

## Profitability of Banks in India: An Assessment

Narendar V. Rao, Rasoul Rezvanian, Emmanuel Nyadroh

### Abstract

*In this study, using the most recent data available for the period 1998-2003, we examined the profitability of three ownership groups of banks operating in India; namely, privately-owned domestic banks (PRODs), publicly-owned domestic banks (PUODs), and foreign-owned banks (FOBs). Applying key profitability ratios to assess the comparative profitability of the three ownership groups of banks, we found that foreign-owned banks (FOBs) were better financial performers than privately-owned domestic banks (PRODs) and publicly-owned domestic banks (PUODs). We concluded that better control over expenses, more efficient use of assets, and judicious use of financial leverage could be the primary reasons for the superior performance of foreign-owned banks compared to the domestic banks.*

### Introduction

There has been a tremendous change in the ownership structure of the banking industry in developing countries during the last decade. The change has been due to the privatization of public banks and entry of foreign banks into domestic markets. La Porta et al. (2002) report that although the privatization wave of the 1980s reduced government ownership of banks from 58.9% in 1970 to 41.6% in 1995, still government ownership of banks is larger than in other general economic activities, such as production and investment<sup>1</sup>. It seems that the trend toward private ownership of banks is a continuing agenda.

During the same period, the deregulation of foreign ownership and geographic expansion of the banking industry by developing countries created a new opportunity for foreign banks to penetrate into the banking markets of developing economies<sup>2</sup>. The recent competitive banking environment created by privatization and globalization of banking firms raises questions about the competitive viability of domestic banking firms versus their foreign counterparts on the one hand, and privately owned banks versus pub-

licly owned banks on the other. In economics terms, a bank is a competitively viable institution if it produces a given bundle of outputs mix with the lowest per unit cost; that is, the bank is minimizing its costs in producing a given bundle of outputs. Based on the duality theory, it also follows that the bank is maximizing its profit for a certain cost of production. Thus, the viability of a bank or group of banks can be assessed by examining their cost efficiency and/or profit efficiency<sup>3</sup>.

Although the relative cost structure of different ownership groups of banks operating in developing countries has been the subject of numerous studies in the last decade, the profitability study of different ownership groups of banks has received little attention. The results from the cost studies are less than conclusive. To contribute to this issue, the current study focuses on the profitability performance of the three ownership groups of banks operating in India. Specifically, the objective of this study is to apply key financial ratios to assess the profitability of the three ownership groups of banks operating in India; namely, privately-owned domestic banks (PRODs), publicly-

<sup>1</sup>La Porta et al. also conclude that larger government ownership of banks is more pronounced in countries with low income per capita, underdeveloped financial system, and inefficient governments.

<sup>2</sup>Clarke et al. (2003) report that in most developing countries, foreign-controlled banks hold more than half of the total banking assets.

<sup>3</sup>Contrary to this argument, Berger and Mester (1997) report that there is a small correlation between cost and profit efficiency in the U.S. banking industry. However, DeYoung and Nolle (1996) examine the efficiency of foreign-owned banks and U.S.-owned banks and report that foreign-owned banks are less profit efficient because of their input inefficiency.

owned domestic banks (PUODs), and foreign-owned banks (FOBs). We refer to the combined groups of PUODs and PRODs as domestically-owned banks (DOBs) in order to compare and contrast their profitability with that of the FOBs.

Indian banking cost studies use either financial ratio analysis or various statistical methods to examine cost performance of publicly-owned, privately owned and foreign owned banks in India<sup>4</sup>. Ataullah and Le (2002) used both ratio analysis and non-parametric cost efficiency methods to study cost efficiency and profitability of the three groups of bank ownership in India and Pakistan in the pre- and post-financial liberalization era of 1990-1992. They found that although the three groups of banks improved their cost efficiency in the post-deregulation period, the improved efficiency of privately owned and foreign owned banks was more noticeable than that of the publicly owned banks. These results were confirmed recently by Rezvanian et al. (2005a, 2005b) who concluded that not only are foreign banks significantly more efficient than privately owned and publicly owned banks, but also the increase in overall technical efficiency, improvement in technological delivery of bank services, and growth in productivity of foreign banks have been significantly higher than those of private and public banks. However, the studies by Mohan and Ray (2003) and Bhattacharyya et al. (1997a) do not appear to confirm the findings of the above studies. Ataullah and Le's study, nevertheless, concluded that high cost efficient banks seem to have higher profitability as measured by the return on assets ratio. Similar conclusions have been reached by Kumbhakar and Sarkar (2003) and Saha and Ravisankar (2000) using Indian banking data, and Elyasiani et al. (1994) using U.S. banking data.

The study by Bhattacharyya et al. (1997b) reports that during the early post-deregulation period of 1991-1996, publicly-owned banks in India were more efficient than both privately-owned banks and foreign

banks. However, at the end of the period, foreign-owned banks became as cost efficient as publicly-owned banks. Concentrating on the effect of deregulation on the performance of publicly owned banks, Bhattacharyya et al. (1997a) analyzed the long-term (1970-1992) pattern of productivity growth of Indian publicly-owned banks. Their findings indicated that these banks achieved a 2% annual productivity growth in this period. However, the growth rate accelerated in post deregulation era. They concluded that deregulation boosted productivity growth by creating a competitive environment.

Sathye (2003), in comparing the efficiency of three ownership groups of banks in India, reports that public banks are the most efficient banks, followed by foreign banks, and then private banks. Sarkar, Sarkar, and Bhaumik (1998) also found differences in the performance of public sector banks and private sector banks in India. Kumbhakar and Sarkar (2003) also analyzed the effect of deregulation and liberalization on the total factor productivity (TFP) growth in the banking industry in India over the years 1985-1996. Their study concluded that a significant increase in TFP growth has not materialized in the Indian banking system following deregulation. They also reported the presence of a weak ownership effect in the Indian banking environment and no evidence of performance differentials due to competition following deregulation. A study by Shanmugam and Das (2004) concluded that the state-owned banks and foreign-owned banks performed better than the privately-owned domestic banks.

It appears that the results of the cost efficiency studies of banks in India are mixed rather than conclusive. Contrary to the above cost efficiency studies, our study focuses only on the profitability performance of the three ownership groups of banks operating in India. Specifically, using data for the years 1998-2003, we provide cross-sectional and time series profitability analyses of the three ownership groups of banks operating in India; namely PRODs, PUODs, and FOBs<sup>5</sup>.

<sup>4</sup>We are not aware of any study using statistical methods to examine the profit efficiency of Indian banks. Therefore, we suggest this for future research.

<sup>5</sup>We are aware that the use of financial ratios to evaluate profitability of banking institutions typically does not account for differences in output mix and input prices faced by different banks. We are also aware that the ratio analysis doesn't capture the differences in risk taking strategies of different institutions. Therefore, the results of this study should be interpreted cautiously in the light of these differences.

Whether, as a result of deregulation, cost efficiencies and growth in productivity of Indian banks, along with improvements in their technological delivery of bank services, have led to relative improvements in the profitability performance of the three ownership groups of banks is the subject of our current study. In effect, our study updates and sheds further light on the post-liberalization profitability of the foreign and domestic banks operating in India. The rest of this paper is organized as follows. In Section II, we review the recent economic and banking environment in India. Section III discusses our research method, definition of the key profitability ratios, the data and the samples of banks used in this study. Section IV presents the empirical results and a brief conclusion.

