Corporate Governance, Regulation, and Bank Risk Taking

Luc Laeven, IMF, CEPR, and ECGI
Ross Levine, Brown University and NBER
Introduction

- Recent turmoil in financial markets following the announcement of heavy losses by major banks on exposures to mortgage-backed securities has reinvigorated an ongoing debate on whether banks are properly governed and regulated.

- If bank managers face sound governance mechanisms, this enhances the likelihood that banks will efficiently mobilize and allocate savings, and exert sound governance over the firms they fund, thereby lowering firms’ cost of capital and accelerating economic growth.

- However, little is known about how a bank’s private governance arrangements, including those covering its ownership and management structure, combine with national laws and regulations to determine bank performance and stability.
Purpose:

- Assess how ownership structure, managerial shareholdings, and national laws and regulations interact to influence bank risk taking
  - Which policies work?
  - Are banks different?

- No previous empirical research simultaneously examines:
  - Private governance
  - Numerous national laws and regulations
Who cares?

- Banks matter for growth & stability
- Governments:
  - Claim private governance don’t work. True?
  - Enact elaborate regulations
    - Basel→ Capital & Supervisory Oversight
    - Barth, Caprio, & Levine (2006)
Motivation: Theory

- Stockholders:
  - Incentives to increase risk by increasing leverage
  - Intensified by deposit insurance
  - Shaped by capital & other regulations (Saunders et al. 1990)

- Managers:
  - Managers may prefer to opt for lower risk, given that their human capital is tied up to the firm, resulting in a classical principal-agent problem (Kose, Litov, and Yeung, 2007)
  - Risk reduction by managers may be impeded by
    - Investor protection laws that empower shareholders
    - Large investors with substantial cash-flow rights
    - Stock options and other incentive pay schemes
  - Regulations that align interests
  - Managers could also engage in empire building, diversifying into different activities (Laeven and Levine, 2007)
Regulators:

- One standard rationale for government regulation of banks is that shareholders and creditors lack sufficient mechanisms for exerting sound governance over complex and opaque banks, especially in the presence of deposit insurance.

- But are banks different? Or do the same corporate control mechanisms that work in nonfinancial corporations also work in banks?
Motivation:

Managers

Bank risk

Owners

Regulation and Laws

Bank: nexus of principal-agent problems
Omitting one component might lead to incomplete or erroneous conclusions
Are banks different?

- As for any firm, shareholders of banks have an incentive to increase risk by increasing leverage, thereby enhancing the value of their equity stakes, however:
  - Society may care more about bankruptcies of banks, given the strong negative externalities associated with bank failures
  - Banks are highly leveraged institutions, thus exacerbating the shareholder-manager conflict
  - Banks’ debt holders chiefly consist of depositors who are likely to be ineffective in monitoring shareholders’ actions, thus intensifying agency problems
  - Banks are considered by many to be extremely complex and opaque (e.g. Morgan 2002); resulting information problems may intensify agency problems
  - Banks are heavily regulated; certain regulations could exacerbate the problem (e.g., deposit insurance, by reducing incentives of debt holders to monitor the bank, may increase the ability and incentives of stockholders to increase risk)
This paper:

- Which regulations matter?
  - Depends on ownership / management structure
  - Depends on laws?

- Does private governance matter?
  - CF↑ of large owner → Risk↑ ??
    - Depends on management structure?
    - Depends on laws and regulation?
  - Management → Risk ?
    - Difference between marginal and large shareholdings?
    - Depends on laws / regulations?
This paper: Limitations

1. Examine impact on risk taking
   - Not: On efficiency of intermediation
   - Not: On optimal risk taking

2. No data on personal portfolios
   (We try to proxy by distinguishing family ownership from corporate ownership)
Methodology

Bank risk\textsubscript{\textit{b,c}} = F\{Ownership\textsubscript{\textit{b,c}}; Management\textsubscript{\textit{b,c}}; Regulation\textsubscript{\textit{c}}; Laws\textsubscript{\textit{c}}; Bank-Level\textsubscript{\textit{b,c}}; Country\textsubscript{\textit{c}}\}\}

Need:
1. New data
2. Identification strategies
3. Robustness
1. **Z-score** = \[\frac{\pi/A + C/A}{\sigma(\pi/A)}\]

- Assume returns are normally distributed
- Z-score = number of standard deviations that a bank’s ROA must fall to make the bank insolvent
- Calculated over the period 1996-2001
- 48 countries. Almost 300 banks.

