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Does Privatization Enhance the Performance of Banks? Evidence from Egypt

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Abstract: One of the main justifications of privatization is to enhance efficiency. The privatization program in Egypt started in the beginning of the 1990s with most of the highlights taking place in the banking sector. The banking sector in Egypt was a perfect target for privatization given the existence of many joint venture banks. In a few years, all joint venture banks were privatized and more recently one of the four big state-owned banks was also privatized. After more than a decade from the launch of this program, we revisit this program to assess the effect of privatization on banks' performance. Using panel data on 9 privatized banks including one state-owned bank spanning for 18 years period, this paper measures the effect of privatization on profitability, efficiency, liquidity, capital adequacy, and bank capitalization. Results show that the effect of privatization is positive on profitability, efficiency, banking effectiveness and asset quality while it has almost no effect on capitalization. In addition, results reveal that the only state-owned bank that was privatized is an outlier when it comes to the effect of privatization on performance. Lastly, there is a strong evidence suggests that foreign ownership is key in order to guarantee that privatization would indeed enhance banks' performance.

JEL Classification: G21, G34, C33

Introduction and Motivation:

One of the most controversial topics in Egypt for the past two decades has been privatization. From the launch of the Economic Reform and Structural Adjustment Program (ERSAP) back in 1991, which had privatization in its core, until the recent announcement by the Egyptian government in 2013 based on public demands that there would be no more privatization of Egypt's public sector, privatization program in Egypt has experienced an amazing rollercoaster. In the beginning of the 1990s when Egypt started to liberalize its economy and to move toward market-based economic system, privatization was often advanced as a necessary condition for this transformation. The argument was quite compelling as it was argued that privatization would relinquish the centrality of the public sector in leading the economy in favor of the private sector; hence reducing inefficiency and misallocation of resources and on the top of that contributing to fiscal consolidation and austerity. On the other hand, opponents of privatization have argued that privatization *per se* has no added value; on the contrary, it adds to unemployment, enhances concentration of market power - and hence exploitation of consumers- and leads to the withdrawal of the state as the main provider of safety net for the poor. Given that the pace of privatization was in tandem with the one of reforms which did not trickle down to the majority of Egyptians, it is widely believed that privatization has been driven by corruption and is one of the main culprits behind many of the economic woes that inflicted on the majority of Egyptians.

This paper attempts to disentangle objectively part of this controversial topic by assessing how privatization has affected banks' performance in Egypt. There are three main reasons behind choosing the banking sector for this exercise. First, given the relative easiness of privatizing joint venture entities and the fact that the big majority of banks pre 1991 were joint venture banks, the government was successful in privatizing all joint venture banks early on and to sell one of the four public banks more recently in 2006. Consequently, there are enough cross-section and time series variations that would enable us to accurately gauge the effect of privatization on performance. Second, given the nature of the banking sector, financial data obtained from the balance sheet and the income statement can be readily used to construct variables to measure different aspects of banks' performance. Third, there is a vast literature verifying and documenting the importance of financial sector development to growth. Hence, if there is compelling evidence pointing to the positive effect of privatization on banks' performance and efficiency, it is safe to argue that privatization in the banking sector has enhanced growth and development in Egypt.

As documented later on in the paper, the effect of privatization is to a large extent indefinite since it depends on characteristics of the privatized sector, status of enterprises before privatization, business climate, quality of institutions, macroeconomic conditions before and after privatization and privatization method. To clear this ambiguity for the case of the privatization of the banking sector in Egypt, one should make use of empirical model to measure the effect of privatization on different aspects of banks' performance.

Using data extracted from financial statements of banks before and after privatization, it is possible to construct a list of indicators or more precisely financial ratios describing the performance of privatized banks over time. A total of five variables were constructed measuring the different aspects of banks' performance which are: (i) return on average equity which is a proxy for profitability; (ii) cost to income which is a proxy for efficiency; (iii) loans to deposits ratio which is a proxy for liquidity and effectiveness; (iv) loan loss provision to net loans which is a proxy for asset quality; and finally (v) equity to assets ratio which is a proxy for capitalization. Assessing the effect of privatization on banks' performance could be then boiled down to estimating the impact of privatization on these five indicators using an appropriate empirical model that takes into account cross section and time series variations and the dynamic nature of banks' performance.

The rest of the paper is organized as follows. Section two briefly reviews the relevant literature. Section three presents the sample and the methodology. Section four comments on the obtained results and finally section five concludes and gives a few policy implications.

Literature Review:

Theoretical Foundations

During the twentieth century, there had been a tendency by governments around the world to launch state-owned enterprises or nationalize existing private ones. However, later many of these same countries' governments "reversed course" and launched privatization programs that reduce the government's role in economic activity (Megginson, 2005).

Privatization, defined as the deliberate sale by state-owned enterprises or assets to private economic agents, has traditionally been a controversial issue with regards to its impact on performance. Proponents of state-ownership justify government control as a way to ensure a balance between social and economic objectives rather than focusing solely on profit maximization. On the other hand, some economists argue that state ownership is less efficient than private ownership even under the assumption of a benevolent government. First, managers of state-owned enterprises have weaker incentives to maximize revenues than managers of private enterprises. Second, state-owned enterprises are usually subject to less monitoring. Third, state-owned enterprises are usually used by politicians to benefit their supporters, which is the most compelling critique of state ownership (Megginson, 2005).

In the controversy between public and private ownership of enterprises, the banking sector has usually been of focal interest to many researchers. In the 1960s and 1970s, governments around the world nationalized existing commercial banks. This trend was driven by the classic "development view" in support of state-owned banks, which dates back to Gerschenkron (1962). This argument rests on the ability of state-owned banks to fund economically desirable projects that would otherwise not be funded by the private sector. This is mainly because public banks enjoy softer financing constraints and explicit government guarantees against failure, making them effectively less risk averse compared to private banks (Andrews, 2005; Coleman and Feler, 2014). An

alternative view of state ownership of banks is the "political view" which suggests that politicians may use state-owned banks and other enterprises to fund politically desirable projects without regard to economic viability in return for votes, political contributions and bribes. This hypothesis postulates that politically motivated banks make bad lending decisions, resulting in non-performing loans, financial fragility and slower growth (Andrianova et. al, 2010).

The ample number of bank privatizations around the world since the mid-1970s, of over 235 privatizations in more than 65 countries, is evidence of how state ownership of banks has been disfavored by many policymakers. This growing preference for private rather than state ownership of banks may be due to the expectation of greater financial stability and higher economic growth in case of privatization, whereas state-owned banks seem to introduce distortions making the financial sector less conducive to growth. Specifically, state-owned banks may be explicitly required or implicitly expected to finance loss-making state-owned enterprises or providing credit based on political considerations rather than objective risk assessment (Andrews, 2005).