### Recent Economic and Banking Environment in India

#### *The Recent Performance of the Indian Economy and the Stock Market*

India is considered one of the fastest growing economies in the world. The economic reforms since 1991 have removed the shackles that were restraining the economy and have attracted foreign investment. The Indian economy has posted steady and impressive growth over the past few years. This has moved India into the front ranks of the rapidly growing countries in the Asia Pacific region.

The Indian economy registered a growth rate of 8.2% in FY 2004. The growth trend was led by positive movements across the agriculture, manufacturing and services sectors.

- Agriculture grew by 9.1% in FY2004, after surging 16.5 and 10.5% in the third and fourth quarters.
- Manufacturing grew by 7.3%, improving on its 2002-03 figure of 6.7%. Much of the country's present economic condition is due to its dynamic and highly competitive private sector. It accounts for over 75% of its GDP.
- Other sectors such as electricity, gas, and water supply grew over 5%, and construction rose

by 6.2%; trade, hotels, transport, real estate and business services grew by 6.8%, while community, social and personnel services saw a 6% growth.

Strong industrial growth, coupled with a surge in the services sector and agriculture, has made a GDP growth rate of 7 to 8% sustainable over the next few years. According to the National Council of Applied Economic Research in India, Indian business confidence is at a 10-year high.

The Indian economy has managed to maintain its growth momentum in spite of the recent insufficient southwest monsoon rainfall, rising international prices of oil and steel and, last but not the least, India's first recorded experience of the tsunami, which caused extensive damage to life and property.

A Goldman Sachs report ("Dreaming with BRICs: The Path to 2050"; URL <http://www.gs.com/insight/research/reports/99.pdf>) states that among Brazil, Russia, India and China, India will grow the fastest over the next 30 to 50 years by leveraging its demographic advantages for continued development. At its present rates of growth, the burgeoning market in the country "would be adding nearly one France every 3.5 years and one Australia every year."

Foreign direct investment has been pouring into India. India is now the third most favored destination for foreign direct investment (FDI), behind China and the United States, according to an AT Kearney survey that tracked investor confidence among global executives to determine their order of preferences. The United Nations Conference on Trade and Development (UNCTAD) has said that India is among the "dominant host countries" for FDI in Asia and the Pacific (APAC).

For the 12 months ending March 31, 2005, foreign investment in India was estimated to be \$13.5 billion. That is on top of \$16 billion invested in the same period a year earlier. The Mumbai Stock Exchange's benchmark sensitive index for 30 stocks, the Sensex, has surged 72% over the past year and 26% since the beginning of April 2005. The Bankex, which tracks bank stocks, has provided the highest returns of 34%.

Foreign funds are increasing their exposure to the Indian stock market and foreign inflows of funds into the Indian equity sector have increased 34% since January 2005.

India is one of the world's largest food producers. It produces 600 million tons of food grains every year. Its granaries had a buffer stock of nearly 50 million tons of food grains (wheat and rice) in 2003-2004. India is the second largest exporter of rice and fifth largest exporter of wheat in the world; its agricultural exports account for nearly 14.2% of its total export figures.

India is also a very strong provider of services. Besides being an outsourcing hub, it has grown into a global manufacturing hub. World corporations are now leveraging its proven skills in product design, reconfiguration and customization with creativity, assured quality and value addition. About 20 percent of Indian automotive production in 2004 was exported to developed countries.

The services sector, which has been growing consistently at a rate of 7% per annum, accounts for almost half of the country's GDP. Export revenues from the sector are expected to grow from \$8 billion in 2003 to \$46 billion in 2007.

Global investment banks, brokerages, and accounting firms have set up large research establishments in India. A growing number of US companies are hiring Indian mathematics experts to devise models for risk analysis, consumer behavior and industrial processes<sup>6</sup>.

To facilitate and sustain the recent economic growth in India, there is a need for viable financial systems. The financial systems in India, as in other emerging markets, are not yet fully developed to provide the needed funds for sustainable growth. The bond and equity markets in India are at their early stages of development. Thus, the Indian banking system plays a major role in providing funds to the growing sectors of the economy. Among the different ownership groups of banks in India, publicly owned banks are still the dom-

inant group in intermediation of funds to many sectors of the Indian economy. Therefore, it is important to examine the performance of publicly owned banks relative to the performance of the other ownership groups in the banking environment in India.

### ***The 1947-1991 Banking Environment in India***

In the early years after independence from Britain in 1947, there were a large number of private sector banks in India. In 1955, the Imperial Bank of India and its seven associate banks were nationalized. This was followed by the nationalization acts of 1969 and 1980 which brought the largest private sector banks under government control. The Indian government viewed banks primarily as instruments for bringing about social change and decided how the banks raised money, to whom they loaned money, and how much they loaned. Other policies included administered interest rates, pre-emption of resources by the government, and extensive micro-regulations directing the major portion of the flow of funds to and from financial intermediaries. The stifling government control over the banking sector resulted in a decline in the productivity and efficiency of banks, as well as in an increase in their non-performing assets. These factors, combined with a sharp increase in personnel costs, negatively affected the profitability of the banks.

Paradoxically, this policy of the Indian government toward the banking sector resulted in a significant increase in the number of branches in the rural sector and thereby brought banking services to the millions of people living in that sector. The net result of the spread of banking in the rural areas was acceleration in the pace of economic development in those areas.

### **The Post-Liberalization and Deregulated Banking Environment in India**

In 1991, the government of India decided to liberalize the economy and remove the impediments to growth. Banking was among the sectors whose liberalization was seen as the key to India's economic revival.

<sup>6</sup>For further comments on the performance of the Indian economy and the stock market, please see the following references: <http://atkearney.com>, <http://www.mckinseyquarterly.com>, <http://www.ncaer.org>, and <http://ibef.org/india.aspx>



Reform-minded policy makers realized that the market's disciplining mechanism and greater transparency in accounting information disclosure would actually strengthen the process of supervising the banks. It was felt that greater market discipline in bank management and greater transparency through improved disclosure norms would help identify problems early and avoid erosion of the public's faith in the banking system. Unlike the policy adopted by many developing countries around the world, India decided not to adopt a policy of large-scale privatization of government-owned banks. Instead, the government of India decided to increase the capitalization of banks through diversification of ownership to private investors up to a limit of 49%. This also ensured that majority ownership and control remained with the government. The eventual goal was to help banks attain standards of international best practices.

Consistent with this objective, the government of India constituted the Standing Committee on International Financial Standards and Codes in December 1999. The objectives of the first generation of financial sector reforms were to create an efficient, productive, and profitable financial service industry with operating flexibility and functional autonomy (Mohan, 2004). The government of India established two important committees, the Committee on the Financial System (CFS) in 1991, and the Committee on Banking Sector Reforms (CBSR) in 1998, and charged them with developing specific recommendations for reforming the banking sector. The CFS advocated a more market-oriented banking system that should operate in an environment of prudent regulation and transparency of accounting information. The market was viewed as the main mechanism for bringing about discipline in the banking sector, while the role of the Reserve Bank of India (RBI), the nation's central bank, was to provide an environment that would foster a level playing field and facilitate the operation of the market forces. The RBI was viewed as a market-friendly supervisor of the banking sector and not as a heavy-handed regulator. The CBSR recommended the dilution of government equity in nationalized banks to 33%. It also suggested that the RBI nominees on bank boards step down in order to give the banks real autonomy.

