Monetary Policy Transmission in India: Recent Dynamics

by Yuvraj Kashyap, Avnish Kumar, Anand Prakash and Shubhangi Latey ^

Transmission to banks' lending and deposit rates has improved in the recent period, facilitated by the introduction of the external benchmark-based lending rate system. Large surplus liquidity and subdued credit demand aided transmission during the pandemic-phase of the easing cycle. The calibrated normalisation of surplus liquidity and robust credit growth strengthened transmission during the current tightening phase although it is still not complete. An empirical bank-level analysis in a panel framework indicates that a higher share of CASA deposits in total deposits has a softening impact on lending rates, while higher capital adequacy ratio has a positive and significant impact. High CD ratio increases the pass-through to deposit and lending rates while excess SLR lowers the pass-through to deposit rates.

Introduction

Monetary policy in India moved into a tightening mode in May 2022 amidst inflationary pressures emanating from the conflict in Ukraine, the concomitant jump in international commodity prices, disruption of supply chains and volatility in global financial markets. The policy repo rate was increased by 250 basis points (bps) between May 2022 and February 2023 and the policy stance shifted to 'withdrawal of accommodation' to align inflation with the target, contain second round effects and keep inflation expectations anchored. Alongside, the Reserve Bank of India (RBI) restored the width of the liquidity adjustment facility (LAF) corridor to 50 bps with the introduction of standing deposit facility (SDF), which replaced the fixed rate reverse repo (FRRR) as the floor of the corridor, in April 2022. The SDF rate was set 40 bps above the FRRR. Additionally, the cash reserve ratio (CRR) was increased by 50 bps in May 2022. In the preceding three years (February 2019-March 2022), monetary policy was in an accommodative mode with cut in the policy repo rate by 250 bps along with large injection of liquidity and other conventional and unconventional measures to mitigate the impact of the COVID-19 pandemic on economic activity.

In this backdrop of this shift in the monetary policy cycle, this article undertakes an assessment of the initial leg of monetary transmission, the process through which changes in central bank's policy rate get transmitted to banks' deposit and lending rates. Banks in India play an important role in meeting the credit needs of the economy and are thus an important conduit in monetary policy transmission. In order to strengthen the transmission of policy rate changes to banks' deposit and lending rates as also to enhance transparency of the rate setting mechanism, the Reserve Bank has periodically refined the process of interest rate setting by banks with external benchmark-based lending rate (EBLR) system being the latest endeavour[1] in this direction.

Previous studies have found some evidence of asymmetry in the response of lending and deposit rates to monetary policy shocks in easy and tight monetary policy cycles, with a relatively faster change in lending rates in response to an increase in policy repo rate as compared to a decrease. For deposits, the

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[1] The Reserve Bank mandated that all scheduled commercial banks (excluding regional rural banks and small finance banks) should link all new floating rate personal or retail loans and floating rate loans to micro and small enterprises (MSEs) to an external benchmark, *viz.*, the policy repo rate or 3-month T-bill rate or 6-month T-bill rate or any other benchmark market interest rate published by Financial Benchmarks India Private Ltd. (FBIL) effective October 1, 2019. The directive was extended to medium enterprises effective April 1, 2020.

pass-through was quicker during the easing phase as compared to the tightening phase (Das, 2015; Singh, 2011). An initial assessment of the EBLR regime, encompassing the accommodative phase of monetary policy, indicated that it helped to accelerate the pass-through to banks' interest rates (Kumar and Sachdeva, 2021; Kumar *et. al.*, 2022). The appropriate modulation of system liquidity in consonance with the prevailing monetary policy stance also aided monetary transmission. The EBLR system of loan pricing enables quicker and larger transmission to lending rates (Ranjan, 2022).

Against this background, this article reviews recent dynamics of monetary policy transmission to lending and deposit rates of banks. The article is structured in the following manner. Section II assesses the transmission of the policy rate changes to banks' interest rates at aggregate as well as disaggregated levels in the current tightening cycle *vis-a-vis* the previous easing phase. Section III presents an empirical estimation of the extent of the pass-through to lending and deposit rates of banks and attempts to delineate the potential determinants of the pass-through. The asymmetric impact of monetary policy on transmission has also been analysed in this section. Finally, Section IV concludes with key takeaways.

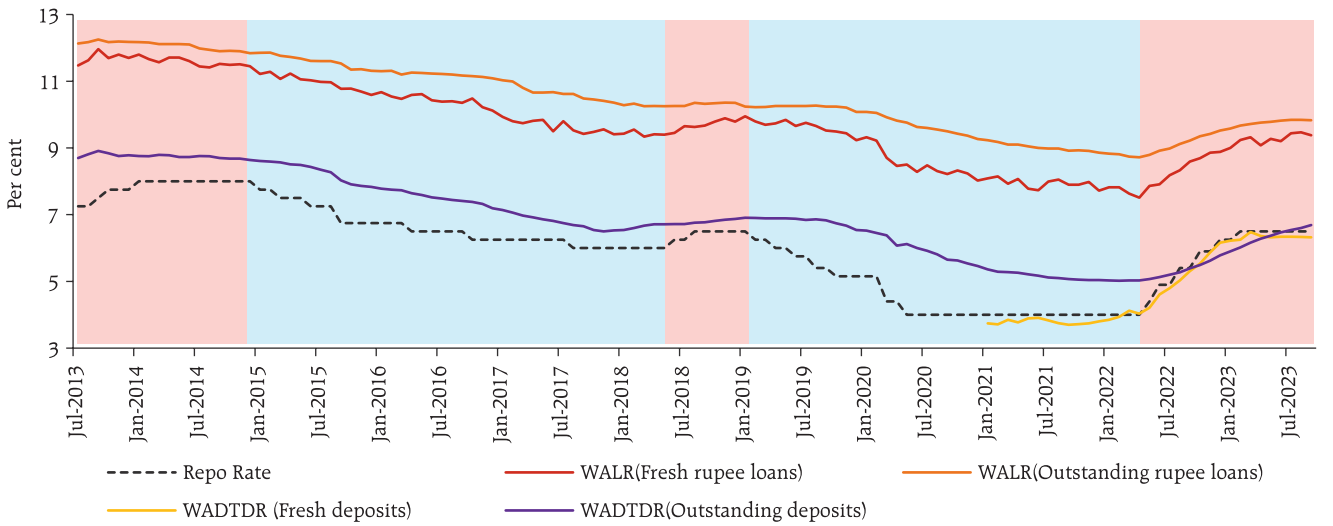
II. Transmission to Banks' Lending and Deposit Rates

Lending and deposit rates of scheduled commercial banks (SCBs) have exhibited co-movement with the policy repo rate (Chart 1). The extent and speed of transmission have varied across monetary policy cycles and benchmark regimes, along with an asymmetry in the transmission to deposit and lending rates.

