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The Impact of Bank Relationships on Corporate and Investment Decisions

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Abstract

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This dissertation consists of three chapters addressing the impact of bank lending relationships on three borrowing firms' corporate and investment decisions: mergers and acquisitions, board structure, and the timing of earnings announcements.

In the first chapter, I investigate the impact of prior bank lending relationships on borrowing firms' acquisition decisions. Information is particularly hard to obtain, but extremely valuable in the course of major corporate events such as acquisitions. As informed lenders, relationship banks are found to play a certification role in acquisitions. The greater the intensity of a prior bank lending relationship, the greater the probability that a firm will initiate and complete acquisitions. Conditional on those completed acquisitions, prior lending relationships are positively associated with the greater use of cash as a method of payment, indicating that studies finding positive abnormal returns for cash-financed acquisitions may contain bank certification effects. Furthermore, the market perceives the monitoring and screening associated with more intense bank lending relationships as certification of value, as evidenced by positive announcement effects, particularly for private target firms.

The second chapter studies the relation between bank lending relationships and borrowing firms' board structure. As delegated monitors, banks are granted various legal and contractual powers to monitor and intervene in the borrowing firms' daily operations, thereby

acting in conjunction with other corporate governance mechanisms. Bank monitoring is costly, however, in terms of the cost of financing and potential hold-up problems. After controlling for endogeneity, I find that the presence of lending relationships increases board size and reduces the percentage of inside directors, resulting in a negative impact on the firm value (Tobin's Q). Controlling for the presence of a bank lending relationship may resolve an ongoing debate regarding the role of inside directors in creating firm value. I also find the costs outweigh the monitoring benefits and certification services provided by bank lenders.

In the third chapter, I examine the role of bank monitoring in the timing of earnings announcements. Managers have been shown to procrastinate and delay the public release of bad news on earnings. I find that banks discipline and prevent such managerial procrastination of earnings disclosures to the public. Moreover, I find that the market is more tolerant of delays in the public release of earnings information in the presence of a bank lending relationship. Thus, the negative abnormal return accompanying late releases of earnings information is observed only when a bank lending relationship is not present.

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Chapter 1

The Impact of Bank Lending Relationships on Mergers and Acquisitions

1.1 Introduction

Banks have been viewed as both salubrious and nefarious participants in economic activities. As delegated monitors and private information producers, banks work closely with their business clients to improve operations through access to credit implied by strong bank lending relationships. These beneficial effects have long been recognized (see James (1987), Petersen and Rajan (1994, 1995), and Berger and Udell (1995, 1996)). However, there is a dark side to banking relationships. Banks can pursue their own interests at the expenses of their clients, as shown in conflicts of interest such as the hold-up problem (see Sharpe (1990) and Rajan (1992)). The question of whether the detriments dominate the benefits of banking relationships is a subject for empirical inquiry. Indeed, the academic literature is filled with contributions examining this question from points of view such as underwriting

activity (see Puri (1996)), firm performance (see James (1987)), and loan contract terms (see Bharath et al. (2011)).

However, an area that has been relatively neglected has been the impact of prior banking relationships on the decision to acquire another firm. Acquisitions are probably one of most important business activities in the arena of corporate finance. It would be expected that the role of information providers such as lending banks would be most critical in these episodic, information-intensive events. Although the literature has examined merger fee structure (Saunders and Srinivasan (2001)), choice of adviser (Allen and Peristiani (2007) and others) and acquisition outcome (Bruner (2002) and Dutta and Jog (2009)), there has been a paucity of studies on the connection between banking relationships and the acquisition decision itself.

This paper addresses this gap by carefully examining the firm's incentives to acquire as a function of a prior banking relationship. The positive role that the relationship bank plays in acquisitions can be found in its monitoring activities. Bank monitoring could prevent value-reducing acquisitions motivated by entrenched management pursuing empire building or self-serving risk diversification strategies. Further, banks provide sources of financing to facilitate the acquisition and may enhance the integration of the acquired firm, thereby improving the prospects for the merger. Monitoring and certification services inherent in bank lending relationships could send positive signals of the acquisition's prospects, which, in turn, will be reflected in announcement returns. Some bank loans come with covenants that require approval from banks for significant corporate events, including merger decisions. In these cases, the evidence of banks' actual monitoring of acquisition decisions can be found in the wording of covenants or amendments to loan contracts. For example, the following excerpts from the bank loan amendments illustrate the bank's exercise of its monitoring role in acquisitions (emphasis added):

- Package ID: 25281; Company: Peebles Inc

  "Credit was amended to modify certain definitions and to **allow for co.'s acquisition of Carlisle Retailers, Inc. Availability after merger must be a min of $10M.**"

- Package ID: 55266; Company: North American Van Lines

  "Credit was amended to modify certain terms and definitions to **permit parent Allied Worldwide, Inc. to acquire Moveline through a stock-for-stock merger.**"

- Package ID: 117324; Company: Heico Corp

  "Credit was amended to extend the term, and **permit the acquisition of all of the assets of Connectronics Corp and Wiremax Ltd in addition to a $30M basket for mergers and acquisitions.**"

- Package ID: 180708; Company: Deep Down Inc

  "Credit was amended to **provide the funding for the cash portion of company's acquisition of Mako Technologies Inc.**, increase TL facility amount and modify certain financial covenant levels."

Even for those bank loans without explicit acquisition provisions in their covenants, there may still be a perception that bank monitoring improves potential acquisition outcomes. Acquirers may care about how their relationship bank perceives the acquisition's future performance prospects, especially when the firm is heavily dependent on a single relationship bank for its access to capital. Thus, more bank-dependent borrowing firms would tend to interact with lending banks more frequently and consult more comprehensively with their relationship banks regarding any acquisition plans. Shareholders may perceive that any announced acquisitions have been monitored and filtered out as good deals, and therefore this "certification effect" may generate positive acquisition announcement returns.

In contrast, however, bank lending relationships may also have negative effects on acquisition incentives and performance due to bank conflicts of interest. Banks may attempt to expand their share of the merger advisory market by offering below-market loans to potential acquirers with already established relationships. By doing so, banks grant funds in order to win lucrative and prestigious merger advisory contracts, regardless of the quality of the acquisitions. Moreover, relationship banks may encourage acquisitions to enable troubled firms to repay past debt obligations using the target firm's resources or to generate future lending business for the bank at the expense of the acquiring firm's shareholders. Therefore, whether the impact of bank relationships on acquisition activities is positive or negative is an empirical question that is addressed in this paper.

The impact of bank relationships on acquisition activity should be most obvious in firms that engage in multiple acquisitions (i.e. "multiple acquirers"). Thus, I focus on the connection between prior bank lending activity and multiple acquisitions. In this paper, I examine the impact of prior bank lending relationships on acquisition decisions. I utilize the Loan Pricing Corporation (LPC) DealScan database to define the prior bank lending intensity for each acquiring firm over the three years prior to each acquisition announcement. I test whether the impact of a prior lending relationship is consistent across three subsamples: (1) multiple acquirers, (2) single acquirers, and (3) non-acquirers. I find that firms with most intense prior lending relationships are most likely to engage in acquisition activities.

In addition, I investigate the method of payment as a potential channel used by relationship banks to exert influence on acquisition decisions. If banks provide cash to fund acquisitions, the impact of the banking relationship may be manifest in the method of payment, rather than in the direct acquisition announcement effect or performance. I, therefore, revisit the literature on the method of payment in acquisitions. That is, previous literature

highlighting the method of payment (dating back to Travlos (1987)) focuses on the signaling effect of cash versus stock payment for acquisitions. However, these studies fail to control for the presence of a banking relationship that may enable the acquirer to finance the acquisition either directly through acquisition-related lending or indirectly through access to ready credit. Utilizing a two-stage instrumental analysis, I control for the endogeneity in the decision to make acquisitions. Conditional upon the acquisition decision, the results show that acquiring firms with bank lending relationships are more inclined to pay higher proportions of cash per deal. Thus, the signaling effect of cash acquisitions may be augmented by the certification effect of relationship bank lenders.

Finally, this paper measures the impact of bank relationships on acquisition announcement returns. Controlling for the effects that lending relationships impact both the acquisition decision and the method of payment, the empirical results show that a relationship bank presence increases 3-day CARs around 52 basis points, inferring that beneficial effects dominate deleterious effects resulting in positive announcement returns for acquirers with prior bank lending relationships. This result is statistically significant when the target firm is private, so that the bank's certification effect is most valuable for informationally opaque non-public firms.

The rest of the paper is organized as follows. Section 1.2 reviews two strands of literature, including bank lending relationships and acquisitions, as well as hypotheses development. Section 1.3 discusses the data sets and descriptive statistics. Section 1.4 describes estimation model and methodologies and explains the empirical results. Section 1.5 conducts robustness tests and Section 1.6 summarizes the findings.

1.2 Literature Review and Hypotheses Development

1.2.1 Bank Relationship Literature

The field of relationship banking has extensively explored the cost of agency problems between borrowers and lenders (see Leland and Pyle (1977) and Diamond (1984, 1991)). In order to minimize that cost, banks play the role of delegated monitors and produce private information about their borrowers through monitoring activities. The benefit of such monitoring is found in positive market reaction to the granting of bank loans, particularly by relationship banks (see James (1987) and Lummer and McConnell (1989)).

Further, Petersen and Rajan (1994, 1995), Berger and Udell (1995, 1996), and Bharath et al. (2011) showed that the reduction in monitoring costs due to reusability of information can be passed to borrowers through better loan terms, looser collateral requirements, and greater funds availability. On the other hand, however, Sharpe (1990) and Rajan (1992) identified the hold-up problem that occurs when the banks' bargaining power expands. The private information generated in the course of the lending relationship increases the bank's monopoly power, thereby enabling the bank to extract rents from the borrower. The monopoly rents distort the firm's incentives. This potential lock-in problem may be severe especially when a borrower is very dependent on few banks, with negative implications for the cost of credit and the availability of financing. The tradeoff between the benefits of private information production and the costs of bank conflicts of interest has been studied in many areas. For example, Puri (1996) examines bank underwriting of corporate bonds and finds that the certification effect of monitoring dominates the hold-up effect.

1.2.2 Mergers and Acquisitions Literature

Acquisitions are probably one of most important business activities in the arena of the corporate finance. The role of delegated monitors is especially critical during acquisitions and exerts an influence on borrowing firms. Therefore, I provide an overview of existing studies in the field of mergers and acquisitions.

Early work in mergers and acquisitions suggests that value-enhancing mergers and acquisitions mainly benefit target shareholders (see review papers, such as Jensen and Ruback (1983), Jensen (1986, 1988), Jarrell et al. (1988), and Bruner (2002)). Shareholders of acquirers, in contrast, earn insignificant or even negative returns, with positive returns in hostile deals only (see review by Dutta and Jog (2009)).

Given the documented non-positive returns, researchers turn to examine the potential determinants that drive the results. Hansen (1987) and Fishman (1989) utilized the embedded contingent pricing feature of stock offers to develop theoretical models on the choice of medium of exchange in M&A deals. Empirically, Travlos (1987) conducted an analysis of the differential impacts of various methods of payment on announcement returns and found that financing a takeover through exchange of common stocks is associated with lower abnormal returns upon announcement of acquisitions, while financing via cash leads to zero abnormal returns for the acquiring firms. He explained this phenomenon as the consequence of a perceived overvaluation of the bidding firm. This explanation is consistent with the signaling hypothesis that managers possess private information, so that they may have incentives to finance the acquisition with stocks if they observe that the market price is higher than the intrinsic value of the firm.

More recent studies revisited the literature and reversed Travlos (1987)'s result that stock acquisitions have negative cumulative abnormal returns under certain scenarios. Chang (2002) found a positive return for stock offers in deals with privately-held targets and Betton et al. (2008a) also documented a similar result, implying that the negative acquirer abnormal returns were not solely driven by the usage of stock. Betton et al. (2008b) presented some evidences suggesting that most M&A studies tend to be biased towards finding some negative effects of the all-stock payment method because of the data availability (limited to large and public acquirers/ targets). However, these studies fail to control for the presence of a banking relationship that may enable the acquirer to finance the acquisition either directly through acquisition-related lending or indirectly through access to ready credit. That is, the documented increase in announcement returns for cash-financed acquisitions may be related to bank financing of these deals. Thus, the bank's willingness to lend to an acquiring firm may serve as a certification signal that leads to better announcement returns for acquirers using cash as the method of payment.

In addition to the method of payment and the status of the target, extant M&A literature studies other bid premium determinants, such as the size effect (Jarrell and Poulsen (1989), Asquith et al. (1983), and Jensen and Ruback (1983)), industry relevancy (Haleblian and Finkelstein (1999)), managerial resistance (Jarrell and Poulsen (1989) and Baron (1983)), acquirers' market valuation (Raghavendra Rau and Vermaelen (1998)), acquirers' corporate governance mechanisms (Masulis et al. (2007)), merger fee structure (Saunders and Srinivasan (2001)), and the choice of advisers (Allen and Peristiani (2007)).

Another strand of the merger literature focuses on the performance and behavior of a group of so-called frequent acquirers, or multiple acquirers. Both Schipper and Thompson (1983) and Asquith et al. (1983) found positive returns for acquirers that engaged in acqui-

sition programs, whereas Asquith et al. (1983) documented that returns up to the fourth deal remained significantly positive. Ismail (2008) compared the performance of single acquirers to that of multiple acquirers and found that, on average, single acquirers outperform multiple acquirers. Moreover, multiple acquirers that had positive announcement returns in their first acquisition suffer from hubris and overpay in subsequent acquisitions. Fuller et al. (2002) identify multiple acquirers as firms that acquired more than five targets in a prior three year period. In this paper, I add to the literature on multiple acquirers by examining the role of bank relationships.

1.2.3 Hypotheses

Information asymmetries underlie both lending and M&A activities. The private information that is produced in the course of a lending relationship can, therefore, be used in various ways to impact the acquisition decision. That is, the presence of a relationship bank may either increase or decrease the likelihood that a firm undertakes an acquisition. Since relationship banks monitor firm decisions, it could be posited that the presence of a relationship bank reduces the likelihood that an acquisition is undertaken since the bank's approval must be obtained from the acquirer's relationship bank.

However, the presence of a relationship bank may encourage acquisitions. The relationship bank may facilitate value-enhancing acquisitions by using private information about the operations of the acquiring firms to certify the value of the acquisition. Alternatively, relationship banks could encourage value-reducing acquisitions in order to generate resources that could be used to pay back past bank loans.

Hypothesis 1: The presence of a prior bank lending relationship increases the probability that a firm will initiate and complete one or more acquisitions.

Hypothesis 1 posits that a firm is more likely to engage in and complete one or more acquisitions if a prior bank lending relationship is present. Indeed, a corollary of Hypothesis 1 is that the more intense the banking relationship, the greater the acquisition probability. Acquirers with intense prior banking relationships may have access to bank loans to finance acquisitions. That is, a relationship bank can support and encourage acquisitions by supplying a stable, non-equity funding source. The next hypothesis, therefore, focuses on the impact of banking relationships on the method of payment in acquisition.

Hypothesis 2: The proportion of cash utilized in acquisitions increases if an acquiring firm has established a relationship with any bank.

This hypothesis investigates the method of payment as one potential channel that relationship banks can use to exert influence over acquisition decisions. A firm with prior bank lending relationships may have access to stable funding sources (see Allen and Gale (1997) analysis of intertemporal provision of liquidity by relationship banks) from relationship banks, and may have a higher propensity to complete acquisitions with cash rather than stock.

Hypothesis 3: The presence of a bank lending relationship increases with the announcement abnormal returns to the acquiring firms.

This hypothesis examines the dominant forces of a bank lending relationship on M&A performance. There are two conflicting forces of bank lending relationships on the acquisition announcement effect. On one hand, the monitoring and certification functions that come with the bank lending relationship may generate positive abnormal returns to the acquirer.

On the other hand, a negative impact might come from the conflicts of interest from the conflicting roles of lending relationship and financial advisers of acquisition.

1.3 Data and Variables

1.3.1 Data

Mergers and acquisitions data are extracted from the Thomson Securities Data Corporation's (SDC Platinum) US M&A database. The acquirers are matched to Compustat via CUSIP. If the acquirer's CUSIP is not available, the acquirer's immediate parent's CUSIP and the ultimate parent's CUSIP were used.[1]

The daily stock returns are downloaded from Center for Research in Security Prices (CRSP) and bank loan data are obtained from Loan Pricing Corporation (LPC) DealScan database[2] [3]. Using the DealScan Compustat link table provided by Chava and Roberts (2008), I match the corresponding loan records to Compustat data and then use the gvkey as the linking identity variable to merge matched loan records to the M&A dataset. The sample period ranges from January 1, 1990 to December 31, 2011. To be included, the sample deals need to meet the following criteria:

1. U.S. acquirers that are public traded firms and have a matching record in Compustat.

[1] A manual check comparing acquirers' names to company names on Computstat was implemented after the CUSIPs matching to make sure that the matching procedure was consistent and to maximize the number of matched observations.

[2] Bank lenders or banks in this paper refer to all types of lenders recognized by LPC DealScan database, rather than narrowly defined commercial banks only.

[3] Following the literature (e.g. Bharath et al. (2007)), bank lending relationships in this paper are measured using syndicated loan activity obtained from DealScan. Syndicated bank loans are important sources of financing for mergers and acquisitions, and DealScan obtains data on borrowing by private firms. In contrast, Compustat focuses on publicly-traded firms and does not distinguish between bank loans and non-relationship sources of financing such as bond issues.

2. Completed mergers, acquisitions, or tender offers with 50% or above shares owned after the transactions.

3. The acquirer and the target must be different entities (i.e. stock repurchases are excluded.)

4. Neither the acquirer nor the target is a utility (SIC ranges from 4900 to 4999) or a financial institution (SIC ranges from 6000 to 6999.)[4]

To control for the impact of alternative funding sources on acquisition decisions and performance (see Baker et al. (2007), Di Giuli (2013), and Eckbo et al. (2013)), I include the issuance of public equity and debt in a year before the acquisition announcements as control variables, obtained from SDC Platinum Global New Issues database. Furthermore, I control for acquiring firm ownership concentration using data from Thomson-Reuters Institutional Holdings (13F) database.

In total, my sample contains 18,246 acquisition deals, including 7,547 acquisition deals conducted by single acquirers and 10,699 deals by multiple acquirers. Single acquirers are defined as the firms who completed only one deal in any given year, whereas multiple acquirers (or serial acquirers) are defined as the firms who completed more than one deal in a specific year[5].

I also construct an alternative dataset containing both acquirers and non-acquirers on a firm-year basis by expanding the deal data across all the years in my sample period. In this set of data, non-acquirers are included as a control group. A firm is defined as a non-acquirer

[4]Financial institutions and utility firms are excluded from the analysis since these mergers may be effected by regulation and financial crises, thereby obscuring the impact of the relationship bank.

[5]Fuller et al. (2002)'s definition of multiple acquirers as 5 deals in a 3 year period is also adopted for robustness tests. Results for the alternative definition of multiple acquirers by Fuller et al. (2002) are consistent with the results presented and are available upon request.

in a specific year if the firm does not have any matched deal record in that year. In total, I have 64,248 firm years after considering the availability of control variables, which can be decomposed into three categories: 45,971 non-acquirer firm years, 10,808 single-acquirer firm years, and 7469 multiple-acquirer firm years.

The role of the relationship bank can be measured using an intensity variable (see Bharath et al. (2007)), as defined either in terms of total number of deals or in terms of total dollar amount of deals. These two relationship intensity measures are illustrated below.

$$Rdeals_M = \frac{Number\ of\ deals\ by\ bank_M\ to\ borrower_I\ in\ last\ 3\ years}{Total\ number\ of\ \ deals\ by\ borrower_I\ in\ last\ 3\ years}$$

$$Ramount_M = \frac{Dollar\ amount\ by\ bank_M\ to\ borrower_I\ in\ last\ 3\ years}{Total\ dollar\ amount\ of\ deals\ by\ borrower_I\ in\ last\ 3\ years}$$

Since each acquiring firm may establish lending relationships with multiple banks simultaneously, I utilize the largest relationship intensity measure across all relationship banks as the proxy for the relationship intensity measure for each acquiring firm. For each acquiring firm, the larger the maximum relationship intensity refers to a more concentrated reliance on a particular lending bank, and a more bank-dependent reliance on bank loans as opposed to other sources of financing. The rationale of using the maximum relationship intensity, rather than the average or the minimum value, to proxy the role of bank lending relationships is that a bank with a higher proportion of lending in and/ or a greater bank-dependent reliance with a firm has greater incentives to monitor and therefore assumes a major delegated role of monitoring (see Diamond (1984, 1991) and Leland and Pyle (1977)), while a bank with relative lower proportions of lending in and/ or a looser reliance with a firm is more likely to be a free rider and to shirk its monitoring duties even with larger amounts of lending to the

firm. Thus, the relationship intensity measures applied to the later analyses are defined as:

- **max_Rdeals**= Maximum of Rdeals of borrower$_I$ across all banks.
- **max_Ramount**= Maximum of Ramount of borrower$_I$ across all banks.
- **Relationship_dummy** equals to one if either max_Rdeals or max_Ramount exceeds zero, and zero otherwise.

Table 1.2 reports summary statistics of the variables for both acquirers and non-acquirers. Acquirers are more inclined to have bank lending relationships in the syndicated loan market and have higher banking lending relationship intensities than non-acquirers, with the mean difference significant at the 1% level. A list of control variable notations and definitions is provided in the Table 1.1. Table 1.2 shows that acquirers are generally larger in size (denoted as Size) and acquirers have larger tangible assets in value (Ppegt, Ppenb, or Tangible_size). Acquirers and non-acquirers have similar level in return on assets (ROA), leverage (Leverage), market-to-book ratio (MTB), and revenue growth rate (Revenue_growth_rate). It is interesting to notice that the acquirers and non-acquirers have roughly the same level of leverage, but acquirers tend to issue more debt in the one to three years prior to the deal (Debt_issuance1 or Debt_issuance3). Furthermore, acquirers have more free cash flow, both in value (FCF) and ratio scaled by total assets (FCF_ratios). Acquirers also have higher cash level (Cash), R&D expenses (Xrd), and selling and administration expenses (Xsga), but the scaled cash (Cash_ratio), scaled R&D expenses (Rnd_exp), and scaled selling and administration expenses (Selling_exp) are relatively lower for acquirers than for non-acquirers. Acquirers also tend to issue more new public equity and debt issuance in a preceding year (Equity_issue_number_lag, Debt_issue_number_lag, Total_equity_issue_amount_lag, and Total_debt_issue_amount_lag), but have a lower ownership concentration on average (Ownership Concentration).

Table 1.3 divides acquirers into two subsamples: single acquirers and multiple acquirers. Multiple acquirers are, on average, larger in size and possess more tangible assets, cash, and free cash flow. Multiple acquirers issue more debt in the past one to three years than single acquirers do, but the leverage for multiple acquirers is not statistically different from that for single acquirers. In addition, multiple acquirers are more likely to have banking relationships (Relationship_dummy) and develop more intense relationships (max_Rdeals or max_Ramount), which is consistent with our hypotheses.

