AN ANALYSIS ON THE PROFITABILITY, RISK AND GROWTH INDICATORS OF PUBLIC AND PRIVATE SECTORBANKS

Mayank Malviya

Research Scholar, Dept. of Management, Manav Bharti University, Solan (H.P.)

ABSTRACT

This paper consolidates the summarized financial statements of the main banks operating in India during the financial year 2010-11, the public and private sector. The profitability, risk and growth prospects of the two types of institutions are analyzed through Return on Equity decomposition and the use of other financial ratios. Various differences between public and private institutions have emerged. In particular, public sector institutions realized higher profitability and cost control; they were more capitalized in absolute terms and relied relatively less on income earned through interest. While Private sector institutions generated comparatively more revenue; they were more capitalized in relative terms and were relatively more provisioned against loan losses and held a higher proportion of liquid assets.
Key words: *India, Profitability, Risk, Growth, Public Sector Banks, Private Sector Banks, Financial Developments*

INTRODUCTION

This study gleans the key indicators from the financial statements of the main banks operating in India during the financial year ending March, 2011, and discusses the profitability, risks and growth prospects of these institutions. The main computations are followed by an analysis highlighting the differences between the public and private sector banks. The initial data pertain to the summary of the Balance Sheets and Income Statements for six main banks such as State Bank of India (SBI), Bank of Baroda (BOB) and Punjab National Bank (PNB) from public sector ICICI Bank, HDFC Bank and Axis Bank from private sector. The data relate to the financial year 2010-11, and were obtained from Reserve Bank of India (RBI) database report. The accounts of the main banks were compiled for the financial year ending March, 2011.

Income Statement figures for the financial year 2010-11 were summarized up as follows:

- ➢ SBI, BOB and PNB were consolidated to form a "Public Sector Banks"; and
- ➢ ICICI Bank, HDFC Bank and Axis Bank were consolidated to form a "Private Sector Banks."

The data pertaining to public and private sector banks thus represent the major banks, and we are confident that the same represent the Indian retail banking system to at the same time. The analysis concentrates on the core indicators of public and private sector banks and where the data were not enough to calculate the indicators relating to public and private sector banks, weighted averages of the component banks' indicators were taken. In those cases where some ratios for a

main bank were unavailable, the weighted averages of the remaining two banks were taken.

The business activities of the banks included in the data set are mainly of a commercial banking nature, with subsidiary involvement in investment banking, life assurance, service banking and fund management. The main share of activities of these banks originates in India.

On an overall, the sample includes a hybrid of different banking activities, and we cannot rule out the possibility that the differences between public and private sector banks are due to heterogeneous combinations of business lines. Yet, this is not a central issue to this research.

The data for Axis bank merit a specific note. This was the only bank with a negative Net Income (NI) for the financial year ending March, 2011. Axis bank's service range and corporate structure have altered since then, partly through the acquisition of other private companies. Axis bank's negative Net Income resulted in a loss-making private sector banks when consolidating the data with ICICI bank and HDFC bank figures. Yet, the latter banks registered profits and therefore paid related taxes. While summing up the Income Statement figures for the three private sector banks, private sector banks resulted in loss-making institution which is still penalized in terms of taxation. These notions imply that the analysis of the private sector banks data may not in fact fully reflect the general state of the "private" Indian banks at the same time.

ANALYSIS OF THE PROFITABILITY

Profitability constitutes the most prominent part in the financial analysis of the Public and Private Sector Banks. The selection of data is based on sample public and private sector banks given above operating in India and on behalf of that the summarized income statement is being drafted for the year ending 31st March, 2011 which is given below in Table 1:

Table 1 Summarized Income Statement (Public and Private Sector Bank) (For the year ending 31st March, 2011)

(In lakh crores)

Summarized Income Statement	**Public Sector Banks** (₹)	**Private Sector Banks** (₹)
Net Interest Revenue	167.8	47.4
Other Operating Income	31.3	23.4
Overheads	(56.9)	(86.7)
Loan Loss Provisions	(7.2)	(4.6)
Proposed Dividend	9.7	1.2
Commission Earned	17.3	8.7
Exchange Earned	26.4	17.7
Rent Recovery from Staff	13.7	23.2
Sundry Charges	(1.4)	(11.8)
Entertainment Expenses	(2.3)	(1.4)
Bad debts written off	(0.8)	(2.7)
Computer Charges	(0.7)	(5.5)
Repairs and Maintenance	(1.2)	(7.9)
Others	3.7	0.4
Tax	(12.9)	(1.7)
Net Income	**186.5**	**(0.3)**

Refer to explanatory notes shown in Table 1.