The CBSR recommended the creation of an Asset Reconstruction Fund (ARF), which would take over the bad debts of banks from their balance sheets to enable them to restart on a clean slate. It also recommended increasing capital adequacy and tightening provisioning norms. It suggested that foreign banks seeking to set up business in India should have a minimum start-up capital of \$25 million and that they should be allowed to set up subsidiaries and joint ventures that would be treated on par with private banks. The recommendations of the CFS and the CBSR formed the basis of the reforms initiated in the 1990s and early 2000s.

The deregulation of the Indian banking sector has been multi-faceted. There has been a relaxation of the requirement to lend to government-designated "priority sectors." There has also been a move toward international standards of capital adequacy, asset quality ranking, liquidity, and reserve requirements. Other reforms have included a liberalization of most deposit and lending rates by commercial banks. The Reserve Bank of India has also gradually lowered the reserve requirement for commercial banks. The average cash reserve requirement (CRR) has fallen from 15% before the onset of reforms to 4.5% currently. The statutory liquidity requirement (SLR) has dropped from 38.5% for domestic liabilities and 30% for non-resident liabilities to 25% currently, which is the minimum ratio of liquid assets to demand and time liabilities allowed under the existing law. Foreign banks have been allowed to expand operations. Banks have been allowed to set up offshore banking units in Special Economic Zones. The limit on foreign direct investment in private banks has been increased from 49% to 74% and the 10% cap on voting rights has been removed. In addition, the limit on foreign institutional investment in private banks is currently 49%. The government has allowed the strong banks to raise funds in the capital markets and has reduced its equity in banks. It has also given banks greater freedom to choose the location of branches as well as recruit personnel. Banks have been allowed to enter into new business areas, such as infrastructure financing, leasing, insurance, investment banking, asset management, etc. Limits on overseas investments by banks

have also been relaxed. The government is also encouraging the growth of universal banking.

The Reserve Bank of India has introduced risk-based supervision of banks and has taken measures to ensure that the best international practices in accounting systems, corporate governance, and payment and settlement systems are being adopted by the banks in India. Consequently, Indian norms for capital adequacy, asset classification, income recognition, and prudent supervision, which are applied equally to all banks, irrespective of ownership, are now close to global standards. The Reserve Bank of India has issued guidelines for putting risk management systems in banks to address credit risk, market risk, and operational risk.

As a result of these reforms, there has been increasing competition in the banking sector. The prudent measures put in place by the RBI have resulted in a significant decline in non-performing assets (NPAs). The enactment of the Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest Act (SARFAESI) in 2002 has also helped banks to manage their NPAs better. Debt recovery tribunals have also been set up to assist banks in the recovery of loans.

Although the liberalization of the banking sector has resulted in the rapid growth of private banks and foreign banks, the public sector banks still account for nearly 90% of the branches and 73% of the credit in the Indian banking system. However, the private sector banks have become strong players and are challenging the dominance of the public sector banks. The share of the private sector banks in the overall income of the banking sector has risen from 8.2% in 1995-1996 to 18.5% in 2002-2003, while the share of the public sector banks has fallen from 82.5% to 74.5% during the same period. The private banks and foreign banks have been able to focus on improving their efficiency and profitability, since they are not constrained by government mandates to lend money to certain "priority sectors." They have also invested in the latest banking technology. The public sector banks, how-

ever, have been laggardly in adopting modern banking technology. Consequently, the overall efficiency and profitability of public sector banks are believed to lag behind the efficiency and profitability of the private banks and the foreign banks.

## Research Method

### *Profitability Ratios*

As with the responsibility of a manager in any other profit generating institution, the role of a bank manager is to implement financial decisions that maximize shareholder value. For a publicly traded bank, value maximization implies maximization of stock price. It has been shown that profitability and stock price usually have a direct, positive correlation. Hence, it can be expected that highly profitable banks should have higher value. Financial ratio analysis is a very useful diagnostic tool that can be used to assess the performance of different ownership groups on time series and cross sectional basis<sup>7</sup>. There are three widely used measures of bank profitability in the banking literature: profit margin (PM), return on assets (ROA), and return on equity (ROE). In the banking literature, profit margin is defined as net income<sup>8</sup> available to common stockholders divided by total operating income<sup>9</sup>.

Profit margin reflects the percentage of each rupee of operating income remaining after all costs and expenses (interest and non-interest expenses) are paid. This ratio is also used as a measure of expense control. Return on assets (ROA) is defined as the ratio of net income to total assets. This ratio shows the rupee amount of net income generated per rupee of assets, and indicates how well the assets of a bank are utilized in generating net income. Therefore, more efficient banks are expected to generate higher net income per rupee of assets. The link between the above two profitability ratios (PM and ROA) is the asset utilization (AU) ratio, which is the ratio of total operating income to total assets. This ratio is an indication of managerial efficiency, and provides information on the success of

<sup>7</sup>The research method used in this section is drawn primarily from Saunders and Cornett (2004)

<sup>8</sup>We will use the word "net income" instead of "net income available to common stockholders."

<sup>9</sup>Total operating income is defined as the sum of interest and non-interest income.

management in generating income per rupee of assets. The relationships among PM, AU, and ROA can be summarized as follows:

$$\begin{aligned} \text{PM} &= \text{Net Income} / \text{Total Operating Income} \\ \text{AU} &= \text{Total Operating Income} / \text{Total Assets} \\ \text{ROA} &= \text{PM} \times \text{AU} = (\text{Net Income} / \text{Total} \\ &\text{Operating Income}) \times (\text{Total Operating Income} \\ &/ \text{Total Assets}) = \text{Net Income} / \text{Total Assets}. \end{aligned}$$

The third profitability ratio used in the banking literature is return on equity (ROE), defined as the ratio of net income to book value of common equity. ROE is considered the most comprehensive indicator of profitability because it is the final outcome of all the bank's activities and decisions made during the year. ROE reflects a bank's operating and investing decisions as well as the bank's financing and tax-related decisions. ROE conveys information on how equity capital is used to generate net income. Cole (1972) decomposes the ROE ratio into its components as follows:

$$\begin{aligned} \text{ROE} &= \text{ROA} \times \text{EM} = \text{PM} \times \text{AU} \times \text{EM}, \text{ or} \\ \text{ROE} &= (\text{Net Income} / \text{Total Operating Income}) \\ &\times (\text{Total Operating Income} / \text{Total Assets}) \times \\ &(\text{Total assets} / \text{Common Equity}) \\ &= \text{Net Income} / \text{Common Equity}. \end{aligned}$$

Apart from the equity multiplier (EM), all the other profitability ratios above are defined as before. The equity multiplier (EM) is defined as the ratio of total assets to the book value of common equity capital, which in turn is the reciprocal of the common equity to total assets (equity to assets) ratio. Hence, EM is a measure of the capital structure of a bank, and the ROE relates a bank's profitability to its capital structure. Figure 6 provides the graph of the decomposition of the ROE ratio.

