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Abstract

Although both domestic and foreign private banks have gained ground in MENA in recent years, state banks continue to play an important role in many countries. Using a MENA bank-level panel dataset for the period 2001–08, the paper contributes to the empirical literature by documenting recent ownership trends and assessing the role of ownership and bank performance in MENA while accounting for key bank characteristics such as size and balance sheet composition. The paper analyzes headline performance indicators as well as their key drivers and finds that state banks exhibit significantly weaker performance, despite their larger size. This result is mainly driven by a larger holding of government securities, higher costs due to larger staffing numbers, and larger loan loss provisions reflecting weaker asset

quality. The results reflect both operational inefficiencies and policy mandates. The paper also provides a detailed performance analysis of foreign and listed banks. Foreign banks are fairly new in MENA, yet perform on par with domestic banks despite their smaller size and higher investment costs. Listed banks exhibit superior performance driven by higher interest margins even in the face of higher costs associated with listing. Taken together, the results do not reject the development role for state banks, but do show that their intervention comes at a cost. As such, there is scope to reduce the share of state banks in some countries and to clarify the mandates, improve the governance, and strengthen the operational efficiency of most state banks in MENA.

This paper is a product of the Financial and Private Sector Development Unit, Middle East and North Africa Region; and the Financial Systems Department, Financial and Private Sector Development. It is part of a larger effort by the World Bank to provide open access to its research and make a contribution to development policy discussions around the world. Policy Research Working Papers are also posted on the Web at <http://econ.worldbank.org>. The authors may be contacted at efeijen@worldbank.org, sfarazi@worldbank.org and rrocha@worldbank.org

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Bank Ownership and Performance in the Middle East and North Africa Region

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1. Introduction

The last three decades witnessed a sharp reduction in the role of state-owned banks (state banks for short) in most emerging countries. The share of state banks in total bank assets declined significantly in most regions during this period (Figure 1). This decline in market shares was dramatic in the Eastern Europe and Central Asian region, reflecting the transition from communism in the 1990s, but was also impressive in the other regions. Today state banks account on average for less than 50 percent of bank assets in most emerging regions, implying that private banks lead financial intermediation in most countries.

This reduction in the role of state banks reflects a general disappointment with their financial performance and contribution to financial and economic development, especially in the countries where they dominated the banking system. In many countries it also reflects a reaction to the large fiscal costs associated with their restructuring. However, despite their loss of market share, state banks still play a substantive role in many regions, especially in East Asia, the Middle East and North Africa, and South Asia (Figure 1). In some countries, state banks still lead the process of financial intermediation, with market shares above 50 percent of total system assets. In most other countries, state banks do not lead financial intermediation any longer, but still retain an important role, with market shares varying between 20 and 50 percent. In general, state banks only seem to play a negligible role in Eastern Europe and Africa.^{1,2}

The arguments that have been put forward to justify the continuing presence of state banks are well known. State banks may address market failures resulting from asymmetric information and poor enforcement of contracts that ultimately restrict access to credit by enterprises and individuals. Moreover, they may also provide essential financial services in remote areas, where access to finance is constrained by large fixed costs. Furthermore, state banks can also play an important counter-cyclical role, helping prevent an excessive contraction of credit during a

¹See Clarke, Cull, and Megginson (2005), and Levy-Yeati, Micco, and Panizza (2007).

² The Eastern Europe and Central Asian region is very diverse in this regard. The average market share of state banks is generally negligible in the first group but still large in the second group.

financial crisis. This latter argument is not new, but has been reinforced by the recent global financial crisis.³

These arguments may justify policy interventions in many countries, although it does not necessarily follow that state banks are the optimal type of intervention. For example, well-designed credit guarantee schemes may address information asymmetries more effectively (by preserving the leadership role of private banks) and may also play a countercyclical role. Moreover, even in the cases where the presence of state banks may be justified, policy-makers still face the challenge of ensuring clear mandates and sound governance structures in order to minimize political interference and avoid credit misallocation and large financial losses – not a trivial task in most countries. Therefore, the decision of whether state banks should continue playing a role in the financial system entails a careful consideration of benefits and costs. In making this decision, policy-makers should take into account many factors, including the past performance and contribution of state banks in their countries and elsewhere.

The Middle East and North Africa (MENA) region is one of the regions where state banks have lost market share but still play an important role in many countries. In the aftermath of the recent global financial crisis, policy-makers in these countries have been considering whether they should reduce further the role of these banks. Therefore, an analysis of the performance of state banks in the MENA region can provide useful inputs to this decision. This is precisely the main objective of this paper. We examine the trends in the structures of MENA banking systems and assess the performance of state and private banks (domestic and foreign) at the bank level in the period 2001-08. We also examine the association between the listing of banks and their performance. In doing so, we diminish omitted variable bias by controlling for bank size, balance sheet structures, and other variables.

The analysis of trends in the structure of banking systems covers the whole MENA region, while the statistical analysis focuses on the nine countries in non-GCC (Gulf Cooperation Council) area: Algeria, Egypt, Lebanon, Libya, Jordan, Morocco, Tunisia, Syria, and Yemen. We focus the statistical analysis on the non-GCC countries because the distinctions between public and

³ Micco and Pannizza (2007) had already shown that credit extended by state banks located in developing countries is less pro-cyclical than credit extended by private banks. See also Levy-Yeati, Micco, and Panizza (2007).

private ownership are more relevant and consequential in these countries (the stronger interlocking ownership structures in the GCC tend to blur these differences).

The paper is structured as follows. The second section reviews the empirical literature on bank ownership and performance. The third section examines recent trends in the structure of banking systems in MENA, with focus on ownership patterns. The fourth section provides a description of the dataset. The fifth section discusses the results from statistical analysis. This includes two-group comparisons as well as regression results. The sixth section discusses whether the performance of state banks in MENA could be explained by the policy mandates imposed on these institutions. Finally, the sixth section summarizes the main findings and identifies the main policy implications.

2. Review of the Empirical Literature on Bank Ownership and Performance

The empirical literature on bank ownership and performance can be divided into three broad groups. The first group examines the financial performance of individual banks controlling for ownership and other bank-level characteristics, such as size and balance sheet structures. The second group of empirical studies examines whether state banks contribute positively to financial development and economic growth, a more ambitious and challenging objective. The third group of studies examines the interactions between the actions of state banks and the political cycle, to assess the degree of political interference on these institutions.

One of the main objectives of the first group of studies is to assess whether bank ownership affects performance, as measured by profits, margins, costs, and the quality of loan portfolios. For example, Demirgüç-Kunt and Huizinga (2000) focus on foreign ownership and find that foreign banks generate higher interest margins and profits, especially in developing countries. Micco, Panizza and Yañez (2004) provide a comprehensive analysis of bank ownership and performance and conclude that state banks in developing countries tend to have lower profits, higher costs, and larger non-performing loans relative to private banks. Foreign banks on the other hand are more profitable and have lower costs.

However, in both this study and a subsequent study (Levy-Yeyati, Micco and Panizza (2007)), the authors caution against drawing immediate conclusions from the weak financial performance of state banks as it may reflect not only extensive political interference (e.g. in lending and

employment decisions) and operational inefficiencies, but also their development mandates. Moreover, the authors do not find a strong correlation between bank ownership and financial performance in industrial countries, suggesting that state banks in these countries have been able to operate with clearer mandates and sounder governance structures.

The second line of empirical research is best exemplified by the influential study by La Porta, Lopez-de-Silanes and Shleifer (2002). In this paper, the authors show that higher government ownership of banks is associated with slower subsequent financial development and GDP growth. Barth, Caprio and Levine (2006) find similar results in a study focused on banking regulation. However, Levy-Yeyati, Micco and Panizza (2007) revisit La Porta, Lopez-de-Silanes and Shleifer (2002) by using more recent data, better estimation techniques, and additional controls and show that the evidence that state bank prevalence lead to lower growth and financial development is not strong. Two recent papers (Korner and Schnabel (2010) and Andrianova, Demetriades and Shortland (2010)) reach similar conclusions. They find a negative relationship between a high fraction of public ownership in the banking system and growth when financial development and the quality of political institutions are low, conditions that tend to prevail in developing countries. However, similar to Levy-Yeyati et al (2007), they don't find a negative impact of public ownership and growth in developed countries. They stress that the quality of institutions and governance are important in studying the impact of public ownership on growth.

The third group of studies examines the interactions between credit decisions of state banks and the political cycle. Dinc (2005) uses a large cross-country sample and finds that in election years the pace of credit from private banks slows, while the growth of credit from state banks remains constant. Cole (2008) finds in the case of India that lending by state banks increases in election years. Khwaja and Mian (2005) show that in Pakistan politically-connected firms borrow more from state banks and have higher default rates. Sapienza (2004) shows that Italian state banks charge lower interest rates in the provinces where the party of the bank's chairman is stronger. In the same line, Micco et al. (2007) find that state financial institutions have lower profitability and higher costs than commercial banks and that the gap widens during election years.

All in all, these studies suggest that while there may be a development role for state banks in developing countries, state banks also have to operate under a more hostile institutional

environment in these countries. Extensive political interference in credit and employment decisions, blurred mandates, poor governance structures, and severe operational deficiencies may eventually outweigh the potential for these banks to address their development mandates and contribute to financial and economic progress. Overcoming these institutional weaknesses and ensuring a supportive environment for state banks is not a trivial task in many developing countries.⁴

There is limited research on bank ownership and performance focused on the MENA region. There are some country-level studies (e.g. Omran (2007) for Egypt, Isik, Gunduz and Omran (2004) for Jordan, Bennaceur and Goaid (2001) for Tunisia, and Turk-Ariss (2008) for Lebanon) that examine the overall efficiency and performance of these banking sectors. The studies with a regional focus tend to stress specific aspects such as economies of scale (Olson and Zoubi (2010)) or institutional aspects such as Islamic banking (e.g. Sufian et al (2008) and Ben Khediri and Ben-Khediri (2009)). The study by Kobeissi and Sun (2010) is possibly the only exception in this regard. The authors analyze the impact of ownership structure on bank performance in 17 MENA countries, and find that private banks perform better than state banks, as measured by higher returns on assets and equity. They also find that the presence of foreign banks seems to have a positive impact on the performance of local banks. Moreover, banks listed in the stock market are also found to have higher performance rates.

Our study is similar to Kobeissi and Sun (2010) in some methodological aspects, but also has some important differences. First, the samples are not identical – while Kobeissi and Sun adopt a broad definition of MENA that includes Iran, Israel, Mauritania and Turkey, we not only exclude these countries, but also focus the statistical analysis in section 5 on the non-GCC countries. As noted before, we focus on the non-GCC countries because the distinctions between public and private ownership are more relevant and consequential in these countries. Second, Kobeissi and Sun only focus on measures of profitability, while we explore other measures of

⁴ In the same vein, Rudolph (2009) analyzes the experience of four state financial institutions in Canada, South Africa, Finland and Chile that have performed reasonably well for relatively long periods of time, and examines the legal and institutional factors explaining this performance. Replicating these conditions would require a significant policy effort in many developing countries.

performance, and make an attempt to explain the differences between the profitability of state and private banks from its main determinants, i.e. margins, costs, employment, wages, and loan-loss provisions.

3. Major Trends in Bank Ownership in the MENA Region

As shown in Figure 2 and Table 1, the overall market share of state banks in MENA declined only moderately in the decade, from 41 percent of total assets in 2001 to 33 percent in 2008. However, this outcome was essentially due to the stable average share of state banks in the GCC countries – around 28 percent of total bank assets during most of this period. By contrast, the average market share of state banks in the non-GCC countries declined significantly – from 56 to 41 percent of total assets in the same period.

Within the non-GCC region, two groups of countries can be identified. In the first group state banks play a dominant role (Algeria, Libya, and Syria), while in the second group private banks lead financial intermediation (Egypt, Jordan, Lebanon, Morocco, Tunisia, and Yemen). As shown in Figure 2, the average market share of state banks declined by a similar amount in the two groups (around 13 percent of total assets), but this decline took place from very different initial positions. In the first group state banks still dominate financial intermediation despite their loss of market share (86 percent in 2008), while in the second group private banks have generally consolidated their leadership position (71 percent in 2008).

These averages provide a very useful overview of the overall trends in MENA, but they also mask important differences across individual countries. As shown in Figure 3, most MENA countries experienced a decline in the share of state banks during the decade, but the differences across countries are significant. The role of state banks is already modest or negligible in one set of countries, including Saudi Arabia, Yemen, Bahrain, Jordan, Kuwait, Lebanon, and Oman. On the other extreme, state banks still dominate financial intermediation in Algeria, Libya, and Syria, as noted above. However, it is interesting to note that Syria has made more progress in reducing the share of state banks in recent years through the entry of new private banks (there has been no major privatization until now), although state banks still play a dominant role with a market share of 70 percent of total assets.

