

NPA, INTEREST RATE SPREAD, NIM, BASE RATE, MCLR AND EFFICIENCY OF MONETARY TRANSMISSION IN INDIA

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Abstract. *The issue of efficiency of Monetary Transmission has attracted a great deal of attention in India. RBI, the central bank and the monetary authority of the country, has come in for criticism every now and then for not doing enough to make cheaper loans available to the consumers/borrowers. For a banking system dominating the financial space and dogged by ballooning NPAs, the study of the impact of NPAs on Monetary Transmission assumes special interest. We have worked out the basic structure of the balance sheet of a commercial bank and explored the condition for a positive RONW for different levels of its NPAs. For a low range of NPAs, NIM tends to increase with increasing NPAs and impedes Monetary Transmission. For a high level of NPAs, the bank gets the PCA tag and its inability to sanction fresh loans at will affects Monetary Transmission adversely.*

Also, for a given positive value of RONW, we observe that any change in a bank's deposit rate has a multiplier effect on its loan rate and NIM. In other words, any hike in deposit rate would lead to a greater hike in loan rate and NIM, thereby adversely affecting Monetary Transmission.

As the monetary authority of India, the principal objective of RBI is to control inflation and at the same time to try to give a boost to growth of the country's economy. For this, it brings about suitable changes in the policy rates from time to time and tries to ensure efficient Monetary Transmission through the available channels.

While India has a floating exchange rate, there is apparently no evidence for an active exchange rate channel for Monetary Transmission. The interest rate channel is expected to operate as a 2 step process viz. change of policy rates leading to change of loan rates, which is to result in change of aggregate demand and rate of inflation. Of these two, while some evidence does exist for the first step, no evidence appears to have been discovered for the second by the concerned researchers.

We track the movements of 1m MCLR, introduced by RBI with effect from April 2016, for 3 public sector and 3 private sector banks over a 25 month period starting from May, 2016, and observe some reduction of MCLR in response to reduction of REPO rate by RBI. Such movements for the 6 banks are also found to be highly correlated to one another. In sum, the study of

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the MCLR does provide some evidence about the first step of the interest rate channel for Monetary Transmission being operational.

Further, the method suggested by RBI for computing MCLR of commercial banks seems to suffer from some lack of compatibility. We have indicated the modified formula for MCLR to ensure the internal consistency of the process.

Keywords: *Non Performing Assets (NPA); Priority Sector Loans, Interest Rate Spread; Net Interest Margin (NIM); Base Rate; Marginal Cost of Funds based Lending Rate (MCLR); Modified MCLR, Harmonisation of Base Rate with MCLR, Correlations among MCLR, Monetary Transmission, Lending Channel, Exchange Rate Channel; Financial Friction.*

1. Introduction

The latest bout of financial sector liberalization in India has witnessed the advent of the omnipotent “universal banks” capable of delivering all varieties of financial services under a single roof. This has no doubt strengthened the position of commercial banks in the financial space. Further, the Indian economy enjoys a significant contribution, in regard to both GDP and jobs, from its micro, small and medium enterprises (MSMEs). Most of such enterprises do not possess the requisite size or financial/organizational strength to access the capital & money markets for garnering necessary financial resources. Their only source for external funding is thus by way of loans – both long term and short term – from the commercial banks. Also, the regulatory norms regarding Priority Sector lending in India make such funding one of the assigned tasks for the commercial banks of India. Hence the commercial banks hold a dominant position in the financial space of India. In such a bank-dominated financial system, monetary policy impulses are likely to be transmitted largely through the banking system.

The commercial banks in India are currently dogged by large NPA ratios. Our analysis, which led to findings quite similar to those reported in a recent RBI Occasional Paper, indicates the humongous impact of burgeoning NPAs on the Interest Rate Spread and NIM. Such high Spreads / NIMs stand in the way of efficient Monetary Transmission. This highlights the utmost importance of effective NPA management in order to ensure efficient Monetary Transmission.

The main aim for the Monetary Policy in India is to keep inflation under control (inflation targeting) while keeping in view the goal of economic growth. Accomplishment of this task requires Monetary Transmission to work effectively. Monetary Transmission through the

banking system broadly means changes in lending rates of banks in response to changes of RBI's policy rates that, in turn, is expected to lead to desired impacts on rate of inflation and growth. For instance, when RBI reduces the REPO rate with a view to giving a boost to aggregate demand, it expects a commensurate reduction in the commercial banks' cost of funds and lending rates. Lower lending rates are supposed to result in a boost to demand from various segments of the society and from entrepreneurs for new or increased investment in plant and machinery. As this process continues, demand goes up and upward pressure on wages and prices tends to raise inflation.

In order to achieve requisite efficiency of Monetary Transmission, RBI tries relentlessly to ensure that changes in policy rates translate into commensurate changes in lending rates for commercial banks in India. This endeavour has made them switch over to Base Rate in 2010, then to Marginal Cost of Funds based Lending Rate (MCLR) in 2016 and finally to harmonising the Base Rate to MCLR in 2018. We observe that reduction of REPO rate by RBI has led to reduction of MCLR by commercial banks, although it may not be exactly as per the expectation of RBI.

RBI's prescription for computation of Marginal Cost of Funds based Lending Rate (MCLR) is also examined and a somewhat modified formula to incorporate requisite internal consistency is worked out.

2. NPA and Interest Rate Spread

A. Introduction

With liberalization of the financial sector in India, commercial banks were converted into universal banks capable of offering a multitude of financial services, both fund based and non-fund based, under a single roof. Commercial banks have also been given complete autonomy for fixing the rates of interest on their deposits and loans. However, some policy directions are issued from time to time by Reserve Bank of India (RBI), the central bank of the country, by adjusting some quantity based (like CRR & SLR) or price based (like REPO & Reverse REPO, MSF, Bank-Rate) benchmark rates. According to the Banking Regulation Act, banks are bound by RBI's directives on interest rates on loans and advances and are obliged to give effect to any revision of interest rates, whether upwards or downwards, on all the existing advances from the date the directives / revised interest rate come into force. Also, there is no unfettered freedom of investment for the lendable resources of commercial banks in India, and directed lending has to account for at least 40% of

Adjusted Net Bank Credit (ANBC) or Credit Equivalent Amount of Off-Balance Sheet Exposure (CEOBE), whichever is higher. Out of this, 18% of ANBC or CEOBE, whichever is higher, has to be allocated to agriculture segment. Within the 18% target for agriculture, a target of 8% of ANBC or CEOBE, whichever is higher, is to be allocated for Small and Marginal Farmers. There is also a sub-target of 7.50% of ANBC or CEOBE, whichever is higher, for bank lending to the Micro Enterprises in the country [1].

RBI also stipulates the following reserve requirements:

- (i) each commercial bank has to maintain a Cash Reserve Ratio (CRR) with RBI. The minimum CRR required to be mandatorily maintained by a commercial bank is currently 4% of its Net Demand and Time Liability (NDTL). This asset bears a nil risk weight and earns no interest for the bank.
- (ii) each commercial bank has to maintain a Statutory Liquidity Ratio (SLR) by way of investment in stipulated government securities etc. (SLR assets), amounting to not less than 19.5% of its NDTL w.e.f. October 14, 2017 [2] (brought down in stages over a period from 25%). This asset, assumed to be free from default/credit risk, bears a small market risk and yields typically risk free rates of return.

In line with the Basel accords, RBI also stipulates that each commercial bank has to comply with the Capital Adequacy Requirement (CAR), whereby each bank must have capital of at least a certain percentage of its risk-weighted assets and off-balance sheet exposure. The off-balance sheet items are of great importance to any bank as these lead to non-interest or fee-based income (commission income) and thereby help to boost the bank's overall Return on Assets (ROA).

