Bank Supervision and Corporate Finance

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Abstract: We examine the impact of bank supervision on the financing obstacles faced by almost 5,000 corporations across 49 countries. We find that firms in countries with strong official supervisory agencies that directly monitor banks tend to face greater financing obstacles. Moreover, powerful official supervision tends to increase firm reliance on special connections and corruption in raising external finance, which is consistent with political/regulatory capture theories. Creating a supervisory agency that is independent of the government and banks mitigates the adverse consequences of powerful supervision. Finally, we find that bank supervisory agencies that force accurate information disclosure by banks and enhance private monitoring tend to ease the financing obstacles faced by firms.

Keywords: Bank supervision; Corporate governance; Financing obstacles
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1. Introduction

Banks provide a substantial proportion of external finance to corporations around the globe (Mayer, 1988). Yet, there have been no studies of whether international differences in bank supervision influence the obstacles that corporations face in raising external finance.

This paper examines competing theories regarding which bank supervisory approaches work best to facilitate the flow of credit to firms. Due to information and transaction costs, core theories of public policy and regulation imply that strong official supervision of banks can improve the corporate governance of banks (Atkinson and Stiglitz, 1980; Stigler, 1971).[1] This "**official supervision view**" holds that private agents frequently lack the information, incentives, and capabilities to monitor powerful firms and banks (Becker, 1968; Becker and Stigler; 1974). From this perspective a powerful supervisory agency will enhance corporate governance of banks, improve the incentives facing bank managers, and thereby boost the efficiency with which banks intermediate society's savings. The official supervision theory assumes that governments have both the expertise and the incentives to ameliorate information, enforcement, and transaction costs and improve corporate governance of banks.

An alternative to the official supervision view also draws on core theories of public policy and regulation. The "**political/regulatory capture view**" argues that politicians do not maximize social welfare; they maximize their own welfare (Hamilton, et al., 1788; Buchanan and Tullock, 1962; Becker, 1983). Thus, politicians may induce banks to divert the flow of credit to politically connected firms, or powerful banks may "capture" politicians and induce official supervisors to act in the best interests of banks rather than in the best interests of society

[1] In a world with (i) no information or transactions costs, (ii) governments that maximize social welfare, and (iii) well-defined and efficiently enforced property rights, market participants will achieve efficient outcomes (Coase, 1960). If the prerequisites for this laissez-faire – invisible hand – theory hold, government supervision of banks would be at best irrelevant and potentially harmful to social welfare (Stigler, 1975).

(Becker and Stigler, 1974; Stigler, 1975; Rajan and Zingales, 2003). This political/regulatory capture theory suggests that direct official supervision of banks may actually reduce the efficiency with which banks allocate credit. Specifically, while powerful official supervision may increase the flow of credit to a few well-connected firms, the political/regulatory capture theory holds that powerful supervision will hurt the availability of credit to firms in general.

Economists have attempted to derive mechanisms that simultaneously recognize the importance of market failures, which motivate government intervention, and political failures, which suggest that politicians and regulators do not necessarily have incentives to ease market failures (Becker and Stigler, 1974). From this perspective, the challenge is to create mechanisms that negate the "grabbing hand" of politicians while creating incentives for official agencies to improve social welfare (North, 1990; Shleifer and Vishny, 1998; Haber, 2003).[2]

In the area of bank supervision, proponents of the "**independent supervision view**" argue that creating an independent agency is a useful mechanism for balancing market and political failures. This view holds that if supervisors are independent from the government and if supervisors have proper incentives, then this reduces the likelihood that politicians will use the supervisory agency to induce banks to funnel credit to favored ends. Similarly, if the supervisory agency is independent from banks and if supervisors have proper incentives, then this lowers the probability that banks will capture supervisors. Thus, the independent supervision view proposes a compromise to create a supervisory agency that has the resources to overcome information asymmetries but that is sufficiently independent so that it avoids

[2] Shleifer and Vishny (1998) use the phrase "grabbing hand" to describe the maximizing behavior of politicians in contrast to the "helping hand" view, which assumes that governments maximize social welfare. These phrases contrast nicely with the "invisible hand" theory, which posits that with (i) no market frictions, (ii) social maximizing governments, and (iii) well-defined and enforced property rights, private agents will produce efficient outcomes.

political/regulatory capture. Under these conditions, independent supervision can enhance the corporate governance of banks and lower firms' external financing obstacles.

The "**private empowerment view**" takes a different approach to confronting information and enforcement costs while recognizing that politicians act in their own interests. The private empowerment theory suggests that bank supervisory strategies should (1) focus on enhancing the ability and incentives of private agents to overcome informational barriers and exert corporate control over banks and (2) limit the power of official supervisors. Thus, the "private empowerment" theory seeks to limit the powers of the supervisory agency so that the government is unable to use bank supervision to achieve political ends. Simultaneously, the private empowerment theory seeks to provide the supervisor with sufficient power to force accurate information disclosure so that private agents can more easily monitor banks (Hay and Shleifer, 1998). This will boost private monitoring of banks and thereby enhance the incentives of bank managers to allocate capital based on efficiency considerations (Grossman and Hart, 1980). Furthermore, this view argues that many empowered bank creditors will be less susceptible to capture by politicians and banks than a single government supervisory agency. Thus, special connections and corruption may play less of a role in countries that foster private monitoring. Finally, a second component of the private empowerment view stresses incentives. Private creditors will more effectively exert corporate governance of banks and therefore enhance corporate financing if the government does not distort incentives through excessively generous deposit insurance.

This paper is further motivated by basic finance theory, banking sector policy concerns, and broad public policy debates. Consider first corporate finance theory and core theories of financial intermediation. An enormous theoretical literature examines the role of banks, along

with shareholders and other financiers, in easing financing constraints and exerting corporate governance (Shleifer and Vishny, 1997). Based on some of these models, new research examines how laws and regulations concerning shareholders influence corporate finance (e.g., La Porta et al., 2000). Yet, there exists no corresponding work that examines how bank supervision influences corporate finance. Also, core theories of financial intermediation provide a theoretical mechanism linking bank supervisory approaches to credit availability. Calomiris and Kahn (1991), Flannery (1994), and Diamond and Rajan (2001) develop models in which the fragile structure of banks, i.e., liquid deposits and illiquid assets, serves as an effective commitment device that keeps banks from assuming excessive risks or from shirking on collecting payment from firms. Put succinctly, the sequential service constraint on bank deposits creates a collective action problem among depositors that induces depositors to run if they acquire information that the bank is not monitoring firms and managing risk appropriately. In this context, generous deposit insurance impedes the commitment device (threat of a run) and raises barriers to firm financing (Diamond and Rajan, 2001). Similarly, supervisory policies that induce greater information disclosure by banks will enhance the commitment mechanism and facilitate external finance. This paper is an initial attempt to understand how different supervisory strategies affect the obstacles faced by firms in raising external finance.

Second, bank supervision is frequently discussed in the context of avoiding banking crises. However, crises cannot be the only criterion because policymakers can essentially eliminate banking crises through a 100 percent reserve requirement. Thus, an important objective of bank supervision – though often under-stated – is to foster efficient capital allocation; i.e., to finance worthy firms. This is the first paper to assess the impact of bank supervision on the firms' financing obstacles across a broad cross-section of countries.

Finally, this paper provides information on a broad public policy issue. In a host of circumstances, policymakers face the question, should governments do nothing, empower the private sector, or directly oversee private activities? This paper addresses this concern by conducting an investigation of different bank supervisory approaches.

This paper uses firm-level data on almost 5,000 firms across 49 countries to examine the impact of bank supervision on the obstacles that firms encounter in raising external capital. The firm-level data comes from the World Business Environment Survey (WBES), which was conducted in 1999. This dataset includes information on firm characteristics, including (i) the obstacles that firms face in raising capital, (ii) the degree to which special connections are important to raising bank loans, and (iii) the degree to which bank corruption is important to raising capital. These data are based on survey questions in which firms rank the impediments on a scale from one to four, in which larger values imply greater obstacles and greater needs for special connections and corruption.

The bank supervisory data are for 1999 and come from Barth, Caprio and Levine (2003, henceforth BCL). This database includes information on the official supervisory power, such as the ability to intervene banks, replace managers, force provisioning, stop dividends and other payments, acquire information, etc. BCL also have information on the degree of supervisory independence from the government and whether banks can sue bank supervisors. BCL collect information on the empowerment of the private sector. This includes information on whether bank directors and officials face criminal prosecution for failure to accurately disclose information, whether banks must disclose consolidated accounts, whether international accounting firms audit banks, etc. Finally, to measure incentives facing private creditors, we use data on the deposit insurance system from Demirguc-Kunt and Detragiache (2003).

Econometrically, we use an ordered probit, where the dependent variable is either financing obstacles faced by firms, the need for special connections, or the extent of corruption in raising external finance. The main explanatory variables are measures of (1) official supervisory power, (2) the independence of the official supervisory agency from the government and banks, (3) the degree to which the bank regulations facilitate private monitoring of banks, and (4) the generosity of the deposit insurance regime to measure the incentives of the private sector to monitor banks. In assessing the impact of bank supervision strategies on the financing obstacles faced by firms, we also control for a range of firm-specific traits and numerous country specific characteristics, such as inflation, economic growth, and overall financial development. In the sensitivity analyses, we further control for state-ownership of banks, regulatory restrictions on bank activities, minority shareholder rights, and checks and balances in the political system.

The results are inconsistent with the official supervision view and supportive of the political/regulatory capture view. Specifically, official supervisory power is positively associated with the financing obstacles faced by firms and positively associated with both special connections and corruption in raising external finance. Even after controlling for firm-specific traits and country-specific factors, the results suggest that official supervisory power hinders external financing opportunities and raises the need for special connections and corruption.

