Pay for Performance?
CEO Compensation and Acquirer Returns in BHCs

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Abstract

We examine how managerial incentives affect acquisition decisions in the banking industry. We find that higher pay-for-performance sensitivity (PPS) leads to value-enhancing acquisitions. Banks whose CEOs have higher PPS have significantly better abnormal stock returns around the acquisition announcements. On average, acquirers in the High-PPS group outperform their counterparts in the Low-PPS group by 1.4% in a three-day window around the announcement. Ex ante, higher PPS helps to prevent value-destroying acquisitions, while at the same time promote value-enhancing acquisitions. The positive market reaction can be rationalized by post-merger performance. Following acquisitions, banks with higher PPS experience greater improvement in their operating performance.

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

JEL Classification: G34, G21

1 Introduction

Top executive pay has increased substantially over the past 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. During the same period, the average value of options soared from near zero to over $7 million (Jensen, Murphy, and Wruck, 2004). Despite the public's long-standing general belief, particularly among disenchanted stockholders, 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; Jensen and Murphy, 1990).

In this paper, we examine how the pay-for-performance sensitivity in executive compensation affects acquisition decisions in bank holding companies (BHCs). We show that when bank CEOs' personal wealth is closely tied to the stock performance, acquisition decisions are more likely to be consistent with shareholder value maximization. Specifically, when CEO's are paid for performance, they are less likely to make acquisitions that do not create shareholder value (such as empire building acquisitions) and more likely to seek out value-enhancing investments. Although various papers have examined the relation between managerial incentives and corporate investment decisions, this paper is one of the first attempts to investigate the channels through which this effect takes place.

Banks provide a natural experiment for assessing the role of compensation in acquisition decisions. Since the late 1980s, the banking industry has gone through rapid consolidation, which makes it possible for us to observe a large number of cross-sectional relationships. Because the industry is homogeneous in its business and most banks operate only in the financial industry, acquisitions are usually not driven by the need to rebalance between different industries. Finally, focusing on a single homogeneous industry alleviates the challenges that multi-industry studies face in having to use fixed-effect controls that may not be broad or detailed enough in terms of industry definitions.

It is also very important to study the role of corporate governance in the banking industry. Healthy banks are vital to economic development and growth, and as evidenced by the recent financial crisis, have a resounding effect on the rest of the economy. Unlike most non-financial firms, banks are regulated to a higher degree, but it remains unclear whether the governance issues identified as significant in non-financial firms are significant in banks (Adams and Mehran, 2003; Barth, Caprio, and Levine,

2004). Regulatory supervision that ensures that banks comply with regulatory requirements can play a general monitoring role that can either substitute for or complement other monitoring mechanisms. By understanding how incentive-based compensation works in a regulatory environment, we can gain insight into the optimal design of regulation and internal corporate governance for banks.

Our sample consists of 159 bank mergers between 1991 and 2005. We use the CEO's pay-for-performance sensitivity (PPS) in a bank as a proxy for managerial incentives. PPS measures the change of the CEO's wealth from both current and existing stock and option holdings given a one percent increase in the stock price. We present our findings at three levels.

First, we analyze the announcement returns around the acquisition and find that acquirer banks with higher PPS have higher announcement returns. Acquirers in the High-PPS group outperform their counterparts in the Low-PPS group by 1.43% in a three-day window around the announcement. Second, we examine the effect of PPS on a bank's probability to make acquisition and use a multinomial logit model to capture the dual roles of incentive compensation. We show that banks with higher PPS are less likely to engage in value-destroying acquisitions, while at the same time more likely to promote acquisitions that create value for shareholders. A one unit increase in the log of PPS lowers the odds of making a value-destroying acquisition by 36% while increasing the odds of making a value-enhancing acquisition by 59%. This dual roles of incentive-based compensation is a novel finding in this paper. Finally, to capture the "real" effect, we analyze how incentive-based compensation relates to changes in performance after the acquisition. We find that acquirers with higher pre-acquisition PPS also experience greater improvements in return on assets, return on equity, efficiency, and stock returns up to three years following the acquisition.

Our paper contributes to the literature in several ways. First, we extend the findings in Bliss and Rosen (2001) to broaden our understanding about the role of managerial incentives in acquisition decisions. Bliss and Rosen (2001) show that bank CEOs with high PPS are less likely to make acquisitions because of the wealth effects from the negative stock price reaction. In this paper, we first document the fact that not all acquisitions have negative price impact. In fact, half of the acquisitions in our sample create significant value for shareholders. We then show that managerial incentives achieve two goals simultaneously. They prevent value-destroying acquisitions and motivate value-improving acquisitions. Thus, we provide some evidence that not only shareholders but all stakeholders benefit.

Next, we add to the governance literature by showing that managerial incentives are important even in the presence of regulation. Using a sample of non-financial firms, Datta, Iskandar-Datta, and Raman (2001) show that high equity-based compensation leads to better stock announcement returns for non-financial acquirers. In this paper, we find similar results for banks, which are much more heavily regulated. Our findings suggest that regulation cannot fully substitute for managerial incentives, and therefore incentive schemes, such as pay-for-performance may be used effectively in the regulated industries. Other studies have shown that governance mechanisms may work differently for banks than for non-financial firms. For example, Adams and Mehran (2002) find that banks with larger boards have higher value, contrary to non-financial firms in which board size is negatively related to firm value (Yermack, 1996). The question of whether and how various governance mechanisms can affect banks and non-financial firms differently falls beyond the scope of our current paper and deserves future study.

Third, this paper joins a small number of studies that aim to explore the channel through which corporate governance affects firm performance. Specifically, our findings corroborate those of Masulis, Wang, and Xie (2007), who show that among non-financial firms, acquirers with strong shareholder rights, measured by the anti-takeover provision (ATP) index, have higher abnormal announcement returns in mergers. We find that acquirer returns around the merger announcement are jointly affected by incentive-based compensation and the market for corporate control. Moreover, among the group of governance measures examined in this paper, such as board size, market for corporate control, and managerial incentives we find that managerial incentives have the most significant effect in creating value for acquirer's shareholders.

Our paper also contributes to the current policy debate about how to control executive compensation such that it does not encourage risk-taking that only benefits shareholders. We show that higher PPS leads to value-enhancing acquisitions and the benefits accrue to not only shareholders, but also other stake-holders through two channels: (1) bigger improvements in operating performance following the acquisitions, and (2) lower likelihood of making unprofitable investments. Therefore, one important policy implication derived from our study is that if incentive-based compensation can effectively enforce bank managers taking actions that are consistent with value maximization, regulatory agencies ought to consider the top management compensation structure explicitly in the supervision process.

The rest of the paper proceeds as follows: In Section 2 we describe our data and compare governance measures between the acquirer and the non-acquirer banks. In Section 3 we study the stock returns to

the acquisition announcement. We estimate the probability to acquire in Section 4 and examine changes of operating performance after acquisitions in Section 5. Section 6 concludes.

2 Data

2.1 Sample Construction

We construct our acquisition sample using the Thompson Financial's SDC Platinum Mergers and Acquisitions database (SDC). Our sample includes acquisitions made between January 1991 and December 2005 in the banking industry that meet the following criteria:

- The acquisition is completed.
- The deal value disclosed in SDC is greater than $25 million.
- The acquirer is classified as a national commercial bank with an SIC code of 6021 in the SDC.[1]
- The target is publicly traded.[2]
- The target's book value of asset is at least 1% of that of the acquirer before the acquisition.[3]
- The acquirer has annual financial information available from Compustat, Compustat Bank or the FDIC's Call Report and the acquirer has stock return data from Center for Research in Security Prices (CRSP).
- Managerial compensation data are available for the acquirer from Compustat's Execucomp database or from proxy statements a year prior to the acquisition.[4]

Our full sample includes 159 acquisitions made by 64 bank holding companies, with some acquirers having multiple acquisitions. Table I Panel A shows the number of transactions by year, together with information on deal value, acquirers' market capitalization, and relative size between targets and acquirers. Consistent with the merger activity of non-financial firms reported in Masulis, Wang, and

[1] We restrict acquirers to be national commercial banks so that we can obtain relevant information from Compustat Bank.

[2] We require targets to be public so that we can obtain information before acquisitions. However, very few deals that satisfy our other data requirements involve private targets, and including those deals (about 5 transactions) does not change our results qualitatively.

[3] Similar cutoff point (1%) is used in Masulis, Wang and Xie (2007).

[4] For acquisitions before 1992 (when Execucomp started), we use the same sample as in Penas and Unal (2004) and hand-collect the compensation information from proxy reports whenever it is available.

Xie (2007), more bank acquisitions occurred between 1997 and 2000 than at other times. The average deal has a transaction value of $1.7 billion. The average acquirer's market capitalization is about $8.4 billion, increasing from $4.1 billion in 1991 to $26 billion in 2005. Bank acquirers are much bigger than non-financial acquirers. The average acquirer listed in Masulis, Wang, and Xie (2007) has a market capitalization of $5.59 billion, which is 67% of the average size of the banks in our sample. The average deal value is about 18% of the acquirer's pre-acquisition market capitalization (compared with 16% in Masulis-Wang-Xie sample), and the average target is about 13% of the size of the acquirer prior to the acquisition. Table I Panel B shows that among the 64 acquirers in our sample, 32 banks (50%) have undertaken only one acquisition, and 8 banks (13%) make at least five acquisitions during the sample period.

