

Competitive and Value Effects of Bank Privatization in Developed Countries

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Abstract

This paper presents a comprehensive analysis of the performance of privatized banks in developed countries. Consistent with the competitive effects hypothesis which asserts that privatization could hurt rivals, we find that the rival banks reacted negatively to news of bank privatization in developed countries. The competitive effects are stronger in cases where government ownership decreases significantly. Contrary to the findings of prior studies that examine the performance of privatized banks in developing countries, we find that privatized banks in developed countries experienced significant improvements in operating performance and stock market performance in the post privatization period..

About the author

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Competitive and Value Effects of Bank Privatization in Developed Countries

1 Introduction

A number of studies have found that privatization of state-owned enterprises (SOEs) improves firms' performance. Megginson et al., (1994), Boubakri and Cosset (1998), and Otchere and Chan (2003) document strong performance improvements for their sample of privatized firms. Recently, the World Bank organized a conference bank privatization in middle and low income countries which culminated in the publication of a special issue of the *Journal of Banking and Finance* on the subject. Most of the studies show marginal improvements in performance (see Cull et al, 2005 for a review of the studies). Unlike bank privatization in developing countries the privatization of banks in developed countries has not been extensively studied. In this paper we examine the competitive and value effects of bank privatization in developed countries. We expect bank privatization in developed countries to have different effects than those of middle and low income countries for a number of reasons.

First, Eckel et al. (1997) argue that the stock market's expectation of the efficiency of the privatized firm can be inferred from changes in the rival firms' stock price following the privatization announcement. There is more uncertainty associated with governments' commitment to privatization in developing countries and the general lack of information for investors to analyze and monitor the performance of privatized firms in developing countries. Hence, investors' expectations regarding the market effects of privatization announcement could differ. The industry counterparts' reaction to privatization announcement in developed and developing countries could differ. Second, as Comstock et (2003) argue, less is often known about companies that are privatized in emerging markets than in a developed capital market; the uncertainties translate into greater risk which could affect the short term and long term performance of the privatized banks. Also, unlike in developing countries, most privatized banks in developed countries are fully privatized and this allows the banks to restructure and pursue profitable but politically unpopular business strategies.

Furthermore, Perotti and Guney (1993) argue that privatized banks in developing countries have strong but perverse incentive to continue to fund former debtors (i.e., state enterprises) that are less efficient and more risky than private firms because doing so enables them to gain the potential of repayment of previous debt granted to them when the bank was a state bank. Given this incentive to continue to fund risky clients, it is not surprising that prior studies (including Otchere (2005)) find that privatized banks in developing countries under perform. For bank privatization in developed countries where these problems may not occur, significant efficiency and profitability gains may materialize after privatization. It is therefore reasonable to surmise that the performance of privatized banks in developed countries will be better than the performance of privatized banks in developing countries. Also, unlike in developing countries, privatized banks in developed countries tend to be of substantial size. From the perspective of this study, this is an important feature because such large privatization offerings are likely to have significant intra-industry effects on industry counterparts.

Our results indicate that the industry counterparts' stock price reacted negatively to news of bank privatization in developed countries. Consistent with the competitive effects

hypothesis which asserts that privatization could hurt rivals, we find that on average the shareholders of the rival banks lost 0.26% of their wealth on the announcement day, with 63% of the rival banks realizing negative abnormal returns. Contrary to the findings of prior studies that examine the performance of privatized banks in developing countries, we find that privatized banks in developed countries have not only experienced significant improvements in operating performance in the post privatization period, but they have also outperformed their industry counterparts. Interestingly, the privatized banks in developed countries have significantly improved the quality of their loan portfolios in the post privatization period, they have also managed to bring their asset quality in line with the industry average. Although the privatized banks embarked on staff attrition, the improvement in operating performance was realized not at the expense of employees' income but rather through improvement in assets use. The improvement in the post-privatization performance is significant even after controlling for persistence in bank performance. The improvement in operating performance is reflected in their stock price as they marginally outperformed the benchmark index in the long run. A comparison of the performance of privatized banks in the developed and developing countries shows that while privatized banks in the developing countries were highly capitalized in the pre-privatization period than those in the developed countries, privatization appears to have encouraged excessive risk taking among the privatized banks in developing countries, with the consequences that they have incurred large asset write-downs on non-performing loans and continue to carry high non-performing assets than those in the developed countries.

The remainder of the paper is organized as follows: Section 2 presents a review of the bank privatization literature and hypotheses development. Section 3 describes the data and methodology. Our primary results are presented in Section 4. A comparison of the effects of bank privatization in developing and developed countries is presented in Section 5. A summary and conclusion are provided in Section 6.

2. Background review and hypotheses development

Bank privatization, like the privatization of other state enterprises, has been a frequent event and has been justified on both economic and political reasons. On economic grounds, state banks have not performed well because of a myriad of reasons. Megginson (2005) attributes the abysmal performance to adverse incentives which affected the firms' desire to maximize revenue and minimize cost, less monitoring, the difficulty of distinguishing and sanctioning non-performing managers, the insatiable desire of politicians to use state banks as tools of redistributive policies, and the tendency to use state banks to pursue social goals such as maintaining excess employment for political constituencies. In examining the political economy of bank privatization and the choice of candidates for privatization, Clark and Cull (2002) find that poorly performing banks and smaller banks that are not overly burdened with overstaffing are more likely to be privatized. For political reasons, overstaffed banks are less likely to be privatized because staff redundancy that accompanies privatization can be politically costly to the incumbent government. The foregoing discussion suggests that poorly performing and small banks are good candidates for privatization. Berger et al (2005) find that state-owned banks that were chosen for privatization had performed poorly in the past and these banks significantly improved their performance after privatization.

In terms of performance changes, most of the earlier studies that analyze bank privatization have concentrated on efficiency and operating performance of the privatized banks. A conference organized by the World Bank on bank privatization in middle and low income countries which culminated in the publication of a special issue of the *Journal of Banking and Finance* in 2005 showed mixed results. For example, Beck et al (2005) examine the effects of bank privatization in Nigeria, a macroeconomic and regulatory environment that was inhospitable to financial intermediation, and document a significantly positive impact from privatization. The authors find that privatization helped close the gap between the performance of state-owned banks and private banks in Nigeria, though the performance of divested firms never surpassed that of private banks. Boubakri et al (1998) examine the post-privatization performance of 81 banks divested by governments of 22 developing countries over the period 1986-1998 and find that privatization partly enhances the profitability or operating efficiency of the firms. Otchere (2005) analyses the pre- and post-privatization operating performance of privatized banks relative to that of the rival banks and finds no significant improvement in operating performance of privatized banks in middle and low income countries. In addition, he finds that the stock price of privatized banks in middle and low income countries underperformed the market index in the long run. However, the evidence catalogued in Megginson (2005) indicates that the performance of privatized banks in transition economies of the Central and Eastern Europe and the former Soviet Union has been somewhat favorable than that in non-transition developing countries; even so the improved performance in these transition economies were realized only after the governments had completely relinquished control.