Empirical Evidence:

The empirical literature relating to the impact of banking sector privatization may be classified into two main categories, based on the focus of research. The first group of studies is concerned with the impact of privatization on the economy as a whole. It questions the "developmental view", which deems public ownership of banks desirable under certain conditions, playing a vital role in financial and economic development. The other side of research places emphasis on the impact that privatization has on the performance of privatized banks.

In the first group, evidence is mixed. Mcquerry (1999) examines the "governmental rescue" of the banking sector in Mexico during the period from 1995 to 1998 and shows that it was successful in attaining its primary goal of stabilizing the banking sector. Andrianova, Demetriades and Shortland (2010) provide cross-country evidence that public ownership of banks has been robustly associated with higher long run growth rates.

Similarly, Coleman and Feler (2014), using data on four federally-owned banks and 115 privately-owned ones in Brazil to examine the role of public banks in preventing a recession during the 2008-2010 financial crises, have found evidence that government banks can mitigate the pro-cyclical behavior of private banks. This finding has been supported by the developmental view of state ownership of banks on one hand and has undermined the political view on the other. First, government banks in Brazil provided more credit, offsetting declines in lending by private banks due to the recession, thus promoting production and increasing employment. Government-owned banks thus became the majority lenders although private banks used to account for the majority of lending prior to the financial crisis. Second, no evidence was found that lending was politically targeted or that it caused productivity to decline in the short-run.

On the other hand, some studies provide evidence that bank privatization, rather than public ownership, has usually been regarded as part of the package of policy measures intended to strengthen the financial system. La Porta, Lopez-de-Silanes and Shleifer (2000), Barth, Caprio and

Levine (2000), Barnett (2000) and Andrews (2005) find evidence that policymakers in both developed and developing countries have an increased preference for private ownership of banks, especially in the aftermath of financial crises, and that privatization is usually associated with an improvement in macroeconomic performance and financial development.

Clarke and Cull (1997) provide an empirical analysis of bank privatization in Argentina and finds that economic crises increase the likelihood of privatization and, that poorly performing banks were more likely to be privatized. Clarke, Cull and Shirley (2003) extend the analysis providing a number of case studies and cross-country analyses supporting the conclusion that privatization improve performance even in poorly regulated environment, even though poor regulation reduces the gains from privatization. This suggests that it is better to privatize even with weak regulation, rather than await reforms that may take time.

Neale and Bozsik (2001) outline the process of privatizing state banks in Hungary, the first transition economy to complete this process, in reaction to the economic and financial pressures that took place after 1989 and had severely weakened the financial condition of these banks. The process generated significant revenue for the state, attracted foreign strategic investors and enhanced the performance of financial institutions.

Guriev and Megginson (2005) surveyed the empirical research on the effect of privatization on the performance of privatized firms and on the society and concluded that privatization in many developed and developing countries usually result in increased productivity and positive effects on the society. The effect of privatization, however, largely depends on having strong and efficient economic institutions in place. If this is not the case, privatization often fails to improve performance at the firm level and for the economy as a whole.

In the second group of empirical studies, the vast majority provide evidence supporting the “political view” of public ownership of banks, which suggests the use of state-owned banks to fund politically desirable rather than financially viable projects. Hence, according to these studies, privatization positively affects bank performance and eventually contributes to the development of the economy as a whole.

Some of these studies base their evidence on cross-country analyses while others draw on the privatization experiences of individual countries; both developed and developing. Bonin and Wachtel (1999) studied the banking sector privatization experience of three Central European transition economies; Hungary, Poland and Czech Republic. They concluded that privatization to an independent strategic investor creates appropriate incentives for lending on a commercial basis only. In addition, foreign ownership appears to be essential to the success of privatization as evidenced by Hungary which has the strongest banking sector in the region and being the most accommodating to foreign investors.

Verbrugge, Megginson and Owens (1999) studied a sample of 65 banks from 12 developed and 13 emerging economies. Results show only limited improvement in bank profitability, operating efficiency, leverage and non-interest revenue after privatization. In most of the cases under study,

substantial public ownership of banks remains even after privatization, which may be the reason why banks' performance did not improve post privatization. This implies that privatization takes time to unfold, especially if public ownership is reduced in stages, which is usually the case.

Otchere (2003) presents a comprehensive analysis of the pre and post privatization operating performance and stock market performance of 18 banks that were privatized between 1989 and 1997 and 28 of their rival banks in middle and low income countries. Comparing the performance of privatized banks before and after privatization, no statistically significant improvements in the privatized banks' operating performance did actually materialize, except for a reduction in the loan loss provisions ratio. Relative to their rivals, privatized banks appear to have carried higher problem loans and to be more overstaffed. The results indicate that the under-performance of privatized banks can be significantly explained by the remaining proportion of public ownership in these banks as sample banks were mostly partially privatized. In addition, privatization usually takes a long time to yield gains as more time may be required by managements to overcome the resistance to change that usually accompanies any privatization process.

Mian (2003), using panel data of over 1,600 banks in 100 emerging economies, identifies the strengths and weaknesses of the three dominant organizational designs in emerging markets over a period of eight years from 1992 to 1999. Private domestic banks have an advantage in lending to "soft information" [1] firms which allows them to lend more, and at higher rates. Foreign banks have the advantage of access to external liquidity from their parent banks which lowers their deposit cost, however, at the expense of being limited to lend only to "hard information"[2] firms. Public banks perform uniformly poorly, and seem to survive only due to strong government support, having the worst performing loan portfolio in the banking sector despite lowering their cost of deposits. The results suggest that government involvement in the banking sector should be minimized much further than its current position in many developing countries.

Megginson (2003) compared the performance of state-owned banks with private and foreign banks in a number of countries, developed and developing, and found empirical evidence of a significant difference in their performance and efficiency. He concluded that privatization generally improves performance but not to the extent observed in non-financial industries. Results suggest that bank privatization in developed countries yields significant performance improvements but cannot single handedly improve performance of banks in developing countries.