<sup>10</sup>The Reserve Bank of India's Website is [www.rbi.org.in](http://www.rbi.org.in).

<sup>11</sup>A trade organization based in Mumbai, India.

<sup>12</sup>McAllister and McManus (1993) caution against the use of a banking sample consisting of very small and very large banks in a banking cost/efficiency study. They correctly suggest that the scale of operation as well as the portfolio of sources and uses of funds of these two groups of banks is different. In this study, we follow their recommendation by excluding very small banks from the three ownership groups of banking samples. We also did not include market data such as stock prices of banks in our study because some of the banks in our sample are not traded publicly in a stock exchange. Including market value data would have reduced our sample size further to an undesirable level. We thank the reviewers and the editor of this journal for bringing these points to our attention.

The advantage of using the extended ROE formula is that it can help analysts to explain the reason(s) for any above or below average profitability performance of a bank by relating such a performance to the three components of ROE mentioned earlier, each of which reflects a different facet of the bank's financial health. For example, if the ROE of a bank has declined, the extended ROE equation helps analysts to determine if this decline is the results of the bank's expenses getting out of control (weak PM), or the bank's assets not being used efficiently (low AU), or the bank's debt financing not being used optimally.

#### *Data and Period of the Study*

The data for this study were obtained from the financial statements of banks that were filed with the Reserve Bank of India<sup>10</sup> and from the Indian Banks Association<sup>11</sup>. The time period under study is 1998-2003.

The banks in India were first grouped into three clusters; namely, public banks, private banks, and foreign banks operating in India. These three clusters were then ranked in descending in accord with their total assets. We selected the first 20 banks from each group and retained only those with complete data. We retained 19 public sector banks, 20 private sector banks and 16 foreign banks. Therefore, our sample consisted of 19 publicly-owned banks, 20 privately-owned banks, and 16 foreign-owned banks operating in India during the years 1998 through 2003. We excluded the small banks from our sample because we believe that they did not hold enough market share and their operations are different from those of their larger counterparts<sup>12</sup>. In the second stage of the analysis, the publicly-owned domestic banks (PUODs) and the privately-owned domestic banks (PRODs) were grouped together and designated domestic banks (DOBs).



## Results and Conclusion

The measures of profit margin (PM), asset utilization (AU), equity multiplier (EM), return on assets (ROA) and return on equity (ROE) are presented for each of the three groups for each of the years 1998-2003 in Tables 1 through 5 and Figures 1 through 5. Table 6 and Figure 6 decompose the ROE into its three components for each group for the six year period, 1998 through 2003. Tables 7 through 11 and Figures 7 through 11 give the PM, AU, EM, ROA, and ROE for the DOBs and the FOBs for each of the years 1998-2003. Table 12 and Figure 12 decompose the ROE for the DOBs and the FOBs for the six year period, 1998 through 2003.

The most surprising result of Table 1 and Figure 1 is the sharp improvement in the net profit margin of the public sector banks from 2002 to 2003 and the drop in the profitability of the private sector banks during the same period. With respect to asset utilization, public banks are clearly lagging behind the private and foreign banks. Table 3 and Figure 3 indicate that the public banks and private banks have a higher level of financial leverage than the foreign banks. In fact, debt level at foreign banks has actually decreased from 2002 to 2003. Table 4 and Figure 4 indicate that the foreign banks operating in India are more profitable as measured by ROA than the public sector and the private sector banks. The reason they have been able to achieve better ROA is that they have been able to control expenses better, which results in a higher net profit margin. They have also been able to make more efficient use of their assets, which results in a higher total asset turnover ratio.

Table 5 and Figure 5, however, reveal that the return on equity for the foreign banks is leveling off, while at the same time there seems to be a significant improvement for both the public and private banks. The efforts made by the Reserve Banks in India to mandate best practices for the Indian banks seem to be paying off. The deregulation of the banking sector and the reforms that have been undertaken seem to have had an effect in making the Indian banks more competitive and in "leveling the playing field." Having enjoyed a significant lead in ROE for a long time, the foreign banks'

performance appears to be leveling off, while the Indian domestic banks seem to be catching up with them.

When we examine the data over the entire six-year period, we find that private banks are the best ROE performers, followed by foreign banks and then by public banks. The key factor differentiating the performance of the private domestic banks from the performance of the foreign banks is the equity multiplier (EM). Except for this metric, foreign banks are better than the private banks on all other metrics over the six year period.

The implications of this study for the public sector banks are that, while the public sector banks have improved their net profit margin, they need to continue to control costs and take immediate steps to improve their asset utilization. In the era of Socialism, profits were not a priority for the Indian public sector banks. They were viewed more as government instruments for social change and as a means of providing employment. As a result, the public sector banks were plagued by inefficiency, bloated personnel costs, and other spiraling operating costs. If they are to remain competitive in India's new market-driven economy, they need to change their mindset further and embrace further internal reforms. They need to address structural problems that have made them less competitive than the private sector banks and the foreign banks operating in India. Improvement in asset utilization as well as more effective cost control will help improve their return on assets. This, coupled with optimal debt utilization, will help improve their ROE further.

The results obtained in the second stage of the analysis are consistent with the earlier findings. The results indicate that foreign banks improved their profit margin significantly from 1998 to 2003 while the domestic banks showed only marginal improvement during this period. The asset utilization of the foreign banks has declined, while that of the domestic banks has shown some improvement. The financial leverage at the domestic banks is clearly higher than that at the foreign banks. This enabled the domestic banks to show significant improvement in the ROE from 2001 to 2003. However, when we examine the data over the entire six year period, we find that foreign banks have had a higher return on eq-



uity than the domestic banks put together.

These results indicate that the domestic banks are catching up fast with the foreign banks in profitability. Foreign banks need to take note of this fact. This study also highlighted the effect of financial leverage (debt ratio) on the banks' return on equity (ROE). Higher debt usage seems to have had a positive effect on the return on equity (ROE) of the publicly-owned banks.