There has been a relatively few studies on bank privatization in developed countries. Verbrugge et al (1999) analyze the pre- and post-privatization performance of a sample of 32 banks in developed countries and five banks in developing countries and document only moderate improvement in performance for privatized banks in developed countries. Braz (1999) also examines the nationalization of Portugal's private banks following a military coup in 1974, as well as the subsequent re-privatization of these banks after 1990. The author finds, among others, that the productive efficiency of the privatized banks increased significantly after divestiture, with the banks reducing staff at a significantly more rapid rate than public banks. Otchere and Chan (2003) conduct a case study of the impact of the privatization of the Commonwealth Bank of Australia on the bank itself as well as on its domestic rivals and find that not only did the financial and operating performance of the privatized bank significantly improved after privatization, but the performance indeed surpassed that of the major rivals. Interestingly, they find that the privatized bank's long-run stock price performance is inversely related to the government's ownership stake in the bank; the lower the government ownership, the better the firm's performance.

The single-country studies that examine privatization in developed countries including Otchere and Chan (2003) provide narrow insights into the effects of bank privatization in developed countries. The majority of the other studies that analyze bank privatization in developed countries have focused primarily on the pre- and post-privatization operating performance of privatized banks.¹ However, such trend analysis has the tendency to obscure the true performance improvements if the industry is undergoing changes. Indeed,

¹ See Megginson (2005) for a review of bank privatization studies.

such analyses do not show how the privatized banks' performance measures up to that of the rival banks in the country. In this study, we compare the performance of privatized banks to that of their industry counterparts in developed countries. Verbrugge et al., (1999) argue that this type of analysis allows for the separation of the effects of privatization from general banking trends. We provide further evidence on the performance of privatized banks in developed countries and subsequently compare the performance to that of privatized banks in developing countries.

Though, in general, the literature suggests that privatization improves performance of the privatized firms, privatization can also have significant effects on industry counterparts. The pressures of product market competition may also compel the newly privatized firms to operate more efficiently, aggressively and competitively if they are to survive in the post-privatization period. Otchere (2005) also argues that following privatization, the firms could retain significant market power (on account of their hitherto monopoly status) while being relieved of the requirements to follow government directives designed to promote social goals. The privatized firms could exploit this market power to their advantage to increase profitability. The foregoing discussion suggests that the former state-owned bank could become a stronger competitive force for the rivals because of their dominant position in the product market. The privatization of a firm could hurt rival banks through increased competition; hence, the rivals could react negatively to privatization announcements. Thus, the stock market's expectation of the efficiency of the privatized firm can be inferred from changes in the rival firms' stock price following privatization announcement. We examine this conjecture in this study.

Bank privatization could also bode well for rival banks and therefore could generate positive information effects for the industry counterparts in a number of ways. First, privatization could lead to the relaxation of the rules of operations in the industry. Deregulation that accompanies or precedes privatization could unlock growth opportunities for all firms in the industry. Second, the presence of a rejuvenated competitor in the industry following the privatization could spur the rival firms to perform better if they are not to lose market share to the privatized firm. Hence, if the market believes that industry counterparts could achieve parallel gains as the privatized firms, then their stock price would increase in response to privatization announcement. Also, the loss of non-competitive incentives such as subsidies and tax cuts to the privatized firm could make the privatized banks less competitive, at least in the short term, relative to the industry counterparts. Thus bank privatization announcements could elicit positive stock market reaction for the rival banks.

3. Data and Methodology

3.1 Data

We obtained the list of privatized banks from the World Bank and the supplemental appendix to Megginson (2000). We use the World Bank country classification to identify our list of developed countries. The privatization announcement dates were identified from Reuters business news archives.² Privatization usually takes a long time to yield gains as more time

² The announcement date relates to the first time that the government announced its intention to privatize the firm.

may be required by management of the privatized firm to overcome organizational inertia and resistance to change that usually characterizes newly privatized firms. We therefore use 5 years pre-privatization operating performance data and 5 years post-privatization operating performance and stock market data to assess the performance of the privatized firms. We obtain the stock price and financial statement data from Bank Scope and Datastream International databases. To be included in the study, the privatized bank should have rivals in the country at the time of the privatization announcement. Also, we require the privatization announcement date and the stock price and financial statements to be available from the aforementioned sources. All publicly traded banks that existed in the country at the time of the privatization were initially considered as rival banks. To reduce confounding effects we excluded rival banks that announced significant events around the event period. We were able to obtain the necessary data for 56 banks privatization transactions that occurred between 1981 and 1999 and 84 rival banks.

[Fix Table 1 here]

Descriptive statistics for the sample firms are presented in Table 1. Panel A shows the distribution of the sample, while Panel B presents summary statistics on the share issue. The data show that most of the bank privatizations occurred in the latter half of the 1990s. About 7% of the issues were reserved for employees, while a third of the shares were issued to foreign investors. The mean (median) gross proceeds from the privatization were \$817 million (\$385 million), which are much larger than the \$156 million (\$66 million) documented for developing countries by Otchere (2005). As mentioned earlier, these large privatizations could have significant competitive effects on other banks.

3.2 Methodology

3.2.1 Stock market effects

3.2.1.1 Industry counterpart's reaction to privatization announcement in developed countries

News about privatization could arrive incrementally over time rather than reaching the market on a specific date. At a minimum, given the well publicized nature of privatization, a narrow focus on the 'official' announcement date could give a limited perspective of the information effects of privatization announcement. Therefore, to broadly investigate the announcement effects of privatization on industry counterparts, we consider a wider event period (5 days before and 5 days after the announcement). The rival banks' reaction to privatization announcements is calculated on a market-adjusted basis.³ To obtain market-adjusted daily abnormal returns, we adjusted the individual bank's daily returns for the contemporaneous returns of the market. Designating the announcement date as day 0, we estimated the abnormal returns over the 11 days surrounding the announcement date. The daily market-adjusted abnormal returns were then averaged across all banks and cumulated

³ Since the privatized banks did not have stock price data, we use the market-adjusted method to compute their returns. To be consistent, we use the same method to compute the rival banks' short run abnormal returns following the privatization announcement.

the abnormal returns by summing the daily market-adjusted returns across different event windows. Then t-tests were estimated by dividing the abnormal returns by their contemporaneous cross sectional standard errors.

3.2.1.2 *Long run stock returns to investors in bank share issue privatization*

The long run stock market performance of the sample firms is examined by analyzing the returns of the privatized banks and those of the rival banks. To examine the conjecture that privatization would give the management of the privatized banks the liberty to pursue growth-oriented but perhaps politically unpopular policies that will enable them to generate higher returns for investors, we compare the 5-year post privatization returns of our privatized banks sample with the returns of rival banks using the market-adjusted method. The market-adjusted abnormal return is the difference between the individual bank's returns and the returns of the benchmark index in the respective country. The abnormal returns are calculated using the same procedure as described above except that here, we use monthly returns.

