

Subprime-Related Losses and Board (In-)Competence: Private vs. Public Banks in Germany^{*}

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Abstract

We examine evidence for a systematic underperformance of state-owned banks in the current financial crisis and study if the bank losses can be traced to the quality of bank governance. For this purpose, we examine the biographical background of 593 supervisory board members of Germany's leading banks and find a pronounced difference in the finance and management experience of board representatives across private and state-owned banks. Measures of "Boardroom Competence" are then related directly to the magnitude of bank losses in the recent subprime crisis. Our data confirms that supervisory board (in-)competence in finance is related to losses in the financial crisis. Improved bank governance is therefore a suitable policy objective to reduce bank fragility.

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1. Introduction

The U.S. subprime crisis had a dramatic effect on the solvency of state-owned German banks. Four fully or partly state-owned banks had to be rescued in the last year at the expense of the tax payer: WestLB, IKB Deutsche Industriebank, Sachsen LB, and Bayern LB. In this context, Wolfgang Münchau, a leading business journalist, commented:

“The more interesting point is whether it is accidental that all the German banks in trouble are essentially publicly owned. [...] The episode tells us, once again, that Germany has too many banks, and in fact, too many bankers. Most of the supervisory board members of these institutions are themselves financially illiterate and do not fully understand the ins and out of investments in new financial instruments, such as CDOs or CDS. They have failed to implement proper risk management systems - something which a private bank could ill afford.”¹

The objective of our study is to examine both assertions, namely whether German state-owned banks indeed suffered disproportionately higher subprime-related losses than private banks and whether this could reflect differences in board competence between state-owned and private sector banks.

The answers to these questions hold importance far beyond the specific context of German banking. World-wide, a large proportion of bank assets are still effectively state-owned. Estimates by La Porta, Lopez-de-Silanes and Shleifer (2002) suggest that on average 42 percent of the equity of the 10 largest banks in each country was state-owned in 1995. The German banking sector with its large share of state-owned banks is in some ways typical of the world-wide distribution of control rights in banks. State-ownership in Germany and elsewhere comes with a specific governance structure in which high-level state employees and politicians exercise the monitoring function otherwise played by private shareholders or their representatives. What is the quality of such bank supervision? Does public ownership come at the price of a deficient bank management control? The economic significance of this question far transcends the German economic context analyzed here.

As a consequence of recent government sponsored bank recapitalization plans, state-ownership in banks is likely to experience a dramatic increase. Even countries like the U.S. and the U.K. where state-ownership in banks was never important now feature a partially state-owned banking sector. Will the government seek the shareholder representation which comes with its ownership share and delegate treasury representatives and politicians to the respective bank boards? Again, a close look at the monitoring effectiveness of such state delegates seems warranted and the German experience offers an instructive case study.

The banking crisis certainly led to financial distress also among many private banks. First, we do not claim that private ownership is a sufficient condition for a bank's crisis resilience. Indeed, private bank institutions may also suffer from severe corporate governance problems. Their failure in risk control does not invalidate the hypothesis that bank governance matters. Second,

¹The quote is taken from an article entitled “Another Landesbank bites the dust” on the website of Eurointelligence <http://www.eurointelligence.com/Article3.1018+M50fcec22186.0.html>.

equity owners generally do not have optimal incentives when it comes to risk choices. The corporate finance literature highlights that the option character of private equity may give the equity owners an incentive for excessive risk taking. In particular, equity owners profit from a mean preserving increase in the dispersion of payoffs due to their limited liability. But short of actual bankruptcy, equity owners are certainly most exposed to any decrease in long-run expected payoffs. Hence, any misalignment of social and shareholder objectives may well be a second order problem compared to the corporate governance problems related for example to badly designed compensation systems and/or a break-down of management monitoring related to state-ownership.

The recent financial crisis has revived the interest in issues of the stability of the banking sector. There is general agreement now – even by supervisors and standard setters themselves – that bank supervision was often too lenient and ineffective. But it is also worth recalling that such leniency may often have been result of political lobbying of the financial industry itself. Last, but not least, the general extension of credit and leveraged finance served powerful political interests which are likely to persist in the future.² This raises the question of whether tough banking regulation can withstand opportunistic political behavior in the long run. The political exposure of bank supervision then calls for a more general approach to banking stability which explores additional policy measures by which banking stability can be enhanced in the presence of imperfect bank supervision.³

One such policy dimension which we examine in this article is the role of bank governance. A closer look at the data on bank insolvency reveals that there is high variance in bank performance during the crisis. What can we learn from these performance differences? Can they be explained by the quality of bank governance? The empirical study in this paper sheds some light on these questions. Three findings can be highlighted:

1. The 29 largest German banks show a systematic underperformance of state-owned banks in the recent banking crisis. Adjusted for size, asset write-downs and losses from the first quarter of 2007 to third quarter of 2008 are on average twice as large for state-owned banks compared to privately owned banks.
2. A close examination of the biographical background of 593 supervisory board members in the largest German banks reveals that measures of management and financial experience of the board members are systematically higher in privately owned banks compared to state-owned banks. This difference in boardroom competence is statistically highly significant and qualitatively large.
3. Subprime-related bank losses correlate with the financial (in-)competence of its supervisory board. Using the percentage of politically affiliated board members as an instrument for boardroom competence, we find no evidence that this correlation is due to other endogenous selection effects.

² Reinhart and Rogoff (2008) remark that the list of leading contributors to the presidential and congressional candidates in the U.S. election is dominated by financial companies. They conclude: ‘Thus it is no surprise that, during the boom, all the supposed market watchdogs were neutered. This is an international problem, not just a U.S. one.’

³ The most widely endorsed policy measure in this context is the transfer of interbank trading in the OTC markets to organized exchanges with centralized guaranteed clearing. This highly sensible measure is not the focus of the current article.

The paper is organized as follows: Section 2.1 provides a brief description of the German banking system. Section 2.2 reviews the historic performance of state-owned banks and Section 2.3 examines their performance in the recent subprime-related crisis relative to the privately owned banks. Section 3 undertakes a detailed study of corporate governance quality across state-owned and private banks. Here we use biographical data on 593 supervisory board members to measure supervisory board competence and monitoring ability. Section 4 examines the linkage between board quality and a bank's crisis performance. The policy conclusions are provided in Section 5.

2. The German Banking System and its Performance in the Subprime Crisis

In this section, we briefly describe the basic features of the German banking system and discuss how it fared during the financial crisis. We argue that the coexistence of a private banking system and a state-owned system makes the German banking system an ideal laboratory to study the role of different governance systems for a bank's crisis performance.

2.1 An Overview of the German Banking Sector

German banking is characterized by the coexistence of three types of banks – commercial banks, cooperatives and public sector banks.⁴

First, commercial banks are corporations and operate as universal banks. In terms of total assets, domestic commercial banks account for 28.6 percent of the German banking sector (see Figure 1). Commercial banks are privately owned and private shareholder representatives sit on their supervisory boards. The German banking statistics separately lists real estate banks which are also privately owned (with a few minor exceptions) and which account for another 11.1 percent of the banking sector.

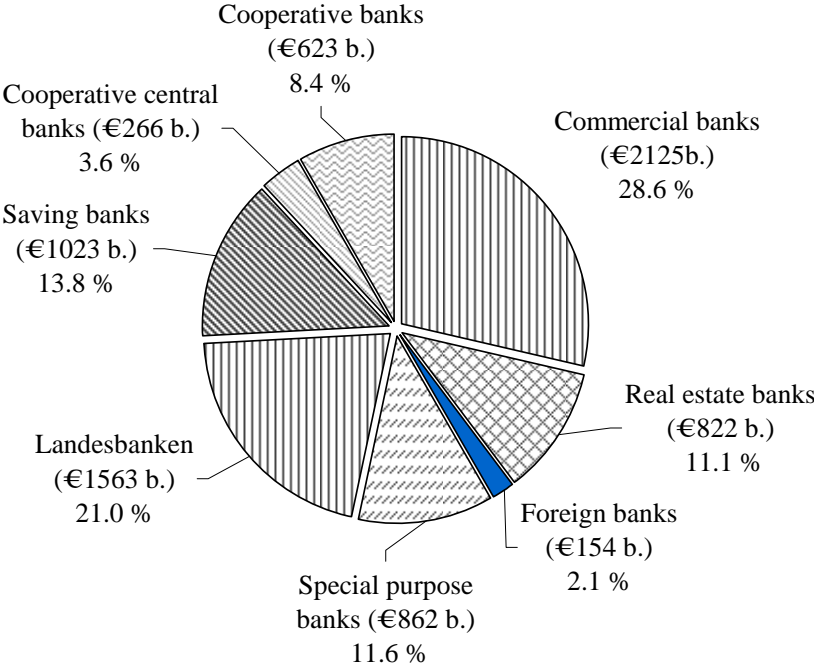
Second, cooperative banks feature a different governance structure. The equity holders – usually customers of the cooperative banks – have equal voting rights independent of their equity shares. Traditionally, the 1,200 cooperative banks have a strong regional focus. To overcome the disadvantages of such a fragmented structure, the cooperative banks have founded two cooperative central banks (DZ Bank and WGZ Bank) which, among other things, carry out the investment banking for the individual and often small cooperative banks. Overall, the segment of cooperative banks has an asset share of 12 percent.

