



eCOMMONS

Loyola University Chicago
Loyola eCommons

Topics in Middle Eastern and North African
Economies

Journals and Magazines

9-1-2001

Incentive-Based Regulations and Bank Restructuring in Egypt

Alaa El-Shazly
Cairo University

Follow this and additional works at: <https://ecommons.luc.edu/meea>



Part of the [Economics Commons](#)

Recommended Citation

El-Shazly, Alaa, "Incentive-Based Regulations and Bank Restructuring in Egypt". *Topics in Middle Eastern and North African Economies*, electronic journal, 3, Middle East Economic Association and Loyola University Chicago, 2001, <http://www.luc.edu/orgs/meea/>

This Article is brought to you for free and open access by the Journals and Magazines at Loyola eCommons. It has been accepted for inclusion in Topics in Middle Eastern and North African Economies by an authorized administrator of Loyola eCommons. For more information, please contact ecommons@luc.edu.

© 2011 the authors

Incentive-Based Regulations and Bank Restructuring in Egypt

Alaa El-Shazly

Cairo University

E-Mail: ashazly@cics.feps.eun.eg

Summary

The Egyptian authorities undertook major banking reforms in the 1990s towards a more liberal system. This included the strengthening of bank supervision and regulations on the basis of internationally accepted standards to deal with the risks inherent in the new policy environment. To ensure the stability of the banking industry, the regulatory policy should include elements of private market discipline along with strong enforcement mechanisms of prudential bank regulation. The safety nets should be based on rules designed to align the private incentives of market players with the social goal of financial stability. Incentives for prudence and safe banking practices can protect market stability and increase the banks' franchise values

JEL Codes: G2, E6, H3

1. Introduction

In recent decades, many countries have experienced banking problems requiring major reforms of their banking systems. The problems are largely due to domestic causes, such as weak banking supervision and inadequate capital. Also, banking reform may be needed to modernize the financial services industry, as in the case of transition countries moving from a public-sector-led to a market economy. External factors, such as deteriorating terms of trade, can cause currency crises and worsen banking problems.

The timing of reforms is important in determining the difficulty and cost of implementation. In times of banking distress, depositors and owners of bank capital all lose confidence and seek simultaneously to salvage their resources by withdrawing them. This leads to banking panic and the authorities have no option but to restore stability with policy remedies that are more difficult and costly under a banking crisis. Governments can do better, however, by anticipating the need for reforms and carrying them out in times of relative financial calm.

Countries resolve their banking problems by adopting strategies, policies, and tools for reform and successful restructuring. Bank restructuring aims to improve bank performance; that is, restore solvency and profitability, improve the banking system capacity to provide financial intermediation between depositors and borrowers, and restore public confidence. This requires a comprehensive approach from policymakers in addressing banking problems.

More precisely, bank restructuring can be classified into three broad categories, namely, financial, operational and regulatory. Each of these categories has its own policy measures whose synchronized application can bring about a more efficient working of the banking system. Financial restructuring attempts to restore solvency by improving banks' balance sheets or net worth³e.g., by raising additional capital or by raising the recovery value of problem loans and collateral. Operational restructuring affects profitability with

such measures as improved management and accounting systems, and better assessment of asset risk. Finally, enhancing supervision and prudential regulation as well as establishing safety nets, such as deposit insurance, raise public confidence and add to the banking system's capacity for financial intermediation.(1)

Focusing on bank regulation, the safety nets should be based on rules designed to align the private incentives of market players with the social goal of financial stability. Incentives for prudence and safe banking practices can protect market stability and increase the banks' franchise values (i.e., the capitalized value of expected future profits). Thus governments should introduce elements of private market discipline as a major component of the regulatory regime along with good rules and strong enforcement mechanisms.

Similar to many emerging market economies, Egypt undertook banking sector reforms in the 1990s towards a more liberal system. The new policy environment necessitated refining the methods used in monitoring risks with emphasis on prudential bank regulation. The present paper sheds light on bank regulatory policy in Egypt and the incentive schemes to foster healthy competition and ensure financial stability.

The paper is organized as follows. Section 2 gives an exposition of structure and competition in the Egyptian banking system. Section 3 focuses on prudential regulation and bank supervision and highlights impediments to stronger enforcement mechanisms. Section 4 discusses different schemes for monitoring bank behavior under informational asymmetries and the design of incentive-compatible safety nets. Section 5 provides econometric evidence on bank heterogeneity and market discipline. Section 6 concludes.

2. The Egyptian Banking System: Structure and Competition

The Egyptian banking sector expanded markedly in the mid-1970s spurred by the country's so-called open door policy. This policy aimed at outward-looking growth with an active role for the private sector to promote economic performance. To serve the new policy, a banking law was enacted in 1975 (Law 120/1975) defining the nature and mode of operations for all banks. It identified three types of banks:

- (i) Commercial banks, which usually accept deposits and provide finance for a wide variety of transactions.
- (ii) Business and investment banks, which carry out medium- and long-term operations such as the promotion of new businesses and financing of fixed asset investments. They may also accept deposits and finance foreign-trade operations.
- (iii) Specialized banks, which carry out operations serving a specific type of economic activity. They may accept demand deposits.

Banks operating in Egypt can also be classified as public sector, private & joint venture, or foreign according to ownership. All specialized banks are state owned and are assigned the task of providing long term finance for real estate, agricultural and industrial development. They mainly cater to the needs of the private sector and depend in their fund raising on borrowing from financial institutions. There are also four public sector commercial banks and whose volume of business constitutes a significant share in total bank transactions. Private & joint venture as well as foreign banks (operating through branches) are private sector institutions established under investment law. Foreign banks are all registered as business and investment banks as their envisaged role is principally to raise long-term funds on the international financial markets and to promote investment. In addition, there are banks which are established under special laws and which are not registered with the Central Bank of Egypt (CBE). Appendix I shows structure of the Egyptian banking system and balance-sheet size of banks. As can be seen, commercial banks account for the bulk of banking operations.

The four public sector commercial banks are the largest operating banks in Egypt in terms of balance-sheet

size, accounting for nearly 50 percent of total bank assets. They have a significant market share in retail and corporate banking services through large branch networks and close relationship with state-owned companies. They are also major participants in the equity capital of most joint-venture banks.

The private banks play a less dominant role in the market for loanable funds and focus on trade-related financial services to the private business sector. They have showed a preference to finance working capital and trade activities whose transactions normally require short term credit and result in quicker and more secure returns. In practice, the portfolio behavior of the private commercial banks and of the business and investment banks are virtually the same.

The banking industry is therefore concentrated and segmented, and this has a stifling effect on competition. The private banks are seeking ways, however, to further diversify their loan portfolio and assets as opposed to focusing on trade finance. They have recently reassessed their financial services and widened their retail base with a view to meet their clients' demand for personal loans, mortgages, insurance products, individual retirement plans, and credit cards.(2)

Regulatory barriers to entry also weaken competition in the banking industry. The CBE is apparently reluctant to license new domestic banks as it regards the number of existing ones large enough for establishing a competitive market. The CBE's reluctance to issue new licenses is reflected in the high entry costs, which are excessive by international standards.(3) The minimum authorized capital for new banks is set at £E 100 million, of which £E 50 million has to be fully paid up (£E denotes Egyptian pound; these figures are equivalent to about US\$ 30 million and US\$ 15 million, respectively). For branches of foreign banks, however, the minimum authorized capital is set at US\$ 15 million or the equivalent in other major currencies.

It is also alleged that the CBE does not particularly favor an expansion of the private banks' branch network in locations already dominated by the public sector banks in the major cities. While there appear no restrictions on branching in locations which are deprived of adequate banking services such as the new communities and the provinces, the public sector banks continue to maintain a large market share. In particular, since the opening of branches is influenced by the expected level of business activity, which is normally higher in the city, branches of the private banks are considerably outnumbered by branches of the public sector banks. At end-December 1999, the private banks had 481 branches nationwide compared to 918 branches for the public sector commercial banks.