Bonin, Hasan and Wachtel (2004) investigate the impact of bank privatization on 67 different banks in six relatively advanced countries, namely, Bulgaria, the Czech Republic, Croatia, Hungary, Poland and Romania, during the period from 1994 to 2002. There are two main findings to this study. First, the timing of privatization affects bank efficiency with early privatized banks being more efficient than later-privatized banks. These efficiency differences are mainly attributed to a lag in achieving

[1] "Soft information" refers to information that cannot be easily publicly verified by a third party. Examples of soft information may include a loan officer's subjective evaluation about a small firm's future outlook.
[2] "Hard information" refers to credible and publicly verifiable information, such as a foreign firm's audited balance sheets, or government guarantees.

the full benefits of privatization. Second, foreign-owned banks were found to be the most efficient while public-owned banks were the least efficient. Privatized banks appeared to resemble foreign-owned banks in terms of equity and earnings but have higher loan loss provisions. Although privatized banks retain their ability to collect deposits, they make fewer loans relative to assets than foreign banks and focus more on commission income from their local advantage in pursuing fee-for-service business.

Bonin, Hasan and Wachtel (2004) also used data for 11 transitional economies in an unbalanced panel of 225 banks over the period from 1996 to 2000. They concluded that government-owned banks are not less efficient than private domestic banks. Nevertheless, their results support the hypothesis that foreign ownership leads to more efficient bank performance.

Assessing the effects of privatization across countries is sometimes difficult due to country-specific circumstances that are hard to control for. Research has, also, turned focus to country-level studies, which assess the performance of privatized banks before and after privatization, relative to other banks and controlling for other bank and country-level but time-variant characteristics (Beck, 2005).

Anwar (1995) analyzed the factors behind the necessity of the privatization of banks and the reduction in government role in the Brazilian banking sector. He concluded that state governments abusively borrowed from state-owned banks that engaged in riskier activities than private banks, relying on the Central Bank to bail them out in case of insolvency, thus creating no incentives for proper management.

Sapienza (2002) provides a comparison between state-owned and privately-owned banks using information on individual loan contracts for a number of 85 banks in Italy during the period from 1991 to 1995. The sample includes 40 banks that have always been privately owned, 43 banks that are state-owned banks and two banks that are privatized during the period of observation. The results provide consistent and strong evidence in favor of the “political view” of public ownership of banks. This is backed by the findings that state-owned banks offer lower lending rates than private banks and that their lending behavior is affected by the electoral results of the party affiliated with the bank.

Fiorentino et. al (2009) provides a comparison in changes in banks’ productivity between the Italian and German banking systems that used to share similar characteristics early in the 1990s but have evolved in different directions afterwards. Italy privatized its publicly-owned banks while Germany has maintained a large share of state-owned banks while banks in both markets engaging heavily in mergers and acquisitions. Results show that privatized Italian banks experienced a significant increase in productivity. Surprisingly, German banks were still able to increase their productivity through consolidation. These findings undermine the general view that state-owned banks tend to be less efficient without taking into account country-specific circumstances. There is evidence that the primary cause of low productivity of Italian public banks in the early 1990s was social interference and thus privatization might have helped to improve performance. In contrast, German banks seemed to previously enjoy greater independence and relatively good performance.

Sathye (2005) examined the impact of privatization on bank performance and efficiency using Indian banks' data for 5 years during the period from 1998 to 2002 using the difference of means test for three groups of banks: partially privatized, fully state-owned and private sector banks. Results showed that partially privatized banks, like private sector banks, outperformed fully state-owned banks and showed improved financial performance and efficiency in post-privatization years. Berger et. al (2005) analyzed the effect of domestic, foreign and state ownership on bank performance using quarterly data from Argentina during the period from 1993 to 1999. Results indicate poor long-term performance for state-owned banks, which improved dramatically following privatization. Beck, Cull and Jerome (2005) examine the effect of privatization on performance in a panel of 14 Nigerian banks for the period 1990-2001 that constitute more than 50% of total banking system assets. They assessed the performance of these banks, as measured by the return on assets and equity as well as the share of non-performing loans, relative to other Nigerian banks and relative to their performance before privatization. Results indicate some performance improvement due to privatization, closing the gap that existed between privately owned commercial banks and privatized banks prior to privatization. However, there were no further performance gains beyond the performance of other private banks in the Nigerian banking system. Results also suggested negative effects of the continuing minority public ownership on the performance of many Nigerian banks.

In recent years, a new direction in the literature on bank privatization has evolved that focuses not only on profitability and efficiency of banks but also on the risk appetite of privatized banks. Ghosh (2010) examined the response of state-owned banks in India to privatization during the period 1990-2006, and found that fully state-owned banks are significantly less profitable than partially privatized ones and that privatization improves profitability, efficiency and bank soundness, while lowering bank risk. Ijaz et. al (2012) studied the effect of privatization on non-performing loans of commercial banks in Pakistan, and Dorra and Sonia (2012) examined the impact of privatization of 17 Tunisian banks on their liquidity risk, credit risk and capital adequacy during the period 1990-2010. These studies concluded that private banks generally have better credit risk management reflected in their early risk assessment, regular monitoring and other favorable factors.

Mohsni and Otchere (2012) examined the risk-taking behavior of 72 banks in 30 countries that were privatized between 1988 and 2007 prior to and after privatization. Results indicate that the risk appetite for privatized banks decreases post privatization suggesting the removal of governments' implicit guarantee and the reduction in lending to state-owned enterprises. They also found evidence that privatized banks have become more profitable and better capitalized following privatization.

Some studies, however, present evidence that the expected benefits from privatization do not always materialize either due to improper organizational structure or continued partial public ownership. Balcerowicz (2001) studied the restructuring and development of the Polish banking sector in the transition period that started in 1989. Results show that recapitalization of a bank, which is not combined with a proper program of structural and organizational changes, is useless. In addition, Poland's experience proves that it is essential to introduce effective bank supervision very

early in transition; otherwise this would create room for poor management of banks which brings banks to financial distress and may lead to costly banking crises as well as public distress.

Khalid (2006) investigated the effects of privatization on the performance of the banking sector in Pakistan, employing the CAMELS[3] framework of financial indicators during the period 1990-2002. Results showed little evidence of improvement in most of the indicators. However, a marked improvement in the majority of indicators was observed during the last year of observation, suggesting that the benefits of privatization are likely to emerge over a longer period of time.

Davydov (2013) studies the impact of state ownership on bank lending and risk taking behavior over the period 2005-2011 in Russia using data of 348 banks. He found that lending behavior was not associated with ownership during the whole sample period. However, interestingly, results seem to support the "developmental view", suggesting that although state ownership may have a negative impact on bank performance and efficiency in normal times, it may be more valuable during financial crises as indicated by the 2008 financial crisis, particularly as far as loan growth is concerned. There is also a positive relationship between capital ratio and state ownership around the crisis, implying that public banks were more protective from asset malfunction than private domestic and foreign banks.

Among individual-country studies, emphasis appears to be directed more towards developing and transition economies. Egypt is among the developing countries that underwent a number of structural reforms and has managed to privatize all of its joint venture banks and one completely state-owned bank. Very few studies, however, have tried to assess the effect of privatization on the economy and on banks' performance.