2. Volatility of Equity Returns

3. Volatility of Bank Earnings
Ownership data

- New data on banks across 44 countries tracing ownership to identify the ultimate owners of bank capital, the degree of ownership concentration, managerial ownership, and board representation.
- 10 largest listed banks in countries with data on shareholder rights.
- Identify “large” owner if any
  - direct + indirect control rights > 10%
  - Trace possible pyramidal structures
  - Find largest controlling owner
  - Compute Voting and Cash-Flow (CF) Rights
Huge variation in ownership

- Banks around the world are generally not widely held, despite government restrictions on the concentration of bank ownership
  - About 75 percent of major banks have single owners that hold more than 10 percent of the voting rights
  - Of these controlling owners, more than half are families
  - Hence, existing regulatory restrictions on bank ownership are largely ineffective in preventing family ownership of banks
  - Almost 20% of banks are state-owned
  - 22 of 48 countries have no widely held banks
Bank boards & management

- Founder on board (3%)
- Descendants on board (14%)
- Large shareholder on board (35%)
- Cash-flow rights of senior management (6%)
Bank Regulation

- Restrict (Activity restrictions)
- Diversification (Diversification guidelines)
- Capital (Regulatory restrictions on capital)
- Official (Official supervisory power)
- Prompt Corrective Action
- Loan Classification Stringency
- Deposit Insurance (DI)
### Some correlations

<table>
<thead>
<tr>
<th></th>
<th>Z-score</th>
<th>Volatility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equity Volatility</td>
<td>***-0.375</td>
<td>1</td>
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<tr>
<td>Revenue growth</td>
<td>***0.205</td>
<td>*-0.144</td>
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<tr>
<td>CF</td>
<td>***-0.230</td>
<td>***0.353</td>
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<tr>
<td>Large owner on mgt board</td>
<td>**-0.122</td>
<td>***0.217</td>
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<tr>
<td>Managerial ownership</td>
<td>-0.063</td>
<td>*0.126</td>
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<tr>
<td>Restrict</td>
<td>***-0.293</td>
<td>***0.224</td>
</tr>
<tr>
<td>Diversification</td>
<td>***0.234</td>
<td>***-0.240</td>
</tr>
</tbody>
</table>

Major regulations NOT significant:
Capital regulations, Supervisory power, Prompt corrective action, Loan stringency, etc.
### Tab 3: Stability, Ownership, & Regulation

<table>
<thead>
<tr>
<th></th>
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<th>-2</th>
<th>-3</th>
<th>-4</th>
<th>-7</th>
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<tr>
<td>Y/N</td>
<td>2.915**</td>
<td>2.084*</td>
<td>2.960***</td>
<td>2.814**</td>
<td>2.947***</td>
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<tr>
<td>Rights</td>
<td>0.758</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Restrict</td>
<td></td>
<td>-2.304**</td>
<td></td>
<td>-2.063**</td>
<td></td>
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<tr>
<td>Diversification</td>
<td></td>
<td></td>
<td>12.025***</td>
<td></td>
<td>10.719***</td>
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<tr>
<td>Capital</td>
<td></td>
<td></td>
<td></td>
<td>-1.409</td>
<td></td>
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<tr>
<td>Large owner on mgt board</td>
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<td></td>
<td></td>
<td></td>
<td>7.440**</td>
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<td>Managerial ownership</td>
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<td>-6.476</td>
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<tr>
<td>Observations</td>
<td>269</td>
<td>236</td>
<td>236</td>
<td>236</td>
<td>232</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.1</td>
<td>0.15</td>
<td>0.16</td>
<td>0.1</td>
<td>0.21</td>
</tr>
<tr>
<td># countries</td>
<td>46</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
</tr>
</tbody>
</table>

Dependent Variable: Bank z-Score.