Recently, in an attempt to reduce market concentration and enhance competition, the authorities have implemented a bank privatization program. The public sector banks are mandated to divest their shares in the joint-venture banks with a maximum ownership of 20 percent. By end-June 2000, the public banks' ownership was above 20 percent in eight (out of twenty three) joint-venture banks whose privatization was planned to be complete by the end of the same year.

The authorities also plan to privatize the four public sector commercial banks. The necessary legislation for the privatization of these banks was passed by the parliament in 1998, but none was offered for sale as yet. The public commercial banks are unlikely to be privatized in the current period until broader financial sector restructuring is undertaken, including the strengthening of bank supervision. This reflects the authorities' preference for selling public banks after improving their financial viability to ensure maximum participation by quality investors and the highest possible price.(4)

2. Bank Regulation and Supervision

Prudential Regulations

The safety and soundness of the banking system is important not only because it prevents economic downturns related to financial panics but also because it avoids adverse budgetary consequences for

governments, which often bear a significant part of the costs of the bailout. Prudential regulation is meant to protect the banking system from these problems by inducing banks to invest prudently. One form of prudential regulation is capital requirements, typically using the Bank of International Settlements (BIS) standards of the Basle Accord. Capital requirements force banks to have more of their own capital at risk so that they internalize the inefficiency of gambling or investing in high-risk assets. While investing in a gambling asset can yield high private returns for the bank if the gamble pays off, it imposes costs on depositors if the gamble fails, where the probability of failure is high. In contrast, investment in a prudent or low-risk asset yields higher expected returns.

Capital requirements reduce gambling incentives and moral hazard by putting bank equity at risk. However, they also reduce banks' franchise values, thus encouraging gambling or "betting the bank". It follows that capital-requirement regulation is not enough to yield Pareto-efficient outcomes. Adding other forms of regulatory instruments can achieve Pareto-efficient outcomes if they facilitate prudent investment by increasing franchise values. Such regulatory policies would seek improving bank profitability. Higher profits imply higher franchise values and so higher incentives for making good loans or investing in prudent assets, thereby reducing the moral hazard problem in banking. Note that the franchise value can only be captured if the bank stays in business; if the bank gambles and fails, it loses its franchise value. Franchise value can be viewed as an intangible capital which augments the bank's equity capital.

Regulatory policies that could be used to generate improvements over using capital requirements alone include portfolio restrictions, enhancing supervision, and the design of incentive-compatible safety nets. The goal of these policies is to limit the scope of the bank engagement in gambling activities and moral hazard behavior while creating (franchise value) incentives for prudential bank behavior (5). Governments may consider the application of an optimal mix of these policies. In what follows, however, we focus on enhancing supervision and the incentive-compatibility of safety nets. These policies would ensure prudent management of the banking firm based on internal controls.

Incentives for prudence in bank behavior can protect financial stability, especially in economies where the banking system role in domestic finance is predominant, such as in Egypt. Incentive schemes which align the objectives of market players with the social good should be an important component of the regulatory policy. For example, safety nets to reduce systemic risk should minimize the moral hazard from stakeholders by limiting risk protection and by making the cost of protection sensitive to the risk taken. Noting this, we first review the prudential regulations in the Egyptian banking system before considering their actual implementation and the room to improve bank regulatory policy.

In Egypt, the central bank is the regulator. The CBE is responsible for, inter alia, regulating and managing the banking and monetary system, and acts as the "bankers' bank" dealing with the daily settlements of clearings. The CBE is also the supervisory authority for deposit-taking banks, with wide powers vested in it by the banking law. Prior to reforms in the early 1990s, the banking sector was heavily regulated through credit controls and portfolio restrictions (6).

A move towards a more liberal regime which emphasizes prudential regulations and competitiveness in the banking industry took place in the 1990s. Regulations that discriminate against private banks and inhibit a level playing field for all participants were removed. For example, public sector companies were allowed to deal with all banks without prior permission from a public sector bank. Branches of foreign-owned banks were allowed to operate in local currency and full entry of foreign banks through the establishment of local subsidiaries was authorized. Foreign partners were allowed majority equity-holdings in joint venture banks. Bank fees and charges, creditor and debtor rates, and transactions on the foreign exchange market were liberalized. Administrative credit allocation was phased out and Treasury bill auctions were used to manage liquidity and indirectly provide a reference interest rate to the financial markets.

The CBE also took the following measures in 1991 to strengthen the solvency and efficiency of banks (7):

(i) Reserve and Liquidity Requirements

To reduce the implicit tax on banking activity, the non-interest-bearing reserve balances held by banks at the CBE were reduced (from 25 percent) to 15 percent of total Egyptian pound deposits. On the other hand, banks continued to hold with the CBE 15 percent of total foreign currency deposits as a reserve balance earning interest equivalent to LIBOR. Meanwhile, the liquidity ratio was reduced and its scope was widened; the ratio became 20 percent (down from 30 percent) and 25 percent for local- and foreign-currency balances, respectively. The liquidity ratio was also extended to business and investment banks in addition to commercial banks.

Although the reserve and liquidity ratios are lower than the requirements in the pre-reform period, they are still relatively high by international standards. This may reflect the authorities concern about the low capitalization and solvency of some banks. But strengthening the solvency of weak banks would be better tackled through capital requirements and loan provisioning (instead of levying implicit tax on all banks indiscriminately in the form of high reserve and liquidity requirements).

(ii) Capital Adequacy Ratio

The banks' minimum capital requirements vis-a-vis their risk weighted assets were increased to 8 percent along the lines of Basle Committee on Banking Supervision; Appendix II shows the classification of assets and risk weights. Capital was defined to consist of two components:

- a. Primary capital, which includes paid-up capital and reserves.
- b. Other capital, which includes provisions for general banking risks and subordinated long-term loans of at least five-year maturity (these loans would be amortized over the last five years of their maturity period at the rate of 20 percent per annum).

As a general rule, one-half of the capital adequacy ratio would be met from primary capital. In addition, the provisions for general banking risks would account for no more than 1.25 percent of the risk weighted assets, and the subordinated loans should not exceed 50 percent of primary capital.

The CBE decision for the (8 percent) capital adequacy ratio was taken in January 1991. Banks whose capital did not comply with the new regulations at the time were allowed gradual compliance:

- (a) For banks with capital adequacy ratio between 7 percent and 8 percent at end-December 1990, they were required to comply with the new regulations by end-December 1992.
- (b) For banks with capital adequacy ratio below 7 percent at end December 1990, they were required to comply with the new regulations by end-December 1993.

It is noteworthy that the public sector banks were recapitalized (through government bonds) to comply with the capital adequacy ratio. At present, there are few non-complying private banks. The CBE has agreed with these banks^{3/4}which are small, accounting for nearly 3 percent of banking assets^{3/4}on a schedule for compliance and a penalty scheme is developed to ensure progress on this front.

(iii) Foreign-Exchange Exposure

The banks foreign-exchange exposure was limited; the ratio of foreign currency liabilities to foreign currency assets became subject to a maximum limit of 105 percent, and the open position for a single currency and for all currencies combined became subject to limits of 10 percent and 20 percent, respectively, of bank capital. With open position in several currencies, the 20 percent limit represents a cap on the single currency

exposure limit.

(iv) Investment Concentration Abroad

Investment abroad by banks is subject to a limit of 40 percent of the bank capital. Also, the bank's deposits held with single foreign correspondents should not exceed 10 percent of total investments abroad (or US\$3 million, whichever is higher).

(v) Credit Concentration

Single customer exposure^{3/4}credit facilities, bonds and share holdings^{3/4}was limited to 30 percent of bank capital (on the Basle definition). At the same time, credit to a single customer should not exceed 25 percent of a bank's paid-up capital and reserves. This applies to all bank borrowers including the public sector ones. When first applied in 1991, some banks who exceeded this limit with a wide margin were allowed a gradual compliance. In addition, to discourage lending to insiders, banks are prohibited from granting any credit facilities to members of their board of directors or to their auditors. There is also surveillance by the CBE on geographical and sectoral concentration of bank lending so as to diversify portfolio risk.

For equity holdings, bank participation in the share capital of joint-stock companies is limited to 40 percent of the company's capital, provided that the nominal value of the shares owned by the bank shall not exceed its paid-up capital and reserves.

