Pay for Performance?
CEO Compensation and Acquirer Returns in BHCs

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Abstract

We examine the effect of incentive-based compensation on bank mergers. Controlling for other characteristics, we find that banks with higher pay-performance sensitivity (PPS) are less likely to engage in mergers. However, when these high PPS managers do undertake mergers, financial markets expect good results and react positively. We find positive abnormal announcement returns for both bondholders and stockholders for banks with high PPS executives. Following acquisitions, these banks also experience significantly more improvement in their operating performance as measured by ROA.

Keywords: Pay-for-Performance Sensitivity, CEO Compensation, Acquirer Returns

JEL Classification: G34, G21

1 Introduction

Top executive pay has increased substantially over the last three decades: the average total remuneration for CEOs in S&P 500 firms (in 2002 constant dollars) increased from $850,000 in 1970 to over $14 million in 2000, and in the same period, the average value of options soared from near zero to over $7.0 million (Jensen, Murphy, and Wruck, 2002).

Despite the long-standing media campaign claiming that chief executives make too much money, economic theories recognize that performance-based compensation can better align managers' interests with shareholders', and as a result, can create value through more efficient investment decisions (e.g., Morck, Shleifer, and Vishny, 1988; McConnell and Servaes, 1990; and Jensen and Murphy, 1990). However, the empirical support for this "corporate governance" role of performance-based compensation is at best mixed. For example, Datta, Iskandar-Datta, and Raman (2001) show that when managers have high equity-based compensation, companies achieve better stock returns around acquisitions. In contrast, Harford and Li (2007) provide evidence that executive compensation can be the cause rather than the cure for growing agency problems. They show that the adverse impact of the post-merger poor stock-price performance on the executives' wealth is offset by the generous stock and option grants these executives receive after acquisitions and that these grants increase the likelihood of value-destroying acquisition decisions.

In this paper, we add to this debate by examining the relationship between executive compensation design and shareholder-bondholder interests in bank holding company (BHC) mergers. The central hypothesis of the paper is that higher performance-based compensation leads to value-enhancing merger decisions. We test this hypothesis at three levels. First, we study how pay-for-performance sensitivity in CEO compensation affects acquisition decisions for BHC. Second, we examine the merger announcement returns for shareholders and bondholders to observe the market's valuation of top executives' compensation structures. Lastly, to capture the "real" effect, we analyze the relationship between changes in operating performance around acquisition and executive compensation at time of acquisition.

Banks provide a natural experiment to assess the role of compensation in the merger decisions for a number of reasons. First, the banking industry has gone through rapid consolidation since the late 1980s, allowing us to observe a large number of cross-sectional relationships. Second, because the industry is homogeneous and most banks operate only in the financial industry, acquisitions are not diversification driven. Finally, focusing on a single and homogeneous industry alleviates the challenges that multi-industry studies face in using fixed-effect controls that may not be broad and detailed enough in terms of industry definitions. Thus, the large number of these homogeneous mergers allows a unique way to test whether executive compensation design leads to size-driven mergers that reward managers or to value-enhancing mergers that benefit stakeholders.

Our sample consists of 178 BHC merger deals in the 1990-2005 period. To capture the possible interactions among various governance measures, we construct a comprehensive governance database for our sample merging banks as well as for non-merging benchmark BHCs. This database includes both internal and external governance measures, such as board monitoring, managerial compensation, institutional ownership, and market for corporate control.

We find that both acquires and targets have lower incentive compensation, as compared with our benchmark banks, which do not participate in mergers. The multivariate regression results show that, controlling for bank and deal characteristics, banks with higher pay-performance sensitivity are less likely to engage in mergers. However, the announcement returns for BHCs with higher pay-performance sensitivity are significantly better, and this is true for both shareholders and bondholders. In other words, despite the lower propensity to merge, when these managers make acquisition decisions, they are more likely to engage in value-enhancing mergers. This is further supported when we examine changes in operating performance post-merger. We find that acquirers with higher pay-performance sensitivity prior to the acquisition also experience greater long-run improvements measured by higher return on assets.

Our findings make three contributions to the literature. First, we add to Bliss and Rosen (2001), who study the effect of CEO compensation on merger decisions in BHCs from 1986 to 1995. They find that CEOs with high performance-based compensation are less likely to make acquisitions. They argue that this is plausible because after an acquisition, the cash-based compensation generally increases due to the size effect but the performance-based compensation suffers due to the decline in stock prices. In this paper, we extend their study to explore the possibility that performance-based compensation can make value-enhancing acquisitions more worthwhile for managers. As a result, managerial incentive can serve dual roles: not only does it prevent value-destroying acquisitions from taking place, but it also motivates CEOs to make value-enhancing acquisitions. Falato (2007) finds similar results for non-financial industries.

Second, we add to the findings in the area of bank corporate governance. Banks are regulated to a higher degree than non-financial firms, but it remains unclear whether the governance issues identified as significant in non-financial firms are significant in banks (Adams and Mehran, 2003; and Capiro, Laeven, and Levine, 2003). For instance, regulatory supervision that ensures that banks comply with regulatory requirements can play a general monitoring role, which can act as a substitute for or complement to other monitoring mechanisms. The empirical evidence on the interaction of regulation and corporate governance and its impact on value is not conclusive. For example, Mehran (1995) and Belkhir (2004) find that bank performance improves when managers receive stock-based compensation. On the other hand, John and Qian (2003) argue that since banks are regulated, highly levered, and larger, they should have lower pay-performance sensitivity. Furthermore, John, Mehran, and Qian (2006) find that when regulator scrutiny is high, perk

consumption becomes the larger driver as compared with risk shifting. Finally, Adams and Mehran (2002) show that unlike manufacturing firms, banks with larger boards tend to have higher value, as measured by Tobin's Q. Our paper provides new evidence that managerial incentives can serve as an effective mechanism in corporate governance for banks.

Finally, we contribute to the literature that explores the channel through which corporate governance affects firm performance. Specifically, our findings corroborate Masulis, Wang, and Xie (2007) (henceforth MWX), who show that among non-financial firms, acquirers with strong shareholder rights, measured by the anti-takeover provision index (ATP), have higher abnormal announcement returns in mergers. Consistent with MWX, we provide evidence that for BHCs, strong governance enhances value through better merger decisions. Further, we show that for BHCs, after controlling for managerial incentives, the positive effect from ATP documented in MWX becomes insignificant, suggesting that different governance schemes can serve as substitutes. That is, high pay-performance sensitivity can act as an efficient internal governance mechanism to supplement the role played by external governance mechanisms, such as the market for corporate control.

Our findings have an important policy implication. For BHC merger decisions, the pay-performance sensitivity appears to be the most important driver among all governance measures studied in this paper. It significantly affects the success of acquisition, with or without controlling for other governance measures. Both stock and bond markets view acquisitions made by CEOs with high pay-performance sensitivity as more profitable, and in the end those acquisitions lead to improvements in operating performance. In other words, market participants do care about the compensation design at BHCs, and for good reason. Hence, regulators should follow suit and include top management compensation structure as part of the supervision process.

The rest of the paper proceeds as follows: Section 2 describes our data and compares governance measures between merging and non-merging banks. Section 3 provides a model to estimate the probability of a merger and the impact of governance variables on this decision. Section 4 studies the market reaction to the merger announcement. Section 5 examines the relationship between governance and performance measured by changes in the ROA. Section 6 concludes.

2 Data

2.1 Sample Selection and Characteristics

Our acquisition sample is from Thompson Financial's SDC Platinum Mergers and Acquisitions database. We use the SIC code of 6020[1] and identify acquisitions made between January 1990 and

[1] SIC 6020 denotes Commercial Banks and Financial Institutions.

December 2005 in the banking industry that meet the following criteria:

- The acquisition is completed.
- The deal value disclosed in SDC is greater than $50 million.
- The acquirer has annual financial statement information from COMPUSTAT Bank or Call Report and stock return data from the University of Chicago's Center for Research in Security Prices (CRSP) at least a year prior to the acquisition.
- The compensation data are available either from Compustat's Execucomp database or (for the acquirers or targets before 1992) from proxy statements a year prior to the acquisition.

Our sample consists of 178 deals made by 65 acquiring BHCs (some acquirers have multiple acquisitions) and 63 target banks. Table I shows the number of transactions by year, the market cap of acquirers, and the number of acquisitions undertaken by acquirers. Consistent with the reported non-financial merger activity in MWX, 1998 proves to be the most active year for BHC mergers during our sample period. The $1990 - 2004$ sample-period average acquirer has a market cap of $10.39 billion, and the size of the acquirer increases over time from $3.4 billion in 1990 to $26.05 billion in 2004.[2] The BHC mergers can be considered as mega-mergers compared with non-financial mergers. Indeed, MWX report the average acquirer to have a market cap of $5.59 billion for the $1990 - 2003$ period, which is roughly half the size of the BHC average merger size. The average deal value over the sample period as a percentage of the acquirer's market capitalization ratio is 35% (compared with 16% in MWX's sample), and the average target is about 12% of the size of the acquirer prior to the acquisition. Panel B shows that among 65 acquirers, 29 banks (45%) have undertaken only one acquisition, and 10 banks (15%) have done at least five acquisitions over our time period.