There is also an intermediate group of countries where the market share of state banks declined to 50 percent of total assets or lower levels, but still remains significant. In these countries state banks do not lead the process of financial intermediation any longer but have still retained an important role. These countries include Egypt, the UAE, Qatar, Tunisia, and Morocco. Note that Egypt is included in this group because of recent financial sector reforms that have reduced the market share of state banks to about 45 percent of total assets.⁵

Foreign banks have increased their average market share in the non-GCC region (Figure 3 and Table 1), while decreasing slightly in the GCC region. In the case of the GCC the decline was relatively modest (from 26 percent in 2001 to 20 percent in 2008) and offset by an increase in the market share of private domestic banks (to yield a stable average share of private banks). However, the expansion of foreign banks was more significant in the non-GCC region, especially in recent years. The share grew from 8 percent in 2001 to 20 percent in 2008, which is almost double the share in 2005.

There are also some interesting patterns in the two sub-sets of non-GCC countries that are worth highlighting. As shown in Table 1, the share of private banks in the first group of countries (i.e. countries where private banks lead) increased initially because of the expansion of domestic banks but since 2005 foreign banks have expanded at a faster pace. These foreign banks represented 20 percent of the system in 2008 and are mostly international banks with headquarters outside the region, as opposed to regional banks. By contrast, the expansion of foreign banks in the second group of countries (i.e. countries where state banks lead) from 1 to 13 percent of the system in 2001-08 also accelerated in recent years, but this expansion was primarily driven by regional banks.

There was also a rapid increase in the share of listed banks in both the GCC and non-GCC regions, as shown in Figure 5 and Table 1. For example, in all non-GCC countries, listed banks accounted for 56 percent of assets in 2008 compared to 29 percent in 2001. Some banks decided to list for strategic considerations, including the need to access external funding in order to sustain high credit growth, while in other countries this trend was due to regulatory requirements.

⁵ These reforms included the divestiture of state shares in several joint venture banks and the privatization of Bank of Alexandria.

In Syria, for example, all new private banks have been required to list, and this explains the rapid increase of listed private banks in the group of countries with state-led banking systems. Interestingly, there was also a modest increase in the number and market share of listed public banks during this period.

In sum, state banks lost market share in practically all MENA countries during the last decade. The exceptions were those countries where their role was already negligible. However, state banks still dominate the banking system in three countries: Algeria, Libya and Syria. There is a second group of countries where state banks do not lead anymore but still hold significant shares varying from 25 to 50 percent of total assets: Egypt, Qatar, the UAE, Morocco, and Tunisia. Foreign banks increased their market share in both the GCC and non-GCC regions. The increase was modest in the GCC but more significant in the non-GCC countries. In most countries the expansion of foreign banks (both regional and international banks) has been relatively recent and many of these banks remain small, as shown below. They seem to occupy specific niches and may not yet be able to challenge domestic banks in their main markets.⁶

There was a significant increase in the share of listed banks during the last decade. Some banks seem to have listed to gain easier access to external funding, while in other cases this increase reflected regulatory requirements. Listed banks are usually subject to stricter corporate governance rules and disclosure requirements and are in principle subject to closer scrutiny by market participants. The extent to which these outcomes materialize depends on the quality of governance rules and disclosure requirements, their enforcement by regulators, and effective monitoring by capital market institutions. Finally, we note that few state banks were also listed during this period, although the period of listing is too recent and the sample too small to allow for any type of statistical testing.

4. Data and Methodology

We adopt a comprehensive, bank-level empirical analysis to assess the association between bank ownership and performance in nine non-GCC MENA countries. In doing so, we proceed along

⁶ Anzoategui, Martinez Peria and Rocha (2010) show that bank competition in MENA is still weaker than in other regions. This may reflect a variety of factors, including lack of critical mass of private banks in some countries (including foreign banks), poor financial infrastructure resulting in weak access of smaller private banks to credit information (including foreign banks), and lack of competition from non-banking institutions and markets.

two lines. First, we conduct standard two-group comparison tests and assess whether statistically significant differences exist between the relevant bank groups (e.g. state versus private, domestic versus foreign, listed versus non-listed). These statistical tests provide useful initial insights into how ownership and bank performance are associated, although they have to be interpreted with care, because bank performance is determined by many factors in addition to ownership.

Therefore, in a second step we turn to bank-level multivariate panel regression analysis in which we analyze ownership while simultaneously controlling for various bank characteristics. For our regressions we employ simple Ordinary Least Squares (OLS) on pooled annual bank data for the period 2001-08. Throughout our regressions we also include country- and time-fixed effects to mitigate omitted variable bias. By introducing these fixed effects we aim to control for general country conditions to which the banks are exposed throughout the sample years.

We also account for the possibility that the results could be driven by countries that have a larger number of banks. Therefore, we also conduct regressions where each bank-year observation carries a weight that is inversely proportional to the number of banks in its banking system in that particular year. We also relax the independency and homoskedasticity assumptions that are required by OLS by reporting three standard errors variations: 1) Huber/White robust standard errors and robust standard errors corrected for possible intra-group correlation for which we consider 2) a bank- or 3) a country-level grouping of bank-year observations⁷.

Most of our data are taken from Fitch's Bankscope database and include unconsolidated statements of commercial banks in MENA. The sample roughly comprises 600 bank-year observations of about 120 banks in 9 countries for the period 2001-08. As noted before, our sample consists of banks in Algeria, Egypt, Jordan, Lebanon, Libya, Morocco, Tunisia, Syria, and Yemen. Table 3 provides an overview of variable definitions and their sources. Table 4 shows pairwise correlations. Appendix A shows the number of banks for each country by year.

Our main dependent variables can be grouped into four clusters. First, we consider *general profitability and interest-related* factors. We investigate the standard profitability indicators Return on Assets (ROA) and Return on Equity (ROE). We use the Net Interest Margin (NIM) to

⁷ Results for country-level groupings are not reported but are available from the authors upon request.

investigate the interest-related side of the business, where NIM is defined as net interest income as a fraction of total assets. We further investigate NIM by dissecting this variable into its two drivers – Interest Income to Assets and Interest Costs to Assets.

Second, we explore *efficiency* variables. To capture bank efficiency we use the ratios of total Overhead Costs to Assets, and Personnel Costs to Assets. Further, we break the two cost ratios between the underlying quantities and prices by computing the number of Employees per unit of Asset and the related average wages.

Third, we study *asset allocation* to understand how banks allocate their resources between lending and non-lending activities. We use the Securities to Assets ratio which encapsulates many types of securities but is mostly driven by government securities. As such this ratio also measures private sector crowding out effects to some extent.

Fourth, we examine *asset quality* and its impact on profitability. Aggregate country level data show that countries that have a large share of state banks also have a high ratio of NPLs to total loans (Figure 6). Ideally, we would use this indicator as a measure of asset quality, but we could not obtain sufficient bank level data on non-performing loans (NPLs), especially for state banks, due to deficiencies in financial disclosure. In order to capture differences in asset quality and its impact on profitability we use the ratio of loan-loss provisions to gross loans. This indicator captures the extent to which banks' loan portfolios are being contaminated by non-performing loans and having an adverse impact on profitability.

Our explanatory variables include ownership variables which we compiled by using a variety of sources including Bankscope, Bankers' Almanac and individual bank websites. We classify equity holders as being either public or private, or domestic or foreign). Our public ownership dummy assumes a value of 1 if the bank is majority government-owned and 0 otherwise. Similarly, our foreign ownership dummy has a value 1 if the private bank is majority foreign-owned and 0 otherwise. We do not differentiate between foreign banks (i.e. regional versus international banks) because of small samples. By conducting the banks' and exchange website searches, we also created a listed dummy variable that assumes a value of 1 if the bank is listed on a stock exchange and 0 otherwise.

Finally, in line with other empirical studies, we also include a number of other bank-level variables as controls, including total assets, the ratio of non-interest income to total assets, and the ratios of deposits to assets and loans to assets. Total assets capture scale effects, while the other variables capture basic differences in the nature and business orientation of the bank.

5. Empirical Results

5.1 Two-group comparison results

State versus Private Banks

We start with univariate, two-group comparisons to identify statistically significant differences of our dependent variables between ownership types of banks. The whole sample of non-GCC banks in 2008 includes 106 banks, including a group of 16 state banks and 90 private banks. Table 5 presents the two-group comparison test results. We start by documenting that state banks are significantly larger than private banks. This finding is important because bank size can have a significant impact on performance through scale economies, particularly on cost ratios.

We find that private banks are significantly more profitable than public banks in the non-GCC region. On average, private banks have an ROA (ROE) of 0.92 (11.16) percent compared to 0.52 (7.57) percent for the state banks. This result is in line with previous research and probably reflects a mix of inefficiencies and policy mandates (Micco et al (2004), Levy-Yeati, Micco and Panizza (2007)). To understand the factors behind the lower levels of profitability we now explore the differences between interest margins, operating costs, and provisions.

Interestingly, we find that the NIM of state banks is not significantly different from the NIM of private banks. This is due to both lower ratios of interest expenses to assets and interest income to assets. That is, state banks enjoy lower funding costs but also generate lower interest income per unit of assets. This result is not surprising since state banks tend to mobilize deposits at a lower cost (including lower-yield demand deposits), due to their size, branch network, brand name, and implicit government guarantee. At the same time, the lower interest income ratio is due to a higher share of government securities and possibly lending to state enterprises and favored sectors at lower rates (this is examined further below). Note also in this regard that the interest income and margins of state banks could be overstated by accrual of interest on non-performing loans to state enterprises and favored sectors. Private banks have more limited

access to cheap sources of funding but compensate for their higher costs by exploring more profitable market segments such as trade finance, retail lending, and credit cards.

The ratio of securities to assets which mostly reflects investments in government-related instruments is not significantly different between the groups, which would seem to contradict the statements above. However, this is due to the inclusion of Lebanon in the sample. The Lebanese case is unique in many aspects, comprising a very large and private banking system (deposits of about 300 percent of GDP) due to large expatriate remittances and other inflows, a large public debt of 150 percent of GDP, and substantial financing of the government by the banks. Excluding Lebanon from the sample reveals that MENA state banks finance significantly more their governments and generate less interest income as a result. State banks hold 20.2 of their assets in securities, compared to only 13.9 percent for their private counterparts.

State banks have lower cost ratios, whether measured by the ratios of overhead costs to assets or personal costs to assets, although the differences are not statistically significant in the last case. This may seem counter-intuitive, but one must bear mind that state banks are much larger and should enjoy stronger economies of scale as a result. The question is whether the differences in cost ratios should be even larger considering the differences in size or, put differently, whether state banks have larger cost ratios controlling for size. The fact that the ratio of personal costs to assets is similar in the two groups suggests that the scale effect is being reduced by other factors.

This issue is examined in more detail in the next section by means of regression analysis, but the last rows of Table 5A already provide an explanation for the lower cost ratios of state banks. These banks have significantly higher ratios of employees per unit of assets, suggesting that they are not being able to exploit the potential advantages of their larger scale. Their lower cost ratios come essentially from lower average wages, whether measured by overhead costs per employee or personal costs per employee.⁸ In other words, state banks have a much larger number of employees but these are likely to be lower skilled workers on average. This finding is consistent with their lower interest income, suggesting that state banks do not compete intensively in areas

⁸ For example, the average wage in private banks is \$25,600 compared to \$17,250 in state banks.

that require more skills, or compete without the right skills and techniques and therefore are more exposed to financial losses.⁹

The last row of Table 5A confirms that state banks have a much higher average ratio of loan loss provisions to gross loans. The Bankscope database does not provide detailed information on the composition of loan portfolios, but this result probably reflects losses resulting from lending to state enterprises and favored sectors. In this regard, state banks might be fulfilling their development mandates, whereby they are directed to finance projects and sectors that may generate low returns or entail excessive risks, but that are regarded as strategic or capable of generating positive externalities. These losses are probably aggravated by the own internal operational deficiencies of state banks in fulfilling these mandates.

By contrast, private banks pay higher average wages in order to attract higher-skilled workers and develop more sophisticated and profitable business lines while being able to manage the associated risks relatively well. At the same time, they are also able to maintain a lower ratio of employees to assets. Thus taken together, these results show that private banks are ultimately able to generate higher profits compared to state banks despite their smaller average size, by exploring more profitable business lines, containing their operating costs, and managing their risks more effectively.

Domestic private versus foreign private banks

Next we analyze the differences between foreign and domestic private banks. In 2008, there were 90 private banks in non-GCC MENA countries of which 45 were domestic and 45 were foreign. As shown in table 5B, we find that foreign banks are significantly smaller, reflecting at least partly their more recent entry into banking systems in the region (see the previous section).