1.3.2 Cumulative Abnormal Returns

Cumulative abnormal returns are calculated using the Eventus system [Cowan (2005) Eventus software, version 8.0]. Following Brown and Warner (1985) and Fuller et al. (2002), market adjusted return model (MAR) estimates abnormal returns by subtracting the value-weighted market index returns from stock returns[6].

The cumulative abnormal return (CAR) is calculated for a three-day event window, including one day before the announcement date and one day after[7]. In the sample, some deals are announced on non-trading dates, such as January 1 and December 31. For those deals, the returns will be matched to the next available trading date. Following Fuller et al. (2002), I exclude the clustered deals which were announced by a single acquirer on the same date or within a three day window since I cannot disentangle the proportion of each individual deal to the acquirers' cumulative abnormal returns.

Table 1.4 presents the descriptive statistics of cumulative abnormal returns for vari-

[6]Results using CAPM market model (MM) to calculate abnormal returns are consistent with the results using MAR model and are available upon request.

[7]The other two event windows, including five-day and eleven-day windows, are also calculated for robustness tests and yield consistent results with ones with three-day event windows. Results are available upon request.

ous event windows, relationship intensity measurements, and other control variables on a deal basis for single acquirers and for multiple acquirers. It follows that the acquisitions conducted by multiple acquirers tend to have lower cumulative abnormal returns, which is consistent with the results provided by Ismail (2008) that single acquirers outperform multiple acquirers. Also, all three lending relationship intensity measures are larger for multiple acquirers than for single acquirers both on firm year basis (Table 1.3) and on deal basis (Table 1.4). Multiple acquirers are more likely to acquire public targets (Target_public_status), to pay cash for acquisitions or to use more cash in a cash/stock deal (Cash_dummy or Cash_portion), and to conduct cross-border acquisitions (Crossborder_dummy) and larger deals (Valueoftransactionmil and Deal_size). Consistent with previous firm year based sample, multiple acquirers have more new public equity and debt issuance (Equity_issue_number_lag, Debt_issue_number_lag, Total_equity_issue_amount_lag, and Total_debt_issue_amount_lag) but maintain a lower ownership concentration (Ownership Concentration).

1.4 Estimation Models and Empirical Results

1.4.1 Bank Lending Relationships and the Propensity to Acquire

I first examine Hypothesis 1 to determine the impact of bank lending relationships on acquisition decisions by utilizing firm-year based data. To determine whether the presence of a banking relationship impacts the decision to become an acquirer, I use two estimation models: a logit regression model and an ordinary least square regression model.

The dependent variable, Y, in the logit regression is a dummy variable that takes a value of one if the firm makes an acquisition in any specific year. The logit regression is formulated

as followed.

$$Y = \alpha + \beta * Relationship\,Intensity + \gamma * X_{firm} + \varepsilon \tag{1.1}$$

Relationship intensity refers to three relationship intensity measurements, max_Rdeals, max_Ramount, and Relationship_dummy. X_{firm} refers to a set of aforementioned firm-specific control variables, including Size, Leverage, Debt_issuance1 (net debt issuance in the past one year), Debt_issuance3 (net debt issuance in the past three years), FCF_ratio (scaled free cash flow), Cash_ratio (scaled cash), Revenue_growth_rate, Rnd_exp (scaled R&D expense), Selling_exp (selling expenses scaled by sales), ROA, Tangible_size, MTB (market-to-book ratio), Equity_issue_number_lag (the number of new public equity issuance in a preceding year), Debt_issue_number_lag (the number of new public debt issuance in a preceding year), Total_equity_issue_amount_lag (total dollar amount of new public equity issuance in a preceding year), Total_debt_issue_amount_lag (total dollar amount of new public debt issuance in a preceding year), and Ownership Concentration(Ownership Concentration in the form of Herfindahl-Hirschman Index).

Table 1.5 reports the estimation results for equation (1.1). All of the coefficients for the three relationship intensity variables are positive and significant, consistent with Hypothesis 1 that the likelihood of acquisition increases with the existence and intensity of the prior bank lending relationship.

I now focus on the distinction between single and serial acquirers. I re-estimate equation (1.1) for a subsample of acquiring firms. The dependent variable, Y, is defined as one if the firm completes two or more acquisitions in a year, and zero if only one acquisition is completed. The results, presented in Table 1.6, show that all three coefficients of relation-

ship intensity variables are positive and significant. Thus, the more intense the bank lending relationship, the more likely that the firm is a multiple acquirer.

Table 1.7 uses an OLS regression to re-estimate equation (1.1) in which Y is equal to the number of acquisitions as the dependent variable. The OLS regression results reported in Table 1.7 show that all of three relationship intensity measurements are positively correlated to the number of acquisitions, consistent with Hypothesis 1.

The results shown in Table 1.5 to 1.7 may be subject to selection bias because of the endogeneity of the acquisition decision. Thus, I utilize Propensity Score Matching to control for comparable acquirers and non-acquirers in order to extract the pure lending relationship effects, or so-called average effects of treatment to the treated (ATT). I use the same set of control variables as in equation (1.1) to predict the propensity to be acquirers and assign propensity scores to both acquirers and non-acquirers. I then pair acquirers to the nearest neighbor non-acquirers using propensity scores and calculate the difference of relationship intensity measures for each pair to obtain ATT. Table 1.8 column (1) reports the result of the logit regression with Acquirer_dummy as the dependent variable and the same set of firm-specific variables in equation (1.1), and column (2), (3), and (4) present both unmatched effects (coefficients for "_treated") and treatment effects ("ATT") for all three relationship intensity variables between acquirers and non-acquirers with the t-statistics for treatment effects provided at the bottom of tables. Table 1.9 reports the results of logit regression (column (1)) and propensity matching models for relationship intensity variables (column (2), (3), and (4)) between single acquirers and multiple acquirers. All of the treatments effects are positive and significant, consistent with previous results and Hypothesis 1.

1.4.2 Bank Lending Relationships and the Method of Payment

In this section, I examine the acquisition terms conditional on the decision to acquire. I investigate the impact of bank lending relationships on the method of payment in an acquisition. Conditional upon the fact that prior bank lending relationships have an impact on acquisition decisions, relationship banks may enable the acquirers to finance the acquisitions either directly through acquisition-related lending or indirectly through access to ready credit. Thus, Hypothesis 2 postulates that the amount of cash or the proportion of cash utilized in acquisitions increase if an acquiring firm has established a relationship with any bank. To investigate this issue, I perform a series of analyses on deal-based data to obtain a set of deal-specific control variables.

I follow Travlos (1987) and Fuller et al. (2002) and classify the method of payment into three categories: all cash, all stock, or combined cash and stock (denoted "combo"). I create one indicator to identify three different methods of payment and use all stock payment as a base case for the multinomial logit regression model to estimate the impact of prior lending relationships on the relative propensity of each category over the base case. The multinomial logit regression is structured as followed in equation (1.2):

$$Y = \alpha + \beta * Relationship\ Intensity + \delta * X_{deal} + \gamma * X_{firm} + \varepsilon \tag{1.2}$$

The dependent variable, Y, is an indicator variable to identify various methods of payment, equal to one for all cash, two for all stock, and three for combo, respectively, and all stock payment serves as the base case for the multinomial logit regression. X_{deal} refers to a set of deal-related control variables, including a dummy for acquisitions conducted by multiple acquirers (Multiple_2), a dummy for public targets (Target_public_status), a dummy for the targets in the same industry with acquirers (Same_industry_dummy), a dummy for targets

taking defense strategies (Defense_dummy), a dummy for hostile deals (Hostile_dummy), a dummy for tender offer deals (Tender_offer_dummy), a dummy for cross-border deals (Cross-boder_dummy), relative sales between the acquirer and the target, and market value of equity for acquirers one week before announcement (MVE_1w). However, either acquirer or target sales was missing in many cases, thereby creating a selection bias due to the loss of observations. In order to mitigate this potential selection bias on the control variable relative sales, I create one additional indicator variable (Nonmissing_relative) that identify deals with available relative sales and one interaction term with this dummy and the original figures (Inter_relative_sales). Instead of controlling for relative sales, I use both the indicator variable and the interaction term to avoid the loss of observations. X_{firm} refers to a set of acquirers' firm-specific controls, including size (Acquirer_size), leverage (Leverage), scaled free cash flow (FCF ratio), ROA, the number of new public equity issuance in a preceding year (Equity_issue_number_lag), the number of new public debt issuance in a preceding year (Debt_issue_number_lag), total dollar amount of new public equity issuance in a preceding year (Total_equity_issue_amount_lag), and public debt issuance in a preceding year (Total_debt_issue_amount_lag), and ownership concentration- Herfindahl-Hirschman Index (Ownership Concentration).

Table 1.10 presents three multinomial logit regression results for three lending intensities (max_Rdeals, max_Ramount, and Relationship_dummy) respectively. Each multinomial logit regression produces two sets of coefficients to show the marginal impact of interested variables on the specified method of payment relative to base case. For example, the coefficient for max_Rdeals under "Cash" column is 0.144, referring that a one unit increase in max_Rdeals leads to 0.144 higher multinomial log-odds for all cash relative to all stock payment. The result presented in Table 1.10 show that the higher lending intensity, the greater probability of an acquisition with all cash payment or stock-cash combination pay-

ment relative to all stock payment.

For robustness, I utilize other measures of the method of payment in Table 1.11. In particular, I define "Cash portion" as the proportion of cash in each deal to represent the usage of cash. Table 1.11 shows the results for OLS regressions with cash portion as the dependent variable over various prior lending relationship measures and other control variables mentioned in equation (1.2). OLS outputs reveal several interesting facts. First, bank lending intensities does not account for the cash portion in contrast to the results in Table 1.10. Second, the estimates for dummies for acquisitions with the target in the same industry are negative and significant across all specifications, consistent with the equilibrium results in Hansen (1987) and Haleblian and Finkelstein (1999) theoretical model of the choice of medium of exchange in M&As. Since acquiring a target in a different industry usually incurs a relatively higher level of uncertainty, acquirers hence prefer to pay a lower cash portion and a higher stock portion in order to take advantages of embedded contingent pricing feature in the stock offer. Moreover, the issuance of public equity (both in the number of deals and dollar amount) in preceding years is negatively associated with the cash portion, which is consistent with Baker et al. (2007)'s and Eckbo et al. (2013)'s observations. Finally, Table 1.11 shows that multiple acquirers tend to pay a higher cash portion than do single acquirers.

These considerations suggest that endogeneity may provide an explanation for the inconsistency between Table 1.10 and 1.11 with regard to the impact of banking relationships on the method of payment in an acquisition. For example, if a firm has a higher propensity to conduct multiple acquisitions in a given year, the firm may arrange its cash for acquisition purposes strategically across acquisitions in advance, thereby impacting the usage of cash for individual acquisitions. Thus, the usage of cash may be indirectly impacted by other

factors that have influence on the propensity to be serial acquirers. Also, in the previous section, I have shown that prior lending relationships impact the firm's decision to acquire regardless of the method of payment. Hypothesis 2 posits an impact of banking relationships on the method of payment. However, since the banking relationship impacts both the method of payment and the acquisition decisions, there is a simultaneity that makes the use of OLS inappropriate for this analysis. Therefore, to address potential endogeneity and simultaneity, I conduct an instrumental variable two-stage least square (IV 2SLS) analysis, where the acquisition decision (dummy variable for multiple acquirers, or Multiple_2 is endogenous[8]). I adopt two excluded instruments: GDP growth rate (GDP_PCH) and the total number of acquisitions on the M&A market in a year (max_count_year). GDP growth rate reflects macroeconomic conditions, whereas the total number of mergers reflects trends in merger waves. Both instruments impact firms' acquisition decisions, but only impact the method of payment indirectly through the acquisition likelihood channel. I control for the same set of control variables used in equation (1.2) and include one more variable to control for the sequence of acquisitions (Deal_sequence), which might influence the usage of cash via strategic manipulations. The results are shown in Table 1.12, in which columns (1), (3) and (5) refer to the first stage regressions, while column (2), (4) and (6) refer to the second stage regressions for different lending intensity measures. The coefficients for most of lending intensities (except for Relationship_dummy) are positive and statistically significant, consistent with Hypothesis 2 stating that prior bank lending relationships have a positive effect on the usage of cash in acquisitions.

To test the validity of the IV 2SLS regressions, I conduct the over-identifying tests, weak instrument test, and endogeneity tests. According to Baun (2006), the validity of IV re-

[8]The results are consistent when using a continuous dependent variable (e.g., the natural log of the number of acquisitions undertaken within a year) in place of the binary dependent variable in the first stage. Results are available upon request.

gression depends on two assumptions that require excluded instruments to be independently distributed of the error process and to be sufficiently correlated with the endogenous variable. The over-identifying test aims to test the first assumption about exclusion restrictions and adopts Hansen J statistics for the null hypothesis that all instruments are uncorrelated with the error term. Hansen J statistics (j) with P-value (jp) are provided at the bottom of Table 1.12 with p-values for all specification showing that exclusion restrictions are not rejected and confirming the validity of the IV regressions. Weak instrument problems can be diagnosed directly through the coefficients of instruments in the first stage and the results show that both models are free from the weak instrument problem. Alternatively, I report the F statistic (widstat) for weak identification by Cragg-Donald or Kleibergen-Paap at the bottom of table. The critical value of 10% maximal IV size provided by Stock and Yogo (2005) is 19.93, which is smaller than the F statistic reported (84.28, 83.78, and 83.19, respectively for three models), inferring that we can reject the null hypothesis and concluding that we do not have a weak-instrument problem. Furthermore, I utilize an embedded endogeneity test in Stata provided by Durbin-Wu-Hausman Chi-square test with the null hypothesis that acquisition decision is properly exogenous in the model. The test statistics (estat) has a P-value (estatp) less than 0.05, rejecting the validity of OLS regressions in favor of IV regressions, lending support to validity of IV 2SLS regressions.

1.4.3 Bank Lending Relationships and Announcement Effects

After confirming the impact of prior lending relationships on both the acquisition decision and the method of payment, I investigate the market's reactions to the announcement of acquisitions in which the acquirer has a prior bank lending relationship. Following most of the traditional M&A literature, I use an OLS regression equation (1.3) shown below.

$$CAR = \alpha + \beta * Relationship\,Intensity + \eta * Cash\,portion + \delta * X_{deal} + \gamma * X_{firm} + \varepsilon \quad (1.3)$$

Hypothesis 3 postulates that the presence of a bank lending relationship increases with the announcement abnormal returns to the acquiring firms. Cumulative abnormal returns (CARs) serve as the dependent variable at the left hand side of the regression in equation (1.3). To test Hypothesis 3, I control for relationship intensity measures, the method of payment, and the same sets of deal-specific and firm-specific control variables used in equation (1.2). Fixed year effects and robust standard errors are also included in all regressions.

Table 1.13 reports the regression outputs of CARs for 3-day windows. Columns (1), (3), and (5) report the base case for different lending intensities. The coefficients for different intensities are all positive and statistically significant, consistent with Hypothesis 3 that the acquiring firms with more intense bank lending relationships experience higher M&A announcement returns, ceteris paribus. However, since prior bank lending relationships have an impact on the acquisition decision and the method of payment, there might be potential multicollinearity concerns among control variables in the regression. To address this issue and control for this conditionality, I use the predicted values from OLS results (Linear prediction) in equation (1.2) to replace both the dummy variable for multiple acquirers (Multiple_2) and the usage of cash (Cash_portion) in the regressions presented in columns (2), (4), and (6) respectively. All estimates for prior lending relationship intensities are positive and significant across all specifications, consistent with Hypothesis 3.

Table 1.13 also demonstrates the economic significance of the presence of a bank lending relationship. It shows that a relationship bank presence increases 3-day CARs around 52 ba-

sis points (over a 3-day event window) in column (5) to (7) after controlling for Cash_portion or Cash_dummy. In addition, the coefficients for Cash_portion or Cash_dummy are all positive and significant across all models, which is in line with documented positive cash effects in Travlos (1987). What deserved to be mentioned the most is that the announcement effects of one standard deviation increase in relationship lending intensities (max_Rdeals $= 0.479 * 0.538 = 0.2577$, max_Ramount $= 0.483 * 0.530 = 0.2560$, or Relationship_dummy $= 0.496 * 0.528 = 0.2619$) are much greater than those of one standard deviation increase in Cash_portion ($= 45.361 * 0.00394 = 0.1787$) or in Cash_dummy ($= 0.458 * 0.379 = 0.1736$), illustrating one important fact that the effect of influential signals embedded in prior lending relationships dominates the signaling effect of the cash usage.

To further disentangle the effects of bank lending relationships from the documented effect of method of payment, I perform regression analyses separately for subsamples with and without the use of cash. The results in Table 1.14 show that the coefficient estimates for all three lending intensity variables are significant across all specifications, confirming previous conjectures that banks are more knowledge intermediaries. When cash is used as a method of payment to pay for the acquisition, the market responds positively to acquirers' lending intensities during announcement windows, implying a positive value for relationship bank monitoring. On the other hand, when cash is not used (100% stock is used for payment), the findings indicate that the monitoring role still matters and the magnitude of the monitoring effect is greater than the contribution even if cash is used. That is, the involvement of relationship banks is viewed as certification of the value of the target to the acquiring firm.

To investigate the value of monitoring roles of lending relationships in terms of the level of information asymmetry, I divide the samples into acquisitions of private targets (a group of acquisitions with high level of information asymmetry) and acquisitions of public targets

(a group of acquisitions with low level of information asymmetry). Table 1.15 shows that the positive effects of three lending intensities are statistically significant only for acquisitions of private targets, but not for acquisitions of public targets. This finding implies that bank monitoring is especially valuable in acquisitions with high level of information asymmetry, which is consistent with the conjectured value of bank certification services.

1.5 Robustness Tests

My sample is constructing utilizing the entire universe of Compustate firms and assigning zero lending relationships to firms that never appear in DealScan during the sample period. However, a borrowing firm may not have a record in DealScan because its loans are too small or the firm does not report syndicated bank loans publicly. To test whether my sample construction methodology imparts a selection bias into my analysis, I adopt the Heckman probit procedure embedded in Stata. The first stage estimates the likelihood that a firm has a record in DealScan at any time during my sample period from 1990 to 2011 (i.e. if there is a record, then DealScan_match is equal to one, and zero otherwise). Then I re-estimate the model in equation (1.1) and present the estimated results in Table 1.16.

Table 1.16 column (1) reports the first stage of probit estimations with the dependent variable (DealScan_match) that identifies whether the firm ever appears in DealScan database and with all firm-specific variables, except for lending intensities, serving as identifying control variables. Table 1.16 column (2)-(4) report the estimations of the second stage with controls of three lending relationship intensities (max_Rdeals, max_Ramount, and Relationship_dummy) respectively. The estimated coefficients for three lending intensity measurements are all positive and significant after correcting for the aforementioned selection bias, confirming the validity of the fundamental analyses of the impact of bank lending relation-

ships on mergers and acquisitions as shown in Table 1.5.

Another robustness check involves an alternative measurement of the intensity of a banking relationship. Rather than using total bank loans as the denominators, I utilize total liabilities in order to examine the importance of lending relationships in the context of the firm's whole debt structure. Thus, I define the Ramount_ratio as follows:

$$Ramount\_ratio = \frac{Dollar\ amount\ by\ bank_{Max\ amount}\ to\ borrower_I\ in\ last\ 3\ years}{Borrower'_I s\ average\ of\ total\ liabilities\ in\ last\ 3\ years}$$

Table 1.16 column (5) presents a positive and significant coefficient for Ramount_ratio, which is consistent with prior findings that the presence of a prior bank lending relationship increases the probability that a firm will initiate and complete one or more acquisitions after correcting for potential selection bias.

1.6 Conclusion

Through their special role as information providers, banks establish and maintain lending relationships with borrowers that may also impact the borrowing firms' business decisions. Mergers and acquisitions are one of the most important business decisions that may benefit from the information production of a relationship bank.

I find that the presence of a prior bank lending relationship increases the probability that a firm will initiate and complete acquisitions. Moreover, the more intense the bank lending relationship, the more monitoring activity and the greater the likelihood of multiple

acquisitions. Conditional on completing acquisitions, the existence and intensity of prior bank lending relationships are found to be positively associated with the usage of cash as a method of payment in the acquisitions. Furthermore, the results of positive announcement effects indicate that the market perceives the monitoring involved in prior bank lending relationships as certifying the quality of acquisitions, particularly when the target is an informationally opaque non-public firm. Thus, the deal announcement effect is positively impacted by the presence of an intense bank lending relationship. Banks influence the acquisition performance via the provision of financing to their relationship borrowers.