[INSERT TABLE I HERE]

Table II presents the summary statistics for the deals. The average size of the transactions is close to $1.6 billion, and almost all deals involve a 100% ownership transfer. In terms of financing, we observe that there is a remarkable difference between the financing of non-financial and bank mergers. While in our sample only 6% of the deals were financed with 100% cash, MWX report that 46% of their non-financial merger deals were financed by 100% cash. A large percentage of mergers (72%) are between banks in different states, and 21% of the transactions are completed by banks that are first-time acquirers.

[2] The average acquirer has a market value of $4.7 billion between 1984 and 1995 in the Bliss and Rosen (2001) sample.

[INSERT TABLE II HERE]

To compare acquiring banks with their non-merging counterparts, we construct a benchmark sample using all bank-years that are not involved in acquisitions (i.e., the bank is neither an acquirer nor a target in that year) and that have information in Execucomp database. Our benchmark sample has 700 bank-years. Across the sample period, the ratio between the number of banks in our acquirer sample and the number in our benchmark sample has a mean of 37% with a standard deviation of 16%. For a robustness check, we also use an alternative benchmark sample consisting only of banks that have never participated in acquisitions. The results are qualitatively the same.

2.2 Corporate Governance Variables

In our analyses of the impact of CEO compensation on the acquisition decisions, we control for other corporate governance mechanisms. Toward that end, we compile data on internal and external governance variables. As a proxy for an internal monitoring mechanism, in addition to compensation, we use board size. The proxies for external governance mechanisms are the anti-takeover provisions and institutional ownership. Table III provides summary statistics on these variables together with firm characteristics.

[INSERT TABLE III HERE]

CEO Compensation We collect the CEO compensation data, including annual salary, bonus, new grants of restricted stock and option grants, and stock and option holdings from past grants, from Execucomp database. For bank-years before 1992, the data are hand-collected from the proxy statements whenever available. To measure the magnitude of incentive-based compensation, we calculate the pay-performance sensitivity (PPS) as defined in Core and Guay (1999). PPS measures the change of a CEO's wealth (in thousand dollars) from her stock and option holdings given a 1% change in stock price. Options are valued using the Black-Scholes formula, assuming a ten-year maturity and stock price volatility is estimated from monthly stock return in the year of the grant. Following Core and Guay (1999), we include both the existing and newly awarded grants to measure the overall wealth effect. This approach is different from that of Bliss and Rosen (2001), who consider only the percentage of equity-based compensation for the current year. In addition to calculating the total PPS (PPS), we also break it into individual components based on stock holdings (SPPS) and option holdings (OPPS). Since pay-performance sensitivities are heavily skewed to the right, we use the natural log of PPS instead of the raw value.

Table III shows that the median total compensation in acquirer banks is \$1.11 million, which represents 53% of total new compensation. Although total compensation has increased during the sample period (from \$1.70 million in 1992 to \$3.12 million in 2004), the percentage that is based on cash has decreased significantly over time. Figure 1 Panel A shows that over our sample period, cash compensation of bank CEOs as a percentage of total compensation decreased from 68% to 44%. Consistent with this decline, PPS has increased dramatically over time. Figure 1 Panel B shows the time trend of total PPS for both benchmark sample and acquiring banks, where we observe that both the option and the share components of PPS have steadily increased during the 1992-2004 period. Turning back to Table III, we observe that for every 1% increase in stock price, the acquirer CEO gains \$189,896 in wealth, 45% of which comes from the existing and newly awarded stocks. CEOs in the benchmark sample have similar total compensation structure: the median cash compensation is \$1.10 million, accounting for 53% of the total compensation. However, benchmark CEOs have higher PPS relative to the CEOs of acquiring BHCs. For every 1% increase in stock price, a benchmark CEO gains \$243,406 in wealth in contrast to the \$189,896 wealth increase for the acquiring CEO. The difference in PPS between acquirer CEO and benchmark is significant at the 10% level.

[INSERT FIGURE 1 HERE]

Board Structure It is well documented in the literature that the size and composition of a board of directors influence the effectiveness of monitoring. Smaller boards (Yermack, 1996; Jensen, 1993; and Lipton and Lorsch, 1992) with more outside directors (Weisbach, 1988; Brickley and James, 1987; and Brickley et al., 1994) tend to have higher stock returns. Following this literature, we collect information from Investors' Responsibility Research Center's (IRRC) Director database on board size (BSize), the percentage of independent directors (BIndep), and whether the CEO is also the chairman of the board (D_CEO). IRRC data are from 1996 and onward. For other years, we hand-collected information from proxy reports whenever it is available.

Consistent with Adams and Mehran (2002), we also find that BHCs have large boards. The average bank in the benchmark sample has 15 directors, as compared with an average of 17 directors in acquirer banks. More than half of the directors are independent (70% for the benchmark sample and 69% for acquiring banks). The majority of the banks have a CEO who is also chairman of the board (92% for the benchmark sample, 88% for acquiring banks, and 89% for target banks).

Anti-takeover Provisions A series of research studies in the recent literature have documented the governance role of the market for corporate control (Gompers, Ishii, and Metrick [GIM], 2003; Bebchuk, Cohen, and Ferrell [BCF], 2004; and Bebchuk and Cohen [BC], 2005). These studies show that negative relations exist between various anti-takeover-provision (ATP) measures and the firm value. MWX further find that acquirers with more ATPs, i.e., weaker shareholder rights, also have lower merger announcement returns. The GIM index is based on 24 ATPs collected by IRRC, the BCF index is based on 6 out of the 24 ATPs, and the BC index is a binary variable based on whether a firm has a staggered board. Since most of the acquisitions in the banking industry are friendly rather than hostile, we use the BCF Entrenchment index (EIndex) as the main proxy to capture the managerial entrenchment, and our results are robust based on the other two measures (the GIM and BC indexes denoted by GIndex and BCIndex).[3] The higher levels of EIndex and GIndex indicate more managerial power.

Table 3 shows that there exist no differences in terms of EIndex and GIndex between the acquirer and the benchmark BHCs. The interesting finding is that the levels of both the EIndex and the GIndex for our sample BHCs are remarkably similar to the ones reported for the non-financial sample in MWX. MWX show that average EIndex and GIndex values are 9.45 and 2.24 for $3,333$ completed non-financial acquirers. These values are 9.97 and 2.65 for our sample acquirers. Given that the threat of hostile takeovers is not nearly as high for BHCs as it is for non-financial firms, this finding raises the possibility that these anti-takeover provisions are included in corporate charters just as a matter of standard practice, unreflective of the takeover threat. In terms of having a staggered board (CBoard), our sample BHCs are above the non-financial firms. Table III shows that 72% of our acquiring BHCs have staggered boards, and MWX report this number to be 61%.

Institutional Ownership Both theory (Shleifer and Vishny, 1996; and Watts, 1988) and empirical evidence suggest that institutional ownership can beneficially influence managerial practice. For example, greater institutional holdings are associated with better investments (Smith, 1996), more-aligned compensation (Hartzell and Starks, 2003), greater performance-sensitive CEO turnover (Parrino, Sias, and Starks, 2003), and more-informative financial information (Rajgopal and Venkatachalam, 1997).

We calculate the institutional ownership using Institutional Money Manager (13f) Holdings in the CDA/Spectrum database. Acquirer banks have an average institutional ownership of 42%, with a standard deviation of 17%. Little difference exists between the acquirer banks and the benchmark.

[3] The Entrenchment Index (EIndex) is based on four "constitutional" provisions that prevent a majority of shareholders from having their way (staggered boards, limits to shareholder bylaw amendments, super majority requirements for mergers, and super majority requirements for charter amendments) and two "takeover readiness" provisions that boards put in place to prevent hostile takeovers (poison pills and golden parachutes).

Table III Panel C shows the correlation matrix of the governance variables. Banks with high pay-performance sensitivity also tend to have smaller boards, CEOs who are also the chairman of the board, and lower Entrenchment Index.

3 Probability to Acquire

Bliss and Rosen (2001) argue that acquisitions lead to higher cash compensation due to size effect but to lower stock prices due to value destruction. As a consequence, CEOs with more stock-based compensation are less likely to engage in acquisition. Bliss and Rosen's (2001) empirical findings confirm this argument. Our hypothesis takes the Bliss and Rosen (2001) arguments one step further and maintains that when these unwilling CEOs make an acquisition decision, it is likely to be value enhancing. However, before we present our central tests, it is instructive to test the applicability of the Bliss and Rosen findings to our sample. Hence, we perform similar analyses using pay-for-performance sensitivity.[4]

We estimate the following logit model:

$$D(ACQ_{i,t+1}) = c_1 + c_2 GOVERNANCE_{i,t} + c_3 CONTROLS_{i,t} + \epsilon_{i,t+1} \tag{1}$$

where $D(ACQ)$ is an indicator variable that equals 1 if an acquisition announcement is made by BHC i in year $t+1$ and 0 otherwise.