## References

- Ataullah, A., & Le, H. (2002). Financial liberalization and bank efficiency: A comparative analysis of Indian and Pakistan. *Working paper*, Durham Business School, University of Durham, UK, and Department of Economics and Politics, Nottingham Trent University, Nottingham, UK, 1-27.
- Berger, A. N., & Mester, L. J. (1997). Inside the block box: What explains the differences in the efficiencies of financial institutions? *Journal of Banking and Finance*, 21(7), 895-947.
- Bhattacharyya, A., Bhattacharyya, A., & Kumbhakar, S. C. (1997a). Changes in economic regime and productivity growth: A study of Indian public sector banks. *Journal of Comparative Economics*, 25(2), 196-219.
- Bhattacharyya, A., Lovell, C. A. K., & Sahay, P. (1997b). The impact of liberalization on the productive efficiency of Indian commercial banks. *European Journal of Operational Research*, 98(2), 332-345.
- Clarke, G. R. G., Cull, R., Martinez, P., & Sanchez, S. (2003). Foreign bank entry: Experience, implications for developing countries, and agenda for further research. *World Bank Research Observer*, 18, 25-40.
- Cole, David W. (1972, Summer). Return on equity model for banks. *The Bankers Magazine*, 155(3), 40-47.
- DeYoung, R., & Nolle, D. (1996). Foreign-owned banks in the United States: Earning market share or buying it? *Journal of Money, Credit and Banking*, 28(4), 622-636.
- Elyasiani, E., Seyed, M. M., & Rezvanian, R. (1994). Empirical test of association between production and financial performance: The case of commercial banking industry. *Applied Financial Economics*, 4, 55-59.
- Goldman Sachs. Dreaming with BRICS: The path to 2050. <http://www.gs.com/insight/research/reports/99.pdg>
- Kumbhakar, S. C., & Sarkar, S. (2003). Deregulation, ownership and productivity growth in the banking industry: Evidence from India. *Journal of Money, Credit and Banking*, 35(3), 403-424.
- La Porta, R., Lopez-De-Silanes, F., & Shleifer, A. (2002). Government ownership of banks. *Journal of Finance*, 57(1), 265-302.
- McAllister, H.P., & McManus, D. (1993). Resolving the scale efficiency puzzle in banking. *Journal of Banking and Finance*, 17, 389-405.
- Mohan, R. (2004, October). Financial sector reforms in India: Policies and performance analysis. *Reserve Bank of India Bulletin*, pp. 851-877.
- Mohan, R., & Ray, S. C. (2003). Productivity and efficiency of public and private sector banks in India. IIMA working papers, 2003-06-01/Indian Institute of Management.
- Rezvanian, R., Rao, N., & Nyadroh, E. (2005a). Production economies of public, private and foreign banks operating in India: Evidence from the post-liberalization era. *Global Business and Finance Review*, Forthcoming.
- Rezvanian, R., Rao, N., & Mehdiian, S. M. (2005b). Efficiency change, technological progress, and productivity growth of private, public and foreign banks in India: Evidence from the post-liberalization era. Paper to be presented at the 18th Australasian Finance and Banking Conference, University of New South Wales, Sydney, Australia, Dec. 2005.

Saha, A., & Ravisankar, T. S. (2000). Rating of Indian commercial banks: A DEA approach. *European Journal of Operational Research*, 124, 188-203.

Sarkar, J., Sarkar, S., & Bhaumik, S. K. (1998). Does ownership always matter? Evidence from the Indian banking industry. *Journal of Comparative Economics*, 26, 262-281.

Sathye, M. (2003). Efficiency of banks in a develop-

ing economy: The case of India. *European Journal of Operational Research*, 148, 662-671.

Shanmugan, K. R., & Das, A. (2004). Efficiency of Indian commercial banks during the reform period. *Applied Financial Economics*, 14, 681-686.

Saunders, A., & Cornett, M. M. (2004). *Financial markets and Institutions: A modern perspective*, 2nd edition. New York: McGraw-Hill/Irwin.

Table 1

Net profit Margin (NPM)						
Group	1998	1999	2000	2001	2002	2003
Public Banks	0.056861	0.034414	0.040787	0.031182	0.064189	0.104858
Private Banks	0.087717	0.061117	0.084705	0.075856	0.082248	0.06738
Foreign Banks	0.039136	0.073993	0.100852	0.098435	0.111328	0.151341

Figure 1

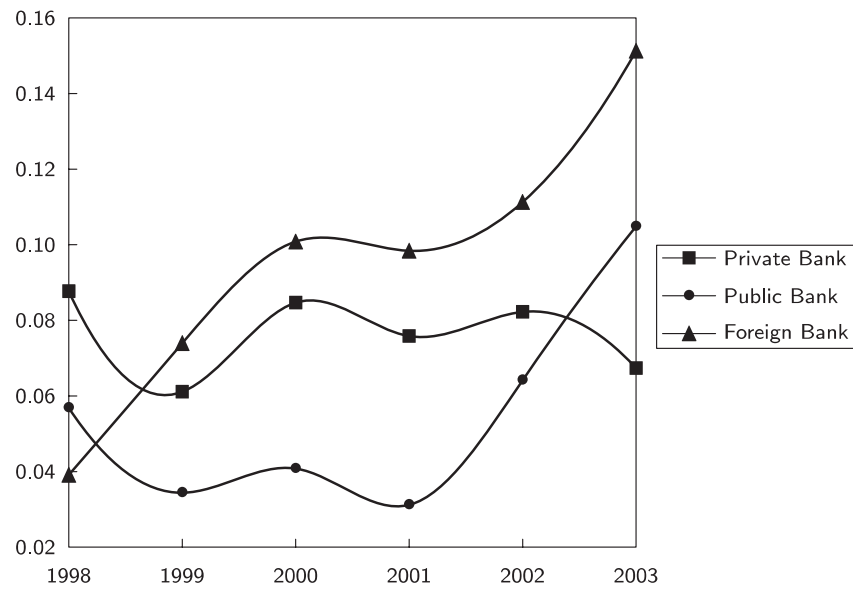


Table 2

Asset utilization (AU)						
Group	1998	1999	2000	2001	2002	2003
Public Banks	0.108419	0.107519	0.107729	0.107178	0.107045	0.093814
Private Banks	0.123324	0.115964	0.108582	0.107198	0.079872	0.146902
Foreign Banks	0.150557	0.144197	0.136042	0.1282	0.125089	0.112698

Figure 2

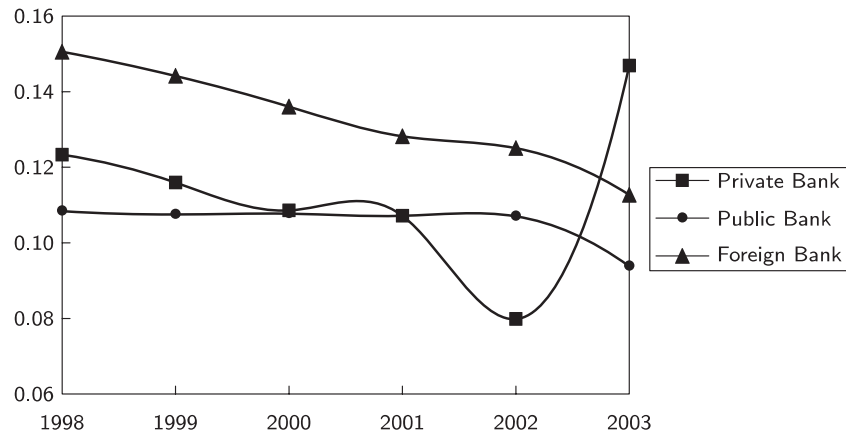




Table 3

Equity Multiplier (EM)						
Group	1998	1999	2000	2001	2002	2003
Public Banks	14.493178	16.91037	18.164861	19.28115	18.965906	18.640435
Private Banks	14.897522	17.40034	16.268724	18.31166	16.497808	16.076448
Foreign Banks	9.838729	12.145538	11.924485	12.85604	11.765808	9.669333