Table 1.1: Variable Notations and Definitions

Variable Notation	Definition
Lending relationship variables	
Relationship_dummy	Dummy variable=1 if the acquirer has established lending relationships with any banks
max_Rdeals	Acquirers' maximum relationship intensity in terms of number of deals across all lenders
max_Ramount	Acquirers' maximum relationship intensity in terms of dollar amount across all lenders
Firm-specific variables	
Size (Acquire_size)	Natural logarithm of total assets
ROA	Return on Assets, or the ratio of EBIT over total assets
Ppegt	Property, Plant and Equipment - Total (Gross)
Ppenb	Property, Plant, and Equipment - Total (Net)
Tangible_size	Natural logarithm of Ppegt
Leverage	The ratio of debt (both long term and short term portion) over total assets
Debt_issuance1	Net debt issuance in the past one year
Debt_issuance3	Net debt issuance in the past three years
MTB	Market to book ratio, or the ratio of market value over total assets
Revenue_growth_rate	Annual revenue growth rate
FCF	Free cash flow, or the difference between net operating cash flow and capital expenditures
FCF_ratio	Scaled free cash flow by total assets
Cash	Cash
Cash_ratio	Scaled cash by total assets
Xrd	Research and development expenses
Rnd_exp	Scaled research and development expenses by sales
Xsga	Selling, general and administrative expenditures
Selling_exp	Scaled selling, general and administrative expenditures by sales
Total_deals	The annual number of acquisition deals the firm conducts
Equity_issue_number_lag	The number of public equity issuance one year prior than acquisitions
Debt_issue_number_lag	The number of public debt issuance one year prior than acquisitions
Total_equity_issue_amount_lag	Total dollar amount (in million) of equity issuance one year prior than acquisitions
Total_debt_issue_amount_lag	Total dollar amount (in million) of debt issuance one year prior than acquisitions
Ownership Concentration	Institutional ownership concentration in the form of HerfindahlHirschman Index
Deal-specific variables	
CAR_MAR_V(E)W_3(5,11)day	3(5,11) day cumulative abnormal returns by value-weighted (equal-weighted) benchmark portfolio
Target_public_status	Dummy variable=1 if the target is a public firm
Cash_dummy	Dummy variable=1 if the acquisition is conducted by 100% cash
Cash_portion	The portion of cash involved in the acquisition transaction
Same_industry_dummy	Dummy variable=1 if the acquirer and the target share the same 2-digit SIC
Defense_dummy	Dummy variable=1 if the target adopts any defense strategy
Hostile_dummy	Dummy variable=1 if the acquisition is hostile
Tender_offer_dummy	Dummy variable=1 if the acquisition deal is a tender offer
Crossborder_dummy	Dummy variable=1 if the target is a non-US firm
Valueoftransactionmil	The dollar amount of the acquisition transactions
Deal_size	Natural logarithm of dollar amount of the acquisition transactions
Relative_sales	The ratio of acquirers' annual sales amount over targets' annual sales amount
MVE_1w	Market value of equity of acquirers one week before the acquisition announcements
Multiple_2	Dummy variable=1 if the acquirers conduct more than one acquisition in a year

Table 1.2: Summary Statistics- Firm-Specifics for Non-Acquirers vs Acquirers

	Non_Acquirers			Acquirers			Difference	
	Obs	Mean	SD	Obs	Mean	SD	Mean_Diff	t-Stats
Size	45971	5.098	2.112	18277	6.292	2.032	-1.194	-66.46
ROA	45971	-0.0250	0.881	18277	0.00501	7.061	-0.0300	-0.572
Ppegt	45971	1451.3	9746.0	18277	2423.0	12739.3	-971.6	-9.287
Ppenb	3868	87.39	408.3	1214	164.0	514.2	-76.66	-4.746
Tangible_size	45971	4.218	2.407	18277	5.216	2.323	-0.998	-48.63
Leverage	45971	0.249	0.577	18277	0.271	3.943	-0.0216	-0.736
Debt_issuance1	45971	22.23	611.1	18277	107.1	1408.1	-84.85	-7.858
Debt_issuance3	45971	91.11	1313.2	18277	259.4	2949.2	-168.3	-7.427
MTB	45971	1.753	3.114	18277	2.241	66.76	-0.487	-0.986
Revenue_growth_rate	45971	0.429	21.14	18277	0.354	4.340	0.0750	0.723
FCF	45971	67.79	697.8	18277	222.4	1310.7	-154.6	-15.12
FCF_ratio	45971	-0.0426	0.485	18277	-0.0215	3.859	-0.0211	-0.737
Cash	45971	149.1	836.9	18277	307.3	1655.9	-158.2	-12.31
Cash_ratio	45971	0.131	0.153	18277	0.0987	0.116	0.0324	28.96
Xrd	45971	42.75	329.0	18277	120.4	583.3	-77.61	-16.95
Rnd_exp	45971	0.273	9.643	18277	0.0665	0.376	0.206	4.580
Xsga	45971	289.5	1354.0	18277	692.6	2498.3	-403.2	-20.64
Selling_exp	45971	1.064	29.91	18277	0.372	2.414	0.692	4.921
Total_deals	45971	0	0	18277	1.903	1.855	-1.903	-138.7
Relationship_dummy	45971	0.413	0.492	18277	0.571	0.495	-0.158	-36.63
max_Rdeals	45971	0.384	0.471	18277	0.534	0.479	-0.150	-36.02
max_Ramount	45971	0.393	0.476	18277	0.547	0.482	-0.154	-36.72
Equity_issue_number_lag	45971	0.0693	0.286	18277	0.1128	0.352	-0.0435	-14.89
Debt_issue_number_lag	45971	0.0387	0.353	18277	0.140	0.851	-0.1013	-15.57
Total_equity_issue_amount_lag	45971	13.96	637.7	18277	21.84	190.0	-7.88	-2.39
Total_debt_issue_amount_lag	45971	23.68	475.0	18277	90.27	957.1	-66.59	-8.98
Ownership Concentration	45971	0.278	0.281	18277	0.144	0.195	0.134	68.87
Observations	64248							

Table 1.3: Summary Statistics- Firm-Specifics for Single Acquirers vs Multiple Acquirers

	Single Acquirers			Multiple Acquirers			Difference	
	Obs	Mean	SD	Obs	Mean	SD	Mean_Diff	t-Stats
Size	10808	5.884	1.966	7469	6.883	1.979	-0.999	-33.62
ROA	10808	-0.0430	9.180	7469	0.0745	0.243	-0.118	-1.330
Ppegt	10808	1767.3	10502.5	7469	3371.8	15363.0	-1604.5	-7.847
Ppenb	814	112.6	371.2	400	268.8	711.9	-156.2	-4.122
Tangible_size	10808	4.852	2.286	7469	5.743	2.275	-0.891	-25.98
Leverage	10808	0.283	5.125	7469	0.253	0.202	0.0302	0.611
Debt_issuance1	10808	56.71	747.4	7469	180.0	2008.7	-123.3	-5.066
Debt_issuance3	10808	133.1	1396.0	7469	442.2	4290.5	-309.1	-6.010
MTB	10808	2.559	86.80	7469	1.781	2.019	0.778	0.931
Revenue_growth_rate	10808	0.310	4.588	7469	0.419	3.952	-0.110	-1.725
FCF	10808	120.4	900.7	7469	370.0	1730.2	-249.7	-11.45
FCF_ratio	10808	-0.0493	5.016	7469	0.0188	0.135	-0.0681	-1.411
Cash	10808	202.0	1070.3	7469	459.7	2239.1	-257.8	-9.246
Cash_ratio	10808	0.109	0.126	7469	0.0841	0.0995	0.0246	14.74
Xrd	10808	69.93	388.8	7469	193.3	777.7	-123.4	-12.66
Rnd_exp	10808	0.0774	0.399	7469	0.0509	0.341	0.0265	4.816
Xsga	10808	434.4	1667.9	7469	1066.2	3318.6	-631.8	-15.18
Selling_exp	10808	0.425	3.009	7469	0.296	1.072	0.128	4.076
Total_deals	10808	1	0	7469	3.210	2.353	-2.210	-81.15
Relationship_dummy	10808	0.522	0.500	7469	0.642	0.480	-0.120	-16.33
max_Rdeals	10808	0.488	0.481	7469	0.601	0.466	-0.113	-15.89
max_Ramount	10808	0.500	0.486	7469	0.616	0.469	-0.116	-16.21
Equity_issue_number_lag	10808	0.097	0.329	7469	0.135	0.382	-0.038	-6.977
Debt_issue_number_lag	10808	0.096	0.732	7469	0.204	0.995	-0.107	-7.948
Total_equity_issue_amount_lag	10808	16.98	158.0	7469	28.86	228.4	-11.88	-3.896
Total_debt_issue_amount_lag	10808	49.38	567.2	7469	149.5	1330.5	-100.1	-6.127
Ownership Concentration	10808	0.167	0.213	7469	0.111	0.161	0.0566	20.46
N	18277							

Table 1.4: Summary Statistics- Deal-Specifics for Single Acquirers vs Multiple Acquirers

	Single_Acquirers			Multiple_Acquirers			Difference	
	Obs	Mean	SD	Obs	Mean	SD	Mean_diff	t-Stat
CAR_MAR_VW_3day	7547	1.714	12.31	10699	1.003	7.598	0.711	4.457
CAR_MAR_VW_5day	7547	1.913	12.85	10699	1.297	9.042	0.616	3.588
CAR_MAR_VW_11day	7547	2.423	15.72	10699	1.502	11.93	0.921	4.293
CAR_MAR_EW_3day	7547	1.568	12.27	10699	0.895	7.587	0.673	4.226
CAR_MAR_EW_5day	7547	1.647	12.81	10699	1.100	9.006	0.546	3.191
CAR_MAR_EW_11day	7547	1.860	15.56	10699	1.058	11.82	0.802	3.774
Relationship_dummy	7547	0.490	0.500	10699	0.616	0.486	-0.126	-16.99
max_Rdeals	7547	0.459	0.482	10699	0.574	0.471	-0.115	-15.98
max_Ramount	7547	0.470	0.487	10699	0.591	0.475	-0.120	-16.61
Target_public_status	7547	0.128	0.334	10699	0.147	0.354	-0.0193	-3.757
Cash_dummy	7547	0.273	0.445	10699	0.319	0.466	-0.0460	-6.737
Cash_portion	7547	40.06	44.56	10699	42.88	45.89	-2.821	-4.159
Same_industry_dummy	7547	0.519	0.500	10699	0.503	0.500	0.0156	2.071
Defense_dummy	7547	0.0103	0.101	10699	0.0127	0.112	-0.00238	-1.494
Hostile_dummy	7547	0.00252	0.0501	10699	0.00280	0.0529	-0.000286	-0.372
Tender_offer_dummy	7547	0.0423	0.201	10699	0.0411	0.199	0.00114	0.380
Crossborder_dummy	7547	0.172	0.378	10699	0.182	0.386	-0.0102	-1.779
Valueoftransactionmil	7547	210.1	1559.7	10699	292.2	1834.3	-82.10	-3.253
Deal_size	7547	3.237	1.921	10699	3.572	1.972	-0.335	-11.49
Relative_sales	2526	214.7	3475.9	3572	1157.8	28781.3	-943.2	-1.939
MVE_1w	7547	2.373	11.76	10699	10.84	39.34	-8.464	-20.96
Acquirer_size	7547	5.503	1.916	10699	6.545	2.153	-1.042	-34.36
Equity_issue_number_lag	7547	0.154	0.394	10699	0.215	0.461	-0.0601	-9.461
Debt_issue_number_lag	7547	0.0822	0.753	10699	0.195	1.026	-0.113	-8.581
Total_equity_issue_amount_lag	7547	19.18	150.5	10699	40.65	285.3	-21.47	-6.593
Total_debt_issue_amount_lag	7547	46.18	584.3	10699	151.4	1387.5	-105.2	-7.011
Ownership Concentration	7547	0.158	0.193	10699	0.107	0.152	0.0506	19.02
N	18246							

Table 1.5: Logit Regressions: Bank Lending Relationships and Acquisition Decisions (Non-Acquirers vs Acquirers)

Dependent variable: Acquirer Dummy; Independent variable notations and definitions are provided in Table 1.1. Fixed year effect has been considered in all models.

	(1)	(2)	(3)
	Acquirer Dummy	Acquirer Dummy	Acquirer Dummy
max_Rdeals	0.216***		
	(0.000)		
max_Ramount		0.216***	
		(0.000)	
Relationship_dummy			0.199***
			(0.000)
Size	0.595***	0.595***	0.595***
	(0.000)	(0.000)	(0.000)
Leverage	-0.0547	-0.0583	-0.0595
	(0.151)	(0.129)	(0.123)
Debt_issuance1	0.0000564***	0.0000564***	0.0000564***
	(0.000)	(0.000)	(0.000)
Debt_issuance3	-0.0000159**	-0.0000159**	-0.0000159**
	(0.012)	(0.013)	(0.012)
FCF_ratio	-0.101	-0.1000	-0.0990
	(0.102)	(0.105)	(0.109)
Cash_ratio	-1.680***	-1.678***	-1.684***
	(0.000)	(0.000)	(0.000)
Revenue_growth_rate	-0.0002	-0.0001	-0.0001
	(0.777)	(0.779)	(0.782)
Rnd_exp	-0.0756***	-0.0755***	-0.0757***
	(0.001)	(0.001)	(0.001)
Selling_exp	-0.0007	-0.0007	-0.0007
	(0.642)	(0.644)	(0.646)
ROA	0.0954*	0.0957*	0.0966*
	(0.083)	(0.083)	(0.080)
Tangible_size	-0.404***	-0.404***	-0.404***
	(0.000)	(0.000)	(0.000)
MTB	0.0275***	0.0277***	0.0278***
	(0.000)	(0.000)	(0.000)
Equity_issue_number_lag	0.233***	0.232***	0.232***
	(0.000)	(0.000)	(0.000)
Debt_issue_number_lag	0.112***	0.112***	0.112***
	(0.000)	(0.000)	(0.000)
Total_equity_issue_amount_lag	-0.000103*	-0.000103*	-0.000103*
	(0.078)	(0.078)	(0.080)
Total_debt_issue_amount_lag	0.000004	0.000004	0.000004
	(0.801)	(0.793)	(0.790)
Ownership Concentration	-1.642***	-1.640***	-1.641***
	(0.000)	(0.000)	(0.000)
Observations	64248	64248	64248
Pseudo R^2	0.103	0.103	0.103

p-values in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 1.6: Logit Regressions: Bank Lending Relationships and Acquisition Decisions (Single vs Multiple Acquirers)

Dependent variable: Multiple Dummy; Independent variable notations and definitions are provided in Table 1.1. Fixed year effect has been considered in all models.

	(1) Multiple Dummy	(2) Multiple Dummy	(3) Multiple Dummy
max_Rdeals	0.136***		
	(0.000)		
max_Ramount		0.132***	
		(0.000)	
Relationship_dummy			0.131***
			(0.000)
Size	0.592***	0.592***	0.592***
	(0.000)	(0.000)	(0.000)
Leverage	-0.0970	-0.0989	-0.104
	(0.237)	(0.229)	(0.207)
Debt_issuance1	0.000009	0.000009	0.000009
	(0.631)	(0.632)	(0.632)
Debt_issuance3	0.000008	0.000008	0.000008
	(0.426)	(0.425)	(0.424)
FCF_ratio	-0.127	-0.126	-0.124
	(0.470)	(0.473)	(0.479)
Cash_ratio	-1.540***	-1.542***	-1.542***
	(0.000)	(0.000)	(0.000)
Revenue_growth_rate	0.0109***	0.0109***	0.0109***
	(0.005)	(0.005)	(0.005)
Rnd_exp	-0.114	-0.114	-0.114
	(0.173)	(0.172)	(0.174)
Selling_exp	-0.00535	-0.00534	-0.00531
	(0.543)	(0.543)	(0.545)
ROA	0.113	0.113	0.112
	(0.345)	(0.346)	(0.353)
Tangible_size	-0.320***	-0.319***	-0.319***
	(0.000)	(0.000)	(0.000)
MTB	0.0104	0.0106	0.0108
	(0.127)	(0.123)	(0.115)
Equity_issue_number_lag	0.275***	0.274***	0.274***
	(0.000)	(0.000)	(0.000)
Debt_issue_number_lag	-0.0155	-0.0154	-0.0154
	(0.452)	(0.455)	(0.454)
Total_equity_issue_amount_lag	-0.000165*	-0.000165*	-0.000165*
	(0.066)	(0.065)	(0.066)
Total_debt_issue_amount_lag	0.00002	0.00002	0.00002
	(0.341)	(0.340)	(0.341)
Ownership Concentration	-0.296***	-0.296***	-0.293***
	(0.008)	(0.008)	(0.009)
Observations	18277	18277	18277
Pseudo R^2	0.071	0.071	0.071

p-values in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 1.7: OLS Regressions: Bank Lending Relationships and Acquisition Decisions

Dependent variable: Number of annual acquisitions; Independent variable notations and definitions are provided in Table 1.1. Fixed year effect has been considered in all models.

	(1) # Acquisitions	(2) # Acquisitions	(3) # Acquisitions
max_Rdeals	0.114***		
	(0.000)		
max_Ramount		0.115***	
		(0.000)	
Relationship_dummy			0.106***
			(0.000)
Size	0.318***	0.318***	0.318***
	(0.000)	(0.000)	(0.000)
Leverage	-0.0110	-0.0118	-0.0121
	(0.390)	(0.355)	(0.343)
Debt_issuance1	0.0000590***	0.0000590***	0.0000590***
	(0.000)	(0.000)	(0.000)
Debt_issuance3	0.0000161***	0.0000161***	0.0000161***
	(0.000)	(0.000)	(0.000)
FCF_ratio	-0.0332	-0.0330	-0.0327
	(0.169)	(0.171)	(0.175)
Cash_ratio	-0.568***	-0.567***	-0.569***
	(0.000)	(0.000)	(0.000)
Revenue_growth_rate	-0.0000117	-0.0000109	-0.0000103
	(0.966)	(0.968)	(0.970)
Rnd_exp	0.000188	0.000199	0.000205
	(0.831)	(0.821)	(0.816)
Selling_exp	0.0000420	0.0000423	0.0000424
	(0.875)	(0.874)	(0.874)
ROA	0.0128	0.0126	0.0125
	(0.319)	(0.323)	(0.327)
Tangible_size	-0.193***	-0.193***	-0.193***
	(0.000)	(0.000)	(0.000)
MTB	0.000413	0.000461	0.000487
	(0.670)	(0.634)	(0.615)
Equity_issue_number_lag	0.177***	0.177***	0.177***
	(0.000)	(0.000)	(0.000)
Debt_issue_number_lag	0.0909***	0.0908***	0.0910***
	(0.000)	(0.000)	(0.000)
Total_equity_issue_amount_lag	-0.0000222**	-0.0000223**	-0.0000226**
	(0.014)	(0.014)	(0.012)
Total_debt_issue_amount_lag	0.0000393***	0.0000394***	0.0000395***
	(0.000)	(0.000)	(0.000)
Ownership Concentration	-0.254***	-0.253***	-0.253***
	(0.000)	(0.000)	(0.000)
Observations	64248	64248	64248
Adjusted R^2	0.106	0.106	0.106

p-values in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 1.8: Propensity Score Matching - Treatment= Acquirer Dummy

Column (1) reports the result of the logit regression with Acquirer Dummy as the dependent variable and a set of firm-specific variables as independent variables. Column (2), (3), and (4) report both the unmatched (_treated) and matched (att) results of the propensity matching models for three relationship intensity variables (max_Rdeals, max_Ramount, and Relationship_dummy) respectively. A list of independent variable notations and definitions is provided in Table 1.1.

	(1)	(2)	(3)	(4)
	Acquirer Dummy	max_Rdeals	max_Ramount	Relationship_dummy
Size	0.556***			
	(0.000)			
Leverage	-0.0102			
	(0.763)			
Debt_issuance1	0.0000594***			
	(0.000)			
Debt_issuance3	-0.0000173***			
	(0.007)			
FCF_ratio	-0.217***			
	(0.007)			
Cash_ratio	-2.131***			
	(0.000)			
Revenue_growth_rate	-0.000187			
	(0.724)			
Rnd_exp	-0.0832***			
	(0.000)			
Selling_exp	-0.000733			
	(0.631)			
ROA	0.260***			
	(0.000)			
Tangible_size	-0.386***			
	(0.000)			
MTB	0.0322***			
	(0.000)			
Equity_issue_number_lag	0.264***			
	(0.000)			
Debt_issue_number_lag	0.153***			
	(0.000)			
Total_equity_issue_amount_lag	-0.000118**			
	(0.046)			
Total_debt_issue_amount_lag	-0.0000132			
	(0.380)			
Ownership Concentration	-1.672***			
	(0.000)			
Constant	-1.782***			
	(0.000)			
_treated		0.150***	0.154***	0.158***
		(0.000)	(0.000)	(0.000)
_cons		0.384***	0.393***	0.413***
		(0.000)	(0.000)	(0.000)
ATT		0.0412	0.0425	0.0439
seatt		0.00620	0.00626	0.00644
t		6.638	6.797	6.814

p-values in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 1.9: Propensity Score Matching - Treatment= Multiple Acquirer Dummy

Column (1) reports the result of the logit regression with Multiple Acquirer Dummy as the dependent variable and a set of firm-specific variables as independent variables. Column (2), (3), and (4) report both the unmatched (_treated) and matched (att) results of the propensity matching models for three relationship intensity variables (max_Rdeals, max_Ramount, and Relationship_dummy) respectively. A list of independent variable notations and definitions is provided in Table 1.1.

	(1)	(2)	(3)	(4)
	Multiple Acquirer Dummy	max_Rdeals	max_Ramount	Relationship_dummy
Size	0.546***			
	(0.000)			
Leverage	-0.0164			
	(0.837)			
Debt_issuance1	0.0000108			
	(0.559)			
Debt_issuance3	0.00000848			
	(0.391)			
FCF_ratio	-0.493***			
	(0.003)			
Cash_ratio	-1.908***			
	(0.000)			
Revenue_growth_rate	0.0108***			
	(0.006)			
Rnd_exp	-0.117			
	(0.164)			
Selling_exp	-0.00682			
	(0.461)			
ROA	0.473***			
	(0.000)			
Tangible_size	-0.300***			
	(0.000)			
MTB	0.0226***			
	(0.001)			
Equity_issue_number_lag	0.304***			
	(0.000)			
Debt_issue_number_lag	0.00872			
	(0.673)			
Total_equity_issue_amount_lag	-0.000179**			
	(0.046)			
Total_debt_issue_amount_lag	0.00000573			
	(0.791)			
Ownership Concentration	-0.262**			
	(0.017)			
Constant	-2.141***			
	(0.000)			
_treated		0.113***	0.116***	0.120***
		(0.000)	(0.000)	(0.000)
_cons		0.488***	0.500***	0.522***
		(0.000)	(0.000)	(0.000)
ATT		0.0262	0.0255	0.0264
seatt		0.0102	0.0103	0.0105
t		2.574	2.483	2.506

p-values in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 1.10: Multinomial Logit Regressions: The Method of Payment

Base case for each set of multinomial logit regression: Stock dummy (dummy for all stock payments); Dependent variable: Cash dummy (dummy for all cash payments); Combo dummy (dummy for cash/stock combinations); Independent variable notations and definitions are listed in Table 1.1. Fixed year effect has been considered in all models.

	(1)		(2)		(3)	
	Method of payment		Method of payment		Method of payment	
	Cash	Combo	Cash	Combo	Cash	Combo
max_Rdeals	0.144**	0.117*				
	(0.023)	(0.056)				
max_Ramount			0.144**	0.133**		
			(0.022)	(0.028)		
Relationship_dummy					0.114*	0.111*
					(0.062)	(0.059)
Multiple_2	-0.00764	-0.0164	-0.00774	-0.0168	-0.00708	-0.0163
	(0.898)	(0.772)	(0.897)	(0.766)	(0.905)	(0.773)
Target_public_status	-1.159***	-1.175***	-1.159***	-1.175***	-1.159***	-1.175***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Same_industry_dummy	-0.0809	-0.132**	-0.0814	-0.132**	-0.0815	-0.132**
	(0.148)	(0.014)	(0.146)	(0.014)	(0.145)	(0.014)
Defense_dummy	-0.568***	-0.637***	-0.567***	-0.635***	-0.570***	-0.638***
	(0.006)	(0.001)	(0.006)	(0.001)	(0.005)	(0.001)
Hostile_dummy	1.820***	1.091**	1.819***	1.091**	1.823***	1.095**
	(0.000)	(0.032)	(0.000)	(0.032)	(0.000)	(0.032)
Tender_offer_dummy	0.470***	0.193	0.470***	0.192	0.471***	0.194
	(0.008)	(0.288)	(0.008)	(0.290)	(0.008)	(0.286)
Crossborder_dummy	0.544***	0.295***	0.544***	0.296***	0.543***	0.294***
	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)	(0.001)
Deal_size	-0.363***	0.0428**	-0.363***	0.0427**	-0.362***	0.0428**
	(0.000)	(0.038)	(0.000)	(0.038)	(0.000)	(0.037)
Nonmissing_relative_sales_dummy	0.243***	0.276***	0.242***	0.276***	0.242***	0.275***
	(0.001)	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)
Inter_relative_sales	-0.00003**	-0.00005**	-0.00003**	-0.00005**	-0.00003**	-0.00005**
	(0.019)	(0.030)	(0.019)	(0.030)	(0.019)	(0.030)
MVE_1w	-0.00721***	-0.00577***	-0.00720***	-0.00574***	-0.00722***	-0.00574***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Acquirer_size	0.453***	-0.0161	0.452***	-0.0177	0.453***	-0.0169
	(0.000)	(0.508)	(0.000)	(0.467)	(0.000)	(0.488)
Leverage	2.184***	2.089***	2.179***	2.077***	2.189***	2.082***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
FCF ratio	2.222***	1.260***	2.221***	1.262***	2.221***	1.264***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
ROA	1.432***	0.0331	1.435***	0.0286	1.442***	0.0305
	(0.000)	(0.851)	(0.000)	(0.871)	(0.000)	(0.862)
Equity_issue_number_lag	-0.0992	0.0385	-0.0999	0.0374	-0.0988	0.0381
	(0.143)	(0.534)	(0.140)	(0.545)	(0.145)	(0.537)
Debt_issue_number_lag	0.0297	0.0468	0.0297	0.0467	0.0298	0.0467
	(0.444)	(0.242)	(0.443)	(0.242)	(0.444)	(0.243)
Total_equity_issue_amount_lag	-0.0003**	-0.0002	-0.0003**	-0.0002	-0.0003**	-0.0002
	(0.038)	(0.227)	(0.038)	(0.230)	(0.037)	(0.227)
Total_debt_issue_amount_lag	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
	(0.352)	(0.371)	(0.352)	(0.373)	(0.346)	(0.367)
Ownership Concentration	0.157	0.836***	0.158	0.838***	0.157	0.837***
	(0.458)	(0.000)	(0.455)	(0.000)	(0.458)	(0.000)
Observations	12660		12660		12660	
Pseudo R^2	0.163		0.163		0.163	

p-values in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 1.11: OLS Regressions: The Method of Payment

Dependent variable: Cash Portion (the proportion of cash payment utilized in the acquisitions); Independent variable notations and definitions are listed in Table 1.1. Fixed year effect and robust standard errors have been considered in all models.

