

Regulation, Board Monitoring and Merger Performance: Evidence from Acquiring Banks in the US and Europe

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Abstract

The notion that regulation and corporate governance act as substitutes underlies most studies on firm governance and has led to the de facto exclusion of banking and other highly regulated firms from corporate governance research. In this paper, we provide a direct test of the hypothesis that regulators substitute for monitoring by shareholders. We analyze the effectiveness of bidding banks' governance provisions in preventing underperforming merger activities across different bank regulatory regimes. Monitoring is costly for shareholders. If regulation and governance are substitutes, the monitoring capabilities of bidding banks' boards should be lower in the US (a relatively strict regime) than in Europe (a less strict regime). However, we find that board monitoring within European institutions plays only a negligible role in preventing underperforming bank mergers. For US banks, by contrast, we find strong and positive associations between governance variables (such as board independence and diversity) and bidder abnormal returns as well as post-merger financial performance. Our findings point to a complementary role between regulation and monitoring.

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1 Introduction

It is a widely-accepted view that regulated firms are not subject to the same contracting costs between managers and shareholders as other public companies (Baysinger and Zardkoohi, 1986; Kole and Lehn, 1999; Booth et al., 2002). The argument goes that, because regulators restrict managerial discretion and the extent to which the actions of managers may adversely affect shareholder wealth, regulators, effectively, act as a substitute for monitoring by shareholders. As a consequence of this view, banks, which are amongst the most closely-regulated companies, are practically absent from governance research. Thus, while it is recognized that banks exert governance over the firms which they finance (La Porta et al., 2000; Levine, 1997), the corporate governance of banking firms themselves is not well understood (Adams and Mehran, 2003). The purpose of this paper is to provide new insights into the nature of the relationship between regulation and corporate governance using a sample of bank mergers in Europe and the US.

Fama and Jensen (1983) argue that the effectiveness of management monitoring is related to the degree to which the interests of managers and shareholders diverge. Consequently, the performance effects of M&A activities form a suitable background against which to examine whether certain types of governance structures safeguard shareholders from managerial opportunism. Agency explanations of M&A performance point to the fact that even though bidding bank shareholders tend to realize wealth losses as a result of M&A (James and Weir, 1987; Houston and Ryngaert, 1994; Becher, 2000; DeLong and DeYoung, 2007), managers at the bidding bank are set to benefit from higher prestige and increased remuneration packages in the post-merger period (Anderson et al., 2004; Masulis et al., 2007; Bliss and Rosen, 2001).¹

Essentially, the question we address is whether regulation acts as a substitute or a complement to management monitoring by shareholders. Consistent with the view that exogenous industry regulation may substitute for internal governance, Subrahmanyam et al. (1997), Baysinger and Zardkoohi (1986), and Kole and Lehn (1999) find that regulated industries display less independent boards and Adams and Ferreira (2006) find bank director attend fewer board meetings than directors of non-financial firms. By contrast, other studies contradict the substitution hypothesis. Booth et al. (2002), Adams and Mehran (2003), and Becher and Frye (2007) find that regulated industries exhibit more independent boards. If boards are less important in mitigating against agency cost in regulated firms, it seems peculiar that boards in these industries appear

¹Other explanations of why M&A is frequently not non-value maximizing include hubris (Roll, 1986), where executives overestimate their abilities to create value from M&A, and diversification of personal risk (Amihud and Lev, 1981; Morck et al., 1990; Wright et al., 2002). The risk diversification argument posits that, because executives are unable to diversify their human capital invested in a firm, they, instead, diversify firm earnings using unrelated acquisitions. Shareholders, on the other hand, may diversify unsystematic risk more efficiently by holding diversified equity portfolios.

to be more adept at monitoring management.

The main findings of this paper are as follows. We present evidence that increased board vigilance leads to improvements in announcement returns and long-term financial performance of bidding banks in the US, but not in Europe. Specifically, US boards that meet more frequently, are more independent, and employ directors who are more diverse in terms of their occupational backgrounds, are associated with higher announcement returns. Also, we find diverse boards improve the long-term financial performance following bank M&A in the US but, again, the same is not applicable to Europe. On the basis that bank regulation in the US market may be viewed as more restrictive vis-à-vis most European economies (e.g., in terms of libel risks borne by directors and restrictions on bank interests), the ineffectiveness of board monitoring in Europe in improving M&A outcomes is not consistent with bank regulation substituting for shareholder monitoring. Instead, our results point to a complementary role between internal governance mechanisms and exogenous regulation.

This paper adds to the growing literature that examines whether corporate governance impacts performance and makes several important contributions. First, our results point to regulation acting as a complement rather than a substitute to firm-level governance. This means we cannot confirm that the reasons for excluding banking from most governance research (on the premise that regulatory pressures partly substitute for shareholder monitoring) are indeed well-founded. Second, we are the first to contrast the effectiveness of internal monitoring in bringing about better performing M&A under different regulatory regimes. Recent studies related to our paper, such as Adams and Mehran (2003) or Becher and Frye (2007), restrict their analysis to the composition of boards and the design of governance mechanisms in regulated and unregulated industries. It could, hence, be argued that these studies contrast the potential monitoring capabilities of regulated versus unregulated industries, while our paper is concerned with the actual effectiveness of such arrangements. Third, our study is the first to contrast internal governance mechanisms for US and European credit institutions. Little academic work has been devoted to the study of European bank governance. In this paper, we present a unique, manually collected dataset on the corporate governance of banking firms in Europe and the US.

The paper is organized as follows. Section 2 introduces the theoretical background to later analyses. In particular, we discuss whether regulation should be perceived a substitute or a complement to corporate governance. Section 3 introduces our sample of bank mergers and points to differences in bank regulatory regimes between Europe and the US. We present some univariate analyses of the performance effects of M&A and the governance of bidding banks in Europe and the US in Section 4. In Section 5, we run regressions of M&A performance and bidding bank governance in Europe and the US. We offer conclusions in the final section.

2 Bank Regulation: Substitute or Complement to Governance?

2.1 The Substitution Hypothesis

The substitution hypothesis posits that, because monitoring is costly for shareholders (Shleifer and Vishny, 1997; Baysinger and Zardkoohi, 1986), they will not duplicate efforts by bank regulators when mitigating against agency cost. This assumption seems to have led to the *de facto* exclusion of banks and other highly regulated firms such as utilities from applied governance research (Adams and Mehran, 2003).

While the substitution hypothesis has not been extensively tested, some findings appear to back the notion that regulators act as a substitute for shareholder monitoring. Joskow et al. (1993) examine a sample of 2,000 US firms between 1970 and 1990 and find that CEOs in regulated industries receive smaller pay packages vis-à-vis unregulated industries. The authors argue that any discount in CEO compensation reflects the extent to which regulators limit discretion and, ultimately, CEO productivity. By the same token, Kole and Lehn (1999) analyze changes in the governance system of the US airline industry over a 22-year period after its deregulation in 1978. The results show a shift in board structure and executive remuneration towards those of unregulated firms.

Further, consistent with the substitution hypothesis, some studies point to banking firms having potentially less effective monitoring mechanisms than non-financial firms. For example, Becher et al. (2005) study the executive pay packages of 14,000 US firms between 1992 and 1999 and find that remuneration packages in the banking industry make less use of incentive compensation (i.e. exhibit a smaller share of equity-based pay) than in unregulated industries. Adams and Ferreira (2006) find that directors in the US banking industry attend fewer board meetings compared with directors in non-financial industries. Finally, Subrahmanyam et al. (1997) find a negative relationship between the abnormal returns accruing to the shareholders of bidding banks at the time of a merger announcement and the proportion of independent directors on the board of the same institution.

However, the results of an increasing number of studies are not consistent with the substitution hypothesis and, instead, point to a complementary role between regulation and corporate governance. Booth et al. (2002) analyze the boards of 300 large US companies in 1999 and find that regulated firms display more independent boards than unregulated firms. In the same vein, Adams and Mehran (2003) find that US bank holding companies (BHCs) have more independent boards, more committees and meet more frequently than the boards of unregulated (manufacturing) firms. Becher and Frye (2007) find for a sample of 400 IPOs in the US between 1993 and 1998 that regulated firms have more independent boards and do not use less incentive compensation than firms in non-regulated industries. These results clearly run counter to the

notion that regulation and governance are substitutes; one would not expect regulated industries to exhibit governance mechanisms that appear more adept at mitigating agency conflict.