(vi) Loan Classification and Provisioning

Stricter loan classification and provisioning criteria were issued to ensure that individual banks act prudently. Non-performing loans are classified as substandard, doubtful, or bad according to the delay in debt repayment. All types of banks are mandated to take provisions on non-performing loans as follows:

- (a) If interest or principal repayment is delayed for over three months (substandard debt), a 20 percent provision has to be taken.
- (b) If unfulfillment of debt-servicing obligations extends to over six months (doubtful debt), the provision increases to 50 percent.
- (c) If the delay in servicing bank debt exceeds a year (bad debt), a 100 percent provision is called for.

The CBE examiners may also request the classification of certain borrowers as high-risk, and consequently mandate increased provisions on the part of banks. This is intended to cover risks which are known to exist but which have not been identified at the balance sheet date. In case of provision inadequacy, the CBE is empowered to prohibit the bank from distributing dividends to its shareholders in order to strengthen the bank's financial position. In addition, interest accrual on non-performing loans should be suspended and appear as footnote to the financial statements; it should not be added to customer debit balances. It is noteworthy that non-performing loans may not be classified as such if borrowers put up highly liquid collateral (near monies) such as bank deposits and Treasury securities which fully guarantee the debt repayment.

These prudential regulations are intended to control bank losses through early detection. In other words, deviations from the regulatory framework serve as early warning signals to banking problems. The CBE confirms that banks are in compliance with the prudential regulations with only a few exceptions; non-complying banks are not allowed to distribute profits until their financial condition is strengthened. Official estimates show that non-performing loans declined from 14.7 percent in 1996 to 11.7 percent in 1999 and

that total provisions cover about 82.2 percent of non-performing loans. Also, risk-weighted capitalization is estimated at 10.5 percent compared to the Basle Committee's minimum requirement of 8 percent (8).

Recent banking problems suggest, however, the need for a more effective implementation of the upgraded regulatory system and internal controls. In 2000, a court case of illegal banking practices sentenced bank officials and problem borrowers to prison for fraud and embezzlement. Also, in 1999-2000, the banking sector faced serious liquidity problems related to excessive risk concentrations (notably, loans to the real estate sector) and increased levels of non-performing loans. The liquidity problems have reduced the banks' capacity for financial intermediation with negative repercussions on the country's growth prospects. Consequently, depositors and potential borrowers have thrown criticism onto the CBE for not sufficiently monitoring the banks, thus undermining public confidence in financial stability(9). Bank supervision and the enforcement of prudential regulations for solvency purposes is discussed next.

The safety and soundness of the banking system is important not only because it prevents economic downturns related to financial panics but also because it avoids adverse budgetary consequences for governments, which often bear a significant part of the costs of the bailout. Prudential regulation is meant to protect the banking system from these problems by inducing banks to invest prudently. One form of prudential regulation is capital requirements, typically using the Bank of International Settlements (BIS) standards of the Basle Accord. Capital requirements force banks to have more of their own capital at risk so that they internalize the inefficiency of gambling or investing in high-risk assets. While investing in a gambling asset can yield high private returns for the bank if the gamble pays off, it imposes costs on depositors if the gamble fails, where the probability of failure is high. In contrast, investment in a prudent or low-risk asset yields higher expected returns.

Capital requirements reduce gambling incentives and moral hazard by putting bank equity at risk. However, they also reduce banks' franchise values (i.e., the capitalized value of expected future profits), thus encouraging gambling or "betting the bank". It follows that capital-requirement regulation is not enough to yield Pareto-efficient outcomes. Adding other forms of regulatory instruments can achieve Pareto-efficient outcomes if they facilitate prudent investment by increasing franchise values. Such regulatory policies would seek improving bank profitability. Higher profits imply higher franchise values and so higher incentives for making good loans or investing in prudent assets, thereby reducing the moral hazard problem in banking. Note that the franchise value can only be captured if the bank stays in business; if the bank gambles and fails, it loses its franchise value. Franchise value can be viewed as an intangible capital which augments the bank's equity capital.

Regulatory policies that could be used to generate improvements over using capital requirements alone include deposit-rate ceilings, portfolio restrictions, entry restrictions, and enhancing supervision. The goal of these policies is to limit the scope of the bank engagement in gambling activities and moral hazard behavior while creating (franchise value) incentives for prudential bank behavior. Governments may consider the application of an optimal mix of these policies. In this paper, however, our focus is on enhancing supervision and ensuring prudent management of the banking firm based on internal controls as a policy instrument designed to align the private incentives of market players with the social goal of financial stability.⁹

Incentives for prudence in bank behavior can protect financial stability, especially in economies where the banking system role in domestic finance is predominant, such as in Egypt. In particular, the returns on investments to set up rules, institutions, and enforcement mechanisms can be greater if market players have an incentive to align their own objectives with the social goal of financial stability. Emphasizing incentives is not to deny the importance of good rules, capable regulators, and strong enforcement measures. For example, safety nets to reduce systemic risk should minimize the moral hazard from stakeholders by limiting risk protection and by making the cost of protection sensitive to the risk taken.

Bank Supervision and Information Disclosure

Surveillance of the banking system is the responsibility of the CBE and comprises on-site and off-site supervision. On-site inspection involves visits to the banks to review their financial condition and evaluate their management controls. Off-site surveillance, on the other hand, involves regular assessment and analysis of bank performance based on the calculation of screening financial ratios for the different types of banking institutions. The screening ratios check such primary determinants of financial soundness as earnings, asset quality, liquidity, and capital adequacy. Based on this surveillance, the CBE's board of directors are kept regularly informed of developments in the banking industry through reports prepared by the supervisory staff.

Bank supervisors are trained on both on-site and off-site supervision and participate in regular training programs. Nevertheless, the enforcement of prudential regulations is weakened by understaffing and unattractive compensation for the supervisors. On-site inspection used to focus on bank compliance with an extensive array of credit and tariff controls. With the financial reforms of the early 1990s and the shift to prudential regulations, greater emphasis has been placed on assessing bank solvency and liquidity. But the frequency and intensity of inspection may not be up to the requirements of the new banking environment. At present, it takes the CBE nearly two years to conduct on-site inspection of all banks. This is infrequent by international standards (10). Also, the CBE examiners may lack the necessary skills for an effective assessment of risk management techniques in banks and close examination of the banks' compliance with regulations, particularly with regard to asset quality as the recent banking and liquidity problems suggest. To ensure sound and safe banking practices, there is need to develop appropriate policies for recruiting and retaining able staff in bank examination and supervision. In particular, bank supervisors should be offered attractive salaries and be trained on modern practices to improve their skill levels.

For off-site surveillance, the banks are required to submit various prudential and statistical returns to the CBE's Bank Control Department on a monthly basis. These returns are analyzed by the CBE examiners on a bank-by-bank basis. For the most part, the returns are reviewed manually due to lack of computational facilities. A more efficient surveillance requires a computer monitoring system for the supervisors to obtain information and identify changes in the financial condition of banks in a timely fashion. It would facilitate (11):

- i.) Screening financial ratios and identifying those banks in the bottom percentile of a peer group.
- ii.) Screening financial ratios and comparing them to critical values.
- iii.) Combining ratios into a composite score, to be used for ranking banks (e.g. CAMEL-type rating system).

Automated and electronic reporting under offsite supervision would improve the ability of the CBE to identify emerging problem banks and to prevent failure. The CBE recently applied the CAMEL rating system but it needs to extend this practice as only very few banks have been rated thus far.