	(1) Cash Portion	(2) Cash Portion	(3) Cash Portion
max_Rdeals	-0.490		
	(0.511)		
max_Ramount		-0.498	
		(0.503)	
Relationship_dummy			-0.712
			(0.326)
Multiple_2	2.649***	2.650***	2.655***
	(0.000)	(0.000)	(0.000)
Target_public_status	-1.333	-1.332	-1.334
	(0.245)	(0.245)	(0.245)
Same_industry_dummy	-2.800***	-2.800***	-2.805***
	(0.000)	(0.000)	(0.000)
Defense_dummy	-16.20***	-16.20***	-16.21***
	(0.000)	(0.000)	(0.000)
Hostile_dummy	30.99***	30.99***	30.97***
	(0.000)	(0.000)	(0.000)
Tender_offer_dummy	-4.223**	-4.224**	-4.214**
	(0.014)	(0.014)	(0.014)
Crossborder_dummy	-1.060	-1.059	-1.061
	(0.240)	(0.240)	(0.239)
Deal_size	-0.0987	-0.0986	-0.0982
	(0.671)	(0.671)	(0.672)
Nonmissing_relative_sales_dummy	7.580***	7.581***	7.588***
	(0.000)	(0.000)	(0.000)
Inter_relative_sales	-0.00005***	-0.00005***	-0.00005***
	(0.000)	(0.000)	(0.000)
MVE_1w	-0.0131	-0.0132	-0.0135
	(0.299)	(0.297)	(0.284)
Acquirer_size	0.421	0.423	0.439
	(0.125)	(0.124)	(0.110)
Leverage	1.751	1.767	1.895
	(0.291)	(0.288)	(0.256)
FCF ratio	25.10***	25.09***	25.05***
	(0.000)	(0.000)	(0.000)
ROA	1.019	1.027	1.092
	(0.723)	(0.721)	(0.704)
Equity_issue_number_lag	-2.172***	-2.169***	-2.160***
	(0.005)	(0.006)	(0.006)
Debt_issue_number_lag	-0.771**	-0.771**	-0.770**
	(0.049)	(0.049)	(0.049)
Total_equity_issue_amount_lag	-0.003*	-0.003*	-0.003*
	(0.059)	(0.059)	(0.058)
Total_debt_issue_amount_lag	0.0005**	0.0005**	0.0005**
	(0.039)	(0.039)	(0.039)
Ownership Concentration	-5.103**	-5.106**	-5.143**
	(0.030)	(0.030)	(0.028)
Observations	18246	18246	18246
Adjusted R^2	0.082	0.082	0.082

p-values in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 1.12: IV 2SLS Regressions: Bank Lending Relationships and the Method of Payment

Dependent variable: (1) Multiple_2 (First Stage); (2) Cash Portion (Second Stage); (3) Multiple_2 (First Stage); (4) Cash Portion (Second Stage); (5) Multiple_2 (First Stage); (6) Cash Portion (Second Stage). Excluded instrument variables: GDP_PCH represents GDP growth rate and max_count_year denotes the total number of acquisitions in M&A market in a year. Deal_sequence identifies the sequence of the acquisitions conducted by the same acquirer in a given year. Other control variable notations and definitions are listed in Table 1.1.

	(1)	(2)	(3)	(4)	(5)	(6)
	1st Stage	2nd Stage	1st	2nd	1st	2nd
max_Rdeals	0.0162**	1.822*				
	(0.031)	(0.062)				
max_Ramount			0.0181**	1.727*		
			(0.016)	(0.078)		
Relationship_dummy					0.0188***	1.217
					(0.010)	(0.207)
Multiple_2		-77.24***		-77.34***		-77.19***
		(0.000)		(0.000)		(0.000)
GDP_PCH	0.008***		0.008***		0.008***	
	(0.000)		(0.000)		(0.000)	
max_count_year	0.00003***		0.00003***		0.00003***	
	(0.000)		(0.000)		(0.000)	
Deal_sequence	0.0943***	7.367***	0.0943***	7.378***	0.0943***	7.364***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Target_public_status	-0.00407	-3.506**	-0.00410	-3.516**	-0.00415	-3.528**
	(0.726)	(0.018)	(0.724)	(0.018)	(0.721)	(0.017)
Same_industry_dummy	-0.00543	-2.583***	-0.00540	-2.585***	-0.00536	-2.590***
	(0.408)	(0.002)	(0.411)	(0.002)	(0.414)	(0.002)
Defense_dummy	-0.0398	-23.22***	-0.0397	-23.24***	-0.0399	-23.29***
	(0.208)	(0.000)	(0.209)	(0.000)	(0.207)	(0.000)
Hostile_dummy	-0.0658	21.17***	-0.0657	21.16***	-0.0655	21.16***
	(0.302)	(0.010)	(0.303)	(0.010)	(0.305)	(0.010)
Tender_offer_dummy	-0.0321*	-8.150***	-0.0322*	-8.148***	-0.0322*	-8.131***
	(0.055)	(0.000)	(0.055)	(0.000)	(0.054)	(0.000)
Crossborder_dummy	-0.0259***	-2.433**	-0.0259***	-2.438**	-0.0259***	-2.439**
	(0.003)	(0.035)	(0.003)	(0.034)	(0.003)	(0.034)
Deal_size	-0.0212***	-1.502***	-0.0212***	-1.504***	-0.0212***	-1.499***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Nonmissing_relative_sales_dummy	0.0150*	8.557***	0.0149*	8.555***	0.0148*	8.562***
	(0.065)	(0.000)	(0.067)	(0.000)	(0.069)	(0.000)
Inter_relative_sales	0.000	-0.000	0.000	-0.000	0.000	-0.000
	(0.426)	(0.282)	(0.423)	(0.282)	(0.421)	(0.278)
MVE_1w	-0.00112***	-0.114***	-0.00112***	-0.115***	-0.00112***	-0.115***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Acquirer_size	0.0558***	5.890***	0.0557***	5.900***	0.0556***	5.930***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Leverage	0.0422**	1.664	0.0409**	1.658	0.0397**	1.820
	(0.012)	(0.449)	(0.015)	(0.451)	(0.018)	(0.408)
FCF ratio	-0.0243	32.38***	-0.0238	32.40***	-0.0233	32.37***
	(0.439)	(0.000)	(0.450)	(0.000)	(0.459)	(0.000)
ROA	0.0517**	-2.627	0.0510**	-2.628	0.0504**	-2.542
	(0.036)	(0.417)	(0.039)	(0.417)	(0.041)	(0.432)
Equity_issue_number_lag	0.0716***	2.990**	0.0715***	2.989**	0.0714***	2.994**
	(0.000)	(0.019)	(0.000)	(0.019)	(0.000)	(0.019)
Debt_issue_number_lag	0.00321	-1.179**	0.00320	-1.179**	0.00317	-1.182**
	(0.409)	(0.018)	(0.410)	(0.018)	(0.415)	(0.018)
Total_equity_issue_amount_lag	-0.000	-0.003*	-0.000	-0.003*	-0.000	-0.003*
	(0.979)	(0.081)	(0.983)	(0.081)	(0.988)	(0.079)
Total_debt_issue_amount_lag	0.000004	0.00102**	0.000004	0.00102**	0.000004	0.00102**
	(0.252)	(0.012)	(0.253)	(0.012)	(0.252)	(0.012)
Ownership Concentration	-0.0841***	-13.74***	-0.0838***	-13.75***	-0.0834***	-13.76***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
j		0.269		0.272		0.290
jdf		1		1		1
jp		0.604		0.602		0.590
widstat		84.28		83.78		83.19
estat		102.7		102.3		101.3
estatdf		1		1		1
estatp		3.98e-24		4.71e-24		8.10e-24

p-values in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 1.13: OLS Regressions: Announcement Effects (3-day event window)

Dependent variable: CAR_MAR_VW_3day; Linear prediction refers to the predicted value of cash portion from Table 1.12 regressions. Other independent variable notations and definitions are listed in Table 1.1. Fixed year effect and robust standard errors have been considered in all models.

	(1) CAR	(2) CAR	(3) CAR	(4) CAR	(5) CAR	(6) CAR	(7) CAR
max_Rdeals	0.538***	0.532***					
	(0.003)	(0.004)					
max_Ramount			0.530***	0.524***			
			(0.004)	(0.004)			
Relationship_dummy					0.528***	0.521***	0.528***
					(0.003)	(0.003)	(0.003)
Multiple_2	-0.195		-0.195		-0.196		-0.194
	(0.246)		(0.245)		(0.244)		(0.249)
Cash_portion	0.00394***		0.00394***		0.00395***		
	(0.006)		(0.006)		(0.006)		
Cash_dummy							0.379***
							(0.003)
Linear prediction		0.00131		0.00132		0.00132	
		(0.561)		(0.559)		(0.558)	
Target_public_status	-2.508***	-2.507***	-2.509***	-2.509***	-2.510***	-2.509***	-2.525***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Same_industry_dummy	0.171	0.164	0.171	0.163	0.172	0.164	0.166
	(0.266)	(0.291)	(0.267)	(0.292)	(0.265)	(0.290)	(0.281)
Defense_dummy	-1.783***	-1.816***	-1.782***	-1.815***	-1.786***	-1.819***	-1.817***
	(0.006)	(0.005)	(0.006)	(0.005)	(0.006)	(0.005)	(0.005)
Hostile_dummy	1.560**	1.659**	1.560**	1.660**	1.569**	1.668**	1.599**
	(0.033)	(0.024)	(0.033)	(0.024)	(0.033)	(0.024)	(0.029)
Tender_offer_dummy	-0.0658	-0.0647	-0.0646	-0.0635	-0.0652	-0.0641	-0.0715
	(0.804)	(0.805)	(0.807)	(0.808)	(0.805)	(0.807)	(0.787)
Crossborder_dummy	-0.186	-0.183	-0.186	-0.184	-0.187	-0.184	-0.189
	(0.241)	(0.243)	(0.240)	(0.242)	(0.239)	(0.241)	(0.234)
Deal_size	0.400***	0.405***	0.400***	0.405***	0.400***	0.405***	0.409***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Nonmissing_relative_sales_dummy	0.209	0.226	0.208	0.225	0.206	0.223	0.222
	(0.231)	(0.206)	(0.235)	(0.209)	(0.238)	(0.212)	(0.207)
Inter_relative_sales	0.000003***	0.000003***	0.000003***	0.000003***	0.000003***	0.000003***	0.000003***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
MVE_1w	0.00660***	0.00649***	0.00663***	0.00653***	0.00668***	0.00657***	0.00672***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Acquiror_size	-0.590***	-0.604***	-0.591***	-0.605***	-0.592***	-0.605***	-0.603***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Leverage	1.229***	1.222***	1.218***	1.211***	1.197***	1.191***	1.216***
	(0.003)	(0.004)	(0.004)	(0.004)	(0.004)	(0.005)	(0.004)
FCF ratio	0.597	0.650	0.603	0.657	0.608	0.662	0.637
	(0.674)	(0.642)	(0.671)	(0.639)	(0.668)	(0.636)	(0.652)
ROA	-0.361	-0.353	-0.365	-0.356	-0.369	-0.361	-0.366
	(0.712)	(0.718)	(0.709)	(0.715)	(0.706)	(0.712)	(0.709)
Equity_issue_number_lag	-0.564***	-0.584***	-0.566***	-0.587***	-0.567***	-0.587***	-0.565***
	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
Debt_issue_number_lag	-0.0106	-0.0130	-0.0105	-0.0129	-0.0109	-0.0133	-0.0114
	(0.850)	(0.817)	(0.851)	(0.817)	(0.846)	(0.813)	(0.838)
Total_equity_issue_amount_lag	-0.00004	-0.00004	-0.00004	-0.00004	-0.00004	-0.00004	-0.00004
	(0.877)	(0.854)	(0.877)	(0.854)	(0.883)	(0.860)	(0.873)
Total_debt_amount_lag	0.00005**	0.00005**	0.00005**	0.00005**	0.00005**	0.00005**	0.00005**
	(0.022)	(0.017)	(0.022)	(0.017)	(0.022)	(0.017)	(0.021)
Ownership Concentration	2.412***	2.423***	2.414***	2.426***	2.426***	2.438***	2.435***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Observations	18246	18246	18246	18246	18246	18246	18246
Adjusted R^2	0.023	0.022	0.023	0.022	0.023	0.022	0.023

p-values in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 1.14: OLS Regressions: Announcement Effects (3-day event window)

Dependent variable: CAR_MAR_VW_3day; Independent variable notations and definitions are listed in Table 1.1. Column (1),(3), and (5) report the regression results for acquisitions conducted with zero cash payment (Cash_portion(CP)=0), while column (2), (4), and (6) report the results for acquisitions with full or at least partial cash payment involved (Cash_portion(CP)>0). Fixed year effect and robust standard errors have been considered in all models.

	(1) CP=0	(2) CP>0	(3) CP=0	(4) CP>0	(5) CP=0	(6) CP>0
max_Rdeals	0.624*	0.434**				
	(0.057)	(0.019)				
max_Ramount			0.609*	0.433**		
			(0.058)	(0.020)		
Relationship_dummy					0.602*	0.438**
					(0.051)	(0.016)
Multiple_2	-0.335	-0.0362	-0.335	-0.0363	-0.336	-0.0370
	(0.238)	(0.842)	(0.237)	(0.841)	(0.237)	(0.838)
Target_public_status	-3.939***	-1.342***	-3.943***	-1.343***	-3.947***	-1.342***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Same_industry_dummy	0.344	0.0162	0.345	0.0157	0.345	0.0165
	(0.197)	(0.921)	(0.196)	(0.924)	(0.196)	(0.920)
Defense_dummy	-1.054	-1.405	-1.054	-1.403	-1.057	-1.405
	(0.216)	(0.147)	(0.216)	(0.148)	(0.215)	(0.147)
Hostile_dummy	1.270	0.709	1.288	0.705	1.315	0.708
	(0.460)	(0.360)	(0.454)	(0.363)	(0.444)	(0.363)
Tender_offer_dummy	0.0274	-0.222	0.0290	-0.222	0.0275	-0.222
	(0.936)	(0.591)	(0.933)	(0.593)	(0.936)	(0.593)
Crossborder_dummy	-0.265	-0.174	-0.265	-0.175	-0.268	-0.174
	(0.270)	(0.404)	(0.269)	(0.403)	(0.266)	(0.405)
Deal_size	0.342**	0.511***	0.342**	0.511***	0.342**	0.511***
	(0.026)	(0.000)	(0.026)	(0.000)	(0.026)	(0.000)
Nonmissing_relative_sales_dummy	0.194	0.227	0.194	0.225	0.194	0.223
	(0.489)	(0.283)	(0.488)	(0.287)	(0.490)	(0.291)
Inter_relative_sales	0.000005***	-0.00002	0.000005***	-0.00002	0.000005***	-0.00002
	(0.000)	(0.408)	(0.000)	(0.409)	(0.000)	(0.410)
MVE_1w	0.00472**	0.00857***	0.00477**	0.00861***	0.00482**	0.00865***
	(0.020)	(0.000)	(0.019)	(0.000)	(0.018)	(0.000)
Acquirer_size	-0.515***	-0.735***	-0.515***	-0.737***	-0.516***	-0.737***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Leverage	0.878	1.308***	0.865	1.299***	0.846	1.275**
	(0.192)	(0.009)	(0.200)	(0.009)	(0.207)	(0.010)
FCF ratio	0.352	1.050	0.357	1.059	0.358	1.070
	(0.869)	(0.433)	(0.867)	(0.429)	(0.867)	(0.424)
ROA	-0.605	0.0979	-0.608	0.0929	-0.609	0.0841
	(0.688)	(0.924)	(0.687)	(0.928)	(0.686)	(0.935)
Equity_issue_number_lag	-0.768***	-0.340	-0.771***	-0.342	-0.772***	-0.343
	(0.001)	(0.109)	(0.001)	(0.107)	(0.001)	(0.106)
Debt_issue_number_lag	-0.0488	0.0203	-0.0483	0.0199	-0.0489	0.0195
	(0.569)	(0.662)	(0.573)	(0.668)	(0.571)	(0.676)
Total_equity_issue_amount_lag	-0.0002	0.0003	-0.0002	0.0003	-0.0002	0.0003
	(0.593)	(0.327)	(0.598)	(0.329)	(0.602)	(0.327)
Total_debt_issue_amount_lag	0.0001	0.00003	0.0001	0.00003	0.0001	0.00003
	(0.127)	(0.148)	(0.129)	(0.146)	(0.126)	(0.144)
Ownership Concentration	2.910**	1.726**	2.915**	1.727**	2.929**	1.735**
	(0.028)	(0.039)	(0.028)	(0.039)	(0.027)	(0.038)
Observations	8868	9378	8868	9378	8868	9378
Adjusted R^2	0.022	0.027	0.022	0.027	0.022	0.027

p-values in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 1.15: OLS Regressions: Announcement Effects (3-day event window)

Dependent variable: CAR_MAR_VW_3day; Independent variable notations and definitions are listed in Table 1.1. Column (1),(3), and (5) report the regression results for acquisitions of private targets (Private), while column (2), (4), and (6) report the results for acquisitions of public targets (Public). Fixed year effect and robust standard errors have been considered in all models.

	(1)	(2)	(3)	(4)	(5)	(6)
	Private	Public	Private	Public	Private	Public
max_Rdeals	0.527***	0.611				
	(0.009)	(0.114)				
max_Ramount			0.531***	0.542		
			(0.008)	(0.162)		
Relationship_dummy					0.535***	0.522
					(0.006)	(0.168)
Multiple_2	-0.265	0.187	-0.266	0.191	-0.266	0.191
	(0.152)	(0.619)	(0.151)	(0.612)	(0.150)	(0.613)
Cash_portion	-0.00127	0.0238***	-0.00127	0.0238***	-0.00126	0.0238***
	(0.418)	(0.000)	(0.418)	(0.000)	(0.422)	(0.000)
Same_industry_dummy	0.177	0.525	0.178	0.518	0.179	0.515
	(0.294)	(0.107)	(0.293)	(0.111)	(0.289)	(0.114)
Defense_dummy	1.143	-0.740	1.137	-0.740	1.140	-0.743
	(0.566)	(0.266)	(0.570)	(0.266)	(0.571)	(0.264)
Hostile_dummy	0.768*	1.224	0.787*	1.223	0.821*	1.230
	(0.095)	(0.100)	(0.088)	(0.102)	(0.077)	(0.101)
Tender_offer_dummy	-0.388	-0.760	-0.388	-0.754	-0.390	-0.748
	(0.179)	(0.242)	(0.179)	(0.246)	(0.177)	(0.250)
Crossborder_dummy	-0.279	0.112	-0.280	0.114	-0.279	0.106
	(0.101)	(0.796)	(0.100)	(0.793)	(0.101)	(0.807)
Deal_size	0.627***	-0.611***	0.627***	-0.611***	0.627***	-0.611***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Nonmissing_relative_sales_dummy	0.167	-0.00659	0.166	-0.00723	0.164	-0.00608
	(0.367)	(0.991)	(0.371)	(0.991)	(0.376)	(0.992)
Inter_relative_sales	0.000	0.000	0.000	0.000	0.000	0.000
	(0.234)	(0.268)	(0.232)	(0.279)	(0.229)	(0.277)
MVE_1w	0.006***	0.002	0.006***	0.002	0.006***	0.002
	(0.000)	(0.618)	(0.000)	(0.625)	(0.000)	(0.619)
Acquiror_size	-0.757***	0.126	-0.759***	0.128	-0.760***	0.128
	(0.000)	(0.369)	(0.000)	(0.363)	(0.000)	(0.361)
Leverage	0.960**	3.044***	0.944**	3.056***	0.918**	3.054***
	(0.035)	(0.003)	(0.038)	(0.003)	(0.043)	(0.003)
FCF ratio	0.835	-2.683	0.844	-2.692	0.849	-2.690
	(0.582)	(0.342)	(0.579)	(0.341)	(0.576)	(0.341)
ROA	-0.725	4.922**	-0.732	4.937**	-0.738	4.935**
	(0.486)	(0.015)	(0.482)	(0.015)	(0.479)	(0.015)
Equity_issue_number_lag	-0.611***	-0.184	-0.614***	-0.188	-0.615***	-0.188
	(0.000)	(0.705)	(0.000)	(0.699)	(0.000)	(0.698)
Debt_issue_number_lag	0.012	-0.094	0.012	-0.093	0.012	-0.094
	(0.807)	(0.476)	(0.808)	(0.480)	(0.806)	(0.476)
Total_equity_issue_amount_lag	-0.000	0.0005	-0.000	0.0005	-0.000	0.0005
	(0.909)	(0.154)	(0.910)	(0.158)	(0.917)	(0.160)
Total_debt_amount_lag	0.00007*	-0.00002	0.00007*	-0.00002	0.00007*	-0.00002
	(0.069)	(0.553)	(0.070)	(0.566)	(0.070)	(0.578)
Ownership Concentration	2.255***	2.949	2.259***	2.949	2.272***	2.966
	(0.008)	(0.122)	(0.008)	(0.122)	(0.008)	(0.120)
Observations	15711	2535	15711	2535	15711	2535
Adjusted R^2	0.021	0.062	0.021	0.062	0.021	0.062

p-values in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 1.16: Heckman Probit: Acquisition Decisions (Non-Acquirers vs Acquirers)

Dependent variable for column (1) is DealScan_match, which is equal to one if the firm has a matching record in DealScan and zero otherwise; Dependent variable for column (2)-(5) is Acquirer Dummy, which is equal to one if the firm conducts any acquisition in that year and zero otherwise; Independent variable notations and definitions are listed in Table 1.1. Robust standard errors have been considered in all models.