The data also lend support to the independent supervision view. In particular, when the supervisory agency is independent, this is associated with lower obstacles to obtaining external finance. Moreover, independence reduces the negative effects from powerful supervision. As independence rises, the negative effect of powerful supervision dissipates and indeed vanishes at the highest levels of supervisory independence. More specifically, as the supervisory agency becomes more independent from the government, this mitigates the positive impact that powerful

official supervision has on firms' reliance on special connections and corruption. Thus, the results suggest that independence tends to reduce political control of the supervisory authority and hence political manipulation of the flow of credit to firms.

The paper also presents evidence that supports the private empowerment view. Regulations that force accurate information disclosure lower obstacles to firm financing and lower the impression that corruption of bank officials is important for raising external finance. Furthermore, moral hazard – as measured by the generosity of the deposit insurance system – is also important. Greater moral hazard tends to raise the corporate financing obstacles faced by firms. The data are consistent with the view that governments that force accurate information disclosure to the private sector and do not distort the incentives of banks through excessively generous insurance of bank liabilities will tend to lower financing obstacles.

This paper is related to recent research. BCL (2003) conduct a purely cross-country analysis and find that financial development is (1) positively associated with supervisory approaches that empower private monitoring of banks and (2) negatively associated with powerful supervisory agencies that directly monitor banks. In this paper, we use microeconomic data to examine the channels running from bank supervision to corporate finance, rather than examining the cross-country connections between bank supervision and banking system size. In a pure cross-country analysis, La Porta, Lopez-de-Silanes, and Shleifer (2002) find that securities market regulations that empower private monitoring of corporations promote stock market development, while securities market regulations that rely on official oversight of markets only promote equity market capitalization in countries with efficient government bureaucracies.[3] In

[3] There is a literature on balancing law and regulations to enhance securities market operations. Glaeser, Johnson, and Shleifer (2001) provide theory and examples concerning the incentives facing judges and regulators in monitoring financial markets. More broadly, Glaeser and Shleifer (2001) analyze the reasons underlying the

this paper, we focus on bank supervision and use firm-level data in assessing whether national approaches to bank supervision influence firms' financing obstacles.

A number of methodological concerns need to be noted. First, individual firms subjectively report financing obstacles. Thus a firm facing the same obstacles in two different countries may report different obstacles for reasons that do not depend on actual constraints. Although it is not clear that this would bias the results in any particular direction, we provide evidence on the validity of the survey information below. Second, this paper faces the problem that the supervisory variables might proxy for some other country specific factor. Importantly, however, we get the same results when including official supervisory power and the private empowerment variables simultaneously. Thus, supervisory power and private monitoring are not proxying for the same unspecified factor. Also, the results hold even when controlling for many economic growth, macroeconomic stability, overall financial development, differences in political systems, state-ownership of banks, regulatory restrictions on bank activities, laws governing the rights of shareholders, and the degree to which the state controls or represses the media. Third, simultaneity bias may influence the results. For instance, the banking crises may raise financing obstacles and boost official supervisory power. When we control for the presence of systemic banking crisis, however, this does not change the findings.

The remainder of the paper is organized as follows. Section 2 presents the data and the methodology is described in Section 3. Section 4 gives the results and Section 5 concludes.

2. Data and Summary Statistics

a. Obstacles to firms obtaining external finance: Definitions

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increased use of regulation in the United States, while Glaeser and Shleifer (2002) develop a theory and provide evidence from England and France concerning why different legal systems evolve to regulate behavior.

To examine the relationship between bank supervisory strategies and corporate financing obstacles, we use data from two main sources: the World Business Environment Survey (WBES) for firm-level data and BCL (2001a,b, 2003) for country-level data on bank supervision.

From the WBES firm-level survey data, we use information on almost 5,000 firms across 49 countries. While the WBES comprises 80 countries and the BCL database includes data on 107 countries, there is limited overlap, which reduces our sample to 49 countries. The WBES surveyed firms of all sizes; small firms (between 5 and 50 employees) represent 40% of the sample, medium-sized (between 51 and 500 employees) firms are 40% of the sample, and the remaining 20% are large firms (more than 500 employees). The survey comprises mostly firms of the manufacturing, construction and services sectors. We also have information on whether these are government-owned, foreign-owned, or privately-owned domestic firms. The data indicate whether the firm is an exporter and provide information on firm employment, sales, industry, growth, financing patterns, and the number of competitors.

Financing Obstacles are measured by using responses to the following question: "How problematic is financing for the operation and growth of your business?" Answers vary between 1 (no obstacle), 2 (minor obstacle), 3 (moderate obstacle), and 4 (major obstacle). Table 1 shows that perceived financing obstacles do not only vary across firms within a country, but also across countries. Portuguese firms rate financing obstacles as relatively insignificant (1.73), while firms in Moldova rate financing obstacles as more than moderate (3.44). Overall, 35% of the firms in our sample rate financing as major obstacle, 27% as a moderate obstacle, 19% as a minor obstacle, and 20% as no obstacle.

Apart from this general financing obstacle, firms were also asked about the need for special connections (**Special Connection**) and corruption of bank officials (**Bank Corruption**)

in obtaining external funding. Answers vary between one and four, where higher values indicate a greater needs for special connections and corruption. Table 2 provides summary statistics and indicates that general financing obstacles is positively correlated with the needs for special connections and corruption to obtain financing.

b. Obstacles to firms obtaining external finance: Justification

The corporate finance literature has used several different approaches to identify firms that are constrained (Kaplan and Zingales, 1997). Fazzari, Hubbard, and Petersen (1988) use a priori reasoning to argue that low-dividend firms are constrained. Rajan and Zingales (1998) use the external financing patterns by US firms as a benchmark for the "natural" dependence of industries on external financing. Demirguc-Kunt and Maksimovic (1998) rely on a financial planning model to identify firms that have access to long-term external financing.

We use survey responses as indicators of the incidence and severity of financial obstacles for four reasons. First, the survey acquires direct information from firms about perceived obstacles and therefore does not infer the existence of financing constraints from other information. Second, the survey data not only has information on general financing obstacles. It also provides information on the specific types of obstacles that firms face, e.g., special connections or corruption. Third, the WBES database has excellent coverage of small and medium size firms (as well as large firms), while other cross-country studies use data that focus heavily on large corporations. Finally, the WBES has very broad country coverage that is important for linking the firm-level data with the bank supervision data.

As noted in the Introduction, using data based on self-reporting by firms may produce concerns that a firm facing the same obstacles will respond to questions differently in different

institutional and cultural environments. If this were pure measurement error, it would bias the results against finding a relationship between bank supervision and firm financing obstacles.

While problems with survey data may bias the results against this paper's conclusions, we (a) control for many country-specific traits in our analyses and (b) present four pieces of information that support the validity of the survey data. First, Hellman et al. (2000) show that in a sub-sample of 20 countries there is a close connection between responses and measurable outcomes. They find no systematic bias in the survey responses.

Second, reported firm financing obstacles are highly, negatively correlated with firm growth. Beck, Demirguc-Kunt, and Maksimovic (2002) show that the negative impact of reported financing obstacles on firm growth hold after controlling for many factors and using instrumental variables to control for endogeneity. Thus, firms' responses to the survey on financing obstacles are capturing more than idiosyncratic differences in how firms rank obstacles.

Third, we examined the connection between reported firm financing obstacles and Wurgler's (2000) measure of the efficiency of investment flows. This is an investment elasticity that gauges the extent to which a country increases investment in growing industries and decreases investment in declining ones. We find the reported financing obstacles are negatively and significantly correlated with this efficiency of investment indicator. Again, the survey data are associated with a measurable outcome: the efficient allocation of capital.

Fourth, we study the link between survey responses regarding firm financing obstacles and industrial expansion. Based on Rajan and Zingales (1998), we examine whether industries that are naturally heavy users of external finance grow faster in economies where firms face lower reported financing obstacles. Thus, we the same data and specification employed by Rajan

and Zingales (1998). We find that externally dependent industries grow faster in countries where firms report lower obstacles. While these observations certainly do not eliminate concerns about the survey data, they suggest that the reported obstacles are closely associated with (i) the growth of externally dependent industries, (ii) the efficient flow of investment, and (iii) firm growth.

c. Firm-specific traits

In our analysis of bank supervision and corporate finance, we control for several firm attributes such as ownership. **Government** takes on the value one if the government owns any percentage of the firm, and **Foreign** takes on the value one if foreign entities own any fraction of the firm.[4] Our sample includes 12% government owned firms and 20% foreign firms.

We also control for each firm's business, competitive environment, and size. The regressions include dummy variables for whether the firm is an exporting firm (**Exporter**), whether it is a manufacturing firm (**Manufacturing**), and whether it is a service sector firm (**Services**). The analyses also include the log of the number of competitors that each firm faces (**Number of Competitors**). In sum, 36% of the firms in our sample are in manufacturing and 46% in service, and on average they face 2.3 competitors. Finally, we include the log of sales in USD as indicator of size (**Sales**), which ranges from –2.12 to 25.3, with an average of 12.

The correlation analysis in Table 2 Panel B indicates that government-owned firms, domestically owned firms, non-exporting firms, smaller firms (as measured by sales), and firms with more competitors suffer more financing obstacles.

[4] While these simple zero-one indicators of ownership may not capture the varying degrees of influence that arise from different levels of government or foreign ownership, information on the percentage of ownership is available for less than 10 percent of the sample. However, among the firms for which we have data on the percentage of foreign and government ownership, more than two thirds of firms with foreign ownership are majority foreign owned and more than 60% of firms with government ownership are majority state-owned.

d. Bank supervisory policies

We use four indicators of supervisory practices to test the empirical validity of the competing hypotheses outlined in the Introduction.

