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Risk Mispricing of Loans by Indian Banks: Whether it is Ownership Neutral

Anmol Chopra*

*Manager,

Reserve Bank of India,
Mumbai, Maharashtra, India.
anmolc@rbi.org.in

Abstract

All Scheduled Commercial Banks in India are expected to hold sufficient provisions to meet the expected loss from the credit portfolio. The build-up of provisions to meet expected losses is to be funded by charging a risk premium from the borrowers. This risk premium should form a significant part of the spread between the banks' cost of funds and the yield on their lending portfolio. When banks do not determine the risk premium appropriately and/or do not pass on the risk premium to the customer, the spread earned by them will not be sufficient to meet the expected credit losses and there will be erosion in the capital of the bank. This paper tried to determine if the Indian banks have been mispricing their loans by way of not factoring the risks underlying those exposures adequately, based on empirical data from 2010 till 2020, covering the full cycle of relatively good reported financial health of banks till 2015 and deterioration post the Asset Quality Review by RBI in 2015-16. The paper also tried to establish if this practice is ownership neutral.

Keywords: Loan pricing, interest rates, risk mispricing, capital buffers, recapitalisation.

1. Introduction

The Global Financial Crisis (GFC) of 2008 had left behind a lot of important lessons for the financial system, including the regulators. One of the important ones out of them pertained to the false optimism and boom that led to the build-up of the crisis and caught the banks and regulators largely unaware of the inadequate risk management policies and practices.



The optimism and boom that preceded the crisis was fuelled by lending to (a) subprime borrowers, (b) at a rate not commensurate with their risk profile, and (c) which led to banks not having sufficient provisioning and capital buffers to support the balance sheet when things started going in the wrong direction.

While India was largely insulated from the crisis due to prudent guidelines already in place and swift action taken to mitigate the damage by RBI, it also becomes important to investigate whether Indian banks¹ have also been lax in pricing their loans and advances by either not determining the riskiness of the borrowers appropriately and/or not passing on the risk premium to such high risk customers adequately.

During the period post the crisis till now, RBI has modified the guidelines related to interest rate on advances several times with the aim of enhancing transparency in lending rates of banks and enabling better assessment of transmission of monetary policy and also in order to maintain the stable financial position of banks with changing macro-economic environment and also to protect the depositors' interests. The benchmark rate for loans and advance has moved from Benchmark Prime Lending Rate (BPLR) system till 2010, to Base Rate system till 2016, to Marginal Cost of Funds based Lending Rate (MCLR) and now gradually allowing banks to price the loans based on external benchmarks.

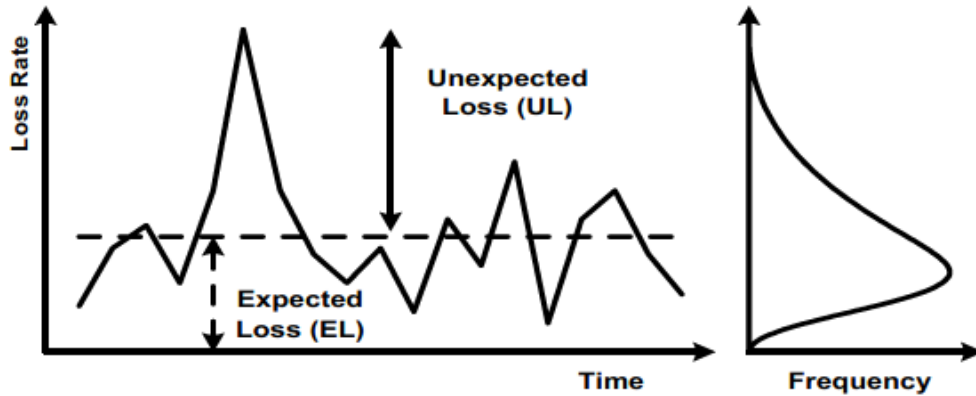
All the above systems have one common objective that is to allow banks to price their loans by taking into account comprehensive factors like riskiness of borrowers, business strategy etc. Under the current, most prevalent system of MCLR based pricing, banks are required to charge a spread over the cost of funds which must take into account the credit risk profile of the borrower among other things.