II.1 Lending Rates

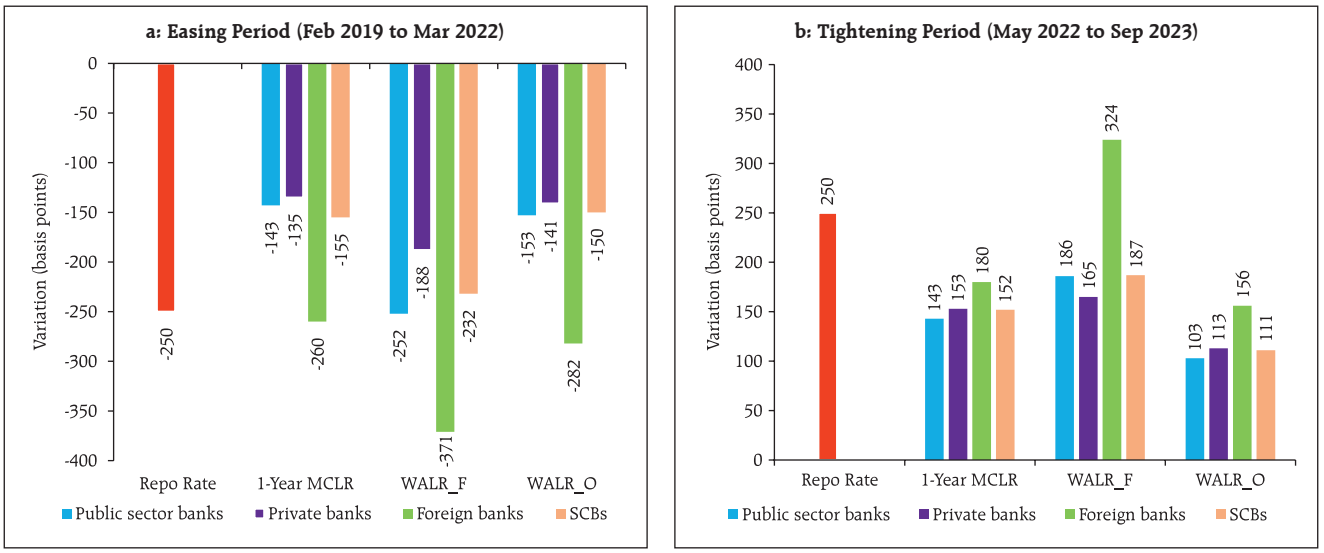
The transmission to lending rates improved significantly during the easing phase, *i.e.*, February 2019 to March 2022 (Chart 2a). Almost complete transmission to lending rates was witnessed, *albeit* over time, and this phase coincided with the introduction of the external benchmark regime in October 2019. The weighted average lending rate (WALR) of SCBs on fresh rupee loans touched a decadal low in April 2022. The lending rates have

Chart 1: Lending and Deposit Rates of Scheduled Commercial Banks



Note: The pink and the blue colours indicate tightening and easing cycles, respectively.
Source: Reserve Bank of India (RBI).

Chart 2: Bank Group wise Transmission to Lending Rates of Scheduled Commercial Banks



Sources: RBI; and Authors' calculations.

started increasing since May 2022 with the hike in the policy repo rate. The EBLR system, the normalisation of surplus liquidity and robust credit growth aided transmission in the current tightening phase. In response to the cumulative hike in repo rate by 250 bps during May 2022 to October 2023, the SCBs revised their repo-linked benchmark rates upwards by the same magnitude. The 1-year median marginal cost of funds-based lending rate (MCLR) rose by a relatively lower magnitude of 152 bps, reflecting the trends in banks' cost of borrowings. Consequently, the WALR on fresh rupee loans rose by 187 bps, while that on outstanding loans rose by 111 bps during May 2022 to September 2023 (Chart 2b).

The increase in the share of outstanding floating rate loans linked to external benchmark and a quicker reset of such loans at higher benchmark rates have facilitated the transmission to WALR on outstanding loans in the current tightening period. Among various external benchmarks, most banks have chosen the policy repo rate as their benchmark for the pricing of loans (Chart 3a). The share of loans in the above 8 per cent interest rate range has increased (Chart 3b).

At bank group level, the increase in the WALRs on fresh rupee loans was higher in the case of public sector banks (PSBs) relative to private banks (PvBs) during the period May 2022 to September 2023. However, the transmission to WALR on outstanding loans was relatively more for PvBs as compared to PSBs. The proportion of outstanding floating rate loans of the PvBs linked to external benchmark rates is higher than that of the PSBs, and this could have facilitated a greater pass-through to lending rates of PvBs[2]. The transmission to lending and deposit rates was the maximum in the case of foreign banks, reflecting the preponderance of their loans being EBLR-linked on the lending side and a higher share of low cost and

[2] In the case of private banks, 73.2 per cent of total outstanding floating rate loans were linked to external benchmark as compared to 36.1 per cent for PSBs at end-June 2023. For foreign banks, the corresponding ratio was 87.6 per cent.

Chart 3a: Share of Outstanding Floating Rate Rupee Loans of SCBs across Interest Rate Benchmarks