[INSERT TABLE I HERE]

Table II presents summary statistics that capture the deal characteristics. Almost all acquisitions involve a full ownership transfer.[5] We find a remarkable difference in financing between bank acquisitions and acquisitions involving non-financial firms. In our sample, 5% of the acquisitions are fully financed with cash (ALLCASH=1) and 79% of the acquisitions are financed exclusively with stock (ALLSTOCK=1). In contrast, 46% of the non-financial acquisitions were fully financed by cash in Masulis, Wang, and Xie (2007). We define an indicator variable D_STOCK to represent deals that are mainly financed through stock. It takes the value of one if the acquisition is more than 75% financed by equity and the value of zero otherwise. This variable has a mean of 82% and is used in our regressions as a control for financing method used in the acquisition. All of our results hold when we use 100% as an alternative cutoff to define D_STOCK. About 70% of the acquisitions in our sample involve banks that have headquarters in a different state. We capture this characteristic by the binary variable, OUTOFSTATE, which takes the value of one if the acquisition involves an out-of-state bank and zero otherwise.

[INSERT TABLE II HERE]

To compare acquiring banks with their non-acquiring counterparts, we construct a benchmark sample using bank-years during which there is no acquisition, i.e., years in which the bank is neither an acquirer

[5] Only 4 deals has less than 100% ownership transferred, among which the minimum percentage is 92%.

nor a target. In contrast, we identify acquirer years as years when banks are acquirers. A bank that has made multiple acquisitions in the same year is counted only once for this identification purpose. Because Execucomp does not have data prior to 1992, our benchmark sample period starts in 1992. This restriction causes us to lose six acquirer years that are before 1992. Data availability in other control variables further causes us to lose additional bank years in both acquirer sample and benchmark sample. Our final sample consists of 109 acquirer years and 568 non-acquirer years. About 25% of our acquirer banks also appear in our benchmark sample at some point during our sample period. For a robustness check, we also use an alternative benchmark sample, which consists of only banks that have never participated in acquisitions (unreported, but available upon request), and all of the main results are qualitatively the same.

Table II Panel B presents the bank characteristics for the two groups. The two samples are very similar, with comparable total assets (TA), market capitalization (MVE), stock returns (RET), stock return volatility (RET_VOL), ratio of loan loss provisions(PRV), cash holding (CASH), and return on assets (ROA).

2.2 CEO Compensation

We collect data on CEO compensation, such as annual salary, bonus, new grants of restricted stocks and options, and stocks and options from previous grants from the Compustat's Execucomp database. For acquirers before 1992, we hand collect data from the proxy statements whenever they are available. Following Core and Guay (1999), we measure the pay-for-performance sensitivity (PPS) as the change of the CEO's total wealth (in thousands of dollars) from her stock and option holdings, given a 1% increase in stock price. Our PPS measure is different from the incentive compensation proxy used in Bliss and Rosen (2001) or Datta, Iskandar-Datta and Raman (2001). We include equity and option holdings from new and previous grants for a total wealth effect while the other papers only consider new equity based compensation. In our sample, the PPS from new grants only accounts for $9 - 15\%$ of the total PPS. Similar to Core and Guay (1999), we use the Black and Scholes (1973) formula to value the options, assuming a ten-year maturity on options and a return volatility based on the monthly stock returns in the past twelve months. In addition to the total PPS, we also calculate PPS based on individual components, such as stock holdings (SPPS) and option holdings (OPPS). We use the natural logarithm of PPS instead of the raw value in our regressions as the distribution is heavily skewed to the right.[6]

[6] We use log(PPS+1) to eliminate the extreme outliers for bank-years with PPS equal to zero.

We compare the CEO compensation between the acquirer and benchmark banks in Table III, Panel A. The cash compensation (Cash Comp) includes payments in salary, bonus and other income, and the total compensation (Total Comp) includes both the cash compensation and the current option grants.[7] On the univariate level, the acquirer sample and the benchmark sample have very similar compensation structures. The median acquirer CEO received cash compensation of $1.55 million, which is 51% of her total compensation and the median benchmark CEO received a cash compensation of $1.60 million, 54% of her total compensation. For both groups, the mean compensation is higher than the median, suggesting that the distribution is skewed to the right. On pay-for-performance sensitivity, acquirer CEOs have slightly lower average (median) Total PPS than the benchmark CEOs: 480 versus 515 (217 versus 268) although the difference is not significant.

Figure 1 presents the change of CEO compensation over time during our sample period. Table III Panel A shows that over the past thirteen years, the average total compensation for bank CEOs rises from $2.7 million in 1992 to $4.9 million in 2004. Meanwhile, pay-for-performance sensitivity has increased even more. We observe in Panel B that in 2004, for every 1% increase in stock price, a median bank CEO gains about $583,000 in her personal portfolio in terms of stocks and options, more than five times as much as she would have in 1992. Despite the common increasing trend, there exists a wide cross-sectional dispersion in the PPS. For example, in 2004, among our sample banks, 13% CEOs have PPS less than 50, while more than 31% of CEOs have PPS greater than 1000.

[INSERT FIGURE 1 HERE]

2.3 Other Corporate Governance Variables

To control for other internal and external governance mechanisms that can potentially affect the acquisition outcome, we also collect information on the board of directors and the strength of shareholder rights from the Investors' Responsibility Research Center (IRRC). Since the IRRC data start in 1996, our sample size is further reduced whenever we include those variables. It is also worth noting that since larger banks are more likely to be included in the IRRC database, regression results based on the subsample with the available board and anti-takeover provision variables may potentially reflect more on larger banks.

[7] The total compensation is based on data item TDC1 in Execucomp.

Board Structure Many studies document that the size and composition of a board of directors can influence the effectiveness of internal monitoring (Yermack, 1996; Hermalin and Weisbach, 1998). To control for the impact of board structure on acquisition success, we obtain information on board size (BSIZE), the percentage of independent directors (BINDEP), and whether the CEO is also the chairman of the board (D_CEO) from the IRRC's Director database. The acquirers have significantly more directors than the benchmark banks - 16 versus 15 directors, and in both samples, about 69% of the directors are independent. In the majority of the banks, the CEO also serves as the chairman of the board (the average D_CEO is 94% for the benchmark banks and 90% for acquirer banks). The larger boards in acquiring banks can also be related to acquisition. After acquisitions, acquirers often take some directors from the target firms onto their Board of Directors. Thus, to the extent that banks tend to make multiple acquisitions, the larger boards of acquirer banks may reflect prior acquisition activities. Therefore, we control for previous acquisitions whenever we include board size as a control for governance.

Shareholder Rights A number of recent papers confirm the governance role of the market for corporate control. They find that firms with fewer anti-takeover provisions (ATPs) or weaker shareholder rights have lower value. These studies measure the level of shareholder rights in a number of ways. Gompers, Ishii, and Metrick (2003) construct a governance index (GINDEX) using all twenty-four ATPs collected by IRRC, while Bebchuk, Cohen and Ferrell (2004) choose six out of the twenty-four ATPs to form an entrenchment index(EINDEX).[8] Bebchuk and Cohen (2005) show that a binary variable based on whether a firm has a staggered board (CBOARD) effectively captures the strength of market discipline.

Among our sample of banks, the average GINDEX is 10.07 for the benchmark sample and 10.18 for the acquirer sample. Both of them are higher than the GINDEX of 9.15 reported in Gompers, Ishii, and Metrick (2003) for non-financial firms. The average EINDEX for our acquirer banks is 2.76, and 76% of the acquirer banks have staggered boards. In comparison, non-financial acquirers have an average EINDEX of 2.24, and a likelihood of 61% for staggered board, as reported by Masulis, Wang, and Xie (2007). Although banks are bigger than non-financial firms and larger firms tend to have more ATPs, these observations still bring up an important issue.[9] That is, despite that most mergers in the banking industry are friendly rather than hostile due to the process of regulatory approval for bank mergers, banks

[8] The six ATPs used by Bebchuck, Cohen and Ferrell are staggered boards, limits to shareholder by–law amendments, super–majority requirement for mergers, super–majority requirement for charter amendments, poison pills and golden parachutes.

[9] Gompers, Ishii and Metrick (2003) show that G-INDEX is positively correlated with firm size.

still adopt more ATPs than the non-financial firms. For brevity, we only report results based on EINDEX for all of our tables, but results are qualitatively the same when GINDEX or CBOARD is used.

[INSERT TABLE III]

Other Considerations Both the decision to acquire and the pay-for-performance sensitivity can change with the CEO's tenure or age. Bliss and Rosen (2001) find that younger CEOs are much more likely to do acquisitions. We use the Execucomp to collect data on the CEO's age and her tenure at the current position. We find that the CEOs of acquirer banks are marginally younger than the CEOs in the benchmark sample, but do not differ significantly in tenure (the median age of acquirers is 55 versus 57 for benchmark banks). Similar to Bliss and Rosen, we create a dummy variable D_AGE to indicate whether the CEO is greater than 60 years old.[10]

Different governance measures can be related. Panel B of Table III presents the correlation matrix among various governance measures. Banks with higher PPS also tend to have their CEO as the chairman of the board, and stronger market discipline (lower GINDEX and EINDEX). Older CEOs with longer tenure have higher PPS. The presence of significant correlation between PPS and other governance variables further confirms the needs for controlling for both variables when we analyze the impact of PPS on acquisition outcomes. Finally, to control for macro-economic conditions that might influence decisions to acquire and changes in PPS over time, we include a year fixed effect in all of our regressions.

3 PPS and Announcement Stock Returns

In this section, we examine the relation between pay-for-performance sensitivity and stock returns acquisition announcements using the event study methodology.

3.1 Univariate Analysis

We measure acquirer announcement returns using the market-adjusted model. We obtain the announcement dates from the SDC and compute the cumulative abnormal returns (CARs) in a three-day $(-1, +1)$ and a five-day window $(-2, +2)$ where day zero is the announcement date. We use CRSP value-weighted returns as the benchmark returns to calculate abnormal stock returns. Panel A of Table

[10] Bliss and Rosen use a cut-off point of 50. However, in our sample only 8% of the CEOs are under 50 years of age, and 32% of the CEOs are under 60. Our main results still hold if we use 50 as the cutoff point.

