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BANK REGULATION AND SUPERVISION. THE LATEST THEORIES, MODELS AND VIEWS

This paper provides a comprehensive review of the latest economic literature about the impact of the bank regulation and banking supervision on the banking sector. It refers to such issues like regulations on: domestic and foreign bank entry, bank consolidation, capital adequacy, deposit insurance design, supervision (in terms of powers given to supervisors), private-sector monitoring of banks, and government ownership of banks. They are considered to be the most considerable and crucial factors determining the banking sector development and its stability. Therefore, they must be analyzed in any research on the relationship between bank regulation and supervision and banking sector performance.

Keywords: bank regulation, banking supervision, banking sector, central bank, financial stability, banking system, financial sector, bank activities, bank entry, deposit insurance schemes, capital adequacy, capital regulations, ownership, prudential regulation

Central banks have two core missions: the pursuit of monetary policy to achieve broad macroeconomic objectives and the maintenance of financial stability, including the management of financial crises. The latter mission is closely connected to regulation and supervision of the banking system, as well as to broader issues related to the financial sector. These issues include domestic and foreign bank entry, bank consolidation, capital adequacy, deposit insurance design, supervision (in terms of powers given to state supervising agencies), private-sector monitoring of banks, and government ownership of banks. To the author "banking supervision" refers to banking regulations and supervisory practices. This broad context and meaning of that term involves literature on the overall role of the government in regulating economic activity – in terms of arguments for greater or smaller government intervention – and the form that those interventions should take.

The characteristic feature of the economic theory on the effects of bank regulations and supervisory practices on bank development, performance, and stability are the conflicting views about those issues. For instance, some

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economists hold views against the banks' participating in securities, insurance, and real estate activities or those from owning non-financial firms. They argue that such complex banks are difficult to monitor effectively due to large informational asymmetries and the market and political power enjoyed by them. Such powerful banks can impede competition and adversely influence economic policies. Counter opinions point out that fewer restrictions on banks' activities allow them to exploit economies of scale and scope and thereby provide services more efficiently. Boyd, Chang and Smith (1998) argue that whether to restrict bank activities depends on policies and institutions, especially in the context of deposit insurance schemes – restrictions on bank activities enhance social welfare in countries with generous deposit insurance. Capital requirements are particularly beneficial when generous deposit insurance distorts incentives for high risk-taking, and official supervision is weak.

There are five main theoretical reasons for restricting bank activities and banking-commerce links provided by the economic literature (Barth et al. 2002). The first one maintains that conflicts of interest may arise when banks engage in such diverse activities as securities underwriting, insurance underwriting, and real estate investment. Such banks may, for example, attempt to "dump" securities on ill-informed investors to assist firms with outstanding loans (John et al. 1994, and Saunders 1985). The second opinion argues that moral hazard encourages riskier behaviour, and banks will have more opportunities to increase risk if allowed to engage in a broader range of activities (Boyd et al. 1998). The third one stipulates that complex banks are difficult to monitor. The fourth view indicates that such banks may become so politically and economically powerful that they become "too big to discipline." Finally, there is a view that large financial conglomerates may reduce competition and efficiency. According to these arguments, governments can improve banking by restricting bank activities (Barth et al. 2002). As opposed to these views, alternative theoretical reasons for allowing banks to engage in a broad range of activities are provided by the literature as well. The first one holds that fewer regulatory restrictions permit the exploitation of economies of scale and scope (Claessens and Klingebiel 2000). According to the second one, fewer regulatory restrictions may increase the franchise value of banks and thereby augment incentives for more prudent behavior. Lastly, it is argued that broader activities may enable

banks to diversify income streams and thereby create more stable banks (Barth et al. 2002).

Some earlier studies (Barth et al. 2001) seemed to prove that greater restrictions are associated with a higher probability of suffering a major banking crisis, and with lower banking-sector efficiency. That research found no opposing positive effects. Severe regulations on bank activities were not closely associated with less concentration, more competition, or greater securities-market development. It was thought that the positive association that was found between restrictions and banking crises simply reflected the effects of significant omitted variables. For instance, countries with more effective supervision may impose fewer restrictions. It was then interpreted that the positive relationship between regulatory restrictions and crises initially found might simply reflect the fact that countries with weaker supervision compensate by imposing more restrictions on bank activities. It was also referred to the positive association between restrictions and crises – it might have reflected another missing variable: the deposit insurance scheme. Countries with deposit insurance schemes that do not severely distort incentives toward greater risk-taking may impose fewer restrictions on bank activities. If so, the positive relationship between restrictions and crises may simply reflect the fact that countries imposing more restrictions do so to compensate for generous deposit-insurance schemes (Barth et al. 2001).