For bank characteristics, we control for size, operating performance, and the expected risk of the bank's portfolio, all of which are measured at one year prior to the acquisition announcement. We define size (Size) as the natural log of the bank's total assets, and use return on assets (ROA) as our measure for operating performance. Since banks may choose to acquire assets for risk sharing, we also control for portfolio risk using loan-loss-provision ratio (Penas and Unal, 2004). Bliss and Rosen (2001) point out that mergers may be positively or negatively auto-correlated, depending on whether the bank follows a merger strategy. Therefore, we include an indicator variable denoting whether the bank has already participated in acquisitions (D_Merger). Abnormal stock price increases may encourage merger activity due to hubris or lower financing cost. To control for this effect, we include the average stock return (Ret) as well as the volatility of return (Ret_Vol) one year prior to the acquisition announcement. We also include the level of cash holdings (Cash) to control for the agency problem generated by free cash flow in as much as higher cash holdings lead to inefficient mergers (Jensen, 1986).

[4] Bliss and Rosen use the percentage of compensation that is related to stock as their measure for incentive-based compensation, whereas our study considers the change of a CEO's wealth from both current and vested stocks and options.

In contrast to Bliss and Rosen (2001), who use only the cash compensation to total compensation ratio, we use all three pay-performance-sensitivity measures − total PPS (PPS), Option PPS (OPPS), and Stock PPS (SPPS). We also control for a larger set of internal and external governance proxies such as managerial entrenchment (E-Index and staggered boards), board structure (board size, percentage of independent directors), and institutional ownership. Table IV presents our results.[5]

[INSERT TABLE IV HERE]

Like to Bliss and Rosen (2001), we find that banks in which CEOs are better aligned with shareholder interests through the use of incentive compensation are less likely to make acquisitions. Results are robust using stock PPS, option PPS, or total PPS, with or without controlling for other governance measures. Table V presents the sensitivity of the merger probability to higher levels of performance-based compensation. Moving from the 25th percentile to the 75th percentile in total PPS decreases the probability of acquisition from 18.8% to 13.7% (a 24% relative change), and moving from one standard deviation above the mean to one standard deviation below the mean in total PPS decreases the acquisition probability from 21.3% to 12.4% (a 37% relative change). Similar results are obtained using stock PPS and option PPS. Clearly, performance-based compensation becomes a deterrent to acquisition decisions.

[INSERT TABLE V HERE]

The importance of this finding can be seen by observing that other governance variables such as entrenchment index, board structure, or level of institutional ownership do not seem to have any significant effects on acquisition probabilities, and including these variables in the regression does not affect the significance of PPS. We also find that larger banks are more likely to make acquisitions, and whether a bank has already participated in an acquisition significantly affects its probability of making another acquisition. Prior stock returns are also positively related to acquisition probability. Contrary to the prediction of free-cash-flow theory, cash holdings have negative effect on acquisition probability.

We conduct several alternative specifications for a robustness check. For example, we use an alternative benchmark sample in which we include a bank-year in the benchmark sample only if the bank has never engaged in merger activity during the sample period. We also check for different specifications using Probit models. None of these checks changes our results significantly.

[5] Our Pseudo R^2s are lower than those of Bliss and Rosen (2001), who have an average Pseudo R^2 of .50. Ours are between .08 and .15, which are similar to those in other bank-merger papers (Bostic, Mehran, Paulson, and Saidenberg, 2002).

4 Announcement Returns and Compensation

In this section, we use an event study method to examine the stock and bond price reaction to acquisition announcements by acquirer banks. Research has shown that mergers benefit all stakeholders through diversification, synergy, or implied government guarantee due to the too-big-too-fail effect (Berger and Humphrey, 1992; Becher, 2000; and Penas and Unal, 2003;). However, other studies find that mergers fail to improve a bank's operating performance or to produce positive abnormal returns to shareholders (Houston and Ryngaert, 1994; and Rhoades, 1994). In this paper, we do not intend to take any position in this debate. Rather, we focus on testing our central hypothesis that banks with better aligned managerial incentives are more likely to make value-maximizing mergers.

4.1 Stock Returns

4.1.1 Univariate Analysis

We measure acquirer announcement returns using the market model adjusted stock returns around initial acquisition announcement. The announcement dates are obtained from Thompson Financial's SDC Mergers and Acquisition Database. We compute the cumulative abnormal returns (CAR) in a three-day and a five-day window, (-1, +1) and (-2, +2), where event day 0 is the announcement date. We use CRSP value-weighted return as the market return and estimate market model parameters over the 200-day period from event day -220 to event day -21. We check the robustness of our results by using CRSP equal-weighted return as the market return and the results remain qualitatively the same.

As Table VI Panel A shows, the 3-day and 5-day CARs are widely dispersed for acquirers in our sample, ranging from -8.78% to 8.82% and from -10.64% to 12.40%, respectively. Neither the mean nor the median is significantly different from zero, similar to the announcement returns presented for BHC mergers in James and Wier (1987). Figure 2 presents the histogram of returns.

[INSERT TABLE VI AND FIGURE 2]

We next provide a univariate test of our hypothesis. To construct the test, we first sort our observations according to total PPS and form three groups of PPS so that each group has one-third of the observations. Group 1 has the least PPS and Group 3 has the most PPS. Table VI Panel B shows the statistics for each PPS group. For every 1% change in stock price, the median CEO in the Low-PPS group has an average wealth increase of $\$56,870$, as compared with an increase of $\$976,440$ for the median CEO in the High-PPS group. Panel C presents the comparison of CARs between the Low-PPS and High-PPS acquirers. We observe that on average, the Low-PPS bank

has a CAR of -0.235%, whereas the High-PPS bank has a CAR of 0.475% around acquisition announcement. The difference is significant at the 10% level. We find similar results using PPS Stock and PPS Option. Figure 3 shows the comparison through box plots.

[INSERT FIGURE 3 HERE]

These findings provide initial support for our hypothesis. The next section presents other possible determinants of acquirer stock returns followed by results for multi-variate tests where we control for three categories of factors: acquirer characteristics, deal characteristics, and other governance measures.

4.1.2 Acquirer and Deal Characteristics and Other Governance Measures

Moeller, Schlingemann, and Stulz (2004) find evidence that acquirer returns are negatively related to bidder size, regardless of the method of payment or whether the target is public or private. Since banks are in general larger than non-financial firms, it is not clear whether those results hold for our sample. Penas and Unal (2003) document a significant too-big-to-fail (TBTF) factor when examining returns around acquisitions. They show that bondholders and stockholders of medium-sized banks realize the highest returns when the acquiring banks push the combined bank's asset size above the TBTF threshold. We control for the size effect by including the log of total assets (SIZE) in our regression.

Neoclassical theory suggests that acquisitions are ways to reallocate resources to their best use (Jovanovic and Rousseau, 2002). Meanwhile, agency theory such as Jensen (1986) shows that managers have incentives to overinvest for their private benefit when there exists free cash flow. Taking both arguments into account, we control for the acquirer's operating performance using return on assets (ROA) and the firms' cash holdings, adjusted by total assets (CASH).

For deal characteristics, we control for the relative size ratio, the method of payment, previous merger activity, and geographic diversification. Asquith, Bruner, and Mullins (1983) show that bidder announcement returns are positively related to relative deal size while Moeller, Schlingemann, and Stulz (2004) show that for a subsample of large bidders, the reverse is true. Our sample is more similar to Moeller, Schilingemann, and Stulz's large-acquirer sample: the market value of equity for the average (median) acquirer in our sample is \$9.5 (\$3.2) billion, as compared with \$3.1 (\$0.8) billion in Asquith, Bruner, and Mullins (1983) sample. We calculate the relative size (SIZE_RATIO) as a ratio between the deal value and the acquirer's market capitalization. For a robustness check, we also use the asset size ratio of the target banks to those of the acquirer banks prior to the merger (RelSize) as an alternative measure.

We control for the method of payment by including an indicator variable, D_Stock, which takes the value of one if the deal is more than 75% financed by equity. It is documented in the literature that acquirers experience significant abnormal returns when they pay for acquisitions with equity due to the adverse selection problem in equity issuance.

We also create a binary variable to indicate whether the acquirer has made any acquisition prior to the announcement (D_MERGER). Since interstate mergers are shown to offer either fewer opportunities for increased market power (Prager and Hannan, 1998) or fewer cost savings (Houston and Ryngaert, 1994; and Houston et al., 2001), we include a binary variable OutofState to control for geographic diversification. It takes the value of one if the merger is out-of-state and zero otherwise.

For governance measures, we control for board structure (BSIZE, B_INDEP, D_CEO), managerial entrenchment (E_Index), and institutional ownership (INST SHR). All control variables are measured at the fiscal year-end prior to the acquisition announcement. For brevity, in the rest of the paper we report only results based on the 3-day window. Results based on other event windows, such as (-2, 2), (-3, 1) and (-5, 1), are qualitatively the same.

4.1.3 Results

We use the following specification:

$$CAR_i = c_0 + c_1 GOV_i + c_3 Controls_i + \epsilon_i \tag{2}$$

where CAR is the abnormal returns for acquirer stockholders, and GOV includes governance variables such as pay-performance sensitivity (SPPS, OPPS, PPS), board size (BSize), percentage of independent directors (Indep), Dual Chair (D_CEO), entrenchment index (EIndex), and institutional ownership (INST SHR).