The Income Recognition and Asset Classification (IRAC) norm set up by RBI [3] calls for, inter alia, classification of the assets of a bank according to its quality. An asset can be either performing or non-performing. A performing asset is a standard asset yielding pre-fixed inflows/income at scheduled intervals. A non-performing asset (NPA), on the other hand, is an asset on which payment of the principal or interest or both is overdue for a period of 90 days or more from the respective due date. NPAs are impaired assets in the books of a commercial bank that have ceased to generate any income for it.

A non-performing asset can be subdivided into three categories in decreasing order of quality as under:

- (a) Sub-standard Asset

- (b) Doubtful Asset
- (c) Loss Asset.

Different extents of provision on these NPAs are required to be created by debit to the Profit and Loss Account of the bank.

As for market related investments by any commercial bank, these are required to be marked to market. This can expose the bank to interest rate and/or exchange risk apart from the conventional credit risk.

We work out below a basic structure of an Indian bank's balance sheet and estimate the minimum spread between its rate of interest on commercial loans and that on deposits, required for continued servicing of the claims of depositors for a given level of non-performing assets. The cut-off risk associated with the asset of a commercial bank for a no default situation is worked out as function of its net worth.

B. Basic Structure of Balance Sheet of a Commercial Bank in India:

Let us consider the basic structure for the balance sheet [4, 5] of a commercial bank in India that has disbursed a priority sector loan of Rs.100 units. We assume that:

- (a) The bank has a CAR/NW of 10% (of Risk Weighted Assets and Off Balance Sheet Exposure);
- (b) All loan assets have 100% Risk Weight;
- (c) CRR is 4% of Deposits and has a zero Risk Weight (deposit with RBI has no risk);
- (d) Income from CRR is nil (RBI does not pay any interest on CRR);
- (e) SLR is 20% of Deposits and has small risk weight from market risk (ignored for simplicity of computation);
- (f) SLR securities have an average yield of 6% p.a.;
- (g) Directed (Priority Sector) lending is worth Rs 100 units, which accounts for 40% of total credit and yields, on the average, 8% p.a.;
- (h) Off-balance sheet exposure is 10% of total balance sheet size and Conversion Factor is 50%;
- (i) A fraction of the credit portfolio (including Priority Sector loans) is NPA, and recovery from NPA comes to 50% of NPA;
- (j) Commission income on off-balance sheet items is 1% p.a.
- (k) "Rs" stand for "Indian Rupees", unit for the Indian currency.

Then, basic structure for the balance sheet of the commercial bank would look as under:

Liability (in Rs. Units)		Asset (Rs. In units)	
Net Worth	28	CRR	12
Deposits	292	SLR Investment	58
		Directed Lending	100
		Commercial Loan	150
Total	320	Total	320

Off-balance sheet items aggregate Rs. 64 units and the consequential exposure (Conversion Factor = 50%) is Rs. 32 units i.e. 10% of the total balance sheet size.

Directed (Priority Sector) Lending (40% of Total loan) = Rs 100 units (assumed)

Commercial Loan (60% of Total Loan) = Rs 150 units

Total Loan Rs (100 + 150) units = Rs 250 units

Off Balance Sheet Exposure @ 10% of B.S. size = Rs 32 units

Net worth = 10% of Rs. (250+32) units ~ Rs. 28 units

Deposits = Rs. (250 – 28)/0.76# units ~ Rs. 292 units

CRR = 4% of Deposits ~ Rs. 12 units

SLR Investments = 20% of Deposits ~ Rs. 58 units

Commission Income = 1% of Rs. 64 units = Rs. 0.64 unit

NPA = A Fraction of Rs. 250 units

Recovery from NPA = 50% of NPA

[(CRR + SLR) = 24% of NDTL = 0.24 Deposit; Fraction of Deposit available for funding Loan Assets = 76% Deposit = 0.76 Deposit; So, Deposits required to fund Loans worth Rs 222 (250 less Net Worth of 28) units = Rs (222/0.76) units]

C. Return on Net-Worth (RONW) and EPS

$$\begin{aligned}
 \text{EPS} &= (\text{Earning for equity shares}) / (\text{No. of equity shares}) \\
 &= \text{Return on Net worth (RONW)} \times \text{Net worth per share} \\
 &= \text{RONW} \times \text{Book Value per share.}
 \end{aligned}$$

The aim of the commercial bank would be to maximize its EPS or RONW under the available circumstances. Let us consider below the situations for 3 different values of NPAs, viz. (i) NPA = 0; (ii) NPA = 6% of Total Loan Assets and (iii) NPA = 10% of Total Loan Assets.

(i) **NPA = 0**

The net return available to the equity investors for a year can be written down as:

$N = [150(1+\alpha) + 100(1+0.08) + 58(1+0.06) + 12 + 0.64 - 292(1+d)] - 28$, where α = yield per annum for the commercial loan, and d = weighted average rate of interest per annum for the bank's deposits.

A positive value for N implies a net positive return (pre-tax) for equity investors, while a negative value for N indicates a corresponding erosion of their net worth during the related year.

$$\begin{aligned} N &= [150 + 100 + 8 + 58 + 3.48 + 12 + 0.64 - 292] - 28 + 150\alpha - 292d \\ &= [332.12 - 320] + 150\alpha - 292d \\ &= 12.12 + 150(d + \delta) - 292d, \text{ where } \delta \text{ is the interest rate spread for the commercial loan } [\delta = (\alpha - d) > 0]; \\ &= 12.12 - 142d + 150\delta, \text{ where } \delta > 0. \end{aligned}$$

Thus, $RONW > 0$ (some positive return for equity investors) requires that $12.12 - 142d + 150\delta > 0$.

Since $\delta > 0$, $142d < 12.12$ would guarantee that $RONW > 0$ for all values of δ .

Or, $d < (12.12/142) < 8.54\%$ would guarantee a positive $RONW$ for all values of δ .

Or, $RONW > 0$ for all values of δ as long as $d < 8.54\%$ (quite an acceptable value).

As a matter of fact, a reasonable δ of 2% and a deposit rate of 6% (current REPO rate) would lead to a Return on Net Worth ($RONW = N/28$) of nearly 23.6%.

A healthy return of 20% on net worth can be achieved with a rather conservative value for Interest Rate Spread of 1.33%.

In other words, a reasonable return on net worth (now-a-days commercial banks are mostly listed entities, and share-holders require a risk based rate of return) can be achieved without any undue restriction on the value of d or δ . So, there is no undue constraint on Interest Rate Spread or NIM as could impact adversely on unhindered Monetary Transmission.

(ii) NPA = 6% of Total Loan Assets

The net return available to the equity investors can be written down as:

$$\begin{aligned} N &= [141(1+\alpha) + 4.5 + 94(1+0.08) + 3 + 58(1+0.06) + 12 + 0.64 - 292(1+d)] - 28 \\ &= [141 + 4.5 + 94 + 7.52 + 3 + 58 + 3.48 + 12 + 0.64 - 292 - 28] + 141\alpha - 292d \\ &= 4.14 - 151d + 141\delta. \end{aligned}$$

Thus, $RONW > 0$ requires that $4.14 - 151d + 141\delta > 0$.

Since $\delta > 0$, $151d < 4.14$ would guarantee that $RONW > 0$ for all values of δ .

Or, $d < (4.14/151) < 2.74\%$ would ensure a positive $RONW$ for all values of δ .

This means that $RONW > 0$ for all values of δ as long as $d < 2.74\%$ (hard to fulfil for an Indian bank at all times).

