RESEARCH PAPER | Management | Volume : 5 | Issue : 2 | Feb 2015 | ISSN - 2249-555X

Relationship of Credit Quality and Profitability in Banks: An Empirical Investigation

KEYWORDS: Credit quality, Burden, Profitability, Liquidity, Deposit Structure

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ABSTRACT *Maintenance of sound credit quality is treated as a key for developing and maintaining vibrant banking and financial system.Given the growing significance of financial stability,banks should formulate strategies for managing the quality of their advance portfolio. This is pre-requisite for sound banking system because in recent times banks have become broad based financial institutions engaging in full spectrum of financial services but this paradigm has made their credit risk exposure more complex and interdependent. The increase in risk sensitivity has reduced the quality of assets in banks. The bank failures due to poor credit quality have multiplier effect and have potential to generate negative externalities for whole financial system. The present study therefore is focused to analyze the impact of poor credit quality of Indian banks on their profitability. Multiple linear regression analysis is used to explain the impact of predictor variables Burden (BUR), Credit Quality (CQ), Liquidity (LQ), Deposit Structure (DE), Operating Efficiency (OPE) on response variable Profitability (PT).Results of regression analysis have shown that BUR, CQ and DE have positive and significant impact on PT.*

Introduction

The Indian banking industry has significantly been growing fast and emerging as huge industry world over during the last few decades. After liberalization good numbers of young private and foreign banks have been given entry by the Indian central bank. Recently, it was in news that some more private banks may be allowed to start their operations in India in future. All this has brought huge competition in the Indian banking system on one hand and has narrowed interest margins to each bank on the other hand. In this scenario now-a-days banks are increasingly placing more focus on credit quality, credit risk management and capital adequacy. However, one key factor for each bank to operate efficiently is to manage credit quality by controlling the credit excesses and capital erosion. Research has shown that high quality of assets contributes significantly to positive spread insulation, capital adequacy, and profitability and ultimately leads to creation of additional value for shareholders. The classic explanation of financial crisis, going back to hundreds of years, is that they are caused by excesses (frequently monetary excesses) which lead to a boom and an evitable bust (Taylor, 2008). Thus, if banks increase their credit excesses will throw them in credit crisis, resulting in deteriorating credit quality and capital adequacy. In recent crisis we had a housing boom and bust which in turn lead to financial turmoil in the US and other countries. Banks in these countries witnessed decline in credit quality mainly because housing bubble plausibly brought down house rentals and house prices.

Similarly main cause behind the Asian Financial Crisis (Yen, 1999) was deteriorating credit quality in banks. It is believed(Nagle, 1991) that the future time bomb for bank collapses will be poor credit quality. Proper management of quality of credit portfoliais therefore an important indicator of proper credit risk management and assures future solvency, consequently leads to insulation better spread from their fund based activities. The declining profitability of Indian banks after implementation of (Narasimham Committee, 1991) recommendations have revealed that credit quality has come to stay high on the agenda of bankers for avoiding banking crisis. The recommendations of the committee relating to asset classification, provisioning, income recognition and capital adequacy norms no doubt has improved the health of Indian banks in terms of credit quality and risk cushion but has caused greater stress and strain on their profitability. Keeping in view the importance of credit quality, supervisors and regulators need to understand the potential implications of the banks to depict rosy picture of credit quality on the financial and systematic stability of the banking sector. No doubt due to proper surveillance of advance portfolio by Reserve Bank of India, presently banks are leaving no stone unturned to manage their advance portfolios on day to day basis, so that credit portfolio are show in better shape and size.

As evidenced from recent American sub-prime crisis, the crisis in banking sector can engulf the entire economy because banks are the catalyst of growth. Banking crisis (Khan, 2000) crop in if Non-performing Assets (NPAs) touches 10% of total banking assets, resolution cost of crisis is 2% or more of GDP and banking problem results in large scale nationalization or extensive bank failures. Further, significant crisis is an extensive unsoundness of banking sector in terms of deterioration in credit quality or loan losses and thereby eliminating fully or partly bank capital. In recent years, banking and financial crisis have become common phenomenon and various nations have already experienced the fall out of deteriorating credit quality and poor credit risk management in banks. Therefore, Indian banks are left with no alternative but to manage quality of credit portfolio in order to meet ever increasing customer expectations and so as to remain competitive in the global market. This scenario has forced banks to pay attention on competing pricing of credit instruments, credit risk management and maintenance of high credit quality. In this context, the present study makes a modest attempt to deliberate on credit quality in Indian banks and its impact on their profitability.

Objectives of the Study

The study is undertaken to achieve the following objectives:

- To evaluate and analyze credit quality of India Banks,
- To gauge impact of credit quality on the profitabilityof banks.