Foreign banks have been more profitable than private domestic banks, as indicated by higher ROAs and ROEs. Although these differences in profitability are not statistically significant, this still suggests important efficiency differences, given that foreign banks are smaller. Foreign banks also generate higher NIMs but the differences vis-à-vis private domestic banks are not

⁹ Rocha, Farazi, Khouri, and Pearce (2010) show that state banks in MENA are as involved in SME finance as private banks, but do not seem to have the same levels of risk management and SME lending techniques.

significant either. Interestingly, foreign banks enjoy lower funding costs probably because they can leverage internal funding markets and the parent's balance sheet and reputation. However, they are not able to generate higher interest income relative to private domestic banks, despite holding smaller securities portfolios. On the other hand, they generate more non-interest income relative to domestic banks. These results suggest that domestic banks are more embedded in local credit markets, whereas foreign banks are still more involved in niche markets such as upscale consumer lending and non-interest income business lines such as foreign exchange commissions, advisory services, and letters of credit.

Foreign banks have higher cost ratios relative to domestic banks, a result that may seem surprising given their presumed sophistication although this could simply reflect their smaller size. Their ratio of employees to assets is higher, consistent with their modest scale, and helps explain their higher cost ratios. Interestingly, foreign banks pay lower wages than private domestic banks, but this is not sufficient to offset the higher ratio of employees to assets to achieve lower costs. One possible reason why foreign banks pay lower wages is that some of the sophisticated and costly work is centrally executed in the head office. However, this is likely to change as foreign banks become better integrated into local markets. The question is whether foreign banks are less efficient than private domestic banks controlling for size, a question that is addressed in more detail in the next section.

Listed versus non-listed banks

In this final sub-section we compare the performance of listed banks and non-listed banks. The number of listed banks increased significantly during the sample period as noted above. In 2008 there were 65 listed banks in the nine non-GCC countries in the sample, accounting for 61 percent of the number of banks and 56 percent of total assets. Out of the 65 listed banks, 60 are private banks and 5 are state banks.

We note that listed banks are on average smaller than non-listed banks, although the difference is not statistically significant (Table 5C). Listed banks are significantly more profitable, whether measured by the ROA or the ROE. For example, the ROA for listed banks is 1.03 percent compared to 0.64 percent for non-listed banks. The average NIM of listed banks is higher than that of non-listed banks, but the difference is not statistically significant. As expected, listed

banks are able to fund themselves at lower rates. However, they also generate less interest income per unit of asset which is surprising, especially considering that they finance the government to a lesser extent. At the same time, listed banks generate much larger income from fees and commissions, which helps explain their higher profitability.

Listed banks have higher cost ratios vis-à-vis non-listed banks. Since average wages in the two groups are similar, this is due essentially to a higher ratio of employees to assets. This result may be partly explained by their smaller size, but could also be explained by the stricter corporate governance, disclosure and compliance requirements imposed on listed banks, which may translate into more staff requirements and higher costs. At the same time, these requirements probably also explain why these banks are able to maintain better quality portfolios and lower levels of provisioning, and are ultimately able to generate higher profits despite their higher operating costs.

5.2 Regression Results

In this section we use regression analysis on a sample of annual bank observations in nine non-GCC MENA countries for the period 2001-08 to elaborate on our two-group comparison findings. Table 6 reports the main results while Appendix C reports additional results involving weighted regressions. Our weights are inversely proportional to the number of banks in a given country to account for differences in the number of banks per country which could skew the results in favor of countries with more banks.

Our main independent variables of interest are a set of dummies: public, foreign, and listed. By including these dummies simultaneously, their regression coefficients need to be interpreted relative to the reference group of private, domestic, and non-listed banks. To account for confounding factors we also include the following bank-level, time-varying controls. As a measure of bank size we use the 1-period lag of the log of total assets. To distinguish between the different strategies on income-generating activities of banks, we also include the non-interest income to total assets. In line with other empirical studies, to control for different asset and funding management approaches, we use the deposit to assets and loan to assets ratios. In addition to bank-level controls we also include time and countries dummies to capture the general regional trends and country-specific time-invariant conditions.

Since the main objective of the paper is to examine the impact of ownership and listing on performance, we focus on the rows when analyzing the different regression results (e.g. we analyze the results for the state bank dummy in different regressions). This approach also allows for an easier comparison with the results of the previous section. However, we also highlight important results in each column (i.e. in the same regression) as we examine the results.

State bank ownership and performance

Regressions 1 and 2 in Table 6A confirm that state banks are on average less profitable than private domestic, non-listed banks. The finding is statistically significant, after controlling for bank size and balance sheet structures, and also holds in our weighted regressions (Appendix C). The ROA and ROE are 0.513 and 6.731 percentage points lower for state banks, respectively, controlling for our set of bank-level factors. These findings are consistent with previous research on bank profitability in developing countries (Micco et al (2004)) as well as MENA-specific research (Kobeissi and Sun (2010)). Note that these are strong results, as they show that state banks are significantly less profitable than the least profitable segment of private banks (i.e., domestic and non-listed banks), controlling for size and other factors.

Regression 3 shows that state banks generate smaller net interest margins vis-à-vis private domestic banks although the coefficient is small and not significant. State banks do not have different interest income and expense ratios either, after controlling for size and other factors. We confirm through regressions 6 and 7 that state banks in MENA tend to hold larger portfolios of government securities after controlling for size and balance sheet structures. This probably reflects a mandate for state banks to participate in government debt auctions and contribute to debt finance, regardless of their size and structure of funding. Intriguingly, this asset structure does not seem to have a major negative impact on interest margins, but it is possible that this result is partly due to accrual of interest on non-performing loans, as noted before.

Regressions 8 – 10 confirm that state banks have higher cost ratios after controlling for their larger size, which helps explain their lower profitability. Moreover, regressions 11 – 13 confirm that their higher cost ratios are generated by much higher ratios of employment to assets, and not by higher wages. In fact, state banks pay considerably lower wages to their employees, relative to their private counterparts, a result that reflects their lower skills base as noted before. These

results show that state banks are not able to exploit effectively their scale economies. The coefficients of the scale variable across different regressions show that larger banks tend to have significantly lower ratios of employees to assets and lower cost ratios, despite paying significantly higher wages. This suggests the existence of substantive scale economies that contribute to higher returns on equity for larger banks. However, for state banks this is offset by a large employment base that contributes to higher cost ratios and lower profitability.

Finally, regression 13 confirms that state banks tend to have significantly higher ratios of loan loss provisions to gross loans. This bank-level result is therefore consistent with country-level data showing that countries where state banks command a larger market share tend to have higher aggregate NPL ratios (Figure 6). The need to provision for larger losses in their loan portfolios probably reflects a larger share of lending to state enterprises as well as lending to favored sectors, relative to private banks, combined with limited capacity to manage the associated risks. Together with the larger operating costs, this result also helps explain the lower profit ratios of state banks. Section 6 provides further discussion on the possible impact of policy mandates on the performance of state banks.

Foreign bank ownership and performance

Regressions 1 and 2 show that foreign banks are slightly more profitable than private domestic banks, a result that has been previously documented for developing countries as well (Demirgüç-Kunt and Huizinga (2000)), Micco et al (2004), and Kobeissi and Sun (2010)). However, the dummy coefficients are not statistically significant in our sample. As noted before, this could be due to sample differences – we do not include countries such as Iran, Israel and Turkey, and foreign bank presence is a relatively recent phenomenon in our sample. Thus, our tests could simply fail due to lack of statistical power.

The lack of statistical power may be affecting other results as well. As shown in regression 3, foreign banks generate higher interest margins but the differences vis-à-vis the reference group are not significant. Intriguingly, they do not generate more interest income despite holding a smaller portfolio of government securities (regressions 4 - 7). However, they benefit from lower funding costs. Also, they have higher ratios of employment to assets and higher cost ratios, even after controlling for their smaller size (regressions 8 – 11). Note also that they have higher cost

ratios despite paying wages which are slightly lower than those paid by private domestic banks (regressions 12 and 13 and section 4).¹⁰ These results would suggest lower levels of cost efficiency for foreign banks, which is intriguing considering previous research.

Again, these results could simply reflect lack of statistical power and suggest that it is premature to test the impact of foreign ownership on bank performance in non-GCC countries: most foreign banks are still very small, are developing their market strategies, and have not yet been able to penetrate the main credit markets. Moreover, the weak financial infrastructure of many non-GCC countries (including weak credit reporting systems) deprives these small foreign banks from essential credit information and prevents a more rapid expansion into potentially profitable areas such as retail lending and SME finance.¹¹

Bank Listing and performance

Regressions 1 and 2 also show that listed banks are significantly more profitable, controlling for size and balance sheet structures. The ROA and ROE coefficients are 0.269 and 3.654 percent higher for listed banks, respectively. Kobeissi and Sun (2010) find qualitatively similar results as well. Listed banks tend to generate higher net-interest margins, due to lower interest expenses and higher interest income relative to total assets. The lower funding costs could reflect a lower risk premium, as these banks are subject to stricter governance and disclosure requirements and closer market scrutiny. The lower ratio of government securities to assets probably contributes to higher interest income and higher interest margins. All the coefficients have the expected signs and form a coherent picture, although we also note that some of these coefficients are not statistically significant.

Regressions 9 - 13 also show that listed banks tend to have higher cost ratios due essentially to higher wages, although some of these results are not statistically significant. However, the

¹⁰ In section 4 we show that foreign banks generate larger revenues from fees and commissions. This helps explain why these banks have slightly higher profit ratios than domestic banks despite having higher costs.

¹¹ Maddedu (2010) and de la Campa (2010) examine the quality of credit information systems and collateral regimes in MENA and show that the region lags most other regions in the quality of financial infrastructure. Anzoategui, Martinez Peria, and Rocha (2010) show that MENA banking systems seem less competitive than banking systems in most other regions, and that this is probably due not only to bank regulations, but also to weak financial infrastructure and less competition from non-banking sectors.

higher costs are more than offset by higher net interest margins and higher non-interest income (section 4), resulting ultimately in higher profitability. Indeed, the higher wages paid by listed banks could simply reflect a more skilled labor force, required to develop more sophisticated and profitable lines of business. The higher profit ratios suggest that this strategy has paid off. Finally, we note that listed banks have lower ratios of loss loan provisions to loans, although the coefficient is not significant.

All in all, these results imply that listing generates higher costs but that these costs are more than compensated by higher revenues and profits. As noted before, the stricter governance and disclosure requirements imposed on listed banks could be driving these results. This interpretation is consistent with a recent survey of bank governance in MENA (OECD (2009)), which concludes that corporate governance of non-listed banks is generally poor, particularly those that are family controlled – these banks tend to engage heavily in connected lending and perform poorly as a result. This would suggest that MENA regulators should encourage or even mandate listing, as some countries already do. However, there is also a possibility that our results could be affected by selection bias: better managed and more successful banks may be precisely those banks that decide to list.

Bank structures and performance

Finally, we complement the analysis of ownership and performance by focusing briefly on the impact of size and balance sheet structures on performance. We note that larger banks tend to be more profitable, as indicated by higher returns on assets and equity, although only the latter variable is statistically significant, and none of the profit indicators is significant in the weighted regressions (Appendix C). Larger banks tend to have lower ratios of interest income to assets and lower net interest margins, results that are consistent with their larger securities portfolios, although most of the relevant coefficients are not statistically significant. Most importantly, larger banks have lower cost ratios, despite paying higher wages on average. This result is essentially due to a lower ratio of employees to assets, reflecting scale economies. These results are all statistically significant and help explain their higher profitability.

Banks which generate higher non-interest income tend to have lower net interest margins (as they focus on particular markets) and higher cost ratios but are still able to drive higher

profitability. The higher cost ratios are due both to higher wages and higher ratios of employees to assets. The higher wages probably reflect the need for higher-skilled staff to develop more sophisticated lines of business that generate substantial revenues from fees and commissions. The higher ratio of employees to assets is not necessarily a sign of operational inefficiency but rather reflects that non-interest business lines are relatively labor-intensive.

Banks that have higher ratios of deposits to liabilities tend to have higher interest expenses and smaller margins, controlling for size. This result could simply reflect the fact that banks have to pay higher interest rates to attract more deposits, holding constant their size (and branch network). In general, changes in the ratio of deposits to liabilities by themselves do not seem to have significant effects on cost ratios or consistent effects on profitability (the impact on ROA is negative while the impact on ROE is positive, although not significant), holding constant bank size and ownership structures.

Finally, we find that banks with larger loan portfolios have lower profitability, controlling for size and other characteristics. This result is not driven by differences in margins – although banks with larger loan portfolios generate more interest revenue, they also need to pay more to attract funding. The lower profitability could be explained by the larger costs required to sustain large loan portfolios, again controlling for size. Intriguingly, the higher ratio of loans to assets is associated with lower provisioning ratios. The latter could be due to lower concentration and higher diversification effects in their loan books, although the result is admittedly surprising.

6. Is the Weaker Performance of State Banks Justified by their Policy Mandates?

Previous sections showed that the financial performance of state banks is substantially weaker than that of private banks. Among others, they exhibit lower profitability, higher costs, and weaker asset quality, controlling for their larger size and balance sheet structures. The question is whether these weaker results could be explained or even justified by their development mandates. State banks tend to have large branch networks and may provide essential financial services in remote areas, where access to finance is constrained by large fixed costs. State banks may also address market failures resulting from asymmetric information and poor enforcement of contracts that ultimately restrict access to finance in key areas, such as SME finance, housing

finance, and investment finance. However, the effectiveness of MENA state banks in fulfilling these mandates has been mixed as noted below.