It appears that, for $NPA = 6\%$ of total loan assets, a positive Return on Net Worth ($RONW = N/28$) can be achieved for a deposit rate of 6% (current REPO rate) only if the spread (δ) exceeds a threshold value of nearly 3.5% . As a matter of fact, a reasonable δ of 2% and a deposit rate of 6% would lead to a negative Return on Net Worth of nearly $(-) 7.5\%$.

Even a moderate Return on Net-Worth ($RONW$) of 10% would require a very high spread (δ) of nearly 5.5% .

Further, for a given value of $RONW$, an increase of 1% in the value of d would warrant an increase of 1.07% for δ and, therefore, a hike of 2.07% for α . In other words, any increase of the deposit rate has a multiplier effect on the increase of commercial loan rate (α) or even the spread (δ).

(iii) $NPA = 10\%$ of Total Loan Assets

The net return available to the equity investors can be written down as:

$$\begin{aligned} N &= [135(1 + \alpha) + 7.5 + 90(1 + 0.08) + 5 + 58(1 + 0.06) + 12 + 0.64 - 292(1 + d)] - 28 \\ &= [135 + 7.5 + 90 + 7.2 + 5 + 58 + 3.48 + 12 + 0.64 - 292 - 28] + 135\alpha - 292d \\ &= -1.18 - 157d + 135\delta \end{aligned}$$

Thus, $RONW > 0$ requires that $-1.18 - 157d + 135\delta > 0$.

Since both the first 2 terms have negative sign, no value of d can guarantee a positive value of $RONW$ for all values of δ .

$RONW > 0$ if $135\delta > 1.18 + 157d$, i.e. $\delta > (1.18/135) + (157/135)d$

Or, $\delta > 0.01 + 1.16d$.

If deposit rate is 6% (current REPO rate), then $RONW > 0$ would require a spread (δ) $> 7.85\%$ i.e. a commercial loan rate of 13.85% , which is more than double the deposit rate. Such a high loan rate/spread is obviously unrealistic in a competitive scenario, and the concerned commercial bank would either stop or be restrained from sanctioning fresh commercial loans. As a matter of fact, RBI has already classified a number of commercial banks under the PCA (Prompt Corrective Action) category

in view of their high NPA ratios. In other words, the lending rate has to be unacceptably high if the Bank has to earn any reasonable return on Net Worth for a high NPA ratio. This is not a feasible scenario and a bank has to be careful not to slip into such a financial quagmire. Controlling the net loss from NPA for any commercial bank is thus of paramount importance.

The article at [5] also highlights that the ever-growing pressure on interest spreads and the need to contain and reduce the cost of intermediation make it imperative for banks to minimize their Gross NPA as a percentage to their Loan and Investment Assets. With global competition coming into play in ever increasing proportions, the Indian banks have to acquire the ability to survive and prosper on thinner interest spreads and lower costs of intermediation. However, as we have discussed, large proportion of non-performing assets as a percentage of aggregate loans and investments in a commercial bank's balance sheet is likely to prove to be a stumbling block towards this end (of surviving with smaller spreads).

It is important to observe that with improved recovery of NPAs, the lending rate as well as interest spread can come down drastically. Concrete steps to cleanse the balance sheets of commercial banks are, therefore, the need of the hour to ensure that the interest rate rigidities can be handled effectively, thereby paving the way for efficient Monetary Transmission.

It is interesting to note that a rather recently published RBI Occasional Paper of 2016 [7] reports exactly similar findings. This will be discussed in some detail in the next paragraph [paragraph 3 that follows immediately].

3. Interest Rate Spread, Net Interest Margin (NIM) & Monetary Transmission

A. Introduction:

NIM (Net Interest Margin) of a commercial bank is measured as the excess of interest income over interest expense scaled by its total asset. Lower the ratio, the more efficient is the banking system on the whole. Without any loss of generality, banks in developed economies typically operate on margins smaller than those of developing and emerging economies.

However, when analysed at individual bank level, a bank with high NIM is considered more efficient as compared to a bank with low NIM, since high NIM can raise profitability. This indicates as to how effectively

a bank deploys its funds to generate income from credit and investment operations.

NIM, though not exactly the same as interest rate spread (difference between loan interest rate and deposit interest rate for a bank), is very closely related with it. Other parameters remaining constant, if interest spread of a bank increases, its NIM does the same. A threshold for interest spread to secure full redemption of depositors' money will warrant a threshold for NIM as well. Given a certain deposit rate, such a threshold for interest spread/NIM would require a minimum value of interest rate for bank loan. A high NIM for a bank would obviously turn out to be a stumbling block in the way of efficient Monetary Transmission of the impact of policy rate changes effected by RBI.

The industry and the chambers of commerce, from time to time, have been expressing their concern about high interest rates on corporate and retail loans which, they apprehend, may dampen the very spirit of investment in India. At the same time, there have been recurrent complaints from depositors about negative real rates of return over rather long stretches. Such a scenario, where both depositors and borrowers are unhappy and have been voicing concerns, has been attributed to the large Net Interest Margins (NIMs) of Indian Banks [6]. In recent times commercial banks have been asked by the regulator i.e. RBI to cut their lending rates and raise their deposit rates – so that they switch over to a regime of considerably lower NIMs.

B. NPA, NIM and Monetary Transmission

The article at [6] discusses how a handsome RONW can be achieved without putting any restriction on the Bank's NIM (i.e. the NIM does not require to clear any threshold value) if the level of loan loss is nil. Then, the average interest rate on commercial loans need not be set at high levels even while keeping the deposit rates well above the inflation rate. Of course, this is too good a scenario to be realized in practice. For non-zero values of loss arising from NPAs, a positive RONW for a commercial bank can be guaranteed only if its NIM exceeds a certain threshold value. As the level of loan loss increases, the threshold NIM required to ensure a positive RONW also shoots up. It is thus essential that concrete and continuing steps are in place in order to improve the quality of assets of the banking sector.

As we stated at the end of paragraph No 2, a RBI Occasional Paper, 2016 [7] reported almost identical findings about the impact of NPAs on Monetary Transmission in India. Quality of assets of the banking system,

it asserts, is quite important for efficient Monetary Transmission. The article expounds that a commercial bank with sound health will be able to pass on changes of policy rates by RBI symmetrically on its deposits and loans. On the other hand, a bank saddled with a high NPA ratio will need to build up large provisions by loading heavy credit risk premium on its performing loans. This leads to an upward movement of loan rates for a given deposit rate and hence of the bank's net interest margin (NIM). In the circumstances, notwithstanding lower funding costs in response to any policy rate cut by RBI, a bank may not be able to reduce its lending rates or may reduce them only partly, thereby impeding Monetary Transmission.

This article reports that gross NPA ratio/the stressed assets ratio (NPA plus restructured assets as a fraction of aggregate loan) has a positive correlation with NIM of the concerned bank. Such a boost of NIM impedes Monetary Transmission.

The analysis suggests that Monetary Transmission through the interest rate channel is impaired when gross NPA ratio is at a relatively low level but rising. At a high level of gross NPA ratio, NIM comes under pressure as a bank is not able to increase its spread at will in a competitive market. The bank becomes risk averse in such a situation and reduces its loan exposure, which impacts adversely its Monetary Transmission through the lending channel.

4. Base Rate, MCLR and Monetary Transmission

A. RBI Master Direction on Interest Rate of Advances

According to RBI/DBR/2015-16/20 Master Direction DBR. Dir. No. 85/ 13.03.00/2015-16 dated March 03, 2016 (Updated as on March 29, 2016) (Interest Rate on Advances) Directions, 2016 [8], the following are the guidelines of RBI for Indian commercial banks:

(A) Working Capital Loan [Short Term $\leq$ 1 year] can be extended by way of Demand Loan or Cash Credit.