There is some degree of coordination between on-site and off-site supervision. If the returns show unfavorable trends for a bank, this bank is contacted for an explanation and, where appropriate, is subjected to on-site inspection by the CBE examiners. For example, while there are no stipulated rules for the maturity mismatch of assets and liabilities in either local or foreign currency, it is analyzed by the examiners to control bank risk. If the maturity mix exceeds safe limits, the CBE notifies the bank management of this and follows up the matter through on-site inspection. However, more effective coordination between on-site and off-site supervision would require upgrading the information technology and staff skills. In this regard, information processing need to be automated through a computer network linking all banking institutions with the CBE (to obtain and monitor information in a timely manner) and the recruitment of high calibre staff should be emphasized. The trained and experienced CBE examiners should also be retained through attractive compensation packages. The CBE also relies on bank examinations conducted by experienced external auditors under its own guidelines. The CBE requires each bank to appoint two external auditors (who enjoy the confidence of CBE) to examine the bank's accounts and prepare an annual report. The auditors should

notify the bank and CBE of any violation to banking regulations and report on the degree of adequacy of the bank's internal control system e.g. risk-management procedures and of provisions. They should also indicate the techniques used for appraising asset quality and management. At this point, it is to be mentioned that the accounting standards might differ among auditors making it difficult to the CBE to assess and compare bank performance cross-section wise and over time. This is specially pronounced in the case of public sector banks which are audited by the government's Central Audit Organization (COA) in addition to the external auditors.

On the market transparency front, public disclosure of financial information was generally poor. Before fiscal 1998, banks used to publish their financial statements only at the end of fiscal year. Meanwhile, the income statements of some banks, especially the state owned, were exceedingly brief with a couple of lines on revenues and expenditures which do not show the amount of provisions. The general public had more frequent access to information only for banks which are listed on the stock exchange. These banks are mandated by the capital market law (Law 95/1992) to submit quarterly statements on their financial position to the Capital Market Authority, which sells the information to the interested public.

The adoption of uniform accounting and auditing standards and practices besides sharp improvements in financial disclosure was much needed. Progress on this front was necessary: (a) for the regulatory staff to make policy recommendations and address problems on sound basis, and (b) to improve corporate governance in banks. In response, the CBE took a decision in 1997 mandating all banks to adopt international accounting standards (IAS) in preparing their financial statements with more frequent disclosure to improve transparency of the banking sector. Starting fiscal 1998, the banks are mandated to prepare quarterly statements on their financial position and profit/loss account and to publish these in widely circulated newspapers. The end-of-year statement would include detailed information while the statements of the preceding three quarters would be brief.

Yet, efforts may be needed to strengthen institutional standards and accountability in the auditing profession (12). Detailed audits based on accurate, forward-looking assessment of the banks' asset quality are essential for a true evaluation of financial viability. Also, while the CBE requests the submission of monthly financial statements by individual banks for monitoring the banking sector's performance, market transparency is so far insufficient. For instance, there is no published data on such important information as non-performing loans, average rates of return, and risk-weighted capitalization. Greater and more frequent public disclosure of information^{3/4}under uniform and internationally accepted accounting practices^{3/4}would allow effective monitoring schemes of bank behavior by stakeholders and establish market discipline.

Bank Compliance and Enforcement of Regulations

Bank compliance and the enforcement of prudential regulations can be checked by looking at such financial solvency measures as the ratio of provisions to loans. It should be noted, however, that provisions cover other uses, such as asset price volatility, and not just loans. In the absence of information breakdown on specific provisions, it is difficult to assess the sufficiency of the level of loan provisioning in Egyptian banks. Yet, given the high leverage ratio in the banking firm, loan provisions normally account for the larger part of total bank provisions. In this sense, the ratio of provisions to loans still provides a fair reflection of bank solvency.

Figure 1 shows the developments of the provisions-to-loans ratio for all banks in Egypt over the period 1991-99. There is a general upward trend especially in the early 1990s which represents the initial period of applying the stricter loan classification and provisioning criteria. State banks and small private banks generally used to understate the reported loan-loss provisions and overstate earnings. Following tighter regulations, however, the banks had to build up provisions to compensate for previous understatements.

Insert Figure 1 here

The CBE's loan grading and provisioning requirements as outlined above are perceived by the specialized

(state) banks as excessive. While consistent with international practice, strict implementation of such a regulatory scheme would depress profitability and significantly reduce the lending activity. The specialized banks note that their loan portfolio is distinct from other types of banks in being predominantly long-term and targeting certain sectors with developmental objectives. The assumed credit risk may be considerable because of the high sectoral concentration and cyclical patterns in the specific markets served but they usually possess adequate collateral, mainly real estate and capital equipment. Yet, if a borrower's cash flow operations are temporarily insufficient to meet debt obligations, which may be caused by project overruns in terms of completion time, the lending bank has to build up provisions even when it controls a guaranteed source of repayment. The CBE's point of view is that insofar as the pledged collateral may not be easily liquidated, the collateral's collection value is uncertain particularly with the slow and expensive procedures of the commercial judicial system in Egypt (13).

The need for an effective judicial system where commercial disputes can be rapidly resolved and contracts enforced is perceived. A legal infrastructure in support of bank lending with appropriate legislation relating to bankruptcy and collateral is deemed necessary for a well-functioning banking system. Improvement of arbitration institutions in Egypt is also sought as a relatively faster alternative for dispute resolution. It is noteworthy that in answer to these demands, the government issued in 1999 a new bill which would stimulate commercial life.

Against this background, the specialized banks have widened the scope of their operations to improve their performance and take account of the changing market conditions. For example, they expand on trade finance related to the sectoral activities of their clients, introduce lending services to non-traditional customers under broader definitions of their developmental tasks, and increase self dependence in fund raising through bond issues and attractive yields on time deposits which are important for medium- and long-term lending. While the authorities may view these developments as favorable to a more competitive system, this actually entails a move towards despecialization as the portfolio behavior of specialized banks will be similar to that of universal ones.

The public sector commercial banks also have difficulties in implementing the CBE's regulations on problem loans. This stems from the high share of lending to public enterprises in their loan portfolio. Before the enactment of Law 203/1991 which reorganized the public enterprise sector into financially autonomous companies cut off from the fiscal budget with the aim of subjecting them to competitive market forces and privatization, many of the public sector companies were not financially viable and usually reported losses. Their output was subject to price controls to maintain subsistence-level incomes for the bulk of the population as part of the social welfare scheme introduced in the early-1960s. The public enterprises operating under this system used to obtain cheap credit from the state banks but had difficulties servicing their debts; they were borrowers with high default risk. Backed by the government, the state banks were not subjected to strict banking supervision with the result that they had to build up substantial loan-loss provisions under the 1990s reforms. Because this would adversely affect their profitability in the shorter run, the banks sought a relatively slow adjustment to the new regulatory regime.

The adjustment process is believed to have gathered pace with the use of privatization proceeds for the settlement of public enterprises indebtedness and the ensuing improvement in quality of the banks' loan portfolio. Further stimulus to the adjustment process of state banks would come from the sales proceeds of their shares in profitable joint-venture banks. It should be noted, however, that these shares have provided them with a reliable source of profit while holding large non-performing loans in public enterprises.

Regarding private banks, the majority have been following prudent lending policies with little difficulty in accommodating the strengthened bank regulations. They adjusted with a reasonable speed. In the meantime, some small private sector banks which are generally undercapitalized lag behind in complying to the regulations. Mergers between such banks and better management may allow them to survive the new policy environment, favorable for a more competitive banking system. In this context, 15 small regional banks were merged in 1993 into a single institution (National Bank for Development). Also, the two specialized real

estate banks merged in 1999 (Credit Foncier Egyptien and Arab Land Bank were merged as the Egyptian Arab Real Estate Bank).

Taking the nature of their existing loan portfolios into account, the CBE has been flexible in the enforcement of the regulations on public sector commercial banks and specialized banks. They are allowed a gradual adaptation to the stricter loan classification and provisioning criteria. While their loan-loss provisions have increased, they are believed to be still well below the required levels so as not to depress profitability. Similarly, the small private banks are allowed a phase-in period. Even though deadlines have been set for adjustment by the different banks, it is not obvious how credible this can be; the adjustment process lacks transparency.

A measure of bank performance which considers provisioning and profitability is the provision for loan loss ratio; the higher the ratio of (annual) loan-loss provisions to total operating income the less profitable the bank is, *ceteris paribus*. Figure 2 shows the developments of this ratio for different groups of banks over the period 1991-98. As can be seen, the provisions ratio is significantly higher for the public sector commercial banks given a large size of non-performing loans to the state-owned enterprises. The lower ratios shown for the private banks and the specialized banks, who mainly cater to the needs of the private sector, reflect better asset quality and profitability in these banks. It should be noted, however, that credit risk in the specialized banks is normally higher than in the private banks as they typically lend to businesses involved in cyclical activities; e.g., agriculture and real estate. This suggests weak implementation of the CBE's loan classification and provisioning criteria in the specialized banks as one would expect higher provision ratios^{3/4}at least compared with the private banks^{3/4}than shown in the figure.