We first consider the mandate to expand access to households in remote areas. State banks in MENA tend to have larger branch networks and are generally more present in remote areas with a smaller volume of business. Success in expanding access in these areas could explain the higher ratios of employees and overhead costs over assets. Yet, we do not find evidence that MENA state banks have made a significant contribution to access, as measured by the number of deposit accounts per adult. Table 7 displays panel regression results that show the number of deposit accounts per adult is even negatively associated with the share of state bank assets as a percentage of total bank assets. This finding persists after controlling for differences in GDP per capita, the degree of urbanization, and the number of branches. Although this analysis does not account for the contribution of specialized institutions such as postal and agricultural banks, the results suggest that the large staff of state commercial banks is probably due to outdated technologies and labor redundancies (possibly reflecting the political constraints to reduce the size of their staff), rather than a well-articulated strategy to promote access in remote areas.¹²

Regarding SME finance, there is evidence that state banks have contributed to access in this important area, although they do not seem to have developed the capacity to manage the associated risks. The average share of SME lending of state banks is similar to that of private banks (about 10 % of the loan portfolio), as shown in Rocha, Farazi, Khouri, and Pearce (2011). Moreover, they seem to have taken more risks in this area than private banks – they are less selective in their strategies to target SMEs, have a lower ratio of collateralized loans to SMEs, and a higher share of investment loans in total SME lending. However, state banks do not seem to have the capacity to manage the associated risks – a lower share of state banks has dedicated SME units, makes use of credit scoring and conducts stress tests.¹³ This lack of risk management capacity reflects a lower skills base (consistent with their lower wages) and has probably contributed to the poor financial results mentioned above, including higher NPLs (Figure 6), higher levels of loan loss provisioning, and ultimately lower profitability.

¹² This finding is also consistent with Pearce (2011).

¹³ Rocha, Farazi, Khouri and Pearce (2011).

Another key mandate is housing finance for which state banks in Algeria, Egypt, Morocco, Syria, and Tunisia took the lead to develop the market which was non-existent due to a weak institutional infrastructure. Yet despite initial successes, political interference in pricing and client screening, and a lack of competition and skills led to instances of large losses and subsequent bailouts. As a result, most MENA governments have shifted strategy towards trying to improve enabling conditions for private suppliers to operate in this market.¹⁴

State banks also seem to play a key role in the provision of long-term investment finance, due to the lack of long-term funding, pricing benchmarks, and risk management instruments such as derivatives. Their role in providing investment finance seems particularly important in countries where they hold a large market share and serve a large number of state-owned enterprises, like Algeria, Libya, Syria, and Egypt. However, these are also the countries where the banking system generates the largest ratios of NPLs to total loans (Figure 6), suggesting again that the fulfillment of this mandate has not been effective, either because of excessive political interference in investment decisions, internal operational deficiencies or both.

Lastly, there is no compelling evidence that state banks in non-GCC countries played a significant counter-cyclical role in the recent financial crisis. The potential scope for counter-cyclical lending would seem important in countries like Egypt, Morocco, and Tunisia, where private banks lead financial intermediation but public banks still retain an important market share and would have the means to mitigate an excessive contraction of credit. However, there is no clear evidence that state banks in these three countries played this role during the crisis. As shown in Table 8, in Egypt and Tunisia state banks lost market share as their credits grew at lower rates than those of private banks in 2009. In Morocco state banks gained some market share, as they kept expanding credit at higher rates than those of private banks. However, it is questionable whether this was a countercyclical measure, as their credit growth rates also declined significantly, and in any case the countercyclical impact of their credit activity was modest at best.

¹⁴ Hassler (2011).

7. Summary of Findings and Policy Implications

Main Findings

Our main objective in this paper was to examine recent trends in bank ownership in the Middle East and North African region and the impact of bank ownership on bank performance. We show ownership trends for the whole region but focus the statistical analysis of bank ownership and performance on non-GCC countries, because state ownership is more prevalent in these countries, and also because the distinctions between public and private ownership are more relevant and consequential in these countries as well. (The stronger interlocking ownership structures in the GCC tend to blur the differences between state and private ownership and make statistical analysis less meaningful). We also examine the impact of bank listing on performance. We analyze these relationships while controlling for bank size and balance sheet structures.

We show that the average market share of state banks remained low and stable in the GCC region (around 28 percent of total assets) but declined considerably in the non-GCC region, from 56 percent of total assets in 2001 to 41 percent in 2008. State banks lost market share in most non-GCC countries, but there is a group of countries where they still dominate financial intermediation (Algeria, Libya and Syria). There is an intermediate group of countries where state banks do not lead intermediation any longer, but still retain an important role, with shares varying from about 15 to 50 percent (Egypt, Morocco, Tunisia, and Yemen). Finally, there is a group of countries where state banks do not exist or play a negligible role (Lebanon and Jordan).

The market share of foreign banks declined slightly in the GCC region, from 25 to 20 percent of total assets between 2001 and 2008. By contrast, the market share of foreign banks increased significantly in the non-GCC region, from 8 percent in 2001 to 20 percent in 2008. However, most of this increase in market shares in the non-GCC region took place in recent years, and was due mostly to entry of new foreign banks rather than the expansion of existing foreign banks. Thus, foreign banks remain relatively small in many countries and do not seem to have penetrated the main domestic credit markets to any significant extent.

The market share of listed banks increased in both the GCC and non-GCC regions. In the GCC it is already very high at 90 percent of total assets. In the non-GCC region the share of listed

banks increased significantly, from 29 percent to 56 percent of total banking assets. The bulk of listed banks are private banks, but a small number of public banks were also listed in this period.

Regarding the main statistical findings, in line with research in other regions we find that state banks are significantly less profitable than private banks in the non-GCC region. This result seems to be due to a combination of policy mandates and operational inefficiencies. First, they finance more the government than private banks, a result which may reflect a *government financing mandate* and that contributes to lower net interest margins. Second, they have much higher ratios of operating costs to assets controlling for their size and balance sheet structures. This result is primarily due to a much higher ratio of employees to total assets which cannot be explained by success in fulfilling an *access mandate*. Instead, state banks have not contributed to greater bank penetration in remote areas, and their large employment base probably reflects outdated banking technologies and restrictions to fire excessive staff. Finally, state banks tend to generate much larger NPLs, which translate into larger loan loss provisions and lower profitability. These results reflect the imposition of various *development mandates* on state banks. These development mandates themselves may be justified, but they have not been fulfilled effectively, due to political interference, lack of risk management capacity or both.

Foreign banks have slightly higher interest margins and profit ratios relative to private domestic banks, but the differences are not significant. They have higher cost ratios and higher ratios of employees to assets, even controlling for their much smaller size. They seem to be able to offset these higher costs through higher interest and non-interest income, although many of these results are not statistically significant. Moreover, we note that the entry and expansion of foreign banks is a recent phenomenon in many non-GCC countries. Most of these banks remain small and apparently unable to challenge the domestic banks in their main credit markets, either due to the absence of a branch network or a weak financial infrastructure (especially weak credit reporting systems). We note that it is probably premature to test the impact of foreign ownership on bank performance in most non-GCC countries.

We also find that listed banks are more profitable than non-listed banks, controlling for their smaller size and balance sheet structures. Listed banks tend to finance less the government, generate higher net interest margins, and also generate more revenue from fees and commissions.

They have higher cost ratios due essentially to higher wages. This implies that they recruit and maintain a more skilled workforce, required to develop more sophisticated and profitable business lines. Therefore, they have higher cost ratios but this is more than compensated by larger revenues and profits. They also tend to have lower ratios of loan loss provisions, which reflect better credit allocation policies and asset quality, and also contribute to their profitability. Listed banks are subject to stricter corporate governance and disclosure requirements, and these factors could be driving their better performance. These results are consistent with a recent survey of bank governance in MENA (OECD (2009)) that report the poor corporate governance of family-owned banks, especially non-listed banks, and stresses the extent of lending to close relatives and other connected parties that ultimately results in their poor financial performance.

Policy Implications

As mentioned in the introductory sections of this paper, the arguments that have been put forward to justify the continuing presence of state banks include market failures resulting from asymmetric information and poor enforcement of contracts that restrict access to credit; the provision of essential financial services in remote areas (where supply may be restricted by large fixed costs); and the provision of counter-cyclical finance to prevent an excessive contraction of credit during a financial crisis.

These arguments may justify the presence of state banks in some MENA countries. In particular, the weak financial infrastructure in MENA (weak credit reporting systems, weak creditor rights) is a major factor hindering access to finance in the region and provides a rationale for policy interventions, including partial credit guarantees and the use of state banks. Ideally, these institutional and legal weaknesses should be addressed head on, and policy interventions should become more targeted and limited in volume, but in some countries it may take time to correct these deficiencies, due to technical limitations, political limitations, or both. During this period, state banks may make a contribution to access in areas such as SME finance, housing finance, infrastructure and agriculture.

At the same time, this paper shows that state bank interventions may come with a significant cost. These banks are much less profitable than private banks, due inter alia to more government financing, excessive employment, larger costs, and lower asset quality. The profitability of state

banks may actually be inflated by interest accrual on NPLs and underprovisioning. Therefore, the differences in profitability may be even larger. In some cases, the accumulated losses may result in the insolvency of these institutions and a large bill for taxpayers. Some of these deficiencies are the result of the mandates themselves, while some of them result from excessive political interference and the poor governance structures and operational deficiencies of these banks. The question that arises is how the potential benefits of state bank interventions can be maximized and the potential costs minimized. The answer to this question needs to be highly tailored to individual country conditions.

There is scope for reducing the market share of state banks in the countries where they still hold very large shares and dominate financial intermediation, i.e., Algeria, Libya and Syria. The main policy objectives that may justify the presence of state banks can be met with fewer state banks holding a lower market share. Moreover, these objectives can probably be met more effectively under these conditions, as these banks would operate in a more transparent and competitive environment. Furthermore, it is easier to clarify policy mandates and monitor the performance of state banks when they are fewer in number and there is a critical mass of private banks providing a benchmark for performance in all the main credit markets. Note in this regard that Syria has been making reasonable progress in reducing the share of state banks through entry of new private banks, although the restructuring of the existing state banks remains a challenge.

There is also scope for clarifying the mandates, improving the governance structures, and strengthening the operational efficiency of most if not all state banks in MENA. Achieving these results and sustaining them over time is not a trivial task but should remain a key objective for MENA policy-makers, if there is a decision to preserve a role for these banks.¹⁵ Although state banks may not be able to achieve the same levels of profitability of private banks due to their policy mandates, the results in this paper suggest that these banks could meet their main development mandates more effectively if they were allowed to operate independently, and able to reduce the excessive employment of low skilled personnel and recruit better trained staff, able to implement better lending and risk management technologies.

¹⁵ Rudolph (2010) and Scott (2007) review the experience of well managed state banks and the legal structures and safeguards that must be put in place to ensure a reasonable operational and financial performance.

MENA countries that do not have state banks may not find it necessary to create new ones, because they have been addressing their policy objectives through alternative and probably more effective policy interventions. For example, Lebanon does not have state banks but has achieved a relatively high share of SME lending by MENA standards through the use of partial credit guarantee schemes.¹⁶ Note that these schemes have also played a counter-cyclical role in many countries within and outside MENA, and this is one of the arguments that have been put forward to justify the presence of state banks.¹⁷ Lastly, we note that credit guarantee schemes may also be a preferable form of policy intervention because they provide an easier exit mechanism.

Foreign banks in MENA remain generally small but would probably expand faster and contribute to more competitive and efficient financial systems if they had access to more and better credit information. As noted above and in other studies, addressing the weakness on credit reporting systems should remain one of the key items in the financial development agenda of MENA countries. This would entail both upgrading public credit registries and, especially, introducing private credit bureaus able to expand coverage and improve the depth of credit information.¹⁸

Listed banks have performed better than non-listed banks, and this may be due to the stricter governance standards and disclosure requirements imposed on these banks. Introducing listing obligations for all licensed banks may be one option to improve the performance of family-owned and non-listed banks, but the same outcome may be achieved by the bank regulator by simply imposing and enforcing the higher governance standards and disclosure requirements on all banks, listed and non-listed.¹⁹ In this regard, an interesting question is whether the listing of public banks could contribute to improvements in their performance. Unfortunately, the listing of MENA public banks is very recent and the sample too small to enable statistical testing, but

¹⁶ Rocha, Farazi, Khouri, and Pearce (2010).

¹⁷ The IFC (2010) provides some evidence of the use of credit guarantee schemes for counter-cyclical purposes.

¹⁸ Maddedu (2010) and Anzoategui, Martinez Peria and Rocha (2010).