As stated, the financial statements for different banks ending March, 2011 were consolidated to form public and private sector banks. Summarized Income Statement for public and private sector banks are shown in Tables 1.

Following the consolidation of the accounts of the individual banks, we now focus on decomposing the Return on Equity (ROE) of public and private sector banks.

The ROE ratio may be decomposed into Return on Assets (ROA) and Equity Multiplier as shown below:

$$\text{ROE} = \frac{NI}{Equity} = \frac{NI}{TA} \times \frac{TA}{Equity} \tag{1}$$

Where NI is the Net Income and TA refers to the Total Assets of the bank. Thus, when multiplying the numerator and denominator of ROE by TA we obtain ROA and the Equity Multiplier (i.e. Total Assets: Equity). The latter ratio may be used as a measure of capital adequacy and is therefore an indicator of the gearing risk of the institution.

ROA may be decomposed further by multiplying the numerator and denominator by the Total Revenue (TR) of the bank as follows:

$$\text{ROA} = \frac{NI}{TR} \times \frac{TR}{TA} \tag{2}$$

The first term on the right hand side of Equation 2 is the Profit Margin (PM), whilst the second term is the Asset Utilization (AU) which indicates the amount of revenue generated by each unit of assets.

Figure 1
Return on Equity Ratio
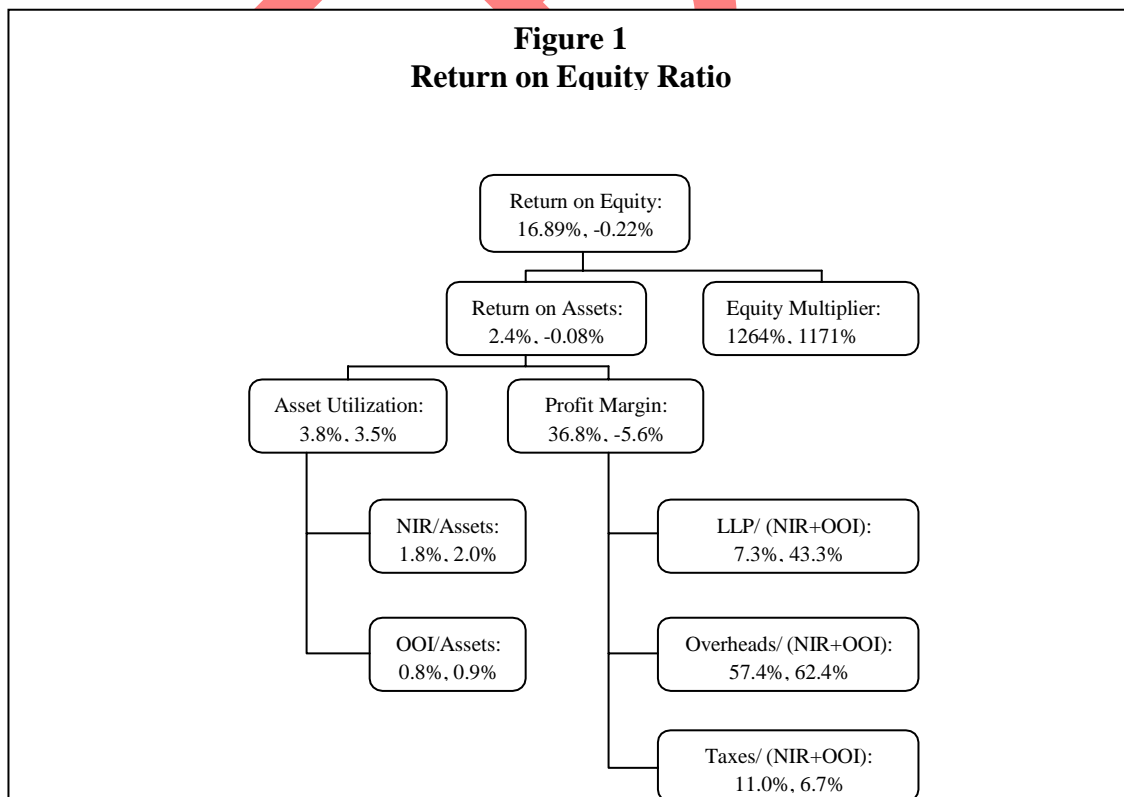
Note to Figure 1:

    a.   Each node shows the relevant ratio for public sector bank followed by the ratio for private sector bank.

    b.   The Total Revenue figures for public and private sector bank were not available, and therefore an approximation was taken by adding up Net Interest Revenue (NIR) and Other Operating Income (OOI). This procedure is likely to understate the Total Revenue (TR) figure, resulting in a higher Profit Margin (PM) and a lower Asset Utilization (AU).