IV shows that the three-day and five-day acquirer CARs are widely dispersed, ranging from −8.78% to 8.82% and from −10.65% to 10.96%, respectively. Neither the mean nor the median is significantly different from zero. Figure 2 presents the returns in histogram.

[INSERT TABLE IV AND FIGURE 2]

We take special note of two results. First, the acquisitions in our sample do not in general "lead to a decline in acquirer stock prices," as noted by Bliss and Rosen. In fact, acquirers have positive announcement returns in more than half of the acquisitions (54%) and the average three-day CAR for those acquirers is about 1.74%.[11] Second, although a value-destroying acquisition can lead to loss of value in the CEO's personal portfolio, the reverse can also occur. That is, the CEO can gain a significant amount of wealth when the acquisition creates value for shareholders. For example, for over half the acquirers that experienced positive three-day CAR, the increase in stock price can translate to a wealth increase of $835,000 to the CEO, which is about half of the CEO's annual cash compensation.[12] Given both directions, our hypothesis is that managerial incentives can serve a dual purpose in the context of acquisitions. That is, higher PPS can increase the likelihood that the CEO rejects value-destroying acquisitions, while at the same promotes acquisitions that create value for both shareholders and the CEO.

We test this hypothesis first at the univariate level. For every year, we divide all banks in that year (both acquirers and non-acquirers) into three groups based on their CEOs' PPS. The Low-PPS group includes the bottom third of banks and the High-PPS group includes the top third of banks. We include the benchmark sample in our calculation for cutoff points of PPS because PPS itself can affect decisions to acquire (which we discuss in detail in the next section). Identifying groups by year helps to control for changes of PPS over time. Among 159 acquisitions in our sample, 51 acquirers belong to the low-PPS group and 51 to the high-PPS group, with the remaining 57 acquirers in the Medium-PPS group. Table IV Panel B reports the mean and median PPS for each group. For a 1% increase in stock price, the median CEO in the Low-PPS group has an average wealth increase of $57,000, compared to an increase of $801,000 for the median CEO in the High-PPS group.

[11] Among the 159 acquisitions, we have 72 acquisitions with negative 3-day CARs and 87 acquisitions with positive 3-day CARs.

[12] We calculate this number based on the average acquirer PPS of $480,000 (Table III Panel A).

Comparing the announcement returns (both three-day and five-day) across different groups, we find a positive relation between PPS and stock returns. Table IV Panel C shows that the Low-PPS acquirers have an average (median) 3-day CAR of -0.18% (-0.43%), while the High-PPS acquirers have an average (median) CAR of 0.70% (0.82%) around the acquisition announcement. The difference is significant at the 4% and 2% level based on t-test and signed-rank test, respectively. We find similar results using five-day CARs. Box plots in Figure 3 further illustrate the comparison. These observations provide the initial evidence that higher PPS creates value for the shareholders. The following section examines the issue in a multivariate setting.

[INSERT FIGURE 3 HERE]

3.2 Multivariate Analysis

To test our focal hypothesis we use the following specification:

$$y_{i,t} = \beta_0 + \beta_1 PPS_{i,t-1} + \beta_2 A_{i,t-1} + \beta_3 G_{i,t-1} + \beta_4 D_{i,t} + F_t + \varepsilon_{it} \tag{1}$$

The dependent variable, $y_{i,t}$, is the cumulative abnormal stock return around the announcement for acquirer i with the deal occurring in year t, and our key explanatory variable is the pay-for-performance sensitivity of the acquirer bank's CEO ($PPS_{i,t-1}$). We control for acquirer's characteristics ($A_{i,t-1}$), other governance variables ($G_{i,t-1}$), and deal characteristics (D_{it}). We also include a year fixed effect (F_t) and ε_{it} is the error term.

For acquirer characteristics ($A_{i,t-1}$), we include log of total assets (SIZE), return on assets (ROA), cash holdings (CASH), and previous merger activity (D_PMERGER). 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. In addition, Penas and Unal (2004) document a significant too-big-to-fail (TBTF) factor when they examine returns around acquisitions. They show that both bond- and stock-holders of medium-sized banks realize the highest returns when the acquiring banks push the combined bank's asset size above the TBTF threshold. Acquisitions can be driven by better opportunities (Jovanovic and Rousseau, 2002) or manager's private benefits. We include a performance measure - return on assets (ROA) and the banks' cash holdings as a percentage of total assets (CASH)

to control for both motivations. For other governance measures ($G_{i,t-1}$), we include board structure (BSIZE, BINDEP), strength of shareholder rights (EINDEX), and CEO age (D_AGE).

For deal characteristics ($D_{i,t}$), we control for the relative size between the target and the acquirer banks (SIZE_RATIO), the method of payment (D_STOCK), and geographic diversification (OUTOFSTATE). The existing empirical evidence is mixed on how relative size affects acquirer returns. Asquith, Bruner and Mullins (1983) show that acquirer announcement returns are positively related to relative deal size, but Moeller, Schlingemann and Stulz (2004) find that the reverse is true for large acquirers. Our sample is more similar to Moeller, Schlingemann and Stulz's large-acquirer sample: the market capitalization for the average (median) acquirer in our sample is \$10.0 (\$3.5) billion. We define relative size (SIZE_RATIO) as the ratio between deal value and acquirer's market value of equity.[13] In unreported regressions, we also use the asset size ratio between target and acquirer banks prior to the acquisition as an alternative measure, and all of our results hold qualitatively. Many merger studies have reported lower acquirer returns when acquisitions are paid using stock. We include the method of payment (D_STOCK) in our regression as a control. Interstate bank mergers are shown to offer less opportunity for increasing market power and fewer cost savings (Prager and Hannan, 1998). Therefore, we include an indicator variable (OUTOFSTATE) to control for geographic diversification.

Table V summarizes our regression results using the three-day CARs. In Columns 1 - 3, we use different measures of PPS such as total PPS, stock PPS and option PPS. In Column 4, we separate acquirers into three groups based on their total PPS. D_MPPS and D_HPPS are indicator variables that equal one if the acquirer is in the middle or top third among all banks in that year, respectively (this is the same variable used in the univariate analysis above). Columns 5 and 6 present the estimation results when other governance variables are included in the regression. The sample size is slightly smaller (from 159 to 116) when we include other governance variables.

[INSERT TABLE V HERE]

In all specifications, the estimated coefficients for PPS are positive and significant, implying that acquirers with higher PPS tend to consistently outperform acquirers with lower PPS. A one unit increase in total PPS (in the logarithm) increases the announcement return by 0.50% and the effect is even stronger at 0.62% when we control for other governance variables. When we separate acquirers into three groups

[13] A similar definition is used in Masulis, Wang and Xie (2007).

based on PPS, we find that the positive effect of PPS on returns increases monotonically: compared to acquirers in the Low-PPS group, acquirers in the Medium- and High-PPS groups outperform by 0.93% and 1.43%, respectively in a three-day announcement return. The difference between the Low- and the High-PPS group is significant at 5% level regardless of whether other governance variables are included or not.

Among other governance variables, we find that announcement returns are higher when the acquiring banks have lower EINDEX (or fewer anti-takeover provisions and stronger shareholder rights). On the other hand, neither board structure nor CEO age seems to matter for acquirer returns. The significance of the EINDEX is noteworthy for at least two reasons. First, it is consistent with the findings of Masulis, Wang, and Xie (2007), who show that more ATPs (higher EINDEX) lead managers of non-financial firms to make value-destroying acquisitions. Here, we find that the same dynamics is at work for financial firms. Second, EINDEX and PPS are negatively correlated and they influence returns in opposite directions. Masulis, Wang and Xie fail to find any significance for CEO compensation variables in their regressions. Our findings, however, suggest that incentive-based compensation promotes better acquisition decisions in the presence of market for corporate control.

In terms of the control variables, we find that returns are higher for small acquirers. Operating performance and cash holdings consistently show positive effects on announcement returns, although the coefficients are not significant. Acquirers which undertook prior acquisitions consistently have lower stock returns, and this effect is stronger in our subsample sample in which other governance variables available. When we examine the deal characteristics, we observe that returns are higher when the target is smaller relative to the acquirer's own size, consistent with findings from Moeller, Schlingemann and Stulz (2004) for their large-acquirer sample. Unlike acquisitions in non-financial firms, the method of payment does not significantly affect returns for bank acquirers. This finding may be due to the fact that majority of the acquisitions in the banking industry are financed mainly by stock. Acquisitions of out-of-state targets do not significantly outperform acquisitions in which the acquirer and the target bank have headquarters in the same state. Although unchanged in signs and significance level, the magnitude of our estimates on certain variables change (e.g. CASH and SIZE_RATIO) when we use the sample with governance variables. This is mainly due to sample difference. Since governance variables are more likely available for larger banks, our subsample with governance variables reflects more on larger banks. In unreported regressions, we also use alternative event windows, such as (-2, 2), (-3, 1), and (-5, 1), and results are

qualitatively the same.

3.3 Robustness Checks

To check the robustness of our result on stock returns, we perform additional tests in this section based on different sample splits. For brevity, we only report results for the overall sample (n=159). Regressions based on subsample with governance variables (n=116) yield qualitatively similar results.

Opportunity Sets Not all banks face the same opportunities. Large national banks are more likely to be diversified in their businesses than small local banks (Prager and Hannan, 1998). For too-big-to-fail banks, there may be fewer potential benefits to shareholders from acquisitions, as compared to smaller sized banks (Penas and Unal, 2004). To further understand how PPS may affect banks of different opportunities, we divide our acquirers into three size categories, small, medium, and large banks. We define a "small bank" as a bank that has asset size in the bottom one-third among all acquirers and a "large bank" that has asset size in the top one-third.[14] We then estimate similar regressions as those in Table V, but include medium and large size indicator variables (D_MED and D_LARGE) as well as interactions between these indicator variables and PPS.