(B) Term loan is a loan which is repayable over or after a specified term (initial period $>$ 1 year).

(C) Rests refers to periodicity of charging interest in borrowers' accounts.

a) Banks are to continue to review and publish their Base Rates.

b) Existing loans and credit limits linked to the Base Rate/BPLR may continue till repayment or renewal, as the case may be.

Provided that existing borrowers shall have the option to move to the Marginal Cost of Funds based Lending Rate (MCLR) linked loan at mutually acceptable terms.

However, such a switch-over shall not be treated as a foreclosure of an existing facility.

- (1) Fixed rate loan means a loan on which the interest rate is fixed for the entire tenor of the loan.
- (2) Floating rate loans means a loan on which interest rate does not remain fixed during the tenor of the loan.
- (3) Benchmark rate means the reference rate used to determine the interest rates for floating rate loans.
- (4) External benchmark rate means a reference rate published by an independent benchmark administrator.
- (5) Internal benchmark rate means a reference rate worked out internally by the bank.
- (6) Benchmark Prime Lending Rate (BPLR) is the internal benchmark rate used to determine the interest rates on advances/loans sanctioned up to June 30, 2010.

B. Interest Rate Framework

Scheduled commercial banks are to charge interest on advances on the terms and conditions specified in these directions.

(i) A comprehensive policy for interest rates on advances duly approved by the Board of Directors of the bank or any committee of the Board to which powers have been delegated should be in place.

(ii) Banks have the freedom to offer all categories of advances on fixed or floating interest rates.

(iii) All categories of advances, barring some exceptions as specified by RBI, would be priced with reference to the benchmark.

(iv) The reference benchmark rate used for pricing the loans is to form a part of the terms of the loan contract.

(v) Banks are to determine their actual lending rates on floating rate advances by adding to the internal benchmark rate the components of spread (accounting for credit risk). Accordingly, there can be no lending below the Base Rate or MCLR of a particular maturity, as the case may be, for all loans linked to that benchmark.

(vi) Interest rate on fixed rate loans shall be as per directions of RBI.

(vii) Interest shall be charged on all advances at monthly rests.

However, interest on agricultural advances and advance to farmers shall be charged as per the instructions of RBI.

(viii) Interest chargeable on rupee advances shall be rounded off to the nearest rupee.

(ix) Interest charged on small value loans – particularly, personal loans and such other loans of similar nature shall be justifiable having regard to the total cost incurred by the bank in extending the loan and the extent of return that could be reasonably expected from the transaction.

(x) In case of takeover of bank branches in rural and semi urban centres from one commercial bank to another commercial bank, transfer of borrowal accounts of the existing branch to the branch of acquiring bank shall be on mutually agreed terms of contract.

Provided that the existing borrowers shall not be put into any disadvantage and the option of continuing with the existing bank or the acquiring bank.

C. Base Rate, Marginal Cost of Funds based Lending Rate (MCLR) & Monetary Transmission

(i) Base Rate

As we have already known from the previous section, the Benchmark Prime Lending Rate (BPLR) is an internal benchmark rate used to determine the interest rates on advances/loans sanctioned up to 30/06/2010.

Thereafter, as decided by RBI, all Rupee denominated loans sanctioned and credit limits renewed on or after 01/07/2010 would be priced with reference to the Base Rate, the new internal benchmark rate for such purposes. The Base Rate system would be applicable for all fresh loans and for those old loans that came up for renewal after 30/06/2010. Existing loans based on the BPLR system might run till their maturity. Of course, if any existing borrower wanted to switch over to the new system of Base Rate before expiry of the existing contract, an option for such a switch over may be given to him, on mutually agreed terms. Banks, however, are not to charge any fee for such a switch-over.

The above guidelines on the Base Rate system became effective with effect from July 1, 2010. Since the Base Rate is to be the minimum rate for all loans, no bank is permitted to extend any kind of loan below the Base Rate. There would be only one Base Rate for every bank and the bank has to review its Base Rate at least once in a quarter.

Even after introduction of the Base Rate system, banks have the freedom to offer all categories of loans on fixed or floating rates. Where loans are offered on fixed rate basis, notwithstanding the quarterly review of the Base Rate, the rate of interest on fixed rate loans will continue to remain the same subject to the condition that such fixed rate should not be below the Base Rate at the time of sanction. If the base rate is revised

upward thereafter and in the process the fixed rate falls below the new Base Rate, it would not be construed a violation of the guidelines on Base Rate.

The Base Rate could also serve as the reference benchmark rate for floating rate loan products, apart from external market benchmark rates. The floating interest rate based on external benchmarks should, however, never be lower than the Base Rate at the time of sanction or renewal. This methodology should be adopted for all new loans. In the case of existing loans of longer / fixed tenure, banks should reset the floating rates of interest according to the above method at the time of review or renewal of loan accounts, after obtaining the consent of the concerned borrower/s.

Changes in the Base Rate would be applicable in respect of all existing loans linked to the Base Rate, in a transparent and non-discriminatory manner. Base Rate is decided in order to enhance transparency in the credit market and ensure that banks pass on the lower cost of fund to their customers. Base Rate is the minimum rate set by RBI below which no bank is allowed to lend to its customers. Loan pricing is to be accomplished by adding to the Base Rate a suitable spread commensurate with the associated credit risk.

The Base Rate is the minimum rate of interest set by RBI for extending a loan. This rate is usually taken as the standard interest rate by all the banks functioning in the country. Once the Base Rate is announced by RBI, no bank is permitted to offer any type of loan to its customers at a rate that is lower than the Base Rate set by RBI.

RBI calculates the Base Rate and sets this to bring uniform rates to all banks in India. Lending rate is the rate of interest at which a bank lends to its customers. A lending rate includes the operating cost of a product, tenor premium, credit risk premium, and the borrower-specific cost. Therefore, it differs from one segment to the other.

Base Rate would include all those elements of the lending rates that are common across all categories of borrowers. Banks have the freedom to calculate cost of funds either on the basis of average cost of funds or on marginal cost of funds or any other methodology in vogue, which is considered reasonable and transparent, subject to it being consistent and made available for supervisory review/scrutiny as and when required.

As an illustration, the Base Rate can be computed as under:

Base Rate = $(a + b + c + d)$, where

a = Cost of Deposit / Fund = D_{Cost}

b = Negative Carry on CRR and SLR

c = Unallocatable Overhead Cost

d = Average Return on Net Worth

a = Cost of Deposits / Funds = D_{cost} (benchmark)

b = Negative Carry on CRR and SLR =

$$\left[\left[\frac{\{D_{cost} - (SLR * T_r)\}}{\{1 - (CRR + SLR)\}} \right] * 100 \right] - D_{cost}$$
$$[(a + b) = D_{cost} +$$
$$\left[\left[\frac{\{D_{cost} - (SLR * T_r)\}}{\{1 - (CRR + SLR)\}} \right] * 100 \right] - D_{cost}$$
$$= [\{D_{cost} - (SLR * T_r)\} / \{1 - (CRR + SLR)\}] * 100\%$$

c = Unallocatable Overhead Cost =

$$\left(\frac{U_c}{D_{ply}} \right) * 100$$

Unallocatable Overhead Cost is calculated by taking the ratio (expressed as a percentage) of unallocated overhead cost and deployable deposits.

d = Average Return on Net Worth =

$$\left[\left(\frac{NP}{NW} \right) * \left(\frac{NW}{D_{ply}} \right) \right] * 100$$

Where

D_{cost} = Cost of Deposits / Funds =

$$\left[\left[\frac{\{D_{cost} - (SLR * T_r)\}}{\{1 - (CRR + SLR)\}} \right] * 100 \right] - D_{cost}$$

D = Total Deposits = Time Deposits + Current Deposits + Saving Deposits

D_{ply} = Deployable Deposits = Total Deposits less Share of Deposits locked as CRR and SLR balances. i.e. = $D * [1 - (CRR + SLR)]$

CRR = Cash Reserve Ratio

SLR = Statutory Liquidity Ratio

T_r = 364 T-Bill Rate

U_c = Unallocatable Overhead Cost

NP = Net Profit

NW = Net Worth = Capital + Free Reserves

According to RBI's current rate (on June 1, 2018), the Base Rate is RBI is 8.70 - 9.45% and Overnight MCLR is 7.80 – 7.95%.