2. Objective

Pricing of loan is, inter alia, a function of cost of funds of the bank, operating cost of the bank, riskiness of the loan taking into account the creditworthiness of the borrower and collateral cover, tenor of the loan and rate of return expected on the capital deployed by the bank. In an ideal scenario, the riskiness of the loan, measured in terms of the 'expected losses' shall be recovered by including appropriate credit risk premium in the loan pricing models of the banks. The 'expected loss' from a credit portfolio is a cost of doing the business of lending for banks and is generally recovered from the credit portfolio of the bank. Simply put, the credit risk premium collected from all the borrowers should be able to cover the losses arising from defaulted borrowers. The frequency and severity of the losses vary from year to year (see Figure 1). However, banks should be able to determine the average of the losses over a period and use it in their loan pricing models, so that any shortfall in covering of above average credit losses during a particular year is recouped in other years when the losses are below average.

¹Public Sector Banks and Private Sector Banks have been taken as sample for the study

Figure 1



While the 'expected losses' and related provisioning from a credit portfolio of the bank are generally taken care by pricing of the loans, the unexpected losses, i.e., large losses which may happen once in a while, are to be mostly covered by capital of the bank. As explained, the build-up of provisions to meet expected losses is to be normally funded by charging a risk premium from the borrowers. This risk premium should form a significant part of the spread between the banks' cost of funds and the yield on their lending portfolio.

When banks do not determine the risk premium appropriately and/or do not pass on the risk premium to the customer, the spread earned by them will not be sufficient to meet the expected credit losses and there will be erosion in the capital cushion of the bank.

Banks may charge a lower risk premium in order to quote competitive prices in the market. However, this may lead to a situation of 'adverse selection', whereby the banks may be funding lower rated borrowers with cheaper credit in order to increase their loan books and market share. During stress times though, when a large number of such borrowers default, banks may not have built enough provision coverage, leading to sharp erosion in capital buffers.

In Public Sector Banks (PSBs), the consequence of mispricing may mean that capital buffers tend to breach the regulatory floor and the Government is generally required to recapitalise the PSBs as they struggle to attract equity from other investors due to their poor profitability metrics and consequent low market valuation.

The current literature is thin on determining if the Indian banks have been mispricing their loans by not properly factoring in the riskiness of the borrowers, and the extent of such mispricing. The paper tries to examine if this indeed is the case, and also whether such a problem is related to only PSBs or also with the Private Sector Banks (PvtSBs). The paper also tries to examine if the difference in the extent of mispricing among the two bank groups can be explained by the difference in the average rate of interest charged by the two bank groups or is dependent on other factors.

The objectives of this paper are to focus on the following:



- To determine the extent of risk mispricing based on the historical data
- Whether such mispricing is related to only PSBs or also with the PvtSBs;
- If the difference in the extent of mispricing among the two bank groups can be explained by the difference in the average rate of interest charged by the two bank groups or is dependent on other factors;

3. Literature Review

There is a significant amount of literature available on pricing of asset classes, and even specifically with respect to loans and advances. However, most of the studies are related to segregation of components of pricing. Some of the studies which relate to mispricing of loans elaborate on the reasons and consequences of mispricing of credit risk, but fall short of determining the extent of risk mispricing.

Demirgüç-Kunt and Huizinga (1999) had determined that the broad factors affecting the level and spreads of interest rates of loans can be bank specific factors, regulatory and policy decisions, market structure and macroeconomic factors. There can also be significant differences in the level of interest rate spreads on loans over time, which may be impacted by the liberalization in interest rate regimes and level of competition in the banking industry. Similarly, Chirwa and Mlachila (2004) determined that interest rate spreads for loans in Malawi increased significantly after implementation of financial liberalization reforms which may be partially attributed to high monopoly within the industry. They further concluded that high interest rate spreads in developing countries will persist if financial sector reforms do not alter the structure of banking system.

