

Profitability Determinants of Banks in India

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ABSTRACT

In the 1980s and 1990s, many countries adopted a series of financial sector liberalization measures that included interest rate liberalization, entry deregulations, and reduction of reserves requirements. This led to significant changes in profitability patterns and efficiency of the banking industry. This paper focuses on India's banking sector, which since 1991 when a streamlined financial reform program was launched, is attracting attention. It assesses whether selected bank-specific and macro-economic determinants have significantly affected profitability of Indian banks. The conclusion is that most of the selected indicators significantly impact banks in India. The last decade and a half has seen the transformation of the Indian banking sector with a high level of technology, diversity and sophistication in products and services and improved efficiency. The banking sector is rapidly moving towards international benchmarks with increasing efficiency, transparency and dynamism. The broad-based reforms have made the banking sector competitive and positioned it well to support sustained economic growth.

Key Words: Bank profitability, Macro-economic Determinants, Efficiency, Operating Profits, Impact.

INTRODUCTION: AN OVERVIEW OF INDIAN BANKING SECTOR

At the time of independence in 1947, the banking system in India was fairly well developed with over 600 commercial banks operating in the country. However, soon after Independence, the view that the banks from the colonial heritage were biased against extending credit to small scale enterprises, agriculture and commoners gained prominence. Additionally, the rapid branch expansion and the channeling of credit in line with the priorities of five-year plans were seen as crucial for economic expansion. As a consequence, in 1967 the policy of social control over banks was announced, which aimed to change the management and distribution of credit by commercial banks. In 1969, the 14 largest banks were nationalized which raised the public sector bank's share of deposits from 31% to 86%. Again, six more banks were nationalized in 1980, raising the public sector banks share of deposits to 92%. Subsequently, quantitative loan targets were imposed on these banks to expand their network in rural areas and they were directed to extend credit to priority sectors. These nationalized banks were then increasingly used to finance fiscal deficits. Although, non-nationalized private banks and foreign banks were allowed to coexist with public sector banks at that time, their activities were highly restricted through entry regulations and strict branch licensing policies. Thus, their activities remained negligible. Beside the nationalization of banks, the government took further control over bank's funds by raising the statutory liquidity ratio (SLR) and the cash reserve ratio (CRR). From a level of 2% of the CRR and 25% of the SLR in 1960, both increased steeply until 1991 to 15% and 38.5% respectively.

In the period 1969-1991, the number of banks increased slightly. But many banks remained unprofitable, inefficient and unsound owing to their poor lending strategy and lack of internal risk management under government ownership. Joshi and Little (1996) have reported that the average return on assets in the second half of 1980s was only about 0.15 per cent, while capital and reserves averaged about 1.5 percent of assets. Further, in 1992/93, non-performing assets (NPAs) of 27 public sector banks amounted to 24 percent of total credit. Only 15 public sector banks achieved a net profit and half of the public sector banks faced negative net worth. The major factors that contributed to deteriorating bank performance included (a) too stringent regulatory requirements regarding SLR and CRR; (b) low interest rates charged on government bonds; (c) directed and concessional lending; (d) administered interest rates; and (e) lack of competition. Further, the prolonged presence of excessively large public sector banks resulted in inefficient resource allocation and concentration of power in a few banks. Moreover, the entry deregulation in this situation put the newly established private banks as well as foreign banks in an extremely disadvantageous position.

Thus, strengthening the financial system became one of the crucial issues in the economy. This is because a sound financial system serves as an important channel for achieving economic growth through the mobilization of financial savings, putting them to productive use and transforming various risks (Beek, Levin and Loayza 1999; King and Levin 1993; Rajan and Zingales 1998; Demirgüç-Kunt, Asli and Maksimovic 1998; Jayaratne and Strahan 1996). The Indian government initiated the first wave of financial liberalization in the second half of 1980s, mainly taking the form of interest rate deregulation. Based on the 1985 report of Chakraborty

Committee, coupon rates on government bonds were gradually increased to reflect demand and supply conditions.