Third, German banking also comprises a large state-owned or public banking sector. It can be further divided into two types of banks according to their geographical scope. The savings banks are organized locally or regionally. They are owned by their respective municipalities or counties. The savings banks account for 13.8 percent of banking assets and typically do not engage in any international banking activities. For this reason, we ignore these public sector institutions in our analysis. More important for our study are the 11 major publicly owned banks that operate nationwide and engage in international banking activities. Most of these banks belong to the so-called *Landesbanken* which were originally founded for providing development financing in their regions and for acting as central banking institutions for the local savings banks. Over time, however, the *Landesbanken* have developed into universal banks that engage

⁴ For a comprehensive survey of the German banking system, see Brunner et al. (2004) and Krahen and Schmidt (2004).

in large-scale (international) lending in direct competition with the private banks. Their share of banking assets is 21 percent. In addition to the Landesbanken, there are several special purpose banks (among others, KfW and IKB⁵) which are directly or indirectly owned by the federal or state governments (with a few minor exceptions). Overall, the public sector banks account for 46 percent of all assets in German banking.

Figure 1: Asset Shares in German Banking

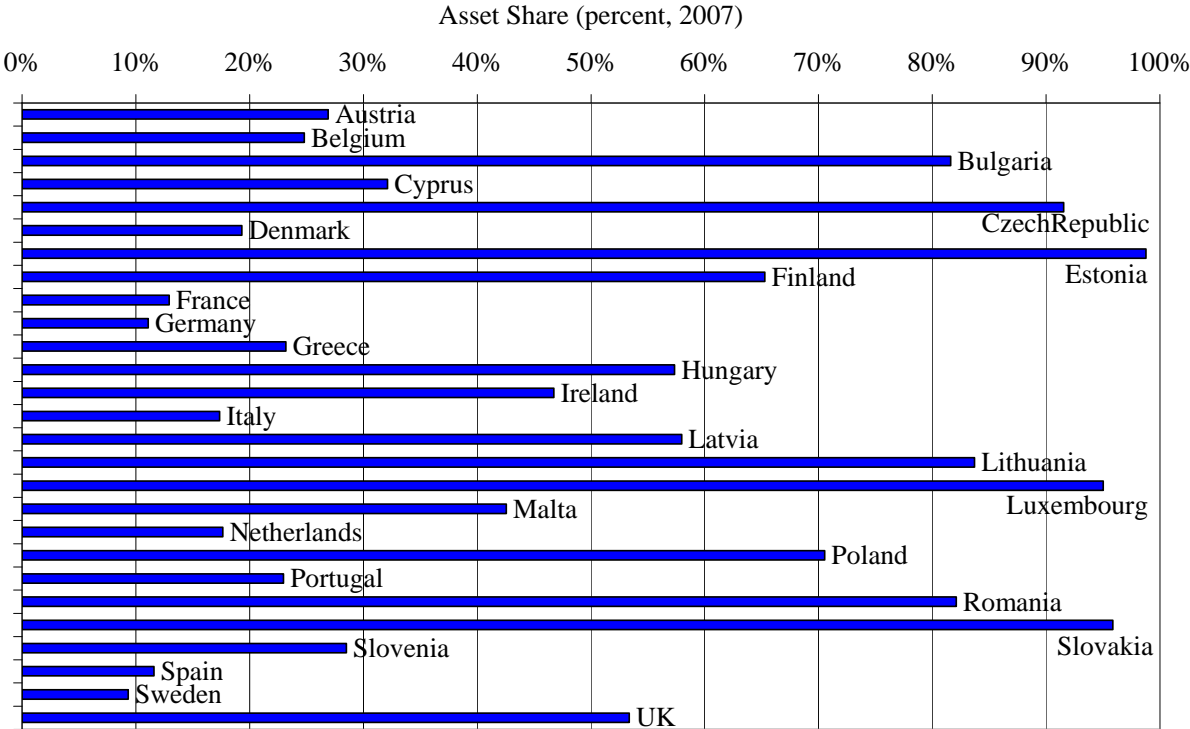


Note: Asset shares are measured by total assets. Savings & loans are excluded as the bank statistic allows no attribution to public and private ownership. All data refer to January 2008
 Source: Deutsche Bundesbank, Bank Statistics 3/08

Foreign banks play only a minor role in German banking. In Figure 1, the 2.1 percent asset share of foreign banks captures only those banks that operate with legally non-autonomous branches in Germany. Legally autonomous subsidiaries are counted among the domestic banks. However, even if the subsidiaries of foreign banks are included, Germany is among the countries with the lowest share of foreign banks in Europe (Figure 2). This aspect makes our study in bank performance across governance structures a relatively clean experiment as confounding effects of foreign ownership are largely irrelevant.

⁵ IKB’s largest shareholder is the state-owned bank KfW. After major losses in international financial markets, the KfW first had to increase its share from 38 to 91 percent and later sold the IKB to Lone Star in October 2008.

Figure 2: Asset Share of Foreign Banks in EU Countries, 2007

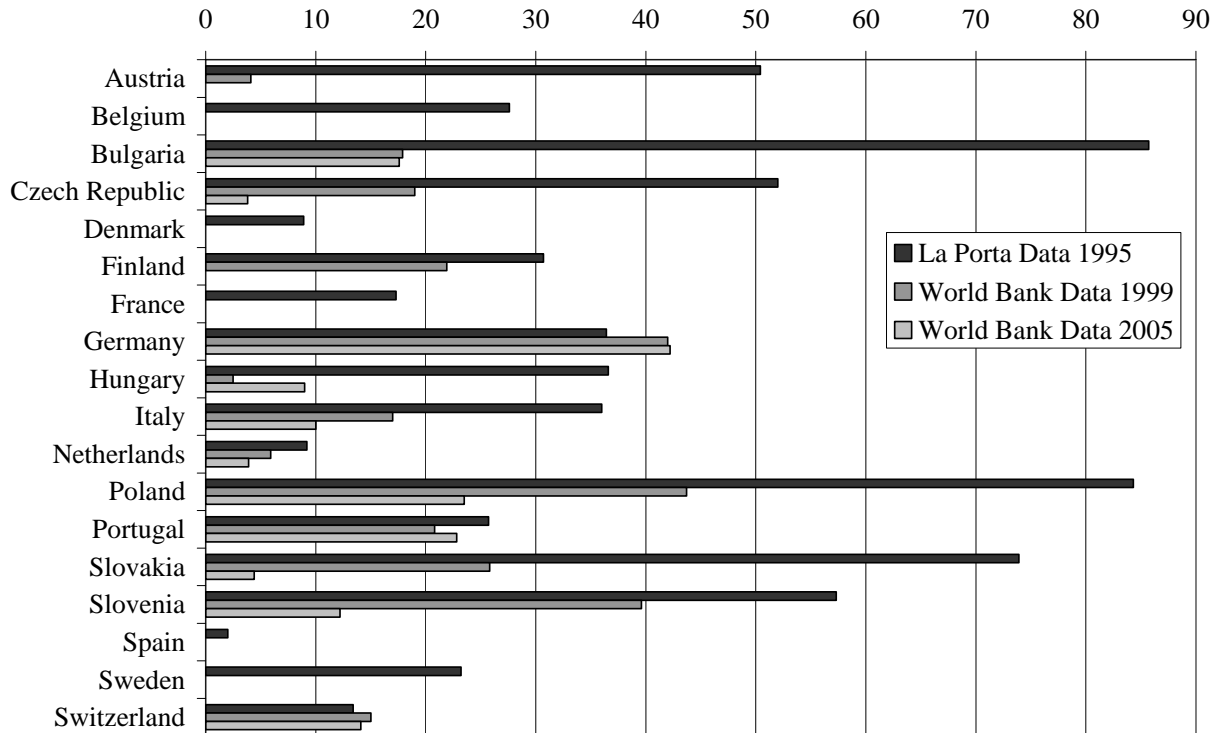


Note: The foreign asset share is measured as the ratio of total assets of foreign banks (branches and subsidiaries) to total assets of all banks in a country. For some countries, the total assets of non-EU banks are not disclosed for confidentiality reasons when the number of branches or subsidiaries is less than three. This may lead to a slight underestimation of the foreign presence in small countries.

Source: ECB (2008, Tables 2, 11 and 13)

Apart from a very low market penetration by foreign banks, the German banking sector also stands out by a large market share of state-owned banks. The latter aspect provides us with a relatively large sample of public sector banks for our performance study. Several countries such as Austria, France and Italy have significantly reduced public ownerships in their banking systems in recent years. Figure 3 provides some information on the market share of publicly owned banks in selected European countries. The data taken from La Porta, Lopez-de-Silanes and Shleifer (2002) refer to the year 1995 and describe the share of the assets of the top 10 banks in a given country that is owned by the government. The World Bank data use a different classification. Here the market share is loosely defined as the ratio of assets of publicly owned banks to total assets in the banking sector. The data refer to the years 1999 and 2005. Compared to other highly industrialized economies, the exceptionally large involvement of the public sector in German banking has become particularly evident in recent years.

Figure 3: Asset Shares of Publicly Owned Banks in Selected European Countries



Note: The figures for Germany are not directly comparable with the public sector share in Figure 1. Figure 1 excludes savings & loans and counts all assets of special purpose banks as publicly owned.