2.2 The Case for Complementarity

The notion that regulation fosters economic institutions that promote shareholder wealth is ubiquitous in the institutional economics literature. Corporate law theory posits that cross-country differences in company governance result from the varying degrees to which the legal and regulatory framework protects minority shareholders across countries (La Porta et al., 2000; 2002; Nenova, 2003). Thus, political institutions that facilitate monitoring by shareholders (e.g. investor protection laws that promote transparency and disclosure and make contracts enforceable) are associated with productive governance institutions (e.g. greater board independence, more active takeover markets). However, the legal framework and regulation are insufficient to determine the effectiveness of governance arrangements. Rajan and Zingales (2003) show that, at the beginning of the twentieth century, stock market capitalization was higher in Germany and France than in the US, even though the legal and regulatory framework in the US favored market-based governance. In the same vein, Dyck and Zingales (2004) show that the private benefits of control (a measure of contracting cost between managers and shareholders) vary across groups of countries with very similar corporate disclosure and transparency regulations.

What determines the effectiveness of governance institutions if the design of legal and regulatory arrangements alone do not? Becher and Frye (2007) argue that even though regulators do not stipulate specific governance arrangements, their presence coerces regulated firms into adopting more productive governance structures. Roe (2003; 2005) explains that it is the political will behind governance laws (and not their design) which acts as the primary determinant of their effectiveness.² Similarly, Mahoney (2001) argues that legal frameworks and regulations should not be understood as a narrow set of rules, but, in a wider sense, as governments signaling intent about good practice and commitment to intervene (enforce). A complementary role between regulation and firm-level governance would, thus, be consistent with arguments that point to governance laws and the instruments to penalize non-complying firms posing a ‘threat of action’ which increases managerial compliance and, ultimately, the effectiveness of corporate governance arrangements at firm-level (see Booth et al., 2002).

²Roe (2003) outlines that a lack of political will has a serious undermining effect on the enforcement of governance laws. In some countries, breaches of insider trading laws are viewed as ‘the wealthy harming the wealthy’ and existing legislation to restrict such activities are, hence, seldom enforced.

3 Research Design

3.1 M&A Data

The sample of bank M&A on which we base our analysis was obtained from Thomson Financial (SDC Platinum). Sampled mergers were announced between 1996 and 2004 and involved acquirers and targets that are both listed in the US or Europe (i.e. EU-15 countries & Switzerland). Further, we imposed the following sampling criteria:

1. The transaction has been completed.
2. All deals are majority bank acquisitions (that led to acquirers owning at least 50% of the target's equity).
3. Deals are valued at more than \$100 million (in constant 2004 \$).
4. Acquirers are commercial banks, BHCs and credit institutions. In order to assess the performance effects of consolidation across different financial product markets, targets may also be insurance companies.
5. Bidding banks have further performance data (share prices on Datastream; accounting data on the Worldscope database) and board composition data (company filings) available.
6. The target bank is not a failing institution (a failing institution as a target suggests the deal is involuntary).
7. There are more than 90 trading days between separate merger announcements by the same bidder and more than one calendar year between completed mergers by the same bidder.³

The resulting dataset is described in Table 1. With 95 out of 137 sampled transactions, the US makes the largest contribution to our sample. The lower levels of sampled M&A activity in Europe are mostly due to a large share of financial consolidation occurring in the non-listed sector (e.g. cooperatives, state-owned savings banks) in countries such as Germany, France and Italy (see CEPR, 2005).

[Table 1 near here]

³As a result, serial acquirers remain in our sample. A large share of M&A activities is due to a small number of serial acquirers. If these were excluded from the analysis, no inferences could be made regarding this large and very relevant share of bank M&A.

3.2 Bank Regulation and Bank Governance

Despite the recent trend towards harmonization of regulatory practices, there remain difference in the design and regulation of banking systems across developed countries. Generally, the US can be described as having a more stringent regime of bank regulation compared with most European economies (see Barth et al., 2006). Our assessment can be illustrated with reference to the following criteria (a more detailed list of regulatory differences is included in the appendix):

- *Activities.* Banks in the US have traditionally not been allowed to diversify into non-depository activities. While most of these restrictions have been repealed by the Gramm-Leach-Bliley Act in 1999, US banks still face restrictions in terms of potential M&A targets. For example banks are not allowed to take stakes in non-financial firms and any acquisition greater than 25% is subject to regulatory approval. Banks in many European countries, on the other hand, have enjoyed a more lenient regime as embodied in the long-established universal banking model in many European countries.
- *Discipline.* US bank directors face a high risk of litigation. Following the savings and loan crisis in the early nineties, US regulators have introduced a ‘prompt corrective action scheme’. While we are not aware of any study that compares the liability risks faced by bank directors across countries, the ‘duty of care’ standards in the US appear harsher than anywhere else’ in the world (Fischer, 1992). Adams and Ferreira (2006) describe that US regulators can freeze directors’ assets and impose civil fines of up to \$1 million a day without trial or hearing.
- *Capital regulation.* There is still some uncertainty when and in which form the new international capital adequacy standards (Basel 2) will be adopted in the US. While the EU will adopt Basel 2 by 2008, the US regulatory authorities have delayed its adoption on the grounds that the proposed capital charges are too low and the regulatory regime too lenient.

We test whether regulation acts as a substitute or a complement to corporate governance for a sample of bank mergers in Europe and the US using a simple hypothesis. We measure monitoring productivity as the effectiveness of bidder board characteristics in securing positive merger performance results for bidding bank shareholders. If regulation and governance are substitutes (complements), we expect more stringent US regulation to be associated with lower (higher) monitoring productivity of boards. Consequently, we test the following basic hypotheses

H_N: The productivity of board monitoring is higher in Europe than in the US.

(*Substitution hypothesis*)

H_A: The productivity of board monitoring is higher in the US than in Europe.

(*Complementarity hypothesis*)

4 Empirical Analysis

4.1 Merger Performance of Bidding Banks

In this section, we present some evidence as regards the performance effects of bank M&A. The findings—which are based on announcement returns as well as long-term financial performance—are not consistent with merger activities creating value for bidders. Thus, our results confirm a potential role of shareholder monitoring in improving the performance of acquisition activities. Agency explanations of M&A have long pointed out that managers’ prestige and salaries increase post-M&A regardless of the performance of a deal (Anderson et al., 2004; Lehn and Zhao, 2006; Amihud and Lev, 1981; Morck et al., 1990).

4.1.1 Announcement Returns

Bidding banks’ announcement returns are measured by market model-adjusted returns. Cumulative abnormal returns (CAR) are calculated over an event window of $(t-2, t+2)$ with 0 as the announcement date supplied by Thomson Financial. We estimate market model parameters using 100-day daily return observations starting from 121 days to 21 days before the acquisition announcement (see Dodd and Warner, 1983). Share price data and equal-weighted national bank-sector indices are from Datastream.

[Table 2 near here]

In an efficient capital market where assets are priced rationally, changes in the bidder’s market valuation around acquisition announcements provide an accurate assessment of the benefits for bidders following the completion of a deal. Table 2 reports that, on the whole, bank mergers do not create bidder wealth in either Europe or the US. Instead, there are economically and statistically significant value losses for US banks in the announcement period. For US deals, the mean (median) $CAR[-2, 2]$ is -0.42% (-0.32%) which is significant at the 1%-level. Announcement returns remain negative and statistically significant for every subset of US M&A transactions. For example, deals which are completely cash-financed lead to $CAR[-2, 2]$ of -0.27% (significant at 5%) and for activity-focusing deals to $CAR[-2, 2]$ of 0.45% (significant at 1%). Shleifer and Vishny (2003) argue that because cash-financed deals are not funded by acquirers’ potentially overvalued equity, they signal greater commitment to an acquisition target and, partly, insulate bidding bank shareholders from managerial opportunism. Generally, the results reported in Table 2 are consistent with a growing literature that reports value losses following US bank merger announcements (see for example, DeLong and DeYoung, 2007; Houston and Ryngaert, 1994).

For the subset of European bidders (Panel B), the market reaction to M&A is slightly more optimistic. Average announcement returns are not statistically different from zero while median returns are -0.02% (significant at 9%). However, there is no evidence that European bank mergers create wealth for bidding bank shareholders in the announcement period—many deal announcements generate negative market reactions.