¹⁹ The OECD (2009) provides an agenda for stronger bank governance standards in the MENA region.

this measure would probably only make sense in the context of a much broader package of reforms changing their markets shares, roles, mandates, and governance structures.²⁰

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²⁰ We included an interactive dummy for public and listed banks, and the results indicated that public listed banks perform better than non-listed ones. However, this result probably lacks statistical power due to very small sample of public listed banks and the short period of listing, and could simply reflect a selection bias – the public banks that were listed were the best performing.

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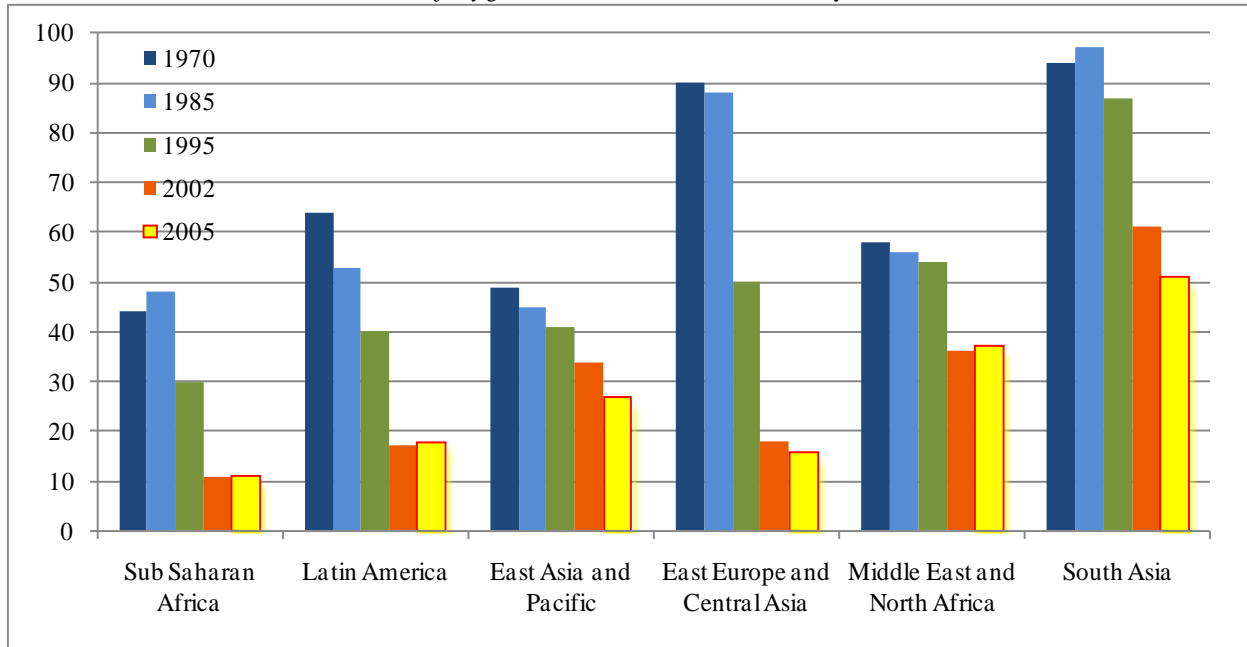
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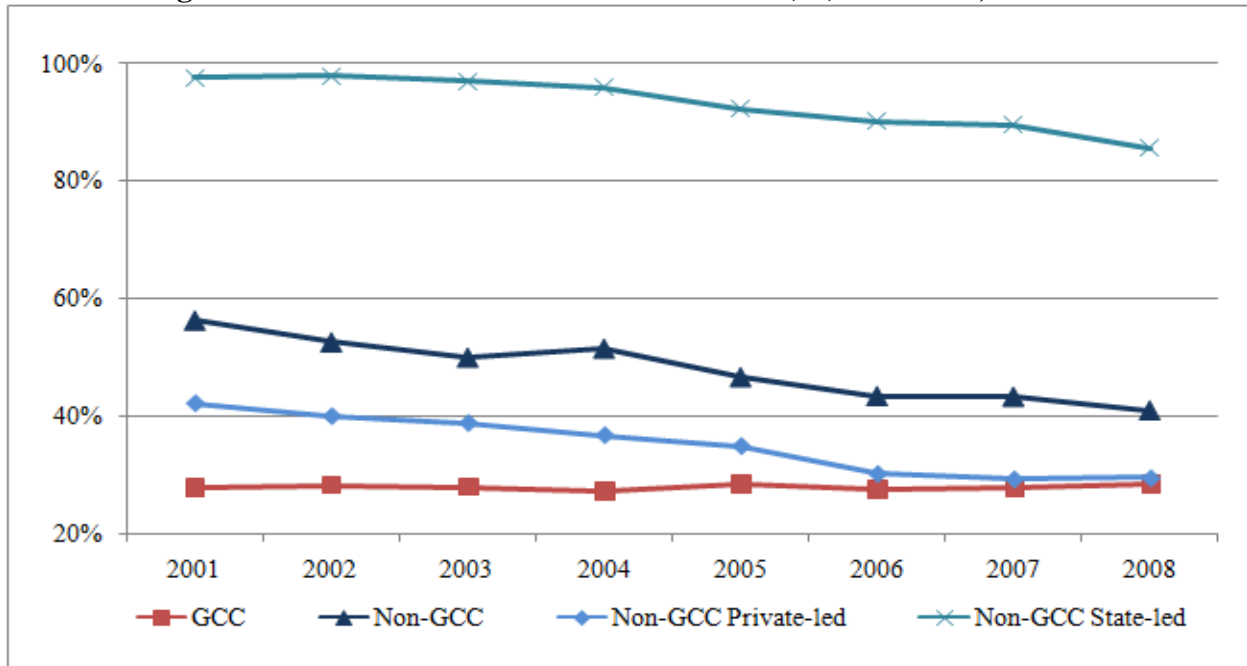
Figure 1: Share of State Banks in Total Assets (%), 1970-2005

State banks are defined as banks in which the government is a majority shareholder. Regional shares are calculated as simple country averages of the share of majority government-owned bank assets to total system assets.



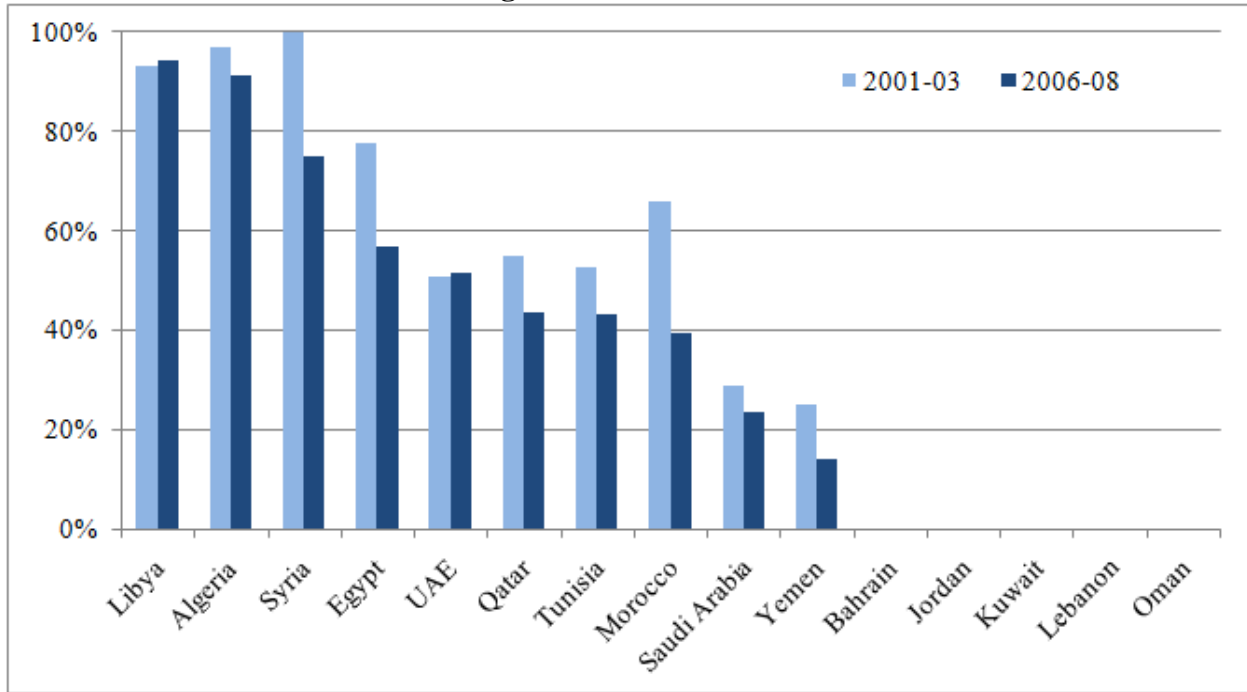
Source: Levy-Yeiaty et al. (2007). 2005 numbers are based on author's calculations. Data for MENA is from Bankscope and for other regions is from Barth et al. (2007). MENA countries include Egypt, Jordan, Lebanon, Morocco, Tunisia, and Yemen.

Figure 2: Share of State Banks in Total Assets (%) in MENA, 2001-08



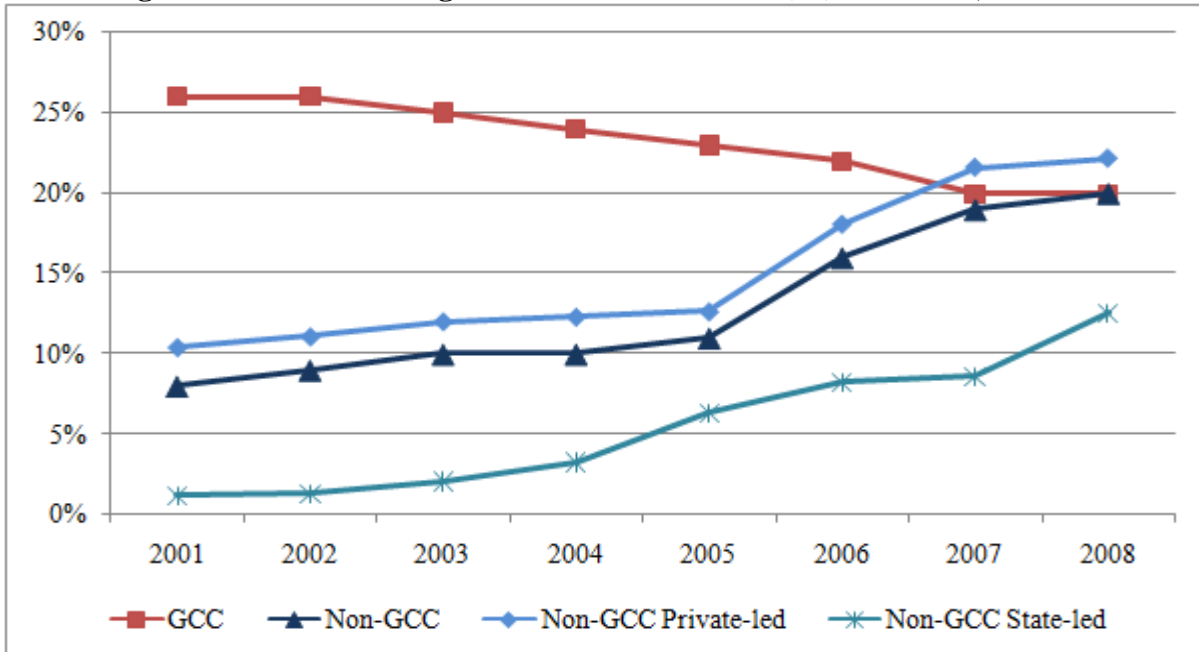
Source: Author's calculations based on data from Bankscope. GCC countries are Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and UAE. Non-GCC private-led banking systems include Egypt, Jordan, Lebanon, Morocco, Tunisia, and Yemen. Non-GCC state-led banking systems include Algeria, Libya, and Syria.

Figure 3: Share of State Banks in Total Assets in MENA Countries (%), Averages 2001-03 and 2006-08



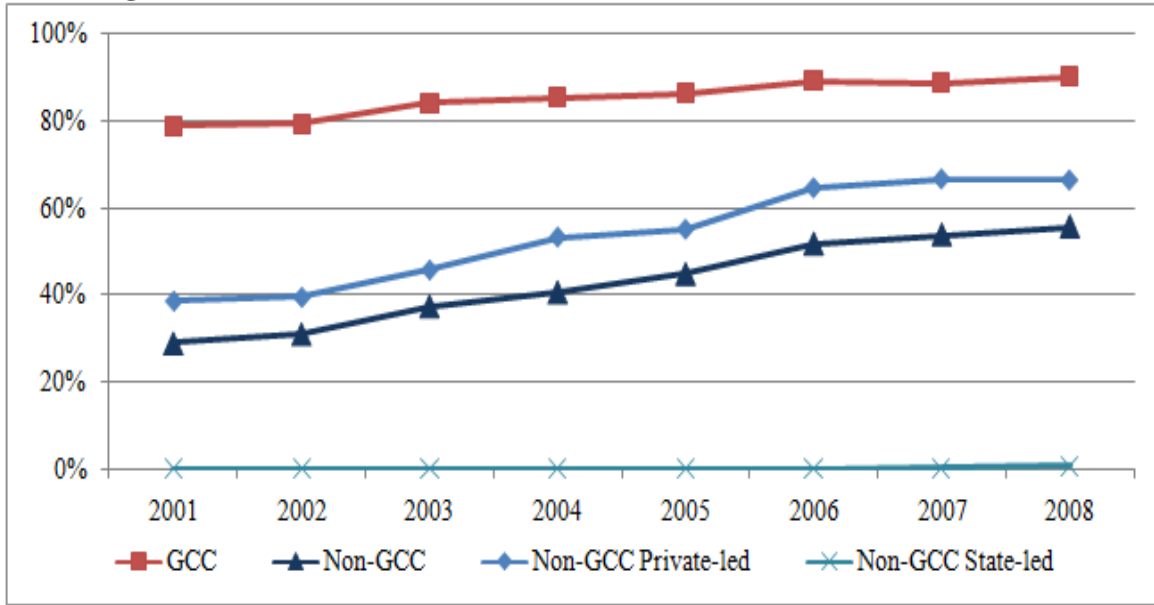
Source: Author's calculations based on data from Bankscope.