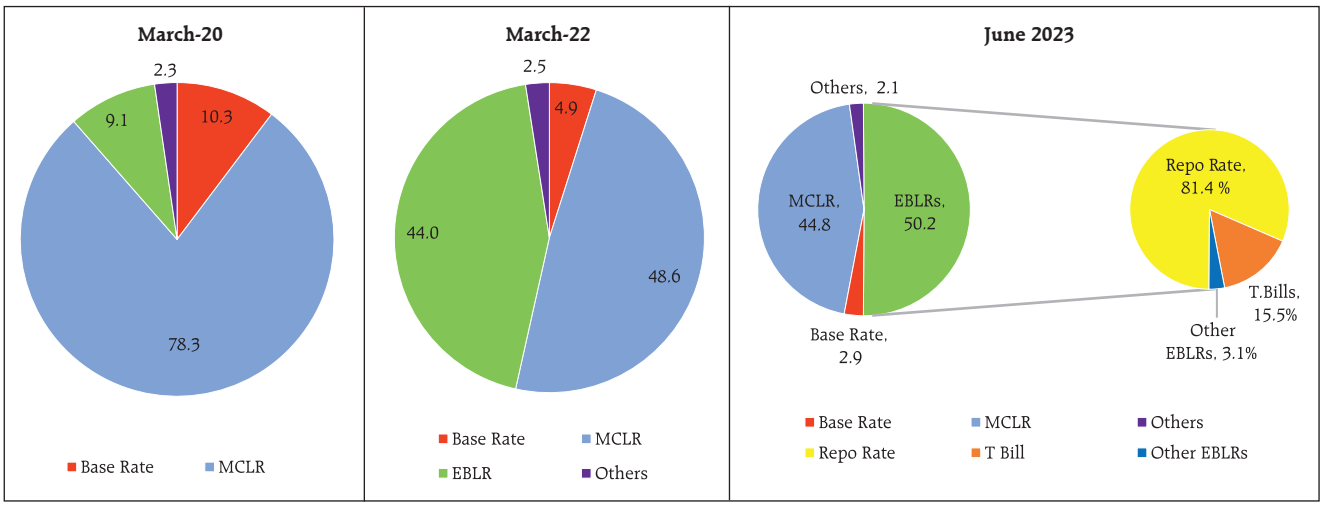
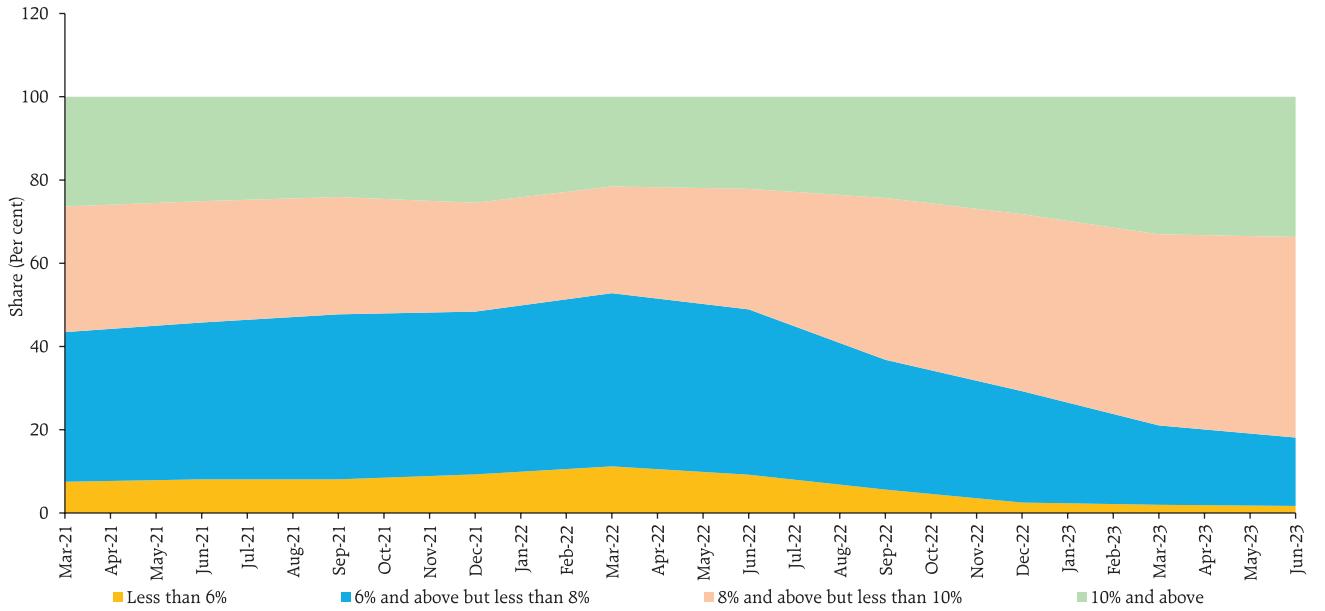


chart 3b: Share of Outstanding Loans across Interest Rate Range



Sources: RBI; and Authors' calculations.

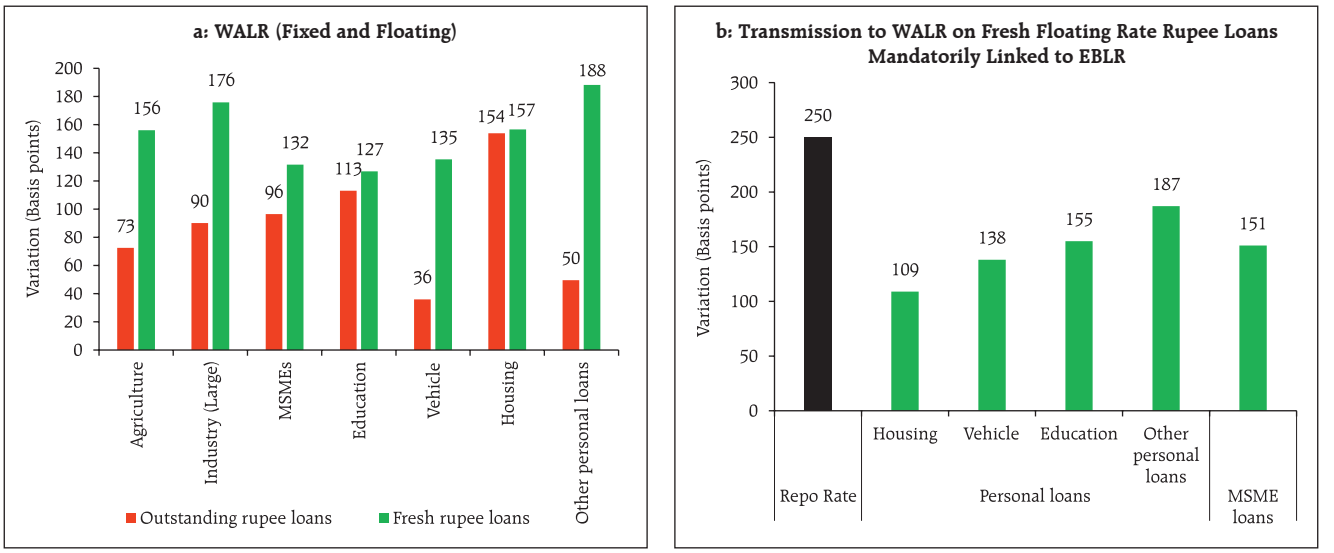
lower duration wholesale deposits on the liabilities side, which facilitate a faster adjustment in interest rates.

The WALRs on fresh as well as outstanding rupee loans to major sectors increased during May 2022 to September 2023 (Chart 4a and 4b). The pass-through has been uneven across sectors reflecting risk profiles and the varied nature of loans extended in each sector.