[INSERT TABLE VII HERE]

Table VII summarizes the results of our estimation. Columns 1-3 show that, controlling for acquirer and deal characteristics, all three PPS measures (PPS, SPPS, OPPS) have positive coefficients at the 5% significance level. In Columns 4-6 we test whether the significance of PPS is affected by the inclusion of board characteristics, EIndex, and institutional ownership variables, respectively. PPS remains significant in all three cases at the 1% level. In Column 7, we include all governance variables. PPS remains significant, and the coefficient estimate shows that a 1%

increase in the log of PPS of the CEO increases the acquirer returns 0.798%. Given that the average abnormal return is 0.26%, the impact is economically significant. These findings support our univariate test results.

To better understand the economic significance of the relationship between PPS and acquirer returns, we estimate the sensitivity of the stock market reaction to different levels of PPS. Using the specification presented in Column 7 in Table VII we estimate the abnormal return increase to one standard deviation increase in the PPS (see Table VIII). We find that the abnormal return for the High-PPS bank (PPS equals to the mean plus one standard deviation) is 1.179%, and for the Low-PPS bank (PPS equals to the mean minus one standard deviation) it is -0.154%. The difference is even more substantial when we replace PPS with SPPS or OPPS.

[INSERT TABLE VIII HERE]

Turning back to Table VII, we observe that EIndex is negative but marginally significant in Column 5. This finding implies that acquirer announcement returns are higher when the banks have fewer anti-takeover provisions. This result corroborates the evidence documented by MWX for non-financial merger cases. However, the significance of EIndex disappears when we control for all other governance measures. Interestingly, in a similar regression specification, the EIndex remains significant in MWX, indicating that different governance mechanisms can have industry specific channels to affect value. Significance of institutional ownership in Columns 6 and 7 shows that another channel of external governance mechanism is still at work. Hence, the multivariate analysis shows that for BHCs, high pay-performance sensitivity acts as an efficient internal governance mechanism to supplement the role played by external governance mechanisms such as the market for corporate control.

Examining the control variables, we find that acquirer returns are negatively related to the relative size ratio, consistent with findings from Moeller, Schlingemann, and Stulz (2004) for their large-acquirer sample. Some specifications suggest a negative relationship between cash holdings and acquirer returns, favoring the free-cash-flow hypothesis proposed by agency theory.

4.2 Bond Returns

The impact of the compensation structure of top executives has an ambiguous impact on the credit risk of the firm. If the compensation design causes greater managerial entrenchment, or if managerial pay-for-performance is structured such that the firm's investment decision benefits the shareholders by increasing the volatility of the firm's earnings at the expense of the bondholders, it

will increase the credit risk of the firm. On the contrary, if the pay-for-performance structure leads to investment decisions that increase the firm value, then we obtain the prediction that bondholders benefit from the compensation structure in place.

The previous section shows that shareholders consider PPS to be an important determinant of the value-enhancing acquisition decisions of the BHCs. However, it is unclear how bondholders evaluate the relationship between PPS and acquisition decisions. If they see that these acquisitions reduce the credit risk of the firm, they must value high PPS together with the shareholders. Therefore we obtain a second hypothesis, which argues that higher performance based compensation leads to reduction in the credit risk of the firm. To test this hypothesis, we estimate abnormal bond returns around the acquisition announcement dates. Such an investigation is also warranted to further check the robustness of our findings regarding shareholder returns.

We measure bondholder abnormal returns using the LBBD database and follow Maxwell and Stephens' (2003) approach that uses a mean-adjusted-return model to account for changes in the term structure. We first calculate excess monthly holding-period return as the monthly return on a bond minus the return on a maturity-matched Treasury security. Then, using the average monthly excess return in the last 6 months as the expected excess return for the announcement month, we calculate the abnormal bond return (BAR) as the difference between the excess monthly return in the announcement month and the mean expected excess return. We should note that the LBBD database contains only monthly data rather than daily returns (Warga and Welch, 1993). But, as argued by Brown and Warner (1980) and Maxwell and Stephens (2003), this shortcoming should bias us only against finding any significance, since the effect of the announcement is diluted.

Due to data limitations, merging our sample with bond return information reduces our sample size significantly.[6] We have 136 bond return data points for 18 acquisitions. The majority of banks in the sample have multiple bonds outstanding, ranging from two to thirty issues. Previous literature uses two approaches: either treat each bond issue as a separate observation, or measure returns as a weighted average (based on market values) of the abnormal returns to all different bond issues (Maxwell and Stephens, 2003). Our reported results are based on the first method. However, we get similar results in regard to signs, significance, and coefficients for the second method.

As with the stock returns, the abnormal returns for bondholders are widely dispersed. Table IX Panel A shows the minimum, maximum, and average abnormal returns of acquirers in our sample, and Figure 4 presents the corresponding histograms. The average cumulative abnormal bond return for acquirers is -0.10% for the (0,1) window, and -0.25% for the $(-1, 1)$ window where $t = 0$ is the event month when acquisition announcements are made.

[6] The Lehman Bond database has data only up till 1998, and so we do not have any mergers post 1998.

[INSERT TABLE IX AND FIGURE 4 HERE]

Table IX, Panel B shows the breakdown of bond returns for different PPS groups based on total PPS, SPPS, and OPPS. The grouping of the PPS is similar to that of Table VI. We observe that on average, the Low-PPS bank has an abnormal bond return of -0.566% while the High-PPS group shows an abnormal bond return of 0.173%. We find similar results using PPS Stock and PPS Option. Figure 5 shows the comparison through box plots. These univariate tests establish the initial evidence that bondholders view high pay-for-performance compensation as reducing credit risk of the BHC.

[INSERT FIGURE 5 HERE]

As with stock returns, we analyze the relationship between PPS and abnormal returns in a multivariate regression setting and estimate the following specification:

$$BAR_i = c_0 + c_1 GOV_i + c_3 CONTROL_i + \epsilon_i \tag{3}$$

where BAR_i is the abnormal return for bondholders of acquirer bank i from one month before to one month after the announcement. The governance variables (GOV) and control variables ($CONTROL$) are the same as those in Equation (2).[7] Again, a positive coefficient for PPS would indicate that bondholders favor the acquisitions made by banks with high incentive-based compensation. Table X presents the results of our estimation.

[INSERT TABLE X HERE]

As with abnormal stock returns, we find very significant results for the PPS variables. Individually or together with other governance variables, PPS is significant at the 1% level. Column 5 shows that a 1% increase in PPS increases the bond returns 1.75%.

Table X also shows that larger banks experience worse bond returns than smaller banks and that higher volatility in stock returns leads to negative bond returns. Like shareholders, bondholders also react negatively to deals financed with stock and deals where the size ratio between target and acquirer is larger. It is interesting to note that bondholders react positively to acquisitions made by banks with high ROA and high cash ratios. This finding is plausible and shows that for acquirers with higher earnings and higher cash on hand, the risk of default on the bonds after acquisition is significantly reduced.

[7] We dropped the institutional ownership variable due to a limitation in data. Additionally, we drop the dual chair CEO dummy since all of our banks with bond data have a dual CEO/Chair.

5 Performance Change Following a Merger

In the previous sections, we show that acquisition announcements made by banks with high PPS have significantly higher returns for both shareholders and bondholders, suggesting that market participants expect acquisitions to deliver value in the future when CEO compensation includes higher performance-based elements. In this section, we study the change of operating performance for the acquirer following the merger, and examine whether the higher returns at the announcement can be justified by greater improvement after the merger.

The literature has mixed results on post-merger gains in banks. These papers measure performance change by focusing on operating costs per employee or the bank's efficiency ratio (where the efficiency ratio is non-interest expense divided by the sum of net interest income and non-interest income). Cornett and Tehranian (1992) and Spindt and Tarhan (1992) find increases in post-merger operating performance, whereas Berger and Humphrey (1992), Piloff (1996), and Berger (1997) do not.

We use return on assets (ROA) as our measure for operating performance in this paper, and focus on changes. First, we collect quarterly data to match the quarter before the merger to eight quarters after the announcement. Then, we calculate the change of ROA as the difference between acquirer's ROA after the acquisition and the combined acquirer-target ROA prior to the acquisition. For the "synthetic" combined ROA prior to the acquisition, we use a weighted average based on acquirer's and target's market capitalization. For a robustness check, we also perform an analysis using the event window (-1, 4), where time 0 is the quarter within which the announcement is made, and we obtain similar results.

Our base specification is as follows:

$$\Delta ROA_{it} = d_0 + d_1 GOV_{i,t-1} + d_2 CONTROLS_{i,t-1} + +\varepsilon_{it} \tag{4}$$

The dependent variable is the change in ROA for the period $t = -1$ to $t = 8$ quarters. The independent variable GOV includes the governance measures PPS, option PPS, stock PPS, managerial entrenchment, board size, dual CEO/Chair, the percentage of independent directors on the board, and institutional ownership. The firm-specific control variables include the size of the bank, the standard deviation of stock returns, acquirer's ROA, and the cash holdings of the bank.

We include a dummy variable that is equal to one if the merger is out of state. As Houston, James, and Ryngaert (2001) show, bank mergers can increase value by reducing costs and/or increasing revenues. Cost reductions can be achieved by eliminating redundant managerial positions, closing overlapping bank branches, or fixing inefficiencies, and may be greater when merging banks

have geographic overlap. We also control for whether the bank has engaged in prior merger activity (D_Merger). As Houston et al. point out, there is mixed evidence as to whether prior merger activity results in worse or better post-merger performance. Banks that have already engaged in successful mergers will be more inclined to merge again. However, banks that have never engaged in mergers will be careful in selecting their first deal.