Figure 4: Share of Foreign Banks in Total Assets (%) in MENA, 2001-08



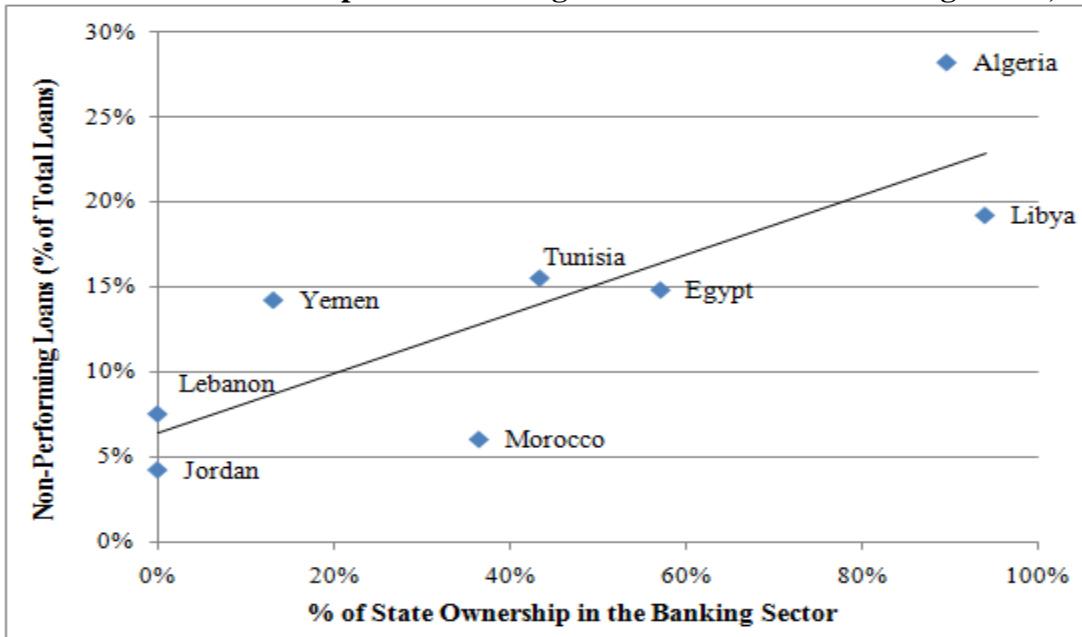
Source: Author's calculations based on data from Bankscope. GCC countries are Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and UAE. Non-GCC private-led banking systems include Egypt, Jordan, Lebanon, Morocco, Tunisia, and Yemen. Non-GCC state-led banking systems include Algeria, Libya, and Syria.

Figure 5: Share of Listed Banks in Total Assets (%) in MENA, 2001-08



Source: Author's calculations based on data from Bankscope. GCC countries are Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and UAE. Non-GCC private-led banking systems include Egypt, Jordan, Lebanon, Morocco, Tunisia, and Yemen. Non-GCC state-led banking systems include Algeria, Libya, and Syria.

**Figure 6: Non-GCC countries
Share of State Ownership in the Banking Sector and Non-Performing Loans, 2**



Source: % of State Ownership is based on author's calculations from data obtained from Bankscope. NPL data is obtained from the IMF's Regional Economic Outlook: Middle East and Central Asia, October 2010.

Table 1: Asset Share of Banks in MENA, by Ownership and Other Categories, 2001-2008

State (private) banks are defined as banks in which the government (private sector) is a majority shareholder. Foreign (Domestic) banks are defined as banks in which foreign (domestic) entities are majority shareholders. Listed banks are defined as banks that are listed in a stock market. Shares are calculated as simple country averages. GCC countries are Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and UAE. Non GCC private-led banking systems include Egypt, Jordan, Lebanon, Morocco, Tunisia, and Yemen. Non-GCC state-led banking systems include Algeria, Libya, and Syria.

MENA	2001	2002	2003	2004	2005	2006	2007	2008
State Banks	41%	39%	37%	38%	36%	34%	34%	33%
Private Banks	59%	61%	63%	62%	64%	66%	66%	67%
Private Domestic	42%	43%	44%	44%	46%	47%	47%	47%
Private Foreign	18%	18%	19%	18%	18%	20%	19%	20%
Private Foreign International	8%	8%	8%	8%	8%	9%	9%	10%
Private Foreign Regional	10%	10%	10%	10%	10%	10%	10%	10%
Listed Banks	56%	58%	64%	66%	70%	75%	76%	78%
Listed Private Banks	49%	50%	53%	53%	55%	60%	60%	61%
Listed State Banks	7%	8%	11%	13%	15%	15%	16%	17%
GCC	2001	2002	2003	2004	2005	2006	2007	2008
State Banks	28%	28%	28%	27%	28%	27%	28%	28%
Private Banks	72%	72%	72%	73%	72%	73%	72%	72%
Private Domestic	47%	46%	47%	49%	48%	51%	52%	52%
Private Foreign	26%	26%	25%	24%	23%	22%	20%	20%
Private Foreign International	12%	12%	12%	11%	10%	9%	8%	9%
Private Foreign Regional	13%	14%	13%	13%	13%	13%	12%	11%
Listed Banks	79%	79%	84%	85%	86%	89%	89%	90%
Listed Private Banks	66%	65%	67%	68%	67%	69%	68%	68%
Listed State Banks	13%	14%	17%	17%	20%	20%	21%	22%
Non-GCC	2001	2002	2003	2004	2005	2006	2007	2008
State Banks	56%	53%	50%	52%	47%	43%	43%	41%
Private Banks	44%	47%	50%	48%	53%	57%	57%	59%
Private Domestic	36%	38%	40%	38%	42%	41%	38%	39%
Private Foreign	8%	9%	10%	10%	11%	16%	19%	20%
Private Foreign International	3%	3%	4%	4%	5%	9%	12%	12%
Private Foreign Regional	5%	6%	6%	6%	6%	7%	7%	8%
Listed Banks	29%	31%	37%	41%	45%	52%	54%	56%
Listed Private Banks	29%	31%	33%	32%	38%	45%	46%	48%
Listed State Banks	0%	0%	4%	8%	7%	7%	7%	7%

Table 1 (continued): Asset Share of Banks in MENA, by Ownership and Other Categories, 2001-2008

State (private) banks are defined as banks in which the government (private sector) is a majority shareholder. Foreign (Domestic) banks are defined as banks in which foreign (domestic) entities are majority shareholders. Listed banks are defined as banks that are listed in a stock market. Shares are calculated as simple country averages. GCC countries are Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and UAE. Non GCC private-led banking systems are Egypt, Jordan, Lebanon, Morocco, Tunisia, and Yemen. Non-GCC state-led banking systems include Algeria, Libya, and Syria.

Non-GCC Private-led	2001	2002	2003	2004	2005	2006	2007	2008
State Banks	42%	40%	39%	37%	35%	30%	29%	29%
Private Banks	58%	60%	61%	63%	65%	70%	71%	71%
Private Domestic	47%	49%	49%	51%	52%	52%	49%	48%
Private Foreign	10%	11%	12%	12%	13%	18%	22%	22%
Private Foreign International	4%	4%	5%	5%	6%	11%	15%	14%
Private Foreign Regional	7%	7%	7%	7%	7%	7%	7%	8%
Listed Banks	39%	39%	46%	53%	55%	65%	67%	66%
Listed Private Banks	39%	39%	41%	42%	46%	56%	58%	58%
Listed State Banks	0%	0%	5%	11%	9%	9%	8%	8%
Non-GCC State-led	2001	2002	2003	2004	2005	2006	2007	2008
State Banks	98%	98%	97%	96%	92%	90%	90%	86%
Private Banks	2%	2%	3%	4%	8%	10%	10%	14%
Private Domestic	1%	1%	1%	1%	1%	2%	2%	2%
Private Foreign	1%	1%	2%	3%	6%	8%	9%	13%
Private Foreign International	0%	0%	1%	1%	2%	3%	3%	4%
Private Foreign Regional	1%	1%	1%	2%	4%	6%	6%	9%
Listed Banks	0%	1%	2%	3%	5%	6%	12%	14%
Listed Private Banks	0%	1%	2%	3%	5%	6%	7%	11%
Listed State Banks							5%	3%

Table 2: Asset Share of State Banks in Non-GCC Countries, 2001-2008

	2001	2002	2003	2004	2005	2006	2007	2008
Algeria	97%	98%	96%	95%	92%	91%	93%	90%
Egypt	79%	77%	77%	75%	72%	58%	55%	57%
Jordan	0%	0%	0%	0%	0%	0%	0%	0%
Lebanon	0%	0%	0%	0%	0%	0%	0%	0%
Libya	95%	92%	93%	97%	95%	95%	94%	94%
Morocco	79%	81%	82%	80%	44%	43%	38%	37%
Syria	100%	100%	100%	97%	90%	82%	74%	69%
Tunisia			53%	46%	44%	44%	42%	43%
Yemen	31%	23%	20%	17%	16%	15%	14%	13%

Table 3: Definition and sources of variables used in regression analysis

Variable	Definition	Source
ROA	Return on average asset is the return generated from the assets financed by the bank.	Bankscope
ROE	Return on average equity is measure of the return on shareholder funds.	Bankscope
Net Interest Margin	This ratio is the net interest income expressed as a percentage of total assets.	Bankscope
Interest Income to Assets	Interest income on loans + other interest income + dividend income as a percentage of assets.	Bankscope
Interest Expenses to Assets	Interest expense on customer deposits+ other interest expense + preferred dividends paid & declared d as a percentage of assets.	Bankscope
Total Securities to Assets	Loans and advances to banks + trading securities + derivatives + available for sale securities + held to maturity securities + at-equity investments + other securities as a percentage of assets.	Bankscope
Overheads to Assets	Personnel expenses + other operating expenses as a percentage of assets.	Bankscope
Personnel Expenses to Assets	Wages, salaries, social security costs, pension costs and other staff costs, including expensing of staff stock options as a percentage of assets.	Bankscope
Employment to Assets	Number of employees as a percentage of assets.	Bankscope and Union of Arab Banks Database
Wage	Personnel expenses (or overheads) as a percentage of employees.	Bankscope
Loan Loss Provisions to Gross Loans	Loan impairment charges as a percentage of gross loans.	Bankscope
Dummy Public Ownership	This is equal to 1 if bank is majority government owned.	Bankscope, Bankersalmanac, Union of Arab Banks Database and banks' websites.
Dummy Foreign Ownership	This is equal to 1 if bank is majority foreign owned.	Bankscope, Bankersalmanac, Union of Arab Banks Database and banks' websites.
Dummy Listed	This is equal to 1 if bank is listed on a stock market.	Bankscope, Bloomberg and websites of national stock markets.
Lag Total Assets (Log)	One period lag of total earning assets + cash and due from banks + foreclosed real estate + fixed assets + goodwill + other intangibles + current tax assets + deferred tax + discontinued operations + other assets.	Bankscope
Non-Interest Income to Assets	Net gains (losses) on trading & derivatives + net gains (losses) on other securities + net gains (losses) on assets at FV through income statement + net insurance income + net fees and commissions + other operating income as a percentage of assets.	Bankscope
Deposits to Assets	Total customer deposits + deposits from banks + Other deposits and short-term borrowings as a percentage of assets.	Bankscope
Loans to Assets	Residential mortgage loans + other mortgage loans + other consumer/retail loans + corporate & commercial loans + other loans - reserve against possible losses on impaired or non performing loans as a percentage of assets.	Bankscope
Asset Share of State Banks	Share of state ownership in the banking sector.	Bankscope, Bankersalmanac, Union of Arab Banks Database and banks' websites.
Log GDP per capita	Logarithm of GDP per capita.	World Bank's World Development Indicators
Urban Population % of Total	Share of population in the urban areas to total population in a country.	World Bank's World Development Indicators
Branches per 100,000 Adults	Number of branches of commercial banks per capita.	IMF
Deposit Accounts per 1,000 Adults	Number of deposit accounts with commercial banks per capita.	IMF