II.1.1 Transmission during Tightening Episodes

The pass-through of policy rate changes to lending rates in the tightening cycles over the past decade has varied sizeably, depending upon factors such as the duration of the tightening cycle, the speed of the rate hikes, and the prevailing liquidity conditions apart from episode-specific events. During the taper tantrum tightening episode (July 2013 to December

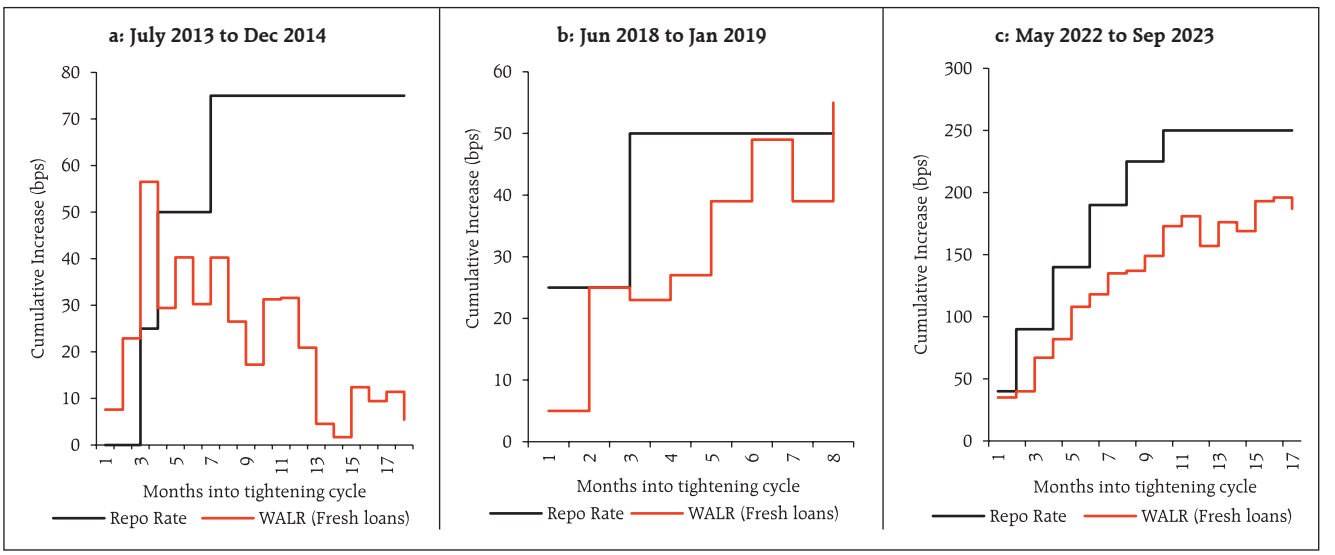
Chart 4: Sector wise Transmission to WALRs of Domestic Banks during May 2022 to Sep 2023



Sources: RBI; and Authors' calculations.

2014), the RBI raised the marginal standing facility (MSF) rate, which became the *de facto* policy rate, and undertook liquidity tightening measures including limiting banks' access to LAF and increase in daily CRR balance maintenance requirement even as the repo rate was left unchanged. Once normalcy was restored in the financial markets, the MSF rate was reduced while the repo rate was increased to contain the inflationary pressures (RBI, 2014). However, amidst surplus liquidity in the system, banks started reducing their lending rates even as the repo rate was unchanged, impeding the degree of transmission in this cycle (Chart 5a). During the June 2018 to January 2019 tightening episode, SCBs increased their lending rate on fresh loans by 55 bps in response to 50 bps change in the repo rate (Chart 5b). The tightening

Chart 5: Speed of Transmission to WALR on Fresh Loans across Tightening Cycles



Sources: RBI; and Authors' calculations.

cycle that started in May 2022 has seen a higher magnitude of increase in the policy repo rate relative to the earlier cycles (Chart 5c). The increase in policy repo rate is still working its way through the system in the current tightening cycle (Das, 2023).

Banks have reportedly reduced spreads charged on new loans over the past few months, thereby moderating the extent of transmission to actual lending rates on new loans (Table 1).

Table 1: Loans linked to External Benchmark – Spread of WALR (Fresh Loans) over the Repo Rate

(Per cent)

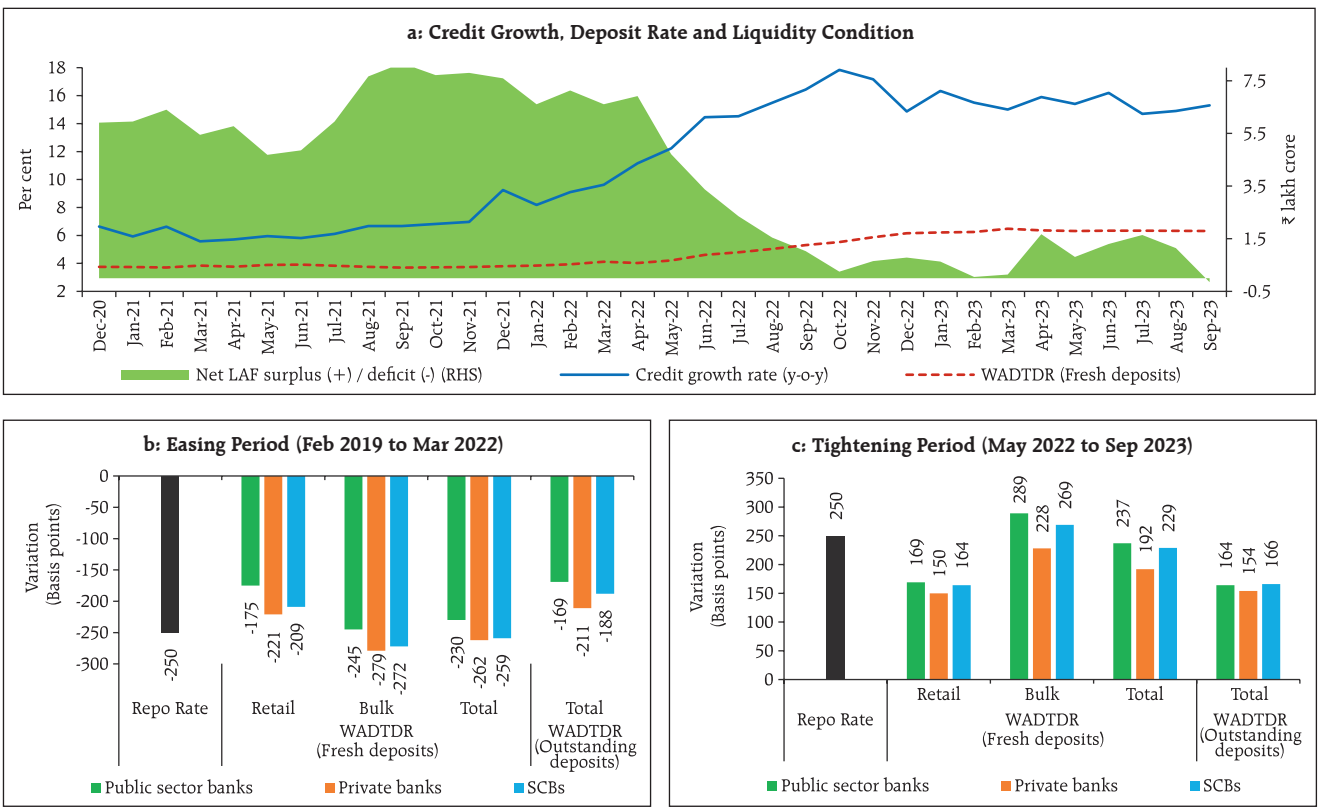
Sectors	September 2022			September 2023		
	Public sector banks	Private Banks	Domestic Banks	Public sector banks	Private Banks	Domestic Banks
MSME Loans	4.13	3.55	3.81	3.77	2.71	3.05
Personal Loans						
Housing	2.89	2.49	2.63	2.30	1.70	1.80
Vehicle	3.09	3.48	3.13	2.36	2.90	2.42
Education	4.33	4.88	4.50	3.71	3.84	3.76
Other Personal Loans	4.03	6.38	4.21	3.39	3.36	3.37