Houston and Ryngaert (1997) find that most acquiring banks issue stock to finance their mergers. Loughran and Ritter (1997) show that equity issuers experience a drop in profitability after an equity issue. Banks might be willing to make stock-financed acquisitions when they are at the apex of their earnings and predict that future profits will decline. Therefore, we control for whether the merger is stock financed (D_STOCK). Finally as shown in Rivard and Thomas (1998), larger mergers lead to increased efficiencies and better performance. We control for merger size as well (SIZE_RATIO).

Table XI shows the results of our estimation. As with return regressions, pay-for-performance sensitivity helps to predict the improvements in post-acquisition operating performance. Banks with high PPS prior to the acquisition generate bigger improvement as measured by change of ROA. This finding, together with our observations for stock and bond abnormal returns, shows how robust the influence of PPS on firm values.

[INSERT TABLE XI HERE]

We also find that larger banks with lower return volatility experience higher increases in ROA. Deals in which the target-acquirer size ratio is large also generate better post-merger performance. On the other hand, higher cash ratios lead to lower changes in return, consistent with results from stock return regressions, suggesting that banks with a large amount of cash may not invest efficiently. Our results are inconclusive in regard to stock-financed acquisitions, out-of-state acquisitions, and acquisitions that are made by banks with no prior experience.

6 Conclusion

This paper examines the effect of incentive-based compensation on bank mergers. Specifically, we examine the role of executive compensation in three areas: the probability of a merger occurring, announcement returns for both shareholders and bondholders, and changes in post-merger performance. Using a comprehensive governance database incorporating managerial compensation, board structure, anti-takeover provisions, and institutional ownership, we investigate whether performance-based compensation is beneficial or harmful to all stakeholders in bank holding companies.

Our findings show that BHCs in which the CEO's wealth is closely linked to the wealth of the shareholders through incentive-based compensation are less likely to acquire. However, when those managers do undertake mergers, financial markets expect good results and react positively. We find positive abnormal returns for both bondholders and stockholders around acquisition announcement for banks with high PPS executives. In the end, markets are correct in their expectations. Following acquisitions, banks with high PPS experience significantly bigger improvement in their operating performance as measured by ROA. As shown in the paper, strong governance through incentive compensation protects both shareholders and bondholders. The policy implication of these findings is straightforward. Executive compensation is an important governance measure that signals BHC acquisition quality. Hence, supervisory process should incorporate top executive compensation structure into its ratings of the BHCs.

Table I: Bank Acquisitions

Panel A describes the deal information in our sample by year. The first column shows the number of BHC acquisitions in the year. Deal Value is the amount of the deal, in millions. Acq. MVE denotes acquisition market value of equity, TAsset denotes target asset size, and AAsset denotes acquire asset value. All deal data are from SDC Platinum. Panel B examines the number of multiple acquirers in our sample.

Panel A: Deals by Year

	Number of Transactions		Deal Value	Acq. MVE	Deal Value/Acq. MVE	TAsset/AAsset
Year	Acquirer	Target	(in $ millions)	(in $ millions)		
1990	4	4	1,337	3,430	0.33	0.36
1991	4	0	395	1,051	0.42	0.23
1992	14	1	273	3,043	0.20	0.10
1993	13	6	364	3,624	0.23	0.11
1994	10	11	1,089	3,133	0.45	0.19
1995	11	5	271	1,378	0.31	0.12
1996	16	9	1,185	3,731	0.64	0.17
1997	21	4	832	4,800	0.40	0.13
1998	24	5	639	11,583	0.37	0.06
1999	16	7	1,306	21,438	0.25	0.11
2000	8	1	260	13,053	0.24	0.08
2001	5	0	216	9,073	0.13	0.03
2002	12	3	4,685	22,454	0.32	0.12
2003	11	6	7,601	17,369	0.40	0.12
2004	9	1	4,625	26,048	0.34	0.21
Total	178	63	1,610	10,390	0.35	0.12

Panel B: Information on Multiple Acquirers

Number of Acquisitions	Frequency	Percent
1	29	45
2	11	17
3	10	15
4	5	8
5 or more	10	15
Total	65	100

Table II: Summary of Deals in the Sample

This table shows the deal characteristics in our acquisition sample. Deal Value is the disclosed value reported by SDC. Pct. Acq. is the percentage of ownership acquired by the acquirer. D_Stock(D_Cash) is an indicator variables that equals to one if the acquisition is financed with at least 75 percent of stock(cash). OutOfState is an indicator variable which is equal to one if the acquisition involves an acquirer and a target from different states. D_Merger equals to one if the acquirer has done at least one acquisition prior to this transaction (based on data in our sample), and zero otherwise.

	Mean	Std. Dev.
Deal Value (in $ mil)	1,610	6,438
Pct Acq	99.92	0.64
D_Stock	0.821	0.38
D_Cash	0.058	0.23
OutOfState	0.72	0.45
D_Merger	0.21	0.41

Table III: Summary of Bank Characteristics

This table compares the acquirer banks with the benchmark sample. A bank is an acquirer if it has made at least one acquisition in the current year, and the benchmark sample contains all bank years that are not related to mergers. Total Assets is the total asset size of a bank. MVE is the market value of equity. Return Volatility. is the annualized standard deviation based on the monthly stock returns. ROA is the return on assets and ROE is the return on equity. PRV is the ratio of loan loss provision. Cash equals the percentage of assets held in cash. RE is the percentage of loans held in real estates. Stock PPS and Option PPS are the pay-performance sensitivity calculated using stock and options grants, respectively, based on methods developed in Core and Guay (1999). Total PPS is the sum of SPPS and OPPS. Bsize and Indep are the size of board and the percentage of independent directors, respectively. D_CEO is an indicator variable that is equal to one if there is a dual CEO and Chair. GIndex is the governance index based on Gompers, Ishii, and Metrick (2002). EIndex is the entrenchment index based on Bebchuk, Cohen and Ferrell (2004). CBoard is an indicator variable that equals to one if the bank has a staggered board, and zero otherwise. INST SHR is the percentage of shares owned by institutions. We use pairwise t-tests to examine whether there is a significant difference between the benchmark and the acquirers, or between the benchmark and the targets. *, **, *** denotes significant at 10 percent, 5 percent, and 1 percent, respectively.

Panel A: Summary Statistics

		Benchmark		Acquirer			
		Mean	Median	Mean		Median	
Firm Characteristics	Total Assets	55,891	17,223	51,081		19,902	
	MVE	7,724	2,503	9,546		3,203	
	Return Volatility	0.25	0.22	0.23	*	0.21	
	ROA(%)	1.17	1.19	1.19		1.19	
	ROE(%)	14.50	14.86	14.28		14.36	
	Cash(%)	4.49	3.72	3.91	**	3.24	*
	PRV(%)	0.87	0.56	1.00		0.79	***
	RE	0.50	0.51	0.50		0.5	
Compensation	Cash Comp($mil)	1.59	1.10	1.47		1.11	
	Cash Comp(in %)	54%	53%	53%		53%	
	Total Comp($mil)	4.17	2.32	3.88		2.18	
	Stock PPS	279.7	114.1	223.3		71.5	***
	Option PPS	216.7	87.0	210.7		68.2	
	Total PPS	509.4	243.4	448.8		189.9	**
Board	BSIZE	15.37	15	16.58	***	17	***
	Indep	0.7	0.71	0.69		0.72	
	D_CEO	0.92	1	0.88		1	
Anti-Takeover Provisions	EINDEX	2.50	3	2.65		3	
	GINDEX	10.16	10	9.97		10	
	CBoard	0.67	1	0.72		1	
Inst. Ownership	INST SHR	0.46	0.46	0.42		0.42	
N		700		163			

Table III: Summary of Bank Characteristics (cont.)

Panel B: Correlation of Governance Variables

	PPS	Bsize	Indep	D_CEO	E Index	G Index	Inst Shr
PPS	1						
BSize	-0.107**	1					
Indep	0.003	0.061	1				
D_CEO	0.154***	0.102**	0.029	1			
EIndex	-0.127***	-0.229***	-0.025	0.014	1		
GIndex	-0.074*	-0.141***	0.045	0.029	0.750***	1	
Inst ShR	0.056	-0.081*	0.105**	-0.040	-0.238***	-0.248***	1