Table VI, column 1 reports our results. We still show a positive coefficient on PPS, significant at 1% level. Moreover, the interaction between large bank indicator and PPS is negative, suggesting that PPS has a weaker effect for larger banks than for smaller banks. Several reasons may explain this finding. First, not only do larger banks tend to have higher PPS, there is also less dispersion. The average log of PPS among larger banks is 5.86 with a standard deviation of 1.22. In comparison, smaller banks have an average log of PPS of 4.75 with a standard deviation of 1.34. As a result, given that PPS has a strong effect on acquirer returns, the relationship is more pronounced among smaller banks. Our finding also compliments the findings of Penas and Unal (2004) who suggest that banks that are already in the too-big-to-fail category realize the least amount of gain during acquisitions.

[INSERT TABLE VI HERE]

Before and After 1999 In 1999, the US Congress passed the Financial Services Modernization Act, which allowed commercial banks to merge with investment banks.[15] This legislation has motivated a

[14] We define "small" and "large"on a relative basis - a small bank in our sample has less than $15 billion in assets, and a large bank has more than $32 billion in assets.

[15] It is also referred to as the Gramm-Leach-Bliley Act of 1999 (http://banking.senate.gov).

large number of acquisitions across the business lines. Because our sample spans over the pre- and post-legislation periods, it is reasonable to question whether the positive effect of PPS on acquirer returns holds in both periods.

We divide our sample into two sub-periods around the year of 1999 (1992-1999 and 2000-2005) and run the return regression separately in each subsample. Within our sample of 159 acquisitions, we have 108 acquisitions occurred before and 51 acquisitions after 1999. Our results are presented in Table VI, Columns 2 and 3. PPS has significant positive effects on acquirer returns in both periods. The coefficient is marginally significant for the second period, potentially due to fewer observations. Our findings suggest that although acquisitions in two sub-periods might be driven by different motivations, in both periods, having the CEO's incentive aligned with the incentive of the shareholders helps to create value for shareholders in the context of acquisitions.

4 Probability to Acquire

In this section, we examine whether higher PPS predicts better acquisition decisions ex-ante. Bliss and Rosen (2001) argue that CEOs with high incentive-based compensation are less likely to engage in acquisitions because of the negative wealth effect due to declining stock prices post acquisition. As we show in the previous section, not all acquisitions lead to negative stock returns. In fact, in our sample, more than half of the acquisitions generate positive returns for their shareholders (see Figure 2 Panel A). For a CEO who holds significant wealth in stocks and options, an unsuccessful acquisition can reduce the value of her personal portfolio. However, she can also be greatly rewarded if the acquisition creates value for the shareholders. In addition, merely investigating the relation between the acquisition decision and PPS, as in Bliss and Rosen, cannot show the channel through which PPS affects the CEO's acquisition decision. For example, incentive-based compensation can prevent CEOs from engaging in value-destroying acquisitions or encourage them to invest in value-enhancing acquisitions or serve a dual purpose and incentives the CEO to do both.

To examine the channels through which PPS affects acquisition decisions, we divide our acquisition sample into two groups: winners and losers, based on the three-day cumulative abnormal returns around the announcement. Then, we estimate a multinomial logit model in which the dependent variable is an indicator variable that equals one if the bank makes an acquisition announcement and the announcement return is negative(D_ACQ = 1), and two if the bank makes an acquisition announcement with positive

return(D_ACQ = 2). We use the non-acquirer sample as the benchmark and set the variable equal to zero (D_ACQ = 0). For acquirers that made multiple acquisitions within a year, we use the weighted average return based on deal value to identify the indicator variable. In our final sample with other governance variables available, we have 80 acquirer years (with 39 negative returns and 41 positive returns) and 323 benchmark bank years.

Our basic specification is as follows:

$$\Pr\left(D\_ACQ_{i,t}\right) = \alpha_0 + \alpha_1 PPS_{i,t-1} + \alpha_2 B_{i,t-1} + \alpha_3 G_{i,t-1} + F_t + v_{i,t} \tag{2}$$

The dependent variable, $D\_ACQ_{i,t}$, is the indicator variable for bank i in year t, as specified above, and our key explanatory variable is the pay-for-performance sensitivity ($PPS_{i,t-1}$). We also control for bank characteristics($B_{i,t-1}$) and other governance variables ($G_{i,t-1}$). F_t is the year fixed effect and v_{it} is the error term.

We draw our variables that reflect bank characteristics ($B_{i,t-1}$) from findings in the existing merger and banking literature. Neoclassical theory suggests that acquisitions help to reallocate resources to their best use (Jovanovic and Rousseau, 2002). Meanwhile, agency theory presents that when there is free cash flow, managers have incentives to over invest for their private benefit (Jensen, 1986). However, banks typically have a lot of easily marketable government securities on their balance sheets as well as the ability to raise insured deposits, which makes the free cash flow argument more complex. Taking both arguments into account, we control for the acquirer's operating performance using return on assets (ROA) and the banks'cash holdings, as a percentage of total assets (CASH). Banks may also engage in acquisitions to take advantage of the recent increase in stock price or high volatility in market valuation (Rhodes-Kropf, Robinson, and Viswanathan, 2005). To control for the motivation due to market valuation we use the average stock return(RET) and the volatility of returns (RET_VOL) one year prior to the acquisition announcement. Banks with riskier assets expect to have higher default rates in the future and may choose to hold higher level of loan loss provisions to meet future needs. We use the ratio of loan loss provisions (PRV) over the total amount of loans outstanding as our proxy for the portfolio risk. Acquisitions may be positively or negatively auto-correlated, depending on whether the bank follows an acquisition strategy. To control for past activity, we add an indicator variable that denotes whether the bank has participated in acquisitions in previous years (D_PMERGER). Finally, we include the logarithm of total book assets (SIZE) in our regression to control for bank size. The governance variables ($G_{i,t-1}$) are similar to those

used in the previous section.

Table VII presents our findings. In Column 1 and 3 the dependent variable is D_ACQ=1, which reflects the value destroying (negative abnormal return) acquisition decision. The coefficient on PPS is negative and significant in both specifications indicating that higher PPS leads to significantly lower probability of making value-destroying acquisitions. On the other hand, in Columns 2 and 4 the dependent variable is D_ACQ=2 reflecting the value enhancing decisions. Here the coefficient of PPS becomes positive and significant implying that higher PPS leads to higher probability of making value-enhancing acquisitions. These findings hold with or without the presence of other governance variables. A one unit increase in PPS lowers the odds of making value-destroying acquisitions by 36% while increasing the odds of making value-enhancing acquisitions by 59%.[16]

To ensure that our breakpoint for value destroying and enhancing mergers is robust, we also use the median abnormal returns as our breakpoint. Acquisitions with returns below or at the median are deemed value destroying, while acquisitions with returns above the median are identified as value enhancing. Columns 4 and 5 show the results, which are consistent with using the zero breakpoint. The results remain unchanged when we use the zero breakpoint.

[INSERT TABLE VII HERE]

These findings support our earlier finding on stock returns. More importantly, they show that when CEO's interests are well aligned with those of the shareholders, two effects are at work. High PPS reduces a CEO's incentives to make acquisitions which destroy value (such as empire building acquisitions). However, since the CEO will be rewarded for investing in value-enhancing acquisitions, it also encourages the CEO to search out for new projects that benefit shareholders. By examining the mechanisms on how PPS affects acquisition decisions, these findings provide insights on the channel through which incentive-based compensation improves the value of a firm.

Examining bank characteristics, Table VII shows that large banks are more likely to make value-destroying acquisitions. Prior acquisition history leads to a higher likelihood of future acquisitions, regardless if they create value or not.

[16] The changes in odds ratio are calculated using estimates from Table VII Model 2. For one unit increase in PPS, change in odds ratio of making value-destroying acquisition =1 - exp(−0.439) = 0.33, and change in odds ratio of making value-improving acquisition=exp(0.461) - 1 = 0.59.

As is the case with many empirical studies, our study is potentially subject to endogeneity problems as our main explanatory variable, PPS, is not entirely exogenous. Therefore, before we can draw the conclusion that high PPS *causes* bank CEOs to avoid value-destroying acquisitions and search for value-improving acquisitions, we need to address two types of endogeneity issues.

The first issue is in the form of reverse causality. That is, CEOs planning to pursue empire building or make unprofitable acquisitions could first structure their compensation to have low pay-for-performance sensitivity. To examine this possibility, we use changes in PPS as an alternative measure in our multinomial logit regressions. The idea is that if an increase in PPS (i.e. improvement in interest-alignment) leads to lower probability of engaging in value-destroying acquisitions but higher probability of value-improving acquisitions, then the effect between PPS and probability to acquire is more likely to be causal. Since option grants can be lumpy over time, we first calculate the two-year moving average of PPS. The smoothing process, if anything, biases against us finding results that changes in PPS affect decisions to acquire. The results are in Table VIII Columns 1-2. Our main result continues to hold. Increase in PPS lowers the probability of value-destroying acquisitions and increases the probability of value-enhancing acquisitions.

[INSERT TABLE VIII HERE]

The other form of the endogeneity problem is an omitted variable bias. The concern is that some unobservable acquirer traits could be responsible for both the level of PPS and the bank's probability to acquire. To address this concern, we perform a two-stage estimation. In the first stage, we estimate a regression to predict acquirer's announcement return using the specification in Equation (1), excluding PPS. In the second stage, instead of using the actual returns to separate out winners from losers, we estimate a multinomial logit model using the predicted returns from the first stage. We identify value-improving acquisitions as transactions with predicted returns greater than zero and value-destroying acquisitions as transactions with predicted returns less than zero. We report results in Table VIII Columns 3-4. Our main finding continues to hold. Higher PPS prevents value destroying acquisitions, while promoting value enhancing acquisitions.