Kahn and Kay (2020) had extensively tried to discern the contribution of risk mispricing in loans towards the subprime lending crisis. The study, albeit limited to mortgage lending in USA, had opined that a combination of mispricing of risk and undue optimism had ultimately led to highly leveraged positions for banking institutions with very little risk mitigation collaterals or buffers. The study had concluded that mispricing formed a significant chunk in the share of high-risk mortgages between 2005 versus 2013.

In the Indian context, George (2016) had raised vital questions regarding mispricing of the loans by banks. The study had tried to understand various components of loan pricing through different frameworks, viz. Matched Fund Transfer Pricing (MFTP) to understand cost of funds, Activity Based Costing (ABC) to understand transaction costs, and Risk-Adjusted Performance Measurement (RAPM) for measuring the cost of equity. However, the study did not quantify the ultimate cost of credit and subsequent relation with pricing of loans through spreads. Instead, the study tried to determine risk premiums on bank loans for PSBs and PvtSBs over the 5-year G-sec yields and comparing them with corporate bond spreads for different rating grades. There may be a concern over this approach, that loan risk spreads cannot be directly compared with bond risk spreads due to (i) the shallow nature of corporate bond market in India and (ii) tighter covenants for loans as compared to bonds.



Ansari (2015) had tried to determine the factors affecting loan pricing in India through a dynamic panel data model at individual bank level for select PSBs and PvtSBs. The study had determined that there is significant impact of various bank specific factors, regulatory and supervisory indicators and macroeconomic factors on the banks' loan interest rates and their spread over deposit interest rates.

While the finding of George (2016) and Ansari (2015) provide a useful starting point for determining the effect of various components in loan pricing, they do not provide definite conclusions regarding the extent of risk mispricing of loans.

4. Methodology and Hypothesis

In order to estimate the extent of risk mispricing of loans, it becomes important to compare the actual Weighted Average Lending Rate (WALR) of banks and the derived WALR, based on the cost of funds, and after adding the operating cost, Return on Net Worth (RoNW) and credit cost.

While the most appropriate method of estimating risk premium is using the Economic Capital Framework (ECF), the lack of availability of data regarding probability of default and loss given default, means that other proxies of risk premium have to be taken. Thus, credit cost has been assumed to represent the risk premium that banks should charge from the borrowers in order to hold sufficient provisions to meet the expected loss from the credit portfolio and should form a significant part of the spread between the banks' cost of funds and yield on their lending portfolio.

Further, while RBI had come out with MCLR guidelines more than four years ago, it is observed that banks are still continuing with certain portion of working capital loans linked to base rate / BPLR. Also, bank-wise data for MCLR for all the loan tenors is not available publicly. In view of this, the relation between average lending rate and average cost of funds has been derived and used in the study, as explained subsequently.

The derived WALR (LRd) has been computed using the broad contours of the MCLR methodology through the following equation:

$$LRd_{i,t} = 0.92 * \left(\underbrace{COF_{i,t} + OE_{i,t} / \text{average}(IEA_{i,t}, IEA_{i,t-4})}_{\text{operatingcost}} \right) + 0.08 * \underbrace{RoNW_{i,t} + RP_{i,t} / \text{average}(GA_{i,t}, G)}_{\text{creditcost}}$$

In the above equation, COF represents the Cost of Funds, OE represents the Operating Expenses, IEA represents the Interest Earning Assets, GA represents the Gross Advances and RP represents the Risk Provisions, for bank i for time period t.

Cost of Funds have been computed as the ratio of Interest Expenses divided by average Interest bearing Liabilities. RoNW represents the cost of equity for the banks, generally computed using pricing models such as Capital Asset Pricing Model (CAPM) and is available in financial databases such as Bloomberg. The other data points used in the above equation are reported by the banks in their periodic financial statements.



Bank i represents the universe of all Public Sector Banks (PSBs) and Private Sector Banks (PvtSBs) as on March 2020 position and time period t represents the quarterly position for the 41 quarters from March 2010 till March 2020. However, as the Asset Quality Review (AQR) by RBI in 2015-16 presents a significant event which led to greater recognition of inherent asset quality problems by the banks and thus subsequent increase in credit costs, the time period has also been segregated into pre-AQR and post-AQR periods, with the break at June 2015.

