

PERFORMANCE MEASURES AND THE CAMEL RATING OF THE BANKING INDUSTRY: THE CASE OF INDIA

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Abstract

While global financial crisis has led to a contraction of performance of the banking industry worldwide and a series of bank failures in the United States, Indian banks have remained robust. As the government of India is encouraging private banks through its liberal chartering policy, its nationalized banks are able to generate equity funds through the country's dynamic stock market. Despite cost prohibitive efforts in the introduction of a range of new products and services, banks in India are striving to emerge from an era of development banking into consumer oriented supermarkets. This paper studies the strong performance measures of the Indian banking industry and its readiness to adopt the CAMELS rating.

Keywords: *India, Banking Industry, Emerging market, CAMEL Rating*

Introduction

The global financial crisis witnessed the failure of more than 500 banks in the United States and the US government had to use unprecedented bail out procedures to salvage some of its major institutions. All of the central banks of the industrialized economies (the US Federal Reserve, the Bank of England, the European Central bank, and the Bank of Japan) had to resort to an indirect means of monetization through their steps of quantitative easing. Their purpose was initially slated for stimulating their economies but later was expanded into including reaching inflation target and keeping unemployment low. They all uniformly accomplished their singular goal of taking their currencies to their bottom. However, India's banking industry has remained strong through the era of boom and bust of the Latin American

debt, East Asian Financial Crisis, Russia's sovereign default, and the currency problems of Argentina and Brazil. Some scholars have attributed the absence of failure of India's banking industry to its past nationalized institutions and to the country's administered interest rate environment. India is world's largest democracy and the legacy of the British raj has helped the country with strong linkages with the West through its proficiency of the English language particularly in the country's legal framework accepting contracts only in English for enforcement purposes. India has consistently introduced steps of economic and financial liberalization starting with the floating of the Indian Rupee in 1991.

A wide range of financial institutions

exist in the country to provide credit to various sectors of the economy. These include (not counting the branches or affiliates) 183 commercial banks, 133 regional rural banks (RRBs), numerous financial institutions, 13,014 non-banking financial companies, and 1,853 urban cooperative banks. In addition to these sources of credit, short-term rural credit at the grass root level is emphasized through 31 state co-operative banks, 367 district central co-operative banks (DCCBs), 108,779 primary agricultural cooperatives. State cooperative and agricultural rural development banks (20) and primary cooperative and agricultural rural development banks (727) serve long term credit needs in rural India. The present landscape of the India banking industry comprises four major groups. First, the State Bank of India group is the largest network across the nation as it plays the role of the country's central bank, The Reserve Bank of India in almost all places where the central bank does not have its office. This group consists of eight institutions. The second group comprises its major nationalized banks, twenty of them in total. There are 30 private sector banks in the third group which includes some of the newly licensed banks. The last and the fourth group represents 35 foreign banks with most of them located in large metropolitan cities.

Literature Review

The banking industry in India has been the focus of select research topics for various scholarly studies. The country's readiness to adopt the modernized risk management frameworks on the foundations of the Basel agreements has been established [Venkataramany and Bhasin, 2012]. The banking regulators in the United States have consistently used the CAMEL (Capital Adequacy, Asset Quality, Management Quality, Earnings Capacity and Liquidity Management) rating criterion to assess and evaluate the safety of the assets of banks and their

soundness of the value as stated in the financial statements. performance and financial soundness of the activities of the bank. The CAMEL rating of the State Bank of India group has been reported through the group's annual financial statement ratios for select years [Sharma, 2017]. Another study identifies the profit per employee as the most impacting factor on the industry's return on assets (ROA) [Kaur, 2015]. The introduction of banking reforms has raised the bar for banks in India to include sensitivity to market risk as the sixth element to make it qualified for CAMELS rating [Sarathbabu and Mehrotra, 2015].

Methodology

This paper analyzes the banking industry of India through two important dimensions of profitability and efficiency through panel data. It considered all the banking performance ratios for the span of eleven years from 2005-2015 pertaining to the four types of banks namely the State Bank of India (SBI) group, nationalized banks, private sector banks and foreign banks. At the first instant, we intended to find the existence of significant difference among the business performance ratios among the four categories of banks. This attempt would enable us to microscopically identify the difference in the business performance in the span of eleven years from 2005-2015. One-way analysis of variance is applied for four groups of banks and banking performance ratios. It is found that the f-values are significant for several measures. Our study of profitability and efficiency were based on the following models wherein the whole industry is analyzed as an integrated whole with each group being examined distinctively.