Sources: La Porta, Lopez-de-Silanes and Shleifer (2002), World Bank - Bank Regulation and Supervision Database (2000 and 2007), <http://econ.worldbank.org/>

2.2. Performance Comparison of Public and Private Banks

2.2.1 Public Bank Performance Prior to the Current Banking Crisis

Do public banks in Germany show signs of poor financial performance even prior to the current banking crisis? The history of financial turmoil surrounding these banks suggests so. The IMF (2006) calculates that the Landesbanken received capital injections of almost € billion from 1991 to 2005 from their public owners (Table 1). Many of these capital injections were needed to replenish the capital base after large losses.⁶

The West LB, which is owned by the state, the municipalities and the savings banks of North Rhine-Westphalia, provides an illustration. Soon after its foundation in 1973, the bank lost DM 300 millions in foreign exchange trading. During the Russian crisis of 1998, the bank made headlines again due to massive losses from non-collateralized investments. In 2003, the West LB faced its most severe crisis so far when it lost almost €4 billions. During the current financial crisis, the West LB initially announced (moderate) write-downs. In November 2007, the bank was no longer able to get short-run financing for its long-run real estate loans. The owners had to agree on a capital injection of €2 billions. A few weeks later, the capital needs turned out to be even larger and the owners had to increase their capital guarantees to €5 billions so that the West LB could transfer its risky business of €23 billions to a special purpose vehicle.

⁶ Sinn (1999) delivers a critical analysis prior to the abolishment of some special privileges (“Gewährträgerhaftung” and “Anstaltslast”) for German state banks.

Another example involved the LB Berlin, which was merged into the holding company Bankgesellschaft Berlin in 1994. Bankgesellschaft Berlin engaged in large-scale real estate speculation over the period 1994 to 2001 and had to be saved by a capital injection of €1.7 billion and a loan guarantee amounting to €21.6 billions. Legal proceedings for fraud against various bank managers are still ongoing.

The IMF (2006, 76) judgment on the historic performance of German state-owned banks is rather harsh: “LBs [Landesbanken] have been providing poor financial returns, resulting in average opportunity costs to taxpayers equivalent to about ¼ percent of GDP annually since the early 1990s.”

Table 1: Capital Injections to Landesbanken 1991 to 2005

Landesbank	Capital Injections (in €millions)
Bayern LB	660
Hamburgische LB	90
Helaba	406
HSH Nordbank	400
LB Berlin	2560
LB Kiel	432
Norddeutsche LB	472
West LB	3729
Total	8749

Source: IMF (2006, 91)

2.2.2 Evidence from the Current Banking Crisis

The most recent banking crisis provides a controlled experiment which allows a more systematic performance comparison of state-owned and privately owned banks.

The Council of Economic Experts [Sachverständigenrat (2008)] calculates a total write-down of \$48.8 billions for German banks. These data were collected from press articles on the interim reports of major German banks (January 2007 until May 2008). The break-down according to bank type paints a striking picture. Even though the asset share of the Landesbanken is only 21 percent, these state-owned banks account for 43 percent of the total write-downs. Including other state-owned banks does not change the picture. The share of all public banks in total assets amounts to 42 percent according to the World Bank Statistics. In the financial crisis, however, they account for 64 percent of all write-downs in the German banking system.

The current paper extends the study undertaken by the Council of Economic Experts both in the sample size and the time period covered. We select all German banks with total assets above 40 billion Euros in January 2007. This sample consists of the 29 largest German banks by asset value, of which 13 are state-owned (for the majority of shares) and 16 are private banks. For every bank, we investigate bank losses for the period from the first quarter of 2007 to the third quarter of 2008. For this purpose we study the news wires and press releases about asset write-

downs and about losses from operating and investment activity. Furthermore, all income statements over the 7 quarters were separately examined as a cross-check and to capture losses not reported in press releases. For 4 of the 29 banks, documentation of bank losses and asset write-downs was so incomplete that we could not establish a quantitative performance measure. These banks were excluded from any performance regression.⁷ Table 2 reports the bank losses for the 25 banks for which we could calculate losses in the financial crisis of 2007-2008. Unfortunately it is not possible to disaggregate these losses further into specific sub-categories like U.S.-mortgage related losses or losses related to bank failure (Lehman Brothers, Icelandic banks, etc). We also calculate three measures of bank size. The total asset value [column (3)] and the tier 1 capital [column (5)] of each bank at the end of 2006 and 2007 are averaged to obtain size proxies. Similarly, we average the book value of equity [column (4)] at the end of 2006 and 2007 to obtain a measure of equity capital. This allows us to calculate a leverage proxy [column (6)] as the ratio of total asset to book equity. Some of the regressions use (log of) leverage as a control variable in the performance regressions. To control for bank size, we normalize the losses by total assets and by equity capital [columns (8) and (9)]. The last rows in columns (8) and (9) illustrate the significantly higher losses in state-owned banks compared to private banks. The Spearman rank test shows that the difference is significant at the 1 percent level.

Next, we report OLS regressions to examine further whether state-owned banks had a disproportional share of the bank losses in the recent subprime crisis. Regression specification (1) uses the (log of the) bank losses normalized by bank assets as the dependent variable. Regression models (2) to (5) consider the (log of the) bank loss as the dependent variable. Regression controls here are bank size proxied by the log of total assets or by the log of tier 1 capital. We have also included bank leverage defined as the log ratio of bank book equity to total assets. Table 3 reports the results. The coefficient of interest concerns the dummy variable which marks state-ownership with one and which is zero for privately owned banks. In each of the five specifications, the dummy variable marking the state-owned banks shows a positive value significant at the 3 percent level. The magnitude of the coefficient of 0.734 to 1.106 implies that the losses of the state-owned banks were on average almost twice the losses of their private counterparts. This constitutes an economically large difference in the crisis performance between private and state-owned banks.

What accounts for the poor historic performance of state-owned banks and their statistically significant underperformance in the recent subprime crisis? One of the most important differences between private and publicly owned banks is their governance. The following section, therefore, undertakes a systematic analysis of the relative quality of corporate governance in private and state-owned banks. We explore in particular the hypothesis if poor monitoring of bank managers can account for the deficient investment performance of the publicly owned banks.

⁷ These banks are Depfa Deutsche Pfandbrief Bank, Essenhyp , NRW Bank and WL Bank,

Table 3: Bank Losses of Private and State-Owned Banks in the Subprime Crisis

Reported are OLS regressions for the (log of the) bank losses in the period 2007-2008 for 25 German banks. Specification (1) uses the bank losses normalized by total assets as the dependent variable, while specifications (2) to (5) use absolute bank losses (in logs) as the dependent variable. The regressions controls are bank size measured by the log of total assets, log of tier 1 capital and leverage defined as the log ratio of total assets over bank equity capital at book value. The t-values of the coefficients are reported in brackets. We mark statistical significance at the 10 percent level (*), the 5 percent level (**) and 3 percent level (***).

Indep. Variables	Dep. Variables				
	Log(Loss/ Total Assets) (1)	log(Loss) (2)	log(Loss) (3)	log(Loss) (4)	log(Loss) (5)
Constant	-5.764*** [-22.40]	-6.102*** [-5.60]	-2.437 [-1.15]	-1.973*** [-6.41]	-1.356 [-0.78]
Dummy for State-Owned Bank	1.106*** [2.98]	1.097*** [2.84]	1.033*** [2.83]	0.738** [2.30]	0.734** [2.24]
Log of Total Assets		1.063*** [5.36]	0.967*** [5.02]		
Log of Leverage			-0.840* [-1.98]		-0.153 [0.722]
Log of Tier 1 Capital				1.147*** [7.17]	1.114*** [5.98]
Obs.	25	25	25	25	25
Adj. R-squared	0.245	0.573	0.623	0.705	0.693

Source: Authors' calculation

3. Supervisory Board Competence across State and Private Banks

As representatives of the equity holders, supervisory boards should prevent executives from choosing excessively risky strategies which may jeopardize the bank's solvency. Excessive risk taking by bank managers may be motivated by ill-designed incentive systems which provide bonuses and option-like payoffs based on short-term performance. Secondly, higher risks may be chosen to generate higher investment returns in periods of financial stability in order to offset poor operating performance. Monitoring by the supervisory board can counterbalance both incentive problems.

Effective monitoring of executives, however, requires that the relevant competencies are available in the supervisory board. In particular, the members of the supervisory board need a comprehensive understanding of the instruments in modern financial markets. If this knowledge is lacking, the supervisory board is bound to give the executives plenty of rope.

3.1 Related Research

Much of the corporate finance literature has focused on formal rather than qualitative measures of boardroom composition, mostly board independence, board size and directors' stock

ownership. The evidence on the role of board independence as measured by the number of outside directors remains mixed. Some studies show no performance effect for board independence [Bhagat and Black (2002), Hermalin and Weisbach (1991), Klein (1995), MacAvoy et al. (1983), Mehran (1995)], while others identify a significant positive performance effect of board independence [Baysinger and Butler (1985); Schellinger, Wood and Tashakori (1989)]. Board size on the other hand is generally found to be negatively correlated with performance measures [Brown and Maloney (1999), Yermack (1996)]. With a large supervisory board, the free-riding of individual board members may lead to a low monitoring effort. There is also evidence that director ownership in a firm correlates with better performance measured by Tobin's Q [Hermalin and Weisbach (1991), Morck, Shleifer and Vishny (1988)].