Figure 3

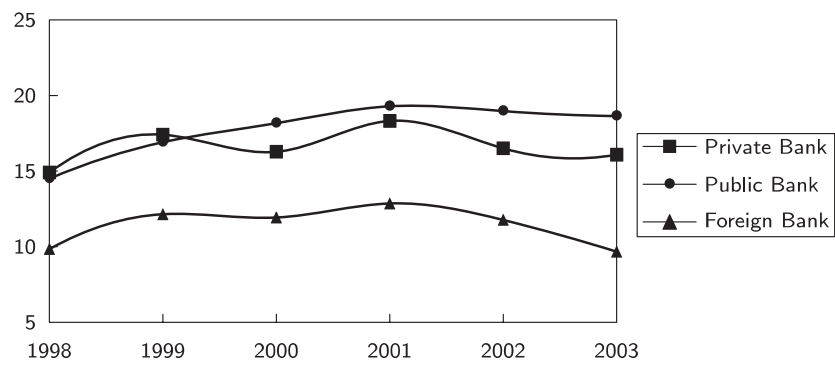


Table 4

Return on Assets (ROA)						
Group	1998	1999	2000	2001	2002	2003
Public Banks	0.006165	0.0037	0.004394	0.003342	0.006871	0.009837
Private Banks	0.010818	0.007087	0.009197	0.008132	0.006569	0.009898
Foreign Banks	0.005892	0.01067	0.01372	0.012619	0.013926	0.017056

Figure 4

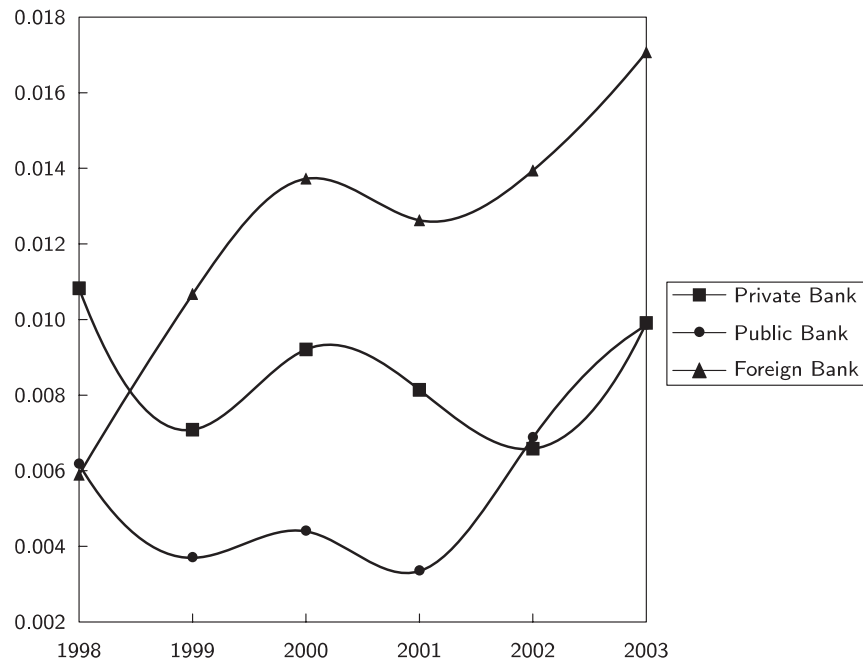


Table 5

Return of Equity (ROE)						
Group	1998	1999	2000	2001	2002	2003
Public Banks	0.089348	0.062571	0.079816	0.064438	0.130317	0.183368
Private Banks	0.161155	0.123322	0.149631	0.148904	0.10838	0.159128
Foreign Banks	0.057969	0.129587	0.163605	0.162234	0.16385	0.164918

Figure 5

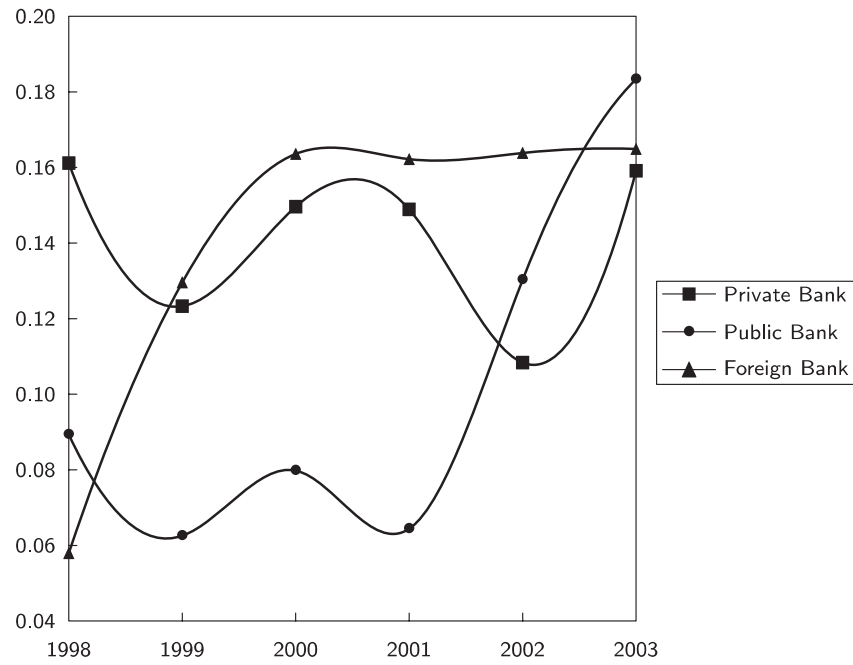


Table 6

Group	<u>ROE</u>	<u>ROA</u>	<u>EM</u>	<u>NPM</u>	<u>AU</u>
Public Bank	0.1016	0.0057	17.7426	0.0554	0.1053
Private Bank	0.1418	0.0086	16.5754	0.0765	0.1136
Foreign Bank	0.1404	0.0123	11.3666	0.0958	0.1328