Table 4: Correlation Matrix of Variables used in Regression Analysis

* significant at 10%; ** significant at 5%, *** significant at 1% NEEDS

	ROA	ROE	Net Interest Margin (Assets)	Interest Income to Assets	Interest Expenses to Assets	Total Securities to Assets (All Countries)	Overheads to Assets	Personal Expenses to Assets	Employment to Assets	Wage (Personal Expense)
ROE	0.73***	1								
Net Interest Margin (Assets)	0.41***	0.29***	1							
Interest Income to Assets	0.15***	0.13***	0.26***	1						
Interest Expenses to Assets	-0.16***	-0.05	-	0.80***	1					
Total Securities to Assets (All Countries)	0.003	0.04	-0.02	0.52***	0.52***	1				
Overheads to Assets	-0.10**	-0.16***	0.37***	0.10***	-0.10***	-0.09**	1			
Personal Expenses to Assets	-0.10**	-0.28***	0.3***	0.10**	-0.10**	-0.17***	0.83***	1		
Employment to Assets	-0.01	-0.11**	0.12**	0.05	-0.02	-0.13**	0.29***	0.5***	1	
Wage (Personal Expense)	0.04	0.08	-0.18**	0.31***	0.29***	0.35***	-0.04	0.03	-0.68***	1
Wage (Overheads)	0.02	0.05	-0.01	0.11*	0.06	0.24*	0.12*	-0.10*	-0.69*	0.93*
Loan Loss Provisions to Gross Loans	-0.27***	-0.19***	0.03	0.03	0.05	0.03	-0.005	0.04	0.34***	-0.30***
Dummy Public Ownership	-0.12***	-0.11***	-0.01	-0.11***	-0.13***	0.03	-0.20***	-0.02	0.19***	-0.23***
Dummy Foreign Ownership	0.06	0.06	0.03	-0.14***	-0.21***	-0.31***	0.22***	0.16***	0.15***	-0.17***
Dummy Listed	0.15***	0.09**	-0.06	-0.07*	-0.16***	-0.29***	0.20***	0.23***	0.080*	0.01
Lag Total Assets (Log)	-0.001	0.05	-0.05	0.04	0.03	0.17***	-0.30***	-0.23***	-0.34***	0.38***
Non-Interest Income to Assets	0.21***	0.12***	0.03	-0.14***	-0.15***	-0.31***	0.38***	0.37***	0.40***	-0.16***
Deposits to Assets	0.03	0.13***	-	0.29***	0.49***	0.36***	-0.26***	-0.14***	-0.09*	0.12**
Loans to Assets	0.07*	-0.04	0.19***	0.02	-0.10***	-0.46***	0.23***	0.40***	0.24***	-0.23***
Public Ownership*Listed	-0.01	-0.02	0.05	-0.08**	-0.11***	-0.09**	0.1***	0.15***	0.01	-0.03

	Wage (Overheads)	Loan Loss Provisions to Gross Loans	Dummy Public Ownership	Dummy Foreign Ownership	Dummy Listed	Lag Total Assets (Log)	Non-Interest Income to Assets	Deposits to Assets	Loans to Assets
Wage (Overheads)	1								
Loan Loss Provisions to Gross Loans	-0.41***	1							
Dummy Public Ownership	-0.22***	0.21***	1						
Dummy Foreign Ownership	-0.14***	0.007	-0.34***	1					
Dummy Listed	0.04	-0.20***	-0.27***	0.41***	1				
Lag Total Assets (Log)	0.33***	-0.15***	0.48***	-0.24***	0.09**	1			
Non-Interest Income to Assets	-0.23***	0.24***	-0.08**	0.25***	0.31***	-0.21***	1		
Deposits to Assets	0.01	-0.05	-0.08**	-0.16***	-0.12***	0.13***	-0.29***	1	
Loans to Assets	-0.18***	-0.08*	0.07**	0.15***	0.41***	0.07*	0.35***	-0.17***	1

Table 5A: T and Rank Tests for Private vs. Public Banks in Non-GCC Region

Tests are conducted on annual bank-level data for the period 2001-08. Column 5 shows the p-value of a t-test which tests for the equality of means of the groups (allowing for inequality in variance). Column 6 shows the p-value of the Wilcoxon ranksum test which tests whether the groups are samples from populations with the same distribution. Non-GCC countries are Egypt, Jordan, Lebanon, Morocco, Tunisia, and Yemen. State-led countries are Algeria, Libya, and Syria.

Variable	Private	Public	P value for t	P Value for Rank
Total Assets	2.1E+06	8.2E+06	0.00	0.00
ROA	0.92	0.52	0.00	0.00
ROE	11.16	7.57	0.01	0.00
Net Interest Margin (Total Assets)	2.27	2.25	0.82	0.89
Total Interest Income to Assets	5.85	5.18	0.00	0.00
Total Interest Expenses to Assets	3.59	2.98	0.00	0.00
Non-Interest Income to Assets	1.35	1.14	0.02	0.02
Securities to Assets (All Countries)	19.56	20.74	0.40	0.48
Securities to Assets (Excluding Lebanon)	13.88	20.23	0.00	0.00
OH Costs to Assets	2.00	1.58	0.00	0.00
Personnel Expenses to Assets	1.05	1.02	0.64	0.83
Employees to Assets	0.05	0.07	0.00	0.00
Wage (Personal Expense)	25.60	17.25	0.00	0.00
Wage (Overheads)	45.32	30.41	0.00	0.00
Loan Loss Provisions to Gross Loans	1.59	2.88	0.00	0.00

Table 5B: T and Rank Tests for Domestic (Private) vs. Foreign Banks in Non-GCC Region

Tests are conducted on annual bank-level data for the period 2001-08. Column 5 shows the p-value of a t-test which tests for the equality of means of the groups (allowing for inequality in variance). Column 6 shows the p-value of the Wilcoxon ranksum test which tests whether the groups are samples from populations with the same distribution. Non-GCC countries are Egypt, Jordan, Lebanon, Morocco, Tunisia, and Yemen. State-led countries are Algeria, Libya, and Syria.

Variable	Domestic	Foreign	P value for t	P Value for Rank
Total Assets	2.3E+06	1.4E+06	0.00	0.04
ROA	0.89	0.97	0.51	0.09
ROE	11.10	11.54	0.71	0.88
Net Interest Margin (Total Assets)	2.25	2.30	0.55	0.34
Total Interest Income to Assets	6.22	5.30	0.00	0.00
Total Interest Expenses to Assets	4.01	3.00	0.00	0.00
Non-Interest Income to Assets	1.17	1.62	0.00	0.00
Securities to Assets (All Countries)	23.54	13.51	0.00	0.00
Securities to Assets (Excluding Lebanon)	16.70	11.85	0.00	0.00
OH Costs to Assets	1.86	2.24	0.00	0.00
Personnel Expenses to Assets	1.01	1.19	0.00	0.00
Employees to Assets	0.05	0.06	0.00	0.00
Wage (Personal Expense)	27.44	21.29	0.00	0.00
Wage (Overheads)	49.56	38.24	0.00	0.00
Loan Loss Provisions to Gross Loans	0.58	0.77	0.01	0.00

Table 5C: T and Rank Tests for Listed vs. Non-Listed Banks in Non-GCC Region

Tests are conducted on annual bank-level data for the period 2001-08. Column 5 shows the p-value of a t-test which tests for the equality of means of the groups (allowing for inequality in variance). Column 6 shows the p-value of the Wilcoxon ranksum test which tests whether the groups are samples from populations with the same distribution. Non-GCC countries are Egypt, Jordan, Lebanon, Morocco, Tunisia, and Yemen. State-led countries are Algeria, Libya, and Syria.

Variable	Listed	Non-listed	P value for t	P Value for Rank
Total Assets	2.9E+06	3.3E+06	0.20	0.01
ROA	1.03	0.64	0.00	0.00
ROE	11.55	9.32	0.02	0.00
Net Interest Margin (Total Assets)	2.32	2.21	0.14	0.03
Total Interest Income to Assets	5.57	5.93	0.01	0.00
Total Interest Expenses to Assets	3.23	3.77	0.00	0.00
Non-Interest Income to Assets	1.57	1.03	0.00	0.00
Securities to Assets (All Countries)	40.01	31.70	0.00	0.00
Securities to Assets (Excluding Lebanon)	15.86	23.94	0.00	0.00
OH Costs to Assets	2.09	1.76	0.00	0.00
Personnel Expenses to Assets	1.16	0.93	0.00	0.00
Employees to Assets	0.06	0.05	0.09	0.07
Wage (Personal Expense)	24.76	24.55	0.87	1.00
Wage (Overheads)	44.14	42.10	0.37	0.52
Loan Loss Provisions to Gross Loans	1.37	2.28	0.00	0.00

Table 6A: Bank Ownership, Profitability, Interest Margin and Securities (Unweighted)

Regressions are estimated via OLS at bank level for the year 2001 to 2008. Robust t statistics in brackets and bank level clustered t statistics in parenthesis. All regressions control for time and country dummies. ***, ** and * represent significance at 1, 5 and 10% level respectively.

	1	2	3	4	5	6	7
	ROA	ROE	Net Interest Margin (Total Assets)	Interest Income to Assets	Interest Expenses to Assets	Total Securities to Assets (All Countries)	Total Securities to Assets (Excluding Lebanon)
Dummy Public Ownership	-0.513	-6.731	-0.061	0.35	0.067	5.304	6.579
	[2.86]***	[3.02]***	[0.48]	[1.38]	[0.41]	[2.55]**	[2.98]***
	(1.76)*	(2.02)**	(0.26)	(0.67)	(0.22)	(1.18)	(1.32)
Dummy Foreign Ownership	0.04	1.333	0.107	-0.105	-0.381	-2.337	-3.71
	[0.28]	[0.83]	[1.20]	[0.67]	[3.39]***	[2.28]**	[3.48]***
	(0.18)	(0.53)	(0.65)	(0.37)	(1.70)*	(1.18)	(1.73)*
Dummy Listed	0.269	3.654	0.241	0.038	-0.221	-3.317	-1.915
	[1.82]*	[2.70]***	[3.01]***	[0.27]	[1.96]*	[2.62]***	[1.47]
	(1.39)	(1.99)**	(1.79)*	(0.16)	(1.19)	(1.57)	(0.91)
Lag Total Assets (Log)	0.047	1.457	-0.025	-0.026	0.046	1.521	0.79
	[1.08]	[2.60]***	[0.77]	[0.44]	[1.20]	[3.50]***	[1.41]
	(0.70)	(1.91)*	(0.45)	(0.28)	(0.79)	(1.92)*	(0.74)
Non-Interest Income to Assets	0.296	2.197	-0.219	-0.291	-0.158	-1.248	-0.706
	[4.11]***	[3.24]***	[4.13]***	[2.76]***	[2.51]**	[2.01]**	[1.10]
	(3.16)***	(2.63)***	(2.74)***	(2.10)**	(1.79)*	(1.38)	(0.76)
Deposits to Assets	-0.014	0.151	-0.027	-0.01	0.025	0.02	0.133
	[2.21]**	[1.64]	[6.00]***	[1.44]	[4.07]***	[0.36]	[2.33]**
	(1.78)*	(1.44)	(3.68)***	(0.91)	(2.54)**	(0.20)	(1.25)
Loans to Assets	-0.008	-0.119	0.002	0.016	0.022		
	[2.34]**	[2.73]***	[0.67]	[2.21]**	[5.73]***		
	(1.53)	(1.94)*	(0.43)	(1.31)	(3.59)***		
Observations	518	516	557	573	563	573	420
R-squared	0.18	0.15	0.41	0.43	0.73	0.49	0.42
Number of Countries	9	9	9	9	9	9	8
Number of Banks	118	119	119	120	118	117	83

Table 6B: Bank Ownership, Costs, Employment, Wages and Provisions (Unweighted)

Regressions are estimated via OLS at bank level for the year 2001 to 2008. Robust t statistics in brackets and bank level clustered t statistics in parenthesis. All regressions control for time and country dummies. ***, ** and * represent significance at 1, 5 and 10% level respectively.