Two recent papers look at more qualitative measures with respect to board composition. Güner, Malmendier and Tate (2008) examine the role of financial board expertise and find that it matters in the presence of conflicts of interest between contracting parties. In contrast to our paper, they analyse the role of financial expertise in the boards of non-financial firms. Another important qualitative dimension of supervisory competencies is the industry experience of board members. Papakonstantinou (2008) shows that industry experience correlates positively with abnormal stock returns and negatively with earnings manipulation as measured by fewer negative income restatements and lower accounting accruals. A particularly original approach to identifying causal links between monitoring and corporate performance is taken by Becker et al. (2008). They show that the presence of rich individual shareholders on U.S. company boards improves the operating and financial performance of the firms. The authors use the density of high-wealth individuals in the proximity of the company headquarters as an exogenous instrument to eliminate reverse causality and also control for self-selection effects.

3.2 Measures of Supervisory Board Competence

Our own study takes a further step towards qualitative measurement of boardroom competence by focusing on a single industry – the banking sector – and by collecting an entire set of competence indicators. We focus on the 29 largest banks in Germany measured by total assets (see Table 2).

To obtain a measure of the monitoring potential in the supervisory boards of these 29 banks, we define 14 different biographical criteria which proxy for board room competence in the context of the subprime crisis. The variables capture a board member's educational background (3 indicator variables), finance experience (6 indicator variables) and management experience (5 indicator variables).

3.2.1. Educational Background

We conjecture here that educational background matters for the monitoring ability of supervisory board members. This may be particularly the case in banking where judgement on a particular investment strategy often requires a high degree of financial literacy. We define three levels of educational achievement by the following 3 criteria:

- *E1*: Does the board member hold a *Business/Economics Degree*? If the answer is yes, the criterion *E1* is marked as 1, and 0 otherwise. It is conjectured that extensive training in Economics and Finance may improve the monitoring ability of supervisory board members.

- *E2*: Does the board member hold a *MBA Degree*? Some executives hold MBA degrees and these also confer on the holder a more extensive knowledge of accounting, finance and economics.
- *E3*: Does the board member hold a *PhD Degree in Business/Economics*? A PhD degree signals advanced knowledge and a capacity for abstract economic thought, provides an easier access to the scientific literature and enables a boarder judgement on financial instruments and their risks.⁸

3.2.2 Finance Experience

Effective monitoring of bank managers may involve industry-specific knowledge which depends on experience. We distinguish 6 criteria:

- *F1*: Does the board member have *Banking Experience*? The person is considered to have banking experience if he or she has ever worked in a bank.
- *F2*: Does the board member have *Financial Market Experience*? As financial market experience we record any previous occupation related to asset markets trading or investment. Financial market experience should make the board members a better monitor of investment risks.⁹
- *F3*: Does the board member have *Financial Market Experience after 1990*? As the human capital in financial markets depreciates over time, we also collect the information, whether the financial market experience is fairly recent, i.e., was gained after 1990.
- *F4*: Does the board member have *Financial Market Experience in the Same Bank*? A past employment in the trading or investment division of the monitored bank might procure the board member a particular information advantage and make him a more effective monitor.¹⁰
- *F5*: Does the board member have a *U.S. Financial Market Experience*? A managerial experience in oversee markets might provide the board member with better information access and possibly a better judgement on the institutional risks of the U.S. subprime market.
- *F6*: Does the board member have a *U.S. Financial Market Experience after 1990*? This is the same as criterion F5, only with the additional requirement that the experience need to have occurred after 1990.

⁸ In cases where the exact type of doctoral degree could not be extracted from the available biographical information, we assume that every person with studies in business or economics and a doctoral degree has achieved this doctoral degree in business or economics.

⁹ Gilian Tett (2008) suggests that the background of CEO and top management is crucial for crisis performance: '[The most successful CEOs]... have had direct career experience of trading and managing market risk. This has given them an obvious advantage in navigating the credit cycle, since they presumably know what a derivative is. Furthermore, men such as Lloyd Blankfein at Goldman Sachs or Anshu Jain at Deutsche, who have risen through trading desks, instinctively tend to view everything in terms of probabilities and risk. That is a different mindset from somebody who has previously worked as a salesman, adviser - or lawyer, such as Mr Prince [from Citybank].'

¹⁰ We concede that past employment links to the same bank might also compromise the independence of the board member. Unfortunately, board member independence is not readily measurable for the German supervisory board members.

3.2.3 Management Experience

A professional corporate management background may provide a board member with many skills which make him a more effective in supervising the activities of other corporate managers. Here we define 5 criteria which could correlate with generic monitoring ability:

- *M1*: Does the board member have a *Consulting Experience*? Board members with a consulting background can typically account for a wide range of corporate experiences including financial distress. That may make them better monitors.
- *M2*: Does the board member have a *Mid-level Management Experience*? This variable captures whether a board member has ever worked as an executive independent of the management level.
- *M3*: Does the board member have a *Top-level Financial Management Experience*? It is registered whether a board member has ever worked in a top-level finance position.
- *M4*: Does the board member have a *Top-level Financial Management Experience in the Same Bank*? This is the same criterion as M3, but restricts the experience to the same bank the board member is monitoring.
- *M5*: Does the board member have *Multiple Board Memberships*? Board members who are appointed to several supervisory boards may be more experienced in monitoring the executives.¹¹

3.2.4 Summary Statistics

Table 4 provides summary statistics for the 14 competence proxies for 593 board members in the 29 largest German banks. As we focus on qualitative differences in the board room composition of private and state-owned banks, the summary statistics are reported separately for the two types of banks. There are 215 board members in private banks and 378 board members in state-owned banks. Columns (1) to (6) concern the private sector banks and columns (7) to (12) the state-owned banks.

According to German law, a firm size dependent number of board members are worker representatives for which we report separately in columns (5), (6), (11) and (12).¹² However, detailed biographical information on worker representatives on the bank board is often unavailable. Therefore, we will mostly focus on the analysis of the owner representatives. This leaves us with 139 board members of private banks and 268 board members of state-owned banks.

All competence proxies are binomial variables, where a ‘one’ implies that the criterion is fulfilled and ‘zero’ otherwise. It is useful to aggregate these binomial variables to indices of supervisory board competence. We define 4 aggregate indices of board competence:

- *IE*: Sum of a board member’s educational indicators E1 to E3
- *IF*: Sum of a board member’s financial competence indicators F1 to F6

¹¹ We just capture whether a board member has additional appointments but we do not count the number of board memberships.

¹² According to the so called ‘Drittelbeteiligungsgesetz’, a third of the board members need to be worker representatives for corporations with less than 2000 employees. Beyond this threshold, the so called ‘Mitbestimmungsgesetz’ applies which requires that half of the board members are worker representatives.

- *IM*: Sum of a board member's managerial competence indicators M1 to M5
- *IT*: Sum of all competence indicators of a board member.

Summary statistics on these 4 aggregate measures of board competence are reported in the last 4 rows of Table 4.

In addition to the 14 competence indicators and the 4 aggregate indices, we also report some statistics on the biographical background of board members. *Age* provides the average age of the board members. *Foreign Nationality* is the percentage of board members born in a non-German speaking country. *Politically Appointed Board Members* captures the case that high-ranking bureaucrats and politicians holding a party and/or government office become representatives in a supervisory board.

3.3 Supervisory Board Competence in Comparison

The difference in board competence is pronounced as is evident from a comparison of proxy means in Table 4. For example, almost 37 percent of owner representative's board members in private sector bank feature some banking experience (*F1*) in their curriculum vitae. In the state-owned sector this criterion is fulfilled only by 14.2 percent of the corresponding board members. The difference in financial market experience (*F2*) is even more pronounced: 36.7 percent versus 19.1 percent. A similar qualitative difference is registered if one focuses on experience in U.S. financial markets (*F5*) – arguably particularly relevant with respect to the subprime crisis. We find U.S. financial market experience for 20.9 percent of the owner representatives on the board of private banks compared to only 2.6 percent for the owner representatives in state-owned banks.