Mohieldin and Nasr (2001) studied the performance of the Egyptian banking sector during the period 1990-2002, in an analytical framework that compares between indicators of public sector banks and private sector banks without application of quantitative techniques. They concluded that, on aggregate, private banks perform better than publicly owned banks. Indicators show several areas of deficiencies in public sector banks, including a relatively low capital adequacy ratio, poor quality of banks' assets, high ratio of non-performing loans, modest earnings and profitability, and declining liquidity. They argue that this may be attributed to these banks restricting their lending either to the public sector or preferred private sector enterprises. However, it was noted that banks are supported by a stable and strong deposit base.

Omran (2007) addressed the issue of financial and operating performance of a sample of 12 Egyptian banks from 1996 to 1999, during which control was transferred from the state to the private sector. Results indicate that some profitability and liquidity ratios for privatized banks decline significantly post-privatization while other performance measures remained virtually unchanged. These findings were complemented by employing several fixed-effect regressions over

[3] A framework involving the analyses of six groups of indicators relating to the soundness of any financial institution: (1) Capital Adequacy (2) Asset Quality (3) Management Soundness (4) Earnings and Profitability (5) Liquidity (6) Sensitivity to market risk.

the entire study period to compare the relative performance changes of privatized banks to their bank counterparts. Results obtained provide evidence that privatized banks perform generally better than banks with a mixed ownership structure in which the majority is state ownership.

The Model and Data Description:

This section presents the sample and describes the methodology used to examine empirically the impact of privatization on the Egyptian banking sector performance. The sample is a balanced panel data set of 9 banks, 8 joint venture banks and one public sector bank, estimated across 18 years (1996-2013)[4].

The model examines five different banking sector performance indicators in five different equations. One indicator is examined for each performance criterion. Return on average equity indicates profitability; cost-to-income indicates efficiency; deposits-to-equity indicates liquidity; equity-to-loans indicates asset quality and equity-to-assets indicates capitalization. In each of these equations, a performance indicator is regressed on a privatization variable as well as a set of control variables, in order to obtain a reliable estimate of the impact of privatization relative to other influences, as follows:

$$Y_{it} = \alpha_i + \rho Y_{it-1} + \gamma P_{it} + \delta X_{it} + \varepsilon_{it}$$

$Y_{i,t}$ represents the banking sector performance indicator of bank (i) at time (t). $P_{i,t}$ is the privatization variable defined as the percentage of private ownership[5] for bank (i) at time (t). $X_{i,t}$ is a vector of control variables that includes (1) the relative size of the bank defined as the bank assets to total banking assets; (2) number of years in which the bank is operational; (3) growth rate in real GDP to account for time-variant economic conditions; (4) number of years following privatization[6]; (5) number of branches as a measure of the bank's service dispersion and (6) the square of the assets-to-total banking assets, to account for the rate of change in assets. In order to allow for a dynamic element in the model, a lagged term of the endogenous variable $Y_{i,t-1}$ is added to the set of regressors. α_i is bank (i) individual effect and $\varepsilon_{i,t}$ is the white noise residual term.

The model is estimated using two estimation techniques for dynamic panel data modeling. The first method is the fixed-effects specification, which assumes slope homogeneity, with the coefficients representing the average effect of all banks in the sample rather than the individual effect for each bank. This average effect, although specific for each group or section, may be fixed or random over time. The fixed-effects method of estimation captures all effects which are specific to a particular

[4] The banks under study include Bank of Alexandria, Cairo Barclays Bank, Al Baraka Bank, Commercial International Bank, Suez Canal Bank, Qatar National Bank AlAhly (Previously National Societe Generale Bank), Egyptian Gulf Bank, Abu Dhabi Islamic Bank (Previously National Bank for Development) and Piraeus Bank. The sample was selected based on the availability of banking data during the period of study.

[5] An alternative proxy for privatization may be a dummy variable that indicates whether or not bank (i) is privatized by the year (t). The percentage of private ownership, however, is considered to be a more indicative measure as it takes into account the gradual exit of state ownership rather than privatization per se.

[6] For this variable, privatization is defined as a private ownership exceeding 50%.

cross-section and do not vary over time. It thus allows for different constants specific for each group or section that is fixed over time. The random-effects estimation method allows for a constant for each section or group that is not fixed over time but has a random component. In making a choice between the fixed-effects and random-effects, the Hausman specification test was performed and results were in favor of fixed-effects estimation. This is consistent with the observation made by Judge et al. that as the number of time series data gets larger and the number of cross-sectional units is relatively smaller, the fixed effects estimation may be preferable (Gujarati, 2003).

The second estimation technique used is the Generalized Method of Moments (GMM), which is commonly employed to estimate the parameters in panel data models with endogenous regressors and unobserved individual specific heterogeneity. In such models, fixed effects and random effects estimators are usually inconsistent. Arellano and Bond (1991) transform the model into first differences to remove the panel-specific heterogeneity using lagged levels of exogenous variables that are individual specific as instruments for the endogenous differences. One main reason for the popularity of GMM in applied economic research using panel data is that GMM provides asymptotically efficient statistical inference (Bun and Kleibergen, 2010).

Comments on the obtained results:

The dynamic panel model was estimated for the five different endogenous variables as indicated earlier. Tables 1 through 5 depict summary of the obtained results. Before delving into a few specific observations pertaining to each of the five indictors, some general comments are in order:

First, two types of estimation were used: fixed-effect estimation and GMM. Despite the fact that GMM is more consistent than the fixed effect estimation, it is advisable to compare between the results under the two specifications in order to avoid excessively bias estimation (Doornik, Arellano and Bond, 2001).

Second, there are a number of control variables besides the one capturing privatization that are used with different indicators. For each indicator, the first model labeled “benchmark regression” includes the best specification that captures the variation in this indicator.

Third, in practically all the estimated regressions, lagged dependent variable is found to be highly significant attesting that the dynamic specification of these five endogenous variables is the right one as opposed to the static one. Failing to take into account this dynamic nature of these five indicators would have resulted in a misspecification and biasness in the estimation.

Fourth, despite having varied F-stat and Wald test, all the estimated regressions are found to be highly significant pointing to the joint significance of the slope coefficients.