4.1.2 Financial Performance

Next, we examine merger-related changes in the long-run accounting performance of bidding banks. Following Healy et al. (1992), and Cornett et al. (2006), we measure performance changes as pre-tax operating cash flows (=income before taxes and extraordinary items plus interest expenses on debt) divided by the book value of assets. We refer to this measure as OPCFROA.⁴ Financial data are from the Worldscope database. Based on Berger et al. (1999) who argue it takes three years for merger-related gains to fully materialize, we compute performance changes between one year before the completion of a merger to three years afterwards. We adjust performance data using an equal-weighted index of all listed banks available on Worldscope in the bidding bank’s country. Consequently, OPCFROA gauges changes in recorded performance net of industry or economy-wide phenomena.

Table 3 presents industry-adjusted post-merger performance data in Europe and the US. By and large, there is little evidence that points to statistically significant performance improvements following bank M&A. In the US, industry-adjusted performance increases by 0.77% (not significant at customary levels) and median industry-adjusted performance by 0.73% in the post-merger period (not significant either). On the other hand, there is evidence of small post-merger performance increases following cash-financed deals (mean industry-adjusted OPCFROA are 0.82% [significant at 10%] and median values are 0.75% [significant at 5%]).

[Table 3 near here]

⁴Long-run performance changes may also be measured on the basis of market returns. However, there are a number of methodological difficulties associated with this method (Barber and Lyon, 1997; Fama, 1998) which are especially severe in multi-country settings when equity markets differ in terms of their sensitivity to news (Park, 2004). Further, the use of OPCFROA has three distinct advantages. First, it captures the realized performance rather than the expected gains from M&A as reflected in merger announcement returns. Second, unlike standard profitability measures, OPCFROA is not sensitive to the method of deal finance (debt finance means lower post-merger profitability), while controlling for interest payments to depositors. Third, OPCFROA is a more precise measure of performance changes than Tobin’s q which is routinely used in corporate governance research. Since Tobin’s q controls for market valuation, it partly reflects growth opportunities. This means that poorly-performing firms may still deliver above-market returns to shareholders, for example, on the back of speculation that a firm might become a takeover target (see Cornett et al., 2007).

For European deals, mean (median) performance-adjusted OPCFROA are -0.41% (-0.34%) which is significant at the 5%- (10%-) level. The deterioration in post-merger performance seems to be particularly pronounced following cross-border mergers. Table 3 reports that mean industry-adjusted performance changes following cross-border deals are -0.56% (significant at 5%) and median changes are -0.59% (significant at 10%). This is consistent with cross-border deals being frequently driven by empire-building motives (Anderson et al., 2004) and attempts to diversify employment risk by decreasing the variability of firm income (Wright et al., 2002; Morck et al., 1990).

The financial performance results following bank M&A which we present in Table 3 echo earlier research which finds bank mergers rarely lead to improvements in corporate performance (Healy et al., 1992; Cornett et al., 2006; DeLong and DeYoung, 2007). This suggests shareholders—possibly through the board of directors which is among the most important internal control mechanisms (Fama, 1980)—should play a greater role in monitoring M&A activities. Boards are particularly important in promoting and protecting shareholder interests in the context of M&A as acquisition activities require approval by statute in most countries (Hermalin and Weisbach, 2003). The next section analyzes the composition of bank boards in Europe and the US.

4.2 Board Characteristics in Europe and the US

We obtain governance data on US banks from proxy statements filed with the Securities and Exchange Commission (SEC). For European bidders, data were extracted from annual reports and other company publications such as corporate governance reports and press releases. In order to analyze the board characteristics prevailing at the time of a deal announcement, we obtain the last filing or publication before a deal was announced. Variable definitions are provided in Table 4. Below, we discuss our rationale for linking the following board characteristics to board vigilance: board size, board activity, leadership structure, board independence, CEO age and tenure, and board diversity.

Board independence. Fama and Jensen (1983) argue that independent directors are incentivized to scrutinize diligently, because they seek to protect their reputation as effective monitors of managerial discretion. We expect that the more independent a board is, the greater the vigilance exerted. Studies of non-financial firms have shown that a higher proportion of independent directors on the board is associated with a higher likelihood of CEO dismissal (Weisbach, 1988) and a more positive market reaction to merger announcements (Byrd and Hickman, 1992).⁵

⁵Other studies do not support the positive role of board independence on board monitoring. Hayward and Hambrick (1997) cannot find any evidence that more independent bank directors reduce the risk of CEOs overpaying for acquisitions. In the same vein, Lehn and Zhao (2006) show that more independent boards are not more likely to replace CEOs after underperforming takeovers.

For the banking industry, Subrahmanyam et al. (1997) find a negative relationship between the abnormal returns accruing to the shareholders of bidding banks at the time of the merger announcement and board independence. By contrast, Cornett et al. (2003) examine the governance arrangements of bidding banks and find that the more independent the acquiring bank's board is, the greater the announcement period returns that bidders realize.

[Table 4 near here]

Board activity. Are busy boards more effective monitors? If boards meet more frequently, and directors interact more often, we expect board vigilance to increase with fewer value-destroying acquisitions as a result. Vafeas (1999) and Fich and Shivdasani (2006) investigate a related question and find a negative association between the frequency of board meetings and corporate valuations for non-financial firms in the US. However, the results do not permit conclusions regarding the direction of causality. Thus, Vafeas (1999) shows the intensity of board meetings increases following sharp declines in a firm's share price. Further, the literature has yet to study the effects of board activity on acquisition performance in the banking industry. Adams and Mehran (2005) examine whether active boards increase the market valuations of banks, but cannot find any evidence consistent with this.

Board size. We hold no *a priori* expectations as regards the effectiveness of management monitoring and board size. Jensen (1993) argues that larger boards—by hindering communication, coordination and, ultimately, decision-making—can more easily fall under control of the CEO and, consequently, are more at risk to be driven by a non-value maximizing agenda. Yermack (1996) finds that smaller boards are associated with higher corporate values. By contrast, Masulis et al. (2007) and Lehn and Zhao (2006) cannot detect any evidence that board size affects bidder announcement returns or, respectively, that CEO turnover increases following value-destroying acquisitions. In a highly regulated industry, however, larger boards may well hold advantages if some outside directors have links to regulators (Baysinger and Zardkoohi, 1986). For example, Adams and Mehran (2005) find a positive association between board size and performance (proxied by Tobin's q) in the US banking industry.

Chairman / CEO duality. Fama and Jensen (1983) argue that separating the positions of chairman and CEO, such as to charge the latter with the running of the company and the former with the running of the board, prevents boards from being overly-influenced by a single person. By the same token, we expect duality to lead to a concentration of power that impairs effective board monitoring. Rechner and Dalton (1991) and Baliga et al. (1996) find that firms perform better when the leadership structure is separated. Goyal and Park (2002) show that the CEOs of underperforming companies are more likely to be dismissed under a separated board leadership structure. As regards M&A, Masulis et al. (2007) show that separating the positions of CEO

and chairman of the board leads to higher bidder announcement returns and may help thwart empire-building ambitions by CEOs.

CEO age & tenure. Both CEO age as well as CEO tenure reflect the level of expertise accumulated by the top executive regarding the organizational as well as the wider economic environment of a bank. We hypothesize that longer-tenured and older CEOs are less likely to harm shareholders' interests. Kosnik (1990) finds that older CEOs engage less frequently in greenmail transactions where CEOs privately repurchase equity from dissident shareholders at a premium. For the US banking industry, Cornett et al. (2003) show that CEO age is positively and significantly related to the announcement period returns that bidding banks realize. However, as regards the realized long-term performance of banks, Cornett et al.(2007) as well as Lehn and Zhao (2006) cannot find any evidence consistent with older CEOs improving the industry-adjusted profitability of a sample of US banks.