Researchers including Barber and Lyon (1997), Fama (1998), Mitchel and Stafford (2000), and Brav (2000) have expressed concerns about methodologies employed in long term event studies. One concern expressed by these authors relates to the statistical test of long run abnormal returns. The implicit assumption underlying the statistical test is that the abnormal returns are independent. However, common industry factors affect returns of firms in the same industry. Hence, part of the abnormal returns realized by the privatized banks could be due to industry factors if, for example, there is a contemporaneous upward trend in the banking industry stock returns. To address this concern, we also calculate industry-adjusted abnormal returns as the difference between the returns of the privatized banks and the industry counterparts' returns. The sample firms' abnormal returns for each month are obtained by taking the average across all the rivals. These industry-adjusted returns are subsequently cumulated over different event periods for 5 years following privatization. We conduct t-tests by dividing the abnormal returns by their contemporaneous cross sectional standard errors.

3.2.2 *Operating performance*

We examine the pre- and post-privatization operating performance of the privatized banks using the CAMEL performance measures that have been employed by the Federal Deposit Insurance Corporation and other researchers, including Persons (1999), to assess the performance of banks. CAMEL, as used in this study, stands for Capital adequacy, Asset quality, Management efficiency, Earnings ability and Labor (employment levels). *Capital adequacy ratio* is the total of Tier 1 and Tier 2 capital and is measured as the ratio of capital to risk-adjusted assets and off-balance sheet exposure determined on a risk-weighted basis of at least 8%. A higher ratio reflects the bank's ability to absorb unanticipated capital losses. The *Asset Quality* measures relate to the impairment of bank loans, the asset with the highest probability of deterioration. Three measures that the banking industry uses to measure loan quality problems, namely, provisions-to-total loans, the ratio of impaired assets (non-performing loans) to total loans, and net impaired assets-to-total loans are employed in this study. A privatized bank may aggressively build its loan portfolio and could be forced to make large provisions for unanticipated bad debts. It is also possible that a privatized bank may be more efficient in managing its loan portfolio and therefore carry only a small loan

loss provision. We analyze provisions-to-loans ratio to ascertain how efficiently privatized banks have managed their loan portfolios. In recognition of bank income smoothing practices involving making higher provisions than necessary when credit quality and net income are high and not increase provisions as much if credit quality is deteriorating, we use the ratio of gross impaired assets-to-loans and net impaired assets-to-loans as additional measures of asset quality, as these ratios alleviate the problem that banks may have underestimated their loan provisions. Higher ratios reflect poor asset quality.⁴

In terms of *management efficiency*, we employ operating efficiency measures such as cost-to-income ratio and expense-to-asset ratio as proxies for management efficiency. Lower ratios reflect higher management efficiency. Given the greater emphasis on profitability, the privatized banks would be more efficient than they were prior to the privatization. Bank *earnings ability* is measured using three profitability ratios. First, we use net interest margin and return on assets (ROA) as measures of profitability. However, as argued by Rhoades (1998), ROA is biased upwards for banks that earn significant profits from off-balance sheet operations such as derivative activities, as these activities generate revenue and expenses but not assets. Consequently, we employ return on equity (ROE) as an alternative measure of profitability. Privatization leads to the transfer of both control and cash flow rights to managers who are more interested in profits and efficiency than the politicians. Therefore, we expect the profitability of the privatized banks to increase following their privatization. Finally, there is evidence that politicians use banks and other state-owned enterprises to provide employment and subsidies to cronies in return for votes. We conjecture that following privatization, banks may reduce their *employment levels* in order to be competitive and profitable. We analyze growth in staff levels to determine whether the privatized banks reduced staff levels after privatization. The definition of the ratios grouped under the CAMEL criteria is presented in Appendix 1.

The change in operating performance is first examined by comparing the privatized banks' operating performance measures from year -5 to year +5. To account for the impact of possible contemporaneous events we also report industry-adjusted performance measures for the privatized banks which we calculated as the difference between the privatized banks' mean ratios and those of the industry counterparts. The significance of the mean change in the pre-privatization period (year -5 to year -1) and the post-privatization period (year 1 to year 5) performance is examined by a t-test, while the significance of the median ratios are examined using the Wilcoxon sign rank test.

4 Results:

4.1 Stock market effects

4.1.1 Industry counterparts' reaction to privatization announcements in developed countries

The market reaction by the rival banks to the privatization announcements is presented in Table 2. Consistent with the competitive effects hypothesis which posits that privatization could hurt rivals, we find that the rival banks reacted negatively to the announcements. The

⁴ Gunther and Moore, (2000) argue that income smoothing ensures that banks with asset quality problems can raise net income and retained earnings, thereby boosting Tier 1 capital.

shareholders of the rival banks lost 0.26% of their wealth on the announcement day (t-statistic is 2.49), with 63% of the rival banks realizing negative abnormal returns. The cumulative abnormal returns (CAR) for the [-1, 0] period of 0.33% is also significant at 5% (t-statistic = 1.98). By the end of the third day following the privatization announcement, the rival banks had lost 0.47% of their wealth (t-statistic = 1.67). While the abnormal returns for all the event windows are negative, the reaction seems to have occurred in the days immediately following the announcement, as statistically significant negative abnormal returns are documented only for the day -1 to day +3. The cumulative abnormal returns realized by the rival banks in the much longer event window of [-5,+5] are not statistically significant at conventional levels. The median abnormal returns for the rival banks are also similar in magnitude to the mean returns. The results presented in Panel A are consistent with the competitive effects hypothesis.

[Fix Table 2 here]

If we assume that government control bodes ill for the state banks, then the competitive effects will increase as the proportion of government ownership reduces in subsequent partial privatization announcements and the firm gradually moves towards full privatization. Hence, the rival firms could react more strongly to subsequent privatization announcement than the 'initial' partial privatization announcement.⁵ To test this conjecture, we examine the rival banks' reaction to the initial and subsequent privatization announcements and present the results in Panel B of Table 2. The rival banks' reaction to subsequent privatization announcement seems to drive the combined results presented in Panel A as the initial privatization announcements did not elicit significant reaction from industry counterparts. We note that as the proportion of government ownership in the privatized banks reduces, subsequent partial privatization announcements generate stronger adverse stock market reaction from rival banks. Shareholders of rival banks lost 1.01% of their wealth in the five days immediately following the announcement of the subsequent sale of government shares in the privatized banks. The short run results presented in this section suggest that investors view privatization announcements as foreshadowing bad news for rival banks.