Insert Figure 2 here

Introducing market incentives for provisioning may speed-up bank adjustment to the prudential regulations. In this connection, allowing tax-deductibility of loan-loss provisions would provide banks with incentives for building up provisions without necessarily depressing their profitability. At present, tax treatment of loan losses in Egypt does not appear to be providing banks with incentives for improving their financial strength. Except for bad debt (as opposed to substandard and doubtful debts) and up to 10 percent of net profits, loan-loss provisions are not tax deductible; income tax on bank business is 40 percent. But when a loan ultimately proves to be uncollectable and is charged off, a tax rebate is allowed. Due to deficiencies in tax administration, however, the remitted amount is usually delayed for years with negative impact on bank liquidity. (Charge-offs reduce provisions for loan losses, lower reported profits, and decrease a bank's net worth; they raise borrowing costs on purchased funds.) It would be helpful to banks if the efficiency of tax administration is improved or if provisions are tax deductible. Such measures would contribute to greater bank loss provisions and higher profits. That is, the ability of banks to absorb future losses would improve together with their performance.

The CBE regulatory system is based on a purely quantitative method applied to all banks, regardless of their size or their individual nature. Under uniform and international audit standards, the main advantage of this method is ensuring a certain transparency in the banking sector by providing objective comparisons. On the other hand, it does not sufficiently take into account asset quality and management efficiency of the banks in light of their business type and principal orientations (14). This drawback risks weak adherence to the prudential regulations as suggested by the Egyptian case with respect to the state-owned and small private banks. Loan classification and provisioning rules are, in general, not strictly implemented by these banks. A practice which is apparently encouraged by the nondeductibility of loan-loss provisions for taxation purposes on one hand and by understaffed (both in terms of quantity and skill levels) CBE examiners on the other. The latter casts doubt on effective enforcement powers.

To improve the enforceability of banking regulations, the CBE may find it worthwhile to reconsider the homogeneity of the forms of control given the diversity of bank types. Alternatively, the quantitative regulatory system may be reinforced with post-liberalization bank restructuring directed towards universal

banking (despecialization with small banks liquidated or merged for better portfolio diversification). While there are potential economies of scale from universal banking, the greater risks involved call for establishing holding company structures with separately capitalized subsidiaries to carry out such activities as securities trading and fund management. The increasing number of banks in Egypt with holding company structures suggests a trend towards universal banking (the number increased from four banks in 1994 to sixteen in 2000). Transparency of public policy on the envisaged structure of the banking system should be emphasized for accountability and enforcement purposes.

Also, in order for the CBE to properly discipline the banking sector, bank regulations should be applied forcefully. On-site and off-site supervision should be strengthened to send a strong signal to banks which do not follow prudent practices and to improve solvency of the banking system. A tough stance should be taken when dealing with problem banks such that only those assessed to be viable in the longer term would be restructured but under new management and ownership; bad management should not be rewarded and corporate governance in the banks should be improved.

Just as well-managed banks monitor their borrowers, the authorities can serve depositors by monitoring banks on their behalf. Government regulation should go beyond processing information and publishing the results. The regulator must not allow a bank to continue functioning when it is insolvent; the bank may be liquidated or merged into another bank (15). More precisely, the regulator should not refrain from exercising their regulatory right to put the insolvent bank out of business. Regulatory forbearance increases the moral hazard incentives for banks because an operating but insolvent bank has almost nothing to lose by taking on greater risks; if the risky investments pay off, it gets out of insolvency.

The stability of the banking industry cannot be achieved, however, without enterprise reform. Loan losses are incurred through the failure of bank borrowers to honor their contracts because of bad policies, ineffective management, or weak institutional frameworks. The factors behind enterprise losses and inefficiencies should be addressed by the authorities so as to create a favorable business environment. This would help the CBE in the enforcement of bank regulations.

In this regard, improving the accounting and disclosure systems and the legal infrastructure are crucial for information gathering and enforcing debt contracts. The availability of reliable and comprehensive information about firms, and the ability of the legal system to enforce contracts rapidly, effectively, and transparently will add to the banking systems' capacity for financial intermediation. Accounting standards that produce comparable corporate financial statements make it easier for banks to assess the creditworthiness of borrowing firms and to evaluate their management. Also, the inclusion of loan covenants in debt contracts to lower moral hazard and monitor the borrower's effort and risk-taking behavior³e.g., the option of immediate loan repayment if cash flow falls below a certain level³4necessitates well-defined accounting and auditing standards, with trained auditors capable of verifying the accounting information. Meanwhile, assessing the health of banks requires reliable information on loan classification and concentration, on the realistic valuation of collateral, and on loan-loss provisioning.

Legislation and laws are important, but so is their enforcement. The legal system must allow banks to foreclose and collect their problem debts in a timely manner such that the position of secured creditors is strengthened. A lengthy process for foreclosure and debt recovery is a disincentive to banks to charge-off delinquent loans and limit financial intermediation (16).

4. Informational Asymmetries, Incentives, and Safety Nets

Turning to the role of incentives and safety nets in ensuring market stability, we first note that financial markets are subject to major systemic risks which are detrimental to the economy. For example, a bank failure can spill over to others either directly through balance sheet linkages or through psychological contagion. This involves direct losses to depositors which are often covered, at least partly, by public finances whether through an explicit deposit insurance scheme or through ad hoc compensation of an implicit

deposit protection scheme. Under the implicit scheme, a central bank may act as lender of last resort, the government may provide funds directly to troubled banks, or the government may take over these banks and then guarantees that depositors will receive their money in full. The borrowers from failed banks also suffer as the informational capital they acquired through sustained dealings with the bank suddenly loses its value.

While providing depositors with reasonable confidence about the safety of their money, deposit insurance has its drawbacks. The implicit safety net in the case of Egypt is no exception. We discuss the informational problems associated with different insurance schemes to draw conclusions on the design of incentive-compatible safety nets which minimize moral hazards (17).

First, we note that if the authorities do not provide adequate supervision, banks with deposit insurance have an incentive to invest in a gambling asset. The bank realizes high private return if the gamble pays off whereas depositors have nothing or little to lose if the gamble fails. With a safety net, depositors do not impose market discipline on banks by withdrawing deposits when they suspect that bank managers are engaged in gambling activities. Yet, in the event of bank failure, the fiscal cost is significant and is eventually borne by taxpayers.

To reduce the moral hazard problems of safety nets, bank supervision should be strengthened to ensure that banks are not taking on too much risk. Meanwhile, the authorities should set incentive structures that align the private incentives of market players with the social good. For example, in explicit insurance schemes, charging insurance premiums that vary with the riskiness of a bank's assets can induce banks to invest in low-risk assets, yielding higher expected returns. Also, allowing the risk-based premiums to drop as the bank's capital increases encourages the bank to hold more capital, which has the benefit of reducing moral hazard.

One problem with risk-based premiums, however, is that bank regulators may have difficulty in accurately assessing the riskiness of a bank's assets. The classification of banks by such measures as the Basel risk-based capital standard solely reflects credit risk and does not take sufficient account of interest-rate risk. Accordingly, risk-based standards should be modified to include interest-rate risk and regulators should set guidelines to encourage banks to manage interest-rate risk.

Second, explicit deposit insurance schemes can take a variety of forms with regard to their administration and financing, ranging from pure private systems to pure public ones. A quasi-public system which is jointly managed and funded by the government and the banks is likely, however, to achieve the insurance fund objective of preserving public confidence in the banking industry more effectively. A pure public system entails a subsidy to banks while a pure private one imposes a tax on banks and may break down, particularly in times of banking problems with high resolution costs³/i.e., just when the system is most needed. In contrast, a quasi-public system with government financial backing provides a more appealing cost-sharing and incentive-compatible structure that can reduce moral hazard and preserve public confidence.