Fifth, one of the drawbacks of panel data models is the usual assumption of slope homogeneity. In our empirical model, this means that implicitly it is assumed that a given explanatory variable has the same effect on the dependent variable across all banks. So, for instance, the effect of privatization on profitability is the same for bank A and bank B. This assumption may not be very restrictive for

the majority of privatized banks since they were joint venture ones sharing many features and characteristics; however, it is safe to assume that this assumption would not be valid for Bank of Alexandria since it used to be one of the four big 100% national banks before being privatized in 2006. Consequently, it is not realistic to assume that the effects of privatization and, following the same logic, other explanatory variables are the same across all banks including Bank of Alexandria. In order to drop this assumption and to give specifity to Bank of Alexandria to have different slope coefficients, interaction terms between different explanatory variables and Bank of Alexandria dummy variable[7] were created and are tossed in the regressions. This would enable us to relax the assumption of slope homogeneity for Bank of Alexandria[8] and to single out the marginal effect of the bank on the average results through its interaction with the set of regressors.

Following the same logic, we experiment by excluding Bank of Alexandria from the sample and compare the obtained results with the whole sample. The following discussion then tackles the results associated with each of the five endogenous variables.

Profitability

Table 1 presents results of estimating the dynamic panel model taking the return on average equity (ROE) which is a proxy for profitability as the dependent variable. In general, the main observation one can notice by comparing the regressions under fixed effects and GMM is that coefficients under GMM are lower in magnitude and sometimes in significance than the ones under fixed effects for the same variables. For example, under the benchmark regression, the coefficient of the lagged ROE dropped from 0.536 to 0.399 under fixed effect and GMM respectively. As for the highlight of the model which is the effect of privatization, virtually all the different regressions with the exception of the benchmark regression under GMM, point to the significant effect on privatization on profitability where the coefficient of the privatization variable is positive and significant. This indicates that privatization has enhanced profitability of the privatized Egyptian banks. Interestingly, if Bank of Alexandria is excluded from the sample or an interaction term between the privatization variable and Bank of Alexandria dummy is included in the regression, the coefficient of the privatization variable increases both in terms of magnitude and statistical significance. This result implies that Bank of Alexandria is considered to be an outlier when it comes to the effect of privatization on profitability. Privatization seems to prop profitability for the sample of joint venture banks but for a bank which was wholly public and then became private, privatization does not seem to affect its profitability.

As for control variables, besides the lagged endogenous variable, number of years in operation (YO) and the lagged growth rate in GDP are found to affect banks' profitability in a negative way. One explanation behind the negative association between years in operation and profitability can be attributed to the possibility that as more banks enter the market, competition would intensify putting downward pressure on banks' profitability. To explain the negative impact of real output growth on

[7] The dummy variable DALEX takes the value of 1 for Bank of Alexandria and the value of 0 otherwise.
[8] Practically, we could "single out" any bank or few banks to have different slopes than the rest of the sample; nevertheless, there is no priori which would make us assume that one of the joint venture banks is significantly different than the others.

profitability, one can appeal to the procyclical nature of banks, where high level of economic activity usually drive banks to expand their operations and compete in terms of attracting deposits and giving loans pushing banks' profit margins to go down.

Efficiency

Summary of the regression results taking cost to income ratio as an indication of efficiency is shown in table 2. The first observation comparing regression results between fixed effects and GMM is that results are very similar in terms of magnitude of the estimated coefficients as well as significance as opposed to the regression results associated with profitability. In addition, it appears from the F-stat and the Wald test that the significance of the whole relation taking efficiency as the dependent variables is much higher than the ones observed for the case of profitability as the dependent variable. This points to significantly more variation in the cost to income ratio captured by the estimated models. Also, the high estimated coefficients of the lagged endogenous variable suggest that efficiency is much more persistent than profitability.

As for the effect of privatization on banks' efficiency, results reveal that privatization has a strong negative effect on the cost to income ratio, indicating a significant positive effect of privatization on efficiency. Bank of Alexandria is found to be even a more prominent outlier since the coefficient of the privatization variable increases dramatically when Bank of Alexandria is excluded from the sample (from 3.938 to 4.821 under GMM) or when including an interaction term between the privatization variable and Bank of Alexandria, which is found to be positive and significant indicating that privatization has adversely affected efficiency for the case of Bank of Alexandria.

As in the case of profitability, the two control variables, number of years in operation and the lagged growth rate in GDP, are found to affect banks' efficiency in a negative way where results show that both variables add to the cost to income ratio.

Asset Quality

Asset quality is measured by the ratio of loan loss provision to net loans. A higher ratio indicates that loans are riskier so the provision to bad loans would increase as a proportion of total loans. Looking at the summary of results in Table 3, one can notice that, similarly to the cases of profitability and efficiency, asset quality proxy is autoregressive in nature; however, despite its high level of significance, the magnitude of the lagged dependent variable is the smallest among all the five indicators indicating that asset quality is not as persistent as other indicators. Similarly, despite the significance of the whole relation as measured by F-stat for the case of fixed effect and Wald Chi-squared for the case of GMM, it appears that estimated models for asset quality are relatively less significant than the models associated with the other four indicators. This observation would suggest that there are a number of explanatory variables which affect asset quality which are not included in the regressions.

Despite these observations, it is apparent that the included explanatory variables explain well some of the variation in asset quality. The size of the bank, proxied by the ratio of bank's assets to total

banking sector assets, does matter where larger banks seem to enjoy better asset quality[9]. Lagged output growth continues to affect asset quality is a negative consistent with the results obtained for profitability and efficiency indicators. Another control variable, number of years following privatization (YP) is found to be significantly and positively affected the endogenous variable. This implies that there is a trend but rather modest, given the tiny magnitude of the estimated coefficient, where privatized banks tend to increase over time their provision for bad loans.

As for the effect of privatization on the proxy for asset quality, it is apparent from the obtained results that privatization improves asset quality as the percentage of private ownership is found to be negative and highly significant. Similarly to YP coefficient, the magnitude of the privatization variable is quite small, indicating that privatization does affect asset quality but the effect is economically rather weak. This magnitude tends to double if we alienate the effect of Bank of Alexandria whether by removing it from the sample or by including an interaction term between Bank of Alexandria dummy and privatization, which turns out to be positive but insignificant.

Liquidity and Effectiveness

One of the common measures of liquidity for banks is the loans to deposits (LTD) ratio. This ratio is less than one if the bank uses only its own deposits to give loans but it is possible that this ratio exceeds one especially in more financially developed countries where banks use external sources of finance (borrowing) to give more loans. In Egypt, however, this ratio hardly can exceed one (Actually, the average on this ratio in this sample does not exceed 62%). In addition, LTD ratio is an indicator of the effectiveness of the bank in its prime function which is financial intermediation. When the ratio is too small, this implies that the bank is not effective in its intermediation function which affects its earnings potential.