Estimation: OLS with clustering at the country-level.
Findings on Ownership and Management Structure

- Larger CF rights by the principal owner are associated with greater risk taking
  - $\sigma^{\uparrow}$-CF $\Rightarrow$ z-score $\downarrow$ by 4

- Bank risk falls when the large shareholder is an executive manager
  - Consistent with predictions that a bank manager has substantial human capital invested in the bank and may enjoy private benefits of control
  - $\sigma^{\uparrow}$-CF & $\sigma^{\uparrow}$ Large owner on board $\Rightarrow$ z-score $\downarrow$ by 0.6, virtually nullifying the effect
Findings on Regulation

- The two key components of Basel II—capital requirements and official supervisory oversight of banks—do not reduce bank risk taking.

- Rather, regulations that promote loan diversification reduce bank risk, while regulations that restrict banks from diversifying income flows by providing nonlending services increase bank risk taking.
Identification & Omitted Variables

Risk = βX + u; Consistency → Cov{u, X_i} = 0

Three approaches:
1) “Saturate” regression with bank/country traits
2) Examine time-series of ownership (CF)
   - Trace 200 banks through time
   - Ownership: highly stable, except for “major” events
   - Ownership does not respond to innovations in risk
3) Instrumental variables
Instrumental variables (Tab. 4)

- General lack of good instruments for ownership
- CF (other banks):
  - Con: 3\textsuperscript{rd} factor could influence Risk(c) and CF(c)
- Founded: older $\rightarrow$ more diffuse
  - Con: 3\textsuperscript{rd} factor could influence Risk(i,c) and success of bank and thus Age(i,c) ($\rightarrow$ OIR-test)
- Founder on board $\rightarrow$ more concentrated
  - Con: Risk(i,c) may affect Founder ($\rightarrow$ OIR-test)
- When using above set of instruments find similar results
- $|\text{IV estimates}| > |\text{OLS estimates}|$
  - OLS underestimates the true causal effect
  - Measurement error
  - Invalid instruments
Sample splits: Extensions from theory (Tab. 5)

- Do investor protection laws affect:
  - Relationship between CF and Risk?
  - Relationship between Regulation and Risk?

- Do capital regulations affect relationship between CF and Risk?

- Does family ownership affect relationship between CF and Risk?

- Does presence of large owner on mgt board affect relationship between CF and Risk?
Strong shareholder protection laws may enhance the governance of firms by limiting the expropriation of minority shareholders.

For nonfinancial firms, La Porta et al. (2002) find that greater cash flow rights mitigate the adverse effects of weak shareholder protection laws on corporate valuations.

For banks, not everyone agrees that shareholder protection laws will effectively thwart expropriation.

- Even with strong investor protection laws, small stakeholders may lack the means to monitor complex banks, and bank regulations may be sufficiently pervasive to render shareholder protection laws superfluous.
### Sample split by shareholder protection laws

<table>
<thead>
<tr>
<th></th>
<th>Strong shareholder protection</th>
<th>Weak shareholder protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue growth</td>
<td>14.787*</td>
<td>7.843</td>
</tr>
<tr>
<td>CF</td>
<td>-7.854</td>
<td>-15.827**</td>
</tr>
<tr>
<td>Large owner on mgt board</td>
<td>6.341</td>
<td>5.996</td>
</tr>
<tr>
<td>Per capita income</td>
<td>4.140**</td>
<td>3.361**</td>
</tr>
<tr>
<td>Restrict</td>
<td>-3.913***</td>
<td>-0.461</td>
</tr>
<tr>
<td>Diversification</td>
<td>0.205</td>
<td>17.738***</td>
</tr>
<tr>
<td>T-test of coefficient difference</td>
<td>CF: 0.11</td>
<td>Restrict: -1.54</td>
</tr>
<tr>
<td>Observations</td>
<td>79</td>
<td>157</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.24</td>
<td>0.22</td>
</tr>
</tbody>
</table>

CF is unimportant on the margin if minority shareholders are well protected (consistent with theory).