Official Supervisory Power indicates whether the supervisory authorities have the authority to take specific actions to prevent and correct problems in banks. This indicator is constructed from 14 dummy variables that indicate whether bank supervisors can take specific actions against external auditors, bank management and bank shareholders both in normal times and times of distress. The exact definition is provided in the data appendix. We use the first principal component indicator of these variables, which varies between –3.05 (Singapore) and 1.14 (U.S.) with a mean of –0.08, and higher values indicating wider authority for bank supervisors.[5]

Supervisory Independence indicates independence of supervisors from both banks and the government. **Supervisory Independence-Banks** is a dummy variable that indicates whether supervisors are legally protected against lawsuits brought by banks. **Supervisory Independence-Government** is the sum of three dummy variables indicating the involvement of government in appointment, control and removal of supervisors. Supervisory Independence is the sum of the individual indicators. We examine Supervisory Independence, Supervisory Independence-Banks and Supervisory Independence-Government.

Regarding the theories discussed in the Introduction, the official supervision view predicts a negative relation between Financing Obstacles and Official Supervisory Power.[6] In

[5] The mean is not exactly equal to zero because we use the raw data available from Barth et al. (2003)on the supervisory indicators. These data are available for a larger number countries than the corresponding data on firm obstacles.

[6] See Polinsky and Shavell's (2000) review of the theory of public enforcement and the discussion in Coase (1988). Also, Spiller and Ferejohn (1992) note that lawmakers do not have sufficient information to anticipate all possible circumstances. Thus, there may be efficiency gains to delegating power to a supervisory agency that has the expertise and resources to set and change the specific rules as events evolve.

contrast, the political/regulatory capture view predicts a positive relationship between Financing Obstacles and Supervisory Power. The independent supervision view predicts a negative relation between Supervisory Independence and financing obstacles and also predicts that independence will reduce the adverse impact of supervisory power on Financing Obstacles.

We use two indicators to measure the tools and incentives of private bank creditors to monitor banks and exercise market discipline.

Private Monitoring is designed to measure the degree to which bank supervision forces banks to disclose accurate information to the public and induces private sector monitoring of banks. Private Monitoring is constructed from nine dummy variables that measure whether bank directors and officials are legally liable for the accuracy of information disclosed to the public, whether banks must publish consolidated accounts, whether banks must be rated and audited, whether banks must be audited by certified international auditors, and whether subordinated debt is allowable (which may create a class of private monitors). The Private Monitoring Index is constructed as principal component indicator, with higher values indicating more tools and incentives for private bank creditors to monitor banks, ranging from –1.83 (Moldova) to 1.46 (United Kingdom).

Moral Hazard, a principal component indicator, measures the generosity of the deposit insurance scheme and thus proxies for the incentives or the lack thereof for private bank creditors to monitor banks. As noted, the Appendix provides the precise definitions of Moral Hazard and the Private Monitoring variables.

In terms of theory, the private empowerment view predicts a negative relationship between Private Monitoring and financing obstacles. The private empowerment view predicts a positive link between Moral Hazard and the degree of external financing obstacles. As

emphasized, the private empowerment theory presumes that there are market failures and that these market failures can be ameliorated though information disclosure that facilitates private sector monitoring, not by direct official monitoring of banks.

d. Country-level control variables

To assess the robustness of the relation between bank supervision and firms' access to external financing, we include other country-level variables. We include the growth rate of GDP per capita (**Growth**) since firms in faster growing countries are expected to grow faster and face lower obstacles. We use the inflation rate (**Inflation**) to proxy for monetary instability, conjecturing that firms in more stable environments face fewer obstacles and grow faster (Boyd, Smith, and Levine, 2001).

We also include the level of financial development (**Priv**) since we want to assess the impact of supervision on corporate finance independent of overall financial development. Overall financial development is positively associated with economic growth (King and Levine, 1993; Levine and Zervos, 1998; Levine, Loayza, and Beck, 2000). Rajan and Zingales (1998) and Demirguc-Kunt and Maksimovic (1998) argue that financial development influences growth by easing the external financing constraints faced by firms. Thus, we examine the independent impact of bank supervision on the financing obstacles faced by firms after controlling for overall financial development and conditions in the macroeconomic economy.

Firms in countries with higher inflation, lower financial development, less independent supervisors and less private monitoring report higher financing obstacles (Table 2 Panel C).

In our sensitivity analyses, we run regressions including a variety of legal and institutional indicators and a dummy variable indicating the occurrence of systemic banking crisis. Specifically, we control for (i) Checks and Balances in the political process, i.e., the

number of veto players in the political system; (ii) Banking Freedom, which measures the absence of government regulatory restrictions on bank activities; (iii) State-Owned Banks, which equals the share of a country's bank assets that are held by banks that are more than 50 percent government owned; (iv) Shareholder Rights, which is a measure of the legal rights of minority shareholders vis-à-vis management and large shareholders and (v) the occurrence of a Systemic Banking Crisis. The Appendix defines each of these variables in detail and we discuss the use of these variables further when we present the sensitivity analyses.

3. The Empirical Model

To examine the relationship between bank supervision and corporate finance, we use the following regression:

$$\text{Financing Obstacle}_{j,k} = \alpha + \beta_1 \text{ Government}_{j,k} + \beta_2 \text{ Foreign}_{j,k} + \beta_3 \text{ Exporter}_{j,k} + \beta_4 \text{ No. of Competitors}_{j,k} + \beta_5 \text{ Manufacturing}_{j,k} + \beta_6 \text{ Services}_{j,k} + \beta_7 \text{ Size}_{j,k} + \beta_8 \text{Inflation}_k + \beta_9 \text{ Growth}_k + \beta_{10} \text{Priv}_k + \beta_{11} \text{ Supervision}_k + \varepsilon_{j,k}. \quad (1)$$

The j and k subscripts indicate firm and country respectively. The variable Supervision in equation (1) represents one – or more – of the various supervision variables discussed earlier. These supervisory indicators change across the different specifications as we discuss below.

Given that Financing Obstacle is a polychotomous dependent variable with a natural order, we use the ordered probit model to estimate regression (1). We use standard maximum likelihood estimation with heteroskedasticity-robust standard errors.[7] The coefficients, however, cannot be interpreted as marginal effects of a one-unit increase in the independent variable on the

dependent variable, given the non-linear structure of the model. Rather, the marginal effect is calculated as $\phi(\beta'x)\beta$, where ϕ is the standard normal density at $\beta'x$. We use the same estimation procedure when using (a) the importance of special connections for obtaining external finance (Special Connection) and (b) the importance of bank corruption (Bank Corruption) for obtaining external finance as dependent variables.

4. Results

A. Initial Findings

The results in Table III suggest that (1) firms in countries with powerful supervisors face higher financing obstacles and (2) firms in countries with strong private monitoring and lower moral hazard face lower financing obstacles. These results are consistent with the political/regulatory capture view, but inconsistent with the official supervision view. These findings also support the private empowerment view since firms face lower financing obstacles in countries where private bank creditors have the tools and incentives to monitor banks. Official Supervisory Power and Moral Hazard enter significantly and positively in the regressions of General Financing Obstacle, while Private Monitoring Index enters significantly and negatively.

The results also support the independent supervision view. The independence of bank supervisors is negatively related with financing obstacles (column 2), and it helps alleviate the adverse effect of official supervisory power (column 3). Indeed, at the maximum level of supervisory independence (4), the marginal impact of additional supervisory power is zero. The

[7] Alternatively, we can assume a logistic function for the distribution of e, resulting in the application of the logit model. However, it is difficult to justify the preference of one over the other, and in practice, the two models seem to give very similar results (Greene, 2000).

results also indicate that supervisory independence is particularly important for reducing financing obstacles when bank supervisors have extensive powers.[8]

The effect of supervisory practices on firms' financing obstacles is not only statistically significant, but also economically relevant. Table IV provides information on (1) the change in the probability that a firm rates financing obstacles as major (i.e., the probability that a firm rates financial obstacles as a four) and (2) the change in the probability that firm rates financing as no obstacle to firm growth (i.e., the probability that firm rates financial obstacles as one) when changing bank policies. Using the coefficient estimates from Table III, we examine the impact of changing bank policies from the 25th percentile to the 75th percentile on the probability that a firm will rank financing as either a major obstacle or not an obstacle. As we move from the country at the 25th percentile of Official Supervisory Power to the country at the 75th percentile, the probability that a firm rates financing as a major obstacle increases from 34% to 36%, compared to the sample mean of 35%. The probability of ranking finance obstacles as major decreases by 6% and 3% respectively when there are increases in Supervisory Independence and Private Monitoring. Furthermore, note that the likelihood of firms indicating that finance is not an obstacle jumps by 5% and 2% when considering corresponding increases in supervisory independence and private monitoring respectively. As another example, consider Chile and Canada. The Table III regression estimates indicate that if Chile had the Official Supervisory Power of Canada (-2.15) instead of its own level (0.05), there would be a three percentage points decrease in the probability that Chilean firms rank financing obstacles as major. If Chile had the Supervisory Independence of Canada (4) instead of the current value in Chile (1), the regression

[8] The bulk of the paper uses linear regressions. We experimented with including quadratic terms for official supervisory power and private monitoring. Although we find some attenuation at high levels of official supervisory power and private monitoring, we find that the direct effects do not change in these non-linear specifications.

estimates predict that there would be a 18 percentage points drop in the probability that Chilean firms rank financing obstacles as major.

B. Robustness of the Initial Findings

Table V confirms our finding for the sub-sample of firms that actually received bank financing. Our sample might contain firms that have not applied for bank credit, either because they feel discouraged or because they do not see the need. Excluding firms that have not received bank finance does not change our results. Official Supervisory Power and Moral Hazard enter significantly and positively, while Supervisory Independence and Private Monitoring enter significantly and negatively. The interaction of Official Supervisory Power and Supervisory Independence enters significantly and negatively, indicating that supervisory independence alleviates the adverse effect of supervisory power.