4.1.2 Long run industry-adjusted stock market performance

The long run industry-adjusted abnormal returns realized by the privatized banks are summarized in Table 3. Columns 2 and 3 show the yearly industry-adjusted abnormal returns for the privatized banks, while columns 5 and 6 present the industry adjusted cumulative abnormal returns. The results show that in general, on a year-by-year basis the privatized banks performed better than the rival banks in the years following the privatization as the

⁵ It is also possible that for privatizations that occur in tranches, the market may learn from the initial partial privatization announcement; hence, the first privatization announcement could contain more surprise. Therefore the initial privatization announcement could elicit stronger reaction from rivals than subsequent partial privatization announcements.

industry adjusted abnormal returns are not significant at conventional levels. The median returns realized by the privatized banks are significantly greater than those realized by the industry counterparts. In the second and fourth years, the privatized banks' median industry-adjusted abnormal returns of 8% and 5.76% are significant at 1% and 5% respectively. The privatized banks' cumulative industry-adjusted abnormal returns also show a similar pattern. The mean industry adjusted cumulative abnormal returns are mostly positive and only the median cumulative adjusted returns of 5.84% realized during the first two years are significant at 10%. In summary, we note that the privatized banks marginally performed better than the rival banks. Our long run results contrast with those of Megginson et al., (2000) and Levis (1993) who find that privatized firms earn significantly positive abnormal returns in the long run.⁶

[Fix table 3 here]

4.2 *Analysis of operating performance*

4.2.1 *Trend analysis*

We first present the privatized banks' median operating performance measures in Table 4 with the view to examining any trends in performance over the pre- and post-privatization period. The results indicate that for most of the pre-privatization period, the privatized banks were minimally capitalized at 8.11% (minimum capital adequacy ratio requirement is 8%). There has been an improvement in risk-adjusted capital from 8.77 four years before privatization to 13.11 in the year of privatization and 10.8 five years after privatization. This suggests that the banks in these countries were relatively undercapitalized in the pre-privatization period perhaps because of the existence of implicit government guarantees. The privatized banks in developed countries have also experienced improvements in all the three asset quality ratios. The provisions-to-total loans, non-performing loans, (the ratio of gross impaired assets to total loans), and net impaired assets-to-total loans fell from 2.15%, 7.89% and 6.98% five years before privatization to 0.88%, 3.51% and 2.76% respectively five years after privatization. In light of the limitations of income smoothing, the reduction in the non-performing loans (gross impaired assets to total loans, and net impaired assets-to-total loans) is remarkable.

[Fix Table 4 here]

The management efficiency measures have also generally improved. Though the cost to income ratio has not shown any appreciable change, the expense-to-asset ratio has fallen as much as 50% from 14.03% five years before the privatization to 7.59% five year after privatization. The profitability ratios do not show any significant trend over the pre- and post-privatization periods. However, the privatized firms' performance is notable for the change in staff levels. The sample firms have reduced their staff levels markedly over the

⁶ Our results are however, consistent with those of Gleason et al (2003) who document insignificant long run price improvements for bidders that purchased privatized financial services. However, Gleason et al's evidence perhaps reflects the long run underperformance of bidders in mergers and acquisitions rather than privatization per se.

pre- and post-privatization period, with the reduction in employment levels in the years preceding the privatization and continuing five years after privatization. These results are different from those documented by Megginson et al. (1994) and Boubakri and Cosset (1998), albeit their samples consist of primarily non-banks.

4.2.2 Industry-adjusted operating performance

It is possible that the changes in the operating performance measures occurred because of industry effects but not privatization per se. To illustrate this point and the importance of estimating industry-adjusted performance measures, recall that the privatized banks reduced employment in the post privatization period (see table 4). However, if the reduction in employment levels by the rival banks was greater than the staff attrition carried out by the privatized banks, then the industry adjusted change in employment levels by the privatized firm would be positive. Therefore, to account for the impact of possible contemporaneous events we also report industry-adjusted performance measures for the privatized bank. The industry-adjusted performance measures were calculated as the difference between the privatized banks' mean ratio and that of the rival banks. Panel C of Table 4 and Table 5 contain the difference in mean tests for the privatized banks and the rivals. Interesting findings emanate from the results.

First, the mean capital adequacy ratio for the privatized banks was higher in the pre-privatization period than in the post privatization period. As compared to the rival banks, the privatized banks were indeed well capitalized. The reduced capital adequacy ratio of 11.26% in the post privatization period is in line with industry counterparts of 11.03%. Consistent with the assertion that government banks carry large loan loss provisions, we find that the privatized bank carried much high impaired asset than their industry counterparts. The loan loss provision ratio and the gross impaired assets-to-loans ratio of 2.15% and 6.44% in the pre-privatization period were significantly higher than those of their rivals of 0.99% and 3.62% at the 1% and 5% respectively in the post privatization period. Interestingly, not only have the privatized banks significantly improved the quality of their loan portfolios after the privatization, with their provisions-to-loan ratio, gross impaired assets-to-loan ratio and the net impaired assets-to-loans ratio reducing from 2.15%, 6.44% and 4.14% in the pre-privatization period to 0.85%, 3.74% and 2.99% respectively in the post privatization period, but they have also managed to bring their asset quality ratios in line with the industry average. The exception is the net impaired assets to total loan portfolio which is marginally higher than that of the industry counterparts.

[Fix Table 5 here]

In addition, the privatized banks have been able to reduce their expense-to asset ratio from 9.87% to 8.62% in the post privatization period (t-statistic for the difference in mean is 2.04); however, they are still less efficient relative to their industry counterparts, as their cost to income ratio of 87.93% is marginally higher than that of their counterparts of 85.26%. Similarly, the privatized banks' earnings generating capacity has improved, with the net interest margin, ROA and ROE increasing from 2.72%, 0.37% and 6.91% to 4.57%, 0.73% and 11.14% respectively, albeit none of these changes is significant at conventional levels. While these improvements have enabled the privatized banks to narrow the gap with their counterparts, their ability to generate returns on their assets still lags behind that of the

industry counterparts; their ROA of 0.73% is significantly less than that of their rivals of 0.97% at the 10% level. Moreover, the privatized banks embarked on significant staff attrition. Although staff levels decreased significantly, the improvement in operating performance came not at the expense of employees' income (since the cost-to-income ratio did not change) but through improvement in assets use, as ROA increased and the expense-to-asset ratio improved in the post privatization period.

4.2 Robustness test: Persistence in Bank performance

There is evidence of persistence in bank performance (Berger et al. 1999), and Brown and Geotzmann (1995).⁷ Berger et al suggest that product market competition in the banking industry can generate market power and allow firms to perform consistently above the industry's performance distribution. There is also evidence that candidate firms for privatization go through a period of corporatization where the firms operate on commercial basis and improve their performance before the privatization is undertaken. It is possible that part of the post privatization improvements in performance we document for the sample firms could be due to the persistence of the pre-privatization period performance. To account for persistence in bank performance, we estimate for each variable, a regression of the mean post privatization operating performance measures on their corresponding pre-privatization measures. If there is persistence in performance, the coefficient of the pre privatization ratio will be significant. A significant intercept will suggest that after controlling for persistence in performance, privatization yields significant improvement in the operating performance of the sample. The results of the regression are presented in Table 6. We observe significant evidence of persistence in the net interest margin and capital adequacy ratios. Most of the operating performance measures including the capital adequacy ratio, provisions-to-loans; gross impaired assets, net impaired assets, ROE, ROA and expense-to-asset ratios remain significant even after controlling for persistence.