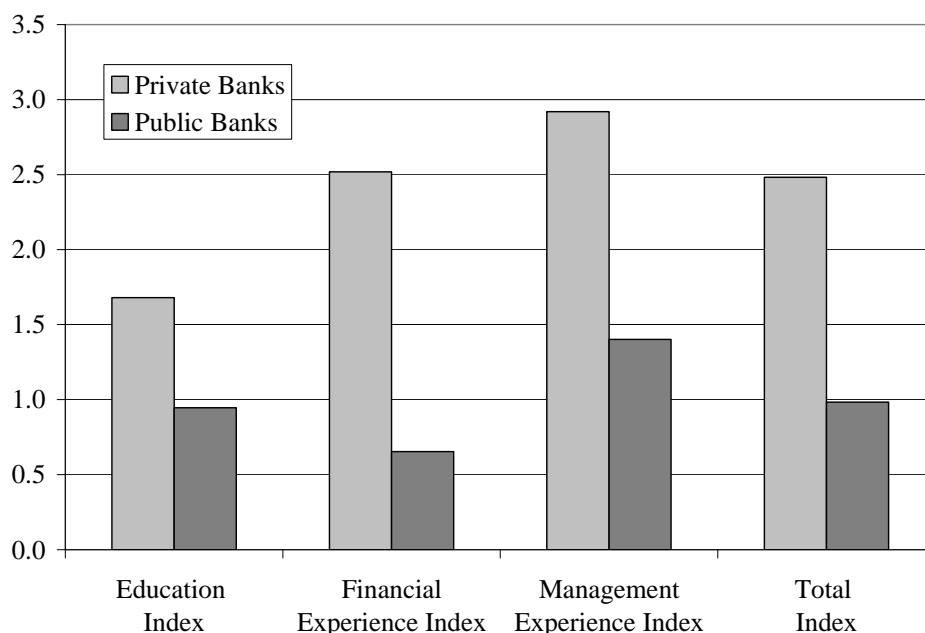
Also in the categories of education and management experience, the private banks have a lead over the state-owned banks. The board members in private banks have 30 percent more academic degrees in business and economics (*E1*) and twice as many doctoral degrees (*E3*). More than a third of the board members in private banks had a top level management position in finance in comparison to 12 percent in public banks (*M3*). The management experience in the same bank (*M4*) is almost non-existent in state-owned banks.

Columns (13) to (15) report the one-sided Fisher tests for the hypothesis that the distribution of competence proxies is the same for private and state-owned banks. The hypothesis that board competence is equal across private and state-owned banks can be rejected for all of the 14 board competence proxies. The hypothesis is rejected at the one percent level for 11 of the 14 criteria; for the remaining three criteria (*Business/Econ Degree*, *Consulting Experience*, *Multiple Board Memberships*) the error probability is still below the ten percent level. Moreover, differences are also qualitatively large. The aggregate measure of finance experience (*IF*) summing the six indicator variables *F1* to *F6* has a mean value of 1.51 and 0.39 for private and state-owned banks, respectively. By this simple linear metric, a board member in a private bank had on average a 3 times higher competence measure than his colleague in a state-owned institution.

Figure 4 illustrates the difference between private and state-owned banks for the three competence indices plus total index which sums all 14 criteria. To allow for a better comparison across the 4 indices, we have scaled them to a range from 0 to 10, where 0 implies that none of the index criteria are fulfilled by a board member and 10 means he fulfils all of them. The difference between private and state-owned banks is particularly strong with respect to management and finance experience of the supervisory board members.

Figure 4: Supervisory Board Members in Private and Public Banks

The figure shows the means for the competence indices of all private and public bank supervisory board members, respectively. To obtain better comparability across indices, each index is scaled so that values can vary over the range 0 to 10.



Source: Authors' calculation

One of the potential sources of fewer competencies in state-owned banks could be the practice of having politicians and politically appointed bureaucrats as owner representatives in the supervisory boards. Most of the politically connected board members made their career in politics and in the administration but have little experience in banking and financial markets. Therefore, we also test whether the competencies of politically connected board members significantly differ from other board members. Table 5 contains the values for the 14 competence criteria. Column (4) shows the values for politically connected board members and column (6) those for other members. Column (7) again delivers the results of the one-sided Fisher test. In most categories, politically connected board members show significantly lower competence values. The politically connected board members fare relatively good in terms of education, but less so for the management criteria. They almost completely lack the financial experience.

Overall, the evidence on supervisory board composition of German banks shows a large competence gap between private and state-owned banks with respect to the management experience and financial market competence. The competence gap can largely be attributed to an appointment practise for state-owned banks which stacks the board with politicians and government employees as the shareholder representatives.

4. The Link between Supervisory Competence and Financial Losses

4.1 Endogeneity Issues

Endogeneity of the board composition is a major issue for any corporate governance study which is based on a sample of exclusively private companies. Any performance difference may be driven by the same factors which also drive board composition. For example an irresponsible

CEO may undertake value destroying projects and at the same time seek to point supervisory board members with little clout or monitoring ability.

In our study, the board composition is frequently conditioned by the exogenous factor of state ownership. As shown in the previous section, approximately 48.1 percent of the board seats (of the owner representatives) go to board members with a political affiliation (Table 4, line A3). The corresponding percentage for the private sector banks is 5.8 percent. Board members with a state and political affiliation generally score low on measures of bank board competence. This can be inferred from Table 5 which reports the bank board competence proxies separately for board members who are coded as state or political appointment and other board members.

Recent research on board composition also shows that corporate boards are often dominated by particular networks related to the educational or professional background of the network members [Bertrand et al. (2008), Kramarz and Thesmar (2008)]. The large representation of politicians and bureaucrats on the state-owned bank boards may therefore have indirect effects on the choice of co-opted board members. Unlike in studies on the board composition of private sector corporations, we can clearly identify state-ownership as an exogenous determinant of board composition and board competence. This should mitigate the endogeneity issue and also generate more sample heterogeneity with respect to board composition.

Does state-ownership induce other endogenous differences in the bank loan policies relative to private sector banks? Two effects are particularly plausible: First, research on Italian state-owned banks has shown a loan preference towards local investment projects where the political party of the board representative had strong election results [Sapienza (2004)] This effect is hardly surprising if politicians on a bank board exercise influence a bank's investment policy. However, such a 'home or voter bias' can hardly explain excessive investments by German banks in the U.S. mortgage market. The endogenous home bias effect should induce *ceteris paribus* lower subprime related losses for state-owned banks.

A second plausible investment bias of state-owned banks concerns their risk aversion. Political board representatives may see employees as part of their constituency. The interest of the employees is to avoid excessive risk taking similar to bond holders. A greater concern of state-owned banks for employee interests should bias their investment policy against any strategy which may 'wreck the ship'. In summary, endogenous differences in the loan policy of state-owned banks are plausible, but they should bias results against finding subprime losses concentrated in the state-controlled part of the banking sector.

4.2 Evidence on the Monitoring-Performance Linkage

This section explores if the relative underperformance of state-owned compared to private banks in the recent subprime crisis can be related to weak governance structures. Executives in state-owned banks may not face any effective monitoring by supervisory boards and are therefore more prone to invest in high risk assets compared to their private sector colleagues.

As a performance measure, we use the write-downs and losses reported by the banks during 2007 and 2008. The most reliable sources are newswires and interim reports, which are systematically scrutinized for the 29 sample banks. Self-reported losses for 18 banks are initially collected by the council of economic experts for a study on the subprime crisis published in May 2008 [Sachverständigenrat (2008)]. We extend this data set to all 29 major German banks and update reported losses into the third quarter of 2008. We also checked the reported losses against the

income statements of the bank. A more detailed use of balance sheet positions, however, is prevented by two factors. First, some banks in the sample use ‘mark to market’ accounting for most of 2007 and 2008, while others continued to publish income statements under the ‘historic value accounting’. Second, in the course of the banking crisis in the fall of 2008, ‘mark to market’ was suspended by some institutions, which further complicates the picture. We believe that the write-offs reported in the interim reports and in the financial press are the most accurate reflection of capital losses by the banks and therefore focus on these numbers.

To construct explanatory variables we use the board members competence indices (*IE*, *IF*, *IM* and *IT*) as defined in Section 3.2.4. For simplicity, we assume that the quality of a bank supervisory board and its monitoring ability is equal to the mean competence level of its members. To allow for a better comparison across the 4 aggregate board indices, we scale them to a range from 0 to 10, where 0 implies that no board member fulfils any of the index criteria and 10 implies that all board members fulfil all index criteria. While board quality need not to be equal to the average skill of its member, we cannot entertain any non-linear hypothesis here for a lack of statistical power. We therefore settle for the most straightforward definition of board competence as the average competence of the board members.

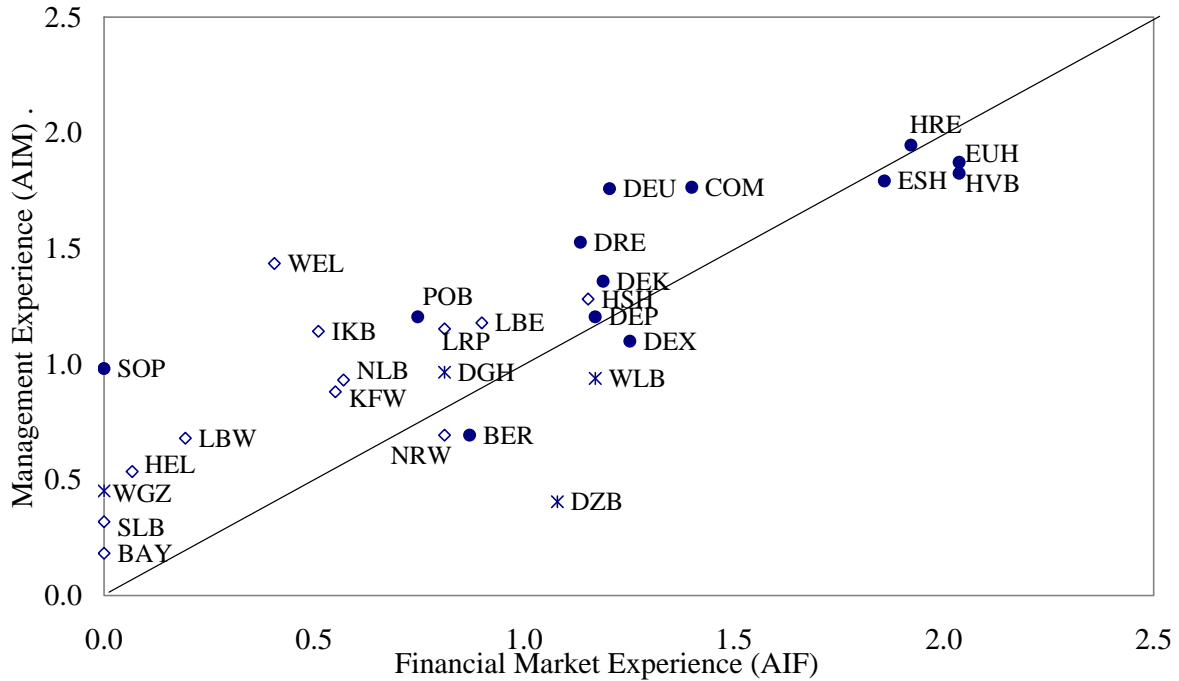
The four measures of average board competence in their rescaled version are still not ideal regressors because of the (right-)skewedness of their distribution. In order to obtain a more normally distributed measure, we also undertake a log transformation given by

$$AIX = \log[1 + \textit{scaled board mean}(IX)].$$

We thus obtain the (log) average board competence levels denoted as *AIE*, *AIF*, *AIM*, and *AIT*, respectively.