Sources: RBI; and Authors' calculations.

II.2 Deposit Rates

On the deposit side, the surplus liquidity conditions coupled with weak credit demand prompted banks to reduce their term deposit rates in the previous easing cycle (2019-22). In the current tightening cycle, with the sustained robust credit demand amidst tepid growth in deposits in the initial phase and moderation in surplus liquidity in the banking system, banks increased their term deposit rates significantly to attract fresh deposits (Chart 6a).

Chart 6: Transmission to Deposit Rates of Banks



Sources: RBI; and Authors' calculations.

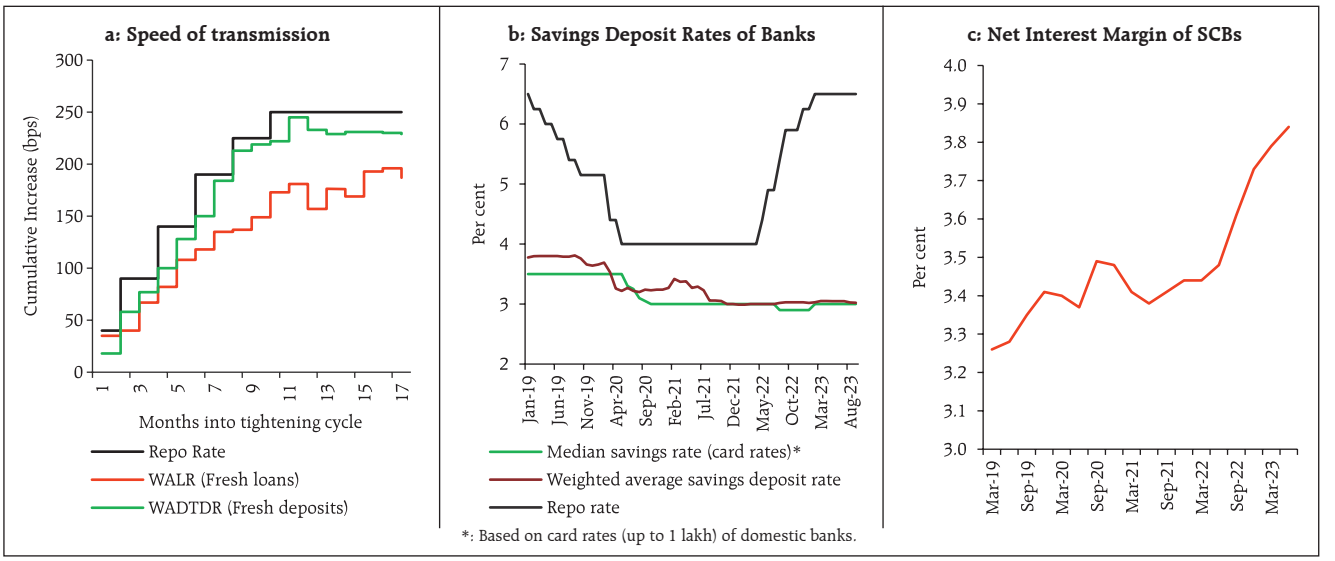
During May 2022 to September 2023, the weighted average domestic term deposit rate (WADTDR) on fresh deposits (bulk and retail combined) increased by 229 bps as against the increase of 250 bps in the repo rate. Banks raised their bulk term deposit rates more than retail term deposit rates in the initial phase of the tightening cycle. The increase in retail deposit rates outpaced increase in bulk deposit rates beginning second half of FY 2022-23[3]. Overall, the WADTDR on fresh retail deposits increased by 164 bps as compared to 269 bps in case of fresh bulk deposits during May 2022 to September 2023. The transmission to WADTDR on outstanding deposits was lower at 166 bps over the same period, reflecting the longer maturity profile of term deposits contracted at fixed rates (Chart 6b & 6c).

The EBLR system hastened the adjustments in deposit rates during the 2020-22 easing cycle, as banks were incentivised to reduce their term as well as savings deposit rates to protect their net interest margins (NIMs) in an environment of falling lending rates. On the other hand, during the tightening cycle, the pace of increase in deposit rates (term deposits and savings account deposits taken together) has lagged the pace of increase in lending rates so far. While the increase in term deposit rates in the current tightening cycle has exceeded that in lending rates, the savings deposit rates of banks – which are a third of total deposits – have remained almost unchanged (Chart 7a and 7b). This has moderated the increase in the banks' overall cost of funds. Accordingly, higher NIMs have been observed during the current tightening phase so far (Chart 7c).

II.3 Recent International Experience

Multi-decadal high inflation has been a global phenomenon across the world since the beginning of 2022. In response, central banks embarked on the path of monetary tightening, which has been the

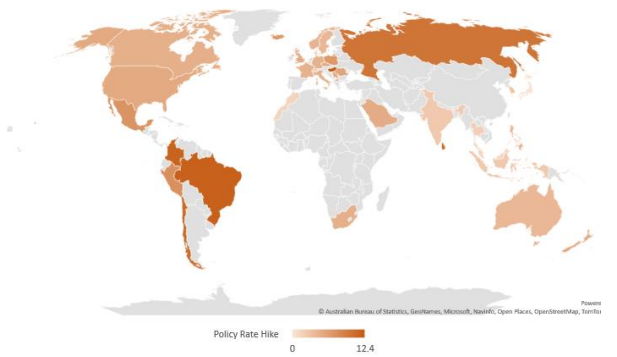
Chart 7: Deposit Rates and Net Interest Margin of Banks



Sources: RBI; and Authors' calculations.