Table IV: Probability of Acquisition

This table shows the results from logit regressions based on (1). The dependent variable is equal to one if the bank takes at least one acquisition in the next year and zero otherwise. All specifications include year dummies. *, **, *** denotes significant at 10 percent, 5 percent, and 1 percent, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Bank Characteristics							
SIZE	.297**	0.252**	0.419***	0.030	0.281**	0.245**	0.448***
	(0.130)	(0.125)	(0.153)	(0.152)	(0.132)	(0.114)	(0.173)
ROA	0.586	0.461	0.212	0.418	0.506	0.588	0.889
	(0.408)	(0.399)	(0.489)	(0.502)	(0.498)	(0.424)	(0.680)
RET	1.653**	1.678**	2.261***	2.166**	1.903**	1.613**	2.337**
	(0.693)	(0.698)	(0.749)	(0.907)	(0.821)	(0.751)	(1.014)
RET VOL	-0.643	-0.724	-0.759	-1.819	-0.559	0.284	-1.659
	(1.853)	(1.878)	(2.090)	(2.236)	(2.186)	(1.971)	(2.667)
CASH	-0.181***	-0.170***	-0.202***	-0.167**	-0.273***	-0.139**	-0.225***
	(0.064)	(0.062)	(0.070)	(0.065)	(0.077)	(0.063)	(0.079)
PRV	-0.022	-0.010	-0.075	0.197	-0.098	-0.314	-0.181
	(0.224)	(0.226)	(0.248)	(0.243)	(0.265)	(0.310)	(0.327)
D_MERGER	1.212***	1.189***	1.459***	1.231***	1.309***	0.963***	1.308***
	(0.259)	(0.262)	(0.296)	(0.294)	(0.294)	(0.286)	(0.379)
Compensation Variables							
PPS	-0.214**						-0.280**
	(0.102)						(0.122)
SPPS		-0.171*					
		(0.094)					
OPPS			-0.333**				
			(0.144)				
Anti-Takeover Provisions							
ETINDEX				-0.030			0.037
				(0.110)			(0.146)
Board Characteristics							
BSIZE					0.031		0.010
					(0.031)		(0.042)
BINDEP					0.282		0.258
					(1.000)		(1.207)
D_CEO					-0.991*		-1.208**
					(0.520)		(0.544)
Ownership Characteristics							
INST SHR						-1.156	-0.742
						(0.974)	(1.264)
Const.	-2.968**	-2.802*	-2.925*	-1.128	-3.297*	-2.914*	-3.587
	(1.445)	(1.448)	(1.603)	(1.975)	(1.850)	(1.535)	(2.611)
Obs.	515	513	427	392	399	456	277
Pseudo R^2	0.10	0.10	0.14	0.12	0.14	0.09	0.17

Table V: Sensitivity of Acquisition Probability to PPS Levels

This table shows the sensitivity analysis of the probability of acquisition on different PPS levels. Estimates are based on predicted value from Table IV (1) - (3). PPS, SPPS and OPPS are the natural logarithm of Total PPS, Stock PPS and Option PPS, respectively. Holding all other variables at their mean level, we calculate the predicted probability using the 25th and 75th percentile of PPS variable, and using one standard deviation below and above the mean of PPS variable. Relative change measures the difference between the predicted value based on low-PPS and the predicted value based on high-PPS divided by the predicted value based on low-PPS.

	25 PCTILE	75 PCTILE	RELATIVE Δ	MEAN-SD	MEAN+SD	RELATIVE Δ
SPPS	0.179	0.140	-22%	0.221	0.130	-41%
OPPS	0.228	0.126	-45%	0.260	0.109	-58%
PPS	0.188	0.137	-24%	0.213	0.124	-37%

Table VI: Acquirer Stock Returns: Univariate Analysis

This table summarizes information on acquirer returns for different PPS groups. Panel A shows the cumulative abnormal stock returns (CARs) in percentage for acquirers using different event window where day 0 is the event day. We separate acquirers in three groups based on their total PPS so that each group has one third of the observation. Panel C compares CARs between acquires in the Low-PPS group (bottom one third) and acquirers in the High-PPS group (top one third). T-Tests (Signed rank tests) are performed to examine whether the mean(median) returns are significantly different between two gruops. *, **, *** denotes significant at 10 percent, 5 percent, and 1 percent, respectively.

Panel A: Summary Statistic on Acquirer Returns

	Mean	Min	Max
(-1, 1)	0.20	-8.78	8.82
(-2, 2)	0.26	-10.64	12.40
N	178		

Panel B: Summary Statistics on PPS Groups

PPS Group	Mean	Median	Min	Max	N
1	62.80	56.87	0.00	134.63	60
2	265.40	265.02	138.10	452.19	59
3	1251.96	976.44	476.35	4238.90	59
Total	524.11	254.21	0.00	4238.90	178

Panel C: Acquirer Returns by PPS Group

Abnormal Returns	Mean Returns			Median Returns		
	Low PPS	High PPS		Low PPS	High PPS	
PPS	-0.235	0.475	*	-0.203	0.664	**
SPPS	-0.155	0.409		-0.203	0.664	*
OPPS	-0.323	0.461	*	-0.301	0.538	*

Table VII: Acquirer Stock Returns: Multivariate Analysis

This table shows regression results where the dependent variable is the cumulative abnormal stock returns (CARs) around acquisition announcement for the acquirers around a 3-day window. . All variables are one-year lagged and we include year fixed effects in all specifications. Robust standard errors are reported in parentheses and.*, **, *** denotes significant at 10 percent, 5 percent, and 1 percent, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Acquirer Characteristics							
SIZE	-0.306	-0.231	-0.249	-0.175	-0.475	-0.670***	-1.258***
	(0.216)	(0.216)	(0.199)	(0.282)	(0.309)	(0.210)	(0.434)
ROA	0.514	0.870	0.426	0.018	0.792	0.293	-0.067
	(0.753)	(0.765)	(0.859)	(0.981)	(0.839)	(0.817)	(1.282)
CASH	17.712*	15.310*	20.583**	17.485	11.231	-8.935	-23.193
	(9.106)	(8.658)	(9.568)	(18.180)	(10.222)	(15.914)	(34.849)
Deal Characteristics							
SIZE_RATIO	-1.059**	-1.051**	-0.872**	-1.006**	-1.324***	-1.325***	-1.240***
	(0.416)	(0.441)	(0.405)	(0.409)	(0.332)	(0.489)	(0.457)
D_STOCK	-0.317	-0.247	-0.400	-0.500	-0.086	0.291	0.464
	(0.506)	(0.519)	(0.512)	(0.565)	(0.569)	(0.486)	(0.720)
D_MERGER	-0.340	-0.494	-0.166	-0.752	-1.049	-0.370	-0.644
	(0.532)	(0.548)	(0.562)	(0.751)	(0.725)	(0.597)	(1.111)
OUTOFSTATE	0.309	0.389	0.332	0.311	0.132	0.941	1.841
	(0.629)	(0.627)	(0.619)	(0.906)	(0.772)	(0.679)	(1.460)
Pay-for-Performance							
PPS	0.416***			0.605***	0.508***	0.484***	0.798***
	(0.129)			(0.207)	(0.136)	(0.129)	(0.253)
SPPS		0.300**					
		(0.120)					
OPPS			0.252**				
			(0.118)				
Board Structure							
BSIZE				0.091			0.279*
				(0.130)			(0.169)
B_INDEP				1.355			-2.078
				(1.743)			(2.168)
D_CEO				-1.529			-2.075
				(1.004)			(1.358)
Anti-Takeover Provisions							
E Index					-0.442*		-0.209
					(0.227)		(0.353)
Institutional Ownership							
INST_SHR						6.327***	9.010**
						(1.935)	(4.496)
Const.	1.171	0.484	0.881	-0.387	3.840	2.344	5.377
	(2.328)	(2.290)	(2.361)	(3.716)	(3.609)	(2.537)	(5.468)
Obs.	117	117	117	105	98	101	76
R^2	0.278	0.264	0.262	.33	0.335	0.326	0.439

Table VIII: Acquirer Bond Returns: Univariate Analysis

This table summarizes information on abnormal bond returns for acquirers. Panel A shows the returns in percentage using different event window where month 0 is the event month. Panel B compares returns between acquires in the Low-PPS group (bottom one third) and acquirers in the High-PPS group (top one third). T-Tests (Signed rank tests) are performed to examine whether the mean(median) returns are significantly different between two groups. *, **, *** denotes significance at 10 percent, 5 percent, and 1 percent, respectively.

Panel A: Summary Statistic on Acquirer Returns

	Mean	Min	Max
(0, 1)	-0.326	-8.77	9.455
(-1, 1)	-0.449	-9.377	10.240
N	190		

Panel B: Acquirer Returns by PPS Group

Abnormal Returns	Mean Returns		Median Returns		
	Low PPS	High PPS	Low PPS	High PPS	
PPS	-0.566	0.173	-0.231	0.390	*
SPPS	-0.504	-0.471	-0.179	0.046	
OPPS	-0.191	-0.004	0.073	0.099	

Table IX: Acquirer Bond Returns: Multivariate Analysis

This table shows the estimation of the abnormal returns around acquisition announcements for bondholders. Abnormal bond returns are measured using a three-month windown (-1, 1) where month 0 is the event month. All variables are one-year lagged and we include year fixed effects in all specifications. Robust standard errors are reported in parentheses and.*, **, *** denotes significant at 10 percent, 5 percent, and 1 percent, respectively.