Figure 5 shows the board competence with respect to financial experience (*AIF*) and management experience (*AIM*) in the 29 sample banks. Private banks are marked with bullets, cooperative banks with stars and state-owned banks with diamonds. As already visible from the aggregate data, the private banks exhibit higher competence values on average. We note that the board indices for management and financial market experience are highly correlated across the 29 banks. Supervisory boards with higher financial competence generally feature more management experience.

Figure 5: Financial Market and Management Experience in the Supervisory Boards



Notes: BAY = Bayern LB, BER = Berlin-Hannoversche Hypothekenbank, COM = Commerzbank, DEK = Dekabank, DEP = Depfa Deutsche Pfandbrief Bank, DEU = Deutsche Bank, DEX = Dexia Kommunalbank Deutschland, DGH = Deutsche Genossenschafts-Hypothekenbank, DRE = Dresdner Bank, DZB = DZ Bank, ESH = Essenhyp, EUH = Eurohypo, HEL = Helaba, HRE = Hypo Real Estate, HSH = HSH Nordbank, HVB = HVB Group, IKB = IKB, KFW = KfW Bankengruppe, LBE = Landesbank Berlin, LBW = LBBW, LRP = LRP Landesbank Rheinland-Pfalz, NLB = Nord LB, NRW = NRW Bank, POB = Postbank, SLB = Sachsen LB, SOP = Sal. Oppenheim jr. & Cie., WEL = WestLB, WGZ = WGZ Bank AG Westdeutsche Genossenschafts- Zentralbank, WLB = Westfälische Landschaft Bodenkreditbank

Source: Authors' calculation

4.2.1. Explaining Relative Bank Losses

Any comparison of subprime-related losses has to account for the size of a bank and its balance sheet. This suggests that write-offs need to be standardized to make them comparable. As a suitable measure of normalization we use banks total assets. The baseline regression, therefore, consists of a simple OLS specification:

$$\log \frac{Losses_i}{Total Assets_i} = \alpha_0 + \alpha_1 Index_i + \mu_i,$$

where $Index_i$ denotes one of the four board competence indices. Table 6 reports the OLS coefficients for the four aggregate index measures, namely the average educational measures (*AIE*), average financial experience of the board (*AIF*), its management experience (*AIM*) and the total experience measure (*AIT*). The average educational achievement, the management experience and the total experience measure are not significantly correlated with bank losses. However, the average finance experience is significant at the 5 percent level. We also note that the estimated coefficients are of large economic significance. The standard deviation for finance competence (*AIF*) across banks is 0.428. A one standard deviation improvement in the average

finance competence implies 42 percent ($=-0.979*0.428$) reduction in the percentage bank losses on total assets.

4.2.2. Explaining Absolute Bank Losses using Size Controls

An alternative regression specification consists in taking (the log of) the bank losses as the dependent variable. In this case, we need to control for bank size with a separate independent variable which controls for bank size. We use the log of the total assets at the end of 2006 and 2007 and the log of tier 1 capital as alternative size controls. Table 7 reports the OLS regression results for the extended specification,

$$\log(Losses_i) = \alpha_0 + \alpha_1 Index_i + \alpha_2 \log(Bank Size_i) + \mu_i,$$

where we control for the banks size instead of scaling by it. The results are qualitatively similar to those obtained in the baseline specification. The index for finance competence (*AIF*) is statistically significant at the 5 percent level; the other indices are insignificant at the standard levels. The coefficients are again qualitatively large: In the case of total assets as a size control [column (3)], a one standard deviation change in financial competence of the supervisory board implies a 49 percent ($=-1.145*0.428$) decrease in bank losses.

As expected bank size measured by (log) total assets is also highly significant for explaining absolute (log) bank losses with an estimated coefficient around 1. Bank losses are therefore approximately linear in bank size. The tier 1 capital as alternative size control is also highly significant and exhibits a coefficient slightly above 1 indicating that losses increase more than proportionally with bank size. We also verified that the above regressions are robust to the inclusion of leverage as an additional control variable. Additional leverage controls did not qualitatively change the results. The extended specification features a much higher adjusted R-squared of 52 percent for specifications (3) and of 70 percent for specification (7) compared to only 12 percent in the corresponding specification reported in Table 6. However, the considerably higher explanatory power in Table 7 is largely due to the size variables (log of) total assets, which was previously used to scale the dependent variable, and (log of) tier 1 capital.

4.2.3. Controlling for Endogeneity in the Monitoring-Performance Linkage

The statistically and economically significant linkage between measures of supervisory board competence in finance and bank losses reported in Tables 6 and 7 represent a correlation and not necessarily a causal relationship. In particular, some third variable might drive both bank losses and influence board competence. For example, a bank CEO may pursue an investment policy without a proper risk control. Such a high-risk investment strategy may be in line with his pay incentive, or serve to disguise deficient operating performance in other areas of the bank's business. Such a CEO has a particular interest in the appointment of supervisory board members who do not scrutinize his investment policy. If the CEO can influence board appointments, a supervisory board with low monitoring ability should result endogenously. The resulting linkage between bank losses and a low competence index then reflects CEO's ability to manipulate board composition.

A way to control for such endogeneity is to use instrumental variables which capture exogenous aspects of board composition. As shown in Section 3 of the paper, board composition of state-owned banks is largely conditioned by their ownership structure. State-owned bank feature a

large number of politically appointed board members and we can assume that the percentage of political representatives may be outside the influence of the CEO. At the same time, the percentage of political board appointments correlates (negatively) with board competence, making it a good instrument. Also the public ownership status itself cannot be influenced by the CEO. This suggests two instruments, namely the percentage of political representatives and a dummy for state-ownership.

Table 8 reports the same regressions as Table 7, except that the competence index is now instrumented. This should eliminate any reverse causality which may result from the CEO's ability to manipulate board composition. The point estimates for the IV coefficients are again negative, but much larger in absolute value than the corresponding OLS coefficients. If the IV regression controls for the endogeneity in the board composition, the higher IV coefficient estimates suggests an even larger role of board competence in limiting bank losses. The statistical significance level of the financial competence index in specifications (3) and (7) is now 5 percent and 10 percent, respectively. Overall, these results suggest that the negative association of bank losses and supervisory board competence reflects causality running from board competence to bank performance.

4.2.4. Alternative Interpretations

The previous section suggested that supervisory boards stacked with political appointees could not effectively exercise their monitoring role. CEOs and bank managers were therefore free to pursue high-risk investment strategies either to serve their own pay incentives or to offset deficient operational performance in other areas of the bank's activity. This explains why the state-owned banks are particularly affected by the current 'moment of reckoning' in financial markets. But monitoring may not be the only dimension in which the supervisory board matters. The choice of the CEO and his immediate management team are also determined or at least influenced by the supervisory board members. A more competent board could possibly do a much better selection choice than one which lacks both managerial and/or financial experience. The latter interpretation would also be supported by our regression results. It could be an important aspect as to why state-owned banks performed so poorly. However, we are not able to discriminate between this alternative hypothesis and the monitoring hypothesis.

A third interpretation of the evidence is that state-owned banks face constraints which are not those of their private sector competitors. For example, state-owned banks could face salary constraints and therefore may not be able to hire either competent CEOs or capable managers. In this case the poor financial performance of the state-owned banks in the current banking crisis would be a reflection of such 'suboptimal' operational constraints. The low competence of the supervisory boards could just be accidental and irrelevant to the observed underperformance of state-owned banks. But our own investigations into such constraints did not yield any evidence for their existence. Both private sector and state-owned banks operate in the same labour market for managerial talent it is hard to come up with any competitive disadvantage faced by the state-owned banks. The only difference we could find is a historic public guarantee of state bank debt. The latter amounts to a competitive advantage not enjoyed by the private sector banks and it was only recently revoked under EU competition law. We therefore discard this third interpretation as not supported by any evidence.