Table 2 Key Ratios for Public and Private Sector Banks (Ending 31st March, 2011)

Key Ratios	Public Sector Banks %	Private Sector Banks %
Panel A: Capital		
Equity/Total Assets	21.60	20.18
Equity/Net Loans	45.06	113.36
Equity/Customer and Short Term Funding	33.65	40.03
Equity/Liabilities	27.56	25.29
Internal Capital Generation Rate =		
ROE x (1-Dividend Payout Ratio)	12.57	-1.25
Panel B: Asset Quality		
Impaired Loans/Gross Loans	24.17	25.63
Loan Loss Reserves/Gross Loans	7.63	13.51
Loan Loss Provisions/Net Interest Revenue	19.62	96.01
Loan Loss Reserves/Impaired Loans	27.93	67.81
Panel C: Liquidity		
Inter-bank Ratio = Money Due from Banks/		
Money Due to Banks	86.13	618.63
Net Loans/Total Assets	57.45	42.43
Net Loans/Customer and Short Term Funding	67.39	22.37
Liquid Assets/Customer and Short Term Funding	16.03	21.15
Panel D: Operations		
Net Interest Margin	7.96	9.72
Net Interest Revenue/Average Assets	7.85	8.12
Net Interest Revenue/Net Income (Note a)	313.62	422.19
Other Operating Income/Average Assets	0.85	0.96
Non Interest Expenses/Average Assets	1.75	3.34
Return on Average Assets	0.76	-0.27
Dividend Pay-out (Note b)	43.31	27.24
Non-operating Items/Net Income (Note b)	13.33	23.70
Cost to Income Ratio	48.79	62.30
Overheads/ (Net Interest Revenue +		
Other Operating Income)	67.44	72.39

Note to Table 3

a. The Dividend Payout ratio of private sector bank is a weighted average of the ratios of ICICI Bank and HDFC Bank, due to Axis Bank's negative Net Income (NI).
b. Private Sector Bank's negative Net Income (NI) figure, leads to negative ratios whenever Net Income (NI) is included in the calculation. Given that in some instances, a negative ratio might in fact be meaningless, a weighted average of the ratios of the component banks was taken.

The latter ratios may be investigated further, depending on data availability. In this case, Asset Utilization (AU) is elaborated upon by splitting Total Revenue (TR) into Net Interest Revenue (NIR) and Other Operating Income (OOI). Similarly Profit Margin (PM) is explained by investigating the expenses which "consume" the profits. The available data permitted the investigation of Loan Loss Provisions (LLP), Overheads and Taxes.

The Return on Equity (ROE) decomposition ratios of public and private sector banks are shown in Figure 1. This analysis also uses further ratios relating to public and private sector banks in order to focus on specific aspects of these institutions. In particular, ratios relating to Capital Adequacy, Asset Quality, Liquidity and the Operations of the institutions were calculated as summarized in Table 2. Having calculated the key ratios for public and private sector bank, we now proceed with the analysis of the above figures.

The fundamental yardstick in the ROE decomposition model is the Return on Equity. ROE for public sector banks stands at around 16.89% – considering that the coupons offered on fixed rate securities were decreasing at the time, this may be considered as acceptable. Yet, one should also scrutinize this rate of return in view of the profits earned elsewhere, and investors might be justified in expecting higher rates of return. The ROE ratio for private sector banks is negative and may be wholly attributed to Axis bank's negative NI. When accounting for the latter fact by eliminating Axis bank from the private sector banks group, the tendency for private banks to operate on a lower ROE still prevails. Such comments also apply to the ROA where the negative figure for private sector banks may be attributed to Axis bank, and there is a tendency for the private banks to realize a lower ROA.