[3] WADTDR on retail and bulk deposits increased by 116 bps and 95 bps, respectively during October 2022 to September 2023.

Chart 8: Policy Rate Hikes by Central Banks of Select Countries in Current Tightening Cycle



Note: The map shows the quantum of policy rates hikes (in per cent) by central banks of 39 countries.
Sources: Central bank websites; CEIC.

most synchronised tightening episode in the last five decades (BIS, 2022). Central banks raised policy rates at about twice their historical pace in the 2022-23 cycle (Chart 8).

In response to monetary policy tightening, banks in many jurisdictions have raised their lending rates significantly (Table 2). The pass-through has varied across countries, reflecting *inter alia* different financial structures. In Euro area, where banks constitute an important segment of financial markets, transmission to term deposit rates has been significant while households' sight deposits witnessed limited pass-through (François Villeroy de Galhau, 2023).

III. Empirical Analysis

In this section, an attempt has been made to empirically estimate the drivers of the pass-through of policy rate changes to lending and deposit rates of SCBs in a panel framework using generalised method of moments (GMM) estimator approach. Following Gambacorta (2008), the role of macroeconomic as well as bank specific factors in shaping monetary transmission is analysed.

Table 2: Transmission to Bank Lending Rates in Select Countries

Country	Recent Tightening Period	Cumulative increase in policy rate	Category of loans	Cumulative increase in lending rates	% increase in lending rates to policy rate
Australia	May 2022- Sep 2023	400	Housing Loan- All loans	348	87
			Housing loans- Variable rate	359	90
Canada	Mar 2022- Sep 2023	475	Variable Rate Mortgage (Total)	587	124
			Fixed Rate Loan (5Y and over)	164	35
US	Mar 2022- Sep 2023	525	30Y Fixed Rate Mortgage (Average)	355	68
			15Y Fixed Rate Mortgage (Average)	371	71
France	July 2022- Sep 2023	450	New Loans to NFCs	298	66
			New Loans to Households	201	45
Germany	July 2022- Sep 2023	450	New Loans to NFCs	305	68
			New Loans to Households	155	34
Italy	July 2022- Sep 2023	450	New Loans to NFCs	376	84
			New Loans to Households	216	48
Netherlands	July 2022- Sep 2023	450	New Loans to NFCs	307	68
			New Loans to Households	177	39
Spain	July 2022- Sep 2023	450	New Loans to NFCs	330	73
			New Loans to Households	219	49
UK	Dec 2021- Sep 2023	515	Secured loans on dwellings, new advances to Individuals and individual trusts	351	68
			Other loans, new advances to Individuals and individual trusts	230	45
India	May 2022- Sep 2023	250	Fresh rupee loans (Total)	187	75
			Outstanding rupee loans (Total)	111	44

Sources: Central bank websites; CEIC.

III.1 Data and Methodology

The empirical analysis focuses on the flexible inflation targeting (FIT) period (2016:Q3 to 2022:Q4) and uses quarterly data for 28 major SCBs[4] to assess monetary transmission. Additionally, an attempt has also been made to gauge monetary transmission during the EBLR period, *i.e.*, 2019:Q3 to 2022:Q4. In the case of lending rates, the WALR on fresh rupee loans is used as the dependent variable and the policy repo rate (Repo) is considered as the key monetary policy variable along with other macroeconomic and bank-specific control variables. Data on WALR on fresh rupee loans are from returns submitted by banks while the rest of the variables have been sourced from the Database on the Indian Economy, RBI. Based on Gambacorta *op. cit.*, Chattopadhyay and Mitra, 2022; Holton *et. al.*, 2018, the following variables have been identified and used in our model (Table 3).

Incorporating these variables in our model, Equation (I) is used to estimate the pass-through of policy rate changes to lending rates:

$$WALR_{b,t} = \mu + \sum_{i=1}^{n} \alpha_i \, WALR_{b,(t-i)} + \sum_{i=0}^{n} \delta_i \; Repo_{t-i} + \sum_{i=0}^{n} \pi_i \, LIQ_{t-i} + \sum_{i=0}^{n} \beta_j \, X_{b,(t-i)} \; + \; Dum_t \; + \; \varepsilon_{b,t} \qquad \ldots(I)$$

Where $WALR_{b,(t-i)}$ represents lagged values of WALR for bank b; $X_{b,t}$ represents the bank-specific variables for bank 'b' at time 't'. $Repo_t$ is the policy repo rate at time 't'. The coefficient of $Repo_t$ measures the extent of pass-through to lending rates. LIQ_t represents the liquidity in the banking system. $\alpha_{i's}$, δ_i, π_i, $\beta_{i's}$ and ('i'=0,1, …) represent partial slope coefficients for equation (I). $\varepsilon_{b,t}$ denotes stochastic disturbance term for respective equations. Dum_t is time dummy for demonetisation[5]. The disturbance term contains unobserved bank-specific effect (time invariant) and

Table 3: Dependent and Explanatory Variables used for Model Estimation

Dependent Variable: *WALR on Fresh Rupee Loans*

Explanatory Variables	Expected Sign	Theory
Policy Repo rate	(+)	Policy rate changes get transmitted to the lending rates of banks through the interest rate channel of monetary transmission.
Current account savings account (CASA) deposit share in total deposits	(-)	Accretion of CASA deposits is a relatively cheaper source for banks to fund credit growth. An increase in CASA share can lead to lower lending rate if the spread remains constant.
Gross Non-Performing Assets (GNPA) Ratio	(+) / (-)	A high GNPA may prompt banks to charge higher spread (credit risk premium) to protect their margins. However, high NPAs could also prompt banks to rejig their portfolio towards more creditworthy borrowers, which can lead to lower lending rates.
Capital to Risk weighted Assets Ratio (CRAR)	(+) / (-)	Higher capital requirements increase the cost of intermediation and banks may pass on the cost to borrowers. On the other hand, banks with higher CRAR may be able to raise funds at a relatively lower cost, thereby reducing their lending rates even if financial conditions are tight.
Net LAF adjusted for NDTL	(-)	An increase in liquidity in the banking system is expected to have a softening impact on lending rates, as banks' requirements of funds could be lower resulting in a reduction in deposit rates.
Incremental Credit to Deposit Ratio	(+)	A measure of bank's lending capacity given its deposit funding. A high CD ratio, *ceteris paribus*, could prompt banks to raise their lending rates, and *vice versa* for a moderation in their CD ratio.

[4] As at end March 2023, the share of these 28 SCBs in total outstanding credit was more than 90 per cent.