5 Performance Change Following the Acquisition

So far, we show that acquirers with higher PPS have better abnormal returns around acquisition announcements and that higher PPS reduces value-reducing acquisitions and promotes value-enhancing acquisitions ex-ante. In this section, we analyze changes in performance following the acquisitions to examine whether the positive reaction on the stock market can be justified by real economic gains from the acquisitions.

Studies on banks'performance-change after an acquisition provide mixed results. Cornett and Tehranian (1992) show that merged banks outperform the industry in the post-merger period, while Pilloff (1996) finds no substantial evidence that mergers are associated with any significant change in performance.

We use four performance measures to capture changes around the acquisitions: return on assets (ROA), return on equity (ROE), an efficiency ratio, and long run buy and hold abnormal return (BHAR). We calculate ROA as the ratio of operating income to total book value of assets and ROE as the ratio of operating income to total book value of equity.[17] The efficiency ratio is similar to that used in Cornett and Tehranian (1992) and we compute it as the ratio of book value of assets to the number of full-time employees. While ROA and ROE measure the overall operating performance to capital invested, and the efficiency ratio captures the employee productivity.

We calculate changes of ROA and ROE based on quarterly data to better reflect the timing of the acquisition. Since it may take several years for an acquirer to completely absorb a target, we use a three-year window to allow full integration. That is, changes are computed as the difference between a ratio in the first quarter after the acquisition became effective and that of twelve quarters later. We use the first quarter following the effective date to measure pre-acquisition performance assuming that following the acquisition, earnings and assets from both parties are simply pooled together under the acquirer. Out of the 80 acquirer years in which other governance variables are available, we have 73 acquirer years with changes of ROA available and 62 acquirer years with changes of ROE available.[18] For efficiency ratio, we use the annual data since Compustat does not have quarterly data on the number of employees.

To calculate the holding period returns (BHAR), we use an approach similar to Kothari and Warner

[17] We measure the operating income as earnings before interest, taxes, depreciation and amortization.

[18] We lose observations on ROA and ROE on acquisitions from later years due to missing value for future years (three years after the acquisition) and we lose a few more observations on ROE due to missing values of book value of equity in Compustat.

(1997), and Barber and Lyon (1997). First we calculate monthly buy-and-hold returns (BHR) by compounding monthly returns calculated using the monthly returns from CRSP over a (0, 36) month horizon. If a sample bank is delisted before the end of the time horizon, the BHR of that particular bank over that time horizon is calculated over the period from the first to the last dates when return index data are available in CRSP. We then calculate BHRs of the CRSP Value matched portfolios over the same time horizon. Finally, BHARs are calculated by subtracting the corresponding average BHRs of benchmark index from the relevant average BHRs of our sample banks.

We use the following specification to estimate the impact of PPS on changes in performance:

$$\Delta PERF_{i,t} = \gamma_0 + \gamma_1 PPS_{i,t-1} + \gamma_2 A_{i,t-1} + \gamma_3 D_{i,t} + \gamma_4 G_{i,t-1} + F_t + \omega_{i,t} \tag{3}$$

The dependent variable, $\Delta PERF_{i,t}$ is the change of performance for acquirer i with acquisition in year t (for the BHAR estimation, $\Delta PERF_{i,t}$ is the BHAR for the (0,t) horizon) , and our key explanatory variable is the pay-for-performance sensitivity for the acquirer bank CEO before the acquisition ($PPS_{i,t-1}$). We control for acquirer's characteristics ($A_{i,t-1}$), deal characteristics ($D_{i,t}$), and other governance variables ($G_{i,t-1}$). F_t is the year fixed effect, and ω_{it} is the error term.

Table IX reports the results. For all four measures, we run separate regressions including governance variables. Columns 1-4 show the results for ROA, ROE, the efficiency ratio, and BHAR, respectively. The estimated coefficients for PPS are positive and significant across all specifications. Banks with higher pay-for-performance sensitivity show a greater improvement in their operating performance following an acquisition. A one unit increase in the log of PPS leads to a 0.21% increase in changes of ROA, suggesting a positive benefit for all stakeholders. Focusing on equity holders, we find that they experience even better improvements in their wealth - a one unit increase in the log of PPS leads to a 1.105% increase in changes of ROE. We also observe that higher PPS is significantly associated with gains in employee productivity, such that managerial incentives lead to more assets being managed by fewer number of employees. Long run returns can be noisy since they include numerous factors in addition to the acquisition itself. Nevertheless, we find that PPS has a significant impact (at 10%) - a one unit increase in the log of PPS leads to a 5.8% increase in the three-year long run return. These findings suggest that high PPS also helps CEOs to focus more on long-run performance.

[INSERT TABLE IX HERE]

Meanwhile, we find that other governance variables have considerably weak effect on changes in performance. For deal characteristics, we find that acquisitions with lower relative size ratio show more improvements in ROA and ROE, and lead to higher long-run stock return.

Bank mergers during our sample period are split between the use of purchase and pooling methods of accounting. Under the pooling method, the assets are combined at their book value while under the purchase method, the assets of the target company are recorded at their purchase price. The difference in accounting methods can potentially affect the calculation of ROA and ROE. To control for it, we add an indicator variable for whether pooling method is used in our estimation and our results continue to hold. Our results also hold when we use a (-1,3) window in which we examine changes from one year before to three years after the acquisition.[19]

6 Conclusion

In this paper, we examine the relation between executive compensation and shareholder interests in bank mergers. Specifically, we show how pay-for-performance sensitivity in executive compensation affects the acquirers' stock returns around the announcement, the probability of acquiring ex-ante, and changes in operating performance after acquisitions.

We find that banks with higher pay-for-performance sensitivity have significantly higher stock returns around the acquisition announcements. Acquirer banks in the High-PPS group outperform their counterparts in the Low-PPS groups by 1.43% in a three-day window.

We also show that incentive-based compensation accomplishes two objectives simultaneously in aligning the interests of the CEO with the interests of shareholders. On the one hand, higher PPS lowers the probability of engaging in value-destroying acquisitions. On the other hand, it encourages CEOs to search for acquisitions that are consistent with shareholder value maximization. The dual role of incentive-based compensation is a novel finding in our paper and it provides insights into the channels through which incentive compensation may affect corporate decisions. Stock markets view acquisitions made by CEOs with high pay-for-performance sensitivity as more profitable and react favorably to those announcements. We provide evidence that those positive reactions can be justified by changes in operating performance

[19] Results are not reported but are available upon request.

following acquisitions. Banks in which CEOs' interests are better aligned experience greater improvement in operating performance.

It is worth pointing out that given the high leverage ratio and the implicit government guarantee on banks, the incentives of all stake-holders (including the FDIC, bond-holders, shareholders and tax payers) are not always aligned (Buser, Chen, and Kane,1981; and Kane, 2004). In fact, other stake-holders can be hurt from higher PPS if the higher abnormal returns from acquisitions come at the expense of other stake-holders. As a result, decisions that benefit the shareholders may not always be optimal for other stake-holders. We provide additional insight into this dynamic. High PPS creates value through bigger improvements in operating performance following the acquisitions and a lower likelihood of making unprofitable investments. Both benefits accrue to not only shareholders, but other stakeholders as well.

Our study also suggests that regulation may not fully substitute for managerial incentives. Although banks are regulated to a much higher degree, incentive-based compensation can still significantly improve shareholders' value in the context of acquisitions. One explanation for this observation is that regulation and incentive-based compensation each have their own relative strengths in monitoring. Regulation can be very effective by enforcing criteria that are clearly quantifiable (such as capital ratios). However, decisions whose outcomes cannot be observed ex-ante, or require extensive insider knowledge, can be either too difficult or too costly for regulators to monitor. As such, our study provides an important policy implication. If incentive-based compensation can effectively enforce bank managers taking actions that are consistent with shareholder value maximization, regulatory agencies might want to consider the top management compensation structure explicitly in the supervisory ratings.

Table I Summary Statistics: Acquisitions by Year

Panel A describes the deals in our sample by year. Deal value is defined by SDC as the total value of consideration paid by the acquirer to the target. MVE denotes the market value of equity of the acquirer. TAsset and AAsset denote the total assets of the target and the acquirer, respectively. Panel B presents the number of acquisitions taken by banks during our sample period. All deal data are taken from SDC Platinum Mergers and Acquisitions database.

Panel A: Deals by Year

	Number of Deals	Deal Value (in $ million)	Acq. MVE (in $ million)	Deal Value/ Acq. MVE	Target Asset/ Acq. Asset
1991	3	1,565	4,136	0.31	0.29
1992	4	395	1,264	0.29	0.23
1993	14	273	2,744	0.13	0.09
1994	11	391	3,921	0.11	0.08
1995	10	1,089	3,133	0.31	0.19
1996	10	286	1,310	0.23	0.13
1997	13	1,153	4,020	0.29	0.15
1998	21	816	4,709	0.17	0.12
1999	22	679	9,255	0.12	0.11
2000	13	1,546	15,650	0.10	0.13
2001	6	328	4,708	0.17	0.11
2002	4	246	10,027	0.08	0.05
2003	10	5,511	16,743	0.19	0.13
2004	9	9,101	17,557	0.29	0.16
2005	9	4,623	26,048	0.18	0.14
Total	**159**	**1,742**	**8,364**	**0.18**	**0.13**

Panel B: Number of Deals by Acquirers

Number of Acquisitions	Frequency	Percent
1	32	50.00
2	9	14.06
3	11	17.19
4	4	6.25
5 or more	8	12.50
Total	64	100

Table II Summary Statistics: Deal Characteristics and Bank Characteristics

Panel A summarizes the deal characteristics for acquirers. Panel B compares acquirers with the benchmark sample, which contains all bank–years that are not related to mergers (where the bank is neither an acquirer nor a target). TA is the book value of assets. N shows the number of bank years. Banks that make multiple acquisitions in a single year are only counted once per year. We use pairwise t-tests to examine whether there is a significant difference between the benchmark and the acquirer sample. *, **, and *** denote significance at the 10, 5, and 1% levels, respectively.