5. Policy Conclusions

Economists have long recognized the fragility of bank institutions and the systemic risk that they pose to the real economy. Unlike most other limited liability companies, banks feature high leverage and their maturity transformation exposes them to additional liquidity risks more than any other industry sector. Their pivotal role in financing the investment activity of small and medium sized companies implies that financial distress by banks carries larger macroeconomic costs. Banks should therefore be subject to a particular regulatory framework, which imposes minimum capital requirements, requires effective systems of internal risk management and appropriate disclosure policies.

The current financial crisis confirms these conventional views [IMF (2008)], but also provides some new lessons. The current regulatory system did not sufficiently constrain the risk choices of many financial institutions. Particularly in the U.S., financial institutions such as investment banks were allowed to operate as a ‘shadow banking system’ outside of traditional banking supervision. The lenient regulation allowed the banks to reduce equity as far as possible in order to benefit from the higher returns which come with higher leverage. Moreover, political lobbying by the financial industry itself may have contributed to the lenient regulatory regime which rendered bank supervision less effective.

In the light of the recent experience, bank regulation needs to be strengthened. However, it is less clear how to shield national bank supervision from the very political interference which has weakened it in the past. More political independence of bank supervision similar to central bank independence seems desirable [Rochet (2008)]. Some have even called for an international financial regulator to provide political insulation from national politics [Reinhart and Rogoff (2008)]. Nevertheless, tougher banking regulation will have to face up to future political challenges which may again undermine its very effectiveness.

It is therefore important to explore parallel policy measures which may strengthen bank stability even further. Here, our performance and governance analysis of German banks in the recent financial crisis offers interesting insights. The large role played by state-owned banks in the German banking sector implies that corporate governance is extremely heterogeneous in an otherwise identical regulatory environment. Studying the biographies of 593 board members in the 29 largest German banks reveals that the financial and managerial competence of supervisory board members is systematically lower in state-owned banks compared to private banks. This result is obtained at high levels of statistical significance should in itself raise concerns about the state-ownership of bank unless one negates the monitoring role of supervisory boards altogether.

In a second step, we show that differences in supervisory boards’ financial competences are correlated to the bank losses in the recent crisis. The evidence suggests that the monitoring ability of the supervisory board matters for the financial fragility of banks. The statistical significance of these results is necessarily much weaker given the limited number of bank observations to our disposal and possible measurement error in both the dependent and independent variable. On the other hand, weak management monitoring and possibly problems of management selection by insufficiently competent board appear to us as the most plausible explanation for the systematic underperformance of state-owned banks.

The underperformance of German state-owned banks in the 2007/2008 banking crisis is statistically significant at conventional levels and large in economic terms. Controlling for bank size, the losses of state-owned banks are on average twice as large as those of their private competitors. The small sample of 25 observations may raise robustness concerns. However,

abundant anecdotal evidence on many previous large-scale investment failures by the Landesbanken is certainly not in contradiction to the underperformance hypothesis.

Finally, we also explore if endogenous factors can explain the linkage between governance and performance. Assuming that CEOs of state-owned companies cannot alter the percentage of political representatives in their supervisory board, we can use this percentage as an instrument to explore the endogeneity of board competence. We find for example no evidence for the reverse causality, whereby particularly reckless bank CEOs co-opt incompetent board members as their monitors.

Our case study suggests that state ownership comes at the costs of weaker monitoring of bank managers, possibly higher risk exposure and higher bank losses in a financial crisis. Privatizing state-owned banks is therefore likely to make a positive contribution to global banking stability. This finding is important given that state-ownership is more prevalent in the banking sector than in any other industry. But a positive role of bank governance also implies that private institutions may similarly benefit from a more competent supervisory board.¹³ It seems worth exploring whether prudential bank regulations should explicitly encompass criteria for board competence and quality. Finally, bank governance is linked to the general governance culture in each country. Whenever entrenched political interest compromise corporate governance, strengthening private shareholder rights may offer a promising path towards better governance and indirectly better bank performance in the next financial crisis.

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¹³Governance failure can also be severe in private companies as the spectacular collapse of Enron and Worldcom shows. The Sarbanes-Oxley act of 2002 was passed as a consequence. Its scope is limited to the U.S. and it focuses on formal aspects of governance rather than its qualitative dimensions.

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Table 2: Key Figures about the 29 Banks in the Sample

Bank	Ownership Dummy (1 = state- owned)	Total Assets (b. € 2006/07)	Equity Capital (b. € 2006/07)	Tier 1 Capital (b. € 2007/08)	Total Losses (b. €)	Leverage	Losses / Total Assets (%)	Losses / Equity Capital (%)
(1)	(2)	(3)	(4)	(5)	(6)	(7) = (3)/(4)	(8) = (5) *100/(4)	(9) = (5) *100/(3)
Deutsche Bank	0	2005.5	36.07	25.9	8.45	55.6	0.42	23.43
Commerzbank	0	615.8	15.77	6.90	2.95	39.1	0.48	18.70
Dresdner Bank	0	489.4	11.36	11.85	3.40	43.1	0.69	29.93
LBBW	1	471.9	21.35	11.55	3.22	22.1	0.68	15.07
HVB Group	0	435.7	23.90	11.55	1.16	18.2	0.27	4.87
DZ Bank	0 (c)	430.6	10.55	9.35	2.30	40.8	0.53	21.77
Bayern LB	1	415.6	12.22	6.40	4.81	34.0	1.16	39.40
Hypo Real Estate	0	397.8	7.95	5.90	1.41	50.0	0.35	17.74
KfW Bankengruppe	1	361.0	14.94	9.64	3.40	24.2	0.94	22.76
WestLB	1	277.2	4.80	6.50	3.17	57.8	1.15	66.13
Nord LB	1	220.2	6.13	6.60	0.92	35.9	0.42	15.07
Postbank	0	215.8	4.79	5.10	1.15	45.1	0.53	23.97
Eurohypo	0	207.1	5.28	5.15	0.39	39.2	0.19	7.40
HSH Nordbank	1	204.6	4.44	7.55	2.31	46.0	1.13	52.00
Helaba	1	174.2	4.86	4.90	0.52	35.9	0.3	10.79
NRW Bank	1	145.4	19.58	3.10	---	7.4	---	---
Landesbank Berlin	1	144.4	2.55	3.85	1.04	56.7	0.72	41.05
Dekabank	1	121.8	3.32	2.10	0.48	36.6	0.40	14.47
WGZ Bank AG	0 (c)	90.0	2.83	2.20	0.25	31.8	0.28	8.86
Essenhyp	0	89.9	0.72	0.80	---	124.6	---	---
Deutsche Genossenschafts- Hypothekenbank	0 (c)	80.5	1.92	1.40	0.16	41.9	0.20	8.44
LRP Landesbank Rheinland-Pfalz	1	77.9	0.99	2.10	0.30	79.0	0.38	30.40
Sachsen LB	1	62.1	1.42	1.30	1.80	43.8	2.90	127.03
Depfa Deutsche Pfandbrief Bank AG	0	53.6	0.82	0.84	---	65.2	---	---
IKB	1	50.2	1.18	2.15	5.13	42.4	10.22	433.53
Dexia Kommunalbank Deutschland AG	0	48.3	0.29	0.28	0.02	164.7	0.04	5.8
Berlin-Hannoversche Hypothekenbank AG	0	42.5	0.72	0.64	0.06	58.8	0.14	8.04
WL Bank AG	0 (c)	41.0	0.32	0.51	---	126.5	---	---
Sal. Oppenheim jr. & Cie. KGaA	0	40.1	2.00	1.80	0.56	20.0	1.41	28.19
Average Overall		276.2	7.69	5.44	1.98	51.3	1.04	42.99
Av. Private Banks		330.2	7.83	5.64	1.71	60.3	0.43	15.9
Av. State-Owned B.		209.7	7.52	5.20	2.26	40.1	1.70	72.3
Spearman Rank Test		0.865	0.493	0.453	0.188	0.209	0.009	0.009

Notes: ^a In January 2008, IKB was formally a private bank but the state-owned bank KfW was the largest shareholder. ^b Cooperative banks are labelled "(c)" in column (2).