Following the 1991 report of the Narasimham Committee, a more comprehensive reform took place in the Indian banking sector. These reform measures included, among other things (a) a shift of banking sector supervision from intrusive micro-level intervention over credit decisions toward prudential regulations and supervision; (b) a reduction of CRR and SLR; (c) interest rate and entry deregulation; and (d) adoption of prudential norms. The objective of banking the sector reforms was in line with the overall goals of the 1991 economic reforms of opening the economy, giving a greater role to markets in setting prices and allocating resources, and increasing the role of the private sector. The profitability of Indian banks has been depicted in the following table which reflects that the private sector banks has left public sector banks and foreign banks far behind.

Table. 1**Operating Profits**

Year	Public sector bank	Private sector bank	Foreign bank
2000 – 01	13792.95	2848.94	3105.15
2001 -- 02	21676.54 (57.16)	4646.44 (63.09)	3513.61 (13.15)
2002 – 03	29715.24 (37.08)	7238.69 (55.79)	3727.85 (15.98)
2003 – 04	39290.10 (32.22)	8324.59 (15.00)	4985.53 (33.74)
2004 – 05	39413.18 (0.31)	7673.58 (-7.82)	4597.44 (- 7.79)
2005 - 06	37967.21 (-3.67)	9768.07 (27.29)	6658.44 (44.83)
2006 – 07	42268.16 (11.33)	14048.58 (43.82)	9599.81 (44.18)
Average Annual Growth Rate	22.41	32.86	22.37

Note: figures in brackets are percentage increase/decrease over previous year

Source: Balance Sheet of Respective banks.

REVIEW OF LITERATURE

In the literature, bank performance, typically measured by the return on assets (ROA) and/or return on equity (ROE) is usually expressed as a function of internal and external determinants. The external determinants are variables that reflect the economic and legal environment where the bank operates. The level of liquidity, provisioning policy, capital adequacy, expenses management and bank size are included among the internal factors. The liquidity risk is considered an important determinant of bank profitability. The loans market, especially credit to households and firms, is risky and has a greater expected return than other bank assets, such as government securities. Thus, one would expect a positive relationship between liquidity and profitability (Bourke, 1989). It could be the case, however, that the fewer the funds tied up in liquid investments the higher we might expect profitability to be (Eichengreen and Gibson, 2001). Changes in credit risk may reflect changes in the health of a bank's loan portfolio (Cooper et al., 2003), which may affect the performance of the institution. Duca and McLaughlon (1990), among others, conclude that variations in bank profitability are largely attributable to variations in credit risk, since increased exposure to credit risk is normally associated with decreased firm profitability. Millar and Noulas (1997) suggest that the more financial institutions are exposed to high-risk loans results in the higher accumulation of unpaid loans and lower profitability.

Capitalization (leverage) has been demonstrated to be important variable in explaining the performance of financial institutions. However, its impact on bank profitability is ambiguous. As lower capital ratios suggest a relatively risky position, one would expect a negative coefficient on this variable (Berger, 1995b). However, Molyneux (1993) argued that the higher levels of

equity would decrease the cost of capital leading to a positive impact on profitability. Berger (1995b) further concludes that an increase in capital may raise expected earnings by reducing the expected cost of financial distress, including bankruptcy. Athanaseglou et al. (2005) suggests that capital is better modeled as an endogenous determinant of bank performance. Indeed, most studies that use capital ratios as an explanatory variable of bank performance (e.g. Bourke, 1998; Molyneux and Thornton, 1992; Goddard et al., 2004) observe a positive relationship.

Bourke (1989) finds that the reduced expenses improve the efficiency and hence raise the profitability of a financial institution and argued a negative relationship between operating expenses and profitability. However, Molyneux and Thornton (1992) observed a positive relationship and suggest that high profits earned by firms may be appropriated in the form of higher payroll expenditures paid to more productive human capital. Bank size is generally used to capture potential economies or diseconomies of scale in the banking sector. This variable controls for cost differences and product and risk diversification according to the size of the credit institution. The first factor could lead to a positive relationship between size and bank profitability, if there are significant economies of scale (Akhavain et al., 1997; Bourke, 1989; Molyneux and Thornton, 1992; Goddard et al., 2004). While the increased diversification leading to lower credit risks and lower returns may have a negative relationship between size and bank profitability. Other researchers, however, conclude that few cost savings can be achieved by increasing the size of a banking form, especially as market develops (Berger et al, 1987; Boyd and Runkle, 1993; Millar and Noulas, 1997; Athanaseglou et al., 2005). Eichengreen and Gibson (2001) suggest that the effect of a growing bank size on profitability may be positive up to a

certain limit. Beyond this point the effect of size could be negative due to bureaucratic and other reasons. Hence, the size-profitability relationship may be expected to be non-linear.