[Fix Table 6 here]

5. *Differential effects of bank privatization in developed and developing countries*

In this section, we compare our results of bank privatization in developed countries to those of Otchere (2005) who examines bank privatization in developing countries. We expect the performance of privatized banks in developed countries to be different from that of privatized banks in developing countries for a number of reasons. The first relates to differences in investor expectations and uncertainties regarding the performance of privatized firms in these countries. There is more uncertainty associated with a government's commitment to privatization in developing countries. Furthermore, as Comstock et al (2003) argue, less is often known about companies being privatized in developing countries than in developed countries; the uncertainties translate into greater risk which may influence the setting of the

⁷ Persistence is defined as the tendency for firms to remain in the same place in the industry's performance distribution (Berger et al. 1999), or a lower speed of convergence of firm level profits to an average profit level for the industry (Brown and Geotzmann 1995).

initial price and the long run performance of the privatized firms.⁸ Boehmer et al (2003) find that bank privatization in non-OECD countries is determined by the (low) quality of the banking system in those countries whereas in developed countries, poor fiscal conditions are the most important determinants of bank privatization. For comparison purposes, we examine the differential reaction to privatization announcements and the long run stock market performance and then examine the differences in operating performance between privatized banks in developed countries and developing countries. We summarize the key results of the two studies in Table 7.

[Fix Table 7 here]

The industry counterparts in both the developed and developing capital markets reacted negatively to privatization announcements, suggesting that the competitive effects are pervasive. However, the magnitude of the abnormal returns realized by the rival banks in developing countries is larger than that realized by their counterparts in the developed countries. This could be explained by the fact that in developing countries, because of lack of competition, the privatized banks may retain dominant market share, hence, the competitive effects of privatization could be greater. Also, we observe that there was a delayed reaction to the privatization announcement in the developing countries, as most of the significant abnormal returns occurred in the period following the announcement. This may be symptomatic of the level of market efficiency, with information being incorporated slowly into stock price in developing countries. The long run *industry-adjusted* abnormal returns for the privatized banks in the developed markets are primarily positive, suggesting that they outperformed their industry counterparts. On the other hand, the privatized firms in developing countries underperformed their industry counterparts, albeit most of the returns are not statistically different.

In terms of operating performance, we observe that the privatized banks in the developed countries experienced significant improvements in operating performance in the post privatization period. Their asset quality and profitability measures improved, albeit the latter ratios are not statistically significant. On the other hand, the privatized firms in developing countries experienced only a marginal improvement in the provisions to loans ratio. Once we account for the effects of industry-wide trends, the quality of the asset portfolios of the privatized banks in the developed countries has become similar to that of the private banks. On the other hand, the performance of the privatized banks in developing countries is notable for their low asset quality problems, as they continue to carry high non-performing assets. Though privatized banks in both the developed and developing countries have reduced staff levels, those in the developed countries have laid off a significant large percentage of their labor force.

Interestingly, the privatized banks in the developing countries were highly capitalized in the pre-privatization period than those in the developed countries, reflecting the weak banking system and perhaps, the governments' directive to increase their capital adequacy ratios. It appears however, that privatization has encouraged excessive risk taking with the

⁸ There is evidence that the long run performance of privatized firms is inversely related to the level of underpricing, such that the best initial performers (highly underpriced offers) tend to be the worst long run performers (Aggarwal and Rivoli, 1990; Loughran and Ritter, 1995; and Comstock et al, 2003). However, lack of data on issue price precludes the analysis of this issue for our sample.

consequence that the privatized banks in developing countries have incurred large asset write-downs on non-performing loans. The finding of high asset quality problems for the privatized firms in developing countries also supports Perotti and Guney (1993) argument that privatized banks in developing countries have strong but perverse incentive to continue to fund former debtors (i.e., state enterprises) that are less efficient and more risky than private firms because doing so enables them to gain the potential of repayment of previous debt granted to them when the bank was a state bank.

The difference in the performance of privatized banks in the developed and the developing countries can also be attributed to factors relating to the nature of the capital markets. Megginson et al. (1994), suggest that capital market monitoring that accompanies privatization triggers improvements in performance. Holstrom and Tirole (1998) also argue that the benefits from capital market monitoring depend on the level of sophistication of the capital market. A well-developed and active capital market allows the newly privatized firms greater access to capital needed to finance profitable projects. The relatively better performance of the privatized banks in developed countries perhaps reflects these differences. The underperformance documented for privatized firms in developing countries could also be due to the fact that the sample firms are mostly partially privatized firms (88% in developing countries according to Otchere (2005) versus 43% in developed countries, see Table 1). While it has been documented that privatization often leads to improvements in efficiency and profitability, the degree to which these benefits can be realized depends on whether or not the government fully privatizes the enterprise. For privatized firms in developing countries, the continued government ownership could hinder the managers' ability to restructure the banks. Brock (2000), Otchere and Chan (2003) and Megginson (2005) find that performance improvements for privatized banks appear to occur only after connections to the government and the associated soft budget constraints are severed. The partial autonomy that the privatized banks in developing countries gain after privatization can also explain why they continue to carry higher non-performing loans than their peers. Since the relationship with the government is not completely severed, partially privatized banks may continue to subsidize former debtors by granting them concessionary loans. Even for those that are fully privatized, Perotti and Guney (1993) show that some privatized banks in certain developing countries have strong, but perverse, incentive to continue to fund former state owned enterprises although these enterprises are more risky than private firms. By so doing, they gain the potential of repayment of previous debt granted to them when the bank was a government-owned bank. Thus debt overhang could affect the performance of the privatized banks in developing countries.

6. Summary and Conclusion

We present a comprehensive analysis of the performance of privatized banks in developed capital markets and find that privatization announcements elicited negative reaction from industry counterparts and that the negative effects are more pronounced in the case of subsequent tranche sale where the proportion of government ownership in the privatized banks is reduced. The negative share price response of the industry counterparts provides evidence that is consistent with the competitive effects hypothesis and suggests that investors view privatization announcements as foreshadowing bad news for rival banks. Contrary to the findings of previous studies, we find that the privatized banks in developed countries

have achieved significant improvements in operating performance. For example, they have not only improved the quality of their loan portfolios after privatization, but they have also managed to bring their asset quality measures in line with the industry average.

Although the privatized banks embarked on significant staff attrition, the improvement in operating performance was achieved not at the expense of employees' salaries but rather through improvement in assets use. The post-privatization performance improvement is significant even after controlling for persistence in bank performance. A comparison of the performance of privatized banks in the developed and developing countries reveals one notable difference; that is, those in developing countries continue to carry high non-performing assets. Interestingly, the privatized banks in the developing countries were highly capitalized in the pre-privatization period than those in the developed countries; privatization appears to have encouraged excessive risk taking among the privatized banks in developing countries with the consequences that they have incurred larger asset write-downs on non-performing loans than those in the developed countries.

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Table 1: Descriptive statistics of the sample

The table presents the frequency distribution and summary statistics for our sample of 56 privatized banks from developed countries for which we were able to obtain daily and monthly stock price data and income statements. Panel A presents the frequency distribution of the privatized banks, while Panel B shows the summary statistics for the privatization transaction.

