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Is The Monetary Policy Transmission to Bank Lending Rates in India Efficient? A Comparison between Public Sector Banks' (PSBS) Median Benchmark Interest Rates and Repo Rate During 2011-2017

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Abstract

With the opening up of Indian financial markets and with global economic forces comes into play, there is much deviation in Reserve Bank of India's (The Central Bank) monetary policy frame-work. Since the implementation of Liquidity Adjustment Facility, monetary policy in India has undergone a significant shift. The conventional monetary policy of controlling CRR and SLR has given way to concepts like Repo and Reverse Repo. But how these policy rates can evoke the desired action from Banks to effectively transmit the policy rates to bank lending? An empirical study of the rate pass-through (the effect of policy rates on bank lending rate) might bring an insight into the influential power of the repo rate in the contemporary monetary policy and specific reactions of Public Sector Banks to these policy rates. This paper examines the relationship between benchmark rates and repo rate and finds that the newly introduced system of benchmarking (MCLR) has improved the rate pass through.

Keywords: Median Benchmark Rate, Repo Rate, Bank lending channel, Monetary policy transmission, Liquidity Adjustment Facility, MCLR.

Introduction

Banks play a major role in the economic system by transferring the funds from the savers to those who need investment and consumption. Banks have to pay interest to the savers and to receive interest from investments and borrowers. To simply state, the difference between the interest received and interest paid is the revenue for Banks. Hence 'interest rates' play a major role in the banking business. In a country like India, where the Banks are the major source of credit mainly for agriculture, SME sector, and Industrial advances, they play an important role in channelizing the credit to the economy. In India, economic reforms were initiated in the early 1990s. These reforms helped the economy to reorient towards a market-based system from a centrally controlled system to support greater efficiency and growth. As a result, these reforms also impacted upon the monetary policy framework.

The opening up of the economy posed some challenges to monetary management. Nonetheless, the period has witnessed significant gains regarding reduction in inflation as well as in containing inflation expectations. Efforts to improve credit availability have also paid rich dividends. Finally, financial stability was maintained in India, even when many other developing and emerging market economies witnessed episodes of financial instability.

Monetary Policy Transmission Mechanism and Bank lending channel

Monetary policy refers to the use of instruments under the control of the central bank to regulate the availability, cost, and use of money and credit. The goal of monetary policy in India is primarily price stability while keeping in mind the objective of growth. (RBI) Monetary policy transmission means how the monetary policy rates influence the interest rates in the market and move the economy in the desired direction as intended by the policy makers. Before Liquidity Adjustment Facility; bank rate, Cash Reserve Ratio and Statutory Liquidity Ratio were prominent instruments in controlling the interest rates.

The Liquidity Adjustment Facility (LAF) introduced since June 2000 has proved to be an effective mechanism for absorbing and injecting liquidity on a day-to-day basis in a more flexible manner and, in the process providing a corridor for the call money market. (RBI: Review of Macroeconomic and Monetary Developments 2000-01). The repo rate became the most important rate, and it transmits through money market rates to alter the interest rates in the financial system and as a result, influences the aggregate demand which is a key determinant in inflation.

Monetary policy rates transmit to the market interest rates through various channels like interest rate channel, exchange rate channel, through asset prices, credit channel and expectations channel. Credit channel which explains bank lending channel and balance sheet channel is an important determinant in emerging and developing economies.

The bank-lending channel, banks play a special role since they are well-suited to deal with certain types of borrowers, especially small firms.

Contractionary monetary policy which results in the decrease of bank reserves or funds will, in turn, reduced the growth in the supply of loans. This reduces loans to small borrowers and hence aggregate spending in the economy. Large firms, in contrast, can directly access capital markets (bonds/equities). The bank-lending channel is particularly relevant for developing and emerging markets with underdeveloped financial markets where interest rates may not move to clear the market. Banks may instead prefer to ration credit to obviate adverse selection problems. In such cases, aggregate demand is often influenced by the quantity of its credit rather than its price (Kamin et al., 1998).

While research before the crisis often cast doubts on the strength of the bank lending channel, evidence during crisis showed that bank-specific characteristics, financial innovations, business models could have implications for the provision of credit and smooth transmission of monetary policy. Therefore, the recent crisis has highlighted the role of banks as a potential source of frictions in the transmission mechanism of monetary policy. (Deepak Mohanty, 2012)

The crisis period has highlighted the need for stronger financial institutions especially in the wake of the failure of big banks in western countries. The recent credit crisis has reminded us of the requirement of stronger banks in the economy. In particular, the crisis has shown that the deregulation of various measures, new developments, financial innovations, an increased presence of institutional investors has impacted the working of monetary policy transmission. This has, in turn, led to changes in banks' business models and the more intensive use of market funding sources, such as the securitization market. (BIS Working Paper, 2011)

Liquidity Adjustment Facility - a single policy rate becomes the paramount weapon for Central Bank to control the fund's flow.