The 2018 or current Base Rates of some banks are as follows:

Bank (PSB/PVT)	Base Rate on June1, 2018 (% age p.a.)
SBI (PSB)	8.70
UNION Bank of India (PSB)	8.95
IDBI Bank (PSB)	9.50
AXIS (PVT)	8.95
HDFC (PVT)	8.85
ICICI (PVT)	8.85

(ii) Marginal Cost of Funds based Lending Rates (MCLR)

There have been several reports in the print and electronic media that while RBI reduced, since January 2015, the Repo Rate gradually by 150 basis points (1 basis point = 0.01%), commercial banks reduced their Base Rates only by 50-60 basis points till March, 2016.

In other words, while Cost of Funds of banks came down owing to lower policy rates, banks could not match their lending rates with reduced policy rates, most probably because their average cost of borrowing still remained high because of older fixed deposits. To make sure that the reduction in policy rates is passed on to borrowers by banks, RBI introduced the Marginal Cost of Funds based Lending Rate (MCLR) method to replace the earlier Base Rate system.

MCLR is to be calculated on the basis of four major components – Marginal Cost of Funds, Negative Carry on account of CRR, Operating Cost and Tenor Premium.

In order to improve the efficiency of Monetary Transmission in India, RBI issued the following guidelines regarding MCLR on Advances as per RBI/2015-16/273 DBR. No.Dir. BC. 67/13.03.00/2015-16 dated December 17, 2015 [9]:

As from April 1, 2016, all credit facilities sanctioned/renewed will be priced with reference to the Marginal Cost of Funds based Lending Rate (MCLR), which will be the internal benchmark for such purposes.

MCLR comprises the following:

- a. Marginal Cost of Funds;
- b. Negative Carry on CRR;
- c. Operating Costs; and
- d. Tenor Premium.

Marginal Cost of Funds = 92%*Marginal Cost of borrowings + 8%*Return on net-worth.

Negative Carry on CRR:

Negative carry on the mandatory CRR, which arises due to return on CRR balances being nil, will be calculated as under:

(Marginal Cost) x [CRR / (1– CRR)]

Thus, Marginal Cost + Negative Carry on CRR = Marginal Cost [1 + {CRR / (1 – CRR)}] = Marginal Cost [1 / (1– CRR)] = Marginal Cost*[100/96], using the current value of CRR = 4% (0.04). In other words, since 4% of the funds are invested in a non-earning asset, the balance 96% (deployed in earning assets) have to bear the burden for the cost of full (100%) funds.

It is surprising that Negative Carry on account of CRR alone and not SLR has been considered, while computation of Base Rate takes into account Negative carry on both CRR and SLR [previous section].

Operating Costs would include all operating costs associated with providing the loan product including cost of raising funds.

Tenor Premium arises for loan commitments with longer tenor. In this sense, MCLR is a Tenor linked Internal Benchmark. The change in tenor premium should not be borrower specific or loan class specific. In other words, the tenor premium will be uniform for all types of loans & all categories of customers for a given residual tenor.

Banks are to publish, at monthly intervals, the internal benchmarks for all the following maturities:

- a. overnight MCLR,
- b. 1-month MCLR,
- c. 3-month MCLR,
- d. 6 month MCLR,
- e. 1 year MCLR.

In addition to the above, banks have the option of publishing MCLR for any other longer maturity. For instance, SBI, Union Bank of India, IDBI Bank, Axis Bank and HDFC Bank display MCLRs for tenors of 2 years and 3 years also.

Spread:

Banks should have a Board approved policy delineating the components of spread charged to a customer. Actual lending rate for any customer will be determined by adding the appropriate spread to the concerned MCLR.

Certain types of loans are specifically exempted by RBI from the purview of MCLR.

With effect from April 1, 2016, all new borrowers are to be covered under the MCLR system only. But, existing borrowers have the option to either continue with the Base Rate system till repayment of existing loans or shift their existing loans to the new MCLR-based system on mutually acceptable terms. However, once the borrowers decide to shift to the MCLR-based system, they cannot shift back to the old Base Rate system.

The lenders will have to specify the interest reset dates while sanctioning loans. The MCLR of a loan will be applicable till its next interest reset date, irrespective of the changes in the MCLR rates by the bank during that period. To ensure prompt transmission of policy rates, RBI has capped the period between two successive reset dates at 1 year.

D. Compatibility Check & Modified/Compatible formula for CLR

As we have pointed out in Section C of Paragraph 3, Negative Carry on account of CRR alone and not SLR has been considered for computation of MCLR. Besides, article [10] carries out a critical evaluation of the 2 basic equations used by RBI for computation of MCLR. There appears to be some issues related to overall compatibility in the entire process. We re-formulate these equations to accommodate the requisite internal consistency and re-work the Marginal Cost of Funds based Lending Rate (MCLR). The current scenario for NPAs and possible irrecoverable loan assets of commercial banks is also discussed and its possible impact on MCLR is dwelt on in article [10].

Based on the Balance Sheet in Paragraph 1B, and the methodology developed in [10], we can write down the expression for modified/compatible MCLR as:

$$\text{MCLR} = [320 \times \text{MCF} - (12 \times \text{return on CRR} + 58 \times \text{return on SLR})] / 250 = (320 \text{ MCF} - 58\text{RF}) / 250,$$
 where $\text{MCF} = 292/320 \times \text{Marginal Cost of borrowings} + 28/320 \times \text{Return on Net-Worth}$, and $\text{RF} = \text{Risk Free Rate of Return} = \text{Return on Treasury (SLR) securities}$.

Since the impact of NPAs and irrecoverable loan assets has been kept out of the purview of MCLR, this impact can only be accommodated in the interest spread. However, burgeoning NPAs and incidence of ever increasing haircuts are apt to lead to sky rocketing of interest spreads. Since any unrealistically high spread is not acceptable in a competitive market, the concerned bank has to refrain from sanctioning such fresh loans. This would adversely impact the efficiency of Monetary Transmission.

E. REPO rates, MCLRs during May, 2016 – May, 2018 and Correlations

The table below lists the 1month MCLRs for 25 months (May, 2016 – May, 2018) of 6 Indian commercial banks, 3 public sector banks [3 PSBs including the largest lender SBI, the PSB with the largest Gross NPA ratio i.e. IDBI Bank and Union Bank of India (UBI)] and 3 most well-known private sector banks [Axis Bank, HDFC Bank and ICICI Bank].