As the analyzed relationship between bank regulation and supervision and the performance of the banking system refers to such above-mentioned issues, theories on them must be presented and discussed. Economic literature provides conflicting views on these issues. The problem of regulations on domestic and foreign bank entry is on the one hand supported by views that effective screening of bank entry can promote stability – enhances prudent risk-taking behaviour (Keeley 1990). On the other hand, it has been opposed with the opinion stressing the beneficial effects of competition and the harmful effects of restricting entry (Shleifer and Vishny 1998). In the case of regulations on capital adequacy, traditional approaches emphasize the positive features of capital adequacy requirements (Dewatripont and Tirole 1994). Capital is to serve as a buffer against losses. It is argued by the views expressing doubts whether the imposition of capital requirements really reduces risk-taking incentives. Kim and Santomero (1988), and Blum (1999) argue that capital requirements may increase risk-taking behaviour. As deposit insurance schemes are considered which are to

prevent banks from illiquidity, and thus insolvency, it is argued that they may encourage excessive risk-taking behaviour (Dewatripont and Tirole 1994). This must be due to the fact that once the risk-based deposit insurance premia are fixed, bankers may respond by taking greater risk in an attempt to earn their 'required' return. On the issue of banking supervision, some theoretical models stress the advantages of granting broad powers to official, state banking supervision. They point out that banks are complex organizations, which are costly and difficult to monitor. Therefore, and also because of informational asymmetries and potential banks' incentives for excessive risk-taking, a systemic and strong, official supervision is required. Opposing views stress that powerful supervisors may exert a negative influence by using their powers to benefit favoured constituents, attract campaign donations, and extract bribes (Shleifer and Vishny 1998; Djankov et. al. 2002; and Quintyn and Taylor 2002). Literature provides also conflicting views on the role of the private sector in monitoring banks. Some economists advocate more reliance on private-sector monitoring, expressing doubts about official supervision of banks (Shleifer and Vishny 1998). There are countervailing arguments, however. Countries with poorly developed capital markets, accounting standards, and legal systems may not be able to rely effectively on private monitoring. Furthermore, the complexity and opacity of banks may make private sector monitoring difficult even in the most developed economies. From this perspective, therefore, excessively heavy reliance on private monitoring may lead to the exploitation of depositors and poor bank performance (Barth et al. 2002). Economic models provide different views about the impact of government ownership of banks. Traditional ones stress that governments help overcome capital-market failures, exploit externalities, and invest in strategically important projects (e.g., Gerschenkron 1962), because governments have adequate information and incentives to promote socially desirable investments. On the contrary, some argue (Shleifer and Vishny 1998), that governments do not have sufficient incentives to do so. By politicizing resource allocation, softening budget constraints, and hindering economic efficiency, government ownership facilitates the financing of politically attractive projects, not economically efficient ones. It has been found that countries with higher initial levels of government ownership tend to have subsequently less financial development and slower economic growth (LaPorta et al. 2002).

One of the latest research on the relationship between specific regulatory and supervisory practices and banking-sector development, efficiency, and fragility was a study carried out by Barth, Caprio, Levine (2002). They managed to provide a new database on bank regulation and supervision from 107 countries and to assess some of the above-mentioned problems. They examined regulatory restrictions on bank activities and the mixing of banking and commerce; regulations on domestic and foreign bank entry; regulations on capital adequacy; deposit insurance system design features; supervisory power; regulations fostering information disclosure and private sector monitoring of banks; and government ownership of banks. The results let them argue that government policies that rely excessively on direct government supervision and regulation of bank activities do not foster banking-sector development, efficiency, and foster fragility. Their findings suggest that policies forcing accurate information disclosure, empowering private-sector corporate control of banks, and fostering incentives for private agents to exert corporate control work best to promote bank development, performance and stability.