	(1) DealScan_match 1st Stage	(2) Acq Dummy 2nd Stage	(3) Acq Dummy 2nd Stage	(4) Acq Dummy 2nd Stage	(5) Acq Dummy 2nd Stage
max_Rdeals		0.0268**			
		(0.050)			
max_Ramount			0.0295**		
			(0.031)		
Relationship_dummy				0.0251*	
				(0.061)	
Ramount_ratio					0.00405**
					(0.021)
Size	-0.0119	0.358***	0.358***	0.358***	0.360***
	(0.158)	(0.000)	(0.000)	(0.000)	(0.000)
Leverage	0.240***	-0.0272	-0.0285	-0.0281	-0.0210
	(0.000)	(0.325)	(0.299)	(0.312)	(0.434)
Debt_issuance1	0.000002	0.00004***	0.00004***	0.00004***	0.00004***
	(0.842)	(0.000)	(0.000)	(0.000)	(0.000)
Debt_issuance3	-0.00001**	-0.00001**	-0.00001**	-0.00001**	-0.00001**
	(0.013)	(0.028)	(0.029)	(0.028)	(0.026)
FCF_ratio	0.0696	-0.368***	-0.368***	-0.368***	-0.366***
	(0.165)	(0.000)	(0.000)	(0.000)	(0.000)
Cash_ratio	-1.526***	-1.275***	-1.273***	-1.275***	-1.288***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Revenue_growth_rate	-0.0004	-0.0002	-0.0002	-0.0002	-0.0002
	(0.176)	(0.274)	(0.276)	(0.276)	(0.265)
Rnd_exp	0.0004	-0.0227	-0.0226	-0.0227	-0.0232
	(0.798)	(0.135)	(0.132)	(0.136)	(0.128)
Selling_exp	-0.0001	-0.0006	-0.0006	-0.0006	-0.0006
	(0.610)	(0.335)	(0.335)	(0.334)	(0.334)
ROA	0.164***	0.454***	0.454***	0.453***	0.453***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Tangible_size	0.147***	-0.248***	-0.248***	-0.248***	-0.248***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
MTB	-0.0230***	0.0312***	0.0313***	0.0313***	0.0311***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Equity_issue_number_lag	-0.111***	0.166***	0.166***	0.166***	0.168***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Debt_issue_number_lag	0.0524	0.0806***	0.0805***	0.0806***	0.0808***
	(0.172)	(0.000)	(0.000)	(0.000)	(0.000)
Total_equity_issue_amount_lag	-0.00001	-0.00007*	-0.00007*	-0.00007*	-0.00007*
	(0.488)	(0.075)	(0.076)	(0.076)	(0.073)
Total_debt_issue_amount_lag	0.00003	-0.00001	-0.00001	-0.00001	-0.00001
	(0.487)	(0.597)	(0.599)	(0.600)	(0.600)
Ownership Concentration	-0.710***	-0.866***	-0.866***	-0.866***	-0.867***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Observations		64248	64248	64248	64196
rho		0.174	0.174	0.174	0.175

p-values in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Chapter 2

Bank Lending Relationships and Board Structure

2.1 Introduction

Banks have long been regarded as efficient information producers and delegated monitors on behalf of debt-holders. Through pre-agreed contractual terms, provisions, and covenants in loan agreements, banks establish multiple mechanisms to monitor and influence firms' important business decisions. This influence extends beyond issues associated with debt repayment. For example, Nini et al. (2009) show how loan covenant violations can be used by banks to enhance corporate governance.

A breach of loan covenants may grant banks immediate legal rights to take an active part in a firm's daily operations. Indeed, even without covenant violations, banks can play a role in the management of the firm via their influence over the firm's board. A typical loan agreement may include a change-in-control clause that strengthens banks' rights when there is a control transfer, which may include alterations in ownership interests, board composition, or

key officers[1]. Relationship banks may request board representation through the appointment of bank officers as directors on boards, or may direct a board composition change to increase board independence to enhance the bank's monitoring goals. For example, the following excerpts from loan agreement clauses or syndicated loan amendments illustrate lenders' ability to influence the board's composition:

- SEC filing[2]; Company: Lowell Mineral Exploration, L.L.C.

  "...to provide the Bank with written notice of any change to the composition of the board of directors of the Borrower; and to request the consent of the Bank by giving it at least 30 days written notice of any proposed material change to the beneficial ownership or structure of the Borrower, such consent not to be unreasonably withheld or delayed."

- Document ID[3] 1164204; Clause ID: 18335185; Company: Itec Environmental Group, Inc

  "Effective at the Closing of the Loan, the Company shall appoint Mr. Ronald M. Domingue[4] (or his designee) to the Company's Board of Directors. For so long as (i) the Note (or any note issued upon transfer of the Note, in whole or in part) remains outstanding, or if later (ii) one year from the First Closing Date, the Company shall nominate Mr. Domingue (or his designee) for election to the Board at any and all times that the stockholders of the Company take action (whether by meeting or written consent) to elect members of the Board of Directors and shall use best efforts to secure

[1]A good example of this is American Apparel received a default notice, which was triggered when the board dismissed CEO, Dov Charney, on June 18, 2014. The loan agreement states that if the CEO Dove Charney got replaced or got ousted, the key lender, Lion Capital, has rights to call back the debt. Reports also mentioned that Lion Capital hired restructuring firm Miller Buckfire to advise American Apparel months ago before the outburst of liquidity crisis for that a bankruptcy is "not the first option" Lion Capital is seeking. (Source: http://nypost.com/2011/04/07charneys-5m-cash-crusade/)

[2]SEC filings (http://www.sec.gov/Archives/edgar/containers/fix200/1307111/000119312505037460/dex1020.htm)

[3]Source: http://www.realdealdocs.com/

[4]Mr. Ronald M. Domingue is a managing partner of the lender, Arbor Malone LLC.

Mr. Domingues (or his designee) election to the Board."

- Package ID[5]:152312; Company: Christie/AIX Inc

  "Credit was amended to modify certain borrowing provisions and extend the deadline for appointment or election of an independent director."

Recognizing its importance to business continuity and long-term development, prior literature tends to focus on the impact of monitoring benefits and costs over the board structure as well as the relation between the board structure and the firm values (see Boone et al. (2007), Linck et al. (2008), and Coles et al. (2008)). Directors with special expertise, especially financial expertise (e.g. "bankers on boards"), are also found to impact certain aspects of firm operations, such as funding alternatives and acquisition decisions (see Byrd and Mizruchi (2005), Burak Güner et al. (2008), and Huang et al. (2014)). However, the role of a relationship bank in corporate governance may be more extensive than just taking a seat on the firm's board. In this paper, I examine how relationship banks impact the board's composition. In particular, I find that relationship banks favor bigger boards with a lower concentration of insiders.

This paper investigates the mechanism of how bank lending relationships impact the corporate governance of the firm by examining board composition. In order to facilitate their monitoring duties, banks may ask for board representation (e.g. appointed as an affiliated director) or at least request additional seats of independent directors on the board to enhance the bank's monitoring goals, leading to a larger board and diluting the impact of insiders. The empirical evidence shows (after controlling for the firm complexity and other firm-specific variables) that in the presence of lending relationships, board size increases, but the proportion of inside directors on the board decreases. However, these results may

[5]Source: DealScan

be skewed by endogeneity in that firms that choose to have lending relationships may have different characteristics than firms without banking relationships. Thus, I utilize a treatment selection model[6] to control for the choice to institute a banking relationship using the firm's access to public equity and debt market three years in the past as instruments. The estimated impacts of lending relationships on board structure remain consistent.

I next examine whether the bank-induced governance changes impact firm value. On one hand, the bank's enhanced monitoring mechanism may strengthen corporate governance, thereby benefiting both creditors and shareholders (for example, see Diamond (1984, 1991), Leland and Pyle (1977), DeLong (1991), Nini et al. (2009), Bharath et al. (2011)). On the other hand, the larger boards implemented by relationship bank monitors may reduce firm value through increased costs, such as increasing compensation paid to directors, prolonged decision making procedures, increased information asymmetries between CEOs and outside directors (see Burkart et al. (1997)), or hold-up problems (see Sharpe (1990), Rajan (1992), and Puri (1996)). The net effects on firm value of relationship banks' intervention in corporate governance remain an empirical issue.

The rest of the paper is structured as follows. Section 2.2 provides a literature review and hypothesis development. Section 2.3 discusses the data sets and descriptive statistics. Section 2.4 describes estimation model and methodologies and explains the empirical results. Section 2.5 summarizes the findings.

[6]The results are consistent using an IV model even given the problem of the binary dependent variable.

2.2 Literature Review and Hypotheses Development

This paper is related to two broad strands of studies, including corporate governance and relationship banking. I will review both strands in the following section and develop the hypotheses accordingly.

2.2.1 Literature Review

The board of directors has been of major interest in the field of corporate governance. Research into the structure of the board has mainly focused on issues such as board size and independence. Utilizing a sample of IPOs, Boone et al. (2007) concluded that firm complexity and the information asymmetry level increase the monitoring needs as well as the number of directors on board to implement monitoring duties, and that CEOs influences and negotiation power with outside directors determine board composition and independence. Linck et al. (2008) further complemented the literature by analyzing a more comprehensive sample and conducting more tests to mitigate the endogeneity problems that are inherent in interrelationship in board structure.

Endogeneity concerns plague studies of board structure. Both Hermalin and Weisbach (2003) and Adams et al. (2008) surveys describe the potential endogeneity concerns that specific board structure may be chosen in response to the governance issues confronted. The most conventional solutions to such endogeneity concerns are the adoption of simultaneous-equation methods with lagged performance as instruments for current performance (see Hermalin and Weisbach (1988, 2003), Adams et al. (2008), Boone et al. (2007), Linck et al. (2008), etc.) Other strategies include the introduction of industry fixed effects into the regression analysis (see Boone et al. (2007) and Linck et al. (2008)), the use of principal component analyses to capture the commonality of a set of endogenous variables (Linck

et al. (2008) and Coles et al. (2008)), and the adoption of three-stage least squares (3SLS) regressions that combine the two-stage least squares (2SLS) regressions and simultaneous equation methodologies (see Coles et al. (2008)).

The importance of board structure hinges on the impact of different board structures on firms' operations, such as firm performance, CEO compensation, CEO turnover, anti-takeover policies, and even capital structure decisions. As an overview measure of firm value, there are many studies examining the relation between firm performance (e.g. Tobin's Q) and board structure. Although larger boards are less likely to be manipulated and thus are assumed to perform better monitoring duties, Lipton and Lipton and Lorsch (1992) and Jensen (1993) pointed out the agency problem (e.g. free-riders) among directors in the board may reduce the efficiency of the board operations and Yermack (1996) later conducted empirical tests to support the arguments. Coles et al. (2008) recognized the non-linear relationship between Tobin's Q and the board size, and suggested an optimal board size for each type of firms. Cheng (2008) also observed a negative relation between the board size and the variability of firm performance, which is consistent with the proposition that it takes more compromises to reach consensus, and therefore a larger board leads to less volatility in firm performance. A general consensus suggests an inverse relationship between board size and firm value.

In contrast, however, there is no general consensus about the impact of inside directors on firm performance. Regulators and legislators advocate the independence of the board (a lower proportion of inside directors), especially after Enron and Worldcom scandals, since independent boards are assumed to best monitor management, thereby aligning the interests of agents and shareholders. However, independent boards are only found to add value in acquisition-related events (see Byrd and Hickman (1992), Brickley et al. (1994), and Cotter

et al. (1997)). Hermalin and Weisbach (1991) and Bhagat and Black (1999) report no relation between the proportion of outside directors on the board and Tobin's Q. In contrast, insiders are claimed to withhold more private information and therefore they are more able to position appropriate strategies when the information asymmetry between insiders and outsiders are large. Rosenstein and Wyatt (1997) and Klein (1998) conducted empirical analyses to reflect the "value-added" of inside directors in corporate governance when the board is dominated by the outsiders or when the inside information can be utilized in finance and investment committees, while Coles et al. (2008) found that Tobin's Q increases with the fraction of insiders on the board for R&D intensive firms.

In addition to the breakdown of insiders vs. outsiders, researchers have analyzed how the special expertise of directors is associated with firm operations. For example, firms with lending bankers on the board tend to have negative impacts on firms' debt ratios (see Byrd and Mizruchi (2005)). Moreover, firms with investment bankers on the board have higher propensities to take acquisitions and, when they conduct acquisitions, obtain higher premiums (see Huang et al. (2014)). Firms with directors with financial expertise were observed to have more external financing but lower investment- cash flow sensitivities (see Burak Güner et al. (2008)). Rather than identifying each director's financial expertise, I investigate how lending banks influence the composition of boards, thereby impacting overall firm value. That is, the bank's influence the board's composition is broader than simply demanding a banker's seat on the board. Instead, the bank can use monitoring as another form of corporate governance that is manifest in the bank's intervention in structuring the board.

Monitoring refers to a process of collecting and producing information that helps economic agents allocate their limited resources to maximize profits. The monitoring process, however, is costly and may suffer from a "reliability problem" (see Hirshleifer (1971)) as

well as may be regarded as a public good (see Grossman and Stiglitz (1980)). Campbel and Kracaw (1980), therefore, proposed that minimum initial wealth endowments will establish a natural barrier to entry into the market of information so that financial intermediaries function as delegated monitors and specialized information producers. Leland and Pyle (1977) and Diamond (1984) also developed theoretical models to show that financial institutions can maximize their advantages of economies of scale to achieve diversification benefits in the production of information. Thus, banks engage in corporate governance through monitoring and production of private information about firm value.

In the course of repeated lending activities, banks enjoy rents from the reusability of proprietary information; meanwhile, borrowing firms also benefit from such bank monitoring. Early literature in relationship banking mainly focuses on the market perceptions of the monitoring services provided by banks. For example, James (1987) and Lummer and McConnell (1989) documented the positive announcement effects on bank loans, especially the renewals with favorable loan terms. Petersen and Rajan (1994, 1995), Berger and Udell (1995, 1996), and Bharath et al. (2011) found that borrowers may also enjoy the benefits from the reduction of monitoring costs through greater fund availability, better loan terms, and loose collateral requirements.

Indeed, lending banks can influence their borrowers far more than future lending activities only, but also other fundamentals, such as the internal monitoring mechanisms and even daily operations. Bank monitoring takes the form of contractual covenant restrictions, pre-agreed periodic reviews of material non-public information and corporate governance. Nini et al. (2009) utilized the incidence of covenant violations to investigate the real effects of banks' implementation of the creditor rights and their exercise of monitoring duties to improve the overall corporate governance level. Nini et al. (2009) documented a series of re-

versal consequences after the violations of the financial covenants. For example, a decline in acquisitions and capital expenditure, a sharp reduction in leverage and shareholder payouts, and an increase in CEO turnover are found to occur immediately after the violations. Also, they showed that both operating performance and stock market performance improve post-violation and concluded the positive impact of lenders' involvement in corporate governance. Saunders et al. (2012) also studied the consequences of covenant violations and found that the borrowing firms experience higher default probabilities as well as higher costs of capital after covenant violations.

Banks may share benefits from the reusability of proprietary information with borrowers, but they may also pursue their own interests at the expenses of their clients. Theoretically, Sharpe (1990) and Rajan (1992) modeled the hold-up problem describing the ascending costs associated with expanding market power. Puri (1996) researched the conflicts of interests embedded in the banking relationships but the empirical findings show that the investors value the certification services provided more than the costs associated. In this paper, banks transfer their monitoring costs to the borrowing firms by requesting the enhancement of corporate governance mechanism. The cost associated with suboptimal governance (e.g. unwieldy or inefficient boards) is an alternative source of costs associated with the lending relationships. In this paper, I examine the role of relationship banks in determining the board's composition.

2.2.2 Hypotheses

As delegated monitors, banks can utilize their contractual rights obtained from bank loan covenants in order to impact borrowing firms' corporate governance. That is, a relationship bank may either ask for board representation (appointment of an affiliated director) or request board composition changes (e.g. greater board independence). As a creditor, the bank

is naturally aligned with debt holders in opposition to equity holders. Moreover, if managers hold stock or options in the company, they may be more aligned with shareholders. So as to control the risk shifting and moral hazard incentives of shareholders and managers, banks and other creditors engage in monitoring activities. These may take the form of board representation so as to oversee the impact the operational activities of the board and institutional shareholders. Thus, I hypothesize that the presence of a relationship bank may shift board composition so as to reduce the power of management and shareholders in favor of creditors.

Hypothesis Ia: The board size increases if the firm has established a lending relationship with a bank.

Hypothesis Ib: The percentage of inside directors on the board decreases if the firm has established a lending relationship with a bank.

These changes in board composition enhance the monitoring capability of the relationship bank by diluting the control of management and institutional shareholders. Conditional on this realignment of power within the firm in the presence of relationship banks, I next examine whether the board composition changes increase or decrease firm value. The banks' role on boards may enhance firm value since they can engage in active corporate governance. However, the enhanced power of the relationship bank in corporate governance may reduce firm value by exacerbating the hold-up problem and the debt overhang problem. Therefore, a banker-controlled board may pass up positive net present value investment projects if they are perceived as too risky, particularly if the firm's financial condition is tenuous[7]. The question of whether the positive or negative impacts of bank relationship intervention in board

[7]The results are consistent if an indicator variable of financial condition, which is equal to one if Altman Z-score is equal to or greater than three and zero otherwise, is included in all specifications.

composition dominate is an empirical one. Thus, I hypothesize:

Hypothesis II: The presence of a bank lending relationship and bank-induced governance reduce firm value.

2.3 Data

Risk Metrics Directors Legacy (previously known as IRRC) collects a range of variables related to individual board directors for firms in the S&P 1500 index since 1996. Rick Metrics experienced a structural change in its data collection methodology[8] to follow Institutional Shareholder Services (ISS) specifications in 2007 and therefore separated its database into two as Directors Legacy for 1996-2006 and Directors for data since 2007. I manually combine two databases and make sure that company identities are consistent across two databases[9]. Therefore, my sample spans all firms in the database from 1996 through 2011.

Companies are then matched to Computstat in order to obtain the firm-specific variables. I also use the Compustat Segment track to obtain the number of segments to proxy the scope and complexity of the firm's operations. I control for previous mergers and acquisitions by incorporating the Thomson Securities Data Corporations (SDC Platinum) M&A database. I categorize firms' acquisition status to be non-acquirers, episodic acquirers, and serial acquirers based on the number of total acquisitions conducted in the past 3 years (see Fuller et al. (2002).) A firm is defined as a serial acquirer if it conducts 5 or more acquisitions

[8]ISS acquired IRRC in 2005 and completed an integration of IRRC databases into ISS databases in 2007. In addition to company ID changes (different IDs and different CUSIP formats (6 digit vs. 9 digit)), some new variables were added (e.g. financial expertise indicator), some files were discontinued (e.g. prior services on board), and some were recorded via different methodologies (e.g. super majority provision in Governance track was a Yes/No indicator, but new super majority contains actual percentage).

[9]To be consistent, I only use variables that can be found in both databases and recorded in a similar manner. I also manually track the company ID based on the company names and the list of directors before and after 2007 to ensure continuity.

in a three-year window, as an episodic acquirer if between 1-4, and non-acquirer if zero. In order to construct two instruments for funding decisions, I obtain the initial years of access to public equity and public debt market from SDC Platinum Global New Issues database.

I obtain more detailed information about the CEO from Execucomp database, e.g. CEO tenure, age, and ownership stake. Bank loan data are extracted from Loan Pricing Corporation (LPC) DealScan database. Using the DealScan Compustat link table provided by Chava and Roberts (2008), I match the corresponding loan records to matched companies. Following Bharath et al. (2007), I use the window of past 3 years (excluding the current year, or (-3, -1)) to define the existence of a prior lending relationship, denoted as Relationship_dummy. After excluding financial institutions and utilities, the final sample consists of 10,382 firm years with 1,797 distinct firms. Among the total firm years, 7,293 (3,089) firm years do (do not) have lending relationships.

Two main measures of board compositions in this paper are board size (denoted as Board_size) and the proportion of inside directors on board (Board_inside_pct). Risk Metrics provides flags of board affiliations for each director, including employee, affiliated, and independent. Directors who serve as employees to the firm are considered inside directors, whereas affiliated and independent are both regarded as outside directors (see Lehn et al. (2009) and Coles et al. (2008)). In exercising their oversight capabilities, banks may require the appointment of either affiliated directors (bank executives) or independent directors (non-bank directors). Since banks may have an impact on the number of both affiliated and independent directors, I use the percentage of inside directors as the major measure of board composition.

Table 2.2 provides summary statistics for the whole sample. Table 2.2 shows that the

mean (median) number of directors on board is 8.97 (9) and the mean (median) percentage of inside directors on board is 20.1% (16.7%). On average, CEOs are aged at 61.59, and have 8.17 years of tenure and 4.94% of ownership. Also, 7.84% of CEOs are elected as chairmen. The average firm in the sample has 2.07 segments[10], age of 32.63 years[11], Tobin's Q of 1.49, size of 7.27 (equivalent to 1,436.55 million dollars of total assets), free cash flow ratio of 5.11%, R&D expense ratio of 4.83%, selling expense ratio of 26%, ROA of 9.58%, leverage of 21.8%, and market-to-book ratio of 1.71. All variable definitions and denotations can be found in Table 2.1.

Table 2.3 divides the full sample into two subgroups: firm years without prior lending relationships and those with prior lending relationships. Table 2.3 shows that firms with prior lending relationships have more directors and a smaller percentage of inside directors on their boards, with the mean differences significant at the 1% level. In addition, firms with banking relationships tend to have more segments, longer operating years, smaller CEO ownership, and older CEOs with longer tenures (all means are significantly different at the 1% level). Firms with prior lending relationships are found to be larger in size, have lower Tobin's Q, smaller free cash flow ratios, smaller R&D expense ratios, selling expense ratios, higher leverage, and smaller market-to-book ratio.

[10]The number of segments is calculated as the summation of total business segments with non-missing segment SIC of a firm. Firms who do not report the segment information are recognized as ones with one segment without any differentiation.

[11]The firm age is calculated based on the founding dates provided by IPO data from Jay R. Ritters website.