Model 1:

$$ROA = \alpha (\text{constant}) + \beta_1 (\text{cost of deposits}) + \beta_2 (\text{cost of borrowing}) + \beta_3 (\text{cost of funding}) + \beta_4 (\text{return on loans adjusted to cost of funds}) + \beta_5 (\text{return on invest}$$

ments) + β_6 (intermediation cost of funds)

Model 1A:

ROA = α (constant) + β_1 (cost of deposits) + β_2 (cost of borrowing) + β_3 (cost of funding) + β_4 (return on loans adjusted to cost of funds) + β_5 (return on investments) + β_6 (intermediation cost of funds) + β_6 (Dummy variable for foreign banks)

Model 2:

ROA = α (constant) + β_1 (term deposits to total deposits) + β_2 (priority sector credit to total credit) + β_3 (term liabilities to total liabilities) + β_4 (secured credit to total liabilities) + β_5 (net interest margin to total assets) + β_6 (non-interest income to total assets) + β_7 (operating profit to total assets)

Model 2A:

ROA = α (constant) + β_1 (term deposits to total deposits) + β_2 (priority sector credit to total credit) + β_3 (term liabilities to total liabilities) + β_4 (secured credit to total liabilities) + β_5 (net interest margin to total assets) + β_6 (operating profit to total assets) + β_7 (Dummy variable for foreign banks)

Model 3:

ROA = α (constant) + β_1 (term deposits to total deposits) + β_2 (priority sector credit to total credit) + β_3 (term liabilities to total liabilities) + β_4 (secured credit to total liabilities) + β_5 (net interest margin to total assets) + β_6 (operating profit to total assets)

Model 3A:

ROA = α (constant) + β_1 (term deposits to total deposits) + β_2 (priority sector credit to total credit) + β_3 (term liabilities to total liabilities) + β_4 (secured credit to total liabilities) + β_5 (net interest margin to total assets) + β_6 (operating profit to total assets) + β_7 (Dummy variable for foreign banks)

Model 4:

ROE = α (constant) + β_1 (Interest income

to total assets) + β_2 (Net interest margin to total assets) + β_3 (Non-interest income to total assets) + β_4 (Intermediation cost to total assets) + β_5 (Wages to total income) + β_6 (intermediation cost of funds)

Model 4A:

ROE = α (constant) + β_1 (Interest income to total assets) + β_2 (Net interest margin to total assets) + β_3 (Non-interest income to total assets) + β_4 (Intermediation cost to total assets) + β_5 (Wages to total income) + β_6 (intermediation cost of funds) + β_7 (Dummy variable for foreign banks)

Discussion of Results

The results that we derived were consistent with regards to expected signs. As evidenced by Table 1, the return on loans adjusted to cost of funds and the intermediation cost of funds were highly significant for the entire industry in producing the Return on Assets (ROA). Neither of this variable was significant for the SBI group but were significant for the other three groups. Similarly, net interest margin and operating profits to total assets were two highly significant variables contributing to the ROA as shown in Tables 2 and 3 for the entire industry. Operating profit displayed its significance for the four groups but net interest margin was significant only to foreign banks. The nationalized banks displayed their unique place among the four groups as the priority sector loans to total loans turned out to be highly significant thereby asserting that they are the implementers of the central government's policies of financial inclusion. Table 4 testifies that the five variables, namely interest income to total assets, net interest margin, non-interest income to total assets, intermediation cost to total assets, and wage bills to total income.

TABLE 1 REGRESSION RESULTS FOR THE INDIAN BANKING INDUSTRY, 2005-2015

Dependent Variable: ROA	Model 1	Model 1A for SBI Group	Model 1B for Natonalized banks	Model 1C for Private Sector banks	Model 1D for Foreign Banks
Constant	1.148 (6.268)***	0.171 (0.970)	0.508 (2.688)**	0.239 (0.678)	1.743 (5.980)***
Cost of Deposits	-0.094 (-2.989)**	-0.383 (-1.772)*	-0.188 (-3.297)**	0.651 (1.801)*	-0.077 (-1.738)*
Cost of Borrowing	0.000 (-1.475)	0.016 (2.224)*	0.000 (-2.099)*	0.000 (-1.346)	0.028 (1.856)*
Cost of Funds	-0.089 (-2.832)**	0.313 (0.147)	0.046 (0.818)	-0.721 (-1.854)*	-0.096 (-1.792)*
Return on Loans adjusted to cost of funds	0.085 (4.275)***	0.259 (5.562)***	0.301 (8.324)***	-0.148 (-1.854)*	0.073 (2.640)**
Return on Investments	0.068 (2.840)**	0.004 (0.112)	0.053 (1.971)*	0.181 (2.608)*	0.028 (0.782)
Intermediaton cost of funds	0.183 (9.842)***	-0.014 (-0.164)	-0.164 (-2.504)*	0.399 (3.189)**	0.143 (5.484)***
Adjusted R ²	0.185	0.452	0.314	0.062	0.117
Number of observatons	950	75	223	254	395

t-statistics appear in parentheses for each variable; * = significant at 90% confidence level;
 ** = significant at 95% confidence level; *** = significant at 99% confidence level