Panel A: Deal Characteristics

	Mean	STDEV	Median
PCT_STOCK	0.89	0.25	1.00
PCT_CASH	0.11	0.25	0.00
ALLSTOCK	0.79	0.38	1.00
ALLCASH	0.05	0.22	0.00
D_STOCK	0.82	0.41	1.00
SIZE_RATIO	0.18	0.24	0.20
REL_SIZE	0.13	0.15	0.08
OUTOFSTATE	0.70	0.46	1.00
N	159		

Panel B: Bank Characteristics

	Acquirers		Benchmark	
	Mean	Median	Mean	Median
TA	58,928	21,247	54,494	17,336
MVE	10,046	3,487*	7,999	2,510
RET	0.23	0.19	0.21	0.17
RET_VOL	0.22**	0.20*	0.24	0.22
ROA (in %)	1.21	1.20	1.19	1.19
PRV	0.94	0.60	0.92	0.59
CASH	0.07	0.06	0.07	0.06
N	109		568	

Table III Summary Statistics: Governance Variables

This table provides summary statistics on governance variables. Panel A compares the acquirer banks with the benchmark sample, and Panel B presents the correlation matrix. A bank is an acquirer if it makes at least one acquisition in the current year. The benchmark sample contains all bank years that are not related to mergers (where the bank is neither an acquirer nor target). N is the number of bank years. Banks that make multiple acquisitions in a year are only counted once per year. We use pairwise t-tests and rank tests to examine whether there is a significant difference between the benchmark and the acquirers in mean and median, respectively.*, **, and *** denote significance at the 10, 5, and 1% levels, respectively.

Panel A: Summary Statistics: Acquirer Sample and Benchmark Sample

	Acquirers			Benchmark		
	Mean	Median	N	Mean	Median	N
Compensation Characteristics						
Cash Comp ($ 000's)	1,546	1,160	109	1,599	1,122	568
Total Comp ($ 000's)	3,978	2,393	109	4,170	2,315	568
Pct_CashComp	0.51	0.50	109	0.54	0.52	568
Stock PPS ($ 000's)	269	97	109	298	127	568
Option PPS ($ 000's)	210	77	109	217	86	568
Total PPS ($ 000's)	480	217	109	515	268	568
Board Characteristics						
BSIZE	16.3**	16.0**	80	15.7	15.0	323
BINDEP	0.69	0.71	80	0.69	0.71	323
D_CEO	0.90	1.00	80	0.94	1.00	323
Anti-Takeover Provisions						
EINDEX	2.76	3.00	80	2.62	3.00	323
GINDEX	10.07	10.00	80	10.18	11.00	323
CBOARD	0.76	1.00	80	0.67	1.00	323
CEO Characteristics						
Tenure	5.3	3.0	109	6.0	5.0	568
Age	55.7*	55.0*	109	56.7	57.0	568

Panel B: Correlation of Governance Variables

	Total PPS	BSIZE	BINDEP	D_CEO	EINDEX	GINDEX	TENURE	AGE
Total PPS	1							
BSIZE	-0.004	1						
BINDEP	-0.039	0.053	1					
D_CEO	0.079*	0.094**	0.019	1				
EINDEX	-0.286***	-0.244***	-0.055	0.030	1			
GINDEX	-0.282***	-0.154***	0.034	0.069	0.757***	1		
TENURE	0.129***	0.064***	-0.083	0.134***	-0.102***	-0.045	1	
AGE	0.212***	0.151***	-0.155***	0.171***	-0.174***	-0.053	0.316***	1

Table IV Acquirer Stock Returns: Univariate Analysis

This table summarizes acquirer returns in general and for different PPS groups. Panel A shows the cumulative abnormal stock returns (CARs) in percentages for acquirers using a three-day and a five-day window where day zero is the event day. Panel B summarizes the PPS for each group based on total PPS where the low-PPS group has the bottom third of the observations, and the high-PPS group has the top third of the observations. PPS is in thousands of dollars. Panel C compares CARs between acquirers in different PPS groups. T- and signed-rank tests are performed to examine whether the mean or median returns are significantly different between high-PPS and low-PPS groups. *, **, and *** denote significance at the 10, 5, and 1% levels, respectively.

Panel A: Summary Statistics on Acquirer Returns (in %)

	Mean	STDEV.	Median	Min	Max	p-value (t-test)	p-value (sign-rank test)
(-1, 1)	0.21	2.28	0.33	-8.78	8.82	0.25	0.19
(-2, 2)	0.24	3.20	0.22	-10.65	10.96	0.35	0.39
N	159						

Panel B: Summary Statistics on PPS Groups (in $000's)

PPS Group	Mean	Median	Min	Max	N
Low	77	57	0	289	51
Medium	273	265	84	676	57
High	1,037	801	164	3,929	51
Total	455	234	0	3,929	159

Panel C: Acquirer Returns by PPS Group (in %)

	CAR (-1, 1)		CAR (-2, 2)	
PPS Groups	Mean	Median	Mean	Median
Low	-0.18	-0.43	-0.35	-0.44
Medium	0.12	0.24	0.27	0.38
High	0.70	0.82	0.78	0.49
t-test (high – low)(p-values)	-2.03(0.04)		-1.70(0.09)	
Signed-Rank (high – low)(p-values)	-2.27(0.02)		-1.94 (0.05)	

Table V: Acquirer Stock Returns: Multivariate Analysis

This table shows results for regressions using Equation(1) where the dependent variable is the acquirer's three-day cumulative abnormal stock returns (CARs) around the acquisition announcement. D_MPPS and D_HPPS are indicator variables that equal one if the acquirer has pre-acquisition PPS in the middle or top one-third among all banks in that year, respectively. All independent variables are measured one year before the announcement, and we control for year fixed effects. We use Huber-White adjusted standard errors. *, **, and *** denote significance at the 10, 5, and 1% levels.

Dependent Variable: CAR(-1,1)						
	(1)	(2)	(3)	(4)	(5)	(6)
Pay-for-Performance						
PPS	0.502***				0.624***	
	(0.16)				(0.20)	
SPPS		0.293**				
		(0.15)				
OPPS			0.350***			
			(0.10)			
D_MPPS				0.928**		0.638
				(0.41)		(0.50)
D_HPPS				1.425***		1.267**
				(0.44)		(0.54)
Other Governance Characteristics						
BSIZE					-0.036	-0.010
					(0.06)	(0.06)
BINDEP					-0.148	-0.084
					(1.56)	(1.55)
D_AGE					0.181	0.359
					(0.51)	(0.50)
EINDEX					-0.371*	-0.272
					(0.19)	(0.20)
Bank Characteristics						
SIZE	-0.552***	-0.397**	-0.480***	-0.488***	-0.657**	-0.517*
	(0.19)	(0.19)	(0.18)	(0.18)	(0.28)	(0.27)
ROA	0.383	0.500	0.274	0.555	0.648	0.989
	(0.61)	(0.63)	(0.60)	(0.62)	(0.81)	(0.80)
CASH	7.017	6.401	8.065*	6.302	0.991	0.467
	(4.48)	(4.66)	(4.38)	(4.53)	(5.86)	(5.81)
D_PMERGER	-0.471	-0.601	-0.035	-0.515	-1.327**	-0.955
	(0.45)	(0.47)	(0.47)	(0.45)	(0.58)	(0.59)
Bank Characteristics						
SIZE_RATIO	-0.607	-0.200	-1.110	-1.164	-3.265***	-3.683***
	(0.72)	(0.74)	(0.71)	(0.72)	(0.81)	(0.80)
D_STOCK	0.294	0.284	0.022	0.212	0.554	0.293
	(0.49)	(0.51)	(0.47)	(0.48)	(0.58)	(0.57)
OUTOFSTATE	0.174	0.155	0.259	0.276	0.132	0.386
	(0.40)	(0.42)	(0.39)	(0.40)	(0.49)	(0.50)
Constant	3.889*	3.223	4.096*	4.864**	7.219*	5.389
	(2.26)	(2.33)	(2.24)	(2.31)	(3.68)	(3.65)
Observations	159	159	159	159	116	116
R^2	0.162	0.123	0.197	0.188	0.386	0.408

Table VI: Acquirer Stock Returns: Multivariate Analysis (Robustness Checks)

This table shows results from regressions using Equation (1) where the dependent variable is the acquirer's three-day cumulative abnormal stock returns (CARs) around acquisition announcement. All independent variables are measured one year before the announcement, and we control for year fixed effect. We use Huber-White adjusted standard errors. Column 1 controls for possible size differences in the acquiring banks. Columns 2 and 3 control for structural breaks in time. D_MED, and D_LRG are indicator variables and equal to 1 if a bank is in the mid- or top one-third group based on assets. *, **, and *** denote significance at the 10, 5, and 1% levels.