The relationship between supervisory practices and financing obstacles is robust to controlling for other legal and institutional variables and the occurrence of banking crisis (Table VI). Here we include Checks and Balances, Banking Freedom, State-Owned Banks, Shareholder Rights and a dummy variable indicating a systemic banking crisis in the country during the 1990s. We confirm all of the results reported above when controlling for either the extent to which the political system impedes the exercise of power by one part of government (Checks and Balances, Panel A) or regulatory restrictions on bank activities (Banking Freedom, Panel B). Unsurprisingly, state-ownership of banks is highly, positively correlated with supervisory power. Thus, when we include the State-owned bank variable, neither supervisory power nor state-owned banks enters independently significantly (Panel C). All the other results hold. We also find that shareholder rights, i.e., the degree to which the law protects the rights of minority shareholders against large shareholders and management, enters negatively and significantly

(Panel D). Stronger shareholder rights reduce external financing obstacles. We also see a weakening of the link between supervisory power and financing obstacles when controlling for shareholder rights. This is consistent with the view that when savers have greater legal protection as equity holders, they feel more comfortable providing equity finance so that firms have easier access to non-bank forms of external finance. All the other results on private monitoring and moral hazard hold when controlling for shareholder rights.[9] Finally, our results hold when controlling for the occurrence of a systemic banking crisis in the country (Panel E). Conceivably, a banking crisis could increase the financing obstacles facing firms and change supervisory policies. While we do find that systemic crises are associated with firms perceiving greater financing obstacles, this paper's core results hold. Overall, the data support the supervisory independence and private empowerment view, and are inconsistent with the official supervision view.

We also conducted further robustness checks on the negative impact of supervisory power and the positive effects of supervisory independence by controlling or the competitiveness of the political system and the freedom of the media. Specifically, we ran regressions where we include supervisory power and independence and their interaction as well as indicators of (i) competitiveness of legislative elections, (ii) degree of state ownership of media, and (iii) degree to which the state represses media (Table VII Panel A). While the competitiveness of legislative elections and absence of state ownership and repression of media decreases financing obstacles, controlling for these effects does not change (i) the positive impact of supervisory power on financing obstacles, (ii) the negative impact of supervisory independence, and (iii) the dampening impact of supervisory independence on the relation between supervisory power and financing obstacles.

[9] We also ran regressions using Creditor Rights instead of Shareholder Rights. All results hold.

We also include interaction terms between supervisory power and indicators of political and media openness. Thus, we assess whether political openness and media openness ameliorate the negative impact of supervisory power (Table VII Panel B). We find that state ownership and repression of media exacerbates the impact of supervisory power on financing obstacles. Thus, empowering the supervisory authority in countries with high levels of state-ownership of the media and state repression of the media is likely to aggravate the financing obstacles faced by firms.

C. Simultaneous Examination of the Bank Supervision Indicators

In Table VIII, several of the bank supervision variables are included simultaneously. Specifically, we include (i) Official Supervisory Power, or Supervisory Independence and (ii) Private Monitoring or Moral Hazard. We also include Private Monitoring and Moral Hazard in the same regression to assess whether both components of the private empowerment view independently influence firm financing obstacles.

When including the bank supervision variables simultaneously, we again find evidence that is inconsistent with the official supervision view, but consistent with both the political/regulatory capture view and the private empowerment view. Supervisory power tends to be associated with greater financing obstacles. Independence of the supervisory authority is associated with lower obstacles.

The data further indicate that Private Monitoring enters significantly and negatively, while Moral Hazard enters significantly and positively. This underlines the importance of both components of the private empowerment view: private agents can more effectively exert corporate control over banks if they have the tools (high levels of Private Monitoring) and sound incentives (low levels of Moral Hazard).

D. Channels: Special Connections and Corruption

Next, we turn to the channels through which supervision operates. We examine whether supervision influences external financing constraints by raising the need for special connections and corruption in raising capital. Thus, we use alternatively the variables measuring (1) the importance of special connections and (2) the importance of bank corruption in obtaining external finance.

The Table IX results indicate that firms in countries with more powerful and less independent supervisors are more likely to report the need of special connections for obtaining corporate finance. While the official supervision view posits the need for powerful official supervision to minimize favoritism and nepotism in banks' lending decisions, the political/regulatory capture view holds that politicians or banks will capture official supervisors and thus increase the likelihood of favoritism and nepotism.

Official Supervisory Power enters significantly and positively, supporting the political/regulatory capture view. Supervisory Independence also enters significantly and negatively, suggesting the beneficial effects of an independent supervisory agency. Finally, note that the interaction of Official Supervisory Power and Supervisory Independence enters significantly and negatively. Thus, independence reduces the negative effects of having a powerful supervisory agency. These results are consistent with the Political/Regulatory Capture and Independent Supervision predictions, but inconsistent with the Official Supervision View.

The Table X results indicate that firms in countries with more powerful and less independent supervisors are also more likely to report that corruption of bank officials is important for raising corporate financing. Official Supervisory Power enters significantly and positively, which again runs counter to the Official Supervisory theory. Supervisory

Independence enters significantly and negatively. These results are consistent with the political/regulatory view, but inconsistent with the official supervision view. Furthermore, Private Monitoring enters significantly and negatively, which suggests that empowering private monitoring of banks tends to reduce the importance of corruption in raising external funds. Thus, the results lend support to the political/regulatory capture view, the private empowerment view, and the independent supervision view and run counter to the official supervision view.

E. More on Independence

Table XI underlines the importance of supervisory independence from both the government and banks. Here, we break apart the two components of the Supervisory Independence index separately into supervisory independence from banks (Supervisory Independence-Banks) and supervisory independence from the government (Supervisory Independence-Government). We then examine the independent effects of these two components of supervisory independence in the regressions.

We find that supervisory independence from the government and banks decreases general financing obstacles. Furthermore, independence from banks has a direct, negative impact on both the need for special connections and bank corruption in raising capital.

We also find evidence that supervisory independence from the government helps alleviate the effect of official supervisory power on the general financing obstacles faced by firms. Thus, the interaction term between Supervisory Independence-Government and Official Supervisory Power enters with a negative and significant coefficient. Similarly, the Table XI regressions indicate that supervisory independence from the government also reduces the effect of supervisory power on the need for firms to have special connection in order to raise funds from banks. Official Supervisory Power enters positively and significantly in all regressions.

Again, these results are inconsistent with the official supervision view and underline the importance of an independent supervisory body to avoid both political and regulatory capture.

5. Conclusion

This paper provides evidence on different theories of bank supervision. The results provide four tentative conclusions about which bank supervisory practices work best to ease the external financing obstacles faced by firms.

First, we examined whether strong official supervision of banks facilitates corporate finance. Here, the answer is a resounding no. Countries with stronger bank supervisory agencies – countries where supervisory agencies can intervene banks, replace managers, force provisioning, stop dividends, etc. – tend to have firms that face greater financing obstacles than firms in countries where the supervisory agency is less powerful. Even after controlling for firms-specific traits and country-specific characteristics, we find that supervisory power hinders external financing opportunities and raises the need for special connections and corruption. The results are inconsistent with theories that hold that official supervisory agencies will promote social welfare by overcoming the information and enforcement costs faced by private agents. Rather, these findings are consistent with the view that politicians will use powerful supervisory agencies to divert the flow of credit to politically connected firms and that powerful banks will "capture" politicians and induce bank supervisors to support the interests of banks, not the interests of society (Stigler, 1975; Shleifer and Vishny, 1998; Rajan and Zingales, 2003).

Second, we evaluate whether creating an independent supervisory agency mitigates the adverse effects of having a powerful official regulator. We find evidence consistent with this view. Greater supervisory independence from the government and from banks tends to lower

impediments to obtaining external finance. Furthermore, independence reduces the negative effects from power supervision. As independence rises, the negative impact of powerful supervision on firm financing obstacles dissipates. Specifically, as supervisory independence from the government rises, the adverse impact of powerful supervision on firms' reliance on special connections and corruption in raising capital falls. These findings are consistent with the view that supervisory independence moderates political control of the supervisory agency and therefore reduces political manipulation of the flow of credit to firms.

Third, we examine whether bank supervisory strategies that focus on empowering the private sector facilitate corporate finance. The answer is yes. In countries where bank supervision forces accurate information disclosure by banks and eases private monitoring of banks, firms tend to face lower obstacles to raising external finance. We also find that greater moral hazard – as measured by the generosity of the deposit insurance regime – tends to raise the financing obstacles faced by firms. The results support the view that forcing accurate information disclosure and not distorting the incentives of private agents tends to lower financial obstacles. These findings are consistent with approaches that simultaneously recognize that private agents face substantive information and enforcement costs when monitoring banks, while also recognizing that politicians and regulators will act in their own interests and not necessarily act to reduce market frictions.

Finally, at a very general level, these results emphasize the importance of both market and political failures. Bank supervision clearly matters. Bank supervisory policies that seek to ameliorate market failures by forcing the accurate disclosure of information reduce the obstacles that firms face in raising external finance. This is not a laissez faire – invisible hand – finding. This result suggests that active bank supervision can help ease information and enforcement

costs and enhance corporate finance. Just as clearly, however, the results highlight the importance of theories that emphasize that politicians act in their own interests. Countries with powerful bank supervisors tend to have firms that face (i) greater financing obstacles and (ii) greater reliance on special connections and corruption in raising capital. Thus, mechanisms that simultaneously recognize the importance of market and political failures – such as creating bank supervisory agencies that focus on forcing accurate information disclosure by banks and easing private monitoring of banks – tend to foster more efficient financial intermediation.