TABLE 2 REGRESSION RESULTS FOR THE INDIAN BANKING INDUSTRY, 2005-2015

Dependent Variable: ROA	Model 2	Model 2A for SBI Group	Model 2B for Nationalized banks	Model 2C for Private Sector banks	Model 2D for Foreign Banks
Constant	0.624 (4.100)***	-0.080 (-0.475)	0.461 (2.711)**	0.321 (0.874)	0.807 (3.506)**
Term loans to total loans	-0.002 (-1.117)	0.015 (3.651)**	0.006 (3.817)***	0.004 (0.733)	0.000 (-0.117)
Priority sector loans to total loans	-0.004 (-1.682)*	-0.003 (-0.700)	-0.003 (-0.908)	0.011 (1.038)	-0.006 (-1.748)*
Secured loans to total loans	-0.002 (-1.198)	-0.003 (-1.079)	-0.012 (-6.432)***	0.003 (0.559)	-0.001 (-0.348)
Net interest margin	-0.148 (-4.637)***	-0.122 (-1.579)	-0.012 (-0.256)	-0.303 (-2.217)*	-0.183 (-4.049)***
Non-interest income to total assets	0.019 (1.220)	0.136 (1.633)	0.049 (1.653)	-0.288 (-1.571)	0.012 (0.619)
Operating profit to total assets	0.636 (22.617)***	0.354 (3.503)**	0.630 (9.319)***	0.668 (4.850)***	0.635 (17.217)***
Adjusted R ²	0.495	0.495	0.553	0.097	0.520
Number of observations	950	75	223	254	395

t-statistics appear in parentheses for each variable; * = significant at 90% confidence level;

** = significant at 95% confidence level; *** = significant at 99% confidence level

TABLE 3 REGRESSION RESULTS FOR THE INDIAN BANKING INDUSTRY, 2005-2015

Dependent Variable: ROA	Model 3	Model 3A for SBI Group	Model 3B for Nationalized banks	Model 3C for Private Sector banks	Model 3D for Foreign Banks
Constant	0.695 (4.787)***	-0.071 (-.397)	0.485 (2.857)**	0.262 (0.729)	0.881 (4.113)***
Demand deposits to total deposits	-0.004 (-1.594)	0.001 (0.334)	-0.005 (-1.598)	0.032 (3.656)***	-0.005 (-1.817)*
Priority sector loans to total loans	-0.003 (-1.090)	-0.002 (-0.358)	0.006 (3.997)***	0.011 (1.128)	-0.004 (-1.086)
Term loans to total loans	-0.002 (-1.258)	0.015 (3.534)**	-0.012 (-6.454)***	-0.005 (-1.094)	-0.001 (-0.295)
Secured loans to total loans	-0.002 (0.166)	-0.004 (-1.181)	-0.012 (-6.454)***	0.002 (0.280)	-0.001 (-0.405)
Net interest margin	-0.149 (-4.819)***	-0.159 (-1.797)*	-0.011 (-0.239)	-0.456 (-3.224)**	-0.177 (-4.102)***
Operating profit to total assets	0.664 (27.192)***	0.443 (4.972)***	0.660 (12.572)***	-0.456 (-3.224)**	0.662 (20.394)***
Adjusted R ²	0.496	0.476	0.557	0.134	0.524
Number of observations	950	75	223	254	395

t-statistics appear in parentheses for each variable; * = significant at 90% confidence level;
 ** = significant at 95% confidence level; *** = significant at 99% confidence level

TABLE 4 REGRESSION RESULTS FOR THE INDIAN BANKING INDUSTRY, 2005-2015

Dependent Variable: ROE	Model 4	Model 4A for SBI Group	Model 4B for Nationalized banks	Model 4C for Private Sector banks	Model 4D for Foreign Banks
Constant	1.861 (1.048)	1.571 (0.370)	0.416 (0.141)	-1.433 (-0.293)	0.609 (0.477)
Interest income to total assets	1.895 (8.475)***	0.803 (1.361)	-0.074 (-0.204)	0.641 (0.838)	1.612 (7.320)***
Net interest margin	-1.594 (-5.074)***	2.933 (1.785)*	7.849 (8.552)***	-1.455 (-0.829)	-1.039 (-4.254)***
Non-interest income to total assets	1.056 (4.004)***	15.178 (6.419)***	10.566 (8.464)***	4.559 (1.675)*	1.148 (7.835)***
Intermediation cost to total assets	1.056 (4.004)***	-9.343 (-2.094)*	-12.980 (-6.756)***	-5.086 (-1.976)*	-0.965 (-5.521)***
Wage bills to total income	0.181 (4.517)***	0.054 (0.109)	0.521 (2.978)**	1.810 (6.465)***	-0.965 (-5.521)***
Adjusted R ²	0.077	0.387	0.407	0.179	0.201
Number of observations	950	75	223	254	395

t-statistics appear in parentheses for each variable; * = significant at 90% confidence level; ** = significant at 95% confidence level; *** = significant at 99% confidence level

Conclusion

This paper suggests a policy framework for banking regulation in India to adopt the CAMELS rating system as their counterparts in the United States have done for decades. This will liberate the industry from the financial repression and compete in the global financial services industry in terms of competitiveness, modernization, enhanced range of product line, and also for the onset of

privatization through increased inward FDI by foreign banks.

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