The difference between the computed $LR_{d_{i,t}}$ and actual Lending Rate ($LR_{i,t}$) gives the shortfall/surplus in the lending rates that banks are charging on their loans. This gives an idea whether individual banks are properly pricing their loans as per the risk profile of the borrowers, or it they are over/ under – charging the loans.

The bank-group level shortfall/ surplus in the lending rates has been computed by taking the weighted average of the shortfall/ surplus of individual banks. This is helpful in determining the difference of risk pricing between PSBs and PvtSBs.

The above computation allows testing two of the hypotheses, viz. the extent of risk mispricing of loans and whether it is a PSB only problem.

Further, a paired difference t-test was carried out to test the null hypothesis that difference of the extent of risk mispricing between PSBs and PvtSBs explains the difference of WALR between the two bank groups, i.e. if the difference between Rate of Interest offered by the two sets of banks is due to risk mispricing alone, or there are other factors as well.

The above hypothesis can be represented mathematically as under:

$$H_0: \text{Mean of } (\Delta Y - \Delta X) = \text{Mean of } (Y - X)$$

$$H_a: \text{Mean of } (\Delta Y - \Delta X) \neq \text{Mean of } (Y - X)$$

Where, X is the average LR for PSBs and Y is average LR for PvtSBs, and Δ represents ($LR_d - LR$) for each bank group, i.e. the difference between derived and actual lending rates.

This is tested using the paired difference t-test at 5% significance level with the null hypothesis being that mean of difference of ($LR_d - LR$) for PSBs and PvtSBs is statistically equal to the mean of difference of LR for PSBs and PvtSBs, and alternate hypothesis that they are not equal.

This will also help in determining if the historical mispricing which resulted in higher credit costs for future periods, is what is now preventing the banks to lower the interest rates and pass on the benefit of rate cuts to the borrowers.

5. Results

Based on the above equation for derived lending rate, $LR_{d_{i,t}}$ for individual banks was computed for 41 quarters between March 2010 and March 2020. By deducting the actual lending rate LR , the shortfall/ excess in yield was computed. Shortfall signifies that banks are not properly pricing the inherent risk of the borrowers and lent at lower rates, while excess means that loans were priced at a higher rate than the risk profile.



Using a weighted average (weighted by gross advances) of the shortfall/ excess in yields, the bank-group shortfall/ excess was computed for PSBs and PvtSBs. It was observed that for all the 41 quarters, a shortfall (negative sign) in yield was observed for PSBs, while for PvtSBs, shortfall was observed for 38 quarters. Quarter wise shortfall for the two bank-groups is given as under:

Pre-AQR period (in %)			Post-AQR period (in %)		
Quarter	PSBs	PvtSBs	Quarter	PSBs	PvtSBs
Mar-10	-1.48	-0.52	Sep-15	-0.80	0.18
Jun-10	-1.07	-0.53	Dec-15	-1.26	0.01
Sep-10	-1.00	-0.49	Mar-16	-1.85	-0.20
Dec-10	-0.85	-0.46	Jun-16	-1.85	0.00
Mar-11	-0.99	-0.45	Sep-16	-1.28	-0.55
Jun-11	-1.07	-0.62	Dec-16	-1.36	-0.47
Sep-11	-0.85	-0.49	Mar-17	-1.36	-0.20
Dec-11	-0.82	-0.40	Jun-17	-1.28	-0.06
Mar-12	-0.81	-0.42	Sep-17	-1.68	-0.14
Jun-12	-0.69	-0.55	Dec-17	-1.60	-0.09
Sep-12	-0.54	-0.25	Mar-18	-2.58	-0.19
Dec-12	-0.65	-0.22	Jun-18	-1.70	-0.53
Mar-13	-0.86	-0.35	Sep-18	-1.88	-0.48
Jun-13	-1.07	-0.34	Dec-18	-2.19	-0.51
Sep-13	-1.17	-0.37	Mar-19	-1.83	-0.34
Dec-13	-1.06	-0.30	Jun-19	-0.54	-0.31
Mar-14	-1.13	-0.31	Sep-19	-1.09	-0.37
Jun-14	-0.72	-0.30	Dec-19	-1.73	-1.05
Sep-14	-0.89	-0.30	Mar-20	-1.62	-1.13
Dec-14	-1.10	-0.45			
Mar-15	-1.41	-0.99			
Jun-15	-0.70	-0.10			

