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Determinants of Profitability of Indian Commercial Banks

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ABSTRACT

This study attempts to examine the effect of determinants influencing the performance of commercial banks in India after the global financial crises. The random effect model on balanced panel data for the period 2010-2016 was performed to determine the impact of the macroeconomic and CAMEL factors on the ROE of the commercial banks. Results suggest that the bank internal factors like the capital adequacy, NPAs and liquidity explain a significant part of the bank profitability. The macro economic factors like GDP, IIP and inflation were insignificant on the banks profitability.

KEYWORDS: Random effect model, Indian commercial banks, Profitability

INTRODUCTION

Financial services sector play an important role in the economic health of a nation. Banks occupy an important position in this sector, bridging two sections in the economy, the households and the enterprises by promoting savings and lending funds for investments thus, keeping the economy well oiled (Schumpeter, 1934). An efficient Banking system is important for investments and economic development (Yaron et.,1998). The banking industry contributes directly to national income and its overall growth (Dash & Das, 2009). Healthy performance of the banking sector provides impetus to the economy, but a failure of the banking system can have a serious damaging effect on the economy. While commercial banks play a vital role in the economic resource allocation, their rewards arise from operations of channelizing the funds from depositors to the entrepreneurs/ investors, they at the same time run risks, which are broadly categorised as Credit risk, Liquidity risk, Market risk, Operational risk and Macroeconomic risk. Banking crisis could entail financial crisis which in turn brings the economic meltdown as happened in USA in 2007 (Marshall, 2009). The year 2008 witnessed a major economic crises leading to a losses across the globe. The crisis that started in United States had cross border effect, with many banks going bankrupt and millions of people losing their jobs. Low solvency of banks was assumed to be its root cause, this crisis created the need for financial reforms and robust regulations in the banking sector. The Basel Committee on Banking Supervision (2010) emphasized on solvency, liquidity creation by banks, and proposed new capital rules to avoid such a situation in future. These rules included maintaining higher

capital reserves by banks. The governments around the globe regulate the banking systems. A strong and financially sound banking system in the developing countries can provide the necessary financial services and provide ample funding options for investors in turn providing employment opportunities and growth in the economy (Mihalca, 2007).

Indian Banking Scenario

The policy liberalisation in India during the nineties, the Narasimham Committee (1992) recommended various reforms including deregulation of interest rates, reduction of the cash reserve ratio (CRR) and statutory liquidity ratio (SLR), liberalising entry barriers, and provisioning norms to strengthen the banking system which translated into a strong competitive market (Joshi, Little 1998). The opening of the private and the foreign banks in this new environment provided a wider choice to the customers and also brought in competition among all the players paving way for a better customer experience, shaking the entire banking system and bringing in a consolidation in the due course. The last decade witnessed healthy performance of the financial institutions. The innovations in the financial sector has catered to the needs of the growing businesses but at the same time has put the stake holders to risk of losses across the asset classes and geographical borders, needing close attention from the monetary authorities (RBI, 2008-09). After the introduction of new reforms in the economic and financial sectors in the 1990s, the Indian banking system witnessed considerable reduction in the NPAs (Pennathur, Subrahmanyam, & Vishwasrao, 2012).

The Indian banks have responded to the opportunity of reforms by adding more branches and expanding their footprint, adopting the latest technology and offering a bouquet of financial services. As of March 31, 2016, 26 public sector banks (PSBs) and 15 private sector banks collectively account for around 90% of the total credit portfolio and deposits of all scheduled commercial banks in India (ICRA, 2016). The Banks provision cover was around 41.7%. Gross NPAs was in the range of 7.7%, indicating a need for increased provisioning and capital adequacy for the Public Sector Banks (ICRA, 2016). Due to the emphasis laid by the regulator to clean up of the balance sheets, the capital position of the banks will be inadequate to support higher credit growth (RBI 2016). The PSBs' Tier I capital was marginally short of the 9.5% in March 2016 Seven banks reported Tier 1 capital of less than 8.25. The financial statements of the Indian banks indicate reduction in credit growth and a chunk of stressed accounts on their balance sheet. The strict financial reporting and compliance with the regulatory norms introduced by the RBI had hit the profitability creating a rise in restructured loan accounts assets of the banks in the year 2013. (CII, 2013). As per the study of (Barman, 2007), the declining tendency in Herfindahl's Concentration Index and net-interest margin post-reforms period is a testimony to increasing competition among the players in the Indian banking sector.