The lower return for private sector banks may be explained by relatively higher costs which decrease Profit Margin (PM). As shown in Table 2 Panel D, the Cost to Income ratio of private sector banks stands at around 62% as compared to public sector bank's ratio of 49%. A relatively higher level of overheads for private sector banks may be attributed to economies of scale concepts, whereby private banks may take longer to recoup fixed costs. For instance, the implementation of IT systems, risk management functions and investment in technical expertise may give rise to economies of scale, since the former costs are likely to be higher for private banks when expressed in relative terms of deposits or loans.

A second factor which accounts for the higher costs realized by private sector banks is the Loan Loss Provision (LLP). When scrutinizing the LLP ratios for the main banks, it seems that private sector bank's high LLP ratio is "inflated" by Axis bank's provision charge for the particular year. This may reflect a higher credit risk relating to this bank's portfolio. Yet, one should note that the higher LLP charges on part of private sector banks result in a more adequately provisioned institution. As shown in Table 2 Panel B, the ratio of Loan Loss Reserves: Impaired Loans stood at around 68% for private sector banks as compared to public sector banks 28%. The two individual institutions with the highest ratio of Loan Loss Reserves: Impaired Loans were ICICI

Bank (112%) and Axis Bank (93%). Both of these figures are included under the private sector bank umbrella. The Loan Loss Reserves: Impaired Loans ratio for the rest of the banks was below 30%.

Private Sector Banks have a higher revenue generation capacity when considering the ratios of Asset Utilization (AU), Net Interest Revenue (NIR): Average Assets and Other Operating Income (OOI): Average Assets. This may be attributed to the fact that private sector banks hold relatively less fixed and non-earning assets as compared to public sector banks. Private sector banks generate higher Net Interest Revenue (NIR) for each rupee invested in assets. This may be attributed to private sector bank's higher net interest margin as shown in Table 2 Panel D. The fact that private sector banks realized a higher ratio of NIR: Average Assets becomes more significant when considering that one of the component banks of private sector banks (Axis bank) does not concentrate as much on NIR. Axis bank's main source of business is not related to deposit and loan activity and it is the only bank with OOI which is higher than NIR.

We may thus summarize that public sector banks have higher cost efficiency, whilst private sector banks have a more effective revenue-generation process. The net result in terms of profitability is tilted in favour of public sector banks, as shown in Figure 1. One possibility is that the higher profitability of public sector banks is related to market power as found by various empirical studies. Whilst there is an evident difference in the size of the banks comprising public and private sector banks, the public sector banks does not necessarily have a higher market power as compared to private sector banks. For instance, Axis bank which is included under private sector bank figures has a considerable market power and specialization in trade finance.

The overall results give more support to those studies suggesting that cost management is a more important source of profitability as compared to market concentration. Another possibility is that the differences between public and private sector banks emanate from a different combination of business activities; however the data set at hand does not permit a definite investigation of this issue.

ANALYSIS OF THE RISKS

Risk constitutes an integral part of a proper financial analysis, since the profitability of an institution should be evaluated in the context of its risk. Higher profits might be the result of higher risk levels and vice versa. Banks are exposed to different risk categories, including financial risks, environmental risks, management risks, and delivery risks which are incurred in delivering a product or service. This section focuses on the main types of financial risks of banks: leverage risks, credit risk, liquidity risk and interest rate risk. Operating risks are discussed as well, although these are usually classified under the delivery risk category. Possible future changes in the banks' risk profiles are also outlined.

This risk analysis is not meant as a comprehensive evaluation of each kind of risk, since this would require information about the portfolio composition in terms of different maturities, types of obligations and counterparty details. In addition, this analysis does not consider foreign

exchange risk and market risk, due to the lack of data on the exposures to foreign currency, marketable securities and derivatives of the respective banks.

1. **Leverage Risk:** The leverage risk of an institution is directly related to capital adequacy, since a higher capital base translates into lower leverage. Whilst public sector bank accumulated more capital in absolute terms, the ratios shown in Table 2 Panel A indicate that private sector banks are more capitalized in relative terms. The Equity: Net Loans ratio is considerably higher for private sector banks, although this may be partly attributed to private sector bank's policy of allocating a lower proportion of funds to loans, as discussed below.