Board diversity. Organizational outcomes are a consequence of fit between various processes within an organization and how these are moderated by factors such as the environment, technology, and culture. Organizational scholars maintain that diverse groups, through interaction between the various group members, produce a variety of different perspectives that will ultimately improve the quality of decision-making (Richard, 2000). While the literature has yet to study the impact of board diversity on M&A performance, we expect that diverse boards take a more critical view on the performance effects of bank M&A. Adams and Ferreira (2004) examine gender diversity in the boardroom of Fortune 500 firms and find that boards with a higher share of female directors are associated with improved director attendance at board meetings, more frequent meetings, and executive remuneration that follows corporate performance more closely. Research on the impact of board diversity by Shrader et al. (1997), Erhardt et al. (2003), and Farrell and Hersch (2005) find a positive link between gender diversity and firm performance in a US multi-industry setting. Bantel and Jackson (1989), in what until today remains the only examination of the performance implications of top management team diversity in the banking industry, find that innovative banks are managed by teams that are more diverse with respect to occupational diversity.

Table 5 presents summary statistics on the board characteristics of bidding banks in Europe and the US. Board structure is a costly input into the monitoring of management. If regulation were a substitute to governance, we would expect to observe fewer board characteristics that are commonly associated with improved monitoring by shareholders in the US than in a European market context. However, the univariate tests reported in Table 5 for US and European banking firms are not consistent with our expectation.⁶ For example, US boards, are more independent

⁶Arguably, recent regulatory changes such as the Sarbanes-Oxley Act in the US in 2002 may well mean that some board ratios presented for the US have become outdated. As a result of these regulatory changes, one may expect an increase in the share of independent board directors in banking as well as in other industries (see

than the boards of European banks. The average (median) percentage of independent directors on US boards is 81% (82%) compared with 70% (67%) in Europe (both *t*-statistic and z-statistic significant at 1%).⁷ Further, US bank boards have significantly fewer members than European boards. For European boards, mean board size is 17.25 compared with 14.93 in the US, while median board sizes are 18 and 14 in Europe and the US, respectively (again, both *t*-statistic and z-statistic significant at 1%).⁸ Also, US bank directors are slightly older, longer-tenured and serve under a CEO who is also longer-tenured. The mean (median) number of outside directorships that bank directors hold is 0.89 (0.67) in the US compared with 1.69 (1.54) in Europe.⁹ As regards the computed diversity indices, European bank boards are more diverse in terms of director expertise (i.e. the number of outside directorships across the board). For US bank acquirers, mean (median) expertise diversity is 0.75 (0.92) and 1.05 (1.08) in Europe (differences significant at 1%). US boards, on the other hand, are more heterogeneous in terms of the gender and occupational background of directors (differences significant below 1%-level for *t*- and z-statistic). Interestingly, the already lower number of female directors on European boards is almost exclusively made up of union representatives. Not a single independent female director could be identified in Italy, Spain or Germany.

[Table 5 near here]

By and large, however, the findings in Table 5 suggest that US bank boards are more independent, with more independent board committees and, by most measures, more diverse boards. Once again, these findings are not consistent with the substitution hypothesis. If regulation were a substitute to monitoring by shareholders, bank shareholders in the US (where bank regulation has been more stringent over the sample period than in most European countries) should place less emphasis on board independence and diversity than their more lightly regulated competitors in Europe.

Wintoki, 2007).

⁷The relatively greater board independence in the US may also be due to labor market regulations in countries such as Germany, the Netherlands and Sweden that reserve a certain number of directorships for insiders such as employee representatives. According to the co-determination law in Germany, seats on supervisory boards of publicly-traded companies with more than 2,000 employees must be equally divided between the representatives of shareholders and employees.

⁸The data on board size are comparable to Adams and Mehran (2003) who report an average board size of 18 in the US banking industry for a sample of 35 BHCs between 1986 and 1999.

⁹It could be argued that the higher number of outside directorships of European directors is reflective of the practice of cross-holdings whereby groups of companies maintain sizable equity holdings of each group member in order to gain representation on each others' boards.

The next section examines the marginal monitoring effectiveness of board variables in the context of bank mergers—a corporate strategy that has been frequently linked to managerial opportunism (Moreck et al., 1990; Masulis et al., 2007).

4.3 Corporate Governance and Bidder Announcement Returns

Table 6 presents preliminary tests of the monitoring effectiveness of bank boards in Europe and the US. The table depicts expected performance gains at acquisition announcements (CAR[-2, 2]) and the board characteristics of bidding banks prevalent in the highest and lowest announcement return tercile.¹⁰ In Europe (Panel A), there is only limited evidence pointing towards the governance of bidding bank as partly determining the market reaction to bank M&A. The only exceptions are board size and board activity (albeit differences are only significant at the 10%-level according to both *t*-tests and *z*-tests). First, for board size, the low return tercile is associated with a mean (median) number of directors of 17.45 (16), while the corresponding values in the high return portfolio are 15.3 (15.5). Second, more active boards are linked to higher announcement returns. European boards in the high return tercile, on average, have three more meetings per fiscal year than boards in the low return tercile.

[Table 6 near here]

Panel B compares governance arrangements for the highest and the lowest return portfolios of US banks. Older CEOs as well as boards with older directors are associated with higher announcement returns (all significant at 1% according to both the *t*-test and the *z*-test). Also, there is a positive association between occupational heterogeneity (*t*-statistic significant at 5%, insignificant *z*-statistic) as well as between age heterogeneity and announcement returns. Further, more independent boards are associated with higher CAR[-2,2], albeit, again, this result is significant at 5% according to the *t*-test while the *z*-test is insignificant.

Overall, the results of Table 6 provide a first indication that board monitoring has a role to play in preventing managerial opportunism at bank acquirers and, most importantly, that the productivity of board monitoring appears to be higher in the US. The results for US bidding banks show that older CEOs and board directors as well as more independent boards exhibit a higher monitoring productivity. Also, the positive sign on the coefficients of two diversity indices may be interpreted as market investors expecting enhanced performance effects for decisions undertaken by more heterogeneous boards.

¹⁰We also perform this test using longer event window specifications. The results are not markedly different for other narrow event-windows (up to CAR[-1, 10]) surrounding the acquisition announcement.

5 Regression Results

To further examine the productivity of board monitoring in Europe and the US, we run different specifications of the following regression:

$$\begin{aligned} \Delta\%performance = & \alpha + \beta_1 \ln(\text{board size}) + \beta_2 \ln(\text{board activity}) + \beta_3 \text{CEO / Chair} \\ & + \beta_4 \text{board indep.} + \beta_5 \ln(\text{CEO age}) + \beta_6 \ln(\text{CEO tenure}) \\ & + \beta_7 \text{occupational div.} + \beta_8 \text{age div.} + \beta_9 \text{expert. div.} \\ & + \beta_{10} \text{cashdummy} + \beta_{11} \text{product focus} + \varepsilon \end{aligned} \tag{1}$$

where $\Delta\%performance$ are either abnormal bidder returns (CAR[-2, 2]) or changes in corporate performance (OPCFROA) that follow a bank merger. Board characteristics are defined as before (see Table 4). Equation (1) also controls for cash versus non-cash finance and for product diversification (based on the first two digits of four-digit SIC codes).¹¹ Both non-cash finance (Becher, 2000) and financial diversification (DeLong, 2001; Beitel et al., 2004) are often driven by a non-value maximizing agenda. As detailed above, a high share of non-cash finance may signal lower levels of commitment to a deal by a bidder (Shleifer and Vishny, 2003) and diversification may be motivated by a managerial desire to smooth company earnings over time (Morck et al., 1990).

5.1 Bidder Announcement Returns and Board Monitoring

Table 7 regresses board characteristics of bidding banks on CAR[-2, 2]. The results show systematic differences in the effectiveness of board monitoring between Europe and the US. Regression 1 reports few indications that board characteristics drive merger announcement returns for the cohort of European bank mergers. The only variables that exert a statistically significant influence on bidder wealth are the log transformations of CEO age and age diversity (both at the 10%-level). The association between CEO age and CAR[-2, 2] is positive suggesting that acquisitions made by more experienced CEOs carry higher market credibility in terms of their value-creating potential. The negative coefficient on age diversity shows that boards which are homogeneous in terms of the age of directors are associated with higher expected gains from a

¹¹We follow Campa and Hernando (2004) and classify deals as diversifying if the first two digits of the SIC code of the main industry of the institutions involved in a deal are not identical. Arguably, SIC codes may not always convey an accurate picture of the activities of financial firms (see DeLong, 2001). Hence, we used a second measure of diversification that may be more suitable to account for the nature of some of the banks as integrated financial firms with more than one SIC code. We follow Sirower (1997) and examine the number of industry classification codes shared between bidders and targets. The results based on this diversification measure, which only classifies deals as diversifying if bidders and targets do not share any SIC codes, are virtually identical to the results reported in this section.

proposed deal (significant at 10%-level). However, age is the only diversity measure that enters Regression 1 significantly. Consequently, there is no evidence that the diversity of the bidding bank's board impacts expected gains from bank mergers in Europe. In Regression 2, the cash finance and product focus dummies enter the analysis with the anticipated positive signs, but are not different from zero at customary levels of statistical significance.