According to the Reserve Bank of India, the banking sector in India is sound, adequately capitalized and well-regulated, the Indian financial and economic conditions are much better than in many other countries of the world due to their high quality liquidity assets (HQLA) and SLR investments. Studies on Credit, market and liquidity risk suggest that Indian banks are generally resilient and well regulated.

The sections to follow presents literature review, objectives of the study, methodology, discussion of the results and findings.

LITERATURE REVIEW

The health of the firms can be measured in terms of productivity and performance which is interchangeably used (Tangen, 2004). Performance is measured in terms of productivity and profitability. The productivity is measured by quantifying the output, cost, efficiency and

performance (Chatzoglou et al, 2010.) Determinants of bank profitability have been studied accounting for the micro and macro factors (Kosmidou et al., 2006). The micro (internal) variables are bank specific determinants such as size of the bank, capital adequacy, asset quality, liquidity and leverage ratios, and the external factors are the macroeconomic indicators such as inflation, GDP, and interest rates that have a systemic effect (Demirguc-Kunt and Huizinga, 1999). Studies on the internal and external factors on bank profitability and its impact, including the financial structure and macroeconomic factors revealed mixed results. Findings of the study by (Ameur and Mhiri, 2013) suggest that the bank profitability is explained by the bank-specific factors, and the macroeconomic variables are not significant. The empirical findings suggest that the bank specific factors like size and credit risk are negatively related to banks' profitability, while non-interest income and are positively related, Fadzlan Sufian, Razali Chong (2008). There is a significant relation of the real interest rate with ROA Sufian and Habibullah (2010). Capital ratio and size could explain the bank profitability in Europe, higher asset quality had negative impact on profitability. Findings also suggest that banks with higher deposit ratio tend to be more profitable Elisa Menicucci, Guido (2016). Study on the size of the bank to capital-asset ratio suggested significant explanatory variables for profitability Goddard et al. (2004). A higher capital ratio provides bargaining capacity of cost to the large banks capital impacting the bottom-line. Molyneux and Thornton (1992) observed a negative relationship between the level of liquidity and profit. Study by Miller and Noulas (1997) suggest a negative relation of credit risk and profitability, indicating that high-risk loans lead to non-performing loans, effecting the profitability. The management efficiency is reflected in the operating efficiency. Lower operating expenses reflect upon the bottom line indicating the efficiency of the management. Studies indicate positive relationship between inflation and profitability (Bourke, 1989 and Molyneux, Thornton, 1992). Studies by Petya Koeva (2003) suggest positive relationship between management efficiency and profitability. Goddard et al. (2001), observed, that diversification in European banks, increase the size of a bank and in turn reduce average cost in the competitive markets. Studies on profit persistence in banking, suggest that profits persist overtime (Athanasoglou et al. 2005). (Berger 1995) investigated the profit-structure relationship and found that, profits were positively related due to superior management and increased market share in the case of small-to-medium-size bank. Ownership can have an impact on the profitability of the banks. Studies on the ownership and profitability suggest that privately-owned banks were profitable when compared to the government organisations in India Petya Koeva (2003) and Sanyal and Shankar (2005). It was not the same in case of Canada Short (1979). Studies by Bourke (1989) and Molyneux, Thornton (1992) suggest ownership status is irrelevant for profitability. The ownership of the firms can have an influence on the financial performance (Ongore, 2011). The dominant shareholders have a dominant say and work for the benefit of the organisation by closely monitoring the performances of the management, but can also scuttle fresh and innovative ideas being introduced in the business (Wen, 2010). The banks with foreign owners have sufficient capital and expertise gained over a period of time in their home countries and exposure in foreign countries, introducing best practices (Ongore, 2011). Studies on banks performance by (Azam and Siddiqui, 2012) in Asian countries revealed that foreign banks performed better than the domestic banks.