Examining the summary of the obtained results for this important indicator reveals that it is highly autoregressive since the coefficient of the lagged dependent variable always exceeds 0.75 and is always highly significant. As for other control variables, years in operation (YO) appears to have a negative and significant effect on LTD ratio whereas lagged output growth affects this ratio positively. The first result of YO is consistent with its noted effect on profitability and efficiency variables. The second result, however, could be explained by procyclical behavior of bank lending which is usually accelerated during boom periods and vice versa during bust periods. Number of branches (BR) seems to affect LTD ratio in a nonlinear way since the coefficient of BR is negative and significant but the coefficient of BR squared is positive and significant. This result could be attributed to the direct relationship between the number of branches and the bank's ability to attract deposits.

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[9] It is worthy of noting that this ratio of bad loans provision to net loans is a proxy for asset quality and it is possible that changes in asset quality would not be reflected in this proxy or vice versa. Hence, this result, of the decrease in this ratio as the relative size of a bank gets larger, does not necessarily imply that an improvement in the asset quality is related to bank's size but more precisely that relatively large banks have less bad loans provision relative to net loans compared to smaller banks. Could this be because larger banks systemically allocate less provision per unit of net loans *ceteris paribus* or that large banks have access to better (safer) clients is a question which we cannot answer.

Notwithstanding the statistical significance of BR, the magnitude of the estimated coefficients of BR and BR squared are relatively small.

Turning to the effect of privatization on LTD ratio, it appears that privatization has a positive effect on this ratio. As mentioned above, LTD ratio in Egypt and in our sample is quite low, signifying that banks in Egypt do not suffer from a liquidity problem but rather the depressed ratio is an indication of the weak effectiveness of Egyptian banks as financial intermediaries. Hence, in effect, privatization enhances banks' effectiveness as financial intermediaries by raising their LTD ratio. As in case of previous indicators, Bank of Alexandria seems to be an outlier when it comes to the effect of privatization on the LTD ratio, where it is documented according to the second and the third regression model in Table 4 that privatization has a marginally negative effect on LTD ratio for Bank of Alexandria.

Capitalization

Estimation results (Table 5) pertaining to capitalization, as measured by the equity to assets ratio, reveal that capitalization is highly autoregressive indicated by the large magnitude of the lagged endogenous variable. The coefficient of the proxy of bank's size (bank's assets divided by total banking sector assets) turns out to be negative and significant with the significance level dramatically increasing under GMM. This indicates that ceteris paribus as banks increase in size, they tend to suffer in terms of capital adequacy. Number of branches (BR) has a significant positive effect on capitalization under all various specifications. Interestingly, capitalization regressions give the best results among all the five indicators in terms of goodness of fit and the significance of the whole relation.

As for the effect of privatization on capitalization, results indicate that privatization has no significant effect on capitalization. Hence, it appears that privatization did not contribute in changing banks' capitalization in any significant way.

Effect of Foreign Ownership

In order to assess the effect of foreign acquisition in the relationship between privatization and banks' performance, the sample was split into two subsamples. One subsample includes only banks which have been acquired by a single strategic foreign acquirer and the other includes other banks with no controlling foreign partner[10]. Interestingly, the majority of privatized banks have significant foreign ownership. Regressions 4 and 5 under fixed effect and GMM specification from Table 1 till 5 depict the estimation results of the model under these two subsamples. The main findings are as follows:

[10] Three banks in our sample of privatized banks have not been acquired by a strategic foreign owner; Suez Canal Bank, Egyptian Gulf Bank and Commercial International Bank.

First, for profitability and asset quality indicators, privatization has a significant salutary effect on both indicators for banks with significant foreign ownership; whereas surprisingly, privatization has a significant adverse effect for banks with no controlling foreign ownership.

Second, under both subsamples, privatization seems to contribute to banks' efficiency; however, for banks with significant foreign ownership, the magnitude of the privatization dummy variable is significantly larger than the one for banks without foreign ownership.

Third, with respect to the LTD ratio which measures liquidity and effectiveness of financial intermediation, splitting the sample into two has rendered the effect of privatization insignificant under both subsamples.

Finally, the significance of the effect of privatization depends on the estimation technique (Fixed effect versus GMM). Under GMM estimation, it is noticed that privatization adds to the capitalization for banks without foreign ownership given the positive sign and the significance of the privatization variable (Model 5 under GMM, Table 5).

Conclusion and Policy Implications:

Since the mid-1970s, there have been over 235 bank privatizations in more than 65 countries. This gave rise to a number of empirical studies on the impact of privatization on the performance of banks across the world. Evidence from these studies for both developing and developed countries has been mixed. Most of the studies, however, support the "political view" of public ownership, which favors private over public ownership of banks, as a guarantee that no political considerations will be factored in lending decisions.

During the 1990s, the Egyptian Banking sector has undergone a number of structural reforms including the privatization of joint venture banks and lately one fully state-owned bank. This paper investigates the impact of privatization of Egyptian banks on these banks' performance. In summary, we find strong evidence that supports the theory and previous empirical findings that banks with greater private ownership generally perform better and that the reduction of state ownership is linked to enhanced performance.

Results, however, depict some variation in the effect of privatization across the different performance indicators of the banking sector. Profitability and efficiency were the key metrics to show significant improvement post privatization. In addition, privatization appeared to have a significant role in improving the quality of assets for the group of privatized banks as well as enhancing the overall effectiveness of the privatized Egyptian Banks as financial intermediaries. These findings are consistent with the "political view" of the public ownership of banks, which suggests that private ownership is generally more desirable as it is usually void of any politically-based incentives. Privatization did not seem to have any significant impact on the level of capitalization for banks that have been privatized.

In order to single out the marginal effect of Bank of Alexandria as the only bank in the sample being fully state-owned pre-privatization, a second group of regressions has been estimated. Results indicate a marginal effect that is significant and always opposite in sign to the average effect of privatization on the whole group of banks across all indicators. This may be attributed to two main reasons. First, being a fully state-owned bank, it would make good sense that the readiness of a public sector bank to adjust to new management techniques is lower than the adaptability of joint venture banks that already had a significant private element prior to privatization. Second, the date of privatization of Bank of Alexandria in 2006 is considered late in time relative to the other banks in the selected sample. This may be one reason why the effect of privatization has not yet been felt for Bank of Alexandria as this effect requires time to be of significance. This is consistent with the conclusion of Verbrugge et al. (1999) that it usually takes substantial time for privatization to yield gains as more time may be required by management of the privatized firm to overcome organizational inertia and resistance to change that usually characterizes newly privatized firms.