	(1)	(2)	(3)	(4)	(5)
Acquirer Characteristics					
SIZE	-2.022***	-2.075***	-1.289***	-1.967***	-2.393***
	(0.756)	(0.277)	(0.437)	(0.506)	(0.295)
RET_VOL	-0.530***	-0.076	-0.699***	-0.486*	-0.271***
	(0.056)	(0.055)	(0.062)	(0.264)	(0.044)
ROA	1.704	-4.338***	2.645	-0.320	-2.007***
	(2.596)	(0.699)	(2.620)	(4.946)	(0.285)
CASH	0.466**	0.214**	0.426*	0.509**	0.652***
	(0.199)	(0.091)	(0.246)	(0.212)	(0.146)
Deal Characteristics					
SIZE_RATIO	-12.449***	-5.754***	-13.861***	-11.613***	-9.588***
	(0.664)	(0.364)	(1.543)	(1.868)	(0.612)
D_STOCK	-6.734***	-6.528***	-6.116**	-6.655***	-7.950***
	(2.260)	(0.645)	(2.504)	(0.906)	(1.101)
D_MERGER	-4.623***	-2.525***	-4.670***	-5.548*	-3.130***
	(0.523)	(0.281)	(0.817)	(2.939)	(0.164)
OUTOFSTATE	-2.961***	-0.094	-3.541***	-0.787	-2.539***
	(0.066)	(0.360)	(0.310)	(1.826)	(0.367)
Pay-for-Performance					
PPS	1.503***			1.334***	1.750***
	(0.382)			(0.200)	(0.477)
SPPS		2.581***			
		(0.356)			
OPPS			0.648***		
			(0.150)		
Board Structure					
BSIZE				0.024	
				(0.379)	
B_INDEP				-5.589	
				(12.642)	
Anti-Takeover Provisions					
E Index					0.328
					(0.307)
Obs.	136	116	136	111	121
R^2	0.457	0.448	0.44	0.47	0.518

Table X: Changes of ROA

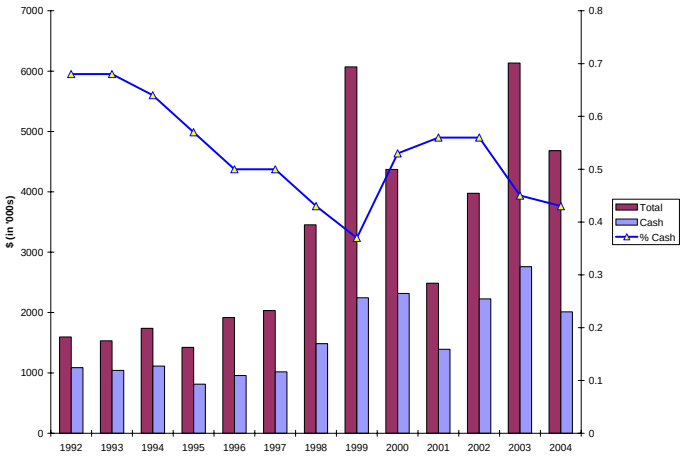
This table shows the analysis on changes of ROA around acquisitions between t-1 to t+8 quarters, where t is the event quarter. We measure the pre-acquisition ROA as the weighted average of the target 's and acquirer's ROA based on their market value. Robust standard errors are reported in parentheses and.*, **, *** denotes significant at 10 percent, 5 percent, and 1 percent, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Acquirer Characteristics						
SIZE	0.019	0.042**	0.029***	0.045***	0.055***	-0.003
	(0.013)	(0.019)	(0.009)	(0.013)	(0.002)	(0.036)
RET_VOL	-4.770***	-4.542***	-5.938***	-6.703***	-7.132***	-2.832***
	(1.032)	(1.505)	(0.721)	(0.768)	(0.185)	(0.969)
ROA	-0.445***	-0.509***	-0.426***	-0.430***	-0.506***	-0.449***
	(0.055)	(0.079)	(0.038)	(0.031)	(0.008)	(0.144)
CASH	-4.313***	-4.263***	-3.008***	-5.069***	-2.734***	-0.143
	(0.453)	(0.708)	(0.294)	(0.348)	(0.076)	(1.544)
Deal Characteristics						
D_MERGER	0.061	0.028	0.127***	-0.064	-0.003	0.046
	(0.039)	(0.055)	(0.028)	(0.060)	(0.007)	(0.083)
D_STOCK	0.016	-0.019	-0.028	-0.014	-0.031***	-0.064
	(0.034)	(0.046)	(0.022)	(0.016)	(0.005)	(0.042)
SIZERATIO	0.418***	0.399**	0.539***	0.272***	0.081***	-0.148
	(0.125)	(0.184)	(0.087)	(0.061)	(0.025)	(0.311)
OUTOFSTATE	0.006	0.023	-0.008	-0.067***	-0.158***	-0.170
	(0.039)	(0.056)	(0.027)	(0.021)	(0.005)	(0.121)
Pay-for-Performance						
PPS	0.067***			0.137***	0.046***	0.049*
	(0.016)			(0.012)	(0.003)	(0.024)
SPPS		0.026				
		(0.016)				
OPPS			0.043***			
			(0.005)			
Board Structure						
BSIZE				-0.0002		0.013*
				(0.002)		(0.008)
B_INDEP				-0.204***		-0.518
				(0.063)		(0.328)
D_CEO				-0.304***		0.252*
				(0.035)		(0.140)
Anti-Takeover Provisions						
E Index					-0.044***	-0.059*
					(0.002)	(0.033)
Const.	0.203	0.278	0.173*	0.016	0.891***	0.822*
	(0.140)	(0.197)	(0.098)	(0.118)	(0.030)	(0.495)
Obs.	57	57	57	41	46	42
R^2	0.924	0.847	0.96	0.994	0.999	0.515

Figure 1: CEO Compansation in BHCs

This figure shows the CEO compensation in bank holding companies over time. Panel A shows the cash and total compensation in dollar amounts and the percentage of cash compensation (over the total compensation) over time. Panel B presents the Stock PPS, Option PPS and Total PPS over time.

Panel A: Cash and Total Compensation



Panel B: Pay-for-Performance

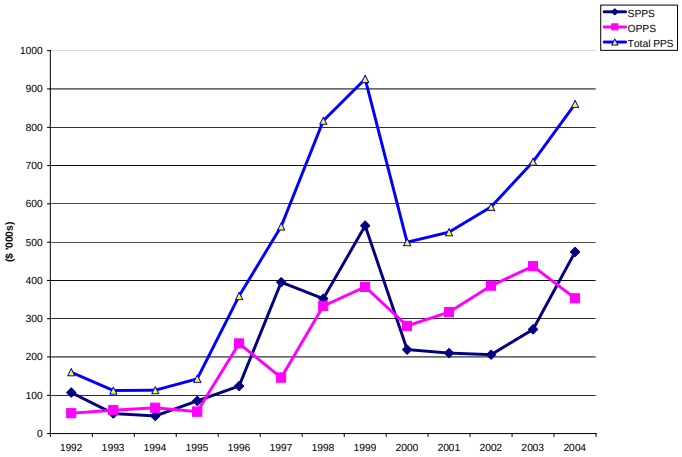


Figure 2: Histogram of Acquirer Stock Returns

This figure shows the cumulative abnormal stock returns (CARs) around the announcement. We use a three-day window, (-1, 1), and a five-day window, (-2, 2), where day 0 is the event date. We use CRSP value-weighted return as the market return and estimate market model parameters over the 200-day period from event day -220 to event day -21.

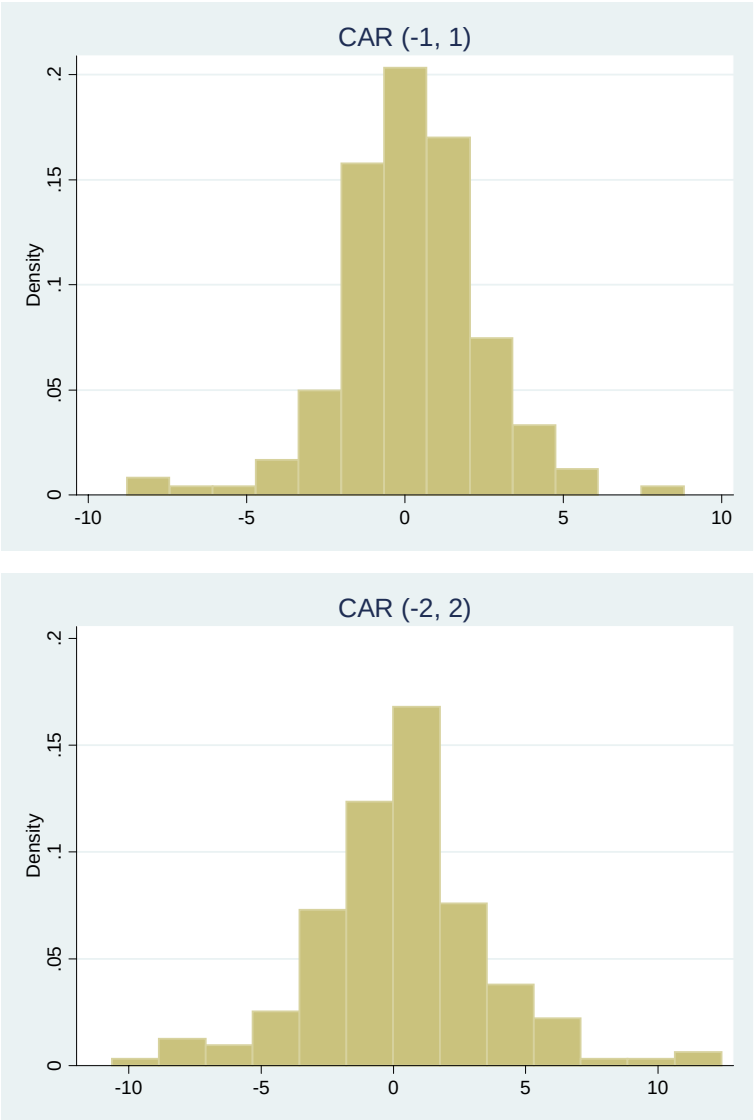


Figure 3: Acquirer Stock Returns by PPS Group

This figure shows the cumulative abnormal stock returns around the announcement for banks in different PPS groups. We use a three-day window, (-1, 1)where day 0 is the event date. We use CRSP value-weighted return as the market return and estimate market model parameters over the 200-day period from event day -220 to event day -21. We separate acquirers in three groups based on their total PPS so that each group has one third of the observation. Low-PPS group has acquires in the bottom one third and High-PPS group has acquirers in the top one third.