This study results show a great cross-country, cross-regional, and cross-income group diversity in bank regulatory and supervisory practices. For example, many countries – such as Australia, Germany, India, Russia, United Kingdom – impose no restrictions on the ability of banks to engage in securities activities. In contrast, many – like China and Vietnam – prohibit banks or their subsidiaries from conducting securities activities. More generally, poorer countries place tighter restrictions on bank activities than richer countries. The analysis involving a unique cross-country database and an advanced set of variables, has allowed an assessment of relationships between bank regulations and supervisory practices and bank development, performance and stability. The results enabled to formulate the following general conclusions. Barth, Caprio, and Levine described the survey questions and data collection process in detail. The completion of the survey entailed numerous steps like: collecting initial survey responses, reconciling conflicting responses from different officials in the same country, cross-checking the data with a survey by the Office of the Comptroller of the Currency (OCC), which included some overlap in the information requested, further reconciling any inconsistencies, and checking our data with information collected by the Institute of International Bankers, and the Financial Stability Forum's Working Group on Deposit Insurance, which

provided input on the accuracy of responses for deposit insurance schemes. They frequently grouped the responses to individual questions into aggregated earlier defined indexes. The authors constructed and defined the following variables used in the research: Securities Activities, Insurance Activities, Real Estate Activities, Banks Owning Nonfinancial Firms, Nonfinancial Firms Owning Banks, Restrictions on Bank Activities, Limitations on Foreign Bank Entry/Ownership, Entry into Banking Requirements, Fraction of Entry Applications Denied, Foreign Denials, Domestic Denials, Overall Capital Stringency, Initial Capital Stringency, Capital Regulatory Index, Official Supervisory Power, Prompt Corrective Power, Restructuring Power, Declaring Insolvency Power, Supervisory Forbearance Discretion, Loan Classification Stringency, Provisioning Stringency, Diversification Index, Diversification Guidelines, No Foreign Loans, Supervisor Tenure, Independence of Supervisory Authority-Overall, Independence of Supervisory Authority-Political, Independence of Supervisory Authority-Banks, Multiple Supervisors, Certified Audit Required, Percent of 10 Biggest Banks Rated by International Rating Agencies, No Explicit Deposit Insurance Scheme, Bank Accounting, Private Monitoring Index, Deposit Insurer Power, Deposit Insurance Funds-to-Total Bank Assets, Moral Hazard Index, Bank Concentration, Foreign-Owned Banks, Government-Owned Banks, Bank Development, Net Interest Margin, Overhead Costs, Nonperforming Loans, Crisis.

Then, they used two methods to construct indexes of regulations and supervisory practices that incorporate the answers to several questions from the survey. First, many of the questions were specified as simple zero/one variables. Thus, the first method simply sums the individual zero/one answers. This method gives equal weight to each of the questions in constructing the index. The second method involves the construction of the first principal component of the underlying questions. In constructing this component, the factor analytic procedure produces a principal component with mean zero and standard deviation one. An advantage of this method is that equal weights for the individual questions are not specified. A disadvantage is that it is less transparent how a change in the response to a question changes the index. They have confirmed all the research conclusions using both methods.

1) Restricting bank activities is negatively associated with bank development and stability, as compared to when banks can diversify into

other financial activities. This way these research results oppose some theories providing conflicting predictions about the implications of restricting the range of bank activities. These results are consistent with the view that broad banking powers allow banks to diversify income sources and enhance stability. Restrictions on bank activities are not positively associated with non-performing loans. The diversification across non-loan making activities is not associated with higher loan quality. Thus, these results are consistent with the view that diversification of income through nontraditional activities is positively associated with bank stability. The study suggests that since we regulate supervisory practices and capital regulations, control for regulations on competition, foster government ownership of banks, the negative relationship between restricting bank activities and bank development and stability does not seem to be due to an obviously missing variable. Furthermore, there was found no evidence that restricting bank activities is positively associated with favorable banking-sector outcomes, in particular regulatory/supervisory environments. Moreover, this research demonstrated no positive relationships between bank development or stability and restrictions on bank activities in economies that offer more generous deposit insurance, have weak official supervision, ineffective incentives for private monitoring, or that lack stringent capital standards.