Despite the small number of observations for the European subsample, there is a very high degree of overlap between the signs and magnitude of the estimated variables in Regression 1 and 2. This lends support to the robustness of the main finding that board monitoring, at best, has only a negligible role to play in preventing value-destroying acquisition strategies in European banking.

[Table 7 near here]

The results for US banks (Regressions 3 and 4), by contrast, identify a number of board characteristics which are related to bidder returns. Both the coefficients on board activeness and board independence have positive and significant signs and are significantly different from zero at the 5%-level. This indicates that boards that hold meetings more frequently as well as boards that exhibit a higher share of independent directors inspire investor confidence in the value-creating potential of a deal. There is also evidence consistent with more heterogeneous boards generating higher announcement returns in the US banking industry. Thus, there is a positive association between occupational diversity and five-day CAR (significant at 5%) as well between expertise diversity and five-day CAR (significant at 1%). Expectations about merger-related gains following a bank merger are, consequently, greater if directors come from diverse backgrounds as regards skills and outside links to other companies. Again, the positive signs on the diversity index reflect the trust that market investors have in the quality of decisions made by heterogeneous groups. Also, the cash finance and product focus dummies do not exert a statistically significant impact on announcement returns.

The reported results show that, far from substituting for governance, the US, despite its stricter form of regulatory supervision, exhibit boards that are more effective in monitoring managers' M&A strategies. The results of Table 7, thus, point to a complementary role between bank regulation and bank governance.

5.2 Performance Results of Board Monitoring

Next, in order to examine the impact of board monitoring on realized performance (rather than on market expectations at the time of the bank merger announcement), we analyze whether board monitoring impacts changes in financial performance over a three-year period following

the completion of a deal in Europe and the US. Table 8 presents regressions of board characteristics on market-adjusted OPCFROA between years -1 and 3. The results we report are broadly in line with our earlier findings on the market reaction to bank merger announcements. Thus, shareholder monitoring is practically irrelevant in determining the long-term performance of bank mergers in Europe, while various board characteristics impact post-merger performance changes in the US. Regression 1 of Table 8 shows that, for the subsection of European deals, board characteristics such as size and activeness are not remotely significant. Further, heterogeneity measures such as tenure diversity and occupational diversity exhibit positive signs on their coefficients, but are not statistically significant either. Regression 2 shows that the results for European banks remain largely unaltered when the cash-only and product focus dummy are added to the analysis. Neither of the two variables enter Regression 2 significantly.

[Table 8 near here]

In Regression 3, the effects of board monitoring on the post-merger performance of US deals are analyzed. Board activeness enters the specification with a positive coefficient (significant at 8%) confirming that boards which meet more frequently—and, presumably, exercise more scrutiny—improve post-merger performance. The coefficient on the log transformation of CEO age is negative and significant (at 1%) which suggests that younger CEOs are associated with stronger post-merger financial performance. Board size, board independence and leadership structure, on the other hand, have no significant bearing on industry-adjusted performance in the post-merger period.

As regards the performance effects of board diversity in the US, the results of Regression 3 echo earlier findings on the announcement returns of bank M&A. Thus, occupational heterogeneity enters the specification with a positive sign (significant at 5%). Further, there is a positive association between expertise diversity and performance-adjusted OPCFROA. This result confirms that diverse groups of board members, possibly by improving the overall quality of decision making, have a positive bearing on post-merger performance. Yet, not all measures of board diversity are associated with performance changes. Age diversity enters Regression 3 with the expected positive sign, but is not statistically significant at customary levels. Gender diversity, whose coefficient is not significant either, exhibits a negative sign indicating that more women directors are associated with weaker performance in the post-merger years.

These results in Table 8 add further weight to regulation and board monitoring acting as complements. Once again, we would not expect the monitoring productivity of US boards to be relatively greater if stricter bank regulation acted as a substitute to vigilance exercised by shareholders.

6 Robustness

The virtual absence of any effects of board characteristics on M&A performance in Europe raises the question whether alternative governance mechanisms that we have not controlled for in our analysis drive the reported results. For example, product market competition is a principal monitoring mechanism (Masulis et al., 2007; Shleifer and Vishny, 1997; Roe, 2003). With the exception of Germany and, perhaps, Italy, most European markets for retail banking services are considerably more concentrated than the US market (CEPR, 2005). Consequently, it is conceivable that, in the face of increased competitive forces, European banks choose their governance optimally such that more vigilant boards have no marginal effect on merger outcomes. We test the argument that market concentration acts as a substitute to shareholder monitoring. We calculate a Herfindahl index for each country (sum of squares of banks' market shares available on Worscope, based on total assets) and run the regressions in Table 7 and Table 8 for the high and low market concentration tercile. We are unable to detect statistically meaningful differences in the monitoring effectiveness of board variables between the resulting portfolios. Consequently, the results we report are not driven by cross-country differences in market concentration levels.

Do the reported results hold over time? Following the passing of the Gramm-Leach Bliley (GLBA) Act in 1999, one of the differences in bank regulation between Europe and the US—the activities that banking firms are permitted to engage in—has become less pronounced. Consequently, it may be the case that results are weaker for the period that follows the deregulation of banking activities in the US. Consequently, the regressions in Table 7 and Table 8 are run separately for US bank mergers completed before 2000 (pre-GLB) and afterwards (post-GLB). There are only marginal differences between the regression results in separate time periods and results for the complete sample period. In this context, it is important to bear in mind that there are other dimensions across which the regulatory environments in Europe and the US differ. For example, US regulators still impose higher libel risks on directors and require regulatory approval for any company stake exceeding 25%.

Serial acquisitions form a sizable share of M&A activities in the banking industry. For transactions that are part of a merger program, there may be an anticipation effect that potentially depresses the announcement returns that serial acquirers earn vis-à-vis first-time bidders (see Song and Walkling, 2006). Alternatively, the long-term performance effects of frequent acquirers may also be different. To account for this, we add a binary variable (zero for first bids and one for second or higher order bids) to the regressions on $CAR[-2,2]$ and industry-adjusted OPCFROA. The merger program dummy does not enter the regressions at customary significance levels indicating that serial acquirers do not have different performance implications.

7 Concluding Remarks

Questions over the relationship between regulation and governance are linked to the wider debate of causality between regulation and the emergence of economic institutions that promote shareholder value. The scale of value-destroying bank M&A in Europe and the US suggests an analysis of bank merger activities in an agency cost-type framework. For a sample of large bank mergers in Europe and the US, we analyze the marginal monitoring productivity of bidding boards in preventing value-destroying M&A under different bank regulatory regimes. The results presented point to a number of linkages between US bidding bank governance at the time of an acquisition announcement and abnormal bidder returns as well as the profitability effects following M&A. For the subset of European deals, however, there is a virtual absence of observable empirical relationships between the governance mechanisms examined and bidding bank performance. Thus, monitoring by shareholders has little effect on the returns that European bidding banks realize in the market for corporate control, and practically no effect on the profitability outcomes of bank M&A.

On the premise that the US exhibits and, by most measures, continues to exhibit the more stringent regulatory regime for banks than most European countries, our results are not consistent with the view that regulation and firm governance are substitutes. Instead, the findings we report hint at a complementary relationship between regulation and governance. While banks are different from non-financial firms on many accounts, our findings show that the frequent practice of excluding banks from governance research on the basis that regulators substitute for shareholder monitoring is not well-founded. More research that examines the effectiveness of established monitoring mechanisms in regulated and unregulated industries is clearly needed. Should future studies confirm our results of a complementary role between shareholder monitoring and corporate governance, there is a strong case for including banks and other highly regulated industries into multi-industry governance research.