The range and median of shortfall at bank-group level is given as under:

In %	Pre-AQR*		Post-AQR*		Complete cycle	
	PSBs	PvtSBs	PSBs	PvtSBs	PSBs	PvtSBs
Max	-1.48	-0.99	-2.58	-1.13	-2.58	-1.13
Median	-0.99	-0.42	-1.60	-0.31	-1.10	-0.37
Min	-0.54	-0.22	-0.54	0.18	-0.54	0.18
SD	0.23	0.17	0.51	0.32	0.47	0.26

*AQR structural break has been taken at Jun 2015



Graphically, the shortfall/ excess can be seen as under:

It can be observed that median LR for PSBs across the 41 quarters was 1.10% lower than derived LR after factoring in the risk profile of borrowers, while the same was 0.37% for PvtSBs. Also, the extent of shortfall in yields or mispricing for PSBs was lesser in the pre-AQR period as compared to the post-AQR period. However, for PvtSBs, there is no such discernible difference between the two periods. Further, for all the 41 quarters, the average shortfall in yield for PSBs was more than the shortfall for PvtSBs.

At the individual bank level, the following observations were made in terms of bank (i) – quarter (t) pairs:

- On a median basis across the 41 quarters, shortfall in yields was observed for all the PSBs and for 16 out of 21 PvtSBs.
- Out of the 779 (i,t) PSB pairs, for only 34 PSB pairs, there was an excess in derived yield as compared to actual yield, while for PvtSBs, there were 255 such pairs out of 861 (i,t) pairs.

Pre-AQR period

Thus, the following conclusions can be made:

- There has been a significant shortfall in derived yield on advances vis-à-vis the actual yield, for all the quarters and for both bank-groups. This shows that banks are either not appropriately determining the riskiness of the borrowers or not pricing the loans even if such determination is happening. As a result, when borrowers default on their loans, the banks do not have sufficient buffers to make provisions for them and still maintain a high capital ratio. Consequently, with the decline in capital ratios, additional capital infusion becomes a necessary requirement. For PSBs, since Government is the major stakeholder and the market valuation of banks has been low, GoI has had to infuse significant amount of capital in the last five years, approximately ₹3.08 lakh crore.
- While a shortfall in yields was observed for both PSBs and PvtSBs, the extent of mispricing for PSBs was almost three times the level for PvtSBs, in terms of median, and almost twice in terms of range and deviation. Thus, it can be concluded that while mispricing of risk has been prevalent for both the bank-groups, the extent has been much more severe for PSBs. Consequently, it is observed that PvtSBs have been able to maintain higher capital ratios and higher provision coverage for NPAs, as compared to PSBs.
- At individual bank-level as well, some private sector banks have been able to factor the riskiness of borrowers better than PSBs. However, one private sector bank has been pricing its loans at a much higher rate as compared to the risk profile of its borrowers.

The difference in shortfall in yields between PSBs and PvtSBs was compared with difference in actual yields between the two bank groups to gauge whether the difference between Rate of Interest offered by the two sets of banks is due to risk mispricing alone, or there are other factors as well. This will also help in determining if the historical mispricing which resulted in higher credit costs



for future periods, is what is now preventing the banks to lower the interest rates and pass on the benefit of rate cuts to the borrowers.