Dependent Variable = CAR(-1, 1)			
	(1)	(2)	(3)
	Size	1992-1999	2000-2005
Pay-for-Performance			
PPS	0.551***	0.632***	0.379*
	(0.21)	(0.23)	(0.21)
PPS*D_MED	-0.062		
	(0.29)		
PPS*D_LRG	-0.699**		
	(0.32)		
Bank Characteristics			
SIZE		-0.443	-0.750**
		(0.32)	(0.28)
D_MED	-0.531		
	(1.54)		
D_LRG	2.665		
	(1.81)		
ROA	0.626	0.413	0.916
	(0.58)	(0.79)	(1.09)
CASH	5.349	6.181	18.707
	(3.79)	(5.24)	(12.54)
D_PMERGER	-0.357	-1.007*	-0.658
	(0.43)	(0.58)	(0.95)
Deal Characteristics			
SIZE_RATIO	0.629	-2.444***	0.640
	(0.67)	(0.86)	(1.92)
D_STOCK	0.204	0.432	0.054
	(0.42)	(0.75)	(0.58)
OUTOFSTATE	0.450	-0.258	0.499
	(0.39)	(0.52)	(0.71)
Constant	-3.577***	3.427	3.468
	(1.33)	(3.82)	(2.32)
Observations	159	108	51
R^2	0.126	0.205	0.195

Table VII Decisions to Acquire

This table shows the results for the multinomial logit model estimated from Equation (2). The dependent variable for Model 1 equals one (two) if the bank takes at least one acquisition and the cumulative abnormal return (CAR) around the announcement is negative (positive), and equals zero if the bank is neither an acquirer nor a target. In Model 2, we use the median CAR as an alternative cutoff point to separate good acquisitions from bad acquisitions. In all models, we compute CARs using a three-day window, (-1, +1), where zero is the event date. For banks with more than one acquisition in the same year, we use the weighted average CAR based on deal value. D_ACQ=1 is for value destroying acquisitions, and D_ACQ=2 is for value-enhancing acquisitions. All independent variables are lagged for one year and all specifications include year fixed effects. Standard errors are adjusted for clustering and are reported in parentheses. *, **, and *** denote significance at the 10, 5, and 1% levels, respectively.

	Model 1		Model 2	
	D_ACQ=1	D_ACQ=2	D_ACQ=1	D_ACQ=2
	(1)	(2)	(3)	(4)
Pay-for-Performance				
PPS	-0.439***	0.461**	-0.479***	0.566**
	(0.15)	(0.20)	(0.15)	(0.22)
Other Governance Characteristics				
BSIZE	-0.010	0.046	0.015	0.034
	(0.04)	(0.05)	(0.04)	(0.05)
BINDEP	-1.195	1.992	-0.713	2.274
	(1.41)	(1.39)	(1.33)	(1.49)
EINDEX	0.203	0.022	0.185	0.035
	(0.16)	(0.13)	(0.15)	(0.14)
D_AGE	-0.314	-0.468	-0.005	-0.828*
	(0.46)	(0.38)	(0.40)	(0.48)
Bank Characteristics				
SIZE	0.391**	-0.349	0.454**	-0.461**
	(0.19)	(0.22)	(0.18)	(0.23)
ROA	-0.432	0.894	-0.331	0.854
	(0.76)	(0.72)	(0.72)	(0.76)
RET	1.994	1.214	2.214*	1.083
	(1.36)	(0.96)	(1.24)	(1.03)
RETVOL	-7.847**	-0.699	-8.506**	0.116
	(3.90)	(2.54)	(3.84)	(2.34)
CASH	-4.231	-0.764	-5.033	-1.100
	(5.10)	(3.96)	(4.92)	(3.76)
DPMERGER	1.099**	1.299***	1.246**	1.209***
	(0.48)	(0.39)	(0.49)	(0.40)
PRVRATIO	0.111	-0.040	0.106	-0.065
	(0.30)	(0.29)	(0.27)	(0.30)
Constant	-1.400	-3.864	-2.794	-3.210
	(2.19)	(2.54)	(2.15)	(2.73)
Obs	403		403	
Pseudo R^2	0.164		0.167	

Table VIII Decisions to Acquire: Controlling for Endogeneity

This table shows the results for the multinomial logit model estimated using Equation (2).The dependent variable equals to one (two) if the bank takes at least one acquisition and the cumulative abnormal return (CAR) around the announcement is negative (positive), and equals zero if the bank is neither an acquirer nor a target. We compute CARs using a three-day window, (-1, +1), where zero is the event date. For banks with more than one acquisition in the same year, we use the weighted average CAR based on deal value. Columns 1-4 use the changes in PPS as an alternative measure. Columns 5-8 uses the predicted returns, instead of the actual returns to identify the dependent variable, D_ACQ. To estimate the predicted returns, we use the specification in Equation (1), but not including PPS in the estimation. All independent variables are lagged for one year and all specifications include year fixed effects. Standard errors are adjusted for clustering and are reported in parentheses. *, **, and *** denote significance at the 10, 5, and 1% levels, respectively.

	Changes of PPS		Based on Predicted CAR	
	D_ACQ=1	D_ACQ=2	D_ACQ=1	D_ACQ=2
	(1)	(2)	(3)	(4)
Pay-for-Performance				
Chg in PPS	-0.787**	1.912***		
	(0.34)	(0.55)		
Lagged PPS	-0.502*	0.391		
	(0.26)	(0.30)		
PPS			-0.429**	0.597***
			(0.17)	(0.21)
Other Governance Characteristics				
BSIZE	0.011	0.069	0.024	0.014
	(0.05)	(0.06)	(0.04)	(0.05)
BINDEP	-1.213	2.248	-1.124	2.932**
	(1.51)	(1.72)	(1.41)	(1.40)
EINDEX	0.219	0.091	0.112	0.074
	(0.15)	(0.18)	(0.16)	(0.13)
D_AGE	-0.106	-1.057**	-0.425	-0.337
	(0.47)	(0.46)	(0.42)	(0.42)
Bank Characteristics				
SIZE	0.525**	-0.242	0.324*	-0.391
	(0.21)	(0.31)	(0.19)	(0.25)
ROA	-0.113	0.479	0.028	0.640
	(0.77)	(0.78)	(0.85)	(0.72)
CASH	-5.673	-2.551	-6.283	0.688
	(6.26)	(5.01)	(5.67)	(4.19)
RET	1.866	1.059	1.213	1.738*
	(1.65)	(1.38)	(1.19)	(0.98)
RETVOL	-6.909	0.935	-3.887	-1.675
	(4.24)	(2.87)	(3.15)	(3.17)
DPMERGER	1.204**	1.345***	0.949*	1.608***
	(0.55)	(0.45)	(0.49)	(0.44)
PRVRATIO	-0.002	0.255	0.075	-0.061
	(0.36)	(0.35)	(0.31)	(0.32)
Constant	-3.308	-5.876	-1.659	-4.356*
	(2.71)	(3.88)	(2.27)	(2.48)
Obs	345		403	
Pseudo R^2	0.175		0.163	

Table IX Change of Operating Performance

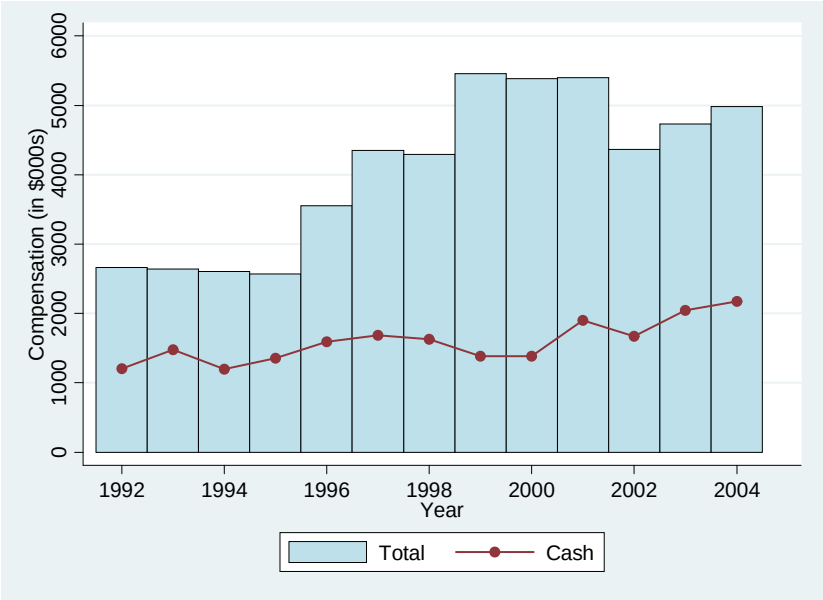
The dependent variables are the change in ROA, ROE, and efficiency ratio, and long-term buy-and-hold market-adjusted return (BHAR). We report the (0,3) windows using acquirer only ROA, ROE and efficiency ratios with time 0 being the year that the acquisition became effective, and calculate the buy-and-hold return using a 36-month window with month 0 being the month of the acquisition announcement. All independent variables are measured one year before the announcement and we use year effects in all specifications. Standard errors are adjusted for heteroscedasticity using Huber-White estimates and are reported in parentheses. *, **, and *** denote significance at the 10, 5, and 1% levels, respectively.