In a third set of regressions, a distinction has been made between privatized banks that have been acquired by a strategic foreign partner and others with no controlling foreign ownership. Results indicate a significant impact for foreign bank entry in the success of privatization in improving bank performance rather than privatization per se. This may be attributed to fresh capital, management and technical expertise that are introduced by foreign owners improving bank operations and creating a competitive environment that facilitates the modernization of the banking industry.

In a nutshell, privatization had a positive impact on the performance of Egyptian Banks that have been privatized, with the exception of the only fully state-owned bank pre-privatization. Hence, these results do not necessarily imply that a decision to privatize any of the currently “Big Three” state-owned banks will rapidly reap its fruits.

Tables

Table 1: Estimation results for the profitability indicator: Return on Average Equity

Equation / Variable	*Fixed Effects Estimation*					*Generalized Method of Moments*				
	Benchmark Regression (1)	Excluding Bank of Alexandria (2)	Including dummy for Bank of Alexandria (3)	Excluding Non-Foreign Banks (4)	Excluding Foreign Banks (5)	Benchmark Regression (1)	Excluding Bank of Alexandria (2)	Including dummy for Bank of Alexandria (3)	Excluding Non-Foreign Banks (4)	Excluding Foreign Banks (5)
ROAE L1	0.539*** (0.074)	0.498*** (0.084)	0.504*** (0.078)	0.553*** (0.096)	0.098 (0.147)	0.404*** (0.079)	0.382*** (0.088)	0.381*** (0.082)	0.511*** (0.093)	0.098 (0.144)
PRO	0.218** (0.105)	0.510** (0.223)	0.487** (0.207)	0.271** (0.128)	-0.840* (0.480)	0.178 (0.130)	0.461* (0.246)	0.389* (0.229)	0.265** (0.131)	-0.840** (0.468)
YO	-0.010** (0.004)	-0.015*** (0.005)	-0.014*** (0.005)	-0.014** (0.006)	0.007 (0.007)	-0.011*** (0.004)	-0.016*** (0.006)	-0.014*** (0.005)	-0.014** (0.006)	0.007 (0.007)
RGDP L1	-1.505* (0.828)	-1.905** (0.929)	-1.760** (0.841)	-2.344** (1.073)	1.599 (1.284)	-1.356* (0.783)	-1.790** (0.885)	-1.549** (0.803)	-2.337** (0.012)	1.599 (1.251)
Alex_D_PRO			-0.286* (0.190)					-0.244 (0.217)		
R-Squared	41.77%	56.38%	19.92%	37.84%	19.04%					
FE: F-Statistic GMM: Wald χ^2	29.02***	26.88***	23.89***	27.88***	1.73	69.10***	69.70***	70.11***	103.21***	7.29
N	153	136	153	102	51	144	128	144	96	48

*Significant at 10% significance level
**Significant at 5% significance level
***Significant at 1% significance level

Note: Instruments used in GMM: Assets, CI, EA

Table 2: Estimation results for the efficiency indicator: Cost-to-Income Ratio

Equation / Variable	*Fixed Effects Estimation*					*Generalized Method of Moments*				
	Benchmark Regression (1)	Excluding Bank of Alexandria (2)	Including dummy for Bank of Alexandria (3)	Excluding Non-Foreign Banks (4)	Excluding Foreign Banks (5)	Benchmark Regression (1)	Excluding Bank of Alexandria (2)	Including dummy for Bank of Alexandria (3)	Excluding Non-Foreign Banks (4)	Excluding Foreign Banks (5)
CI L1	0.696*** (0.057)	0.667*** (0.063)	0.667*** (0.059)	0.674*** (0.073)	0.163 (0.136)	0.661*** (0.057)	0.629*** (0.063)	0.617*** (0.060)	0.656*** (0.071)	0.163 (0.131)
PRO	-0.268* (0.147)	-0.687** (0.313)	-0.687** (0.292)	-0.345* (0.188)	-0.251 (0.332)	-0.297* (0.162)	-0.888** (0.370)	-1.052*** (0.376)	-0.400** (0.187)	-0.251** (0.321)
YO	0.016*** (0.006)	0.022*** (0.007)	0.022*** (0.007)	-0.023** (0.009)	0.010* (0.005)	0.018*** (0.006)	0.027*** (0.008)	0.029*** (0.007)	0.026*** (0.009)	0.010** (0.005)
RGDP L1	3.902*** (1.218)	4.582*** (1.369)	4.313*** (1.235)	5.377*** (1.766)	0.512 (0.930)	3.959*** (1.168)	4.829*** (1.333)	4.683*** (1.207)	5.517*** (1.698)	0.512 (0.899)
Alex_D_PRO			0.459* (0.277)					0.854** (0.384)		
R-Squared	62.19%	72.93%	38.33%	53.21%	7.5%					
FE: F-Statistic GMM: Wald χ^2	60.91***	55.78***	49.88***	45.04***	2.45	240.56***	222***	248.16***	194.41***	10.48**
N	153	136	153	102	51	144	128	144	96	48

*Significant at 10% significance level
**Significant at 5% significance level
***Significant at 1% significance level

Note: Instruments used in GMM: Assets, ROAE, EA

Table 3: Estimation results for the asset quality indicator: Cost of Risk (Loan Loss Provision Expense-to-Net Loans):

Equation / Variable	*Fixed Effects Estimation*					*Generalized Method of Moments*				
	Benchmark Regression (1)	Excluding Bank of Alexandria (2)	Including dummy for Bank of Alexandria (3)	Excluding Non-Foreign Banks (4)	Excluding Foreign Banks (5)	Benchmark Regression (1)	Excluding Bank of Alexandria (2)	Including dummy for Bank of Alexandria (3)	Excluding Non-Foreign Banks (4)	Excluding Foreign Banks (5)
CoR L1	0.292*** (0.084)	0.260*** (0.090)	0.276*** (0.084)	0.305*** (0.101)	0.035 (0.150)	0.261*** (0.085)	0.234*** (0.092)	0.252*** (0.086)	0.299*** (0.102)	0.035 (0.148)
PRO	-0.047*** (0.015)	-0.086*** (0.032)	-0.083*** (0.030)	-0.061*** (0.016)	0.154* (0.079)	-0.045*** (0.015)	-0.083** (0.087)	-0.079** (0.036)	-0.061** (0.016)	0.154** (0.077)
Assets	-0.610** (0.241)	-0.506* (0.284)	-0.456* (0.264)	-0.826*** (0.274)	-0.897* (0.526)	-0.625** (0.258)	-0.514* (0.303)	-0.480* (0.294)	-0.804*** (0.293)	-0.897* (0.517)
RGDP L1	0.274** (0.127)	0.337** (0.142)	0.294** (0.128)	0.446*** (0.193)		0.274** (0.127)	0.336** (0.142)	0.294** (0.126)	0.442*** (0.154)	-0.002* (0.001)
YP	0.002*** (0.000)	0.002*** (0.001)	0.002*** (0.001)	0.003*** (0.001)	-0.002 (0.001)	0.002*** (0.001)	0.002*** (0.001)	0.002*** (0.001)	0.003*** (0.001)	
Alex_D_PRO			0.046*** (0.033)					0.040 (0.038)		
R-Squared	25.89%	24.40%	16.25%	38.41%	18.81%					
FE: F-Statistic GMM: Wald χ^2	8.59***	8.06***	7.54***	10.93***	1.67	33.37***	30.26***	34.22***	50.31***	6.91**
N	153	136	153	102	51	144	128	144	96	48