The literature concentrating on regulatory framework suggests that the emerging economies have significantly increased the attractiveness of its banking system for foreign investors. Foreign ownership may have an impact on bank profitability due to a number of reasons. First, the capital brought in by foreign investors decrease fiscal cost of banks' restructuring (Tang et al., 2000). Second, foreign banks may bring expertise in risk management and a better culture of corporate governance, rendering banks more efficient (Bonin et al., 2005). Third, foreign bank presence increases competition, driving domestic banks to cut costs and improve efficiency (Claessens et al., 2001). Finally, domestic banks have benefitted from technological spillovers brought about by their foreign competitors. The literature on effect of deregulation on bank performance lacks formal verification. However, the contestable market theory and regulation theory in general, point out the importance of entry barriers in enhancing profitability, while some other regulatory interventions may have an opposite effect. Mamatzaky et al. (2005) provide evidence that a non-collusive behavior among banks is in operation in banking industry, suggesting the existence of a contestable market. In contrast, other studies on transition countries have highlighted the fact that the financial reform process positively affect banks' profitability and that banking sector reform is a necessary condition for the development and deepening of the sector (Fries and Taci, 2002).

The literature on the effect of macroeconomic events on bank performance suggests that higher economic growth encourages banks to lend more and permit them to charge higher margins, as

well as improving the quality of their assets. Neely and Wheelock (1997) using per capita income suggest that this variable exerts a strong positive effect on bank earnings. Demirgüç-Kunt & Huizinga (2000) and Bikker & Hu (2002) attempted to identify possible cyclical movements in bank-profitability-the extent to which bank profits are correlated with the business cycle. The finding suggests that such correlation exists. A widely used proxy for the effect of the macroeconomic environment on bank profitability is inflation. Revell (1979) introduces the issue, noting that the effect of inflation depends on whether bank's wages and other operating expenses increase at a faster rate than inflation. The question is how mature an economy is so that future inflation can be accurately forecast and thus banks can accordingly manage their operating costs. As such, the relationship between the inflation rate and profitability is ambiguous and depends on whether or not inflation is anticipated. The anticipation of inflation rates implies that banks can approximately adjust interest rates in order to increase their revenues faster than their costs and thus acquire higher profits. However, an unanticipated inflation leads to the possibility that costs could increase faster than revenues due to improper adjustment of interest rates. Most studies (e.g. Bourke, 1989; Melyneux and Thornton, 1992) observe a positive relationship between inflation and bank performance.

OBJECTIVES OF THE STUDY

The overall objective of the present study is to assess whether the reform program in the Indian banking sector have been successful in restructuring of public sector banks. This has been initiated with the following objectives:

1. To appraise the profitability of public sector, private and foreign banks in India.
2. To analyze the impact of bank specific determinants i.e. investment, advances, deposits and assets of respective banks on profitability of banks in India, and.

3. To examine the impact of selected macro-economic indicators on profitability of banks in India.

Hypotheses of the Study

The following null hypotheses have been tested to assess the impact of bank-specific and macro – economic determinants on profitability of banks in India.

1. The bank specific determinants i.e. investments, advances, deposits and assets of respective banks have no impact on profitability of banks.
2. The selected macro economic determinants i.e. per capita income, exports and foreign exchange reserves have no impact on profitability of banks.

Methods

The present study is based mainly on secondary data. The data and information have been collected from the publications of the Reserve Bank of India; Report on Trend and Progress of Banking in India, Handbook of statistics on Indian Economy and Annual reports & other valuable publications of public sector, private and foreign banks in India. Various websites have also been used for the collection of data and information. For preparation of present study various journals, magazines and newspapers like Indian journal of commerce, Economic survey of India, Economic and political weekly, Financial Express, Economic Times etc have also been used. The period covered under the study is from 2000-01 to 200-07. However, the period varies according to the nature of subject dealt with and availability of data. The bank-specific determinants selected for assessing impact on profitability are investment, advances, deposits & assets of respective banks. The macro economic determinants selected for examining the impact on profitability are per capita income, index of industrial production, wholesale price index, exports and foreign exchange reserves. The study has been initiated with relevant percentages & averages and ratios. The impact of selected indicators has been examined by regression analysis.