Diversification guidelines matter when the legal system does not support minority shareholders.
Robustness (Tab. 6 and 7)

- Results are robust to the inclusion of a host of country factors (legal system, concentration, deposit insurance, volatility of GDP) and bank-level controls (size and CAMEL ratios)

- Results are robust to controlling for valuation (Tobin’s Q) and to estimating a system of equations for Z and Q where Q is a function of proxies for market power (size and entry restrictions)
Robustness (Tab. 8 and 9)

- Results are robust to alternative cutoffs to determine control and controlling for state ownership
- Results are robust to using alternative proxies for bank stability (equity volatility, earnings volatility, Z scores computed over different periods)
Summary

■ **Standard regulations are not directly linked to risk**
  - The two key components of Basel II—capital requirements and official supervisory oversight of banks—do not reduce bank risk
  - Rather, simple portfolio diversification guidelines reduce bank risk

■ **Private governance mechanisms matter**
  - Large owners with substantial cash-flow rights tend to induce banks to increase risk, but the relationship between ownership structure and risk taking depends on the role of the large owner in managing the firm, investor protection laws, and regulations
  - Effective legal protection of small shareholders reduces the impact of ownership concentration on bank risk
  - Bank risk falls when the large shareholder is an executive manager with substantial human capital and private benefits of control tied to the bank’s existence

*To understand the determinants of bank risk, need to simultaneously examine ownership structure, management structure, and the legal / regulatory regime*
Extra slides, etc.

Definitions
Diversification guidelines

- 7.1 Are there explicit, verifiable, and quantifiable guidelines regarding asset diversification? (for example, are banks required to have some minimum diversification of loans among sectors, or are there industrial or sectoral concentration limits)?
  ○ Yes  ○ No
Capital regulation

3.1.1 Is the minimum capital-asset ratio requirement risk weighted in line with the Basel guidelines?
3.3 Does the minimum ratio vary as a function of market risk?
3.9.1 Are market value of loan losses not realized in accounting books deducted?
3.9.2 Are unrealized losses in securities portfolios deducted?
3.9.3 Are unrealized foreign exchange losses deducted?
3.6 What fraction of revaluation gains is allowed as part of capital?

1.5 Are the sources of funds to be used as capital verified by the regulatory/supervisory authorities?
1.6 Can the initial disbursement or subsequent injections of capital be done with assets other than cash or government securities?
1.7 Can initial disbursement of capital be done with borrowed funds?
Official supervision

5.5 Does the supervisory agency have the right to meet with external auditors to discuss their report without the approval of the bank?
5.6 Are auditors required by law to communicate directly to the supervisory agency any presumed involvement of bank directors or senior managers in illicit activities, fraud, or insider abuse?
5.7 Can supervisors take legal action against external auditors for negligence?
6.1 Can the supervisory authority force a bank to change its internal organizational structure?
10.4 Are off-balance sheet items disclosed to supervisors?
11.2 Can the supervisory agency order the bank's directors or management to constitute provisions to cover actual or potential losses?
11.3 Can the supervisory agency suspend the directors' decision to distribute:
   11.3.1 Dividends? / 11.3.2 Bonuses? / 11.3.3 Management fees?
11.6 Can the supervisory agency legally declare—such that this declaration supersedes the rights of bank shareholders—that a bank is insolvent?
11.7 Does the Banking Law give authority to the supervisory agency to intervene that is, suspend some or all ownership rights—a problem bank?
11.9 Regarding bank restructuring and reorganization, can the supervisory agency or any other government agency do the following:?
   11.9.1 Supersede shareholder rights? / 11.9.2 Remove and replace management? / 11.9.3 Remove and replace directors?
Prompt corrective action

11.8 Does the Law establish pre-determined levels of solvency deterioration which forces automatic actions (like intervention)?

11.1 Are there any mechanisms of cease and desist-type orders, whose infraction leads to the automatic imposition of civil and penal sanctions on the bank's directors and managers?
9.2 Classification of loans in arrears based on their quality: after how many days is a loan in arrears classified as:

9.2.1 Sub-standard?
9.2.2 Doubtful?
9.2.3 Loss?