*Significant at 10% significance level
**Significant at 5% significance level
***Significant at 1% significance level

Note: Instruments used in GMM: ROAE, EA

Table 4: Estimation results for the liquidity indicator: Loans-to-Deposits Ratio

Equation / Variable	*Fixed Effects Estimation*					*Generalized Method of Moments*				
	Benchmark Regression (1)	Excluding Bank of Alexandria (2)	Including dummy for Bank of Alexandria (3)	Excluding Non-Foreign Banks (4)	Excluding Foreign Banks (5)	Benchmark Regression (1)	Excluding Bank of Alexandria (2)	Including dummy for Bank of Alexandria (3)	Excluding Non-Foreign Banks (4)	Excluding Foreign Banks (5)
CoR L1	0.823*** (0.046)	0.814*** (0.049)	0.829*** (0.046)	0.789*** (0.055)	0.847*** (0.081)	0.836*** (0.038)	0.908*** (0.033)	0.907*** (0.033)	0.881*** (0.038)	0.863*** (0.056)
PRO	0.088** (0.040)	0.169** (0.067)	0.172** (0.069)	0.075** (0.033)	0.151 (0.198)	0.086** (0.035)	0.142** (0.061)	0.143** (0.064)	0.036 (0.029)	0.001 (0.128)
YO	-0.019*** (0.007)	-0.004** (0.002)	-0.004*** (0.002)	-0.005** (0.002)	-0.006* (0.003)	-0.020*** (0.006)				
RGDP L1	0.519* (0.295)	0.520* (0.298)	0.563* (0.298)			0.512** (0.233)	0.726*** (0.226)	0.727*** (0.220)		
BR	-0.001** (0.001)	-0.001** (0.001)	-0.001** (0.001)			-0.001** (0.001)	-0.002*** (0.001)	-0.002*** (0.001)	-0.001* (0.000)	-0.003** (0.001)
BRsq	0.007* (0.003)	0.008** (0.003)	0.008** (0.003)			0.008*** (0.003)	0.009*** (0.003)	0.009*** (0.003)	0.004* (0.003)	0.002** (0.003)
YP	0.016* (0.007)					0.017*** (0.006)				
Alex_D_PRO			-0.174** (0.082)					-0.157* (0.087)		
Alex_D_BR								-0.092*** (0.035)		
Alex_D_BRsq								0.000*** (0.000)		
R-Squared	42.70%	87.93%	75.46%	77.91%	87.66%					
FE: F-Statistic GMM: Wald χ^2	133.87***	157.25***	132.87***	190.25***	101.51	1546.08***	1441.86***	1430.68***	832.75***	643.77**
N	153	136	153	102	51	144	128	144	96	48

*Significant at 10% significance level
**Significant at 5% significance level
***Significant at 1% significance level

Note: Instruments used in GMM: Assets, ROAE, EA

Table 5: Estimation results for the capitalization indicator: Equity-to-Assets Ratio

Equation / Variable	*Fixed Effects Estimation*					*Generalized Method of Moments*				
	Benchmark Regression (1)	Excluding Bank of Alexandria (2)	Including dummy for Bank of Alexandria (3)	Excluding Non-Foreign Banks (4)	Excluding Foreign Banks (5)	Benchmark Regression (1)	Excluding Bank of Alexandria (2)	Including dummy for Bank of Alexandria (3)	Excluding Non-Foreign Banks (4)	Excluding Foreign Banks (5)
EA L1	0.751*** (0.045)	0.737*** (0.049)	0.739*** (0.047)	0.703*** (0.067)	0.754*** (0.712)	0.716*** (0.044)	0.700*** (0.048)	0.716*** (0.044)	0.704*** (0.062)	0.754*** (0.062)
PRO	0.006 (0.006)	0.009 (0.010)	0.009 (0.009)	0.005** (0.006)	0.037 (0.044)	0.001 (0.006)	-0.002 (0.010)	-0.004 (0.010)	0.002 (0.006)	0.037** (0.038)
Assets	-0.242* (0.132)	-0.269* (0.158)	-0.241* (0.145)	-0.234* (0.129)	-0.282 (0.599)	-0.370*** (0.127)	-0.328** (0.146)	-0.343*** (0.134)	-0.301** (0.124)	-0.281 (0.521)
BR	0.002*** (0.001)	0.002*** (0.001)	0.002*** (0.001)	0.002*** (0.001)		0.002*** (0.001)	0.002*** (0.001)	0.002*** (0.001)	0.002 (0.001)	
Alex_D_PRO			-0.007 (0.012)					0.008 (0.013)		
R-Squared	81.73%	83.31%	79.41%	71.31%	86.71%					
FE: F-Statistic GMM: Wald χ^2	119.68***	88.24***	79.29***	71.68***	44.30***	553.27***	337.17***	530.63***	337.92***	234.46
N	153	136	153	102	51	144	128	144	96	48

*Significant at 10% significance level
**Significant at 5% significance level
***Significant at 1% significance level

Note: Instruments used in GMM: CI, ROAE

Table 6: Classification of Banks into Foreign and Non-Foreign:

Banks classified as Foreign	Bank	Foreign Acquirer
1	**Bank of Alexandria**	Intesa San Paolo Group
2	**Cairo Barclays Bank**	Barclays PLC
3	**Al Baraka Bank- Egypt**	Al Baraka Banking Group
4	**Abu Dhabi Islamic Bank**	Abu Dhabi Islamic Bank PJSC
5	**Piraeus Bank - Egypt**	Piraeus Bank Greece Group
6	**Qatar National Bank Al Ahli**	Societe Generale Bank
Banks classified as Non-Foreign	**Bank**	**Majority Ownership**
1	**Commercial International Bank**	93.5% Free Float
2	**Suez Canal Bank**	41.48% Arab International Bank (38.76% owned by Central Bank of Egypt on behalf of Arab Republic of Egypt)
3	**Egyptian Gulf Bank**	55.78% Free Float

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