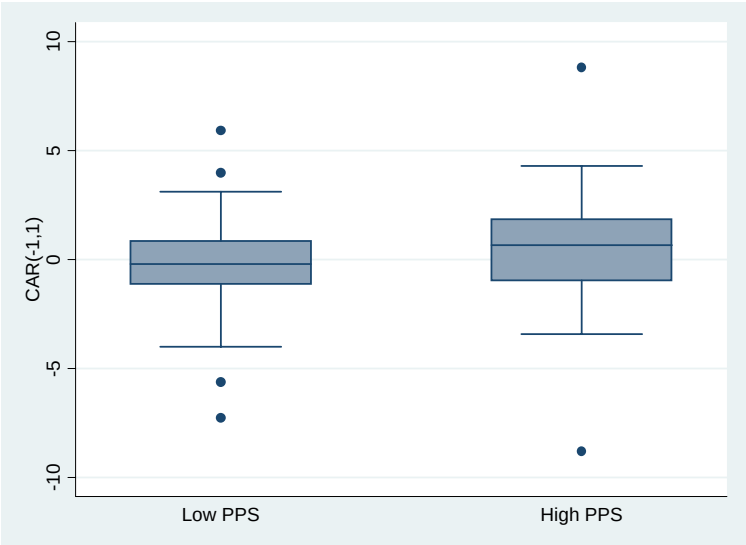
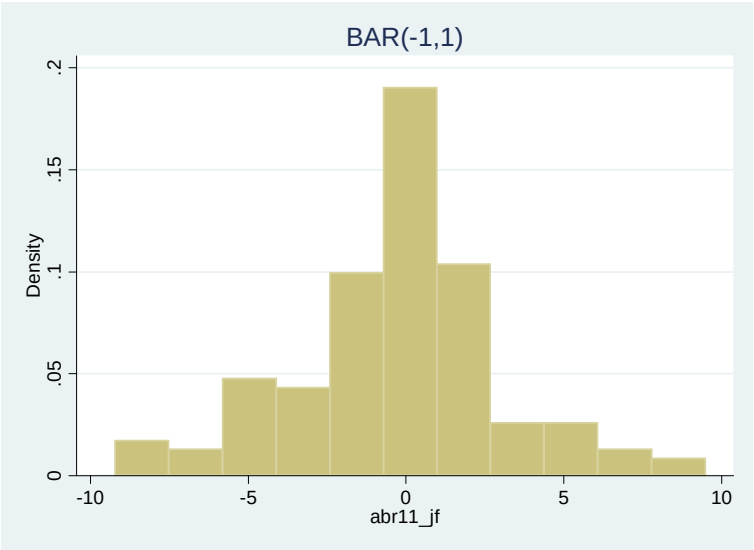


Figure 4: Histogram of Acquirer Bond Returns

This figure shows the habnormal bond returns around the annoucement. We use a three-month window, (-1, 1) and a two-month window, (-1, 0), where month 0 is the event date. We measure bondholder abnormal returns using the LBBD database and follow Maxwell and Stephens' (2003) approach.



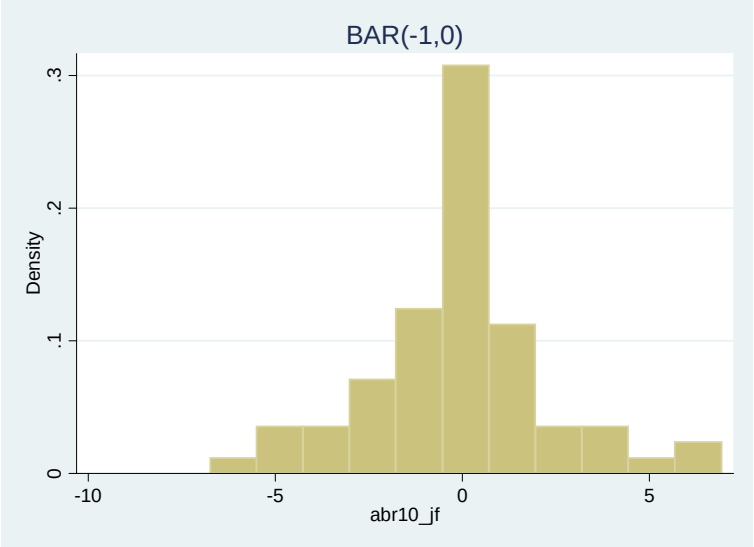
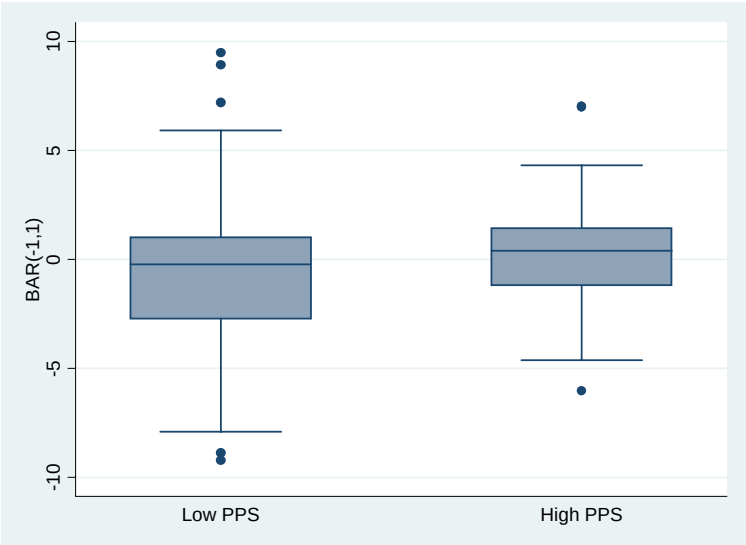


Figure 5: Acquirer Bond Returns by PPS Group

This figure shows the abnormal bond returns around the announcement for banks in different PPS groups. We use a three-month window, (-1, 1), where day 0 is the event date. We measure bondholder abnormal returns using the LBBD database and follow Maxwell and Stephens' (2003) approach.. We separate acquirers in three groups based on their total PPS so that each group has one third of the observation. Low-PPS group has acquires in the bottom one third and High-PPS group has acquirers in the top one third.



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Appendix: Description of Variables

Firm Specific Variables (from Compustat, Compustat Bank, CRSP and FDIC Call Reports)

- Total Assets: The total asset size of a bank
- Size: The natural logarithm of Total Assets
- MVE: Market value of equity - number of shares outstanding multiplied by the average share price
- Ret_Vol:.The annualized standard deviation based on the monthly stock returns
- Ret: The annualized stock return, calculated using monthly stock returns
- ROA The return on assets, defined as the net income divided by the total assets
- ROE The return on equity, defined as the net income divided by total shareholder's equity
- RE Ratio The ratio of real estate loans to total loans for the bank
- PRV_Ratio The total loan loss provision divided by the total loans
- Cash: The cash holdings divided by total assets

Deal Specific Variables (from SDC Plantinum)

- Acq. MV: Acquirer's market value of equity
- AAsset: Acquirer asset size
- TAsset: Target asset size
- Value: The deal value
- D_Merger: An indicator variable that equals to one if the bank has participated in acquisition before and zero otherwise
- D_Stock: An indicator variable that equals to one if more than 75% of the deal was funded with stock and zero otherwise
- D_Cash: An indicator variable that equals to one if more than 75% of the deal was funded with cash and zero otherwise
- OutofState: An indicator variable that equal to one if the acquisition involves acquirer and target from different states
- Size_Ratio The ratio of the deal value over the acquirer's market value of equity

Compensation Variables (from Excucomp and Proxy Statements)

- SPPS: The log the pay-performance sensitivity based on stock grants
- OPPS: The log of the pay-performance sensitivity based on option grants
- PPS: The log of the sum of PPS Stock and PPS Options
- Cash Comp: The amount of cash compensation in $millions

- Total Comp: The total amount of compensation in $millions.
- Percentage in Cash: The ratio of cash compensation over the total compensation.

Board Characteristics (from IRRC Director Database and Proxy Statements)

- Bsize: The size of board
- Indep: The percentage of independent directors
- D_CEO: An indicator variable that is equal to one if the CEO aslo serves as the Chair of the Board of Directors

Anti-takeover Provisions (from IRRC)

- GIndex: The governance index based on Gompers, Ishii, and Metrick (2002).
- EIndex The entrenchment index based on Bebchuk, Cohen and Ferrell (2004)
- CBoard: An indicator variable that equals to one if the bank has a staggered board, and zero otherwise.

Ownership (from 13F)

- INST SHR: The percentage of shares owned by institutions.