[5] Demonetisation dummy for the period Q3:2016 to Q4:2016 is included in the model. Transmission gained significant traction during this period resulting from a massive influx of low-cost CASA deposits into the banking system prompting a faster reduction in term deposit rates by banks, which led to a sharp reduction in the cost of funds and, hence, in lending rates.

idiosyncratic disturbances term (varies across time but not across banks). In the case of deposits, the analysis is based on a relatively short period 2020:Q1 to 2022:Q4, given the data availability. The weighted average domestic term deposit rate (WADTDR) on fresh deposits of the SCBs have been used as the dependant variable. Independent variables include repo rate, and other control variables, *viz.*, liquidity, credit ratio, investment ratio and bank size.

Drawing from Arellano-Bover (1995) and Blundell and Bond (1998), system GMM estimator approach in a dynamic panel framework has been used for empirical estimation for consistent and efficient estimates (Roodman, 2009). In our model, the GMM has been used given the observed persistence in the dependent variable (WALR and WADTDR) and the model has potential heterogeneity arising out of fixed individual bank effects. The robustness of the model was tested using a variety of diagnostics tests: (i) Sargan test of over identifying restrictions for the validity of the instruments; and (ii) Arellano-Bond test (AB test) for serial correlations of the residuals for first order and absence in the subsequent higher orders, *i.e.*, AR(1) should be significant, and AR(2) should be insignificant.

III.2 Results

At the outset, bin scatter plots[6] have been drawn for a preliminary non-parametric analysis of the relationship between the dependent and the explanatory variables. Scatter plots show that the WALR on fresh rupee loans is positively correlated with the repo rate, while liquidity, CASA share and GNPA are negatively correlated during the EBLR period as well as for the whole sample period, *i.e.*, FIT period. CRAR is positively correlated during the EBLR period, while there is a weak correlation in the whole sample period. The correlation between incremental CD ratio and lending rate is ambiguous for the whole sample period (Annex Chart 1 and Chart 2).

Table 4: Pass-through of Repo Rate changes to Lending Rates – A System GMM Approach

Dependent Variable: WALR	**Model I (FIT Period)**	**Model II (Tightening Dummy)**	**Model III (EBLR Period)**
Explanatory Variables			
WALR (-1)	0.554*** (0.10)	0.582*** (0.04)	0.690*** (0.01)
WALR (-2)	0.112 (0.10)	0.094*** 0.03)	
Repo Rate	0.229*** (0.03)	0.206*** (0.03)	0.255*** (0.02)
CASA (-1)	-0.010** (0.00)	-0.009** (0.00)	-0.006** (0.00)
CRAR (-1)	0.040* (0.02)	0.037** (0.02)	0.024 (0.02)
GNPA (-1)			-0.006 (0.01)
GNPA (-3)	0.004 (0.01)	0.003 (0.01)	
LIQ			-0.019*** (0.01)
LIQ (-1)	-0.057*** (0.01)	-0.051*** (0.01)	
ICD (-1)	0.002*** (0.00)	0.002*** (0.00)	0.004*** (0.00)
Constant	1.715** (0.76)	1.759** (0.71)	1.481*** (0.32)
Demonetisation Dummy	-0.086*** (0.02)	-0.043 (0.04)	
T_Dummy*Repo		0.013** (0.01)	
Long run Passthrough			
Repo Rate	**69*** (0.073)**	**63*** (0.73)**	**82*** (0.058)**
Diagnostics			
AR (1) (p)	0.013	0.001	0.011
AR (2) (p)	0.770	0.858	0.995
Sargan (p)	0.096	0.109	0.082
No. of Banks	28	28	28
Observations	728	728	392

'***', '**' and '*' represent significance level at 1%, 5% and 10% respectively. Standard errors in parentheses.

[6] Bin scatter groups the x-axis variable into equal-sized bins, computes the mean of the x-axis and y-axis variables within each bin, then creates a scatterplot of these data points. The result is a nonparametric visualisation of the conditional expectation function.

The results of the econometric analysis (for WALR) are reported in **Table 4**. Three models have been estimated with model I covering the entire sample period, *i.e.*, FIT period, while model II specifically deals with the impact on transmission during the tightening cycles in the whole sample period. Model III covers the EBLR sub-period. The results suggest that a 100 bps increase in the policy repo rate has a contemporaneous significant positive impact of 20-25 bps on the lending rates of banks across the models and the long-run impact is higher at 82 bps during the EBLR period, and 69 bps during the overall period (63 bps in model II).

Systemic liquidity in the banking system and the share of CASA deposits in total deposits have the expected negative and significant impact on lending rates. It may be mentioned that the share of CASA deposits in total deposits increased from 41.2 per cent in September 2019 to 44.8 per cent in March 2022. An increase in credit/deposit ratio has positive impact on lending rates and thus expected to strengthen the pass-through to lending rates during the tightening phase. While capital adequacy ratio has a positive and significant impact on lending rates over the full sample period, the asset quality of banks has an insignificant impact on the lending rates.

To assess the asymmetric impact of monetary policy, an interaction dummy ($T\_Dum_t * Repo_t$) that captures the differential pass-through to lending rates during the tightening cycles *vis-à-vis* easing cycles is introduced as:

$$WALR_{b,t} = \mu + \sum_{i=1}^{n} \alpha_i \, WALR_{b,(t-i)} + \sum_{i=0}^{n} \delta_i \; Repo_{t-i} + \sum_{i=0}^{n} \pi_i \, LIQ_{t-i} + \sum_{i=0}^{n} \beta_j \, X_{b,(t-i)} \; + Dum_t + (T\_Dum_t * Repo_t) + \varepsilon_{i,t} \quad \ldots(II)$$

where, $T\_Dum_t = \{$ 1 *if monetary tightening* episodes; 0, *otherwise*

The coefficient of the interaction dummy ($T\_Dum_t * Repo_t$) is positive and significant (Model II), implying that the pass-through to lending rates is higher during the tightening cycle.