Our paper is not without shortcomings. First, board characteristics and performance changes are examined at the BHC-level and not at the level of individual subsidiaries for which governance data tend to be less readily available. Therefore, it is possible that variables such as board activity understate the true level of interaction between bank directors. Similarly, board diversity may be more pronounced at the level of bank subsidiaries. Second, director independence in the banking industry may be impaired by the presence of loan relationships between outside directors and banks. More sophisticated measures of director independence should take loan relationships between banks and insiders into account.¹² Finally, our study does not examine executive pay as a device to mitigate against contracting cost in the context of M&A. This is due to data

¹²In the US, Regulation O of the Federal Reserve Board stipulates that credit extensions to insiders must be disclosed if they, in aggregate, equal or exceed \$500,000 or 5% of bank's capital, whichever is less.

availability issues. In some European countries, executive pay data are not fully disclosed or have only been recently made available. However, consistent with our finding of a complementary role between regulation and shareholder monitoring, we expect that that incentive pay should be less effective in curbing underperforming bank mergers in Europe vis-à-vis the US.

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Table 1 Sample Descriptive Statistics

The sample consists of 137 completed bank mergers between 1996 and 2004 in Europe and the US (listed in Thomson Financial) made by firms for which Worldscope data and company filings are available.

By Bidder Country			By Announcement Year		
Bidder Country	N	Percentage	Ann. Year	N	Percentage
United States	95	69.34	1996	4	2.92
Greece	7	5.11	1997	16	11.68
United Kingdom	7	5.11	1998	15	10.95
Belgium	6	4.38	1999	21	15.33
Italy	6	4.38	2000	21	15.33
France	5	3.65	2001	20	14.6
Spain	4	2.92	2002	11	8.03
Netherlands	3	2.19	2003	16	11.68
Switzerland	2	1.46	2004	13	9.49
Denmark	1	0.73			
Germany	1	0.73			
Total	137	100		137	100

Table 2 Bidder Announcement Returns, CAR[-2, 2]

The sample consists of 137 completed bank mergers between 1996 and 2004 in Europe and the US. Announcement returns are based on market model returns against equal-weighted Datastream bank sector indexes. Deals are classified all-cash if financed by 100% cash, activity diversification is based on the first two digits of the four-digit SIC code between acquirer and target. Cross-border deals involve bidder and targets in different countries. The statistical significance of mean abnormal returns is based on *t*-tests and median abnormal return on Wilcoxon signed-rank tests

		Whole sample	All-cash	Some stock	Activity Diversifying	Activity Focusing	Domestic M&A	Cross-border M&A
Panel A: US								
CAR[-2, 2]	Mean	-0.42% ^{***}	-0.27% ^{**}	-0.45% ^{**}	-0.25% ^{**}	-0.45% ^{***}	-0.42% ^{***}	n.a.
	Median	-0.32% ^{***}	-0.24% [*]	-0.37% ^{**}	-0.21% ^{**}	-0.38% ^{**}	-0.35% ^{**}	n.a.
% negative		71.58	62.50	73.42	56.25	74.68	72.63	
n		95	16	79	16	79	95	0
Panel B: Europe								
CAR[-2, 2]	Mean	-0.01%	0.32% [*]	-0.13%	0.06%	0.12%	0.05%	0.15%
	Median	-0.02% [*]	0.21% ^{**}	-0.08%	0.14%	0.19%	0.34%	0.05%
% negative		42.86	33.33	52.38	50.00	38.46	39.13	52.63
n		42	21	21	16	26	23	19

^{*}Significant at 10%; ^{**} significant at 5%; ^{***} significant at 1%

Table 3 Bidder's Industry-adjusted Post-merger Performance Changes, Years -1 to 3

The sample consists of 137 completed bank mergers between 1996 and 2004 in Europe and the US. Changes in operating performance are measured as pre-tax operating cash flows divided by the book value of assets between years -1 and 3 relative to the merger completion year. Performance data are adjusted by average performance of listed banks in the bidding bank's country. Deals are classified as all-cash if financed by 100% cash, activity diversification is based on the first two digits of the four-digit SIC code between acquirer and target. Cross-border deals involve bidder and targets in different countries. The statistical significance of mean abnormal returns is based on *t*-tests and median abnormal return on Wilcoxon signed-rank tests

	Panel A: US				Panel B: Europe			
	n	Mean	Median	% neg	n	Mean	Median	% neg
Whole sample	95	0.77%	0.73%	70.18	42	-0.41%**	-0.34%*	46.15
All-cash	16	0.82%*	0.75%**	56.25	21	-0.55%	-0.59%	33.33
Some stock	79	0.75%*	0.73%	72.34	21	-0.28%	-0.28%	61.54
Activity Diversifying	16	1.10%	1.20%	75.56	16	-0.56%	-0.63%	43.75
Activity Focusing	79	0.68%	0.61%	50.63	26	-0.30%	-0.08%	54.55
Domestic M&A	95	0.77%	0.73%	70.18	23	-0.26%	-0.08%	52.17
Cross-border M&A	0	n.a.	n.a.	n.a.	19	-0.56%**	-0.59%*	38.46

*Significant at 10%; ** significant at 5%; *** significant at 1%

Table 4 Variable Definitions: Bidder Boards

All variables are collected at the BHC-level of bidding banks and, unless stated otherwise, refer to the year of the acquisition announcement. In countries, where two-tier board structures prevail, data are collected for the executive board as identified in OECD (2004). Governance data on US banks are from proxy statements filed with the Securities and Exchange Commission (SEC). For European bidders, data were extracted from annual reports and other company publications such as corporate governance reports and press releases. We obtain the last filing or publication before a deal was announced.

Variable Name	Explanation
Board Size	Number of directors.
Board Independence	Proportion of the board that consists of independent directors. Directors are independent if they are not employees, former employees, or relatives of employees (see Hermalin and Weisbach, 2003).
Board Activeness	Number of board meetings per annum (including extraordinary meetings).
CEO / chair duality	Dummy variable which takes the value 1 if the bidding CEO is also the chairman of the board and zero otherwise.
CEO age	Age of the CEO.
Mean age	Mean age of the members of the board of directors.
CEO tenure	Tenure of the CEO.
Mean tenure	Mean tenure of the members of the board of directors.
No. of women	Number of female directors on the board.
Mean outside directorships	Average number of outside board memberships held by members of the board.
Audit, remuneration, and appointment committee activeness	Number of committee meetings per year.
Occupational Diversity	Based on Blau's (1977) measure of heterogeneity. Following Hillman et al. (2000), directors are categorised as insiders, outsider business experts (e.g., CEO or senior manager of for-profit firms), support specialists (such as law and accounting experts), or community leaders (e.g. politicians, clergy, academics). The following Herfindahl-type index is computed: $1 - \sum p_i^2$, where p is the proportion of group members in i different categories. In the presence of these four groups, the diversity index varies between 0.75 (maximum diversity) and 0.25 (minimum diversity) depending on the distribution of group members across the board.
Finance background	Proportion of independent directors with independent directorships in financial services companies.
No. of indep. board committees	Number of board committees chaired by an independent director.
Age diversity	Mean age of directors on the board divided by the standard deviation of director age across the board.
Tenure diversity	Mean tenure of directors on the board divided by the standard deviation of director tenure across the board.
Gender diversity	Number of women on board divided by board size.
Expertise Diversity	Mean number of outside directorships of directors on the board divided by the standard deviation of outside directorships across the board.

Table 5 Descriptive Statistics: Bank Governance in Europe and the US

The table provides descriptive statistics for the sample of 137 completed bank mergers between 1996 and 2004 in Europe and the US. Data are for bidding banks and presented by the bidder's country. Variable definitions are in Table 4. *t*-Statistics test for differences in means and *z*-statistics for differences in medians using a Wilcoxon two-sample test.