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Table I
Financing Obstacles and Supervisory Practice across Countries

General Financing Obstacle is the response to the question "How problematic is financing for the operation and growth of your business?" Answers vary between 1 (no obstacle), 2 (minor obstacle), 3 (moderate obstacle), and 4 (major obstacle). Supervisory Power indicates the power of the supervisor vis-à-vis banks; Supervisory Independence the independence of the bank supervisor from government and banks. Private Monitoring is the amount of information available to bank creditors and Moral Hazard indicates the generosity of the deposit insurance scheme. Detailed variable definitions and sources are given in the appendix.

	General Financing Obstacle	Supervisory Power	Supervisory Independence	Private Monitoring	Moral Hazard
Argentina	3.03	-0.30	1	1.13	
Belarus	3.28	-2.24	4	-1.55	
Bolivia	3.04	0.22	2	0.06	
Botswana	2.34	0.82	2	0.97	-2.49
Brazil	2.71	1.00	1	0.97	
Canada	2.07	-2.15	4	1.05	2.86
Chile	2.43	0.05	1	0.29	2.20
China	3.34	0.28	1	1.05	
Croatia	3.34	0.17	2	0.29	
Czech Republic	3.13	1.00	1	-0.03	
Egypt	3.00	0.38	4	-0.13	-2.49
El Salvador	2.87	0.09	1	0.29	-2.49
Estonia	2.49	0.27	1	0.29	
France	2.76	-1.16	3	0.69	1.16
Germany	2.54	-0.91	4	0.97	1.93
Ghana	3.07	-0.09	4	-1.56	1.71
Guatemala	2.97	-0.42	1	-1.14	-2.49
Honduras	2.85	0.82	2	-0.42	-2.49
Hungary	2.67	1.00	2	-0.43	
India	2.54	-0.36	3	-0.42	2.95
Indonesia	2.86	0.74	2	0.25	-2.49
Italy	2.11	-1.66	2	1.27	2.09
Kenya	2.84	1.00	2	-1.00	3.41
Lithuania	2.88	-0.34	2	0.29	
Malawi	2.74	-0.10	2	-1.25	-2.49
Malaysia	2.65	-0.25	3	0.55	-2.49
Mexico	3.40	-0.17	1	-0.43	3.98
Moldova	3.44	-0.18	2	-1.83	
Namibia	1.91	-0.54		-0.13	
Nigeria	3.14	0.61	2	0.39	3.09
Panama	2.18	1.14	3	-0.13	-2.49
Peru	3.04	0.09	3	0.29	2.34
Philippines	2.68	0.95	1	-0.63	3.33
Poland	2.41	0.58	3	0.29	
Portugal	1.73	1.00	4	0.97	-2.49
Romania	3.30	-0.71	1	0.42	
Russia	3.22	-0.40	2	-1.25	
Singapore	1.85	-3.05	3	0.35	-2.49
Slovenia	2.29	1.00	4	-0.43	
South Africa	2.45	-2.95	2	0.77	-2.49
Spain	2.24	-0.32	3	0.97	
Sweden	1.89	-1.55	3	0.69	-2.49
Thailand	3.11	0.72	2	-0.42	-2.49
Trinidad & Tobago	3.03	-0.91	2	-0.43	
Turkey	3.13	-0.30	4	0.69	3.45
United Kingdom	2.25	0.59	4	1.46	0.73
United States	2.33	1.14	4	0.97	3.39
Venezuela	2.49	1.14	3	-0.43	2.52
Zambia	2.71	0.51	2	-0.13	-2.49

Table II
Summary Statistics and Correlations

Summary statistics are presented in Panel A and correlations in Panel B and C, respectively. General Financing Obstacle is the response to the question "How problematic is financing for the operation and growth of your business?" Answers vary between 1 (no obstacle), 2 (minor obstacle), 3 (moderate obstacle), and 4 (major obstacle). Special Connection, and Bank Corruption are defined in a similar way. Government and Foreign are dummy variables that take the value 1 if the firm has government or foreign ownership and zero if not. Exporter is a dummy variable that indicates if the firm is an exporting firm. Manufacturing and Services are industry dummies. Sales equals the logarithm of sales in US$. Number of Competitors is the logarithm of the number of competitors the firm has. Priv is claims on the private sector by deposit money banks as share of GDP. Growth is the growth rate of GDP. Inflation is the log difference of the consumer price index. Supervisory Power indicates the power of the supervisor vis-à-vis banks. Supervisory Independence is the independence of the bank supervisor from government and banks. Private Monitoring is the amount of information available to bank creditors and Moral Hazard indicates the generosity of the deposit insurance scheme. Detailed definitions and the sources are in the data appendix.

Panel A: Summary Statistics:

	Mean	Median	St.Dev.	Maximum	Minimum	Observations
General Financing obstacle	2.76	3.00	1.13	4.00	1.00	4,812
Special Connection	2.13	2.00	1.05	4.00	1.00	4.632
Bank Corruption	1.64	1.00	0.98	4.00	1.00	4,109
Government	0.12	0.00	0.32	1.00	0.00	5,072
Foreign	0.20	0.00	0.40	1.00	0.00	5,072
Exporter	0.39	0.00	0.49	1.00	0.00	5,072
Sales	10.41	13.82	8.16	25.33	-2.12	5,072
Number of Competitor	0.83	0.69	0.32	2.20	0.00	5,072
Manufacturing	0.36	0.00	0.48	1.00	0.00	5,072
Services	0.46	0.00	0.50	1.00	0.00	5,072
Inflation	0.12	0.07	0.15	0.71	0.00	49
Growth	0.02	0.02	0.02	0.07	-0.03	49
Priv	0.39	0.27	0.32	1.16	0.00	49
Supervisory Power	-0.08	0.09	1.04	1.14	-3.05	49
Supervisory Independence	2.40	2.00	1.07	4.00	1.00	48
Private Monitoring	0.09	0.29	0.81	1.46	-1.83	49
Moral hazard	0.12	0.73	2.65	3.98	-2.49	31

Panel B: Correlations between firm-level variables

	General Financing Obstacle	Special Connection	Bank Corruption	Government	Foreign	Exporter	Sales	Number of Competitors	Manufacturing
Special Connection	0.29***	1.0000							
Bank Corruption	0.26***	0.42***	1.0000						
Government	0.04***	-0.10***	-0.07***	1.0000					
Foreign	-0.16***	-0.08***	-0.07***	-0.04***	1.0000				
Exporter	-0.06***	-0.07***	-0.09***	0.09***	0.24***	1.0000			
Sales	-0.18***	0.01	-0.09***	-0.21***	0.24***	0.11***	1.0000		
Number of Competitors	0.09***	0.01	0.067**	-0.04***	-0.11***	-0.05**	-0.34***	1.0000	
Manufacturing	0.02	-0.02	-0.04**	0.056**	0.11***	0.34***	0.05***	-0.07***	1.0000
Services	-0.10***	0.01	0.03	-0.07***	-0.05***	-0.25***	0.06***	-0.02	-0.70***

Panel C: Correlations between country-level variables

	General Financing Obstacle	Inflation	Growth	Priv	Supervisory Power	Supervisory Independence	Private Monitoring
Inflation	0.42***	1					
Growth	-0.16	-0.16	1				
Priv	-0.42***	-0.52***	0.03	1			
Supervisory Power	0.014	-0.08	-0.12	-0.13	1		
Supervisory Independence	-0.40***	0.08	0.20	0.26*	-0.15	1	
Private Monitoring	-0.44***	-0.42***	0.16	0.51***	-0.10	0.09	1
Moral Hazard	0.21	0.19	0.310	-0.15	0.06	0.12	0.03

Table III
Supervision and Financing Obstacles

The regression estimated is: General Financing Obstacle = β_1 Government + β_2 Foreign + β_3 Exporter + β_4 Manufacturing + β_5 Services + β_6 Sales +β_7 No. of Competitors +β_8 Inflation + β_9 Growth + β_{10} Priv + +β_{11} Supervision + ε. General Financing Obstacle is the response to the question "How problematic is financing for the operation and growth of your business?" Answers vary between 1 (no obstacle), 2 (minor obstacle), 3 (moderate obstacle), and 4 (major obstacle). Government and Foreign are dummy variables that take the value 1 if the firm has government or foreign ownership and zero if not. Exporter is a dummy variable that indicates if the firm is an exporting firm. Manufacturing and Services are industry dummies. Sales is the logarithm of sales in US$. Number of Competitors is the logarithm of the number of competitors the firm has. Priv is claims on the private sector by deposit money banks as share of GDP. Growth is the growth rate of GDP. Inflation is the log difference of the consumer price index. Supervision is one of four supervisory variables. Supervisory Power indicates the power of the supervisor vis-à-vis banks. Supervisory Independence is the independence of the bank supervisor from government and banks. Private Monitoring is the amount of information available to bank creditors and Moral Hazard indicates the generosity of the deposit insurance scheme. The regression is run with ordered probit. Detailed variable definitions and sources are given in the appendix. P-values are reported in parentheses.

	General Financing Obstacle	General Financing Obstacle	General Financing Obstacle	General Financing Obstacle	General Financing Obstacle
Inflation	0.515	0.773	0.740	0.362	-0.429
	(0.000)***	(0.000)***	(0.000)***	(0.004)***	(0.111)
Growth	-5.874	-3.525	-3.811	-5.531	-16.333
	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***
Priv	-0.092	-0.064	-0.068	-0.088	-0.124
	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***
Supervisory Power	0.042		0.145		
	(0.011)**		(0.003)***		
Supervisory Independence		-0.177	-0.168		
		(0.000)***	(0.000)***		
Private Monitoring				-0.072	
				(0.003)***	
Moral Hazard					0.028
					(0.004)***
Supervisory Power*			-0.045		
Supervisory Independence			(0.007)***		
Observations	4812	4777	4777	4812	2377

*,**,*** indicate significance levels of 10,5, and 1 percent, respectively.