Panel A: Distribution of privatization

COUNTRY	No. of firms	Yearly Frequency Distribution	
		Year	Frequency
Australia	3	1981	1
Denmark	1	1984	1
France	7	1986	1
Germany	7	1987	7
Italy	11	1988	1
Netherlands	1	1989	3
Norway	6	1990	2
Portugal	14	1991	5
Spain	4	1992	7
Sweden	2	1993	12
		1994	6
		1995	4
		1996	4
		1997	1
		1998	1
Total	56	Total	56

Panel B: Descriptive Statistics

VARIABLE	MEAN	MEDIAN
Issue size (\$ US MLN)	817.0303	385
% of capital offered	38.5	31.5
% reserved for employees	7.644762	8.6
% reserved for foreign Investors	34.80714	31.6
No of Shareholders created	540067.4	64843
% Govt. owned before	76.48691	83
% Govt. owned after	40.02636	43.6

Table 2: Industry counterparts' reaction to privatization announcements

This table presents the rival banks' abnormal returns realized over different return intervals. Abnormal returns are calculated using the market-adjusted model as the difference between the bank's returns and the return of the market index in the respective country. The returns are cumulated over the -5 to +5 interval. Panel A shows the full sample results. Panel B present the results for the initial privatization announcements, while Panel C shows the results for subsequent privatizations. The percentage negative is the ratio of firms that realized negative abnormal returns to the total sample for the respective event windows. The symbols ***, **, *, represent significance at 1, 5% and 10% respectively.

	% Mean Returns	t-statistics	p-value	Percent negative	%Median Returns
Panel A: Industry counterpart's reaction to privatization announcements					
CAR (-1, 0)	-0.33	-1.99**	0.05	60	-0.43
0	-0.26	-2.49**	0.02	63	-0.26
CAR (0,+1)	-0.21	-1.14	0.26	59	-0.26
CAR (0,+2)	-0.39	-1.05	0.29	58	-0.53
CAR (0,+3)	-0.25	-0.95	0.34	52	-0.19
CAR (0,+4)	-0.40	-1.05	0.29	54	-0.26
CAR (0,+5)	-0.37	-1.05	0.29	58	-0.53
CAR (-1,+2)	-0.33	-1.26	0.20	56	-0.47
CAR (-1,+3)	-0.47	-1.67*	0.10	58	-0.47
CAR (-1,+1)	-0.23	-1.37	0.17	60	-0.43
CAR (-2,+2)	-0.70	-1.48	0.14	56	-0.34
CAR (-5,+5)	-0.68	-1.20	0.23	53	-0.30
Panel B: Industry counterpart's reaction to the first privatization announcements					
CAR (-5,+5)	0.10	0.19	0.85	48	0.16
CAR (-2,+2)	-0.24	-0.65	0.52	56	-0.24
CAR (-1,+1)	-0.28	-1.00	0.32	63	-0.56
CAR (0)	-0.11	-0.74	0.46	58	-0.24
CAR (0,+1)	-0.28	-1.21	0.23	62	-0.26
CAR (0,+2)	-0.11	-0.34	0.74	50	-0.06
CAR (0,+3)	-0.16	-0.44	0.66	48	0.04
CAR (0,+4)	0.15	0.35	0.73	46	0.03
CAR (0,+5)	0.12	0.26	0.80	52	-0.09
CAR (-1, 0)	-0.11	-0.50	0.62	58	-0.38
CAR (-1,+2)	-0.11	-0.32	0.75	52	-0.49
CAR (-1,+3)	-0.16	-0.42	0.68	54	-0.24
Panel C: Industry counterpart's reaction to the subsequent privatization announcements					
CAR (-5,+5)	-1.78	-1.57	0.12	58	-0.66
CAR (-2,+2)	-1.22	-1.18	0.24	53	-0.38
CAR (-1,+1)	-0.26	-0.77	0.45	58	-0.24
CAR (0)	-0.45	-3.02***	0.00	68	-0.54
CAR (0,+1)	-0.08	-0.26	0.80	58	-0.32
CAR (0,+2)	-0.25	-0.63	0.53	55	-0.29
CAR (0,+3)	-0.68	-1.68*	0.10	63	-0.77
CAR (0,+4)	-0.87	-1.79*	0.08	60	-0.89
CAR (0,+5)	-1.01	-1.81*	0.08	65	-0.59
CAR (-1, 0)	-0.63	-2.27**	0.03	65	-0.54
CAR (-1,+2)	-0.42	-0.98	0.33	58	-0.30
CAR (-1,+3)	-0.86	-1.91*	0.06	60	-0.87

Table 3: Long run stock market returns

This table contains mean and median long run industry-adjusted abnormal returns for the privatized banks. The return measures are the difference between the market-adjusted abnormal returns of the privatized banks and those of their rivals. The cumulative market-adjusted returns are from month 1 to month 60 relative to the share issue month (month 0). The figures in parentheses are t-statistics for mean returns or z-statistics for the median returns or percentage positive. The symbols ***, **, * indicate significance at the 1%, 5% and 10% level respectively.

Event period	Panel A: Abnormal Return		Panel B: Cumulative Abnormal Returns			
	% Mean	Median %CAR	Event period	Mean %CAR	Median %CAR	
First Year	-1.07 (-0.22)	0.82 (0.80)	CAR ₍₁₋₁₂₎	-1.07 (-0.22)	0.82 (0.80)	
Second Year	5.18 (1.30)	8.00 (3.62)***	CAR ₍₁₋₂₄₎	3.70 (0.67)	5.84 (1.71)*	
Third Year	-1.39 (-0.33)	-1.27 (-0.24)	CAR ₍₁₋₃₆₎	2.21 (0.39)	0.27 (1.03)	
Fourth Year	2.03 (0.35)	5.76 (2.55)**	CAR ₍₁₋₄₈₎	3.46 (0.56)	-1.55 (-0.51)	
Fifth Year	0.90 (0.15)	3.65 (1.05)	CAR ₍₁₋₆₀₎	4.55 (0.61)	3.70 (1.55)	

Table 4: Median operating performance measures

This table shows the median pre- and post-privatization ratios and the associated z-statistics for the sample based on the CAMEL criteria. CAMEL stands for Capital adequacy, Asset quality, Management efficiency, Earnings ability and Labor (employment levels). The mean pre-privatization ratios are calculated over the year -5 to year -1 period and the mean post-privatization ratios are calculated over year +1 to year +5, relative to year 0 (the year of issue). The symbols ****,***,** indicate significance at the 1%, 5% and 10% level respectively.