The capital ratios of public and private sector banks, disguise considerably higher ratios for two of the component banks – Punjab National Bank (PNB) and Axis Bank. The latter banks have Equity: Total Assets ratio of 23% and 28% respectively, and this might be partly attributed to the banks' lower asset bases, which emanate from comparatively low earning assets, non-earning assets and fixed assets. The latter is related to the banks' policy of not relying on extensive branch networks. In the case of Axis bank, the institution is not reliant on traditional deposit-loan activities and this translates in comparatively lower financial assets and liabilities, making the institution even less geared. This explains the overall lower gearing ratios (and therefore lower leverage risks) for these banks.

2. **Credit Risk:** The ratio of Impaired Loans: Gross Loans, as shown in Table 2 Panel B indicates that the asset quality of public sector banks is marginally better than that of private sector banks. Yet, the private sector banks are more adequately provisioned for loan losses than public sector banks. For instance, the Loan Loss Reserves: Impaired Loans ratio of private sector banks is roughly double that of public sector banks. We may attribute the latter difference to a policy of allocating a relatively higher Loan Loss Provisions (LLP) on part of private sector banks, rather than better loan selection policies. The LLP policies of public and private sector banks were discussed above. The Loan Loss Reserves figures reflect the necessity for public sector banks to build up higher LLPs against possible loan defaults as at March, 2011. In addition there may be a potential for both public and private sector bank to improve their asset quality through more rigorous use of credit scoring systems. Local banks tend to apply credit scoring and statistical techniques only in case of personal loans. Assisting lending officers with automated decision procedures may translate into more prompt decisions on loan proposals, and this may improve the operating efficiency of banks.

3. **Liquidity Risk:** The ratios presented in Table 2 Panel C indicate that public sector banks take on higher liquidity risks than private sector banks. The public sector banks allocate a higher proportion of funds to loans, which in the Indian context may be considered as illiquid assets due to the absence of securitization activity. In addition public sector banks tend to hold a lower proportion of funds in liquid assets. The inter-bank ratios indicate that public sector banks are net borrower from other banks, whilst private sector banks are net lender to other banks. These results are in line with the notion that private banks tend to be more prudent in their liquidity management

policies. This may be attributed to the fact that public sector banks tend to have easier access to tap additional funding from external sources, such as issuing new debt or equity.

4. Interest Rate Risk: As stated above, a thorough assessment of interest rate risk requires detailed data about the re-pricing procedures of different assets and liabilities. For instance, the interest rate on some deposits or loans may change only at maturity, whilst the interest rate on other accounts might change more frequently. The net effect in terms of interest rate risk is mainly dependent on the re-pricing mismatches of assets and liabilities.

The available indicators for the assessment of interest rate risk are the Net Interest Margin (NIM) and the NIR / NI ratio. NIM indicates that private sector banks were realizing higher earnings on its deposit-loan function in relative terms. This makes private sector banks more capable of absorbing adverse fluctuations in interest rates, and in this sense it is less exposed to interest rate risk. Yet, when considering the NIR / NI ratio, private sector bank's profits rely to a larger extent on interest earnings and in this sense it is more lying to interest rate risk. Public sector banks are less reliant on interest earnings and this is in line with the notions that as banks become larger, they endeavour to broaden the income obtained from alternative sources of business.

5. Operating Risk: Operating risks are related to the bank's operating costs. Increased operating costs decrease Net Income (NI). The management of operating costs encompasses a wide adorn of issues including proper management structure, internal controls and contingency planning. Such items cannot be assessed from the above data, however we may infer the extent of operating risk through various indicators such as the Cost: Income Ratio and Overheads: Revenue ratio. Such indicators as shown on Table 2 Panel D reveal that private sector banks are exposed to a higher degree of operating risk as compared to public sector banks. The Cost: Income ratio is considerably higher for private sector banks, although this may be partly attributed to this bank's policy of allocating a relatively higher LLP. The Overheads: Revenue ratio excludes the LLP allocation, and therefore the difference between public and private sector banks become less pronounced when considering this criterion.

The above assessment does not reveal any clear-cut difference in public sector banks or private sector bank's capacity to absorb the risks discussed above. Both types of banks have their own strong and weak points, and this makes comparisons difficult to undertake. Public sector banks have higher capital adequacy in absolute terms, are less reliant on Interest Income, and have a lower Cost: Income ratio. Private sector bank's strong points are higher capital adequacy in relative terms, higher Loan Loss Reserves to counter credit risk, and a higher level of liquidity stored in the Balance Sheet.