Table 4: Summary Statistics of Competencies in Supervisory Boards

	Board Members of Private Banks						Board Members of State Banks						Fisher- /Spearman-Tests			
	All Members		Owner Rep.		Worker Rep.		All Members		Owner Rep.		Worker Rep.		All Members	Owner Rep.	Worker Rep.	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	
	Obs.	Mean	Obs.	Mean	Obs.	Mean	Obs.	Mean	Obs.	Mean	Obs.	Mean	H0 : (2) = (8)	H0 : (4) = (10)	H0 : (6) = (12)	
Biographical Data																
A1	Age	103	57.73	86	59.13	17	50.88	186	56.20	177	56.09	9	58.22	0.132	0.005	0.010
A2	Foreign Nationality	215	0.047	139	0.072	76	0.0	378	0.005	268	0.007	110	0.0	0.001	0.001	---
A3	Politically Connected Board Members	215	0.037	139	0.058	76	0.0	378	0.352	268	0.481	110	0.036	0.000	0.000	0.120
Education																
E1	Business/Econ Degree	215	0.191	139	0.273	76	0.039	378	0.148	268	0.201	110	0.018	0.110	0.065	0.331
E2	MBA	215	0.037	139	0.058	76	0.0	378	0.005	268	0.007	110	0.0	0.006	0.004	---
E3	PhD	215	0.112	139	0.173	76	0.0	378	0.053	268	0.075	110	0.0	0.008	0.003	---
Finance Experience																
F1	Banking Experience	215	0.316	139	0.367	76	0.224	378	0.111	268	0.142	110	0.036	0.000	0.000	0.000
F2	Financial Market Experience	215	0.270	139	0.367	76	0.092	378	0.071	268	0.101	110	0.0	0.000	0.000	0.002
F3	... since 1990	215	0.270	139	0.367	76	0.092	378	0.069	268	0.097	110	0.0	0.000	0.000	0.002
F4	... in the Same Bank	215	0.102	139	0.108	76	0.092	378	0.003	268	0.004	110	0.0	0.000	0.000	0.002
F5	US Financial Market Experience	215	0.181	139	0.209	76	0.132	378	0.019	268	0.026	110	0.0	0.000	0.000	0.000
F6	... since 1990	215	0.060	139	0.094	76	0.0	378	0.016	268	0.022	110	0.0	0.004	0.002	---
Management Experience																
M1	Consulting Experience	215	0.056	139	0.079	76	0.013	378	0.026	268	0.037	110	0.0	0.058	0.061	0.409
M2	Mid-level Management	215	0.358	139	0.532	76	0.039	378	0.0167	268	0.231	110	0.009	0.000	0.000	0.187
M3	Toplevel Management Finance	215	0.237	139	0.338	76	0.053	378	0.085	268	0.119	110	0.0	0.000	0.000	0.027
M4	... in the Same Bank	215	0.060	139	0.094	76	0.0	378	0.003	268	0.004	110	0.0	0.000	0.000	---
M5	Multiple Board Memberships	215	0.298	139	0.417	76	0.079	378	0.225	268	0.310	110	0.018	0.032	0.020	0.051
Competence Indices																
IE	Education (SUM)	215	0.340	139	0.504	76	0.039	378	0.206	268	0.284	110	0.018	0.117	0.041	0.380
IF	Finance Exp. (SUM)	215	1.200	139	1.511	76	0.632	378	0.288	268	0.392	110	0.036	0.000	0.000	0.000
IM	Mgmt Experience (SUM)	215	1.009	139	1.460	76	0.184	378	0.505	268	0.701	110	0.027	0.000	0.000	0.002
IT	Total (SUM)	215	2.549	139	3.475	76	0.855	378	1.000	268	1.377	110	0.082	0.000	0.000	0.000

Source: Authors' calculation

Table 5: Competencies of Politically Connected Members in Supervisory Boards

Board Members of Private and State Banks								
	All Members		Politically Connected Members.		Other Members		Fisher- /Spearman- Test	
	(1) Obs.	(2) Mean	(3) Obs.	(4) Mean	(5) Obs.	(6) Mean	(7) H0 : (4) = (6)	
Biographical Data								
A1	Age	263	57.07	136	56.04	127	58.18	0.072
A2	Foreign Nationality	407	0.029	137	0.000	270	0.044	0.007
Education								
E1	Business/Econ Degree	407	0.226	137	0.241	270	0.219	0.348
E2	MBA	407	0.025	137	0.022	270	0.026	0.550
E3	PhD	407	0.101	137	0.066	270	0.119	0.064
Finance Experience								
F1	Banking Experience	407	0.219	137	0.088	270	0.285	0.000
F2	Financial Market Experience	407	0.192	137	0.029	270	0.274	0.000
F3	... since 1990	407	0.189	137	0.029	270	0.270	0.000
F4	... in the Same Bank	407	0.039	137	0.007	270	0.056	0.012
F5	US Financial Market Experience	407	0.081	137	0.000	270	0.122	0.000
F6	... since 1990	407	0.047	137	0.000	270	0.070	0.000
Management Experience								
M1	Consulting Experience	407	0.052	137	0.066	270	0.044	0.245
M2	Mid-level Management	407	0.334	137	0.190	270	0.407	0.000
M3	Toplevel Management Finance	407	0.194	137	0.088	270	0.248	0.000
M4	... in the Same Bank	407	0.034	137	0.007	270	0.048	0.024
M5	Multiple Board Memberships	407	0.346	137	0.380	270	0.330	0.186
Competence Indices								
IE	Education (SUM)	407	0.351	137	0.328	270	0.363	0.884
IF	Finance Experience (SUM)	407	0.767	137	0.153	270	1.078	0.000
IM	Mgmt Experience (SUM)	407	0.961	137	0.730	270	1.078	0.174
IT	Total (SUM)	407	2.079	137	1.212	270	2.519	0.109

Source: Authors' calculation

Table 6: Relative Bank Losses and Supervisory Board Competence

Reported are OLS regressions for the (log of the) bank losses in the period 2007-2008 relative to total assets (at the end of 2007) for 25 German banks. As the independent variable we use 4 measures of supervisory board competence, namely the educational index (AIE), the average management experience (AIM), the average finance experience (AIF) and the aggregate total experience measure (AIT). The t-values of the coefficients are reported in brackets. We mark statistical significance at the 10 percent level (*), the 5 percent level (**) and the 3 percent level (***)).

Indep. Variables	Dep. Variable: log(Loss/Total Assets)			
	(1)	(2)	(3)	(4)
Constant	-5.533*** [-14.42]	-4.946*** [-11.32]	-4.775*** [-15.96]	-4.714*** [-10.29]
Education (AIE)	1.365 [0.94]			
Mgmt. Experience (AIM)		-0.516 [-0.76]		
Finance Experience (AIF)			-0.979** [-2.06]	
Total Experience (AIT)				-0.560 [-1.28]
Obs.	25	25	25	25
Adj. R-squared	0.000	0.000	0.120	0.026

Source: Authors' calculation

Table 7: Absolute Bank Losses with Size Controls

Reported are OLS regressions for the (log of the) bank losses in the period 2007-2008 for 25 German banks. As the independent variable we use 4 measures of supervisory board competence, namely the educational index (AIE), the average management experience (AIM), the average finance experience (AIF) and the aggregate total experience measure (AIT). Each regression controls for the bank size by using either (the log of) the total bank assets or (the log of) tier 1 capital. The t-values of the coefficients are reported in brackets. We mark statistical significance at the 10 percent level (*), the 5 percent level (**) and the 3 percent level (***)

Indep. Variables	Dep. Variable: log(Loss)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Constant	-5.191*** [-4.29]	-5.305*** [-4.37]	-5.795*** [-5.09]	-5.352*** [-4.52]	-1.739*** [-4.93]	-1.435*** [-3.65]	-1.392*** [-4.58]	-1.261*** [-3.18]
Education (AIE)	1.566 [0.98]				0.618 [0.47]			
Mgmt. Experience (AIM)		-0.577 [-0.78]				-0.504 [-0.88]		
Finance Experience (AIF)			-1.145** [-2.18]				-0.858** [-2.16]	
Total Experience (AIT)				-0.653 [-1.34]				-0.545 [-1.47]
Log of Total Assets	0.924*** [3.81]	1.072*** [4.44]	1.207*** [5.30]	1.136*** [4.71]				
Log of Tier 1 Capital					1.136*** [5.86]	1.215*** [6.71]	1.271*** [7.59]	1.252*** [7.05]
Obs.	25	25	25	25	25	25	25	25
Adj. R-squared	0.441	0.432	0.521	0.461	0.638	0.647	0.698	0.667

Source: Authors' calculation

Table 8: IV Regressions for Absolute Bank Losses with Size Controls

Reported are instrumental variable (IV) regressions for the (log of the) bank losses in the period 2007-2008 for 25 German banks. As the independent variable we use 4 measures of supervisory board competence, namely the educational index (AIE), the average management experience (AIM), the average finance experience (AIF) and the aggregate total experience measure (AIT). As instruments for board competence we use a dummy variable for state-owned banks and the percentage of politically appointed board members. Each regression controls for the bank size by using either (the log of) the total bank assets or (the log of) tier 1 capital. The t-values of the coefficients are reported in brackets. We mark statistical significance at the 10 percent level (*), the 5 percent level (**) and the 3 percent level (***)

Indep. Variables	Dep. Variable: log(Loss)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Constant	-6.155** [-2.25]	-5.327*** [-3.42]	-6.185*** [-4.96]	-5.450*** [-4.04]	-0.283 [-0.19]	-0.506 [-0.63]	-1.217*** [-3.46]	-0.655 [-1.09]
Education (AIE)	-12.276 [-0.82]				-10.208 [-1.02]			
Mgmt. Experience (AIM)		-3.387 [-1.55]				-2.621 [-1.64]		
Finance Experience (AIF)			-2.048*** [-2.32]				-1.425** [-2.22]	
Total Experience (AIT)				-1.896* [-1.93]				-1.382* [-1.97]
Log of Total Assets	1.688* [1.77]	1.375*** [3.66]	1.362*** [5.05]	1.374*** [4.36]				
Log of Tier 1 Capital					1.792*** [2.54]	1.393*** [5.37]	1.335*** [7.27]	1.373*** [6.43]
Obs.	25	25	25	25	25	25	25	25
Adj. R-squared	0.000	0.065	0.456	0.302	0.000	0.429	0.670	0.590

Source: Authors' calculation