Table IV
Supervision and Financing Obstacles
Quantifying the Effect

Based on the regressions of Table III, Panel A presents estimated probabilities of firms rating financing as a major obstacle to the operation and growth of the enterprise (Financing Obstacle=4) for values of four bank policy variables at the 25%, 50% and 75% percentiles. Panel B presents estimated probabilities of firms rating financing as a no obstacle to the operation and growth of the enterprise (Financing Obstacle=1) for values of four bank policy variables at the 25%, 50% and 75% percentiles.

Panel A: Probability that firms rate financing as major obstacle

	25%	50%	75%	Change between 25% and 75% percentiles
Supervisory power	0.342	0.349	0.359	0.017
Supervisory independence	0.368	0.368	0.307	-0.061
Private monitoring	0.357	0.339	0.329	-0.028
Moral hazard	0.250	0.272	0.297	0.047

Panel B: Probability that firms rate financing as no obstacle

	25%	50%	75%	Change between 25% and 75% percentiles
Supervisory power	0.203	0.197	0.190	-0.013
Supervisory independence	0.179	0.179	0.226	0.047
Private monitoring	0.188	0.202	0.210	0.022
Moral hazard	0.251	0.224	0.208	-0.043

Table V
Supervision and Financing Obstacles – Firms with Access to Bank Finance

The sample is limited to firms that receive bank financing. The regression estimated is: General Financing Obstacle = β_1 Government + β_2 Foreign + β_3 Exporter + β_4Manufacturing + β_5 Services + β_6 Sales +β_7 No. of Competitors +β_8 Inflation + β_9 Growth + β_{10} Priv + +β_{11} Supervision + ε. General Financing Obstacle is the response to the question "How problematic is financing for the operation and growth of your business?" Answers vary between 1 (no obstacle), 2 (minor obstacle), 3 (moderate obstacle), and 4 (major obstacle). Government and Foreign are dummy variables that take the value 1 if the firm has government or foreign ownership and zero if not. Exporter is a dummy variable that indicates if the firm is an exporting firm. Manufacturing and Services are industry dummies. Sales is the logarithm of sales in US$. Number of Competitors is the logarithm of the number of competitors the firm has. Priv is claims on the private sector by deposit money banks as share of GDP. Growth is the growth rate of GDP. Inflation is the log difference of the consumer price index. Supervision is one of four supervisory variables. Supervisory Power indicates the power of the supervisor vis-à-vis banks. Supervisory Independence is the independence of the bank supervisor from government and banks. Private Monitoring is the amount of information available to bank creditors and Moral Hazard indicates the generosity of the deposit insurance scheme. The regression is run with ordered probit. Detailed variable definitions and sources are given in the appendix. P-values are reported in parentheses.

	General Financing Obstacle	General Financing Obstacle	General Financing Obstacle	General Financing Obstacle	General Financing Obstacle
Inflation	0.492	0.714	0.689	0.377	-0.202
	(0.009)***	(0.000)***	(0.001)***	(0.044)**	(0.537)
Growth	-7.152	-5.149	-5.029	-7.006	-18.380
	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***
Priv	-0.104	-0.074	-0.076	-0.103	-0.099
	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.012)**
Supervisory Power	0.045		0.176		
	(0.021)**		(0.004)***		
Supervisory Independence		-0.152	-0.143		
		(0.000)***	(0.000)***		
Private Monitoring				-0.063	
				(0.042)**	
Moral Hazard					0.032
					(0.003)***
Supervisory Power*			-0.053		
Supervisory Independence			(0.011)***		
Observations	2925	2890	2890	2925	1859

Table VI
Supervision and Financing Obstacles – Controlling for Legal and Regulatory Variables

The regression estimated is: General Financing Obstacle = β_1 Government + β_2 Foreign + β_3 Exporter + β_4 Manufacturing + β_5 Services + β_6 Sales + β_7 No. of Competitors + β_8 Inflation + β_9 Growth + β_{10} Priv + β_{11}X + β_{12} Supervision + ε. General Financing Obstacle is the response to the question "How problematic is financing for the operation and growth of your business?" Answers vary between 1 (no obstacle), 2 (minor obstacle), 3 (moderate obstacle), and 4 (major obstacle). Government and Foreign are dummy variables that take the value 1 if the firm has government or foreign ownership and zero if not. Exporter is a dummy variable that indicates if the firm is an exporting firm. Manufacturing and Services are industry dummies. Sales is the logarithm of sales in US$. Number of Competitors is the logarithm of the number of competitors the firm has. Priv is claims on the private sector by deposit money banks as share of GDP. Growth is the growth rate of GDP. Inflation is the log difference of the consumer price index. Supervision is one of four supervisory variables. Supervisory Power indicates the power of the supervisor vis-à-vis banks; Supervisory Independence the independence of the bank supervisor from government and banks. Private Monitoring is the amount of information available to bank creditors and Moral Hazard indicates the generosity of the deposit insurance scheme. X is one of five variables. Checks and Balances indicates the number of veto players in the political process; Banking Freedom indicates the absence of government interference in banking; State-Owned Banks is the share of assets in banks that are majority-owned by the government in total banking assets; Shareholder Rights is an indicator of minority shareholder rights vis-à-vis blockholders and management. Systemic Banking Crisis is a dummy variable that takes on the value one if the country has suffered a systemic banking crisis during the 1990s. The regression is run with ordered probit. Detailed variable definitions and sources are given in the appendix. P-values are reported in parentheses.

Panel A:

	General Financing Obstacle	General Financing Obstacle	General Financing Obstacle	General Financing Obstacle	General Financing Obstacle
Inflation	0.442	0.743	0.718	0.315	-0.462
	(0.001)***	(0.000)***	(0.000)***	(0.012)**	(0.087)*
Growth	-6.428	-3.769	-3.986	-6.114	-16.345
	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***
Priv	-0.077	-0.062	-0.066	-0.074	-0.105
	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.006)***
Checks and Balances	-0.055	-0.014	-0.010	-0.055	-0.025
	(0.000)***	(0.311)	(0.464)	(0.000)***	(0.175)
Supervisory Power	0.033		0.141		
	(0.044)**		(0.005)***		
Supervisory Independence		-0.169	-0.162		
		(0.000)***	(0.000)***		
Private Monitoring				-0.062	
				(0.011)**	
Moral Hazard					0.033
					(0.001)***
Supervisory Power* Supervisory Independence			-0.044		
			(0.008)***		
Observations	4812	4777	4777	4812	2377

Panel B:

Inflation	0.479	0.740	0.708	0.339	-0.219
	(0.000)***	(0.000)***	(0.000)***	(0.007)***	(0.425)
Growth	-6.020	-3.696	-3.988	-5.817	-15.702
	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***
Priv	-0.075	-0.056	-0.059	-0.074	-0.090
	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.012)**
Banking Freedom	-0.110	-0.064	-0.068	-0.097	-0.126
	(0.000)***	(0.014)**	(0.010)**	(0.000)***	(0.000)***
Supervisory Power	0.045		0.150		
	(0.007)***		(0.000)***		
Supervisory Independence		-0.171	-0.161		
		(0.000)***	(0.000)***		
Private Monitoring				-0.057	
				(0.020)**	
Moral Hazard					0.024
					(0.012)**
Supervisory Power* Supervisory Independence			-0.046		
			(0.001)***		
Observations	4812	4777	4777	4812	2377

Panel C:

	General Financing Obstacle	General Financing Obstacle	General Financing Obstacle	General Financing Obstacle	General Financing Obstacle
Inflation	0.472	0.900	0.734	0.490	-0.370
	(0.002)***	(0.000)***	(0.000)***	(0.001)***	(0.185)
Growth	-9.129	-6.305	-6.974	-8.086	-15.771
	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***
Priv	-0.055	0.018	-0.002	-0.008	-0.107
	(0.044)**	(0.538)	(0.952)	(0.784)	(0.003)***
State-owned Banks	0.099	0.120	0.114	0.069	0.244
	(0.217)	(0.134)	(0.155)	(0.391)	(0.041)**
Supervisory Power	-0.011		0.113		
	(0.555)		(0.028)**		
Supervisory Independence		-0.138	-0.128		
		(0.000)***	(0.000)***		
Private Monitoring				-0.127	
				(0.000)***	
Moral Hazard					0.022
					(0.034)**
Supervisory Power*			-0.049		
Supervisory Independence			(0.005)***		
Observations	4413	4413	4413	4413	2232

Panel D:

Inflation	0.412	0.573	0.545	0.266	-0.361
	(0.003)***	(0.000)***	(0.000)***	(0.045)**	(0.212)
Growth	-9.598	-7.434	-7.959	-9.212	-13.765
	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***
Priv	-0.116	-0.095	-0.103	-0.114	0.018
	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.723)
Shareholder rights	-0.040	-0.048	-0.033	-0.050	-0.071
	(0.004)***	(0.000)***	(0.022)**	(0.000)***	(0.001)***
Supervisory Power	0.027		0.188		
	(0.133)		(0.001)***		
Supervisory Independence		-0.117	-0.101		
		(0.000)***	(0.000)***		
Private Monitoring				-0.075	
				(0.007)***	
Moral Hazard					0.054
					(0.000)***
Supervisory Power*			-0.061		
Supervisory Independence			(0.001)***		
Observations	4134	4134	4134	4134	1982

Panel E:

Inflation	0.490	0.770	0.734	0.384	-0.495
	(0.000)***	(0.000)***	(0.000)***	(0.002)***	(0.066)*
Growth	-5.295	-3.418	-3.774	-4.343	-14.044
	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***
Priv	-0.086	-0.064	-0.068	-0.078	-0.123
	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***
Systemic banking crisis	0.166	0.042	0.020	0.202	0.129
	(0.000)***	(0.286)	(0.644)	(0.000)***	(0.038)**
Supervisory Power	0.011		0.140		
	(0.520)		(0.006)***		
Supervisory Independence		-0.170	-0.165		
		(0.000)***	(0.000)***		
Private Monitoring				-0.094	
				(0.000)***	
Moral Hazard					0.025
					(0.010)**
Supervisory Power*			-0.045		
Supervisory Independence			(0.008)***		
Observations	4812	4777	4777	4812	2377

Table VII
Supervision and Financing Obstacles – Controlling for the Political Environment

The regression estimated is: General Financing Obstacle = β_1 Government + β_2 Foreign + β_3 Exporter + β_4 Manufacturing + β_5 Services + β_6 Sales +β_7 No. of Competitors +β_8 Inflation + β_9 Growth + β_{10} Priv + β_{11}X +β_{12} Supervision + ε. General Financing Obstacle is the response to the question "How problematic is financing for the operation and growth of your business?" Answers vary between 1 (no obstacle), 2 (minor obstacle), 3 (moderate obstacle), and 4 (major obstacle). Government and Foreign are dummy variables that take the value 1 if the firm has government or foreign ownership and zero if not. Exporter is a dummy variable that indicates if the firm is an exporting firm. Manufacturing and Services are industry dummies. Sales is the logarithm of sales in US$. Number of Competitors is the logarithm of the number of competitors the firm has. Priv is claims on the private sector by deposit money banks as share of GDP. Growth is the growth rate of GDP. Inflation is the log difference of the consumer price index. Supervision is one of two supervisory variables. Supervisory Power indicates the power of the supervisor vis-à-vis banks; Supervisory Independence the independence of the bank supervisor from government and banks. X is one of three variables. Legislative Competition indicates the degree of competitiven4ess of legislative elections. State repression of media is an indicator of the degree to which the government represses a country's media. State ownership of media indicates the share of media owned by the government. The regression is run with ordered probit. Detailed variable definitions and sources are given in the appendix. P-values are reported in parentheses.

Panel A:

	General Financing Obstacle	General Financing Obstacle	General Financing Obstacle
Supervisory Power	0.132	0.193	0.218
	(0.008)***	(0.000)***	(0.000)***
Supervisory Independence	-0.140	-0.128	-0.148
	(0.000)***	(0.000)***	(0.000)***
Supervisory Power*	-0.046	-0.047	-0.053
Supervisory Independence	(0.006)***	(0.006)***	(0.002)***
Legislative competition	-0.066		
	(0.000)***		
State repression of media		0.079	
		(0.000)***	
State ownership of media			0.459
			(0.000)***
Observations	4777	4325	4325

Panel B:

	General Financing Obstacle	General Financing Obstacle	General Financing Obstacle
Supervisory Power	0.160	0.110	0.186
	(0.373)	(0.052)*	(0.000)***
Supervisory Independence	-0.140	-0.124	-0.146
	(0.000)***	(0.000)***	(0.000)***
Supervisory Power*	-0.045	-0.053	-0.066
Supervisory Independence	(0.018)**	(0.002)***	(0.000)***
Legislative competition	-0.065		
	(0.001)***		
State repression of media		0.088	
		(0.000)***	
State ownership of media			0.483
			(0.000)***
Legislative competition*	-0.005		
Supervisory power	(0.872)		
State repression of media*		0.022	
Supervisory power		(0.001)***	
State ownership of media*			0.197
Supervisory power			(0.008)***
Observations	4777	4325	4325

Table VIII
Supervision and Financing Obstacles – The Horserace

The regression estimated is: General Financing Obstacle = β_1 Government + β_2 Foreign + β_3 Exporter + β_4Manufacturing + β_5 Services + β_6 Sales +β_7 No. of Competitors +β_8 Inflation + β_9 Growth + β_{10} Priv + +β_{11} Supervision + ε. General Financing Obstacle is the response to the question "How problematic is financing for the operation and growth of your business?" Answers vary between 1 (no obstacle), 2 (minor obstacle), 3 (moderate obstacle), and 4 (major obstacle). Government and Foreign are dummy variables that take the value 1 if the firm has government or foreign ownership and zero if not. Exporter is a dummy variable that indicates if the firm is an exporting firm. Manufacturing and Services are industry dummies. Sales is the logarithm of sales in US$. Number of Competitors is the logarithm of the number of competitors the firm has. Priv is claims on the private sector by deposit money banks as share of GDP. Growth is the growth rate of GDP. Inflation is the log difference of the consumer price index. Supervision is one of four supervisory variables. Supervisory Power indicates the power of the supervisor vis-à-vis banks; Supervisory Independence the independence of the bank supervisor from government and banks. Private Monitoring is the amount of information available to bank creditors and Moral Hazard indicates the generosity of the deposit insurance scheme. The regression is run with ordered probit. Detailed variable definitions and sources are given in the appendix. P-values are reported in parentheses.

	General Financing Obstacle	General Financing Obstacle	General Financing Obstacle	General Financing Obstacle	General Financing Obstacle
Inflation	0.445	-0.405	0.712	0.099	0.075
	(0.001)***	(0.133)	(0.000)***	(0.727)	(0.791)
Growth	-5.245	-14.975	-3.034	-12.820	-12.613
	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***
Priv	-0.086	-0.104	-0.060	-0.035	-0.004
	(0.000)***	(0.003)***	(0.000)***	(0.364)	(0.922)
Supervisory Power	0.040	0.068			
	(0.014)**	(0.001)***			
Supervisory Independence			-0.174	-0.144	
			(0.000)***	(0.000)***	
Private Monitoring	-0.070		-0.058		-0.211
	(0.004)***		(0.018)**		(0.000)***
Moral Hazard		0.025		0.033	0.031
		(0.009)***		(0.001)***	(0.002)***
Observations	4812	2377	4777	2377	2377

*,**,*** indicate significance levels of 10,5, and 1 percent, respectively.

Table IX
Supervision and the Need for Special Connection

The regression estimated is: Special Connection = β_1 Government + β_2 Foreign + β_3 Exporter + β_4Manufacturing + β_5 Services + β_6 Sales +β_7 No. of Competitors +β_8 Inflation + β_9 Growth + β_{10} Priv + +β_{11} Supervision + ε. Special Connection is the response to the question "Is the need of special connections with banks an obstacle for the operation and growth of your business?" Answers vary between 1 (no obstacle), 2 (minor obstacle), 3 (moderate obstacle), and 4 (major obstacle). Government and Foreign are dummy variables that take the value 1 if the firm has government or foreign ownership and zero if not. Exporter is a dummy variable that indicates if the firm is an exporting firm. Manufacturing and Services are industry dummies. Sales is the logarithm of sales in US$. Number of Competitors is the logarithm of the number of competitors the firm has. Priv is claims on the private sector by deposit money banks as share of GDP. Growth is the growth rate of GDP. Inflation is the log difference of the consumer price index. Supervision is one of four supervisory variables. Supervisory Power indicates the power of the supervisor vis-à-vis banks; Supervisory Independence the independence of the bank supervisor from government and banks. Private Monitoring is the amount of information available to bank creditors and Moral Hazard indicates the generosity of the deposit insurance scheme. The regression is run with ordered probit. Detailed variable definitions and sources are given in the appendix. P-values are reported in parentheses.

	Special Connection	Special Connection	Special Connection	Special Connection	Special Connection
Inflation	-0.338	-0.409	-0.328	-0.516	-0.599
	(0.011)**	(0.002)***	(0.017)**	(0.000)***	(0.020)**
Growth	-6.466	-6.253	-6.166	-6.925	-9.684
	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***
Priv	-0.086	-0.080	-0.081	-0.088	-0.028
	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.433)
Supervisory Power	0.090		0.202		
	(0.000)***		(0.000)***		
Supervisory Independence		-0.055	-0.040		
		(0.001)***	(0.018)**		
Private Monitoring				-0.018	
				(0.460)	
Moral Hazard					0.014
					(0.151)
Supervisory Power*			-0.043		
Supervisory Independence			(0.012)**		
Observations	4632	4595	4595	4632	2373

*,**,*** indicate significance levels of 10,5, and 1 percent, respectively.

Table X
Supervision and Bank Corruption

The regression estimated is: Bank Corruption = β_1 Government + β_2 Foreign + β_3 Exporter + β_4Manufacturing + β_5 Services + β_6 Sales +β_7 No. of Competitors +β_8 Inflation + β_9 Growth + β_{10} Priv + +β_{11} Supervision + ε. Bank Corruption is the response to the question "Is the corruption of bank officials an obstacle for the operation and growth of your business?" Answers vary between 1 (no obstacle), 2 (minor obstacle), 3 (moderate obstacle), and 4 (major obstacle). Government and Foreign are dummy variables that take the value 1 if the firm has government or foreign ownership and zero if not. Exporter is a dummy variable that indicates if the firm is an exporting firm. Manufacturing and Services are industry dummies. Sales is the logarithm of sales in US$. Number of Competitors is the logarithm of the number of competitors the firm has. Priv is claims on the private sector by deposit money banks as share of GDP. Growth is the growth rate of GDP. Inflation is the log difference of the consumer price index. Supervision is one of four supervisory variables. Supervisory Power indicates the power of the supervisor vis-à-vis banks; Supervisory Independence the independence of the bank supervisor from government and banks. Private Monitoring is the amount of information available to bank creditors and Moral Hazard indicates the generosity of the deposit insurance scheme. The regression is run with ordered probit. Detailed variable definitions and sources are given in the appendix. P-values are reported in parentheses.