RESULTS, DISCUSSION AND CONCLUSION

The impact of bank specific determinants and selected macroeconomic determinants on profitability of banks has been assessed by working out simple linear regression analysis using yearly data on operating profit as dependant variable and bank specific determinants and macro economic determinant separately as independent variables on 5% level of significance. It has been assumed that the data of each variable are normally distributed. The analysis revealed the following facts (Tables 2-7).

1. The investments of respective banks have significant impact on profitability. One unit change in investment causes .094, .068 and .173 times changes in the operating profit of public sector, private and foreign banks in India respectively.
2. The advances deposits and assets of respective banks have insignificant impact on profitability of public sector banks. These variables have significant impact on profitability of private sector banks and foreign banks in India. But in all cases one unit change in these variables are able to explain very little change in profitability of respective banks.
3. The per capita income, index of industrial production, wholesale price index, exports and foreign exchange reserve have significant impact on profitability of public sector banks. The operating profits of public sector banks changes 3.805 times, 287.271 times, 501.897 times, 0.062 times and 0.041 times due to one unit change in per capita income, index of industrial production, wholesale price index, exports and foreign exchange reserves respectively.
4. The selected macro economic determinants have significant impact on profitability of private sector banks too. P – value of all the observations is less than 0.05
5. One unit will change in per capita income, index of industrial production, wholesale price index, exports and foreign exchange reserves causes 0.947, 70.910, 112.593, 0.016 and 0.009 times changes in operating profits of foreign banks in India. The regression results show that P – value is less than 0.05 in all the cases and selected macro economics determinants have significant impact on profitability of foreign banks in India.

Thus, it is concluded that profitability of banks in India has risen significantly over the years and the selected macro economic determinants exert a significant impact on profitability of banks. The profitability moves in consonance with the selected macro economic determinant. The accepted/ rejected hypotheses have been presented in Table 8. Thus, it can be inferred that the last decade and a half has seen the transformation of the Indian banking sector with a high level of technology, diversity and sophistication in products and services and improved efficiency. The banking sector is rapidly moving towards international benchmarks with increasing efficiency, transparency and dynamism. The broad-based reforms have made the banking sector competitive and have positioned it well to support sustained economic growth.

Table.2

Regression Results (Public sector banks)
Dependent variable – Operating profit

Independent variables	Coefficient	Std.error	T	P – Value	R2
Investment	.094	.007	13.964	.000	.980
Advances	.015	.007	2.086	.105	.521
Deposits	.016	.006	2.626	.058	.633
Assets	.013	.005	2.517	.066	.613

Table.3

Regression Results (Private sector banks)
Dependent variable – Operating profit

Independent variables	Coefficient	Std.error	T	P – Value	R2
Investment	.068	.011	6.355	.003	.910
Advances	.026	.005	5.651	.005	.889
Deposits	.021	.003	6.331	.003	.909
Assets	.016	.003	6.148	.004	.904

Table.4

Regression Results (Foreign banks in India)
Dependent variable – Operating profit

Independent variables	Coefficient	Std.error	T	P – Value	R2
Investment	.173	.015	11.695	.000	.972
Advances	.074	.009	8.282	.001	.945
Deposits	.071	.005	15.592	.000	.984
Assets	.036	.003	13.385	.000	.978

Table.5

Regression Results (Public Sector Banks in India)
Dependent variable – Operating profit

Independent Variables	Co – efficient	Std.Error	T	P-Value	R2
PCI	3.805	1.187	3.207	.024	.673
IIP	287.271	87.804	3.272	.022	.682
WPI	501.897	125.216	4.008	.010	.763
EXPORTS	.062	.021	2.903	.034	.628
FER	.041	.009	4.482	.007	.801

Table.6

Regression Results (Private Sector banks in India)
Dependent variable – Operating profit

Independent Variables	Co – efficient	Std.Error	T	P-Value	R2
PCI	1.464	.237	6.182	.002	.884
IIP	110.573	16.785	6.587	.001	.897
WPI	180.286	30.643	5.883	.002	.874
EXPORTS	.025	.004	5.915	.002	.875
FER	.015	.002	6.834	.001	.903