2.4 Estimation Models and Empirical Results

2.4.1 Determinants of Board Compositions

To test the first set hypotheses about determinants of board structure, I perform the ordinary least square regressions on board size and the proportion of inside directors separately as follows:

$$Board\_size = \alpha * Relationship\_dummy + \beta * X_{CEO} + \gamma * X_{Firm} + \varepsilon \tag{2.1}$$

$$Board\_inside\_pct = \alpha * Relationship\_dummy + \beta * X_{CEO} + \gamma * X_{Firm} + \varepsilon \tag{2.2}$$

CEO related variables (X_{CEO}) include CEO ownership (CEO_Own), CEO age (CEO_Age), CEO tenure (CEO_Tenure) and an indicator if the CEO and chairman position are joined (CEO_Duality). Intuitively, CEOs have incentives to utilize their influences and bargaining power to affect the board structure (see Hermalin and Weisbach (1998, 2003) and Boone et al. (2007)). Thus, CEO related variables are included in Equation (2.1) and (2.2) as a control for CEO's negotiation power over the board composition.

Firm related variables (X_{Firm}) include the number of prior acquisitions/ prior acquirer status (L.Total_Mergers_3yrs represents the number of acquisitions in the past three years or L.Acquirer _status_f identifies the status of acquirers to be non-acquirer, episodic acquirer, or serial acquirer), the number of segments (Seg_total), the firm age since operations (Firm_age), the natural logarithm of total assets (Size), free cash flow ratio (FCF_ratio), research and

development expense ratio (Rnd_exp), selling expense ratio (Selling_exp), return on asset (ROA), leverage (Leverage), and market-to-book ratio (MTB). The prior acquisition status, the number of segments, the firm age and the firm size represent the scope and the complexity of firm operations, which increases the need for broader consultancy and a bigger board (see Boone et al. (2007) and Coles et al. (2008)). Free cash flow ratio captures the extent that CEOs might be able to expropriate for private benefits (see Jensen (1986)) and thus the need for professional monitoring. The relative portion of R&D expenditure represents the level of expertise in the professions and the costs of monitoring to the outside directors, while the ratio of selling expenses measures the market competition and serves as the opposite effects to R&D expenses. Returns on assets proxy for firms' profitability and leverage serves as a control for firms' current funding status. Market-to-book ratio projects firms' growth opportunities as well as the monitoring costs from the perspective of outside directors.

Table 2.4 column (1) and (2) demonstrate the regression results for Equation (2.1). The positive coefficients on the Relationship_dummy imply that the presence of prior lending relationship increases the board size (positive coefficient significant at the 5% level). Meanwhile, CEO age is positively correlated with the board size, which is consistent with the phenomenon found by Hermalin and Weisbach (1988) that when CEOs age and near their retirement, the board size tends to expand to include potential successor candidates. The negative coefficients of CEO tenure and CEO duality in the analysis of board size reveal that the larger the impact of CEOs, the more condensed the board. Also, positive and statistically significant coefficients on the number of segments, firm age, and firm size reconfirm that larger, more complex firms require larger boards to provide advice and oversight (see Boone et al. (2007)). Consistent with the conjectures about the monitoring costs, both R&D expenditure and market-to-book ratio are associated with more condensed boards, while selling expenditure is positively correlated with the number of directors on board.

Table 2.5 column (1) and (2) present the results for analysis of the proportion of inside directors. The findings show that the presence of prior lending relationships leads to lower percentages of inside directors on board (negative coefficient significant at the 1% level). CEOs influence the composition of the board structure towards the insiders via their ownership and tenure, lending support to negotiation hypotheses that the board composition is the outcome of negotiations between CEOs and outside directors (see Hermalin and Weisbach (1998) and Boone et al. (2007)). The empirical results also show that firms tend to reduce the proportion of inside directors on board as they age, expand in size, and become more levered. The market-to-book ratio, however, represents potential growth opportunities as well as the monitoring costs to outsiders and thus increases the proportion of inside directors.

There are two dimensions of potential endogeneity concerns associated with the OLS cross-sectional analyses. First, board composition itself may be jointly determined. To control for such joint-endogeneity problems, I control for the proportion of inside directors in the analysis of board size, and control for the board size in the analysis of the proportion of inside directors (see Coles et al. (2008)). Furthermore, the year and industry fixed effects are included in all specifications and the standard errors are clustered at the firm level. Alternatively, I consider the timing of joint-endogeneity concern and follow Hermalin and Weisbach (1991) and Coles et al. (2008) to use the lagged values of board size and the proportion of inside directors in each others' regressions. Corresponding results are reported in column (3)- (6) in Table 2.4 and 2.5. Results are all consistent with OLS results presented in column (1) and (2) of Table 2.4 and 2.5.

The second dimension of endogeneity concern involves the decision to establish a bank lending relationships itself. Therefore, I estimate a two-stage treatment selection model to

address this endogeneity concern. In the first stage, I conduct a probit regression with a dummy dependent variable to identify the decision to have a bank lending relationship. The instruments, or exogenous variables to identify the lending decisions, are the firm's access to public equity markets and to public debt markets three years prior to the firm year analyzed (t-3). The rationale for constructing an instrument endogenous bank relationships using the firm's access to public equity market and debt market in the past three years is that, firms' previous funding capabilities in the public debt and equity markets may affect their decisions to establish lending relationships with banks in the syndication market, but do not necessarily impact the current board composition directly. In the second stage, I run the OLS regressions of the board composition (board size or the proportion of inside directors) over the predicted value of lending relationships from the first stage.

Table 2.6 reports the results of two-stage treatment selection regressions for the board size and Table 2.7 presents the results for the proportion of inside directors, respectively. Both tests confirm OLS results, showing a positive impact over the board size and negative impact over the proportion of inside directors in the presence of a banking relationship. Tables 2.6 and 2.7 also present the first stage probit regressions in columns (2), (4), and (6). When a firm has prior access to public equity market, it is significantly (at the 5% level or better) less likely to establish a bank lending relationship. However, prior access to public debt significantly (at 1% level) increases the likelihood of a bank lending relationship. The signs and significance levels for other control variables are all consistent with prior tests on the board size and the proportion of inside directors respectively.

A further test to address the simultaneity in board composition measure is found in Table 2.8, which presents the results of an estimation of a system of two seemingly unrelated regression equations (SURE). The model can be presented in the following equations:

$$\begin{cases} Board\_size = \alpha_1 * Relationship\_dummy + \beta_1 * X_{CEO} + \gamma_1 * X_{Firm} + \varepsilon_1 \\ \\ Board\_inside\_pct = \alpha_2 * Relationship\_dummy + \beta_2 * X_{CEO} + \gamma_2 * X_{Firm} + \varepsilon_2 \end{cases}$$

The empirical results of SURE system mentioned above are presented in column (1) Table 2.8. Furthermore, I conduct three stage least square estimation (3SLS), which combines two stage least square (2SLS) and seemingly unrelated regression equations, to include lagged value of the board size and the percentage of insiders in each other's equation to control for joint-endogeneity concern. 3SLS estimations are presented in column (2) Table 2.8. Both models in Table 2.8 confirm the positive size effect and the negative insider percentage effect of the presence of prior lending relationships.

2.4.2 Firm Value and Lending Relationships

In this section, I test Hypothesis II, which investigates the impact of relationship banks and board structure on Tobin's Q. I expand the 3SLS model described in the prior section to include the firm value, proxied by Tobin's Q. The fundamental structure of the model can be presented as follows:

$$\begin{cases} Tobin's\ Q = \alpha_1 X_{Board\ structure} + \beta_1 Relationship\_dummy + \delta_1 X_{CEO} + \eta_1 X_{Firm} + \varepsilon_1 \\ \\ Board\_size = \alpha_2 X_{Board\ structure,t-1} + \beta_2 Relationship\_dummy + \delta_2 X_{CEO} + \eta_2 X_{Firm} + \varepsilon_2 \\ \\ Board\_inside\_pct = \alpha_3 X_{Board\ structure,t-1} + \beta_3 Relationship\_dummy + \delta_3 X_{CEO} + \eta_3 X_{Firm} + \varepsilon_3 \end{cases}$$

$X_{Board\ structure}$ in Tobin's Q equation refers to the contemporary value of the board size and the percentage of inside directors. On the other hand, $X_{Board\ structure,t-1}$ in Board size represents the lagged value of the percentage of inside directors, while $X_{Board\ structure,t-1}$ in Board inside director percentage equation represents the lagged value of the board size.

Table 2.9 provides the results for 3SLS estimations mentioned above. The results are consistent with the general consensus in the literature that Tobin's Q decreases in board size (see Lipton and Lorsch (1992), Jensen (1993)), Yermack (1996) and Coles et al. (2008)). It is interesting to note that Tobin's Q significantly increases in the percentage of inside directors after controlling for the presence of lending relationships and joint-endogeneity. Though Rosenstein and Wyatt (1997) and Klein (1998) also documented positive contribution of insiders, their results are not comprehensive but subject to certain circumstances. Rosenstein and Wyatt (1997) found positive inside director appointment announcement effects only when insiders ownerships are between 5% and 25%, but the positive announcement effects went away when insiders ownerships are more than 25%. Klein (1998) found little association between firm performance and overall board composition, but positive relation between the percentage of inside directors on finance and investment committees and accounting and stock market performance measures. However, the positive relation between Tobin's Q and the percentage of insiders in Table 2.9 prevails in the full sample without special conditions. Results suggest, therefore, that relationship banks use their influence over the board to prevent insiders from entrenchment by diluting insiders power and expanding board size, while at the same time utilizing insiders private information to add value, thereby resolving the controversy in the literature about the connection between the board independence and firm value.

On the other hand, the presence of lending relationships is found to have a negative im-

pact on Tobin's Q. The negative coefficients in Relationship_dummy imply that the hold-up problems outweigh the monitoring benefits and certification services provided by banks. The most likely explanation rests in the nature of the firms in my sample, which is comprised of firms in the S&P 1500 index. Therefore, the firms are large, informationally transparent with relatively well-established board structures. The role of the bank monitor is most evident for smaller, informationally opaque firms. Thus, after controlling for the board size and the percentage of insiders, banks' intervention in management brings more costs than benefits to the borrowing firms.

Hermalin and Weisbach (1998, 2003) pointed out that another potential endogeneity issue that the firm performance may affect the board composition and the board size. For example, Hermalin and Weisbach (1998) suggested that the poor performance leads to increases in board independence. The same concept may apply to the relation between the performance and the board size. To deal with the potential mutual influence concerns, I include the lagged value of Tobin's Q in both board size and the percentage of inside directors equations and present the results in Table 2.10. The results are all consistent with the findings in Table 2.9.

Coles et al. (2008) found a U-shaped relation and board size. To control for such non-linearity, I include both the squared term of the board size (denoted as Size_sq) and the percentage of inside directors (or Inside_sq) in Table 2.11. Consistent with Coles et al. (2008), the coefficients on the squared terms in Table 2.11, column (1) are statistically significant (at the 1% level), indicating a non-linear relation between Tobin's Q and board size and between Tobin's Q and the percentage of inside directors. Results shown in Table 2.11 also indicate the negative relationship between board size and lending relationships, as well as the positive effect of insider percentage, presented in Table 2.6, 2.7, and 2.8.

2.5 Conclusion

As delegated monitors, banks are granted various legal and contractual powers to monitor and intervene in the borrowing firms' daily operations. Lending banks may attempt to actively enhance the firm's corporate governance in the course of pursuing their monitoring duties. Several venues can be adopted to enhance one firm's overall corporate governance. For example, banks may ask for board representation (appointment of an affiliated director) or simply board composition changes (e.g. greater board independence), affecting both the board size and the percentage of inside directors.

Utilizing board information obtained from RiskMetrics and syndicated bank loan data obtained from LPC DealScan, I find that the presence of lending relationships increases the board size but reduces the percentage of inside directors. The results are consistent across different model specifications dealing with joint endogeneity and simultaneity concerns.

Bank monitoring is costly, however, in terms of the cost of financing and potential hold-up problems. The presence of lending relationships is found to have a negative impact on firm value, implying that monitoring costs outweigh the governance benefits and certification services provided by lending banks. In particular, I find that the diluted participation of insider directors (via larger board size and a lower percentage of insiders) reduces firm value in the presence of bank lending relationships.

Table 2.1: Variable Notations and Definitions

Variable Notation	Definition
Main Variables	
Board_size	Total number of directors on board.
Board_inside_pct	The percentage of inside directors on board.
Board_aff_pct	The percentage of affiliated directors on board.
Board_indep_pct	The percentage of independent directors on board.
Relationship_dummy	Dummy variable=1 if the acquirer has established lending relationships with any banks in the past three years (-3,-1).
Tobin's Q	The ratio of market value of the company over the replacement value of the company.
X_{CEO}	
CEO_Own	CEO ownership stake in outstanding common stocks.
CEO_Age	CEO age.
CEO_Tenure	CEO tenure in CEO position.
CEO_Duality	An indicator if the CEO and chairman position are joined.
X_{Firm}	
Total_Mergers_3yrs	Total number of mergers the firm conducts in the past three years, including the contemporary year (-2,0).
L.Total_Mergers_3yrs	Total number of mergers the firm conducts in the past three years, excluding contemporary year (-3,-1).
Acquirer_status_f	The acquirer status indicator, 1=non acquirer, 2-episodic acquirer (who conduct 1-4 acquisition in the past 3 years), and 3= serial acquirers (who conduct 5 or more acquisitions in the past three years).
L.Acquirer_status_f	The acquirer status indicator in the previous period, 1=non acquirer, 2-episodic acquirer (who conduct 1-4 acquisition in the past 3 years), and 3= serial acquirers (who conduct 5 or more acquisitions in the past three years).
Seg_total	The number of segments, which is equal to the summation of total business segments with non-missing segment SIC of a firm.
Firm_age	The firm age, which is calculated based on the founding dates provided by IPO data from Jay R. Ritters website.
Size	Natural logarithm of total assets
FCF_ratio	Scaled free cash flow by total assets
Rnd_exp	Scaled research and development expenses by sales
Selling_exp	Scaled selling, general and administrative expenditures by sales
ROA	Return on Assets, or the ratio of EBIT over total assets
Leverage	The ratio of debt (both long term and short term portion) over total assets
MTB	Market to book ratio, or the ratio of market over book value of total assets

Table 2.2: Summary Statistics- All

	Obs	Mean	SD	Min	25th Perc.	Median	75th Perc.	Max
Board_size	10382	8.969	2.327	3	7	9	10	21
Board_inside_pct	10382	0.201	0.107	0.0476	0.125	0.167	0.250	0.727
Board_aff_pct	10382	0.118	0.133	0	0	0.100	0.200	0.800
Board_indep_pct	10382	0.681	0.170	0	0.571	0.714	0.818	0.938
Seg_total	10382	2.071	1.360	1	1	2	3	10
Firm_age	10382	32.63	20.05	1	19	29	39	151
CEO_Own	10382	4.935	11.07	0	0	1.600	3.700	100
CEO_Age	10382	61.59	8.482	31	55	62	67	95
CEO_Tenure	10382	8.166	7.830	0	3	6	11	60
CEO_Duality	10382	0.0784	0.269	0	0	0	0	1
Total_Mergers_3yrs	10382	3.078	4.646	0	0	2	4	130
L.Total_Mergers_3yrs	10382	3.159	4.867	0	0	2	4	130
Acquirer_status_f	10382	1.941	0.701	1	1	2	2	3
L.Acquirer_status_f	10382	1.945	0.709	1	1	2	2	3
Relationship_dummy	10382	0.702	0.457	0	0	1	1	1
Tobin's Q	10382	1.487	1.486	0.00255	0.626	1.056	1.807	34.06
Size	10382	7.266	1.371	2.819	6.309	7.116	8.060	13.59
FCF_ratio	10382	0.0511	0.0907	-1.150	0.00898	0.0524	0.0977	0.779
Rnd_exp	10382	0.0483	0.209	0	0	0.00371	0.0502	17.44
Selling_exp	10382	0.260	0.372	0.000925	0.120	0.219	0.344	27.27
ROA	10382	0.0958	0.106	-1.528	0.0535	0.0955	0.144	0.909
Leverage	10382	0.218	0.180	0	0.0556	0.210	0.330	1.743
MTB	10382	1.706	1.438	0.0110	0.897	1.281	1.976	34.06
N	10382							

Table 2.3: Summary Statistics- By Lending Relationships

	No-Relationship			Relationship				
	Obs	Mean	SE	Obs	Mean	SE	Mean_diff	t-stat
Board_size	3089	8.236	0.0395	7293	9.279	0.0271	-1.044	-21.79
Board_inside_pct	3089	0.216	0.00206	7293	0.194	0.00120	0.0225	9.448
Board_aff_pct	3089	0.118	0.00239	7293	0.118	0.00156	-0.000451	-0.158
Board_indep_pct	3089	0.666	0.00304	7293	0.688	0.00199	-0.0221	-6.086
Seg_total	3089	1.848	0.0218	7293	2.165	0.0165	-0.317	-11.61
Firm_age	3089	28.95	0.324	7293	34.19	0.242	-5.242	-12.96
CEO_Own	3089	5.973	0.215	7293	4.496	0.125	1.477	5.945
CEO_Age	3089	60.83	0.162	7293	61.91	0.0963	-1.076	-5.706
CEO_Tenure	3089	9.061	0.157	7293	7.787	0.0865	1.274	7.111
CEO_Duality	3089	0.0745	0.00472	7293	0.0801	0.00318	-0.00562	-0.987
Total_Mergers_3yrs	3089	2.461	0.0673	7293	3.340	0.0580	-0.879	-9.891
L.Total_Mergers_3yrs	3089	2.433	0.0659	7293	3.467	0.0616	-1.035	-11.46
Acquirer_status_f	3089	1.842	0.0122	7293	1.982	0.00826	-0.141	-9.539
L.Acquirer_status_f	3089	1.823	0.0124	7293	1.997	0.00833	-0.174	-11.68
Tobin's Q	3089	1.941	0.0314	7293	1.295	0.0154	0.646	18.46
Size	3089	6.724	0.0230	7293	7.496	0.0157	-0.772	-27.72
FCF_ratio	3089	0.0582	0.00190	7293	0.0481	0.000977	0.0101	4.727
Rnd_exp	3089	0.0931	0.00656	7293	0.0293	0.000792	0.0637	9.650
Selling_exp	3089	0.347	0.0114	7293	0.223	0.00180	0.124	10.74
ROA	3089	0.0927	0.00238	7293	0.0971	0.00108	-0.00441	-1.685
Leverage	3089	0.141	0.00310	7293	0.251	0.00203	-0.110	-29.61
MTB	3089	2.082	0.0308	7293	1.546	0.0149	0.536	15.69
N	10382						10382	

Table 2.4: OLS Regression of Board Size

Dependent variable: Board_size; Independent variable notations and definitions are provided in Table 2.1. Standard errors are clustered at the firm level and year and industry fixed effects have been considered in all models.

	(1)	(2)	(3)	(4)	(5)	(6)
	Board_size	Board_size	Board_size	Board_size	Board_size	Board_size
Relationship_dummy	0.154**	0.152**	0.130**	0.128**	0.132**	0.130**
	(0.016)	(0.017)	(0.039)	(0.041)	(0.037)	(0.039)
Board_inside_pct			-1.899***	-1.907***		
			(0.000)	(0.000)		
L.Board_inside_pct					-1.576***	-1.582***
					(0.000)	(0.000)
L.Total_Mergers_3yrs	-0.0100		-0.00909		-0.00936	
	(0.226)		(0.273)		(0.260)	
L.Acquirer_status_f		-0.0183		-0.0116		-0.0120
		(0.727)		(0.822)		(0.816)
CEO_Own	-0.00671	-0.00675	-0.00312	-0.00315	-0.00355	-0.00357
	(0.106)	(0.105)	(0.448)	(0.446)	(0.390)	(0.388)
CEO_Age	0.0253***	0.0254***	0.0251***	0.0252***	0.0249***	0.0250***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
CEO_Tenure	-0.0177***	-0.0178***	-0.0135**	-0.0136**	-0.0145**	-0.0145**
	(0.008)	(0.007)	(0.037)	(0.036)	(0.026)	(0.025)
CEO_Duality	-0.532***	-0.532***	-0.551***	-0.551***	-0.552***	-0.553***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Seg_total	0.0967***	0.0945***	0.0949***	0.0927***	0.0961***	0.0937***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Firm_age	0.00737***	0.00743***	0.00689***	0.00694***	0.00698***	0.00703***
	(0.002)	(0.002)	(0.004)	(0.004)	(0.004)	(0.003)
Size	0.806***	0.796***	0.788***	0.778***	0.790***	0.780***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
FCF_ratio	-0.0485	-0.0602	-0.173	-0.185	-0.162	-0.174
	(0.897)	(0.873)	(0.641)	(0.618)	(0.664)	(0.640)
Rnd_exp	-1.663***	-1.655***	-1.631***	-1.624***	-1.636***	-1.629***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Selling_exp	1.010***	1.005***	0.986***	0.981***	0.985***	0.980***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
ROA	1.305***	1.314***	1.373***	1.383***	1.375***	1.384***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Leverage	-0.00794	-0.0140	-0.0611	-0.0678	-0.0645	-0.0714
	(0.971)	(0.949)	(0.781)	(0.758)	(0.769)	(0.745)
MTB	-0.107***	-0.108***	-0.102***	-0.103***	-0.104***	-0.104***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
N	10382	10382	10382	10382	10382	10382
adj. R^2	0.400	0.400	0.406	0.406	0.404	0.404

p-values in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 2.5: OLS Regression of Proportion of Inside Directors on Board

Dependent variable: Board_inside_pct; Independent variable notations and definitions are provided in Table 2.1. Standard errors are clustered at the firm level and year and industry fixed effects have been considered in all models.