	US							Europe							$\Delta(\text{EUR} - \text{US})$	
	N	Mean	P25	P50	P75	Min	Max	N	Mean	P25	P50	P75	Min	Max	<i>t</i> -statistic	<i>z</i> -statistic
Board Size	95	14.93	12.00	14.00	18.00	6.00	31.00	42	17.25	15.00	18.00	20.00	8	27	3.07 ***	3.06 ***
No. of Indep Directors	95	12.23	9.00	12.00	15.00	5.00	27.00	42	11.89	10.00	12.00	14.00	5	18	-0.53	-0.33
Board Independence	95	0.81	0.75	0.82	0.88	0.55	0.94	42	0.70	0.61	0.67	0.75	0.45	0.93	-7.52 ***	-6.06 ***
Board Activeness	95	9.01	6.00	8.00	12.00	4.00	18.00	33	9.26	7.00	8.00	12.00	4	15	0.40	0.55
CEO / Chair Duality? (1=yes)	95	0.73	0.00	1.00	1.00	0.00	1.00	42	0.17	0.00	0.00	0.00	0.00	1.00	8.40 ***	7.36 ***
CEO Age (years)	95	55.54	52.00	56.00	59.00	41.00	68.00	42	53.98	48.00	54.00	59.00	40	65	-1.75 *	-1.27
CEO Tenure (years)	95	12.11	7.00	12.00	16.00	1.00	31.00	42	4.87	2.00	5.00	6.00	1	13	-6.95 ***	-6.85 ***
Director Age (years)	95	59.69	58.27	59.72	61.45	52.25	71.88	33	58.06	56.91	58.63	59.70	51.09	64.82	-2.99 ***	-2.80 ***
Director Tenure (years)	95	9.43	6.85	9.11	11.53	2.50	17.00	31	5.60	4.36	5.07	6.78	1.9	13.12	-6.37 ***	-6.06 ***
No of Women Directors	95	1.21	0.00	1.00	2.00	0.00	5.00	42	0.88	0.00	1.00	1.00	0	4	-1.94 *	-1.83 *
Mean Outside Directorships	95	0.89	0.20	0.67	1.44	0.00	3.00	30	1.69	1.00	1.54	2.65	0.19	4.07	4.67 ***	4.41 ***
Finance Background	95	0.19	0.10	0.15	0.25	0.00	0.89	27	0.24	0.14	0.23	0.31	0.08	0.6	1.44	2.55 **
No. of Board Committees	95	4.24	3.00	4.00	5.00	2.00	9.00	42	3.27	3.00	3.00	4.00	4	15	-3.84 ***	-3.31 ***
No. of Indep. Committees	95	3.76	3.00	4.00	5.00	1.00	8.00	42	2.31	1.00	2.00	3.00	0	5	-5.89 ***	-5.07 ***
Share of Indep Committees	95	0.87	0.80	1.00	1.00	0.17	1.00	42	0.68	0.50	0.71	1.00	0	1	-4.42 ***	-3.67 ***
Audit Committee? (1=yes)	95	0.99	1.00	1.00	1.00	0.00	1.00	33	0.70	0.00	1.00	1.00	0	1	-6.70 ***	-6.01 ***
Remuneration Committee? (1=yes)	95	0.95	1.00	1.00	1.00	0.00	1.00	32	0.63	0.00	1.00	1.00	0	1	-5.63 ***	-5.20 ***
Appointment Committee? (1=yes)	95	0.61	0.00	1.00	1.00	0.00	1.00	38	0.39	0.00	0.00	1.00	0	1	-2.44 **	-2.41 **
Audit Comm. Activeness	95	5.05	4.00	4.00	5.00	0.00	15.00	23	5.17	3.00	4.00	7.00	2	13	0.20	0.11
Remunerat. Comm. Activeness	95	4.54	3.00	4.00	6.00	0.00	18.00	20	3.10	0.00	3.00	4.50	0	8	-2.30 **	-2.17 **
Appoint. Comm Activeness	90	3.13	1.00	3.00	5.00	0.00	11.00	15	2.67	0.00	3.00	4.00	0	8	-0.71	-1.00
Age Diversity	95	8.54	6.73	8.08	10.29	3.71	16.09	33	8.08	7.03	8.16	8.84	4.63	14.94	-1.00	-0.81
Tenure Diversity	95	1.40	1.10	1.28	1.48	0.79	4.69	33	1.44	1.22	1.40	1.63	0.73	3	0.38	1.35
Expertise Diversity	95	0.75	0.43	0.70	0.92	0.20	2.27	33	1.05	0.84	1.08	1.27	0.47	1.83	3.71 ***	4.11 ***
Occupational Diversity	95	0.54	0.45	0.57	0.66	0.13	0.76	42	0.50	0.42	0.49	0.58	0	0.69	-2.23 ***	-2.62 ***
Gender Diversity	95	0.08	0.00	0.08	0.13	0.00	0.29	42	0.05	0.00	0.05	0.08	0	0.2	-2.69 ***	-2.70 ***

Table 6 Corporate Governance Variables by Terciles, Ranked by CAR[-2, 2]

For a sample of 137 completed bank mergers between 1996 and 2004 in Europe and the US, the table presents descriptive statistics for board variables for the highest and the lowest one third of observations based on five-day abnormal returns (market model) around acquisition announcements. Variable definitions are provided in Table 4. *t*-Statistics test for differences in means and *z*-statistics test for differences in medians (based in a two-sample Wilcoxon test).

	Lowest One Third					Highest One Third					$\Delta(\text{Low-High})$	
	N	Mean	Median	Min	Max	N	Mean	Median	Min	Max	Mean	Median
Panel A: European Banks												
Board Size	11	17.45	16	8	25	10	15.3	15.5	9	21	2.15 *	0.5 *
No. of Indep. Directors	11	12.45	12	5	18	10	9.8	10.5	6	13	2.65 *	1.5 *
Board Independence	11	0.72	0.71	0.45	0.92	10	0.66	0.63	0.55	0.91	0.06	0.08
Board Activeness	10	9.71	9	6	14	10	12.75	14.5	7	15	-3.04 *	-5.5
CEO / Chair Duality? (1=yes)	11	0.91	1	0	1	10	0.8	1	0	1	0.11	0
CEO Age (years)	10	53.6	53	49	60	9	57.44	59	46	65	-3.84	-6
CEO Tenure (years)	10	5.4	5	1	13	9	4.71	3	1	10	0.69	2
Mean Director Age (years)	11	57.36	57.02	53.3	60.38	10	57.37	58.74	51.09	60.91	-0.01	-1.72
Mean Director Tenure (years)	8	4.88	5.22	2.2	6.78	10	5.38	5.14	4.36	6.64	-0.5	0.08
No. of Women Directors	10	1.1	1	0	2	10	0.8	0	0	4	0.3	1
Occupational Diversity	10	0.56	0.54	0.46	0.69	10	0.53	0.5	0.37	0.68	0.03	0.04
Audit Comm. Activeness	11	4.6	4	3	8	10	4	4	2	6	0.6	0
Remunerat. Comm.	10	2.2	3	0	4	10	7	7	7	7	-4.8	-4
No. of Board Committees	11	3.36	4	1	5	9	3	3	1	5	0.36	1
No. of Indep. Committees	10	2.6	2.5	0	5	9	1.67	1.5	0	4	0.93	1
Share of Indep. Committees	10	0.7	0.9	0	1	9	0.47	0.5	0	0.8	0.23	0.4
Age Diversity	11	8.87	8.75	5.78	12.4	10	10.04	9.98	5.26	14.94	-1.17	-1.23
Tenure Diversity	11	1.32	1.44	0.73	2	11	1.52	1.31	1.22	2.01	-0.2	0.13
Expertise Diversity	11	0.99	1.05	0.47	1.61	10	0.96	0.87	0.84	1.16	0.03	0.18
Gender Diversity	10	0.06	0.06	0	0.09	10	0.05	0	0	0.2	0.01	0.06
Panel B: US Banks												
Board Size	31	14.55	14	6	31	30	14.7	13.5	8	26	-0.15	0.5
No. of Indep. Directors	31	11.87	11	5	27	30	12.3	11	6	23	-0.43	0
Board Independence	31	0.80	0.79	0.56	0.94	30	0.83	0.84	0.55	0.94	-0.03 **	-0.05
Board Activeness	31	9.77	10	4	16	30	9.37	9.5	4	15	0.4	0.5
CEO / Chair Duality? (1=yes)	31	0.26	0	0	1	30	0.37	0	0	1	-0.11	0
CEO Age (years)	31	53.03	53	42	61	30	56.23	57	46	66	-3.2 ***	-4 ***
CEO Tenure (years)	31	12.29	12	2	28	30	12.3	13	1	25	-0.01	-1
Mean Director Age (years)	31	58.34	58.33	53.75	61.89	30	60.54	60.07	52.25	71.88	-2.2 ***	-1.74 ***
Mean Director Tenure (years)	31	9.55	9.33	4.5	16.5	30	9.84	9.43	4	17	-0.29	-0.1
No. of Women Directors	31	1.26	1	0	4	30	1.2	1	0	4	0.06	0
Occupational Diversity	31	0.54	0.56	0.28	0.72	30	0.57	0.59	0.20	0.76	-0.03 **	-0.03 *
Audit Comm. Activeness	28	3.89	4	1	11	28	4.75	4	0	13	-0.86	0
Remunerat. Comm.	27	4.04	4	0	9	28	4	4	0	7	0.04	0
No. of Board Committees	31	3.9	3	2	8	30	4.4	4	2	7	-0.5	-1 **
No. of Indep. Committees	24	3.71	3	2	7	27	3.52	3	1	5	0.19	0
Share of Indep. Committees	24	0.9	1	0.33	1	27	0.8	0.83	0.17	1	0.1	0.17
Age Diversity	31	7.62	7.45	4.51	13.49	30	8.54	7.60	4.51	13.49	-0.92 **	-0.15 *
Tenure Diversity	31	1.46	1.24	0.92	4.35	30	1.45	1.24	0.79	4.69	0.01	0
Expertise Diversity	27	0.69	0.71	0.2	1.59	30	0.76	0.65	0.26	1.9	-0.07	0.06
Gender Diversity	31	0.09	0.08	0	0.25	30	0.07	0.07	0	0.21	0.02	0.01