Table.7

Regression Results (Foreign banks in India)

Dependent variable – Operating profit

Independent Variables	Co – efficient	Std.Error	T	P-Value	R2
PCI	.947	.122	7.746	.001	.923
IIP	70.910	9.407	7.538	.001	.919
WPI	112.593	21.201	5.311	.003	.849
EXPORTS	.016	.002	7.627	.001	.921
FER	.009	.002	5.404	.003	.854

Note: PCI--- Per Capita Income

IIP --- Index of Industrial Production

WPI--- Wholesale Price Index

FER---- Foreign Exchange Reserves

Table.8 Accepted/ Rejected Hypotheses

Hypotheses	ACCEPTED			REJECTED		
	Public sector banks	Private sector banks	Foreign banks	Public sector banks	Private sector banks	Foreign banks
1.The investment have no impact on profitability				✓	✓	✓
2.The advances have no impact on profitability	✓				✓	✓
3.The deposits have no impact on profitability	✓				✓	✓
4.The assets have no impact on profitability	✓				✓	✓
5.Per capita income have no impact on profitability				✓	✓	✓
6.Index of industrial production have no impact on profitability				✓	✓	✓
7.Wholesale price index have no impact on profitability				✓	✓	✓
8.Exports have no impact on profitability				✓	✓	✓
9.Foreign exchange reserves have no impact on profitability				✓	✓	✓

REFERENCES

- Claessens, Stijn, Asli Demirgüç-Kunt and Harry Huizinga, 2000. "How does foreign entry affect the domestic banking market"? in Claessens and Jansen, eds., *The Internationalization of Financial Services: Issues and Lessons for Developing Countries* (Dordrecht, Holland, Kluwer).
- Clarke, George R.G. and Robert Cull, 1998. "Why privatize: the case of Argentina's public provincial banks", Policy Research Working Paper No. 1,972, World Bank.
- Demirgüç-Kunt, Asli and Enrica Detragiache, 1998. "Financial liberalization and financial fragility", Annual Bank Conference on Development Economics, Washington, D.C.
- Demirgüç-Kunt, Asli and Vojislav Maksimovic, 1998. "Law finance, and firm growth", *Journal of Finance*, Vol. 53, No. 6, pp.2,107-2,137.
- Hoshi, Takeo, Anil Kashyap and David Scharfstein, 1990. "The role of banks in reducing the costs of financial distress in Japan", *Journal of Financial Economics*, Vol.27, pp. 67-88.
- Jayarathne, J. and P.E. Strahan, 1996. "The finance-growth nexus: evidence from bank branch deregulation", *Quarterly Journal of Economics*, Vol. 111, pp.639-670.
- King, Robert G. and Ross Levine, 1993, "Finance and growth: Schumpeter might be right", *Quarterly Journal of Economics*, August, Vol. 108, No.3, pp.713-737.
- Levine, Ross, 1996. "Foreign banks, financial development and economic growth", in Claude E. Barfield, ed., *International Financial Markets* (Washington, D.C., AEI Press).
- Patil, R.H., 2001. "Broadbasing and deepening the bond market in India", a paper presented at the Asian Development Bank Institute/Wharton Seminar titled "Regulatory Differences between Banks and Securities Markets: Implications for Crisis Prevention and Management", 26-27 July.

Sarkar, Jayati, Subrata Sarkar and Sumon K. Bhaumik, 1998. "Does ownership always matter? Evidence from the Indian banking industry", *Journal of comparative Economics*, Vol.26, pp.262-281.

Stiglitz, Joseph and Andrew Weiss, 1981. "Credit rationing in markets with imperfect information", *American Economic Review*, Vol. 71(3), pp.393-410.

Walter, Ingo and H. Peter Gray, 1983. "Protectionism and international banking, sectoral efficiency, competitive structure and national policy", *Journal of Banking and Finance*, Vol.7, pp.597-607, 609.

World Bank, 2001. *Finance for Growth: Policy Choices in a Volatile World* (New York, Oxford University Press).

Yoshitomi, Masaru and Sayuri Shirai, 2000. Technical background paper for policy recommendations for preventing another capital account crisis. Asian Development Bank Institute.