1m MCLRs (% age) of 3 PSBs and 3 Private Sector Indian Banks for May 2016 – May 2018

[SBI is State Bank of India; UBI is Union Bank of India; IDBI is IDBI Bank – all 3 are PSBs]

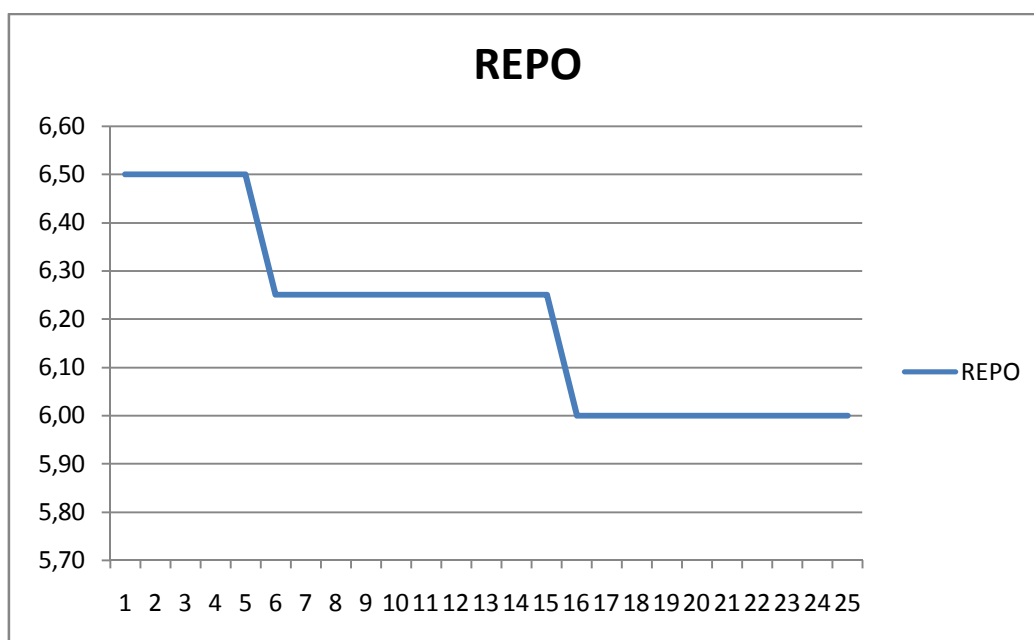
[Axis, HDFC and ICICI Banks are 3 very well-known Private Sector Indian Banks]

Month	SBI	UBI	IDBI	Axis	HDFC	ICICI
May, 2016	9.00	9.30	9.25	9.05	9.00	8.95
June, 2016	9.00	9.25	9.25	9.05	8.95	8.95
July, 2016	9.00	9.25	9.00	8.95	8.95	8.95
August, 2016	8.95	9.25	9.00	8.90	8.95	8.90
Sept, 2016	8.95	9.20	9.00	8.90	8.90	8.90
Oct, 2016	8.75	9.20	9.05	8.85	8.90	8.85
Nov, 2016	8.75	9.10	9.05	8.70	8.75	8.75
Dec, 2016	8.75	9.10	9.05	8.55	8.70	8.70
Jan, 2017	7.85	8.35	8.75	7.90	7.90	8.00
Feb, 2017	7.85	8.20	8.40	7.90	7.85	8.00
March, 2017	7.85	8.20	8.40	7.90	7.85	7.85
April, 2017	7.85	8.20	8.40	7.90	7.85	7.85
May, 2017	7.85	8.20	8.20	7.90	7.85	7.85
June, 2017	7.85	8.10	8.20	7.80	7.85	7.85
July, 2017	7.85	8.10	8.20	7.80	7.85	7.85
Aug, 2017	7.85	8.10	8.20	7.80	7.85	7.85
Sept, 2017	7.85	7.90	8.10	7.80	7.85	7.85
Oct, 2017	7.85	7.90	8.10	7.80	7.85	7.85
Nov, 2017	7.80	7.90	8.10	7.80	7.80	7.80
Dec, 2017	7.80	7.90	8.10	7.80	7.80	7.80
Jan, 2018	7.80	7.90	8.10	7.85	7.80	7.80
Feb, 2018	7.80	7.90	8.10	7.85	7.80	7.80
March, 2018	7.80	7.90	8.10	7.85	7.95	7.95
April, 2018	7.80	8.05	8.10	7.85	7.95	7.95
May, 2018	7.80	8.05	8.10	7.85	7.95	7.95

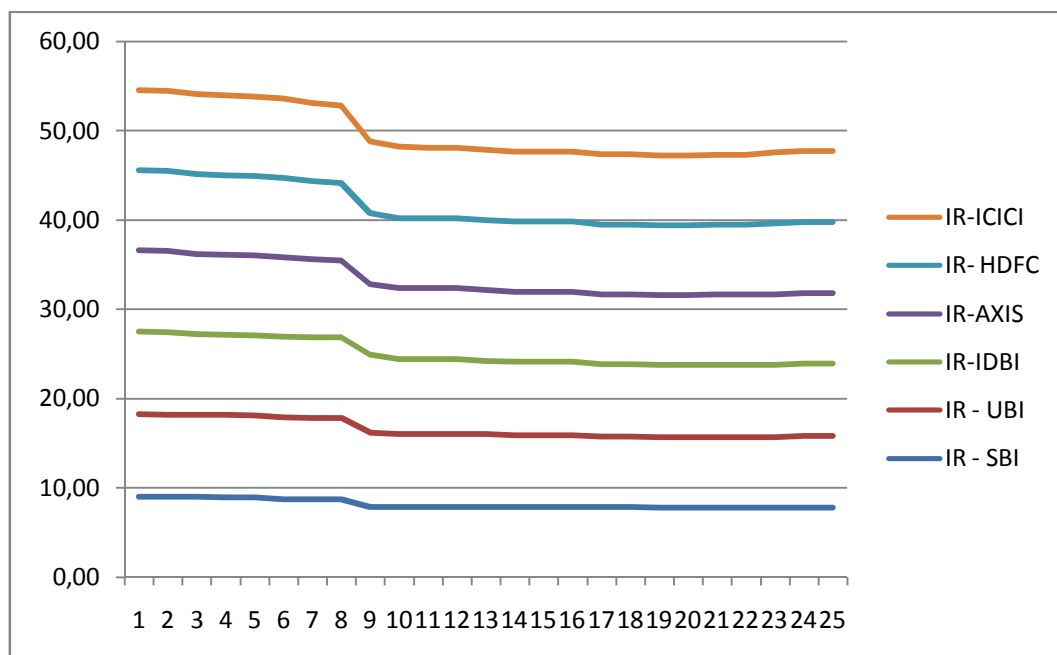
Source: <https://www.myloancare.in/>

As against this, the movement of the REPO rate during this period was as under: 05 April, 2016 6.50% 04 October, 2016 6.25% 02 August, 2017 6.00

The graphical representation for the REPO rate is shown below.



The graphical representations for the movements of 1m MCLR for the 6 identified banks over the designated 25 month period (May, 2016 – May, 2018) are indicated below. The 6 charts show that there have been similar responses by all the concerned commercial banks in response to RBI's reduction of the REPO rate. All the banks display some reduction of their lending rates, though it may not be to the extent expected by RBI, in response to RBI's reduction of the REPO rate.



The table below displays the 15 pair-wise correlations among the 1m MCLR rates for the above 6 Indian banks. It reveals a very high degree of correlation for each pair. In other words, there is a great amount of coherence among the movements of the 1m MCLR rates for the six commercial banks over the 25 month period (May, 2016 – May, 2018).

	IR - SBI	IR – UBI	IR-IDBI	IR-AXIS	IR-HDFC	IR-ICICI
IR – SBI	1					
IR – UBI	0.978972	1				
IR-IDBI	0.939743	0.975388	1			
IR-AXIS	0.991981	0.97743	0.943699	1		
IRHDFC	0.992766	0.977114	0.933614	0.992099	1	
IR-ICICI	0.991361	0.982111	0.946969	0.991068	0.996992	1

Significance: All 15 correlations between 1m MCLR rates (for 15 pairs of banks constructed out of 6 Banks, 3 PSBs & 3 Private Sector Indian Banks) are significant at 0.01 level (P-value < 0.00001).