Year	CAPITAL ADEQUACY		ASSET QUALITY			MANAGEMENT EFFICIENCY			EARNINGS ABILITY			LABOUR
	Tier 1+ Tier 2	Y	Provision to Loans	Impaired Assets to Loans	Net Impaired Assets to Loans	Cost to Income	Expense to Assets	Net Interest Margin	ROE	ROA	Growth in staff levels	
-5	-		2.15	7.89	6.98	86.62	14.03	3.55	-	-2.70	-	
-4	8.77		1.77	7.73	6.84	88.83	11.47	3.10	11.18	0.30	5.56	
-3	8.20		1.05	8.02	6.98	91.61	11.44	2.58	7.89	-0.09	-0.90	
-2	9.70		1.42	6.82	5.56	86.96	9.89	2.29	10.77	0.79	-1.74	
-1	11.16		1.02	6.62	4.55	87.32	9.49	2.70	11.80	0.72	-2.52	
0	13.11		0.92	4.44	3.89	86.23	9.22	2.70	12.12	0.78	-2.42	
1	11.80		0.62	3.90	3.01	88.20	9.21	2.81	11.92	0.77	-1.42	
2	11.17		0.7	3.84	2.91	86.31	8.43	2.76	12.26	1.01	-1.43	
3	10.79		0.53	3.86	3.23	88.42	7.86	2.55	11.07	0.74	-0.38	
4	10.61		0.74	4.33	3.47	87.24	7.15	2.23	10.34	0.61	-1.26	
5	10.80		0.88	3.51	2.76	86.79	7.59	2.68	9.43	0.49	-2.28	
			Panel A: Median Ratios of Privatized Banks									
			Panel B: Median Ratios of Rival Banks									
-5	-		0.76	1.69	0.96	85.37	11.63	1.03	-	0.95	-	
-4	11.1		0.76	2.39	1.34	88.16	11.33	1.36	12.73	0.85	4.41	
-3	11.75		0.64	2.82	1.76	89.12	11.04	1.27	12.11	0.95	2.47	
-2	13.1		0.81	3.19	1.87	85.85	10.18	1.58	12.05	0.96	2.51	
-1	12.61		0.65	3.30	2.15	84.75	9.61	1.61	12.41	1.19	2.41	

0	13	0.75	3.91	2.96	85.42	9.61	1.80	13.42	1.22	1.18
1	12.55	0.58	3.18	2.66	86.6	8.63	2.26	13.54	1.19	0.94
2	12	0.47	2.87	1.86	85.37	7.96	2.09	13.60	1.15	1.05
3	11.3	0.51	2.36	1.76	86.28	7.57	2.16	13.60	0.94	0.13
4	11	0.47	2.07	1.38	86.7	7.32	2.13	12.80	0.80	0.45
5	10.5	0.44	1.43	0.95	84.98	7.15	2.19	11.40	0.82	0.55
Table 4 continued										
Panel C: z-statistics for difference in median (Privatized Banks - Rivals)										
-5	-	3.62***	2.80***	2.80***	1.10	2.38**	1.4	-	-2.52**	-
-4	-2.80***	4.14***	2.49**	2.67***	1.05	0.00	2.43**	-0.97	-3.73***	0.97
-3	-3.73***	1.57	3.24***	3.43***	2.35**	1.09	2.12**	-2.38**	-3.75***	-2.60***
-2	-4.28***	3.28***	3.80***	3.82***	1.29	-0.32	1.25	-0.18	-1.56	-3.98***
-1	-2.45**	2.06**	4.50***	3.35***	2.25**	-0.17	1.98**	-1.08	-2.63***	-4.09***
0	1.15	1.25	1.21	1.19	1.75*	-1.73*	1.22	-1.24	-3.23***	-4.11***
1	-0.75	0.39	0.75	0.36	1.71*	0.73	1.55	-0.60	-3.12***	-3.75***
2	-1.92*	1.27	1.66*	1.97**	0.73	0.34	2.30**	-0.19	-0.46	-2.46**
3	-2.19**	0.43	3.04***	3.45***	2.58***	0.47	2.35**	-2.07**	-3.27***	-2.41**
4	-2.18**	3.60***	4.37***	4.36***	1.49	-2.15**	1.09	-2.37**	-3.63***	-2.96***
5	1.43	3.89***	4.19***	4.18***	2.29**	1.21	3.45***	-2.76***	-4.92***	-4.16***

Table 5: Difference in mean

This table shows the mean pre- and post-privatization ratios and the associated t-statistics for the sample firms based on the CAMEL criteria. CAMEL stands for Capital adequacy, Asset quality, Management efficiency, Earnings ability and Labor (employment levels). The mean pre-privatization ratios are calculated over the year -5 to year -1 period and the mean post-privatization ratios are calculated for the period year +1 to year +5, relative to year 0 (the year of issue). The symbols ***, **, * indicate significance at the 1%, 5% and 10% level respectively.

Ratio	Privatized Banks				Mean difference in privatized and rival banks' performance							
	Mean difference in performance				Pre-privatization			Post-privatization				
	Post	Pre	Post-Pre	t-statistic	privatized	Rivals	Diff.	t-statistic	privatized	Rivals	Diff.	t-statistic
Capital Adequacy	11.2 6	14.2 0	-2.94	-0.69	14.20	12.7 0	1.5	0.35	11.26	11.0 3	0.23	0.53
Provisions-to-Loans	0.85	2.15	-1.3	3.51***	2.15	0.99	1.16	3.211*	0.85	0.77	0.08	0.51
Gross Impaired Assets to Loans	3.74	6.44	-2.7	2.37**	6.44	3.62	2.82	2.48**	3.74	3.06	0.68	1.33
Net Impaired-Assets-to Loans	2.99	4.13	-1.14	-1.29	4.13	2.71	1.42	1.58	2.99	2.28	0.71	1.72*
Cost- to- Income	87.9 3	87.8 4	0.09	0.06	87.84	85.4 2	2.42	1.91*	87.93	85.2 6	2.67	1.93*
Expense-to-Asset	8.62	9.87	-1.25	2.04**	9.87	9.99	0.12	-0.20	8.62	8.09	0.53	1.30
Net interest margin	4.57	2.72	1.85	1.26	2.72	2.63	0.09	0.13	4.57	2.65	1.92	1.39
ROA	0.73	0.37	0.36	1.14	0.37	1.17	-0.8	2.33**	0.73	0.97	0.24	-1.94*
ROE	11.1 4	6.91	4.23	0.90	6.91	11.4 6	4.55	-0.98	11.14	9.61	1.53	0.68
Growth in Staff	- 0.61	0.21	-0.82	-0.33	0.21	2.15	1.94	2.96***	-0.61	1.96	2.57	4.14***

Table 6: Results of regression to account for persistence in bank performance

The table presents the results of the regression of the post-privatization ratios on the pre-privatization ratios to account for persistence in bank performance. The regression variables are based on CAMEL criteria. CAMEL stands for Capital adequacy, Asset quality, Management efficiency, Earnings ability and Labor (employment levels). Specifically for each performance measure we estimate the following regression:

$$\text{Post privatization ratio}_i = \alpha_i + \beta_i (\text{Pre-privatization ratio}_i) + e_i$$

The mean pre-privatization ratios are calculated over the year -5 to year -1 period and the mean post-privatization ratios are calculated over year +1 to year +5, relative to year 0. For robustness test, we also estimate the regressions using 3-year mean pre- and 3-year mean post-privatization data. The symbols ***, **, * represent significance at 1%, 5% and 10% respectively.

