.

This study captures the growth and trends in the functioning of the fixed-income markets in India over the last few years, followed by capturing the impact of RBI's policy signals on the functioning of the fixed-income securities markets in India during a critical period (January 2020 to December 2022).

The percentage share of financing the annual Gross Fiscal Deficit (GFD) through annual market borrowing (i.e. issuance of debt instruments) has reduced (from 76 to 48 percent), and mostly remains the same (between 80 to 85 percent) respectively for the Central and State Governments. But the total outstanding liability (market borrowing) of the Central Govt.

(combining T-bills and dated securities) with respect to GDP still follows an increasing (from 42 percent in 2017-18 to 61 percent in 2021-22) trend over the last few years, exhibiting the growing importance of Government securities market for the overall growth of Indian economy. On the other hand, the Indian corporate bond market also shows consistent growth in terms of total outstanding volume, number of instruments offered, and the total number of issuers, indicating the growing importance of market borrowings even for various corporate entities, and also an increasing share of Non-SLR investments made by commercial banks and other financial institutions in India. A deep money market, a key for the effective transmission of monetary policy impulses, and a developed debt securities market, providing an efficient and cost-effective source of long-term funds, are clearly visible from the developments over the years as exhibited from various facts and figures.

As far as the impact of RBI's monetary policies is concerned, interest rates (short and long term) in the fixed-income market are duly affected by the central bank's announcements of rate cuts and rate hikes, coupled with its future stance on Accommodation or Withdrawal of Accommodation. Market sentiments during the policy announcements are found to be reflected better in Money market rates and other short-term yields, and largely internalized during the first few announcements, leaving a relatively weaker sentiment and reaction during subsequent rate hikes (till December 2022). Accordingly, yield curve (GOI risk-free yield curve) shifts are found to be relatively wider during April and May 2022 announcements of rate hikes, as compared to the subsequent policy announcements. The impact is found to be stronger in the short end of the curve, leading to a situation of flattening of the entire yield curve. Market rates of various tenors are found to have a stronger and positive correlation during the initial policy announcements. A weaker and insignificant association between the rates during the subsequent policy announcements possibly signals no further rate hikes or marginal rate hikes in the near future, as also reflected by the movement of OIS curves. As far as the policy implications on the long-term investments and trading volumes of institutional investors in the fixed-income market are concerned, the facts clearly highlight the growing importance of the market, both for the investors and the borrowers, irrespective of the actual return on investments / or cost of borrowings, affected by the policy announcements. There may be a temporary impact on the secondary market trading, especially for medium and long-term instruments/securities, due to possible MTM losses caused by hikes in policy rates. But the central bank's announcement on parallel hikes in HTM limit for SLR securities and further stretching of the last date of its phased reduction to its original level (from 23 percent to 19.50 percent of NDTL) takes care of the MTM losses of banks and other institutional players. The larger implications of consecutive rate hikes, not only in India but worldwide, for the retail players/investors having sizable exposures in fixed-income markets, are of two folds: larger depreciation in the value of their existing investments and therefore a significant fall in the value of their wealth, with a possible opportunity to earn a higher return on investment in the future on their fresh investments in debt market.

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