F. Linking Base Rate with MCLR

Base Rate was put into practice with effect from 1st July, 2010 to ensure that banks do not extend loans at very fine rates to large corporate clients by charging considerably higher rates from the smaller customers.

The Base Rate was fixed as the lowest rate at which a bank could offer funds to its best customers, and there could not be any lending below that floor rate.

With effect from April, 2016, RBI introduced MCLR whereby banks were allowed to offer multiple lending rates linked to the tenor of the loan and each rate was fixed for a fixed period. MCLR was introduced since RBI felt that monetary policy transmission was not happening to full extent with the Base Rate.

In January, 2017, most banks had sharply reduced MCLR by 80-90 basis points since they were flush with funds. A basis point is 0.01 percentage point. But the Base Rate remained unchanged for many banks meaning that a huge chunk of retail borrowers, who chose not to switch over to the MCLR system and held on to the old Base Rate mechanism, continued to pay higher rates of interest despite a decline in the banks' cost of funds in the wake of lowering of policy rates by RBI.

RBI expressed concern about the inadequacy of Monetary Transmission to Base Rate. RBI wanted harmonising the calculation of Base Rate with MCLR so that responsiveness of the credit portfolio to monetary policy signal is not hindered by large part of bank's portfolio being linked to Base Rate. RBI clarified that since MCLR is more sensitive to policy rate signals, it has been decided to harmonize the methodology of determining benchmark rates by linking the Base Rate to the MCLR. RBI also pointed out that arbitrariness in calculating the Base Rate and MCLR and spreads charged over them has undermined the integrity of the interest rate setting process. The Base Rate and MCLR regime is also not in sync with global practices on pricing of bank loans.

According to RBI's Statement on Developmental and Regulatory Policies – February 2018 dated February 07, 2018 [11], with effect from April 1, 2018 Base Rate will be linked to MCLR and they will move in tandem.

For the sake of a ready comparison, we give below the current Base Rate quoted by State Bank of India, the largest commercial bank of India, and the current (w.e.f. 01/06/2018) MCLRs displayed by it:

SBI's Base Rate increased from 8.65% p.a. to 8.70% p.a. with effect from 01.04.2018.

STATE BANK OF INDIA

MARGINAL COST OF FUNDS BASED LENDING RATE (MCLR) WITH EFFECT FROM-01.06.2018

Tenor	Existing MCLR (In %)	Revised MCLR (In %)
Over night	7.80	7.90
One Month	7.80	7.90
Three Month	7.85	7.95
Six Month	8.00	8.10
One Year	8.15	8.25
Two Years	8.25	8.35
Three Years	8.35	8.45

As against this, for June, 2018, Axis Bank announced a Base Rate of 8.95%.

Axis Bank MCLR Rates, Axis Bank Base Rate – Jun 2018

Current MCLR rates of Axis Bank range from 8.00% to 8.65% varying by reset frequency of the loan. Axis Bank revises MCLR rates on a monthly basis and benchmarks its interest rates for home loans and other loans to MCLR rates of different tenor.

Tenure wise MCLR	Axis Bank Rate Today
Overnight	8.00%
1 Month	8.00%
3 Month	8.25%
6 Month	8.40%
1 Year	8.50%
2 Year	8.60%
3 Year	8.65%
Axis Bank Base Rate	8.95%

4. Efficiency of Monetary Transmission in India

A. Introduction

We all know that RBI's most important task is to keep a tab on economic growth and rate of inflation in India by adjusting overall money supply. RBI also monitors the exchange rate of the Rupee. To accomplish all this, RBI uses several monetary tools, such as REPO rate, Reverse REPO rate, MSF, CRR and SLR etc. For instance, in a very usual move, if RBI wants to impart some stimulus to economic growth by using the REPO rate, it lowers the REPO rate during its monetary policy pronouncements with a view to reducing the cost of borrowings by agriculture, industry and retail customers. As a sequel to the lowering of the REPO rate, commercial banks get access to a cheaper source of fund. If this finally results in a commensurate lowering of interest rates on loans to various categories of bank borrowers which, in turn, lead to the desired growth of the economy, the ultimate goal of the monetary policy measure can be assumed to have been achieved and an effective Monetary Transmission can be claimed to have been accomplished.

As RBI has pointed out time and again, an efficient monetary policy transmission is an essential pre – requisite for achieving the ultimate objectives of the monetary policy, viz. a boost to growth and a control on inflation. Monetary Transmission takes place via the way changes in short-term policy/money market interest rates by RBI impact commercial banks' lending interest rates or change banks' lending standards and their use of non-price measures while sanctioning loans. Further, since the financial system in India continues to be dominated by commercial banks, the financial health of banks plays a vital role in the process of Monetary Transmission. In other words, the level of NPA for commercial banks in India has a profound impact on the efficiency of Monetary Transmission in the country. As such, a robust health of the banking system becomes a sine qua non for effective Monetary Transmission for a country like India.

B. Mechanism and Efficiency of Monetary Transmission in India

RBI, while discharging its responsibilities as the central bank of India, naturally tries to pursue a prudent monetary policy by suitably adjusting the relevant monetary parameters from time to time in order to attain and sustain optimum levels of growth and rate of inflation. In spite of all such efforts and concerns, it faces criticism off and on from certain quarters for not doing enough to boost the growth of the country's economy/GDP. Also, it is seized with the issue of efficient Monetary Transmission almost on a continuous basis.

For instance, while introducing the concept of Base Rate w.e.f. 01/07/2010, RBI highlighted that the Base Rate is decided in order to enhance transparency in the credit market and ensure that banks pass on the lower cost of fund to their customers. Again, at the time of introducing the Marginal Cost of Funds based Lending Rate (MCLR) w.e.f. 01/04/2016, RBI pointed out that the move is aimed at improving the efficiency of Monetary Transmission in India. Finally, when RBI announced its plan to harmonise the Base Rate with the MCLR w.e.f. 01/04/2018, it expressed concern about the inadequacy of Monetary Transmission to Base Rate and argued in favour of harmonising the calculation of Base Rate with MCLR so that responsiveness of the credit portfolio to monetary policy signal is not hindered on account of large part of the bank's portfolio being still linked to the Base Rate. RBI also clarified that since MCLR is more sensitive to a policy rate signal, it has been decided to harmonize the methodology of determining benchmark rates by linking the Base Rate to the MCLR.

An IMF (Asia and Pacific Department) Working Paper on “Monetary Transmission in Developing Countries: Evidence from India”, prepared in August, 2016 by Prachi Mishra, Peter Montiel and Rajeswari Sengupta [12] also observed that while a tightening of monetary policy in India is associated with a significant increase in bank lending rates and conventional effects on the exchange rate, the impact of a lowering of policy rates on banks' lending rates is only partial and exchange rate effects are weak. Such lowering of rates did not have any significant impact on real output or the inflation rate.

This IMF article observed that the channels through which monetary policy affects aggregate demand depend on a number of factors including the country's financial structure, its exchange rate regime etc. Also, there is no reason to expect that mechanisms of Monetary Transmission in low-income countries would be similar to those for high-income countries. Careful studies of the effectiveness of Monetary Transmission in low-income countries have often found monetary policy effects that are counterintuitive, weak, and/or unreliable. Of course, the World Bank has since classified India as a lower middle income country instead of a low-income/developing country.

The findings of this article can be summarized as under:

There can be 2 channels for monetary transmission – (i) Lending Channel and (ii) Exchange Rate channel.

(i) (a) If we think of Monetary Transmission through the banks' Lending Channel in two steps – from policy rates to bank lending rates (1st

step) and from bank lending rates to aggregate demand (2nd step) – there is some evidence that the first step is operative in India, unlike in many other developing countries. Although pass-through from policy rates to bank lending rates is incomplete, there is some evidence that it does exist.