Third, unless the membership of banks in explicit insurance schemes is mandatory, only the weaker banks will participate in the scheme with adverse selection consequences. For the scheme to be adequately funded and financially viable, the cost of insurance should be shared among all banks. This surely entails a cross subsidization of the weaker banks out of the financially sound ones. Yet, all banks would benefit from having a more stable industry where the likelihood of bank panics is reduced (18).

Fourth, with a safety net in which deposits are fully insured, large depositors would lose incentive for monitoring banks and establishing market discipline. Whatever the riskiness of bank assets is, depositors will not suffer any losses if all deposits are fully guaranteed. This may encourage banks to take on greater risks, thereby increasing the likelihood of bank failures and financial instability. While a complete deposit insurance eliminates the risks of bank runs, it destroys the value of information production and monitoring by depositors for sound banking practices and financial stability.

In contrast, an explicit deposit insurance scheme in which depositors are paid off only up to a certain insurance limit can induce banks to engage in prudent risk taking. Under such a scheme, large depositors (holding accounts in excess of the deposit insurance limit) would have an incentive to monitor bank behavior and pull out their deposits when the bank takes on too much risk. To prevent a significant loss of deposits and a possible related decline in franchise value, the bank would be more likely to invest prudently.

Fifth, an ambiguous safety net in the form of an implicit deposit insurance scheme (which is backed by the government) may destabilize the banking system by encouraging excessive risk taking and undermining market discipline. While ambiguity may be important to deter moral hazard incentives, it may lead to regulatory forbearance in the face of banking problems. The regulator may be reluctant to adopt transparent and clear rules for resolving banking problems; e.g., putting a bank out of business if it is insolvent.

In particular, the regulator may need to refrain from implementing these rules when it believes that there is risk of unjustified closure of a bank because of incomplete information on its true solvency (for instance, because of deficiencies in accounting information). In order not to impair its credibility in such a situation, the regulator may prefer ambiguous but credible rules over transparent rules that lack credibility. The scope for ambiguity has been declining, however, with trends towards greater disclosure of banking information (19).

Regulatory forbearance can also arise from agency problems, which occur when the agent (the regulator) does not have the same incentives to minimize costs to the economy as the principal (the taxpayer). Regulators are ultimately agents for taxpayers (principals) who bear the cost of any losses by a deposit insurance scheme. To act in the taxpayer's interest and lower costs to a deposit insurance scheme, the regulator must enforce prudential regulations and must not adopt a stance of regulatory forbearance, which allows insolvent banks to continue to operate. However, the regulator may lack adequate incentives to act in the taxpayer's interest.

The regulator's desire to hide the problem of an insolvent bank on the hope that the situation will improve, and hence escape blame for poor performance in bank supervision, may be higher than their desire to impose regulations under the existing incentive scheme. This may happen when the regulatory body is understaffed and poorly paid such that bank supervisors are prone to regulatory capture. In this case, the supervisors serve the banks rather than the interests of depositors and taxpayers. In particular, an insolvent bank may offer attractive honoraria to supervisors to adopt a stance of regulatory forbearance, thereby aligning the bank's incentive to bet the bank with the supervisors' incentive for greater compensation.

To reduce the danger of regulatory capture, the regulatory body should be adequately staffed, both in terms of quantity and skill levels, and supervisors should be handsomely compensated. For the regulatory body to attract and retain qualified staff, trained to maintain their public responsibilities when carrying out their supervisory duties, compensation should be competitive with the private sector. Exempting bank supervisors from government salary scales may have less budgetary cost than a bank failure (20).

In Egypt, financial difficulties of individual banks have been met by the government in an ad hoc manner. For example, in 1991, a joint venture between Bank for Credit and Commerce International (BCCI) and a local partner faced solvency problems that led to government intervention to protect the depositors' funds. The CBE first requested other banks to lend support in the form of an interest-free loan equivalent to 0.25 percent of their deposits. Subsequently, the joint venture merged into a public sector bank, Banque Misr, following the collapse of BCCI, supported by a loan from the CBE (21).

The private sector in Egypt perceives the implicit government safety net as primarily a protection scheme for depositors of public sector banks; it may not necessarily cover the deposits of all banks. The ambiguity of such an implicit deposit insurance scheme may have opposing effects on the stability of the banking industry. On one hand, it may encourage banks to engage in excessive risk taking on anticipation that the government will provide full insurance to depositors. On the other hand, it may impose market discipline on banks as

depositors can withdraw their funds if they suspect that the banks take on too much risk and that their deposits are not fully insured. Clearly, banking stability is undermined in the former case whereas it is strengthened in the latter. As the final outcome of this ambiguity can be detrimental to the economy if it leads to bank panics, it is important to establish a deposit insurance scheme with clearly defined rules and procedures. Such a scheme would serve as an efficient mechanism for crisis management. It would also allow timely exit of insolvent banks and foster healthy competition.

To this end, the authorities approved in 1992 the legal basis of a deposit insurance fund which would protect small depositors. The insurance fund would replace the existing implicit protection for deposits of the public sector banks with an explicit scheme covering the deposits of all banks. The banking legislation declares the insurance fund as an independent agency which is subject to the supervision of the CBE. However, the deposit insurance fund has not been established as yet. Banks are reluctant to contribute towards its establishment, showing preference instead to the less costly, though ambiguous, implicit government safety net.

In light of the above discussions, designing an incentive-based safety net^{3/4}where depositors monitor bank behavior to ensure financial stability^{3/4}calls for a quasi-public system of partial insurance. Also, the membership of banks in the insurance scheme should be mandatory and insurance premiums should be risk-sensitive. This would introduce market discipline as a key element of the regulatory regime. At the same time, prudential regulations should be enforced by capable bank supervisors and such that the likelihood of regulatory capture or forbearance is minimized. By not adopting a stance of regulatory forbearance, the bank regulator effectively limits the fiscal costs associated with safety nets, especially in the presence of spill over effects or wider systemic risks.

5. Bank Heterogeneity and Market Discipline: Panel Estimation

The ambiguity of an implicit deposit insurance scheme raises the issue of its effectiveness in imposing market discipline. To study whether depositors effectively monitor banks in Egypt, we take a formal look at the evidence on asset risk and market reaction to banking problems. The observable characteristics of banks with regard to asset risk and prudence include such financial ratios as the interest margin (the ratio of net interest to income

producing assets) and solvency^{3/4}for example, the ratio of provisions and equity to total assets which takes account of both loan provisioning and capital adequacy. On the other hand, we define market discipline as the depositors' reaction to bank behavior such that they withdraw their funds from banks with excessive risk taking. Accordingly, we use deposit growth as a measure of market discipline.

In general, given the interest paid on bank deposits, a low interest margin implies a low quality of loan portfolio or investment in a gambling asset; investment in a safer asset yields higher average return and hence higher net interest. In the meantime, bank solvency necessitates sound practices of asset classification and provisioning such that the ratio of provisions and equity to assets is normally higher in banks engaged in excessive risk taking. Also, to the extent the measures of observable asset risk or bank solvency indicate increased default risk, the withdrawal of deposits from risky banks impose market discipline.

A banking system in which market discipline plays an important role in ensuring sound practices and stability should have three main characteristics (22). First, depositors should distinguish among the default risks of different banks. Second, differences in deposit growth across banks should reflect differences in bank asset risk. Third, depositors should act to limit default risk such that banks have incentive to strengthen their financial condition and avoid disciplinary deposit outflows.

With this in mind, we investigate the microeconomic evidence on the existence of market discipline in two

steps. First, we consider the evidence on the extent of cross-sectional heterogeneity in the Egyptian banking system. In particular, we consider the heterogeneity in asset risk, financial solvency and deposit flows among three different groups of banks: public sector commercial banks, private banks, and specialized banks. Second, we test a model that relates deposit growth as a measure of market discipline to bank asset risk and solvency measures. The model uses panel data on the three groups of banks over the period 1991 - 1998, which witnessed bank reforms and restructuring to promote performance and market stability. The financial statements of the different bank groups are published on annual basis only starting from 1991.