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Literature Review

In the context of performance and systematic soundness of banks, credit quality is considered as a major outcome of perfect credit risk management and serves as a link between profitability and capital adequacy. The study of (William, 2009) demonstrates convincingly that all along the problems in the US money market were related to credit risk rather than liquidity, as he argues that credit crunch with large spillovers, seriously has weakened an economy which was already suffering from the lingering impacts of the oil price bout and the housing bust. A synoptic review of literature brings to the fore insights into various determinants of poor credit quality. A considered view is that banks' lending policy is a major driver of NPAs [(Reddy, 2004), (McGoven, 1998), (Bloem & Goerter, 2001)]. While critically reflecting on banks' investment portfolio and lending policy (Mohan, 2003) has conceptualized lazy banking as important reason for NPAs. Certain other reasons for poor asset quality highlighted by various researchers are poor credit investigation, appraisal and supervision (Taori, 2000), lengthy bank litigation process (Bhagavat, 1990), huge over dues in loan accounts (Kurup, 1990), poor house-keeping (Godse, 1990), industrial recession (Nambirajan, 2000), regulatory supervision (Rajagopal, 1996), macroeconomic instability (Chaudhari, 1997), capital controls (Rangarajan, 2000), thrust on rural credit (Thiugalaya, 1999), social objective (Joshi, 1987) and cross subsidization of activities (Bastian, 1998). In an empirical study (Rajaraman & Vashista, Non-Performing Loans of Indian Public Sector Banks: Some Panel Results , 2002) provided an evidence of significant bivariate relationship between an operating inefficiency indicator and the problem loans of public sector banks. Normally the loan loss provisions is used to measure credit quality of banks while researchers have used the ratio of loans to deposits and short term funding to measure the bank exposure to default risk and credit quality and have ascertained positive association between profits and risk (Valentina, Mcdonald, & Schumacher, 2009)The studies of (Bashir & Hassan, 2003)and (Staikouras & Wood, 2003)lime lighted higher advances ratio affects profits of banks negatively.

The important revelation in the context of credit quality and credit risk management has been made by the (Taylor, 2008). While providing empirical evidence that government actions and intervention caused, prolonged and worsened the recent sub-prime financial crisis. He revealed that along with other factors, the government actions prolonged the crisis by misdiagnosing the problem in the bank credit market and thereby responding inappropriately by focusing on liquidity rather than credit risk.In India, in spite of high NPA ratio and poor credit quality in banks, fortunately Indian banking sector has been able to avoid severe crisis in recent times. Since most of the factors identified by researchers as main cause of poor credit quality and problems in bank credit, which lead to crisis in US and other countries are by and large present in Indian banking system, as such utmost care and precautions should be taken to check future banking crisis. After implementation of provisioning and accounting norms, banks' in India are now-a-days booking their incomes as per these norms under strict RBI supervision. However, many banks even today do present healthy figures on NPAs by window dressing procedures, commonly known as "Ever Greening" of credit portfolio. Hence, reduction in NPAs (Hugar, 1998) and structured asset quality management (Taori, 2000) continues to be critical area in the real soundness and stability of banking system.

Materials and Methods

The Indian banking sector comprises of public, private, foreign and cooperative banks. However, public and private sector banks are most important segments of the Indian banking industry. For the present study both public and private sector banks have been selected as they dominate the Indian banking system. In order to test the hypothesis the study used panel data of 35 observations from the public and private sector banks for period of ten from 2003-04 to 2012-13. The data regarding various variables were collected from Prowess, Capital Line and RBI official website.

Regression dataanalysis, t-test, p-value and Durbin Watson test are used to explain the impact of Burden (BUR) i.e. difference between non-interest income and non- interest expenses to working funds ratio, Credit Quality (CQ) i.e. net NPAs to net advances ratio, Liquidity (LQ) i.e. total financing to total deposits ratio, Deposit Structure (DE) i.e. total deposits to total assets ratio, Operational Efficiency (OPE) i.e. operating expenses to operating income ratio on response variable Profit (PT) i.e. profit after tax to total assets ratio. The study analyses the influence of an important credit quality variable on the profitability of banks by using multiple regression analysis because it useful to explain the inter relationship between credit quality and bank profitability by mixing it with other important predictor variables. Before going into detailed regression analysis the relationship between predictor variables and response variable PT were examined in the light of available literature. The expected relationship is exhibited in Table: 1.

Table: 1 – Relationship of Dependent Variable with Independent Variables

Predictor Variables	Expected Sign
Spread Burden (BUR)	+
Credit Quality (CQ)	-
Liquidity (LQ)	+
Deposit Structure (DE)	+
Operating Efficiency (OPE)	-

Accordingly, in present study for evaluating the influence of non-performing assets on profit of banks following model was hypothesized:

PT= f (BUR, CQ, LQ, DE, and OPE)

Thus, in present study, a linear regression model is used to analyze the impact of different bank specific variables including credit quality on bank profitability. The basic linear equation is as follows:

$$PT_t=\beta_o+\beta_1 (BUR_t) + \beta_2 (CQ_t) + \beta_3 (LQ_t) + \beta_4 (DE_t) +\beta_5 (OPE_t)+e$$

Where PT_t is the predictor variable, β_o is an intercept, β the partial regression coefficients'/is the slope of the line and e is the error term associated with the 'n'th observation. Thus, the multiple regression model gives the expected value of PT_tconditional upon the independent varibles.