OBJECTIVES OF THE STUDY

An attempt is made to identify the profitability factors of commercial banks in India, so that the decision makers may design strategies in a way that it can benefit the financial institutions.
The objectives of this research is to study
a. The bank specific factors that impact banks profitability
b. The macroeconomic factors that impact banks profitability

METHODOLOGY

To critically examine the determinants of the profitability of commercial banks in India the study is done for the period 2010 – 2016. By the year 2010, the global financial crises started to fade away and the Indian economy started to pick up and many reforms were brought in the Indian banking sector. To conduct this study Random effect model on the balanced panel data is employed. The random effects model assumes the variation across entities to be random and uncorrelated with the independent variables included in the model (Green, 2008). It is assumed that the differences arise across the entities and influence the profitability of banks; hence a study by random effects is modeled.

The study is based on the secondary data collected from the banking regulatory body, Reserve Bank of India. The CAMEL approach, this is a quantitative technique that consists of a set of performance measure i.e. Capital Adequacy, Asset Quality, Management Efficiency, Earnings Ability and Liquidity is adopted to evaluate the financial health of commercial banks, which are as per the recommendations of the Basel Committee on Banking Supervision of the Bank of International Settlements (BIS) of 1988 (Dash and Das, 2009, ADB in Baral, 2005, Roman & Sargu, 2013).

DETERMINANTS

Bank Specific Factors

The commonly used ratios in the industry to measure profitability are Return on Equity (ROE) and Net Interest Margin (NIM) (Murthy and Sree, 2003).

1. Return on Equity (ROE) is a financial ratio measuring the profitability of the firm. It measures the ability of a firm to generate profits from its shareholders capital invested in the company. A business that has a high return on equity is to be cash generating organisation and stable. Higher the ROE the better it is. ROE indicates the effective employment of owners' capital by the firms Wen, 2010 and Khrawish, 2011).The model employs ROE as measure of profitability, which is taken as a dependent variable.

2. Net Interest Margin (NIM) measures the difference between the interest earned and interest expended. It is a measure of its primary income of the banks. The NIM is calculated as net interest income divided by total earnings of assets (Gul et al., 2011). Higher net interest margin better it is, It indicates that profit of the bank is stable. This is an independent variable to measure the bank profitability.

3. Capital Adequacy is a measure of a bank's capital, expressed as a percentage of a bank's risk weighted credit exposures. It is a metric used to protect depositors and promote the stability and efficiency of banks. Capital available enables the bank to support the bank's business in case of adverse situation like liquidity in case of heavy abrupt withdrawals (Athanasoglou et al. 2005). Capital Adequacy protects the banks from financial distress (Diamond, 2000). Capital Adequacy Ratio (CAR) is taken as independent variable in the model.

4. Asset Quality The quality of bank's asset affects the profitability of a bank. As bankers are primarily into lending activities, loans are the major assets that generate primary income. Superior quality of the loan portfolio needs to be strong for the bank to be profitable. The highest risk facing a bank is the losses derived from delinquent loans (Dang, 2011). The nonperforming loan ratio is considered a proxy for asset quality. NPLs may include sub-standard, bad or loss loans. These are loans which in full or in part overdue for 90 days. Lower nonperforming loans are an indication of efficient performance, which has a bearing

on profits (Sangmi and Nazir, 2010). Net NPA to Net Advances (NNNA) is taken as an independent variable in the model.