ANALYSIS OF THE GROWTH

Growth is an important business aspect given that larger businesses are more likely to survive on the market. This is especially relevant to the banking industry where the largest banks are often considered as "too big to fail". Growth constitutes an integral part of this analysis, given that

some of the component institutions might be focusing on increasing market share rather than on profitability – at least in the short term. This might well be the case with Axis bank, the only sampled bank registering losses during financial year 2010-11.

Two aspects which are required to achieve growth are a growth-oriented strategy and funding availability. This section focuses on the latter aspect. Growth may be financed through internal sources or external sources. The main internal sources of funds are liquid assets and fresh capital generated by the business. External sources of funding are interbank loans, and debt or equity issues. Irrespective of the chosen funding source, the bank should remain adequately capitalized at all times. An assessment of the capital adequacy of the institutions was undertaken above, in terms of gearing ratios.

As regards the banks' liquid assets, private sector bank has a policy of holding a higher proportion of liquid assets as discussed above; although the absolute amount of liquid assets is perhaps of higher relevance, since growth strategies are likely to require large amounts of funding. Public sector bank holds a higher amount of liquid assets in absolute terms.

The internal capital generation rate (ICGR) is an indicator of the "fresh" funds generated by the business. It refers to the amount of profits which are retained in the business rather than distributed as dividends. The ICGR as shown in Table 2 Panel A may be misleading. In case of public sector banks, it represents ratios of around 9%, 4% and 1% for the individual banks. The ICGR of private sector bank is negative since this institution is registering a negative Net Income (NI). The ICGR of the component banks is 6%, 5% and negative in case of the loss-making bank. In this way, the different ICGRs of public and private sector banks do not allow us to derive any inferences, since each of the individual banks should be taken on its own merits.

In this context, the ICGR reveals how relying exclusively on the analysis of particular ratios might be misleading. For instance Axis bank has the lowest ICGR for the year ending March, 2011; yet it is the bank which subsequently pursued the most aggressive growth strategy.

Institutions with insufficient internal sources of funds may still finance growth through external sources such as inter-bank loans, debt issues and equity issues. The inter-bank ratio for private sector banks is particularly high and shows that it should not be a problem for this bank to obtain more funds from other banks. Yet, private banks usually prefer to leave their interbank credit lines unconsumed and it might also be optimal to finance growth through more permanent funding sources.

All external sources of funding affect the institution's gearing. As discussed above, private sector banks are more adequately capitalized in terms of gearing ratios whilst public sector banks are more adequately capitalized in absolute terms. However, tackling growth issues in absolute terms might be more reasonable, as discussed above. For instance, borrowing a given sum of money may increase the gearing of private sector banks by a higher proportion as compared to public

sector bank. Thus, borrowing from external sources might be a more suitable option for the public sector bank rather than for private sector banks. Private sector banks might still resort to external funding sources, but it might be more reasonable to issue equity rather than debt, or alternatively a mixture of debt and equity. Overall, public sector banks hold more liquid assets and equity in absolute terms, and this facilitates the financing of growth strategies through both internal and external sources of funding. As for private sector banks, the funding of a growth strategy might require additional capital, and therefore further equity issues might be optimal.

CONCLUSION

The main findings of this research are summarized as follows:

➢ During the year ending March, 2011, public sector banks realized a higher level of profitability and cost control, whilst private sector banks generated more revenue for each rupee invested in assets.

➢ Public and private sector banks have differing strengths which are relevant in mitigating risks. Public sector banks hold more capital in absolute terms, relies relatively less on Interest Income, and operates on a lower Cost: Income ratio. Private sector banks are more adequately capitalized in relative terms, have accumulated relatively higher Loan Loss Reserves, and hold a higher proportion of liquid assets.

➢ Public sector banks may be better equipped to finance growth strategies given that these hold higher amounts of capital in absolute terms. In case of private sector banks, supplementing the equity base with additional capital might constitute a vital aspect of a growth strategy.

The above findings still leave a number of unanswered questions. Topics which may offer potential for further research include the issue of economies of scale of Indian banks. For instance, as discussed by Jacob Bikker (2002) economies of scale should prove to be an important element that affects profitability within the Indian environment. A further issue emanates from the trend for merger and consolidation activity in Indian banking. The responses of Indian banks to such changes were discussed by different authors such as Lambrix and Singhvi (2004) and Ghosh and Maji (2009). The application of such notions to the Indian banking system would be an interesting exercise in assessing future strategies for Indian banks.

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