	Bank corruption	Bank corruption	Bank corruption	Bank corruption	Bank corruption
Inflation	0.533	0.357	0.615	0.208	0.492
	(0.000)***	(0.017)**	(0.000)***	(0.154)	(0.085)*
Growth	-5.821	-6.046	-5.178	-6.185	-14.883
	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***
Priv	-0.039	-0.036	-0.031	-0.038	0.010
	(0.018)**	(0.032)**	(0.067)*	(0.022)**	(0.806)
Supervisory Power	0.162		0.126		
	(0.000)***		(0.022)**		
Supervisory Independence		-0.054	-0.044		
		(0.007)***	(0.030)**		
Private Monitoring				-0.084	
				(0.002)***	
Moral Hazard					-0.005
					(0.683)
Supervisory Power*			0.011		
Supervisory Independence			(0.564)		
Observations	4109	4072	4072	4109	2139

*,**,*** indicate significance levels of 10,5, and 1 percent, respectively.

Table XI
Independent Supervisors and Financing Obstacles

The regression estimated is: Financing Obstacle = β_1 Government + β_2 Foreign + β_3 Exporter + β_4Manufacturing + β_5 Services + β_6 Sales +β_7 No. of Competitors +β_8 Inflation + β_9 Growth + β_{10} Priv + +β_{11} Supervision + ε. Financing Obstacle is either the General Financing Obstacle, Special Connection or Bank Corruption. Answers vary between 1 (no obstacle), 2 (minor obstacle), 3 (moderate obstacle), and 4 (major obstacle). Government and Foreign are dummy variables that take the value 1 if the firm has government or foreign ownership and zero if not. Exporter is a dummy variable that indicates if the firm is an exporting firm. Manufacturing and Services are industry dummies. Sales is the logarithm of sales in US$. Number of Competitors is the logarithm of the number of competitors the firm has. Priv is claims on the private sector by deposit money banks as share of GDP. Growth is the growth rate of GDP. Inflation is the log difference of the consumer price index. Supervision is one of three supervisory variables. Supervisory Power indicates the power of the supervisor vis-à-vis banks; Supervisory Independence from Banks/Government the independence of the bank supervisor from government and banks, respectively. The regression is run with ordered probit. Detailed variable definitions and sources are given in the appendix. P-values are reported in parentheses.

	General Financing Obstacle	General Financing Obstacle	Special Connection	Special Connection	Bank Corruption	Bank Corruption
Inflation	0.819	0.708	-0.370	-0.378	0.379	0.650
	(0.000)***	(0.000)***	(0.005)***	(0.007)***	(0.011)**	(0.000)***
Growth	-4.332	-4.969	-7.098	-7.264	-6.980	-5.687
	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***
Priv	-0.065	-0.066	-0.080	-0.078	-0.034	-0.032
	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.037)**	(0.056)*
Supervisory Power		0.116		0.178		0.117
		(0.022)**		(0.001)***		(0.034)**
Supervisory Independence	-0.125	-0.117	0.001	0.007	0.004	-0.006
from government	(0.000)***	(0.000)***	(0.958)	(0.754)	(0.864)	(0.803)
Supervisory Independence	-0.303	-0.298	-0.189	-0.158	-0.194	-0.137
from banks	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.001)***
Supervisory Power*		-0.072		-0.075		0.028
Supervisory Independence – Govt		(0.000)***		(0.000)***		(0.217)
Supervisory Power*		0.045		0.056		-0.033
Supervisory Independence – Banks		(0.289)		(0.186)		(0.479)
Observations	4777	4777	4595	4595	4072	4072

*,**,*** indicate significance levels of 10,5, and 1 percent, respectively.

Appendix : Variables and Sources

Variable	Definition	Original source
Banking Freedom	Indicator of openness of banking and financial system: specifically, whether the foreign banks and financial services firms are able to operate freely, how difficult it is to open domestic banks and other financial services firms, how heavily regulated the financial system is, the presence of state-owned banks, whether the government influences allocation of credit, and whether banks are free to provide customers with insurance and invest in securities (and vice-versa). The index ranges in value from 1 (very low – banks are primitive) to 5 (very high – few restrictions). Averaged over 1995-97.	Heritage Foundation
Checks and Balances	Measure of the number of veto-players in the political decision process, both in the executive and the legislature. Average for 1990-95.	Beck, Clarke, Groff, Keefer, and Walsh (2001)
Corruption of bank officials	Is the corruption of bank officials no obstacle (1), a minor obstacle (2), a moderate obstacle (3) or a major obstacle (4)?	World Business Environment Survey (WBES)
Exporter	Dummy variable that takes on the value one if firm exports, zero otherwise.	World Business Environment Survey (WBES)
Foreign	Dummy variable that takes on the value one if any foreign company or individual has a financial stake in the ownership of the firm, zero otherwise.	World Business Environment Survey (WBES)
General Financing Obstacle	How problematic is financing for the operation and growth of your business: no obstacle (1), a minor obstacle (2), a moderate obstacle (3) or a major obstacle (4)?	World Business Environment Survey (WBES)
Government	Dummy variable that takes on the value one if any government agency or state body has a financial stake in the ownership of the firm, zero otherwise.	World Business Environment Survey (WBES)
Growth	Growth rate of GDP, average 1995-99	World Development Indicators
Inflation rate	Log difference of Consumer Price Index	International Financial Statistics (IFS), line 64
Legislative competition	Index of the number of parties competing in the last legislative election, ranging from 1 (non-competitive) to 7 (competitive). Average for 1990-95.	Beck, Clarke, Groff, Keefer, and Walsh (2001)
Manufacturing	Dummy variable that takes on the value one if firm is in the manufacturing industry, zero otherwise.	World Business Environment Survey (WBES)
Moral Hazard	Principal component indicator measuring the generosity of deposit insurance, based on co-insurance, coverage of foreign currency and interbank deposits, type and source of funding, management, membership and level of explicit coverage.	Demirguc-Kunt and Detragiache (2003)
Need special connections with banks	Is the need of special connections with banks/financial institutions no obstacle (1), a minor obstacle (2), a moderate obstacle (3) or a major obstacle (4)?	World Business Environment Survey (WBES)
Number of Competitors	Regarding your firm's major product line, how many competitors do you face in your market?	World Business Environment Survey (WBES)

Priv	{(0.5)*[F(t)/P_e(t) + F(t-1)/P_e(t-1)]}/[GDP(t)/P_a(t)], where F is credit by deposit money banks to the private sector (lines 22d), GDP is line 99b, P_e is end-of period CPI (line 64) and P_a is the average CPI for the year.	IFS
Private Monitoring	Principal component indicator of nine dummy variables that measure whether (1) bank directors and officials are legally liable for the accuracy of information disclosed to the public, (2) whether banks must publish consolidated accounts, (3) whether banks must be audited by certified international auditors, (4) whether 100% of the largest 10 banks are rated by international rating agencies, (5) whether off-balance sheet items are disclosed to the public, (6) whether banks must disclose their risk management procedures to the public, (7) whether accrued, though unpaid interest/principal enter the income statement while the loan is still non-performing (8) whether subordinated debt is allowable, and (9) whether there is no explicit deposit insurance system and no insurance was paid the last time a bank failed..	Barth, Caprio and Levine (2003)
Services	Dummy variable that takes on the value one if firm is in the service industry, zero otherwise.	World Business Environment Survey (WBES)
Shareholder rights	Summary indicator of the rights of minority shareholders vis-à-vis management and blockholders	La Porta, Lopez-de-Silanes, Shleifer and Vishny (1997, 1998)
Size	Logarithm of firm sales	World Business Environment Survey (WBES)
State ownership of media	Average of percentage of state ownership in press media and TV media	Djankov, McLiesh, Nenova and Shleifer (2002)
State repression of media	Degree to which government represses media freedom	
State-owned banks	Percentage of banking system's assets in banks that are 50% or more government owned	Barth, Caprio and Levine (2003)
Supervisory Independence	The degree to which the supervisory authority is independent from the government and legally protected from the banking system	Barth, Caprio and Levine (2003)
Supervisory Independence from banks	The degree to which the supervisory authority is legally protected from the banking system	
Supervisory Independence from government	The degree to which the supervisory authority is independent from the government (To whom are the supervisory bodies responsible or accountable? How is the head of the supervisory agency (and other directors) appointed? How is the head of the supervisory agency (and other directors) removed?) Ranges from one (low) to three (high independence).	
Supervisory Power	Principal component indicator of 14 dummy variables: 1.Does the supervisory agency have the right to meet with external auditors to discuss their report without the approval of the bank? 2.Are auditors required by law to communicate directly to the supervisory agency any presumed involvement of bank directors or senior managers in elicit activities, fraud, or insider abuse? 3.Can supervisors take legal action against external auditors for negligence? 4.Can the supervisory authority force a bank to change its internal organizational structure? 5.Are off-balance sheet items disclosed to supervisors? 6. Can the supervisory agency order the bank's directors or management to constitute provisions to cover actual or potential losses? 7. Can the supervisory agency suspend the directors' decision to distribute: a) Dividends? b) Bonuses? c) Management fees? 8.Can the supervisory agency legally declare-such that this declaration supersedes the rights of bank shareholders-that a bank is insolvent? 9.Does the Banking Law give authority to the supervisory agency to intervene that is, suspend some or all ownership rights-a problem	Barth, Caprio and Levine (2003)

	bank? 10.Regarding bank restructuring and reorganization, can the supervisory agency or any other government agency do the following: a) Supersede shareholder rights? b) Remove and replace management? c) Remove and replace directors?	
Systemic banking crisis	Dummy variable that takes on the value one if the country suffered a systemic banking crisis during the 1990s	Caprio and Klingebiel (1999)