Using above linear regression model, the present study has tested following hypotheses in order to evaluate the influence of predictor variables on response variable:

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H1: Burden (BUR) has statistically significant effect on profitability of banks.

H2: Credit Quality (CQ) has statistically significant effect on profitability of banks.

H3: Liquidity has statistically significant effect on profitability of banks.

H4: Deposit mix (DE) has statistically significant effect on profitability of banks.

H5: Operating Efficiency (OPE) has statistically significant effect on profitability of banks

Results and Discussions

The Credit quality is an important parameter to gauge the soundness of a bank. A non-performing asset not only declines bank profitability by requiring high loan loss provisions charged to the profit and loss account, but carrying cost of NPAs also swells-up due to avoidable management attention. Apart from this, a poor asset quality puts severe strain on banks' net worth as credit risk increases and bank is supposed to maintain obligatory risk adjusted capital adequacy of 8%. The financial strength of banks' gets affected because their income recognition capacity gets depleted due poor credit quality, as a result slowly erodes their capital funds. In this context, the results of an analysis based various parameters of credit quality of public and private sector banks are presented as follows:

Regression Analysis

The effect of identified variables on the bank profitability computed through regression data methodology is presented in Table: 2. The regression analysis reveals firstly , the value of R Square shows that 82 percent variability in the profitability can be explained by BUR,CQ,LQ,DE and OPE. Secondly, diagnostics of regression partially as Durbin Watson Test is less than rule of thumb 2 and that there is no serial correlation because Durbin Watson Test value of 1.369 is less than 2.Thirdly, F-Test value is 23.57 and p-value is less than 5%for the data variables. In other words, null hypothesis are rejected and overall regression coefficients are accepted. This also shows that regression model is well fit. Therefore, final regression model that can be applied is as follows:

$PT_t = 0.450 + 0.427(BUR_t) - 0.536(CQ_t) + 0.135(LQ_t) + 0.470(DE_t) - 0.262(OPEt) + e$

On the basis of regression analysis we can deduce that i) BURhave positive and significant impact on PT, as β is 0.427, t –value 3.30 is greater than 1.96 and p-value is less than 5 percent. Hence, H1 is accepted; ii) CQ has negative and significant impact on PT, as β is -0.536, t-value -5.39is greater than 1.96 and p-value is less than 5 percent. Hence, H2 is accepted; iii) LQ has insignificant impact on PT, as β is .135, t –value 1.13 is less than 1.96 and p-value is more than 5%. Hence, H3 is rejected; iv) DE has positive and significant impact on PT, as β is -0.470, t-value 4.85 is greater than 1.96 and p-value is less than 5 percent. Hence, H4 is accepted; and iv) OPE has no significant impact on PT, as β is -0.262, t-value 1.39 is less than 1.96 and p-value is more than 5 percent. Hence, H5 is rejected. Finally, R square reveals that 82 percent of variability in the profitability is explained by Burden, Credit Quality of Assets and Deposit Mix.

Hence, present study shows that credit quality of banks is one single variable responsible for variation in profitability of banks. As such regulators of bank sector should always try to address credit portfolio of banks on highest priority so that banks are not able to attempt any sort of Ever Greening of their credit portfolio and thereby should try to avoid any type of financial crisis in the economy.

Conclusion

The research findings of the present paper study brings to light that a significant variation in credit quality of banks. It is evident from the regression analysis that BUR has positive and significant impact on PT, as β is 0.427, t –value 3.30 is greater than 1.96 and p-value is less than 5 percent. Hence, H1 is accepted. Similarly, CQ has negative and significant impact on PT, as β is -0.536, t-value -5.39 is greater than 1.96 and p-value is less than 5 percent. Hence, H2 is accepted. Finally, R square reveals that 82 percent of variability in the profitability is explained by Burden, Quality of Assets and Deposit Mix.

Table: 2- Regression Results (Response Variable- PAT)
* significant at 5% and ** significant at 10%

Predictor Variables	Constant	BUR	CQ	LQ	DE	OPE
β p value	0.450 (.081)	0 .427** (.021)	-.536* (.000)	.135 (.260)	.470 (.002)	- .262 (.330)
t-value	2.54	3.30	-5.39	1.13	4.85	1.39
R.91	R Square .82	Adjusted R Square .80				
F –test 23.57 (.000)		Durbin Watson 1.369			S.E. 0.15	

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