(i) (b) However, the results provide no support for the second step of Monetary Transmission, or any effect of monetary policy shocks on aggregate demand, as recorded either in the IIP (Index of Industrial Production) gap or the inflation rate.

(ii) The 2nd channel i.e. the Exchange Rate channel could be relevant for India in view of India's floating exchange rate regime. Also, the higher the degree of financial integration, the greater is the extent to which exchange rate changes reinforce the effects of interest rate changes on aggregate demand, and therefore the stronger the Monetary Transmission mechanism.

India's relatively low degree of financial integration, possibly abetted by RBI's intervention in the Foreign Exchange Market to control the volatility of the Rupee-USD exchange rate, would tend to make for a very weak, possibly non-existent, Exchange Rate channel.

C. Financial Friction & Monetary Transmission

RBI's Press Release – DRG Study No. 44 dated 27/03/2018: Role of Financial Frictions in Monetary Policy Transmission in India [13] points out that Monetary Transmission improves with lesser friction in the financial system – particularly with an enhanced extent of financial inclusion in terms of depositors' base and easing of the requirements of collaterals for household loans. Easier norms for collaterals are expected to enable borrowers to avail of loans more freely and up to higher amounts. This, in turn, is expected to facilitate Monetary Transmission.

RBI has already categorised all types of loans to the MSME (micro, Small and Medium Enterprises) segment as Priority Sector Loans. For this purpose, RBI has decided to remove the current loan limits of ₹ 5 crore and ₹ 10 crore per borrower to Micro/Small and Medium Enterprises (Services) respectively, for classification under priority sector. Accordingly, all bank loans to MSMEs, engaged in providing or rendering of services as defined in terms of investment in equipment under MSMED Act, 2006, shall qualify under priority sector without any credit cap.

Also, the article at [11] discloses the following guideline of RBI: In order to create a level-playing field within banks, the sub-target of 8% of Adjusted Net Bank Credit (ANBC) or Credit Equivalent Amount of Off-Balance Sheet Exposure (CEOBE), whichever is higher, for lending to the small and marginal farmers, shall become applicable for the foreign

banks with 20 branches and above, from FY 2018-19. Further, the sub-target of 7.50% of ANBC or CEOBE, whichever is higher, for lending to the Micro Enterprises shall also become applicable for the foreign banks with 20 branches and above from FY 2018-2019.

Thus, on the one hand, the entire MSME segment has been accorded the status of Priority Sector for bank credit. On the other, foreign banks with 20 or more branches in India have also been assigned the tasks of extending designated share of credit to Micro Enterprises and marginal farmers. These twin steps are supposed to facilitate the flow of credit – particularly to the so-called bottom of the pyramid.

As for collateral – free loans, the requirements of relatively small and financially weak entities like the ones belonging to the MSE (Micro and Small Enterprises) segment have been taken care of by SIDBI (Small Industries Development Bank of India). To encourage commercial banks to extend collateral – free loans to the MSE segment, the Ministry of Micro, Small and Medium Enterprises, Govt. of India and Small Industries Development Bank of India (SIDBI) have established a Trust named Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE) to implement the Credit Guarantee Fund Scheme for Micro and Small Enterprises. The Credit Guarantee scheme (CGS) seeks to reassure the lender that, in the event of a MSE unit, which was extended collateral – free credit facilities, failing to discharge its liabilities to the lender, the Guarantee Trust would make good the loss incurred by the lender up to 85% of the outstanding amount in default. The CGTMSE would provide cover for credit facility up to Rs. 20 million which have been extended by lending institutions without any collateral security and /or third party guarantees. The main objective of the scheme is that lender should give importance to project viability and secure the credit facility purely on the primary security of the assets financed. The other objective is that lender availing guarantee facility should endeavour to give composite credit (term loan and working capital facilities from single agency) to the borrowers.

5. Conclusion

Our study about the impact of commercial banks' NPAs on Return on Net-Worth (RONW) reveals that in case of zero NPA, a reasonable return on net worth can be achieved without any undue restriction on the deposit rate or the interest rate spread. So, there is no undue constraint on Interest Rate Spread or NIM as could impact adversely on unhindered Monetary Transmission.

For a NPA level of 6% of Total Loan Assets, however, a positive Return on Net-Worth (RONW) can be achieved for a deposit rate of 6% (current REPO rate) only if the interest rate spread exceeds a threshold value of nearly 3.5%.

Moreover, it is observed that any increase of the deposit rate has a multiplier effect on the increase of commercial loan rate (α) and the interest rate spread.

For a still higher level of NPA of 10% of Total Loan Assets, if deposit rate is 6% (current REPO rate), then a positive Return on Net-Worth (RONW) would require an extremely high level of interest rate spread that is totally unrealistic in a competitive scenario. Accordingly, such a commercial bank would either stop or be restrained from sanctioning fresh commercial loans. As a matter of fact, RBI has already classified, by April 2018, as many as 11 banks under the PCA (Prompt Corrective Action) category in view of their high NPA ratios, thereby placing restriction, inter alia, on their sanction of fresh loans. In other words, the lending rate has to be unacceptably high if the Bank has to earn any reasonable Return on Net-Worth (RONW) for a high NPA ratio. This is not a feasible scenario and the bank might have to stop lending altogether, thereby affecting adversely the process of Monetary Transmission. Controlling the net loss from NPAs for any commercial bank is thus of utmost importance for an efficient transmission of the changes in policy rates brought about by RBI.

It is interesting to note that the above results emanating from our existing method of analysis are quite similar to the ones published in a RBI Occasional Paper of 2016.

As for Marginal Cost of Funds based Lending Rates (MCLR) of commercial banks, there appears to be some reduction in MCLR in the wake of reduction of policy rates by RBI. So, there is obviously some degree of transmission of policy rates, although it may not be enough to meet the expectations of RBI completely. Also, the movements of MCLR for the six selected banks are in tandem and thus highly positively correlated.

Moreover, in the method suggested by RBI for computing MCLR, there appears to be some lack of compatibility. It is also somewhat surprising that the negative carry on account of SLR has not been specifically considered although this was done while computing the Base Rate. Anyway, the modification to the formula necessary to ensure the overall internal consistency has been indicated.

The goal of RBI is to control inflation and at the same time to try to give a boost to growth of the economy. For this, it brings about changes in the policy rates like the REPO rate from time to time. On 06/06/2018 also, RBI has increased the REPO, Reverse REPO, MSF and Bank Rates by 25 basis points each.

RBI also intervenes intermittently in the Foreign Exchange Market in order to avoid excessive volatility in exchange rates. A strong domestic currency can adversely impact the country's export competitiveness, whereas a weakened currency is apt to impart an upward push to inflation.

Since India has a floating exchange rate, it is possible to have Monetary Transmission via the Exchange Rate channel. However, no evidence for the same has been observed by researchers. This has been attributed to the following 2 possible reasons: (a) low degree of financial integration and (b) RBI's intervention in the Foreign Exchange Market from time to time.

The other channel for Monetary Transmission available in India is the Interest Rate channel. This normally is expected to operate as a 2 step process – (a) change of banks' lending rates in response to RBI's change of policy rates and (b) change of aggregate demand and rate of inflation in response to change of banks' lending rates. Of these two, while some evidence does exist for the first step, no evidence appears to have been discovered for the second by the concerned researchers.

Efficient Monetary Transmission is a sine qua non for success in RBI's efforts to achieve its goals on a sustained basis. When one channel for Monetary Transmission is found to be inactive and the only active channel requires two steps to take place in succession, of which the first one alone is operational and the second one is non-operational, it is somewhat surprising that RBI is focussed so intensely on the first step without dealing with the second.

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