In the case of deposit rates, as noted earlier, the analysis pertains to a shorter period 2020:Q1 to 2022:Q4. The results indicate that a 100 bps change in the policy repo rate pushes term deposit rates by around 70 bps contemporaneously **(Table 5)**. The

Table 5: Pass-through of Repo Rate changes to Deposit Rates

Dependent Variable: WADTDR- Fresh deposits

Explanatory Variables	**Model I (Baseline)**	**Model II**
WADTDR(-1)	0.409*** (0.018)	0.396*** (0.021)
Repo Rate	0.681*** (0.020)	0.705*** (0.023)
Liquidity(-1)	-0.015*** (0.004)	-0.023*** (0.004)
CD Ratio (-1)	0.015*** (0.001)	0.007*** (0.002)
Investment_ratio (-1)		-2.797*** (0.214)
Bank size		-0.053* (0.018)
Constant	-1.287*** (0.099)	0.684** (0.292)
Long Run pass-through		
Repo Rate	**1.15*** (0.021)**	**1.16*** (0.026)**
Diagnostics		
AR(1) (p)	0.006	0.004
AR(2) (p)	0.183	0.120
J-Hansen Test (p)	0.300	0.431
No. of Banks	28	28
Observations	336	336

Note: This table reports results of estimating $Y_{i,t} = \alpha + \beta X_{i,t} + \varepsilon_{i,t}$; where, $Y_{i,t}$ denotes WADTDR- fresh deposits during 2020:Q1 to 2022:Q4. The $X_{i,t}$ variables include repo rate, and other control variables, *viz.*, liquidity, credit ratio, investment ratio and bank size. Investment ratio is calculated as ratio of SLR approved securities to total deposits. Bank size is taken as log of total assets of banks.
'***', '**' and '*' represent significance level at 1%, 5% and 10% respectively. Standard errors are in parentheses.

surplus liquidity and the credit/deposit ratio have the expected negative and positive signs, respectively. High investment ratio dampens transmission to deposit rates as banks can meet higher credit demand by drawing down on their excess investments rather than mobilising fresh deposits. Bank size is found to have a negative impact on deposit rates suggesting big banks offer lower rates on term deposits.

IV. Conclusion

This article has attempted to analyse recent dynamics in monetary transmission to banks' lending and deposit rates. The transmission to banks' interest rates has improved in the recent period, facilitated by the introduction of the EBLR system. Large surplus liquidity and subdued credit demand aided transmission during the pandemic-phase of the easing cycle, while the calibrated normalisation of surplus liquidity and robust credit growth strengthened transmission during the current tightening phase. The transmission to term deposit rates has been robust while savings deposit rates have exhibited rigidity. An empirical bank-level analysis in a panel framework indicates that surplus liquidity in the banking system and a higher share of CASA deposits in total deposits has a negative and significant impact on lending rates, while higher capital adequacy ratio has a positive and significant impact on lending rates. High credit/deposit ratio strengthens the transmission to deposit and lending rates while excess SLR lowers the pass-through to deposit rates. The pass-through to lending rates is found to be higher during the tightening cycle. The extent of transmission has improved after the introduction of EBLR system in October 2019. With the MCLR-linked loans still a sizeable part of the lending portfolio, the transmission of the policy rate actions to deposit and lending rates is ongoing at the current juncture.

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Annex

Chart 1: Lending Rates on Fresh Rupee Loans and its Determinants (2016:Q3 to 2022:Q4)

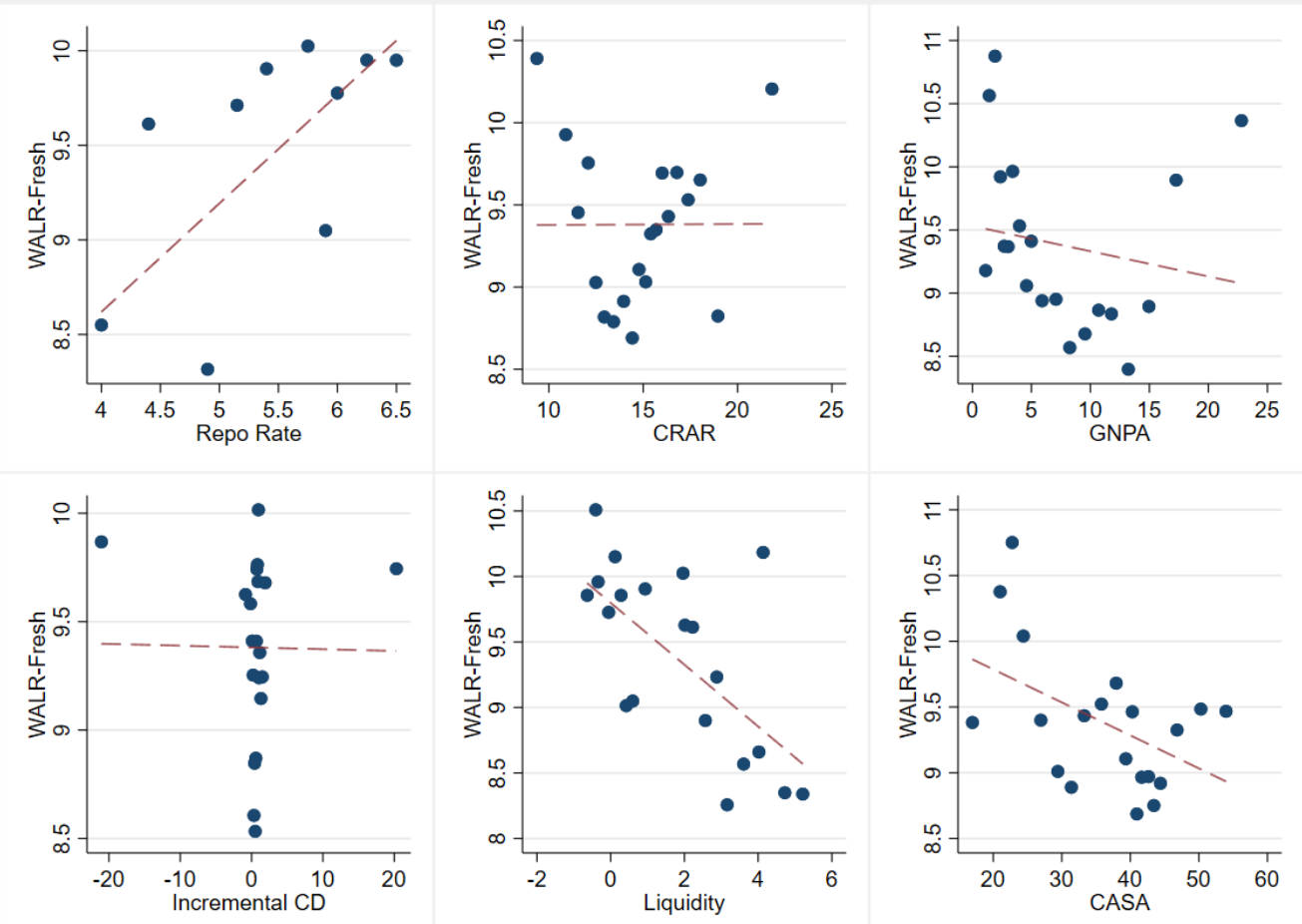

Chart 2: Lending Rates on Fresh Rupee Loans and its Determinants (2019:Q3 to 2022:Q4)