Table 1 provides summary statistics for the banks' asset risk, financial solvency and deposit growth for the 1990s. The greater is the operating asset ratios, the more profitable the bank, *ceteris paribus*. In general, private banks performed better than the other bank groups on the various measures, including financial solvency, and attracted deposits at a higher growth rate.

Insert Table 1 here

The profit margin and the return on equity were particularly high. The high profit margin indicates that private banks were more efficient in controlling expenses^{3/4}for example, overstaffing in public sector banks increases the operating costs. The lower operating expenses in private banks also contributed to the greater return on equity. The return on assets was also higher in the private banks.

The interest margin in private banks was relatively low which can be explained, at least in part, by a small loan portfolio relative to the deposit base. The interest margin is a summary measure of net interest returns on income producing assets. While interest margin of the private banks is higher than the public sector commercial banks', it is lower than that of the specialized banks. The low interest margin of the public commercial banks reflects nonaccrual of interest on a large volume of non-performing loans to state-owned enterprises. On the other hand, the higher interest margin of the specialized banks can be attributed to obtaining lower cost funds through borrowing from state-owned financial institutions (i.e. they incurred lower interest expenses).

Table 1 provides some evidence on how links among asset risk, solvency, and market discipline differ across the three bank groups. Specifically, while deposit growth was higher in the private banks, their better scores on the operating asset ratios and financial solvency would justify an even greater inflow of deposits than that realized by the public commercial banks and the specialized banks. In other words, depositors do not appear to penalize the state-owned banks as much for excessive risk taking (noting the large non-performing loans to public enterprises). Depositors could have acted more effectively to limit the state banks' weakness through larger deposit outflows or lower deposit growth. The lack of substantial evidence of market discipline in the Egyptian banking system can be explained by the government's implicit deposit insurance scheme which protects state banks from the risk of insolvency and such that depositors have no strong incentive to penalize asset risk in those banks. As argued above, a more effective monitoring of bank behavior by depositors that foster healthy competition and market stability can be achieved through a quasi-public system of partial deposit insurance in which banks membership is mandatory and the cost of protection is risk sensitive.

Next, we study a panel regression analysis of market discipline as a reaction to asset and solvency risk. The model regresses deposit growth as a measure of market discipline on the interest margin and the ratio of provisions and equity to assets as measures of asset risk and financial solvency, respectively. To capture bank heterogeneity, we specify a fixed effect model and allow both the intercept and slope coefficients to differ across the cross-sectional units (23). To take account of heteroscedastic and contemporaneous correlation among the disturbances in this general model specification, we use the seemingly unrelated regressions (SUR) method for panel estimation. The correlation matrix computed from the equation-specific residuals indicates that SUR produces a gain in efficiency over a generalized least-squares regression that only accounts for heteroscedastic disturbance terms.

Table 2 reports the SUR estimation results. The coefficient estimates are statistically significant and vary

substantially across the bank groups. The results on market discipline across banks and in the banking system as a whole are mixed. For example, the effect of the solvency measure on deposit growth in the private banks is of the expected sign (positive) suggesting the operation of market discipline within these banks. Yet, the effect of the interest margin on deposit growth in the same banks is contrary to expectation (negative sign), making it difficult to conclude on the existence of market discipline. A similar argument applies to the public sector commercial banks where the measures of asset and solvency risks have opposite impacts on deposit flows. Only in specialized banks is there unambiguous evidence of the operation of market discipline, which may be explained by the fact that depositors of these banks are mainly financial institutions who are more sophisticated than individuals (on informational grounds) in monitoring bank behavior.

Insert Table 2 here

The ambiguity on the existence of market discipline in the Egyptian banking system can be largely explained by the ambiguity of the government safety net for deposit insurance. Without substantial evidence of market discipline, a conservative approach to our findings calls for policy measures to enhance banking industry transparency and stability. Precisely, it is important to design incentive-compatible safety nets which align the private incentive of market players with the social goal of financial stability. Safety nets should reduce the moral hazard from stakeholders by limiting depositors protection and by making the cost of protection sensitive to the risk taken.

6. Conclusions

The Egyptian authorities undertook major banking reforms in the 1990s towards a more liberal system. This included the strengthening of bank supervision and regulations on the basis of internationally accepted standards to deal with the risks inherent in the new policy environment. But the banking industry remain highly concentrated and segmented with the dominance of public sector banks. The on-going bank-privatization program to level the playing field for all banks will help to improve market competitiveness and efficiency.

Safety of the banking system necessitates strong compliance with prudential regulations. To improve the stability of the banking industry, it is crucial to have effective enforcement mechanisms of the regulations. At present, a number of factors limit the enforceability of bank regulations. (i) The legal infrastructure does not provide appropriate support to bank lending with the slow and expensive procedures of the commercial judicial system in Egypt. (ii) The state-owned banks hold large non-performing loans in public enterprises whose restructuring (under the privatization program) is still in progress.

(iii) Undercapitalization and management inefficiencies of the small private banks. (iv) Lack of adequate tax incentives for taking loan-loss provisions. (v) Understaffed and inadequately trained bank examiners and supervisors. (vi) Subjective assessment of bank asset quality as there is need to strengthen institutional standards and accountability in the auditing profession. (vii) Insufficient banking sector transparency. (viii) Limited evidence of private market discipline.

Improving the regulatory framework may require reconsidering the homogeneity of the forms of control in light of the different types of banks operating in Egypt. If, however, the authorities welcome bank restructuring towards universal banking and despecialization, public policy should be transparent about this with clearly set deadlines for accountability and enforcement purposes. Enterprise restructuring and reforms would also enable the CBE to reinforce bank regulations. In addition, strengthening bank supervision would require improving corporate governance in banks and management skills. In all cases, governments should introduce elements of private market discipline as a major component of the regulatory regime along with good rules and strong enforcement mechanisms.

End Notes

1. Dziobek and Pazarbasioglu (1998).
2. See Huband (1999).
3. See World Bank (1993).
4. See US AID, Privatization in Egypt Quarterly Review, July-September 1999.
5. Banking regulations of the pre-reform period may be found in the CBE annual reports.
6. See CBE (1992).
7. See Government of Egypt (2000).
8. Business Monthly, August 2000, pp. 42-43.
9. Hellmann et al. (2000).
10. In the US, for example, on-site supervision for all banks takes place at least once a year and by more than one regulatory agency.
11. See Harvilesky et al. (1985). Under the CAMEL rating system, the financial condition of banks are judged based on their capital, asset quality, management, earnings and liquidity (hence the acronym CAMEL); bank examiners assign a numerical value ranging from 1 to 5, where 1 is the best rating, for these criteria.
12. See US AID , op. cit., October -December 1998.
13. See World Bank (1994).
14. See De Carmoy (1990).
15. When a bank is liquidated or merged into another bank, the managers are usually fired and the shareholders lose their investment.
16. See Polizatto (1992).
17. The discussions draw on Bhattacharya et al. (1998) and Talley and Mas (1992).
18. In this sense, the contribution of financially sound banks to an insurance scheme is a premium for enjoying market stability.
19. Enoch, et al. (1997).
20. See Polizatto (1992).
21. See IMF (1998).
22. See Calomiris and Powell (2000).

23. See Greene (2000).

References

Bhattacharya, S., Boot, A., and Thakor, A. (1998), "The Economics of Bank Regulation," *Journal of Money, Credit and Banking*, Vol. 30, No. 4, pp. 745-770.

Business Monthly [Journal of the American Chamber of Commerce in Egypt], August 2000..

Calomiris, C., and Powell, A. (2000), "Can Emerging Market Bank Regulators Establish Credible Discipline? The Case of Argentina, 1992-1999," NBER Working Paper, No. 7715.

Central Bank of Egypt (1992), *Banking and Credit Developments* [In Arabic].

De Carmoy, H. (1990), *Global Banking Strategy*, Oxford: Basil Blackwell.

Dziobek, C., and Pazarbasioglu, C. (1998), "Lessons from Systemic Bank Restructuring," *IMF Economic Issues*, No. 14.

Enoch, C., Stella, P., and Khamis, M. (1997), "Transparency and Ambiguity in Central Bank Safety Net Operations," IMF Working Paper.