	(1)	(2)	(3)	(4)	(5)	(6)
	Board_inside_pct	Board_inside_pct	Board_inside_pct	Board_inside_pct	Board_inside_pct	Board_inside_pct
Relationship_dummy	-0.0124***	-0.0124***	-0.0116***	-0.0117***	-0.0118***	-0.0119***
	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
Board_size			-0.00520***	-0.00522***		
			(0.000)	(0.000)		
L.Board_size					-0.00421***	-0.00423***
					(0.001)	(0.001)
L.Total_Mergers_3yrs	0.000489		0.000437		0.000450	
	(0.146)		(0.197)		(0.182)	
L.Acquirer_status_f		0.00349		0.00340		0.00342
		(0.178)		(0.185)		(0.183)
CEO_Own	0.00189***	0.00189***	0.00185***	0.00185***	0.00187***	0.00187***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
CEO_Age	-0.000115	-0.000114	0.0000172	0.0000184	-0.0000108	-0.00000977
	(0.734)	(0.735)	(0.959)	(0.956)	(0.974)	(0.977)
CEO_Tenure	0.00223***	0.00223***	0.00214***	0.00213***	0.00215***	0.00214***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
CEO_Duality	-0.0100***	-0.00997***	-0.0128***	-0.0127***	-0.0117***	-0.0117***
	(0.004)	(0.004)	(0.000)	(0.000)	(0.001)	(0.001)
Seg_total	-0.000905	-0.000936	-0.000403	-0.000443	-0.000469	-0.000507
	(0.544)	(0.531)	(0.788)	(0.767)	(0.753)	(0.735)
Firm_age	-0.000252**	-0.000252**	-0.000214**	-0.000214**	-0.000217**	-0.000217**
	(0.013)	(0.013)	(0.035)	(0.035)	(0.033)	(0.033)
Size	-0.00957***	-0.00958***	-0.00538***	-0.00542***	-0.00613***	-0.00615***
	(0.000)	(0.000)	(0.005)	(0.005)	(0.002)	(0.001)
FCF_ratio	-0.0655***	-0.0655***	-0.0658***	-0.0658***	-0.0643***	-0.0644***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Rnd_exp	0.0168	0.0164	0.00819	0.00774	0.00923	0.00877
	(0.391)	(0.404)	(0.664)	(0.681)	(0.628)	(0.645)
Selling_exp	-0.0128	-0.0125	-0.00755	-0.00724	-0.00824	-0.00792
	(0.313)	(0.324)	(0.533)	(0.549)	(0.501)	(0.517)
ROA	0.0359*	0.0358*	0.0426**	0.0427**	0.0400**	0.0400**
	(0.074)	(0.074)	(0.034)	(0.033)	(0.046)	(0.045)
Leverage	-0.0280**	-0.0282**	-0.0280**	-0.0283**	-0.0281**	-0.0283**
	(0.015)	(0.014)	(0.015)	(0.014)	(0.015)	(0.014)
MTB	0.00256**	0.00261**	0.00200	0.00205	0.00202	0.00207*
	(0.043)	(0.038)	(0.112)	(0.103)	(0.108)	(0.099)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
N	10382	10382	10382	10382	10382	10382
adj. R^2	0.220	0.220	0.228	0.228	0.225	0.225

p-values in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 2.6: Two-stage Treatment Selection Model for Board Size

Each set of model includes two stages of regressions, including one (second stage) with Board_size as the dependent variable and one (first stage) with Relationship_dummy as the dependent variable. Independent variable notations and definitions are provided in Table 2.1. Year and industry fixed effects have been considered in all models.

	(1)		(2)		(3)	
	Board_size	Relationship_dummy	Board_size	Relationship_dummy	Board_size	Relationship_dummy
Relationship_dummy	1.658***		1.564***		1.552***	
	(0.000)		(0.000)		(0.000)	
Access_to_Equity_Dum_l3		-0.0833***		-0.0714**		-0.0707**
		(0.007)		(0.021)		(0.022)
Access_to_Debt_Dum_l3		0.147***		0.135***		0.133***
		(0.000)		(0.001)		(0.001)
Board_inside_pct			-1.563***	-0.746***		
			(0.000)	(0.000)		
L.Board_inside_pct					-1.240***	-0.758***
					(0.000)	(0.000)
L.Acquirer_status_f	-0.0580*	0.0914***	-0.0506	0.0923***	-0.0508	0.0926***
	(0.064)	(0.000)	(0.103)	(0.000)	(0.102)	(0.000)
CEO_Own	-0.00590***	-0.00234*	-0.00299	-0.000966	-0.00347*	-0.000853
	(0.002)	(0.099)	(0.122)	(0.505)	(0.073)	(0.556)
CEO_Age	0.0254***	-0.00301	0.0252***	-0.00297	0.0251***	-0.00307
	(0.000)	(0.167)	(0.000)	(0.173)	(0.000)	(0.159)
CEO_Tenure	-0.0145***	-0.00433**	-0.0111***	-0.00266	-0.0121***	-0.00278
	(0.000)	(0.049)	(0.000)	(0.233)	(0.000)	(0.211)
CEO_Duality	-0.542***	0.0377	-0.557***	0.0302	-0.557***	0.0275
	(0.000)	(0.481)	(0.000)	(0.572)	(0.000)	(0.608)
Seg_total	0.0729***	0.0328***	0.0725***	0.0324***	0.0736***	0.0328***
	(0.000)	(0.006)	(0.000)	(0.007)	(0.000)	(0.006)
Firm_age	0.00652***	0.000790	0.00616***	0.000565	0.00626***	0.000561
	(0.000)	(0.322)	(0.000)	(0.480)	(0.000)	(0.482)
Size	0.716***	0.162***	0.705***	0.157***	0.708***	0.156***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
FCF_ratio	0.0405	-0.235	-0.0674	-0.287	-0.0555	-0.292
	(0.888)	(0.284)	(0.814)	(0.193)	(0.846)	(0.185)
Rnd_exp	-1.419***	-2.078***	-1.406***	-2.072***	-1.413***	-2.072***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Selling_exp	0.984***	-0.470***	0.966***	-0.490***	0.966***	-0.495***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
ROA	0.993***	-0.321	1.065***	-0.298	1.067***	-0.291
	(0.000)	(0.135)	(0.000)	(0.165)	(0.000)	(0.176)
Leverage	-0.721***	1.510***	-0.731***	1.482***	-0.725***	1.475***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
MTB	-0.0572***	-0.0483***	-0.0556***	-0.0463***	-0.0572***	-0.0463***
	(0.001)	(0.000)	(0.002)	(0.000)	(0.001)	(0.000)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
N	10374		10374		10374	

p-values in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 2.7: Two-stage Treatment Selection Model for Proportion of Inside Directors on Board

Each set of model includes two stages of regressions, including one (second stage) with Board_inside_pct as the dependent variable and one (first stage) with Relationship_dummy as the dependent variable. Independent variable notations and definitions are provided in Table 2.1. Year and industry fixed effects have been considered in all models.

	(1)		(2)		(3)	
	Board_inside_pct	Relationship_dummy	Board_inside_pct	Relationship_dummy	Board_inside_pct	Relationship_dummy
Relationship_dummy	-0.0370***		-0.0297**		-0.0297**	
	(0.002)		(0.013)		(0.013)	
Access_to_Equity_Dum_l3		-0.0833***		-0.0765**		-0.0792**
		(0.007)		(0.014)		(0.011)
Access_to_Debt_Dum_l3		0.147***		0.140***		0.142***
		(0.000)		(0.001)		(0.001)
Board_size			-0.00509***	0.0177**		
			(0.000)	(0.029)		
L.Board_size					-0.00413***	0.0102
					(0.000)	(0.194)
L.Acquirer_status_f	0.00417***	0.0914***	0.00390**	0.0918***	0.00392**	0.0917***
	(0.008)	(0.000)	(0.012)	(0.000)	(0.011)	(0.000)
CEO_Own	0.00187***	-0.00234*	0.00184***	-0.00223	0.00186***	-0.00229
	(0.000)	(0.099)	(0.000)	(0.116)	(0.000)	(0.106)
CEO_Age	-0.000115	-0.00301	0.0000142	-0.00344	-0.0000130	-0.00326
	(0.425)	(0.167)	(0.921)	(0.116)	(0.928)	(0.137)
CEO_Tenure	0.00217***	-0.00433**	0.00210***	-0.00402*	0.00211***	-0.00413*
	(0.000)	(0.049)	(0.000)	(0.068)	(0.000)	(0.061)
CEO_Duality	-0.00978***	0.0377	-0.0125***	0.0463	-0.0115***	0.0418
	(0.005)	(0.481)	(0.000)	(0.387)	(0.001)	(0.435)
Seg_total	-0.000601	0.0328***	-0.000215	0.0311***	-0.000280	0.0318***
	(0.440)	(0.006)	(0.781)	(0.010)	(0.718)	(0.008)
Firm_age	-0.000239***	0.000790	-0.000206***	0.000670	-0.000208***	0.000709
	(0.000)	(0.322)	(0.000)	(0.402)	(0.000)	(0.375)
Size	-0.00826***	0.162***	-0.00456***	0.149***	-0.00528***	0.155***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
FCF_ratio	-0.0674***	-0.235	-0.0673***	-0.235	-0.0658***	-0.237
	(0.000)	(0.284)	(0.000)	(0.285)	(0.000)	(0.280)
Rnd_exp	0.0124	-2.078***	0.00497	-2.018***	0.00598	-2.040***
	(0.272)	(0.000)	(0.657)	(0.000)	(0.594)	(0.000)
Selling_exp	-0.0121*	-0.470***	-0.00705	-0.487***	-0.00771	-0.480***
	(0.061)	(0.000)	(0.272)	(0.000)	(0.231)	(0.000)
ROA	0.0411***	-0.321	0.0464***	-0.331	0.0437***	-0.324
	(0.002)	(0.135)	(0.001)	(0.122)	(0.001)	(0.132)
Leverage	-0.0166**	1.510***	-0.0198**	1.509***	-0.0199**	1.510***
	(0.043)	(0.000)	(0.016)	(0.000)	(0.015)	(0.000)
MTB	0.00178**	-0.0483***	0.00145	-0.0469***	0.00148*	-0.0473***
	(0.047)	(0.000)	(0.101)	(0.000)	(0.096)	(0.000)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
N	10374		10374		10374	
R^2						

p-values in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 2.8: Seemingly Unrelated Regression Equations (SURE) and Three-stage Least Squares (3SLS)

Two equations, one with Board_size as the dependent variable and one with Board_inside_pct as the dependent variable, are included in both SURE and 3SLS models. Independent variable notations and definitions are provided in Table 2.1. Standard errors are clustered at the firm level and year and industry fixed effects have been considered in all models.

	(1) SURE		(2) 3SLS	
	Board_size	Board_inside_pct	Board_size	Board_inside_pct
L.Board_size				-0.00598***
				(0.000)
L.Board_inside_pct			-2.207***	
			(0.000)	
Relationship_dummy	0.152***	-0.0124***	0.121***	-0.0117***
	(0.000)	(0.000)	(0.004)	(0.000)
L.Acquirer_status_f	-0.0183	0.00349**	-0.00958	0.00340**
	(0.529)	(0.021)	(0.740)	(0.025)
CEO_Own	-0.00675***	0.00189***	-0.00232	0.00186***
	(0.000)	(0.000)	(0.208)	(0.000)
CEO_Age	0.0254***	-0.000114	0.0248***	0.0000336
	(0.000)	(0.426)	(0.000)	(0.815)
CEO_Tenure	-0.0178***	0.00223***	-0.0133***	0.00211***
	(0.000)	(0.000)	(0.000)	(0.000)
CEO_Duality	-0.532***	-0.00997***	-0.561***	-0.0124***
	(0.000)	(0.004)	(0.000)	(0.000)
Seg_total	0.0945***	-0.000936	0.0934***	-0.000328
	(0.000)	(0.216)	(0.000)	(0.663)
Firm_age	0.00743***	-0.000252***	0.00688***	-0.000202***
	(0.000)	(0.000)	(0.000)	(0.000)
Size	0.796***	-0.00958***	0.774***	-0.00473***
	(0.000)	(0.000)	(0.000)	(0.000)
FCF_ratio	-0.0602	-0.0655***	-0.219	-0.0639***
	(0.825)	(0.000)	(0.419)	(0.000)
Rnd_exp	-1.655***	0.0164	-1.618***	0.00561
	(0.000)	(0.138)	(0.000)	(0.611)
Selling_exp	1.005***	-0.0125*	0.970***	-0.00603
	(0.000)	(0.052)	(0.000)	(0.347)
ROA	1.314***	0.0358***	1.412***	0.0417***
	(0.000)	(0.007)	(0.000)	(0.002)
Leverage	-0.0140	-0.0282***	-0.0941	-0.0284***
	(0.904)	(0.000)	(0.417)	(0.000)
MTB	-0.108***	0.00261***	-0.102***	0.00185**
	(0.000)	(0.001)	(0.000)	(0.021)
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
N	10382		10382	
R^2	0.405	0.226	0.408	0.231

p-values in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 2.9: Three-stage Least Squares (3SLS) with Tobin's Q

Three equations are included in 3SLS model and dependent variables for three equations are Tobin's Q, Board_size and Board_inside_pct respectively.Independent variable notations and definitions are provided in Table 2.1. Standard errors are clustered at the firm level and year and industry fixed effects have been considered in the model.

	(1)		
	Tobin's Q	Board_size	Board_inside_pct
Board_size	-0.0767***		
	(0.000)		
L.Board_size			-0.00614***
			(0.000)
Board_inside_pct	0.270*		
	(0.064)		
L.Board_inside_pct		-2.263***	
		(0.000)	
Relationship_dummy	-0.246***	0.147***	-0.0122***
	(0.000)	(0.001)	(0.000)
L.Acquirer_status_f	-0.0594***	-0.00348	0.00329**
	(0.001)	(0.904)	(0.030)
CEO_Own	-0.0000115	-0.00231	0.00186***
	(0.992)	(0.210)	(0.000)
CEO_Age	-0.00975***	0.0260***	0.0000159
	(0.000)	(0.000)	(0.912)
CEO_Tenure	0.00622***	-0.0140***	0.00212***
	(0.001)	(0.000)	(0.000)
CEO_Duality	-0.101**	-0.555***	-0.0126***
	(0.018)	(0.000)	(0.000)
Seg_total	-0.0765***	0.102***	-0.000467
	(0.000)	(0.000)	(0.535)
Firm_age	-0.00494***	0.00744***	-0.000211***
	(0.000)	(0.000)	(0.000)
Size	0.164***	0.763***	-0.00442***
	(0.000)	(0.000)	(0.000)
FCF_ratio	0.779***	-0.302	-0.0624***
	(0.000)	(0.266)	(0.000)
Rnd_exp	-0.372***	-1.593***	0.00488
	(0.006)	(0.000)	(0.658)
Selling_exp	1.043***	0.870***	-0.00408
	(0.000)	(0.000)	(0.521)
ROA	5.841***	0.822***	0.0525***
	(0.000)	(0.001)	(0.000)
Leverage	-1.762***	-0.0170	-0.0298***
	(0.000)	(0.883)	(0.000)
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
N	10382		
R^2	0.398	0.406	0.230

p-values in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 2.10: Three-stage Least Squares (3SLS) with Tobin's Q- controlling for lagged Tobin's Q

Three equations are included in 3SLS model and dependent variables for three equations are Tobin's Q, Board_size and Board_inside_pct respectively.Independent variable notations and definitions are provided in Table 2.1. Standard errors are clustered at the firm level and year and industry fixed effects have been considered in the model.

	(1)		
	Tobin's Q	Board_size	Board_inside_pct
L.tobins_q		-0.110***	0.00348***
		(0.000)	(0.000)
Board_size	-0.0947***		
	(0.000)		
L.Board_size			-0.00573***
			(0.000)
Board_inside_pct	0.848***		
	(0.000)		
L.Board_inside_pct		-2.131***	
		(0.000)	
Relationship_dummy	-0.236***	0.107**	-0.0109***
	(0.000)	(0.012)	(0.000)
L.Acquirer_status_f	-0.0617***	-0.00714	0.00337**
	(0.001)	(0.805)	(0.026)
CEO_Own	-0.00123	-0.00246	0.00186***
	(0.302)	(0.182)	(0.000)
CEO_Age	-0.00919***	0.0238***	0.0000754
	(0.000)	(0.000)	(0.599)
CEO_Tenure	0.00459**	-0.0131***	0.00209***
	(0.012)	(0.000)	(0.000)
CEO_Duality	-0.104**	-0.549***	-0.0126***
	(0.014)	(0.000)	(0.000)
Seg_total	-0.0740***	0.0909***	-0.000157
	(0.000)	(0.000)	(0.835)
Firm_age	-0.00464***	0.00655***	-0.000185***
	(0.000)	(0.000)	(0.000)
Size	0.184***	0.779***	-0.00519***
	(0.000)	(0.000)	(0.000)
FCF_ratio	0.813***	-0.297	-0.0623***
	(0.000)	(0.273)	(0.000)
Rnd_exp	-0.411***	-1.548***	0.00412
	(0.003)	(0.000)	(0.708)
Selling_exp	1.065***	0.952***	-0.00700
	(0.000)	(0.000)	(0.272)
ROA	5.823***	1.492***	0.0309**
	(0.000)	(0.000)	(0.016)
Leverage	-1.743***	-0.202*	-0.0238***
	(0.000)	(0.083)	(0.000)
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
N	10381		
R^2	0.394	0.408	0.232

p-values in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 2.11: Three-stage Least Squares (3SLS) with Tobin's Q- controlling for non-linearity of board size and insider percentage

Three equations are included in 3SLS model and dependent variables for three equations are Tobin's Q, Board_size and Board_inside_pct respectively.Independent variable notations and definitions are provided in Table 2.1. Standard errors are clustered at the firm level and year and industry fixed effects have been considered in the model.

	(1)		
	Tobin's Q	Board_size	Board_inside_pct
L.tobins_q		-0.129***	0.00365***
		(0.000)	(0.000)
Board_size	-1.400***		
	(0.000)		
L.Board_size			-0.00558***
			(0.000)
Size_sq	0.0636***		
	(0.000)		
Board_inside_pct	4.975***		
	(0.000)		
L.Board_inside_pct		-2.084***	
		(0.000)	
Inside_sq	-8.379***		
	(0.000)		
Relationship_dummy	-0.161***	0.0998**	-0.0108***
	(0.000)	(0.019)	(0.000)
L.Acquirer_status_f	-0.0640***	-0.00790	0.00338**
	(0.001)	(0.785)	(0.025)
CEO_Own	-0.00103	-0.00253	0.00186***
	(0.419)	(0.169)	(0.000)
CEO_Age	-0.00441**	0.0235***	0.0000748
	(0.022)	(0.000)	(0.602)
CEO_Tenure	-0.00164	-0.0130***	0.00209***
	(0.412)	(0.000)	(0.000)
CEO_Duality	-0.167***	-0.548***	-0.0125***
	(0.000)	(0.000)	(0.000)
Seg_total	-0.0672***	0.0890***	-0.000157
	(0.000)	(0.000)	(0.835)
Firm_age	-0.00357***	0.00640***	-0.000185***
	(0.000)	(0.000)	(0.000)
Size	0.229***	0.782***	-0.00533***
	(0.000)	(0.000)	(0.000)
FCF_ratio	0.876***	-0.295	-0.0624***
	(0.000)	(0.277)	(0.000)
Rnd_exp	-0.393***	-1.541***	0.00432
	(0.007)	(0.000)	(0.695)
Selling_exp	0.999***	0.966***	-0.00726
	(0.000)	(0.000)	(0.254)
ROA	5.990***	1.606***	0.0298**
	(0.000)	(0.000)	(0.020)
Leverage	-1.595***	-0.234**	-0.0235***
	(0.000)	(0.045)	(0.000)
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
N	10381		
R^2	0.292	0.407	0.232

p-values in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Chapter 3

Bank Monitoring and Managerial Procrastination: Evidence from the Timing of Earnings Announcements

3.1 Introduction

Banks have long been perceived as efficient monitors because of their expertise developed through the receipt of privation information over the course of long term lending relationships. As relationship lenders, banks are granted contractual and legal rights to enable them to perform their monitoring duties and restructure loans whenever necessary. Banks may perform their monitoring activities through various channels. For example, banks may set up periodic conference calls, request the review of financial statements in a timely manner, participate in board meetings and include various covenants in loan contracts to trigger active involvement in management through renegotiation.

The effects of implementing bank monitoring duties can be found in a wide range of

business activities, such as mergers and acquisitions (see Su (2014)), board structure (see Su (2015)), and other daily operations (debt ratio in Byrd and Mizruchi (2005), corporate investment in Chava and Roberts (2008) and Nini et al. (2009), the firm value in Nini et al. (2012), earnings management behavior in Ahn and Choi (2009), etc.). Continuous and routine bank monitoring can keep the firms' daily operations on track and enhance corporate governance.

An external, public indicator of firm performance is the regular announcement of earnings. These announcements tend to take place at regularly scheduled intervals (e.g., 25-35 days after the end of each quarter.) However, if an earnings announcement takes place at an unscheduled time, this may be a public signal that releases some of the lenders' private information about firm performance. Early earnings announcements may not indicate good performance, but late announcements usually deliver a negative signal about the company's performance. The delay of earnings announcements may be caused by internal disorganization in the firm's accounting or financial processing system, the managerial intention to reverse bad earnings through earnings management (see Trueman (1990)), the intention to manipulate analyst forecasts to avoid negative surprises (see Matsumoto (2002)), or managerial intention to take advantage of investor inattention (see DellaVigna and Pollet (2009) and Damodaran (1989)). Indeed, there may be a behavioral explanation for late earnings announcements: intentional managerial procrastination to avoid release of bad news (see Chambers and Penman (1984), Kross and Schroeder (1984), and Begley and Fischer (1998)).

Prior studies mainly focus on how the delay of earnings announcements is associated with lower stock returns. However, since banks are privy to the earnings information even before the public release of earnings, they are not deceived by managerial procrastination in the face of bad earnings announcements. Thus, banks can use their private information to

prevent opportunistic timing of earnings announcements and to reduce managers' ability to manipulate earnings. This is the subject of this paper.

In this paper, I find that bank monitoring prevents managerial procrastination associated with bad earnings announcements. That is, ongoing bank monitoring induces borrowing companies to provide timely financial reports and reduces managers' ability to take advantage of the delay for potential earnings management or other manipulation. Furthermore, monitoring and certification services inherent in bank lending relationships may mitigate the information asymmetry associated with late earnings announcements, and prevent negative announcement effects even if the delay is unavoidable. Thus, the market expects banks to monitor late reporting firms using contractual control rights available within loan terms. For example, evidence of banks' disciplinary monitoring actions involving control over the timely release of financial statements, forecasts, or earnings announcements can be illustrated by the following loan amendments:

- Package ID: 3425; Company: Chelsea Communications Inc

  "Credit was amended to modify the definition of total debt service, and to waive any default resulting from **co.'s failure to provide an annual forecast for FY1994 in timely manner.**"

- Package ID: 62487; Company: Ceridian Corp

  "Credit was amended to reflect **co.'s inability to file in time its 10K form.** Pricing: Co. pays an amendment fee of $5,000."

- Package ID: 104611; Company: American Restaurant Group

  "Credit was amended to **extend the time period in which borrower shall deliver their projections**, and to waive certain events of **default related to the min. EBITDA** required on 9/30/02. Co. pays a $225K amendment fee."

- Package ID: 108503; Company: Adelphia Communications Corp

  "Credit was amended to **add 4/15/04 deadline for delivery of co.'s 2003 audited financial statements.** Credit also amended asset sale basket from $15M to $30M"

To test the role of bank monitoring in controlling managerial procrastination, I utilize syndicated loan data from the Loan Pricing Corporation (LPC) DealScan database in order to identify bank lending relationships. A series of reported earnings announcement dates from Institutional Brokers Estimate System (I/B/E/S) and Compustat are utilized to estimate the expected announcement dates and delays. Controlling for analyst forecast surprises, I find that firms with prior lending relationships are less likely to announce earnings late, which supports my prior conjecture that banks monitor and prevent managerial procrastination of the release of bad earnings news.

However, does the market value of the monitoring role of banks in disciplining opportunistically late release of bad earnings announcements? I investigate the impact of bank lending relationships on earnings announcement returns. I find that when firms delay their public disclosures of earnings, the market does not react as negatively when there is a banking relationship as when there is no banking relationship. I also revisit the good news early and bad news late hypothesis by examining the announcement effects of lateness. The findings show that the observed negative late effect remains only when the firms do not have prior lending relationships, whereas the negative effect disappears if the firms have established lending relationships, suggesting that the market is more tolerant to late earnings announcements if the bank monitoring mechanism exists.