2) Barriers to foreign-bank entry are positively associated with bank fragility, although no strong association between restrictions on bank entry and bank efficiency was found. It was stressed, that it is not the actual level of foreign presence (or bank concentration) that matters, but specific impediments to bank entry that are associated with bank fragility. Finally, the research, even when using interaction terms for numerous institutional, regulatory, and policy environments, has not enabled to identify conditions that produced a positive relationship between restrictions on bank entry and banking sector outcomes.

3) Stringent capital regulations are not closely associated with bank development, performance or stability when controlling for other features of the bank regulation and supervision. This finding is consistent with recent studies that offer a cautious assessment of the independent beneficial effects of capital regulations. However, it was noted that more stringent capital regulations are negatively linked with non-performing loans, although in general no significant, negative relationship between capital regulations and banking crises, bank

development, or bank efficiency was found. The research also examined whether capital regulations are particularly important in countries with generous deposit insurance, weak official supervisory agencies, or ineffective regulations concerning private-sector monitoring of banks. No evidence was found that capital regulations are positively related to favourable banking-sector outcomes, in particular institutional or policy environments.

4) Generous deposit insurance schemes are strongly and negatively associated with bank stability. This is in contradiction to the common belief that effective regulation and supervision can mitigate the moral hazard produced by generous deposit insurance. According to the researchers, strong official supervisory agencies, stringent capital standards, and regulations that encourage private-sector monitoring of banks are not found to counterbalance these negative associations of generous deposit insurance.

5) No strong relationship between a range of official supervisory indicators and bank performance and stability was found. Thus, it was pointed out that measures of supervisory power, resources, independence, loan classification stringency, provisioning stringency, and others are not robustly associated with bank development, performance or stability. These results do not support the strategies of many banking supervision agencies that focus on greater official supervisory oversight of banks. The one exception involves diversification – a negative relationship was found between the diversification index (which aggregates diversification guidelines and the absence of restrictions on making loans abroad) and the likelihood of suffering a major crisis, especially in small economies.

6) Regulations that encourage and facilitate private monitoring of banks are associated with better banking-sector outcomes, i.e. greater bank development, lower net interest margins, and small non-performing loans. However, it was not found that regulations that foster private monitoring reduce the likelihood of suffering a major banking crisis.

7) While government ownership of banks is negatively correlated with favourable banking outcomes and positively linked with corruption, government ownership of banks does not retain an independent, robust association with bank development, efficiency, or stability when controlling for other features of the regulatory and supervisory environment. There was found no evidence, even in weak institutional settings, that government-owned banks are associated with positive outcomes.

In terms of broad implications, the results may indicate the need for reform of strategies that place excessive reliance on countries adhering to regulations and supervisory practices that involve direct, government oversight of and restrictions on banks. Instead, the researchers advocate regulations and supervisory practices that force accurate information disclosure, empower private-sector corporate control of banks, and foster incentives for private agents to exert corporate control work best to promote bank development, performance and stability. It was stressed that the results do not suggest that official regulation and supervision are unimportant. Undoubtedly, this research results point out that regulations and supervisory practices that force accurate information disclosure and limit the moral hazard incentives of poorly designed deposit insurance schemes are positively associated with greater bank development, better performance and increased stability. And this is the understanding of the supervision and regulation of banks.

A comprehensive study of bank regulations and supervision must also involve the issue of bank consolidation, as a remarkable feature of the market structure of the contemporary banking industry, and its relationship with bank fragility. Hitherto literature on banking crises does not address directly the issue of banking structure. Earlier work has mostly focused on identifying the macroeconomic determinants of banking crises (Demirgüç-Kunt and Detragiache 1998), the relationship between banking and currency crises (Kaminsky and Reinhart 1999), the impact of financial liberalization on bank stability (Demirgüç-Kunt and Detragiache 1999), and the impact of deposit insurance design on bank fragility (Demirgüç-Kunt and Detragiache 2003). Only Beck T., Demirgüç-Kunt A., and Levine R., (2003) managed to obtain research results about the relationship between bank concentration and banking system fragility. Even though many economic theories and views offer conflicting predictions on the issues of the impact of bank concentration, bank regulations, and national institutions impact on the financial stability.