5. Management efficiency is a qualitative issue and is subjective in nature. To assess it a study on management systems, human resources, control systems, facilities and risk taking capacity of the management has to be studied. Management efficiency is plays a substantial role in the profitability of the banks. Operational efficiency can be measured to determine the management quality. A quantitative metric, Profit per employee (PPE) has been employed as a proxy for management efficiency.

6. Earnings quality is a metric to determine the profitability of the banks and the effective employment of their assets (Roman and Sargu, 2013). It is represented by the financial ratio Operating Profit to Total Assets (OPTA).

7. Liquidity shows the banks' ability to pay their short term obligations on time. If banks do not have enough liquid assets when there is a need, this can lead to bankruptcy. It is crucial to have necessary liquid assets. Therefore, liquidity ratios be monitored effectively (Derviz and Podpiera, 2004). According to (Dang 2011) adequate level of liquidity is positively related with bank profitability. Investment to Total Assets (ITA) is taken as an independent variable in the model.

Macroeconomic Factors

The businesses are effected by the external environment like the economic policy, Gross Domestic Product (GDP), Inflation and IIP and others. The external factors can influence the investing decisions, thereby affect the investment portfolio and asset quality. For instance, the favourable economic environment generates employment, healthy GDP thereby creating demand for loans. During boom the demand for credit is high compared to recession (Athanasoglou et al., 2005). Bourke (1989) suggest that the consumer price index could be used as an independent variable of banks profitability. The GDP growth rate explains the bank profitability (Masood and Ashraf, 2012). Studies by Demirguc-Kunt and Huizinga (2000), Bikker and Hu (2002) suggest that GDP, annual growth rate of GDP and GNP per capita, unemployment rate and interest rate differentials explain the profitability of businesses.

FINDINGS AND DISCUSSION

Table-1 Descriptive Statistics					
	GDP	**IIP**	**WPI**	**ITA**	**NNNA**
Mean	1.00E+08	3.228571	5.020000	27.05195	1.844603
Median	99466360	2.800000	5.980000	26.64953	1.310000
Maximum	1.37E+08	8.200000	9.560000	43.36450	11.89000
Minimum	63500570	-0.100000	-2.490000	16.33763	0.000000
Std. Dev.	24386556	2.556211	3.958456	4.195474	1.777325
Skewness	0.018271	0.726618	-0.660875	0.677364	2.012511
Kurtosis	1.753764	2.603048	2.317387	3.968900	8.428323
Jarque-Bera	20.40203	29.78673	29.04543	36.40951	599.3858
Probability	0.000037	0.000000	0.000000	0.000000	0.000000
Sum	3.15E+10	1017.000	1581.300	8521.364	581.0500
Sum Sq. Dev.	1.87E+17	2051.743	4920.183	5527.030	991.8900
Observations	315	315	315	315	315

	OPTA	**PPE**	**CAR**	**ROE**

Mean	1.900842	1.131511	13.38946	6.559841
Median	1.860537	0.600000	12.83000	4.060000
Maximum	3.921486	94.30000	56.41000	26.88000
Minimum	-0.675763	-2.100000	7.510000	-23.20000
Std. Dev.	0.685562	7.048406	3.478550	8.485825
Skewness	-0.151847	12.40021	6.872263	-0.045489
Kurtosis	3.612678	156.2572	79.40179	3.506309
Jarque-Bera	6.137301	316349.8	79093.17	3.473215
Probability	0.046484	0.000000	0.000000	0.176117
Sum	598.7653	356.4260	4217.680	2066.350
Sum Sq. Dev.	147.5784	15599.53	3799.497	22610.90
Observations	315	315	315	315

The descriptive statistics presented in Table-1 point that the average ROE of the banks during the study period is 6.5%, which is fairly healthy. All the variables except ROE, WPI and OPTA are asymmetrical since skewness is positive for these variables. The Kurtosis value of all variables indicates that the data is not normally distributed.