The Liquidity Adjustment Facility (LAF) has been introduced by RBI in June 2000. LAF aids the smooth functioning of the banking system by supplying liquidity when the system is drained and absorbing liquidity when the system is in excess. In this exercise, the banks holding government securities sell them to RBI and receive the cash

with an option to re purchase it back on a future date. When the banks are in need of funds, they can sell its securities for cash and when banks have excess money they can purchase the securities from RBI and park the excess cash with RBI.

In determining the interest rate trends, the repo and reverse repo rate are becoming important. Repo means sale and repurchase agreement. In the repo, Banks sell the securities it holds to RBI with an agreement of repurchase the same at a future date at a predetermined price. This sale results in funds were moving from RBI to banks and will inject liquidity into the banking system. Since October 2013, the Reserve Bank has introduced term repos (of different tenors, such as, 7/14/28 days), to inject liquidity over a period that is longer than overnight. The aim of term repo is to help develop inter-bank money market, which in turn can set market-based benchmarks for pricing of loans and deposits, and through that improve transmission of monetary policy.

Benchmark Interest Rates - a well-defined system in theory but go wrong in practice?

NASDAQ defines benchmark interest as “Also called base interest rate, it is the minimum interest rate investors will demand to invest in a non-Treasury security. It is also tied to the yield to maturity offered on the comparable-maturity Treasury security that was most recently issued (on-the-run)”. Benchmark interest rate for loans is a reference rate around which the loan is typically priced, which means at what interest rate the loan is provided and typically stated as this much rate below or above the benchmark interest rate.

Since the economic reforms which initiated during the 1990s, banks have been given freedom to fix the interest rate for deposits and advances. Step by step deregulation has been carried out by the Reserve Bank of India since then; as it was evident that the administered interest rate mechanism has blunted the price discovery in a competitive market. However, while giving the freedom to banks to fix interest rates, the central bank wanted it to be transparent and should be known to the public as banks would price the interest rate on loans on the case to case basis considering the risk and various other factors. So there should be a mechanism which should tell the

stakeholders and public how the banks are pricing the loans to various customers. While pricing the loans, banks consider the average costs plus a mark up (like risk premium) and accordingly interest rates are finalized.

The deregulation of interest rate has been started with the introduction of Prime Lending Rate (PLR) system which is the rate charged to the prime borrowers of the bank, and normally good and valuable relationships are priced lower and more competitive. The idea is that the rate charged to prime borrowers of the bank should serve as the PLR. However in line with the Monetary and Credit Policy 2001-02 and Monetary Policy Statement, 2003 which allowed the banks to convert the PLR into a reference benchmark rate instead of minimum rate charges to prime borrowers. The Benchmark Prime Lending Rate (BPLR) system was introduced where the banks announce the BPLR and the loans were priced either below BPLR or above BPLR according to the risk-reward perception of banks. This reference rate is computed based on the cost of funds, operating expenses, and margin required to cover regulatory requirements, capital cost, profit, etc. However, in practice banks started to price loans well below BPLR to corporate clients and much more than BPLR to common borrowers. Competition among banks to get good corporate accounts was stated as one of the reasons for this. As most of the common borrowers are from agriculture and small and medium scale industries which lacks technical and legal knowledge regarding loan pricing and other matters were not in a position to question the bank regarding the high-interest rate charged. This was exploited by the banks, and they started charging more to the common man and less to big corporate borrowers, thereby denying the opportunity of benchmark interest rate advantages to common borrowers. This process has blunted the entire benchmark system. Pricing the loans in above manner has resulted in the loss of transparency and the arrest of pass-through of monetary policy rates to common borrowers via benchmark interest rates which were the actual intention of RBI.

RBI during 2010 has issued guidelines to banks to change the benchmark system from BPLR to Base Rate, a method which thought to be a better

system than BPLR both regarding implementation and methodology of calculation. The base rate will be determined by including the following factors :

Table 1: Components of Base Rate

- a) Cost of Deposits/funds [card Rate on retail deposits with one-year maturity for below.15 Lakh (adjusted for Current Accounts and Savings Accounts)]
- b) Negative carry on CRR
- c) Negative carry on SLR
- d) Unallocatable overhead cost
- e) The average return on net -worth

Table 2: Actual lending rates of Banks

Base rate + Product specific operating cost + Credit risk premium + Tenor premium

In this system, for all loans with one-year maturity and above, the bank will not be allowed to lend below the base rate as lending below will not be viable as per the above calculation. However, banks can lend without referring to the base rate for loans with maturity below one year. Base Rate system

has removed the major transparent issue of BPLR system, which loans cannot be priced below the base rate, so borrowers shall know the minimum interest rate that a bank can charge and hence creditworthy borrowers may negotiate interest rate with the banks.