This was checked using the paired difference t-test (two-tail) on the following series to check if the mean of the two series is statistically equal or not:

In %	Actual Lending Rates			Shortfall in Lending Rates		
	PSBs (X)	PvtSBs (Y)	Y - X	PSBs (ΔX)	PvtSBs (ΔY)	($\Delta Y - \Delta X$)
Mar-10	8.89	9.32	0.43	-1.48	-0.52	0.97
Jun-10	8.76	8.81	0.05	-1.07	-0.53	0.53
Sep-10	8.93	8.91	-0.02	-1.00	-0.49	0.51
Dec-10	9.11	9.07	-0.04	-0.85	-0.46	0.40
Mar-11	9.16	9.17	0.01	-0.99	-0.45	0.55
Jun-11	9.95	9.93	-0.02	-1.07	-0.62	0.46
Sep-11	10.17	10.14	-0.04	-0.85	-0.49	0.36
Dec-11	10.32	10.33	0.01	-0.82	-0.40	0.42
Mar-12	10.32	10.37	0.05	-0.81	-0.42	0.39
Jun-12	10.45	10.74	0.29	-0.69	-0.55	0.14
Sep-12	10.43	10.79	0.37	-0.54	-0.25	0.29
Dec-12	10.41	10.77	0.36	-0.65	-0.22	0.43
Mar-13	10.26	10.71	0.45	-0.86	-0.35	0.51
Jun-13	9.96	10.46	0.50	-1.07	-0.34	0.73
Sep-13	10.05	10.58	0.53	-1.17	-0.37	0.80
Dec-13	10.09	10.64	0.55	-1.06	-0.30	0.76
Mar-14	10.16	10.57	0.42	-1.13	-0.31	0.83
Jun-14	10.04	10.52	0.48	-0.72	-0.30	0.42
Sep-14	10.03	10.55	0.52	-0.89	-0.30	0.59
Dec-14	10.03	10.54	0.51	-1.10	-0.45	0.65
Mar-15	8.72	9.12	0.40	-1.41	-0.99	0.42
Jun-15	8.91	10.20	1.29	-0.70	-0.10	0.61
Sep-15	8.92	10.02	1.10	-0.80	0.18	0.98
Dec-15	8.85	9.89	1.03	-1.26	0.01	1.27
Mar-16	8.85	9.91	1.05	-1.85	-0.20	1.65
Jun-16	8.35	9.83	1.49	-1.85	0.00	1.85
Sep-16	8.73	9.66	0.93	-1.28	-0.55	0.73
Dec-16	8.49	9.56	1.07	-1.36	-0.47	0.89
Mar-17	8.38	9.45	1.07	-1.36	-0.20	1.16
Jun-17	8.30	8.99	0.68	-1.28	-0.06	1.23
Sep-17	8.33	8.98	0.65	-1.68	-0.14	1.55
Dec-17	8.05	9.01	0.96	-1.60	-0.09	1.50
Mar-18	7.71	8.94	1.23	-2.58	-0.19	2.39
Jun-18	7.79	8.84	1.05	-1.70	-0.53	1.17
Sep-18	7.79	8.95	1.16	-1.88	-0.48	1.40
Dec-18	7.86	9.05	1.19	-2.19	-0.51	1.68
Mar-19	7.85	9.10	1.25	-1.83	-0.34	1.49
Jun-19	7.87	9.29	1.42	-0.54	-0.31	0.23
Sep-19	7.91	9.32	1.41	-1.09	-0.37	0.72
Dec-19	7.91	9.38	1.47	-1.73	-1.05	0.68



In %	Actual Lending Rates			Shortfall in Lending Rates		
	PSBs (X)	PvtSBs (Y)	Y - X	PSBs (ΔX)	PvtSBs (ΔY)	($\Delta Y - \Delta X$)
Mar-20	7.81	9.28	1.46	-1.62	-1.13	0.49

The output of the paired difference t-test was as under:

	Y - X	($\Delta Y - \Delta X$)
Mean	0.70	0.85
Variance	0.25	0.26
Observations	41	41
Pearson Correlation	0.55	
Hypothesized Mean Difference	0	
df	40	
t Stat	-1.969	
P(T<=t) one-tail	0.028	
t Critical one-tail	1.684	
P(T<=t) two-tail	0.056	
t Critical two-tail	2.021	

As can be observed, the two-tail p-value is more than the 5% significance level and thus, for the following hypothesis, null hypothesis cannot be rejected.

$$H_0: \text{Mean of } (\Delta Y - \Delta X) = \text{Mean of } (Y - X)$$

$$H_a: \text{Mean of } (\Delta Y - \Delta X) \neq \text{Mean of } (Y - X)$$

Thus, the mean of ($\Delta Y - \Delta X$) series is statistically equal to the mean of ($Y - X$) series, which signifies that the difference between Rate of Interest offered by the two sets of banks is primarily due to risk mispricing.