Table-2

Dependent Variable: Return on Equity (ROE)				
Method: Panel EGLS (Cross-section random effects)				
Sample: 1 315				
Periods included: 7				
Cross-sections included: 45				
Total panel (balanced) observations: 315				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	27.27449	4.253551	6.412170	0.0000
GDP	-6.80E-08	1.65E-08	-4.123524	0.0000
CAR	-0.199759	0.087932	-2.271747	0.0238
IIP	0.000590	0.107691	0.005480	0.9956
ITA	-0.269229	0.083328	-3.230955	0.0014
WPI	-0.063520	0.075845	-0.837494	0.4030
NNNA	-2.942494	0.200559	-14.67147	0.0000
OPTA	0.919575	0.667967	1.376679	0.1696
PPE	0.033648	0.035163	0.956900	0.3394

Table-3

Dependent Variable: Net Interest Margin (NIM)				
Method: Panel EGLS (Cross-section random effects)				
Sample: 1 315				
Periods included: 7				
Cross-sections included: 45				
Total panel (balanced) observations: 315				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	0.168446	0.211533	0.796311	0.4265
GDP	6.74E-09	7.48E-10	9.005864	0.0000
CAR	0.034370	0.004117	8.348332	0.0000
IIP	0.021862	0.004783	4.571123	0.0000

ITA	-0.008788	0.004001	-2.196257	0.0288
WPI	0.032550	0.003379	9.634496	0.0000
NNNA	0.005803	0.009132	0.635441	0.5256
OPTA	0.727744	0.033340	21.82783	0.0000
PPE	-0.000962	0.001585	-0.606584	0.5446

From the results given in Table-2, the Capital adequacy ratio has a significant impact on ROE. The same is confirmed with NIM when taken as dependent variable as seen in Table-3. It is necessary for the banks to pay attention toward the improvement of the capital adequacy as it was found that the funds held up in the CAR can lead to increase of the cost of capital and it has a negative effect on the profits for the banks. This finding is inconsistent with some earlier studies (Goddard et al., 2004;). And consistent with study that higher capitalisation is negatively associated with profitability (Sharma and Gounder, 2012).

The impact of non-performing loans is negative and is significant at 5% level. This indicates that the increase in NPLs results in decline in profitability for the banks.

Management efficiency which was measured by Profit per Employee is insignificant both in the models with dependent variables as NIM and ROE as dependent variables. It suggests that the profit earned per employee does not contribute to the profitability of the banks, enough attention is not paid to make each employee a profit centre. It may be due to the fact that the banks function in remote locations where it is uneconomical, but contribute to the nation building by working towards the financial inclusion to bring all the sections of the society into the banking network.

The Earning quality which is measured by the operating profit to total assets has insignificant explanatory value.

Liquidity has shown a positive and significant impact on the profitability of the banks in both the models. The positive liquidity ratio indicates that the banks have sufficient liquid investments as against the total assets and may not run the liquidity risk. The finding on liquidity is in line with the conclusion by Bourke (1989) who found it to be explanatory variable for bank profits.

The evaluate the second objective of this study on whether macroeconomic variables affect the performances of commercial banks in India, the effect of GDP, IIP and Inflation (WPI) indicates no significant explanatory value, when the ROE is the dependent variable, which concurs with the findings of (Ameur and Mhiri, 2013). The results from Table 3, which has been modeled with NIM as the dependent variable all the macro economic variables have significant explanatory values.

CONCLUSION

Based on the results, we conclude that to an extent of explanatory variables the bank-specific variables of capital adequacy, asset quality and liquidity are able to explain significant part of profitability in Indian banks. This indicates that the banks should pay attention towards the profit per employee, by creating an environment for the employee to contribute to the profits of the bank. The Tier I capital has to be maintained as it was showing a negative relation. This is more to do with the regulatory frame work where the managements can adopt to employing their capital effectively. Same is with the Nonperforming assets, attention has to be paid towards the advances and due diligence may be adopted to reduce the NPAs.

The Macro-economic variables such as GDP at current market prices, inflation and IIP have not shown any effect on the profitability of the banks.

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