	8	9	10	11	12	13
	Overheads to Assets	Personal Expenses to Assets	Employment to Assets	Wage (Personal Expense)	Wage (Overheads)	Loan Loss Provisions to Gross Loans
Dummy Public Ownership	0.364	0.24	0.035	-9.161	-18.476	1.26
	[3.61]***	[3.29]***	[7.17]***	[5.84]***	[5.79]***	[2.84]***
	(2.17)**	(1.88)*	(4.38)***	(3.58)***	(4.40)***	(2.12)**
Dummy Foreign Ownership	0.268	0.194	0.008	-1.527	-2.8	-0.057
	[3.51]***	[3.43]***	[2.01]**	[1.45]	[1.29]	[0.27]
	(2.05)**	(1.80)*	(0.98)	(0.80)	(0.73)	(0.19)
Dummy Listed	0.25	0.036	0.004	1.729	7.038	-0.32
	[3.05]***	[0.61]	[1.15]	[1.11]	[2.56]**	[1.54]
	(1.95)*	(0.42)	(0.72)	(0.70)	(1.89)*	(1.25)
Lag Total Assets (Log)	-0.186	-0.117	-0.01	4.336	8.737	-0.031
	[5.80]***	[5.39]***	[10.09]***	[9.45]***	[10.02]***	[0.39]
	(3.75)***	(3.29)***	(5.90)***	(5.57)***	(7.09)***	(0.36)
Non-Interest Income to Assets	0.275	0.118	0.007	2.189	1.76	0.58
	[6.02]***	[3.47]***	[2.54]**	[2.81]***	[1.18]	[3.25]***
	(5.00)***	(2.46)**	(1.96)*	(2.99)***	(1.16)	(2.79)***
Deposits to Assets	-0.012	-0.0004	0.0002	-0.217	-0.69	0.044
	[1.82]*	[0.08]	[1.15]	[3.97]***	[4.85]***	[3.45]***
	(1.53)	(0.07)	(0.73)	(2.30)**	(3.37)***	(2.98)***
Loans to Assets	0.006	0.004	0.0002	0.086	0.02	-0.017
	[2.07]**	[1.81]*	[1.82]*	[2.56]**	[0.28]	[2.03]**
	(1.45)	(1.23)	(1.02)	(1.44)	(0.20)	(1.63)
Observations	575	384	387	270	384	489
R-squared	0.4	0.5	0.55	0.71	0.66	0.38
Number of Countries	9	9	9	9	9	9
Number of Banks	120	92	102	77	104	115

Table 7: Government Ownership of Banking Sector and Access to Finance

Regressions are estimated via OLS at country level for the year 2001 to 2009. Robust t statistics are in brackets.

***, ** and * represent significance at 1, 5 and 10% level respectively.

	1	2	3	4	5	6
Deposit Accounts per 1,000 Adults						
Asset Share of State Banks	-2.87 [2.21]**	-2.3 [6.40]***	-5.44 [4.35]***	-4.34 [8.43]***	-2.72 [14.13]***	-2.36 [11.35]***
Log GDP per capita		176.35 [1.24]	392.37 [4.72]***		593.96 [9.85]***	556.87 [7.39]***
Urban population % of Total Population		6.12 [1.05]	7.28 [1.88]*		2.1 [0.47]	1.21 [0.27]
Branches per 100,000 Adults			-22.38 [2.79]***			7.12 [1.91]*
Country Dummies	No	No	No	Yes	Yes	Yes
Observations	31	31	31	31	31	31
R-squared	0.13	0.91	0.94	0.99	1	1
Countries	9	9	9	9	9	9

Table 8: Credit Growth of Public and Private Banks

Average growth rates for government owned banks and private banks for 2007 to 2009.

		2007	2008	2009
Egypt	Share of Public Banks Credit to Total Credit	67%	63%	62%
	Total Credit Growth	20%	17%	2%
	Private Banks Credit Growth	49%	33%	4%
	Public Banks Credit Growth	9%	9%	1%
Morocco	Share of Public Banks Credit to Total Credit	43%	44%	46%
	Total Credit Growth	45%	20%	15%
	Private Banks Credit Growth	40%	16%	13%
	Public Banks Credit Growth	51%	26%	19%
Tunisia	Share of Public Banks Credit to Total Credit	48%	49%	46%
	Total Credit Growth	15%	6%	7%
	Private Banks Credit Growth	14%	5%	14%
	Public Banks Credit Growth	17%	7%	-0.04%

Appendix A: Number of Banks in MENA, 2001-2008

MENA	2001	2002	2003	2004	2005	2006	2007	2008
Total Banks	128	135	144	151	158	169	183	172
State Banks	25	24	27	28	27	26	28	26
Private Banks	103	111	117	123	131	143	155	146
Private Domestic	69	73	76	80	83	89	96	86
Private Foreign	34	38	41	43	48	54	59	60
Private Foreign International	11	11	15	14	15	18	20	19
Private Foreign Regional	23	27	26	29	33	36	39	41
Listed Banks	73	77	93	95	103	116	126	125
Listed Private Banks	66	70	82	83	91	104	113	112
Listed State Banks	7	7	11	12	12	12	13	13
GCC	2001	2002	2003	2004	2005	2006	2007	2008
Total Banks	48	51	52	54	57	61	66	66
State Banks	9	10	10	10	10	10	10	10
Private Banks	39	41	42	44	47	51	56	56
Private Domestic	27	28	29	31	33	37	41	41
Private Foreign	12	13	13	13	14	14	15	15
Private Foreign International	3	3	3	3	3	3	3	3
Private Foreign Regional	9	10	10	10	11	11	12	12
Listed Banks	39	41	47	49	51	56	59	60
Listed Private Banks	32	34	39	41	43	48	51	52
Listed State Banks	7	7	8	8	8	8	8	8
Non-GCC	2001	2002	2003	2004	2005	2006	2007	2008
Total Banks	80	84	92	97	101	108	117	106
State Banks	16	14	17	18	17	16	18	16
Private Banks	64	70	75	79	84	92	99	90
Private Domestic	42	45	47	49	50	52	55	45
Private Foreign	22	25	28	30	34	40	44	45
Private Foreign International	8	8	12	11	12	15	17	16
Private Foreign Regional	14	17	16	19	22	25	27	29
Listed Banks	34	36	46	46	52	60	67	65
Listed Private Banks	34	36	43	42	48	56	62	60
Listed State Banks	0	0	3	4	4	4	5	5

Appendix A (continued): Number of Banks in MENA, 2001-2008

Non-GCC Private-led	2001	2002	2003	2004	2005	2006	2007	2008
Total Banks	68	74	80	78	80	84	90	82
State Banks	7	7	10	10	10	9	10	10
Private Banks	61	67	70	68	70	75	80	72
Private Domestic	41	44	46	47	47	49	51	43
Private Foreign	20	23	24	21	23	26	29	29
Private Foreign International	8	8	9	8	9	12	14	13
Private Foreign Regional	12	15	15	13	14	14	15	16
Listed Banks	33	35	42	40	44	51	55	52
Listed Private Banks	33	35	39	36	40	47	51	48
Listed State Banks	0	0	3	4	4	4	4	4
Non-GCC State-led	2001	2002	2003	2004	2005	2006	2007	2008
Total Banks	12	10	12	19	21	24	27	24
State Banks	9	7	7	8	7	7	8	6
Private Banks	3	3	5	11	14	17	19	18
Private Domestic	1	1	1	2	3	3	4	2
Private Foreign	2	2	4	9	11	14	15	16
Private Foreign International	0	0	3	3	3	3	3	3
Private Foreign Regional	2	2	1	6	8	11	12	13
Listed Banks	1	1	4	6	8	9	12	13
Listed Private Banks	1	1	4	6	8	9	11	12
Listed State Banks	0	0	0	0	0	0	1	1

Appendix B: Number of Banks in the Non-GCC Region, 2001-2008

	2001	2002	2003	2004	2005	2006	2007	2008
Algeria	6	6	7	11	10	12	12	11
Egypt	21	21	21	21	21	22	23	22
Jordan	10	10	10	10	11	11	11	10
Lebanon	24	27	27	24	24	27	31	26
Libya	5	3	4	4	5	5	5	3
Morocco	3	3	3	3	4	4	6	6
Syria	1	1	1	4	6	7	10	10
Tunisia	4	5	11	12	12	12	12	11
Yemen	6	8	8	8	8	8	7	7

Appendix C: Bank Ownership, Profitability, Interest Margin and Securities (Weighted)

Regressions are estimated via OLS at bank level for the year 2001 to 2008. Robust t statistics in brackets and bank level clustered t statistics in parenthesis. All regressions control for time and country dummies. Inverse of number of banks in a country in a given year is used as weights. ***, ** and * represent significance at 1, 5 and 10% level respectively

	1	2	3	4	5	6
	ROA	ROE	Net Interest Margin (Total Assets)	Interest Income to Assets	Interest Expenses to Assets	Total Securities to Assets
Dummy Public Ownership	-0.281 [1.88]* (1.10)	-4.844 [2.50]** (1.65)	0.113 [0.77] (0.44)	0.622 [2.26]** (1.14)	0.144 [0.91] (0.50)	6.688 [2.95]*** (1.35)
Dummy Foreign Ownership	-0.026 [0.18] (0.11)	-0.069 [0.04] (0.03)	-0.025 [0.22] (0.13)	-0.156 [0.79] (0.42)	-0.372 [2.78]*** (1.39)	-3.468 [3.08]*** (1.54)
Dummy Listed	0.245 [1.72]* (1.32)	4.319 [2.54]** (2.07)**	0.291 [2.72]*** (2.37)**	0.206 [1.19] (0.82)	-0.05 [0.46] (0.28)	-1.503 [0.99] (0.74)
Lag Total Assets (Log)	-0.035 [0.68] (0.50)	0.093 [0.10] (0.09)	-0.052 [1.33] (0.85)	-0.074 [1.08] (0.65)	0.032 [0.78] (0.49)	1.438 [2.88]*** (1.48)
Non-Interest Income to Assets	0.265 [3.86]*** (3.01)***	2.04 [2.78]*** (2.22)**	-0.271 [4.54]*** (2.93)***	-0.386 [3.35]*** (2.53)**	-0.221 [3.18]*** (2.31)**	-1.294 [1.81]* (1.24)
Deposits to Assets	-0.007 [0.95] (0.81)	0.291 [2.19]** (2.03)**	-0.021 [4.01]*** (2.87)***	0.001 [0.11] (0.07)	0.031 [4.80]*** (2.84)***	0.134 [2.20]** (1.37)
Loans to Assets	-0.008 [2.09]** (1.40)	-0.069 [1.45] (1.17)	0.002 [0.51] (0.32)	0.011 [1.32] (0.78)	0.018 [4.31]*** (3.06)***	
Observations	517	515	556	572	562	572
R-squared	0.2	0.21	0.46	0.47	0.72	0.48
Number of Countries	9	9	9	9	9	9
Number of Banks	118	119	117	120	118	117

Appendix C (continued): Bank Ownership, Costs, Employment, Wages and Provisions (Weighted)

Regressions are estimated via OLS at bank level for the year 2001 to 2008. Robust t statistics in brackets and bank level clustered t statistics in parenthesis. All regressions control for time and country dummies. Inverse of number of banks in a country in a given year is used as weights. ***, ** and * represent significance at 1, 5 and 10% level respectively.

	7	8	9	10	11	12
	Overheads to Assets	Personal Expenses to Assets	Employment to Assets	Wage (Personal Expense)	Wage (Overheads)	Loan Loss Provisions to Gross Loans
Dummy Public Ownership	0.375	0.204	0.039	-8.368	-16.895	1.405
	[3.38]***	[2.83]***	[8.32]***	[5.82]***	[4.59]***	[2.94]***
	(2.22)**	(1.73)*	(5.26)***	(3.64)***	(4.40)***	(2.09)**
Dummy Foreign Ownership	0.204	0.126	0.012	-1.035	-3.801	0.304
	[2.09]**	[1.75]*	[3.08]***	[0.88]	[1.51]	[1.22]
	(1.31)	(1.03)	(1.62)	(0.45)	(0.95)	(0.84)
Dummy Listed	0.288	0.065	0.003	0.893	3.667	-0.6
	[2.50]**	[0.77]	[0.69]	[0.77]	[1.28]	[2.12]**
	(1.96)*	(0.64)	(0.56)	(0.58)	(1.22)	(1.73)*
Lag Total Assets (Log)	-0.161	-0.118	-0.011	4.078	9.214	0.067
	[3.01]***	[3.13]***	[8.31]***	[9.20]***	[7.51]***	[0.72]
	(2.43)**	(2.55)**	(5.23)***	(6.50)***	(6.46)***	(0.61)
Non-Interest Income to Assets	0.285	0.101	0.004	1.802	3.47	0.404
	[5.81]***	[2.70]***	[1.50]	[2.58]**	[1.73]*	[2.67]***
	(4.78)***	(2.09)**	(1.13)	(2.98)***	(1.65)	(2.19)***
Deposits to Assets	-0.012	0.003	0.0003	-0.252	-0.794	0.046
	[1.44]	[0.73]	[1.86]*	[4.01]***	[4.40]***	[3.35]***
	(1.28)	(0.61)	(1.20)	(2.32)**	(3.44)***	(2.89)***
Loans to Assets	0.007	0.004	0.0002	0.029	-0.035	-0.009
	[1.98]**	[1.87]*	[1.83]*	[1.05]	[0.58]	[0.91]
	(1.37)	(1.28)	(1.03)	(0.67)	(0.43)	(0.71)
Observations	574	384	387	270	384	488
R-squared	0.41	0.52	0.57	0.73	0.65	0.43
Number of Countries	9	9	9	9	9	9
Number of Banks	120	92	102	77	104	115