Figure 6

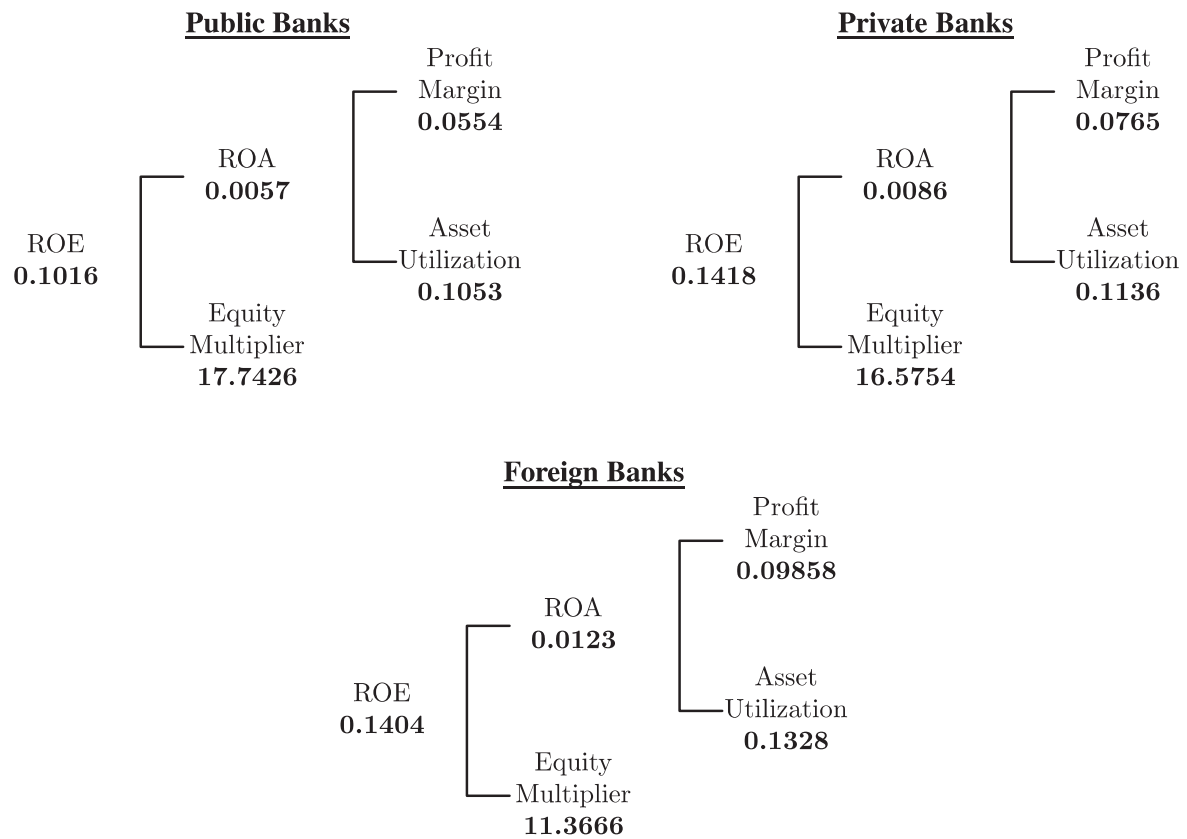




Table 7

Net profit Margin (NPM)						
Group	1998	1999	2000	2001	2002	2003
Foreign Bank	0.039136	0.073993	0.100852	0.098435	0.111328	0.151341
Domestic Bank	0.072684	0.048108	0.063309	0.054092	0.073450	0.085639

Figure 7

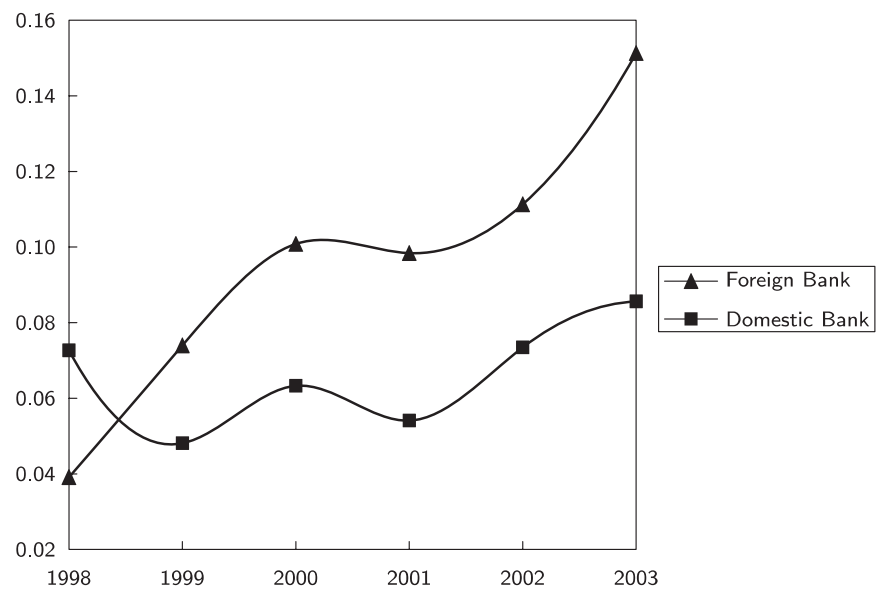


Table 8

Asset Utilization (AU)						
Group	1998	1999	2000	2001	2002	2003
Foreign Bank	0.150557	0.144197	0.136042	0.1282	0.125089	0.112698
Domestic Bank	0.116063	0.111850	0.108166	0.107188	0.093110	0.121039

Figure 8

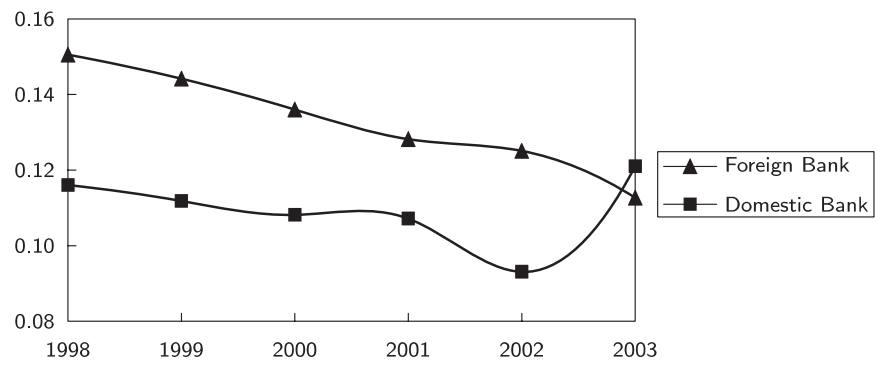


Table 9

Equity Multiplier (EM)						
Group	1998	1999	2000	2001	2002	2003
Foreign Bank	9.838279	12.145438	11.924485	12.85604	11.765808	9.669333
Domestic Bank	14.700534	17.161637	17.192483	18.783976	17.700215	17.325570

Figure 9

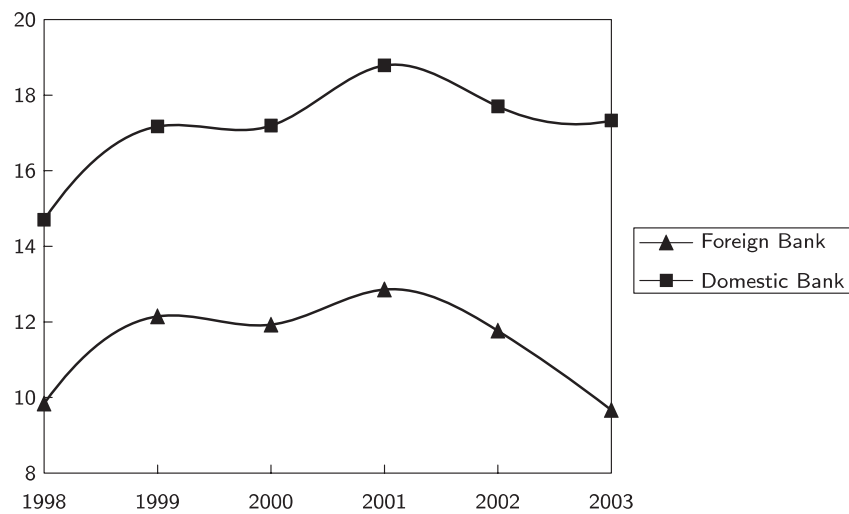


Table 10

Return on Assets (ROA)						
Group	1998	1999	2000	2001	2002	2003
Foreign Bank	0.005892	0.010670	0.013720	0.012619	0.013926	0.017056
Domestic Bank	0.008551	0.005437	0.006857	0.005798	0.006716	0.009868