Some economists point out that a less concentrated banking sector with many small banks is more likely to suffer financial crises than a concentrated banking sector with a few large banks (Allen and Gale, 2000, 2003). They argue that large banks' better ability to diversify makes such banking systems less fragile than banking systems with many small banks. Moreover, it is also the ability of concentrated banking systems to enhance profits that

reduces banks' fragility. High profits serve as a "buffer" against adverse shocks and increase the franchise value of the bank, reducing incentives for bank owners to take excessive risk (Hellmann et al. 2000). The proponents of banking consolidation hold views that a few large banks are easier to monitor than many small banks, so that corporate control of banks will be more effective and the risks of contagion less pronounced in a concentrated banking system. On the other hand, countervailing views point out that a more concentrated banking structure enhances bank fragility. The main argument is of a political character – that large banks in trouble frequently are rescued by public subsidies due to "too big to fail" policies. Since regulators fear potential macroeconomic consequences of large bank failures, most countries have implicit "too large to fail" policies which protect all liabilities of very large banks whether they are insured or not. Thus, largest banks frequently receive a subsidy not to collapse. This may in turn intensify risk-taking incentives, increasing the fragility of concentrated banking systems (Boyd and Runkle 1992, Mishkin 1999). Another argument for the concentration-fragility view is that a few large banks are easier to monitor than many small banks. This just indicates that size is positively correlated with complexity, which means that large banks may be more opaque than small banks, and therefore they tend to produce a positive relationship between concentration and fragility. The third argument points out that banks with greater market power tend to charge higher interest rates to firms, which induces firms to assume greater risk (Boyd, De Nicolo 2003). If concentration is positively associated with banks having market power, this model predicts a positive relationship between concentration and bank fragility.

On the basis of data on concentration obtained from 70 countries from 1980 to 1997, including 47 crisis episodes, it was found that crises are less likely in economies with more concentrated banking systems, fewer regulatory restrictions on bank competition and activities, and national institutions that encourage competition (Beck et al. 2003). This research included the study of the impact of concentration on crises across a broad cross-section of countries while controlling for differences in regulatory policies, national institutions governing property rights and economic freedom, the ownership structure of banks, and macroeconomic and financial conditions. The researchers controlled for an array of factors that may influence both bank concentration and fragility: international differences in

the generosity of deposit insurance regimes, capital regulations, restrictions on bank entry, and regulatory restrictions on bank activities. Furthermore, to assess the impact of concentration on crises, they needed to control for cross-country differences in bank ownership, i.e., the degree to which the state and foreigners own the country's banks, and finally, for the overall institutional environment governing economic activity as greater net subsidy from the government. The analysis of concentration and crises provided results suggesting that concentrated banking systems are less vulnerable to banking crises. It is supportive of the concentration-stability view that concentration fosters a more stable banking system. In the context of concentration, regulations and crises, the results indicate that tighter entry restrictions and more severe regulatory restrictions on bank activities boost bank fragility. These are consistent with the results obtained by Barth et al. (2002), who examined the impact of entry restrictions on crises in a purely cross-country investigation that does not control for bank concentration. This is also consistent with the argument that restricted entry reduces the efficiency of the banking system, also making it more vulnerable to external shocks. It was found that restrictions on bank activities increase crisis probabilities. This result indicates that overall these restrictions prevent banks from diversifying outside their traditional business, reducing their ability to reduce the riskiness of their portfolios. The required reserves and capital regulatory index do not enter with significant coefficients. The results also demonstrate that the overall effect of bank concentration on crisis likelihood is still negative and significant. While exploring the impact of concentration, bank ownership and the overall institutional environment variables on bank fragility, the data does not indicate a strong link between bank fragility and either state or foreign ownership. The impact of foreign ownership on fragility is negative, but insignificant. In contrast, it was found that countries with greater freedoms in banking, and generally more competitive economic policies, are less likely to experience banking crises. Better institutional environment is also associated with a lower probability of systemic crisis. This evidence is consistent with theories that emphasize the stabilizing effects of competition (Boyd and De Nicolo 2003), but inconsistent with the many models that stress the destabilizing effects from competition. Boyd and De Nicolo (2003) stress that competition exerts a stabilizing impact on banks because more competitive banks charge lower interest rates to firms and these lower rates reduce the likelihood of default. The analysis of