In Base rate system the various banks calculated the cost of funds using different methodologies, like average cost of funds, the marginal cost of funds, blended cost of funds, etc. Reserve Bank has commented that for effective transmission, lending rates have to be sensitive to policy rates and the marginal cost of funds methodology is more sensitive than any other method of calculations and encouraged banks to move in a time-bound manner to calculate the benchmark lending rates based on marginal cost of funds. In first bi-monthly monetary policy statement of 2015-16, RBI stated that transmission of policy rates had not taken place so far despite weak credit off taking and front-loading of two rate cuts. This has again cast doubts in base rate system regarding the transmission of policy rates. An illustration of calculation of the marginal cost of funds is as below

Table 3: Calculation of Marginal Cost of Funds

Sl	Source of funds (excluding equity)	Rates offered on the date of review/rates at which funds raised	Balance outstanding in the books of the bank on the date of review as a percentage of total funds (excluding equity)	Marginal cost (1) x(2)
		(1)	(2)	
1	Deposits			
a	Current Deposits	0.00	7%	0.00
b	Savings Deposits	4.00	21%	0.84
c	Term deposits *			
	Up to one month	4.5	2%	0.09
	One month to six months	7.00	10%	0.70
	Six months to one year	7.5	26%	1.95
	More than one year	8.0	22%	1.76
2	Borrowings			
	RBI	7.25	2%	0.15
	Other banks and institutions	7.20	2%	0.14
	Bonds and debentures	9.0	8%	0.72
	The marginal cost of funds			6.35

* Maturity buckets should be the same as the buckets included in the schedule of interest rates on deposits

As per master directions of RBI on Interest Rate on Advances 2016; all loans sanctioned and credit limits renewed with effect from April 2016 shall be priced concerning MCLR which will be the internal benchmark. MCLR consists of the following:

Table 4: Components of MCLR

- | |
|-------------------------------------------------------------------------------------------------------------------------|
| <p>a) The marginal cost of funds
b) Negative carry on account of CRR
c) Operating cost
d) Tenor premium</p> |
|-------------------------------------------------------------------------------------------------------------------------|

Banks in India has since implemented the MCLR system as benchmark interest rate for loans. As discussed above the PLR/BPLR system has many flaws which obstructed the smooth transmission of policy rates. Moreover, the system itself was not transparent. The Base Rate system introduced since April 2010 has removed much of the transparent issues like the minimum rate of interest that the bank can charge know n to the public and borrowers.

Data and Methodology

The data of RBI's repo rate and bank's median benchmark rate of Public Sector Banks have been collected for the period from 2011 to 2017. The data has been analyzed for normality, the correlation between rates and regressing the independent variable Repo Rate over dependent variable Median Benchmark Rate.

Chart 1: Movement of Median Benchmark Rate and Repo Rate.

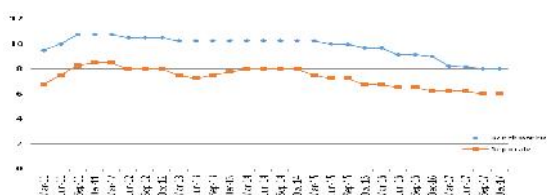
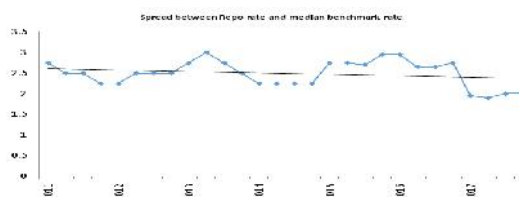


Chart 2: Basis point difference between Median Benchmark Rate and Repo Rate



Results

It is very essential to test the normality of the data before conducting any statistical analysis as the statistical procedures and tests differ for normal data and non-normal data. In other words, we use parametric test procedure for normal and distribution-free methods for non-normal data. To test normality, we use Kolmogorov-Smirnov test under which we test the hypothesis

H0: the given data is normal

H1: the given data is non-normal.

If the p-value is less than 0.05, we reject the normality assumption, and if the p-value is greater than 0.05 the data is normal

Accordingly, first we conduct the K-S/Shapiro-Wilk test, and the following table gives the result of the K-S test. The test indicates that the data is non-normal.