6. Implications

Mispricing of loans can have several serious consequences for the banks' financial health, financial stability and interest of all stakeholders involved in the banking system.

First, mispricing of loans or not factoring in proper risk premium frequently results in the rate of interest being offered to the borrower at a lower rate as compared to what it should have been. This results in a period of unrealistic boom and optimism, which consequently means that companies tend to increase their borrowings and the leverage levels go up. This over-leveraging can become problematic during stress periods and can hamper debt servicing. When such a scenario gets replicated for multiple and large borrowers, banks' asset quality can decline very rapidly.

Second, banks are expected to build-up provisions to meet expected losses by charging a risk premium from the borrowers. However, when the risk premium being charged is insufficient as per the risk profile of the borrowers, it prevents banks from building a strong level of provision coverage over time. This can impact the banks' profitability when a large number of borrowers default during a short span of time.



Third, the above two implications ultimately lead to capital erosion of banks during stress periods as they would have large amount of exposure where risk premium was inadequately collected from borrowers over time and thus capital buffers would be inadequate. When multiple large borrowers default over a short period of time, the resulting high provisions can significantly reduce the capital levels. This capital erosion can have two consequences. Many banks' capital ratios can dip to below the minimum regulatory requirements, and also banks will not be able to fund future credit growth, with the adverse consequences for the economy.

Fourth, an indirect consequence of mispricing of loans leading to capital erosion of banks, is on the other stakeholders in the banking system, viz. depositors and bond holders. Banks often tend to reduce their deposit rates during stress periods in order to bring down their cost of funds. Also, the capital regulations for most countries have early trigger and Point of Non Viability wherein the CoCo bonds (known as Additional Tier-1 and Tier II instruments respectively in India) act as loss absorbing capital and gets converted into equity when the equity capital of the bank is below minimum requirement levels. This can erode the investments of such bond holders.

Fifth, as PSBs hold about two-thirds of the total assets of the banking system in India and Government holds majority stake in these banks, Government is forced to infuse capital in banks when the existing level has been eroded due to asset quality pressure. As this is partially in lieu of banks mispricing the loans and charging lower interest rates from borrowers, this recapitalization by Government acts as an indirect interest subvention to the borrowers or as an indirect viability gap funding for projects, creating a moral hazard problem within the banking system.

Sixth, RBI has recently encouraged banks to price loans against external benchmarks instead of MCLR based pricing. While the current portfolio of such loans is very small and most of such loans are small ticket loans, the move by the regulator is expected to improve the loan pricing mechanism and take into account the market risk perception of the borrowers through external ratings.

7. Conclusion

It is clear from the empirical data that banks have either not been determining the risk premium appropriately and/or are not passing on the risk premium to the customers. This phenomenon has been more pronounced for PSBs. Further, it has been proven in the study that the difference between Rate of Interest offered by the two sets of banks is primarily due to risk mispricing. The implications of this risk mispricing can seriously and adversely impact the financial health of banks, and the financial stability of the system.

References

- Ansari, J. (2015). Determinants of Commercial Banks' Loan Pricing: Empirical Analysis using Dynamic Panel Data Model. CAFRAL Working Papers.
- Chirwa, E.W. & Mlachila, M. (2004). Financial Reforms and Interest Rate Spreads in the Commercial Banking System in Malawi. IMF Staff Papers, 51 (1), 1-5.



Demirgüç-Kunt, A. & Huizinga, H. (1999). Determinants of commercial bank interest margins and profitability: some international evidence. *The World Bank Economic Review*, 13 (2), 379-408.

George, D. (2016). *Modernisation of India's Banking Sector: Notes on the Indian Financial System.* DVARA RESEARCH.

Kahn, J.A. & Kay, B.S. (2020). The Impact of credit risk mispricing on mortgage lending during the subprime boom. *BIS Working Papers*, No 875.