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 7 CAR[-2, 2] and Board Characteristics at the Time of M&A Announcements

The table reports least squares regressions for a sample of 137 completed bank mergers between 1996 and 2004 in Europe and the US on five-day abnormal returns (market model) around acquisition announcements. Governance variables are defined in Table 4. The cash-only dummy equals one if the transaction is completely cash-financed (and zero otherwise) and the product focus dummy equals one if the first two digits of the four-digit SIC code between bidder and target are identical (zero otherwise).

	European Banks		US Banks	
	(1)	(2)	(3)	(4)
ln(Board size)	0.320 (2.687)	0.242 (3.051)	-0.063 (0.258)	-0.0894 (0.249)
ln(Board Activity)	-3.30 (2.21)	-2.424 (3.051)	3.788** (1.202)	-2.079* (1.216)
Chair / CEO duality	1.537 (1.150)	1.385 (1.146)	0.028 (0.174)	-0.045 (0.174)
Board independence	-0.606 (0.372)	-0.838 (0.877)	8.462** (2.839)	6.498*** (2.707)
ln(CEO age)	9.441* (4.957)	7.713 (5.666)	1.713* (0.948)	0.654 (0.379)
ln(CEO tenure)	-0.535 (0.663)	-0.011 (0.102)	-0.040 (0.105)	-0.165 (0.094)
Occupational diversity	-1.949 (4.584)	-1.973 (4.671)	1.366** (0.655)	1.129** (0.556)
Age diversity	-0.748* (0.402)	-0.698 (0.413)	0.010 (0.038)	0.017 (0.038)
Expertise diversity	0.199 (0.727)	0.146 (0.754)	0.897*** (0.245)	0.340*** (0.074)
Cash-only dummy		0.885 (1.592)		0.158 (0.212)
Product Focus dummy		0.719 (0.988)		0.251 (0.226)
Constant	-31.955 (22.475)	-20.922 (29.721)	-7.184* (3.877)	-6.528* (3.891)
Observations	31	31	94	94
R-squared (%)	2.20	3.62	9.52	11.25

Heteroskedasticity-robust standard errors are reported in parentheses.

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 8 Board Characteristics and Industry-adjusted Performance

The table reports least squares regressions for a sample of 137 completed bank mergers between 1996 and 2004 in Europe and the US on bidders' industry-adjusted OPFCROA (operating cash flows divided by the book value of assets) from year -1 to year 3 following the completion of a bank merger. Variable definitions are provided in Table 4. Governance variables are defined in Table 4. The cash-only dummy equals one if the transaction is completely cash-financed (and zero otherwise) and the product focus dummy equals one if the first two digits of the four-digit SIC code between bidder and target are identical (zero otherwise).

	European Banks		US Banks	
	(1)	(2)	(3)	(4)
ln(Board size)	-0.201 (0.380)	-0.359 (0.409)	0.037 (0.296)	0.079 (0.312)
ln(Board activity)	-0.084 (0.228)	-0.072 (0.231)	0.313* (0.178)	0.303* (0.180)
Chair / CEO duality (1=yes)	-0.026 (0.168)	-0.053 (0.171)	-0.146 (0.124)	-0.142 (0.127)
independent directors	-0.195 (0.396)	-0.179 (0.405)	-0.053 (0.306)	-0.010 (0.316)
ln(CEO age)	-1.040 (0.955)	-1.332 (0.994)	-2.469*** (0.713)	-2.407*** (0.724)
ln(CEO tenure)	-0.060 (0.119)	-0.027 (0.128)	0.110 (0.109)	0.124 (0.111)
Occupational diversity	1.117 (0.832)	1.124 (0.869)	1.354** (0.614)	1.276** (0.630)
Age diversity	0.710 (0.764)	0.697 (0.842)	0.586 (0.624)	0.489 (0.517)
Expertise diversity	0.745 (0.62)	0.261 (0.157)	1.216*** (0.275)	0.383*** (0.102)
Cash-only dummy		0.093 (0.218)		0.158 (0.168)
Product Focus dummy		0.259 (0.307)		0.047 (0.170)
Constant	4.806 (4.077)	6.278 (4.311)	8.745*** (3.026)	8.365*** (3.135)
Observations	31	31	94	94
R-squared (%)	3.41	4.63	14.51	16.63

Heteroskedasticity-robust standard errors are reported in parentheses.

* significant at 10%; ** significant at 5%; *** significant at 1%

Appendix 1

Bank Supervision in Europe and the US, 1998-2000

	Activities			Ownership		Disclosure		Discipline			
	Securities	Insurance	Real estate	Bank ownership of nonfinancial firms	Max of capital that related parties may hold in bank	Are directors legally liable for erroneous information?	Have penalties been enforced?	Does the law establish levels of solvency deterioration which forces automatic intervention?	Can supervisory agency remove and replace management?	Can supervisory agency remove and replace directors?	Can supervisory agency forbear certain prudential regulations?
Panel A: US											
United States	restricted [†]	restricted [†]	restricted	restricted	25	yes	yes	yes	yes	yes	no
Panel B: Europe											
Belgium	permitted	permitted	restricted	permitted	n.a.	yes	no	no	yes	yes	yes
Denmark	unrestricted [†]	permitted	restricted	restricted	n.a.	yes	no	yes	no	no	no
France	unrestricted	permitted	unrestricted	permitted	n.a.	yes	no	no	no	yes	yes
Germany	unrestricted	unrestricted	unrestricted	permitted	n.a.	no	n.a.	no	no	yes	yes
Greece	permitted	restricted	permitted	permitted	n.a.	yes	no	no	yes	yes	yes
Italy	unrestricted	permitted	prohibited	restricted	n.a.	yes	yes	no	yes	no	yes
Netherlands	unrestricted	permitted	unrestricted	permitted	n.a.	no	no	no	yes	yes	yes
Portugal	unrestricted	permitted	restricted	restricted	n.a.	yes	no	no	yes	yes	yes
Spain	unrestricted	permitted	restricted*	unrestricted	n.a.	yes	yes	yes	yes	yes	yes
Sweden	unrestricted	permitted	restricted	restricted	n.a.	yes	yes	no	yes	yes	yes
Switzerland	unrestricted [†]	unrestricted	unrestricted	permitted	n.a.	yes	yes	no	yes	yes	yes
United Kingdom	unrestricted	permitted	unrestricted	unrestricted	n.a.	yes	yes	no	yes	yes	yes

[†] permitted in 2004

* unrestricted in 2004

unrestricted = full range of activities can be conducted directly in the bank;

permitted = full range of activities can be conducted, but some or all must be conducted in subsidiaries;

restricted = less than full range of activities can be conducted in the bank or subsidiaries;

prohibited = the activity cannot be conducted in either the bank or subsidiaries.

Source: Barth et al. (2006), Worldbank : <http://go.worldbank.org/SNUSW978P0>