Dependent Variable: Change of Performance (0,3)				
	ROA	ROE	Efficiency Ratio	BHAR
	(1)	(2)	(3)	(4)
Pay-for-Performance				
PPS	0.214**	1.105***	0.052**	0.058*
	(0.09)	(0.33)	(0.02)	(0.03)
Governance Characteristics				
BSIZE	0.007	-0.024	-0.003	-0.014
	(0.03)	(0.07)	(0.01)	(0.01)
BINDEP	-1.350*	-3.761*	-0.069	0.054
	(0.72)	(2.11)	(0.17)	(0.23)
D_AGE	0.188	-0.915	-0.100	-0.162*
	(0.24)	(0.66)	(0.09)	(0.08)
EINDEX	0.019	-0.527*	0.006	0.001
	(0.10)	(0.27)	(0.02)	(0.03)
Bank Characteristics				
SIZE	-0.047	-0.690	-0.041	0.099**
	(0.10)	(0.42)	(0.04)	(0.04)
RET	-1.392**	-3.702	-0.055	0.454**
	(0.60)	(2.43)	(0.17)	(0.22)
CASH	-2.721	-3.165	0.676	-1.613*
	(2.30)	(7.33)	(0.55)	(0.94)
D_PMERGER	0.357*	-0.595	-0.033	-0.107
	(0.19)	(0.55)	(0.05)	(0.07)
Deal Characteristics				
SIZERATIO	-2.114***	-3.587***	-0.053	-0.283**
	(0.42)	(0.92)	(0.08)	(0.10)
D_STOCK	0.076	-0.214	0.037	-0.172*
	(0.27)	(0.75)	(0.09)	(0.09)
OUTOFSTATE	0.165	0.548	0.042	0.035
	(0.23)	(0.75)	(0.06)	(0.08)
Constant	1.465	10.211*	0.576	-0.031
	(1.44)	(5.15)	(0.46)	(0.63)
Observations	73	62	64	62
R^2	0.640	0.614	0.322	0.741

Figure 1: Total Compensation and Pay-for-Performance Sensitivity

This figure shows CEO compensation in bank holding companies over time. Panel A shows cash and total compensation in thousands of dollars, and Panel B presents the mean and the median pay-for-performance sensitivity (PPS) in thousand of dollars.

Panel A: Cash and Total Compensation over Time



Panel B:Pay-for-Performance

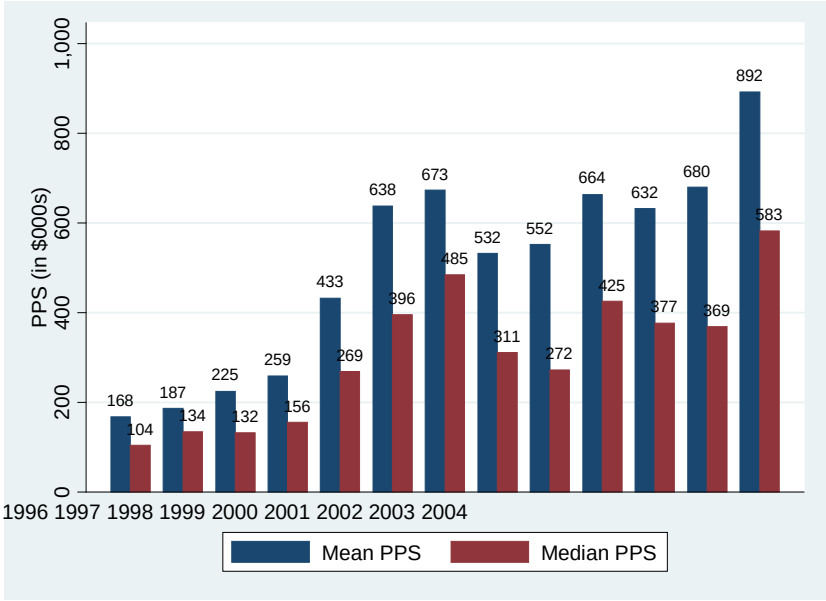
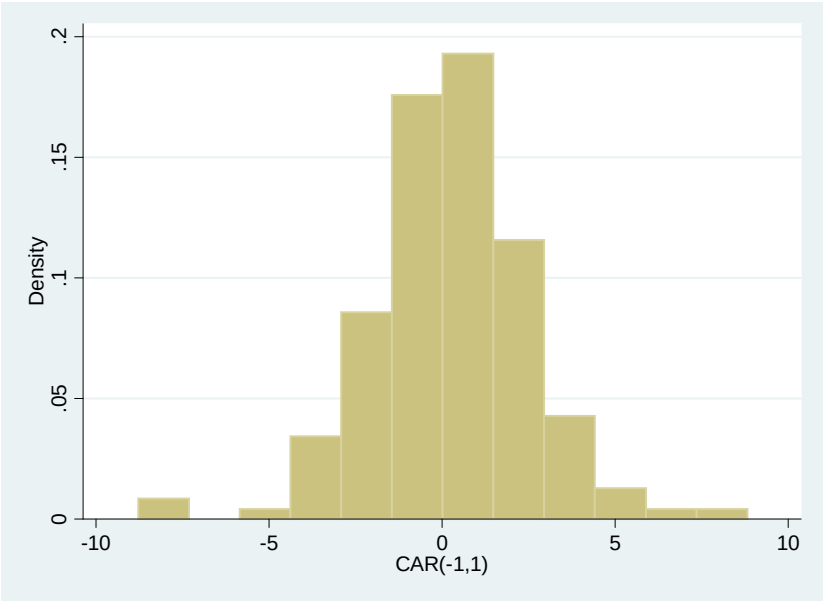


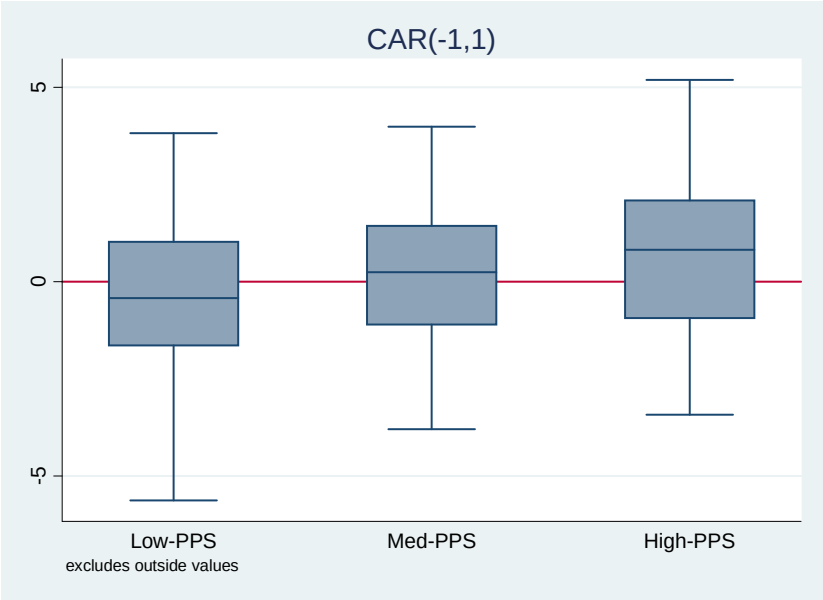
Figure 2: Histogram and Boxplots of Acquirer Stock Returns

Panel A shows the histogram of the cumulative abnormal stock returns (CARs) around the announcement using a three day window, CAR(-1,1), and a 5-day window, CAR(-2,2). Panel B shows the returns by PPS group in box plots. The lines (from top to bottom) represent the largest, upper quartile, median, lower quartile, and the smallest observation. We exclude outliers for all plots. For each year, we separate all banks (both acquirer and benchmark) into three groups based on their PPS. The Low-PPS group has banks in the bottom third and the High-PPS group has banks in the top third levels of PPS.

Panel A: Histogram of CARs



Panel B: Box Plots of CARs by PPS Group



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Appendix: Description of Variables

Firm Specific Variables

From Compustat

- TA: The total asset of a bank (data6).
- SIZE: The natural logarithm of total assets,(log(data 6)).
- MVE: Market value of equity: the number of shares outstanding multiplied by the average share price (data199 * data 25).
- CASH: Cash divided by total assets (data1/data6*100).
- ROA: Return on assets(%), defined as operating income divided by the total assets (data18/data6 *100).
- ROE: Return on assets(%), defined as operating income divided by the book value of equity (data18/data60 *100).
- Efficiency Ratio: Defined as total assets divided by the number of employees (data6/data29*100).

From Compustat Bank

- PRV: Provision for loan losses divided by total loan amount (data135/data23 *100).

From CRSP

- RET_VOL:.The annualized standard deviation of stock returns based on the monthly returns.
- RET: The annualized stock return, calculated using monthly stock returns.
- BHAR: The long run holding period abnormal return, calculated using monthly stock returns.

Deal Specific Variables (from SDC Platinum)

- A_ASSET: Acquirer asset size.
- T_ASSET: Target asset size.
- D_PMERGER: An indicator variable that equals one if the bank has participated in mergers before (within the sample period) and zero otherwise
- D_STOCK: An indicator variable that equals one if more than 75% of the deal was funded with stock and equals zero otherwise.
- D_CASH: An indicator variable that equals one if more than 75% of the deal was funded with cash and equals zero otherwise.
- OUTOFSTATE: An indicator variable that equals one if the acquisition involves acquirer and target from different states and equals zero otherwise.
- SIZE_RATIO: The ratio of the deal value to the acquirer's market value of equity.
- REL_SIZE: The total assets of the target divided by the total assets of the acquirer.

Compensation Variables and CEO Characteristics (from Execucomp and Proxy Statements)

- SPPS: The log of pay-for-performance sensitivity based on stock grants.
- OPPS: The log of pay-for-performance sensitivity based on option grants.
- PPS: The log of pay-for-performance sensitivity based on both stock and option grants
- Cash Comp: Cash compensation including salary and bonus (in $ millions)
- Total Comp: Total compensation including cash compensation and stock and option grants (in $millions)
- Tenure: The numbers of years of being the CEO
- Age: The age of the CEO
- D_Age: An indicator variable that is equal to one if the CEO is 60 or older.

Board Characteristics (from IRRC Director Database and Proxy Statements)

- BSIZE: The size of board of directors.
- BINDEP: The percentage of independent directors.
- D_CEO: An indicator variable that equals one if the CEO also serves as chairman of the board and equals zero otherwise

Anti-takeover Provisions (from IRRC)

- GINDEX: The governance index based on Gompers, Ishii, and Metrick (2003).
- EINDEX: The entrenchment index based on Bebchuk, Cohen and Ferrell (2004).
- CBOARD: An indicator variable that equals one if the bank has a staggered board, and equals zero otherwise.