Tests of Normality

	Kolmogorov-Smirnov*			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Median Benchmark Rate	.236	28	.000	.835	28	.000
Repo Rate	.168	28	.042	.923	28	.042
*Lilliefors Significance Correction						

Correlation is appropriate to analyze the relationship between the two variables which were interval-scaled and ratio-scaled. Furthermore, correlation coefficients reveal magnitude and

direction of relationships which are suitable for hypothesis testing. The researcher used Pearson Correlation / Spearman rank correlation to identify the relationship between Median Benchmark Rate

and repo rate, and the result is exhibited in the following Table. In another word we use Correlation to test the following hypothesis There will be the

significant relationship between Median Benchmark Rate and repo rate.

Correlation between Median Benchmark Rate and Repo Rate

Variables	Correlation	Lower Bound	Upper Bound	Z	p
Pearson	0.929	0.912	0.946	12.800	<0.001
Spearman	0.959	0.949	0.969	17.254	<0.001

From the table, we can observe that the correlation between Median Benchmark Rate and Repo Rate is greater than 0.5 and the p-value is significant for all the traits. So we conclude that there exists a positive relationship between Median Benchmark Rate and Repo Rate. In other words, we accept the above hypothesis.

As the methodology of calculating benchmark has undergone a change from April 2016 onwards, we can observe from chart 2 that the Median Benchmark Rate for the period from June 2016 to March 2017 has fallen sharply by 95 basis points from 9.15% to 8.20% while at the same period the Repo Rate has fallen by only 25 basis points. Hence it is very

apparent that the new methodology had its impact on median benchmark rates.

Since there is the significant relationship between the variables nest we use the regression model to evaluate the mathematical or functional relationship between Median Benchmark Rate and Repo Rate and the result is exhibited in the following table. Multiple R of 0.92 states a very strong positive relationship between Repo Rate and Median Benchmark Rate. R Squared value of 0.86 states 86% of the variation of Median Benchmark Rate values around the mean are explained by the Repo Rate values. In other words, 86% of the values fit the model.

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.412	.579		4.169	<0.001
	Repo Rate	1.011	.079	.929	12.847	<0.001

a. Dependent Variable: Median Benchmark Rate

From the table the regression equation between Median Benchmark Rate and repo rate is Median Benchmark Rate = 2.412 + 1.011 Repo rate

Conclusions

It is evident from the above that the new methodology is moving towards achieving the goal of RBI regarding the transmission of policy rate to bank's lending rates. However, the mix of liabilities (deposits received from public and borrowings from various sources) is the major factor which decides the benchmark rate and how competitively a bank can arrive at the MCLR. For example for a bank which has the higher percentage of CASA (Current Account and Savings Account) deposits find its MCLR on the lower side because the interest paid

by the bank on CASA is at lowest and has an impact on overall calculation as mentioned above in Table 3. But a bank having high-interest rate bearing time deposit than its CASA deposit finds it difficult as its marginal cost will be on higher side. So for MCLR system to be successful and to be competitive, the cost of deposits and cost of borrowings should be on a lower side. As banks mainly rely on LAF system for its borrowing options with the common interest rate set by RBI, the CASA deposit base and an interest rate on time deposits plays an influencing role in arriving at the marginal cost of funds.

Corporate companies with good creditworthiness may access the money market which offers interest rate less than the bank's benchmark rate; banks will find it difficult to increase the loan book with high

value -low volume business and has to turn to retail business where competition is intense. The following points may help in smooth transmission of policy rate to lending rates

- a) Increase in aggregate demand in the economy which boosts lending.
- b) Strong and supportive fiscal policy
- c) Stronger and faster resolution of Non Performing Assets as banks with low asset quality may refrain from fresh lending and also reduce interest rate in tune with the competition.
- d) Reduction in high-cost borrowings of banks especially fixed deposits placed by the public at high-interest rates.
- e) The high-interest rate of small savings schemes of Government like PPF, Senior Citizen Schemes, etc. restricts the bank to lower the interest rate on deposits as they may lose the business to such schemes.
- f) Various control mechanisms to be ensured by the Central Bank to check and arrest the sanctioning of loans to big corporate houses which increases the debt-equity ratio (ratio of loans availed to capital available) beyond the stipulated level.

Further Scope for Study

The paper has analyzed only the effect of repo rate on median benchmark rate and the effect of new methodology (MCLR) in fixing bank's benchmark rate. However, there may be various other reasons like cost of funds, asset quality, external economic shocks, profitability, the ratio of corporate and retail loans to total loans, capital adequacy, etc. which may prevent the bank to reduce its lending rate in tandem with RBI's policy rate (Repo Rate). It may be noted that including all the above variables require complex regression modeling with sophisticated tools and it may help us to identify the exact reasons for bank's reluctance to pass on the policy rate immediately. Addressing the issues may help us to develop a much better market-oriented interest rate system.

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