concentration, regulations, ownership, institutions, and crises indicates that bank concentration remains significantly negatively associated with bank fragility even when controlling for the regulatory variables and overall institutional development. The results suggest that regulatory approaches to banking are part of the overall national approach to openness, competition, and private property in the economy. The evidence proves that bank concentration is not a simple proxy for regulatory restrictions or national institutions. It supports the view that concentrated banking systems are more stable than less concentrated systems. The data are inconsistent with theories that predict more fragility in more concentrated banking systems. The researchers point out that findings that concentration lowers fragility and low competition raises fragility imply that future research needs to move beyond a simple "concentration-stability" versus "concentration-fragility" debate where concentration is viewed as a simple proxy for market power. They provide three possible explanations for our finding that concentration is negatively associated with bank fragility. First, concentrated banking system may have bigger banks that are better diversified than less concentrated banking systems. Second, concentrated banking systems may reduce fragility by boosting bank profits. Third, concentrated banking systems with a few large banks may be easier to monitor than a banking system with many small banks. In a nutshell, the Beck et al. (2003) study provided three general, concluding findings.

1) Crises are less likely in more concentrated banking systems, which is consistent with the concentration-stability view's argument that banking systems characterized by a few, large banks are more stable than less concentrated banking markets.

2) More competition lowers the probability that a country will suffer a systemic banking crisis. The data indicate that fewer regulatory restrictions on banks – lower barriers to bank entry and fewer restrictions on bank activities – reduce bank fragility.

3) Countries with national institutions that promote competition in general have a lower likelihood of suffering a systemic banking crisis. In terms of linking the results to specific parts of the concentration-stability view, the finding that competition reduces fragility is inconsistent with the argument that concentrated banking systems boost profits and therefore reduce fragility. The evidence is more consistent with the views that

concentrated banking systems tend to have banks that are better diversified or easier to monitor than banks in less concentrated banking systems.

CONCLUSIONS

The arguments in favour of government intervention in the form of stricter regulations, restrictions and limitations on banks are of long tradition (Pigou 1938) – it is the existence of monopoly power, externalities, and informational asymmetries, and the belief that government interventions will reduce these market failures. According to opposing views, regulations that empower the private sector to monitor banks will be more effective than direct government interventions at enhancing bank performance and stability. The variety of hitherto research results are often conflicting and contradictory. They may suggest that there is no broad cross-country evidence that many different regulations and supervisory practices employed around the world work best to promote bank development and stability. Researchers have attempted to work out a universal set of best practices by examining the relationship between bank regulation and supervision and bank development, performance and stability. They have used a database consisting of many issues (factors), and the most crucial ones are presented in this paper.

However, the latest studies on the impact of bank concentration, bank regulations, bank ownership, and the overall institutional environment on banking system fragility, provide us with some important findings. Entry barriers and activity restrictions have a destabilizing effect on the sector. Severe capital regulations are not positively related to favourable banking-sector outcomes in particular institutional or policy environments. Generous deposit insurance schemes are strongly and negatively associated with bank stability. Results do not support the strategies of many banking supervision agencies that focus on greater official supervisory oversight of banks, because no strong relationship between a range of official supervisory indicators and bank performance and stability was found. Regulations that encourage and facilitate private monitoring of banks are associated with better banking-sector performance. Government ownership of banks is negatively correlated with their outcomes and positively linked with corruption. Bank concentration has a stabilizing effect on banking systems,

and countries with better-developed institutions and with policies that promote competition throughout the economy are less likely to suffer from systemic banking crises. Regulations and supervisory practices that involve direct government oversight of banks do not foster bank development and stability. The data do not support the view that more concentration and competition in the banking system induces greater fragility. What works best to promote bank development, performance and stability are regulations and supervisory practices that force accurate information disclosure, empower private-sector corporate control of banks, and foster incentives for private agents to exert corporate control. It must be stressed that bank regulations and policies cannot be viewed in isolation from the overall institutional environment. Countries with better institutions (property rights, rule of law, political openness, low corruption, etc.) promoting competition throughout the economy are less likely to suffer from systemic banking crises.

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