Government of Egypt (2000), *Ministry of Economy and Foreign Trade Quarterly Economic Digest*, Vol. 5, No. 2, January-March 2000.

Greene, W. (2000), *Econometric Analysis*, New Jersey: Prentice-Hall.

Harvilesky, T., R. L. Schweitzer, J. T. Boorman, (1985), *Dynamics of Banking*, Illinois: Harlan Davidson, Inc.

Hellmann, T., Murdock, K., and Stiglitz, J. (2000), "Liberalization, Moral

Hazard in Banking, and Prudential Regulation: Are Capital Requirements Enough?," *American Economic Review*, Vol. 90, No. 1, pp. 147-165.

Huband, M. (1999), *Egypt Leading the Way: Institution Building and Stability in the Financial System*, London: Euromoney Publications.

IMF (1998), *Egypt: Beyond Stabilization, Toward a Dynamic Market Economy*, IMF Occasional Paper No. 163.

Polizatto, V. (1992), "Prudential Regulation and Bank Supervision," in Vittas, D., ed., *Financial Regulation: Changing the Rules of the Game*, Washington, D.C.: World Bank.

Talley, S., and Mas, I. (1992), "The Role of Deposit Insurance," in Vittas, D., ed., *Financial Regulation: Changing the Rules of the Game*, Washington, D.C.: World Bank.

US AID, *Privatization in Egypt Quarterly Review*, Various Issues.

World Bank (1993), *Egypt: Financial Policy for Adjustment and Growth*, Washington, D.C.: The World Bank.

Appendix I

Structure of the Egyptian Banking System as at 31/12/1999

		<i>No. of Branches</i>
<i>All Types of Banks Registered With CBE</i>	62	
<i>Commercial Banks:</i>	28	
Public Sector Banks	4	918
Private & Joint Venture Banks	24	330
<i>Business and Investment Banks:</i>	31	
Private & Joint Venture Banks	11	105
Foreign Banks (Branches)	20	46
<i>Specialized Banks:</i>	3	
<i>Industrial:</i> Industrial Development Bank	1	14
<i>Real Estate:</i> Egyptian Arab Real Estate Bank	1	26
<i>Agriculture:</i> Principal Bank for Development and Agricultural Credit	1	1005

Note: This banking system structure does not include two banks established under private laws and which are not registered with CBE; namely, Arab International Bank and Nasser Social Bank.

Balance-Sheet Size of Banks (as at 31/12/1999)

(LE Million; US\$ = LE 3.4 at end-December 1999)

	Assets	Total deposits	Total Loans
<i>All Types of Banks</i>	370,032	246,927	212,885
<i>Commercial Banks</i>	290,983	208,186	166,157
<i>Business and Investment Banks</i>	51,710	27,854	23,866
<i>Specialized Banks</i>	27,339	10,887	22,862

Source: Central Bank of Egypt.

Appendix II

Classification of Assets and Risk Weights Held by Egyptian Banks

- | | | |
|-----|------------|---|
| (1) | Nil weight | Loans to the government sector in local currency
Government securities in local currency
Government and public economic authorities' rediscounted and exchange bills in local currency
Letters of credit to the government and public economic authorities in local currency
Letters of guarantee to the government and public economic authorities
Contingent liabilities on guarantees for loans to the government and public economic authorities |
| (2) | 0.2 weight | Loans to the public economic authorities in local currency
Loans to (or guaranteed by) governments of the OECD countries
Balances with international development banks
Balances with banks of the OECD countries
Balances with banks of other countries with a maximum term of up to one year
Export Credit to banks of the OECD countries
Export credit to banks of other countries with a maximum term of up to one year |
| (3) | 0.5 weight | Loans with a real-estate guarantee (for private housing) |
| (4) | 1.0 weight | Loans to the government sector in foreign currency
Government securities in foreign currency
Loans to the public economic authorities in foreign currency
Loans to the public sector companies
Loans to the private sector
Loans to non-bank financial intermediaries
Loans to the foreign sector, other than those to (or guaranteed by) the OECD countries
Private sector and foreign securities
Balances with banks overseas with a term of more than one year
Government and public economic authorities' rediscounted and exchange bills in foreign currency
Other sectors' rediscounted and exchange bills in foreign currency
Letters of credit to the government and public economic authorities in foreign currency
Letter of credit to other sectors
Export credit to banks overseas, other than banks of the OECD countries, with a term of more than one year
Letters of guarantee to the government and public economic authorities in foreign currency
Letters of guarantee to other sectors
Contingent liabilities on guarantees for loans to the government and public economic authorities in foreign currency |

Contingent liabilities on guarantees for loans to other sectors

Source: Central Bank of Egypt.

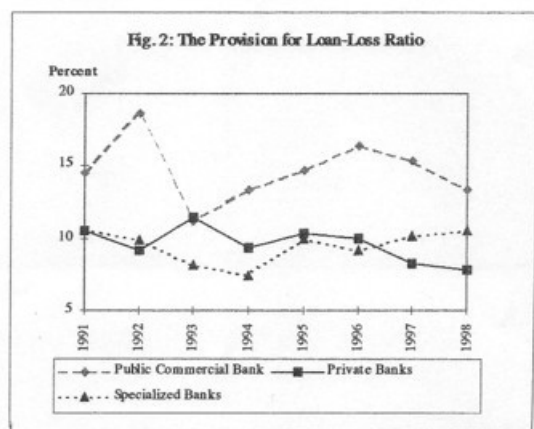
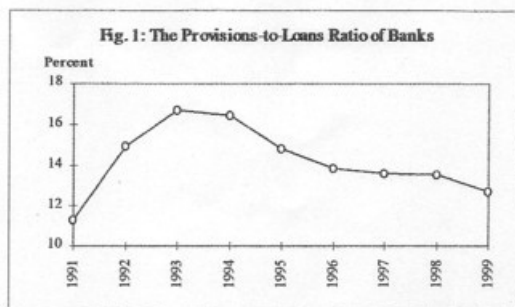


Table 1: Banking System Heterogeneity, 1991-98

	Public Commercial Banks			Private Banks			Specialized Banks		
	Mean	Median	Std.	Mean	Median	Std.	Mean	Median	Std.
Interest Margin	0.7	0.2	1.2	1.1	1.2	1.7	3.7	3.6	0.7
Return on Equity	5.6	5.1	2.0	18.5	18.2	1.9	2.8	3.5	7.0
Return on Assets	0.2	0.2	0.1	1.3	1.3	0.1	0.2	0.2	0.5
Profit Margin	2.4	2.2	1.0	14.4	14.2	1.8	2.4	2.2	4.7
(Provisions + Equity)/Assets	11.1	11.1	1.9	17.4	16.7	4.5	13.7	13.7	2.8
Deposit Growth	11.9	11.1	13.0	12.8	15.1	6.3	11.1	17.4	11.9

Notes:

1. Interest margin: the ratio of net interest income to earning assets (loans and securities investments).
2. Return on equity: the ratio of net income to equity.
3. Return on assets: net income per monetary unit of assets.
4. Profit margin: the ratio of net income to total operating income.

Table 2: Panel Regression Analysis of Bank Deposit Growth

SUR // Dependent Variable is MD (PSCB_MDPSCB; PB_MDPB; SB_MDSB)

Sample: 1991 1998

Total panel observations 24

Variable	Coefficient	Std. Error	t-Statistic
PSCB--IMPSCB	11.3956	0.0085	1335.8580
PB--IMPB	-8.1614	0.0117	-697.4376
SB--IMSB	9.0937	0.0629	144.4874
PSCB--PEAPSCB	-12.3424	0.0192	-642.3801
PB--PEAPB	2.9994	0.0067	450.2445
SB--PEASB	2.6105	0.0051	509.3831
Fixed Effects			
PSCB--C	154.9464		
PB--C	-33.1401		
SB--C	-52.28444		

Notes:

PSCB stands for public sector commercial banks.

PB stands for private banks.

SB stands for specialized banks.

MD is deposit growth.

IM is interest margin.

PEA is the ratio of provisions and equity to assets.

C is a constant.

The variables read as follows:

PSCB_IMPSCB is the interest margin for the public sector commercial banks, etc.