Figure 10

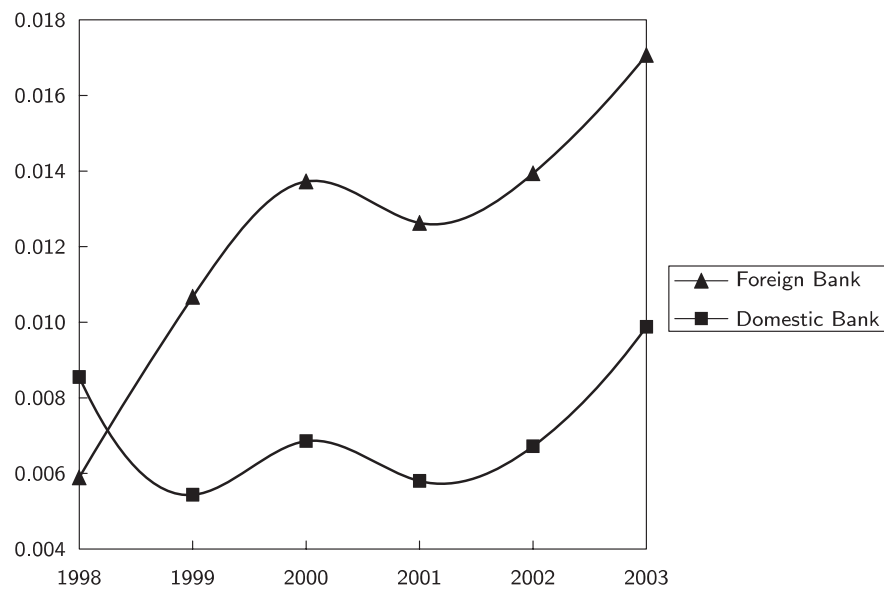




Table 11

Return on Equity (ROE)						
Group	1998	1999	2000	2001	2002	2003
Foreign Bank	0.057969	0.19587	0.163605	0.162234	0.16385	0.164918
Domestic Bank	0.126172	0.093725	0.115619	0.107754	0.119067	0.170937

Figure 11

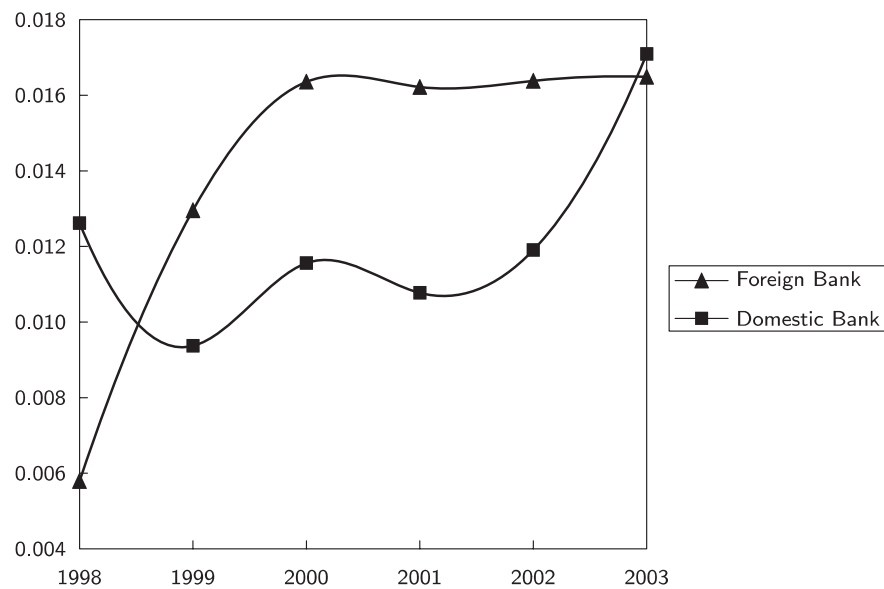
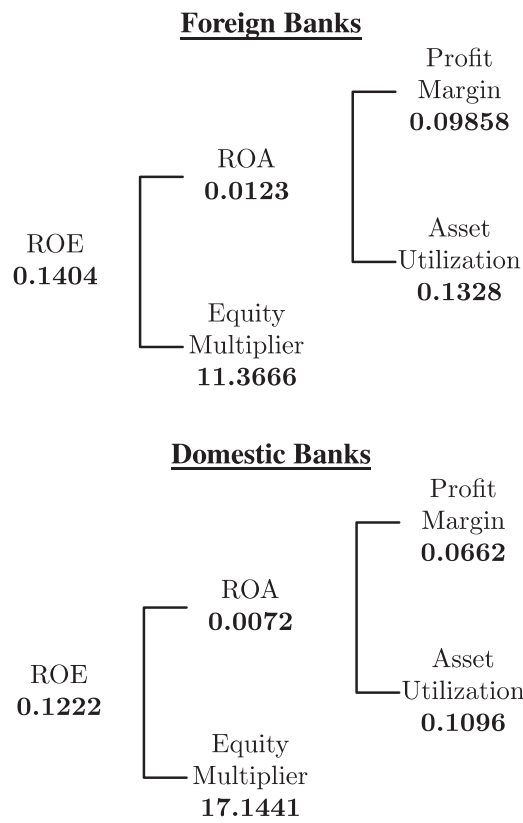


Table 12

Group	<u>ROE</u>	<u>ROA</u>	<u>EM</u>	<u>NPM</u>	<u>Au</u>
Foreign Bank	0.1404	0.0123	11.3666	0.0958	0.1328
Domestic Bank	0.1222	0.0072	17.1441	0.0662	0.1096

Figure 12



#### ABOUT THE AUTHORS

**Dr. Narendar V. Rao** is an associate professor of finance and Coordinator of Graduate Programs in Business at Northeastern Illinois University in Chicago. In addition to several refereed journal articles, he has also authored the instructors' manual and the lecture presentation software for a leading graduate-level textbook on investments. He has also been the reviewer for several textbooks. He has been the recipient of the Faculty Excellence Award five times at Northeastern Illinois University where he has also been given the Distinguished Service Award. Dr. Rao has a Ph.D. in corporate finance from the University of Cincinnati in Cincinnati, Ohio. In addition, he has professional certifications in finance, accounting, and business management. He has taught and also given guest lectures in several universities/business schools outside the United States including the Indian School of Business, Hyderabad, India, Great Lakes Institute of Management, Chennai, India, Sultan Qaboos University, Muscat, Oman, Osmania University, Hyderabad, India, the University of Madras, Chennai, India, International Institute of Information Technology, Pune, India.

**Dr. Rasoul Rezvanian** is a professor of banking and finance at the College of Business and Management, Northeastern Illinois University in Chicago. Professor Rezvanian's research interest is in banking productivity, efficiency, and regulation. He has presented numerous papers in national and international conferences. He has published extensively and his recent articles appeared in the following journals: *Journal of Banking and Finance*, *Review of Financial Economics*, *Quarterly Review of Economics and Finance*, *Journal of Economics and Business*, *Allied Economics*, and *Applied Financial Economics*. Professor Rezvanian has taught a variety of finance courses at the following universities outside the USA: Urals State Technological University, Russia; Khazar University, Azerbaijan; China Social Science Academia, People's Republic of China; Nanyang Technological University, Singapore; Hajeetepe University, Turkey; Sultan Qaboos University, Oman; and Alliance Business Academy, India.

**Dr. Emmanuel Nyadroh** is a faculty member of the Department of Accounting, Business Law, and Finance at Northeastern Illinois University. He received his Ph.D. from the Kellogg School of Management, Northwestern University, Evanston, Illinois.