Post-Privatization Performance Measures	Alpha		Beta	
	3-year mean ratios	5-year mean ratios	3-year mean ratios	5-year mean ratios
Capital Adequacy	10.16 (9.91)***	10.25 (11.07)***	0.15 (2.80)**	0.15 (3.07)***
Provisions-to-Loans	0.76 (2.08)**	0.62 (1.66)	-0.03 (-0.20)	0.03 (0.17)
Gross Impaired Assets-to-Loans	2.71 (2.35)**	3.04 (2.37)**	0.19 (1.21)	0.16 (0.88)
Net Impaired Assets-to-Loans	2.24 (2.46)**	2.62 (2.57)**	0.21 (1.31)	0.17 (0.83)
Growth in Staff Levels	0.45 (0.24)	0.83 (0.37)	0.22 (0.85)	0.36 (1.10)
Return on Asset	0.87 (4.24)***	0.82 (4.38)***	-0.26 (-1.50)	-0.22 (-1.38)
Return on Equity	12.50 (2.73)**	11.78 (2.58)**	-0.09 (-1.00)	-0.08 (-1.02)
Cost-to-Income	27.68 (0.43)	20.70 (0.33)	0.70 (0.95)	0.78 (1.09)
Expense-to-Assets	4.87 (1.79)*	7.73 (3.24)***	0.35 (1.23)	0.24 (0.83)
Net interest Margin	0.05 (0.10)	-0.02 (-0.05)	0.78 (49.35)***	0.78 (49.17)***

Table 7: Effects of bank privatization in developed and developing countries

This table summarizes the stock market returns and operating performance measures of privatized banks in developed and developing countries. Panel A shows the abnormal returns realized by the industry counterparts of the privatized banks. Panel B presents the long run stock market performance, while Panel C presents the pre- and post-privatization ratios and the associated t-statistics for the sample based on the CAMEL criteria. CAMEL stands for Capital adequacy, Asset quality, Management efficiency, Earnings ability and Labor (employment levels). The mean pre-privatization ratios are calculated over the year -5 to year -1 period and the mean post-privatization ratios are calculated over year +1 to year +5, relative to year 0. The symbols ***, **, * represent significance at 1%, 5% and 10% respectively.

Panel A: Rival firms reaction to privatization announcements

	Middle and Low income					
	Developed Countries			countries		
	Mean	t- statistics	p-value	Mean	t- statistics	p-value
CAR (-1, 0)	-0.33	-1.99**	0.05	-0.31	-0.71	0.49
0	-0.26	-2.49**	0.02	-0.32	-0.85	0.41
CAR (0,+1)	-0.21	-1.14	0.26	-1.32	-1.93	0.07
CAR (0,+2)	-0.39	-1.05	0.29	-2.24	-1.87*	0.07
CAR (0,+3)	-0.25	-0.94	0.34	-2.80	-2.49**	0.02
CAR (0,+4)	-0.40	-1.05	0.29	-2.73	-2.45**	0.02
CAR (0,+5)	-0.37	-1.05	0.29	-2.06	-1.59	0.12
CAR (-1,+2)	-0.33	-1.26	0.20	-2.24	-1.77*	0.09
CAR (-1,+3)	-0.47	-1.67*	0.10	-2.80	-2.38	0.03
CAR (-1,+1)	-0.29	-1.37	0.17	-1.31	-1.65	0.11
CAR (-2,+2)	-0.70	-1.48	0.14	-1.94	-1.58	0.13
CAR (-5,+5)	-0.68	-1.20	0.23	-0.78	-0.62	0.54

Panel B: Long run industry adjusted cumulative abnormal returns

Event period	Developed Countries		Middle-and-Low Income countries	
	Mean % Returns	Median % Returns	Mean %CAR	Median % Returns
CAR (1-12)	-1.07 (-0.22)	0.82 (0.80)	-8.02 (-0.47)	-6.63 (-0.60)
CAR (1-24)	3.70 (0.67)	5.84 (1.71)*	1.00 (0.08)	-5.11 (-0.31)
CAR (1-36)	2.21 (0.39)	0.27 (1.03)	-10.28 (-0.60)	-4.32 (-0.72)
CAR (1-48)	3.46 (0.56)	-1.55 (-0.51)	-13.00 (-0.76)	-4.88 (-0.68)
CAR (1-60)	4.55 (0.61)	3.70 (1.55)	-19.32 (-1.06)	-11.66 (-1.11)

Table 7 continued
Panel C: Operating performance

Ratio	Differences in pre- and post-privatization operating performance										Post-privatization Industry-adjusted operating performance (privatized-rivals)			
	Developed countries					Middle-and-Low Income					Developed countries		Middle-and-Low Income	
	Post	Pre	Post-Pre	t-statistic	Post	Pre	Post-Pre	t-statistic	Difference	t-statistic	Difference	t-statistic		
Capital Adequacy	11.2 6	14.2 0	- 2.94	- 0.69	13.5 8	18.4 5	- 4.88	- 0.89	0.23	0.53	1.81	3.23** *		
Provisions-to-Loans	0.85	2.15	- 1.3	-	2.30	3.91	- 1.61	- 2.14**	0.08	0.51	0.95	2.06**		
Gross Impaired Assets to Loans	3.74	6.44	- 2.7	-	14.7 6	15.1 8	- 0.42	- 0.07	0.68	1.33	5.43	1.77*		
Net Impaired-Assets-to Loans	2.99	4.13	- 1.14	- 1.29	11.8 4	10.1 3	1.71	0.30	0.71	1.72*	3.68	1.41		
Cost- to- Income	87.9 3	87.8 4	0.09	0.06	78.6 7	77.5 8	1.10	0.28	2.67	1.93*	- 2.02	- 0.67		
Expense-to-Asset	8.62	9.87	- 1.25	-	12.2 5	14.6 5	- 2.40	- 1.22	0.53	1.30	1.89	2.03**		
Net interest margin	4.57	2.72	1.85	1.26	5.12	5.08	0.04	0.03	1.92	1.39	0.42	0.68		
ROA	0.73	0.37	0.36	1.14	2.78	2.76	0.02	0.02	- 0.24	- 1.94*	0.72	0.93		
ROE	11.1 4	6.91	4.23	0.90	14.4 3	1751	- 3.02	- 0.45	1.53	0.68	1.81	0.38		
Growth in Staff	- 0.61	0.21	- 0.82	- 0.33	1.51	5.33	- 3.82	- 0.65	- 2.57	-	- 1.83	- 0.72		

Appendix A: Definition of ratios

Measures	Ratios	Calculation
Capital Adequacy	Total Capital Adequacy	=Tier 1 + Tier 2 Capital
Asset Quality	Provisions-to-Loans	General provision / Total loans
	Gross Impaired Assets-Loans	Gross impaired assets /Total loans
	Net Impaired Assets to Loans	Gross impaired assets less provisions/ Total Loans
Management Efficiency	Cost-to-Income	Operating Expenses / Operating Income
	Expense- to- Assets	Operating Expenses /Average Assets
Earnings Ability	Net Interest Margin	Net Interest income/Average interest earning assets
	Return on Asset (ROA)	Net Profit Before Interest and Tax/Average Total Assets
	Return on Equity (ROE)	Net Profit After Tax/Average Shareholders Equity
Employment	Growth in staff levels	% change in staff levels