The rest of the paper is organized as follows. Section 3.2 reviews the literature and develops hypotheses. Section 3.3 discusses the data sets and descriptive statistics. Section 3.4 describes estimation models and methodologies and explains the empirical results. Section

3.5 summarizes the findings.

3.2 Literature Review and Hypotheses Development

This paper is related to two distinct strands of research: bank lending relationships and the timing of earnings announcements. I will review both strands of literature below and develop hypotheses accordingly.

3.2.1 Literature- Bank Lending Relationships

The field of bank lending relationships has been extensively explored. Leland and Pyle (1977) and Diamond (1991, 1984) modeled the costs of resolving information asymmetry between borrowers and lenders, and reached the conclusion that, in equilibrium, banks develop their expertise in collecting and processing information through repeated lending transactions that lower the bank's monitoring costs, thereby providing banks a comparative advantage in providing monitoring services. James (1987) and Lummer and McConnell (1989) find positive abnormal returns upon loan approvals, indicating that the stock market views bank lending activity as a positive signal.

Consequently, researchers began investigating the benefits and costs associated with bank lending relationships. It was observed that relationship lenders tend to pass the benefits of the lending relationships to the borrowers through the channel of the subsequent lending in the form of loan terms, covenants, and fund availability (see Petersen and Rajan (1994, 1995), Berger and Udell (1995, 1996), and Bharath et al. (2011)). However, Sharpe (1990) and Rajan (1992), in contrast, find that borrowers incur potential costs because the bank lending relationship confers market power on lending banks. Such expansion of banks' market power grants banks more bargaining power to extract monopoly rents from bank-dependent

borrowers, thereby increasing the cost of funding. Puri (1996) also researched the conflicts of interests embedded in the banking relationships, but found that monitoring certification benefit dominated the hold-up costs associated with bank lending relationships.

More recent papers further extend the analysis of the role of bank monitoring to a broader scope of firm operations. Utilizing contractual and legal rights to monitor, banks can influence the firm's business activities or even the corporate governance mechanisms of the borrowing firms. For example, Su (2014) explores the role of bank monitoring and certification in M&A announcement effects. Nini et al. (2009) and Saunders et al. (2012) investigate the change of firm performance after the covenant violations which trigger banks' active involvement in management. The other growing body of literature researches how the banks affect the borrowing firms' daily operations through the appointment of officers on board (see Byrd and Mizruchi (2005) and Huang et al. (2014)). Allen et al. (2012) examines the role of banks in borrowing firm dividend policy.

However, within the literature, there is an absence of work on the implementation of bank monitoring on the timing of earnings announcements. Thus, this paper contributes to the literature of bank lending relationships by utilizing the timing of earnings announcements as the evidence of banks' exercise of monitoring duties.

3.2.2 Literature- The Timing of Earnings Announcements

Earnings announcements have been one of most routine activities in a firm's daily operations and have also been regarded as the most direct reflection of a firm's performance. There have been extensive studies in the literature examining all types of potential managerial strategies regarding earnings announcements from various perspectives, such as the timing of earnings announcements, earnings management through various accounting standards, and relative

analyst forecast consensus. In this paper, I examine the role of delegated monitors can be critical in preventing opportunistic manipulation of the timing of earnings announcements. Therefore, I provide an overview of existing studies in the timing of earnings announcements.

Early studies observed a prevailing relation between the timing of earnings announcements and the stock market reactions toward the earnings news, as in the good news early and bad news late hypothesis (see Kross (1981), Kross and Schroeder (1984), and Chambers and Penman (1984)). The prior evidence suggested that, at least during 1970s, the benefits of delaying the formal release of earnings exceeded the costs, and therefore managers had incentives to delay the earnings announcements under certain scenarios. There are a variety of explanations to account for this good news early and bad news phenomenon. For example, managers may take advantage of delaying the disclosure of bad earnings to complete a contract (for the company or for their own personal purposes) with better terms. In addition, managers may delay earnings announcements to get more time to reverse the bad performance through a change in accounting standards or arrangements, so-called earnings management (see Trueman (1990)). Alternatively, managers may put off the timing of earnings announcements to manipulate analyst forecast consensus to avoid negative earnings surprises (see Matsumoto (2002)). The alternative source of the delay may come from the delay of audit reports (see Dyer and McHugh (1975), Givoly and Palmon (1982), and Ashton et al. (1987)), which reveals even more information about the firm performance from the perspective of the monitors (or auditors). Though there may be various reasons for the audit delay, such delay may still be interpreted as the negative signal about the firm performance.

Some more recent papers suggest that good news early and bad news late phenomenon did not prevail during the 1980s because of litigation concerns. First, Skinner (1994) asserts that the intensified litigation concerns in 1980s would induce managers to preempt formal

releases of bad earnings with voluntary disclosures, reducing the risk of being sued under Rule 10b-5. Secondly, it was observed that firms experience higher likelihood of facing legal allegations if they have positive pre-announcement returns and a dramatic price drop immediately afterwards upon an adverse earnings announcements (see Francis et al. (1994)), thereby inducing auditors and managers to spend more time verifying good news and leading to a delay in announcement of good news. Altogether with the preemption of bad news and the delay of good news, the intensified litigation risk may serve as an efficient monitoring mechanism eliminating the documented timing phenomenon. However, Begley and Fischer (1998) revisited the hypothesis using announcements from 1980s to early 1990s and found that the good news early and bad news late phenomenon remained.

Another strand of the literature examines how investors respond to earnings surprises when earnings are announced on any specific day in a week (see DellaVigna and Pollet (2009)), weekend (see Damodaran (1989)), or any specific period in a trading day (see Patell and Wolfson (1982), Gennotte and Trueman (1996), and Pronk (2006)). For example, investor inattention affects the magnitude of the market's reaction to earnings announcements, which may motivate managers to arrange the timing of earnings announcements strategically. To accommodate those documented calendar effects, I define the dummy variable of being late to be 7 calendar days later than expected announcement dates and include a set of date-specific variables in the analyses of earnings announcement effects.

3.2.3 Hypotheses Development

According to the studies mentioned above, the procrastination of earnings announcements may carry important information about firm value. As delegated monitors, banks have incentives to prevent managerial manipulation. One way of accomplishing this may be through their efforts to insure timely delivery of financial statements as well as the earnings announce-

ments. Furthermore, even though the delay of earnings announcement is not caused by any managerial manipulation, banks' exercise of routine monitoring duties can force the borrowing firms to have up-to-date statements ready at any time for random reviews, thereby reducing propensity of late earnings announcements. Therefore, I construct Hypothesis 1 as followed.

Hypothesis 1: The presence of a prior bank lending relationship reduces the probability that a firm will delay quarterly earnings announcements.

Hypothesis 1 posits that a firm is less likely to make late earnings announcements if a prior lending relationship is present. If bank monitoring is shown to prevent the potential delay of earnings announcements, thereby reducing the propensity of managerial manipulations associated with delays, the next question will be how this type of monitoring is priced by investors. That is, if banks serve as efficient monitors and prevent managerial manipulation during the time period of the delay in earnings announcements, investors therefore would perceive the presence of bank lending relationships as some assurance of the stability (or quality) of firm performance, offsetting the documented negative late announcement effects. Thus, I hypothesize:

Hypothesis 2: The presence of a bank lending relationship reduces the negative impact of a delay in the announcement of abnormal returns to the earnings announcing firms.

Hypothesis 2 examines the earnings announcement effect of delays in earnings announcements in the presence of bank lending relationships. Managerial procrastination and delay in the reporting of earnings has been shown to have detrimental impacts on the firm's value,

as shown by negative abnormal returns on the late announcement dates. The market presumes that the delay is indicative of potential agency problems (such as attempts at earnings manipulation) that will exacerbate the firm's problems. Hypothesis 2 surmises that the presence of a lending bank mitigates these concerns. Thus, the market does not react negatively (i.e., there is no negative abnormal return) upon the late release of earnings for firms with banking relationships.

3.3 Data and Main Variables

3.3.1 Data

I start with all available quarterly earnings announcement dates from Compustat Fundamentals Quarterly universe ranging from January 1990 to December 2013. I complement the sample using quarterly earnings announcement dates from I/B/E/S database. The final earnings announcement dates are the ones with earlier records from Compustat or I/B/E/S, if there are discrepancies. I also obtain the analyst forecast records from I/B/E/S to calculate the earnings surprises and the analyst coverage.

I obtain the bank loan data from the Loan Pricing Corporation (LPC) DealScan database to identify bank lending relationships, which proxy for the incentives for bank monitoring. I merge the bank lending relationships to corresponding companies in Compustat via the linking table provided by Chava and Roberts (2008). If there is no matching record from LPC DealScan, I consider the firm as if it had no lending relationships. Accordingly, I define Rel_dummy to be equal to one if the firm has any syndicated loan transaction in the past three years (t-3, t-1) to proxy for the prior lending relationships, and zero otherwise, which can be written as followed.

$$Rel\_dummy = \begin{cases} 1 & \text{if the firm has any syndicated loan in the past three years (t-3, t-1)} \\ 0 & \text{otherwise} \end{cases}$$

The monthly and daily stock returns are downloaded from the Center for Research in Security Prices (CRSP), while the cumulative abnormal returns (CARs) are calculated via the Eventus system [Cowan (2005). Eventus software, version 8.0]. CARs are estimated based on the CAPM market model (MM) over the window of (-365, -46) with both value- and equal-weighted benchmarks. Three CAR measurements with different windows, including 1-day window (0,0), 2-day window (0,+1), and 3-day window (-1, +1), are therefore defined as the summation of abnormal returns for the corresponding windows.

To be included in the final sample set, the firms need to meet the following criteria:

- Firms need to have consecutive quarterly earnings announcement dates (for current quarter *q*, previous quarter *q-1*, and previous fourth quarter *q-4*) reported on either I/B/E/S or Compustat.
- Firms are not utility companies (SIC ranges from 4900 to 4999), nor financial institutions (SIC ranges from 6000 to 6999).
- Firms need to have trading records on CRSP for return information and records on Compustat for firm-specific information.
- Firms need to have at least one analyst forecast for the reporting quarter posted on I/B/E/S for analyst consensus.

After considering the availability of control variables, my final sample contains 51,022 firm quarters ranging from 1999 to 2013 and covers 3,061 distinct firms. Among 51,022 firm

quarters, 28,371 firm quarters have no prior lending relationship in the past three years, while 22,651 firm quarters are found to have prior lending relationships in the past three years.

3.3.2 Main Variables: Delay and Late_dummy

To test the first hypothesis of the impact of bank monitoring over lateness of earnings announcements, I follow Kross and Schroeder (1984) and Begley and Fischer (1998)'s methodology to measure the lateness of earnings announcement. I first estimate the "$Lag_{i,q}$" which is defined as the number of days between the end of reporting quarter q and the announcement date of quarter q's earnings for firm i.

$$\tilde{Lag}_{i,q} = f(Lag_{i,q-1}, Lag_{i,q-4}, Lag_{Industry,q}, Calendar\ Quarter\ FE))$$

where:

- $\tilde{\text{Lag}}_{i,q}$ is the predicted lag of earnings announcements for firm i in quarter q.
- $\text{Lag}_{i,q-1}$ and $\text{Lag}_{i,q-4}$ refer to the actual lag of earnings announcements for firm i in quarter *q-1* and *q-4* respectively.
- $\text{Lag}_{Industry,q}$ is the industry average lag of earnings announcements in quarter q.
- Calendar Quarter FE refers to calendar quarter fixed effect identifying the first, second, third and fourth calendar quarter.

Then, I define the variable "*Delay*" as the number of days between the actual earnings announcement dates and the expected announcement dates as followed:

$$Delay_{i,q} = Lag_{i,q} - \tilde{Lag}_{i,q}$$

$\text{Delay}_{i,q}$ is positive when the quarterly earnings are announced after the expected dates, while $\text{Delay}_{i,q}$ is negative when the quarterly earnings are announced before the expected dates. $\text{Delay}_{i,q}$ may provide an alternative measure of earnings announcement lateness. To reduce the impact of outliers in the $\text{Delay}_{i,q}$ variable, I utilize an indicator variable, denoted as Late_dummy, which is designed to be equal to one if $\text{Delay}_{i,q}$ is equal to or greater than 7 calendar days[1] (one week), and zero otherwise, which can be illustrated by the following form:

$$Late\_dummy = \begin{cases} 1 & \text{if Delay}_{i,q} >= 7 \\ 0 & \text{if Delay}_{i,q} < 7 \end{cases}$$

Table 3.2 reports the summary statistics for two subgroups- announcing firms without and with prior lending relationships. Table 3.2 shows that firms with prior lending relationships tend to use fewer days (Lag) to announce earnings and have smaller delays (Delay and Late_dummy) with the mean difference significant at 1% level, which provides preliminary evidence to support the conjecture that bank monitoring prevents procrastination.

In addition, Table 3.2 shows that firms with prior lending relationships are more likely to have positive quarterly earnings (Positive_EPS), attract more attention from analysts (Number_Forecast), have larger assets (Size), higher quarterly sales volume (Sales), higher leverage level (Leverage), lower market-to-book ratio (MTB), higher market capital (Mkt_cap), higher returns on assets (ROA), and lower scaled selling expenses (Selling_exp). It is also interesting to note that firms with prior lending relationships, on average, retain relative lower proportions of cash (Cash_ratio) and lower propensities for positive accruals (Positive_Accruals),

[1]In order to accommodate the potential calendar effects, I define the indicator variable of being late (Late_dummy) to be 7 calendar days later than expected announcement dates. An alternative Late_dummy measurement ($\text{Delay}_{i,1}$ >=3) is also included for robustness tests and yields consistent results with the one with 7-day definition. Results are available upon request.

but hold higher portions of free cash flow (FCF_ratio). In terms of stock market activities, firms with prior lending relationships are found to have more liquidity (Turnover), smaller past short-term returns (Reversal), and smaller past long-term returns (Momentum). A list of variable notations and definition is provided in the Table 3.1.

3.4 Estimation Models and Empirical Results

3.4.1 Bank Lending Relationships and the Timing of Earnings Announcements

To test Hypothesis 1 about the impact of bank lending relationships (monitoring) over the timing of earnings announcements, I utilize three estimation models, including logit regressions, ordinary least square (OLS) regressions and seemingly unrelated regressions (SUR).

In logit regressions, I test the impact of the presence of a prior lending relationship on the propensity to announce earnings late. Accordingly, the dependent variable, Y, is Late_dummy (see Section 3.3.2 for variable construction details), which is equal to one if $\text{Delay}_{i,q}$ is equal to or greater than 7 days, and zero otherwise. The logit regression is formulated as followed.

$$Late\_dummy(Y) = \alpha + \beta * Rel\_dummy + \gamma * X_{Firm} + \epsilon \tag{3.1}$$

X_{Firm} refers to a set of firm-specific control variables, including the indicator variable for positive EPS (Positive_EPS), analysis forecast errors using either the mean or the median of the analyst forecast (Surprise_mean or Surprise_median[2]), the analyst coverage (Num-

[2]The earnings surprise is measured by the differences of actual EPS and the mean (median) of analyst forecast EPS on the earnings announcement date scaled by the stock price of the last trading day of the reporting quarter. An alternative earnings surprise measured on the expected announcement date is also

ber_Forecast), firm size (Size), quarterly sales volume (Sales), leverage ratio (Leverage), market-to-book ratio (MTB), market capital in thousands of dollars (Mkt_cap), returns on assets (ROA), scaled research and development expenses (RnD_exp), scaled quarterly selling expenses (Selling_exp), cash ratio (Cash_ratio), free cash flow ratio (FCF_ratio), the indicator variable for positive total accruals (Positive_Accruals), the past short-term returns (Reversal), and the past long-term returns (Momentum). Robust standard errors and cluster effect at the firm level are included in all specifications, while fixed effects vary across specifications.

Table 3.3 presents the estimation results of logit regressions shown in Equation (3.1). The coefficients of Rel_dummy are consistently negative and statistically significant (at the 1% significance level) across all specifications, inferring that firms with prior lending relationships are less likely to announce earnings late (i.e., later than expected earnings announcement dates).

In addition to bank monitoring, I notice an alternative mechanism in monitoring the timing of earnings announcements. That is, the monitoring by external analysts, which is measured by the number of analysts submitting the earnings forecasts. The negative and significant coefficients on the Number_Forecast variable reveal that analysts also serve as an important source of external monitoring preventing the delay of earnings announcements.

Surprisingly, the earnings surprises (based on the average of consensus or the median of the forecast) show no significant effect on the delay of announcements. Thus, managerial delay in the release of earnings information is not related to the error in the analyst forecasts. On the other hand, the coefficients of Positive_EPS are negative and statistically

calculated for robustness tests and yields consistent results with the earnings surprised measured on the actual earnings announcement date. Results are available upon request.

significant across specifications, which lends partial support to good news early hypothesis. Positive_EPS serves as an alternative indicator for "good" news and provides a more straight-forward evidence of qualified firm performance.

As another test of the impact of the role of lenders in the timing of public release of earnings information, I run OLS regressions using $\text{Delay}_{i,q}$ (as a continuous variable in terms of days) as the dependent variable. The estimations of OLS regressions can be presented below:

$$Delay(Y) = \alpha + \beta * Rel\_dummy + \gamma * X_{Firm} + \epsilon \tag{3.2}$$

Table 3.4 reports the OLS estimation results of Equation (3.2). Consistent with Table 3.3 results, the coefficients on Rel_dummy are negative and statistically significant, suggesting that earnings are more timely in the presence of banking relationships. Moreover, the coefficients on the Number_Forecast variable is negative and statistically significant, indicating that external monitoring by analysts reduces the delay in earnings announcements. The coefficients on earnings surprises remain insignificant, whereas the coefficients for positive EPS indicator remain negative and statistically significant, consistent with the logit results presented in Table 3.3.

There might be a potential simultaneity concern associated with the analysis of the timing of the earnings announcements. That is, the analysts may revise their forecasts promptly to reflect the timing of earnings announcements. Therefore, the delay and the earnings surprises may be determined simultaneously. To address this type of simultaneity concern, I conduct a seemingly unrelated regression (SUR) model, which estimates two equations simultaneously as follows.

$$\begin{cases} Delay = \alpha_1 + \beta_1 * Rel\_dummy + \gamma_1 * X_{Firm} + \varepsilon_1 \\ \\ Surprise = \alpha_2 + \beta_2 * Rel\_dummy + \gamma_2 * X_{Firm} + \varepsilon_2 \end{cases}$$

Table 3.5 provides the empirical results for the SUR model. Model (1) in Table 3.5 shows the results for full sample, while Model (2) and (3) present the results for sub-samples of negative delays (early announcements) and positive delays (late announcements) respectively to test the differential impacts of bank monitoring over the timing of earnings announcements. The results show that the earnings are announced earlier (i.e, fewer delays and earlier accelerated announcements) when firms have prior lending relationships. The magnitude of this effect is greater for earnings announcements after the expected date (positive delays) as compared to announcements before the expected date (negative delays). Further, Table 3.5 shows that the more analysts that monitor the firm (forecast firm earnings), the smaller the delays, consistent with previous findings finding the presence of analysts performs as an external monitoring mechanism that prevents delays. On the other hand, the analyst coverage on average has a positive impact over the earnings surprises, implying that a broader analyst coverage suppresses the forecast consensuses. This effect is larger in magnitude in positive delay group (when earnings are announced after the expected dates) as compared to negative delay observations.

3.4.2 The Impact on Returns of Bank Monitoring of Earnings Announcement

In this section, I examine the impact on firm returns of bank lenders' monitoring of the timing of earnings announcement, as stated in Hypothesis 2. I start with the OLS regressions of

cumulative abnormal returns, which can be illustrated by the following equation:

$$CAR(Y) = \alpha + \beta * Rel\_dummy + \delta * Late\_dummy + \zeta * (Rel * Late) + \gamma * X_{Firm} + \lambda * X_{Date} + \varepsilon \tag{3.3}$$

Hypothesis 2 postulates that the presence of a bank lending relationship reduces the negative announcement abnormal returns associated with delays in earnings announcements. Therefore, cumulative abnormal return (CAR) serves as the dependent variable at the left hand side of the OLS regression in Equation (3.3). In addition to the interested variable, Rel_dummy, I control for the indicator of the announcement delay, Late_dummy, the cross product of Rel_dummy and Late_dummy, the same set of firm-specific (X_{Firm}) control variables used in Equations (3.1) and (3.2) and a set of date-specific (X_{Date}) controls to capture the potential calendar effects. X_{Date} includes a dummy for Monday announcements (Monday), a dummy for Friday announcements (Friday), and a dummy for January announcements (January). Fixed calendar quarter, fiscal quarter, and industry effects, robust standard errors, and cluster effect at the firm level are also included in all regressions.

Table 3.6 provides the estimation results for the baseline regressions shown in Equation (3.3). Columns (1) to (6) represent the regressions utilizing different CAR measurements (with different weighting schemes (value as opposed to equally weighted market indices) for three different announcement windows (one-day CAR(0,0), two-day CAR (0,+1) and three-day CAR(-1,+1)) as the dependent variables. The empirical results show a consistent negative announcement effect of being late, implying that the late releases contain some private information about managerial intentions and potential manipulation which may distort the future firm performance. The existence of a prior lending relationship per se is not significantly associated with a positive announcement effect, but the coefficients for the cross

product of prior lending relationships and late announcements are positive and significant across all specifications. The positive effect of the interaction term fully offsets the negative effect associated with the lateness, thereby implying that investors appreciate the monitoring services provided by the lending banks and do not penalize late reporting firms.

On the other hand, the number of analysts forecasting earnings is not found to significantly impact the market's reaction to earnings announcements, indicating that analyst consensus and external monitoring by analysts does not contain private information.

As expected, Positive_EPS serves as one proxy for good news, leading to higher CARs. Earnings surprises itself do not lead to higher CARs, but the interaction term with Positive_EPS does increase CARs, indicating that earnings surprises increase CARs only when the earnings are positive. This result is in line with prior research which shows that "earnings response coefficients are essentially zero for negative earnings" (see Mian and Sankaraguruswamy (2012), Hayn (1995), and Lipe et al. (1998)).

To further test the role of bank monitoring in negative late announcement effect, I divide the sample into two sub-samples: firms with and without prior lending relationships. I run the regressions in Equation (3.3) for the two subgroups (with and without Rel_dummy). The estimation results for sub-sample regressions are shown in Table 3.7 (1-day CARs), Table 3.8 (2-day CARs), and Table 3.9 (3-day CARs). In all cases, the announcement effect on late earnings releases is significantly negative when there is no banking relationship, but statistically insignificant from zero when there is a banking relationship.

Table 3.7 shows the estimations for 1-day CAR regressions: Column (1) and (2) use the value-weighted CARs as the dependent variables, while Column (3) and (4) use the

equal-weighted CARs as the dependent variables. It is worth noting that the coefficients of Late_dummy become negative and statistically significant in "No Relationship" sub-groups, but turns insignificant in "With Relationships" sub-groups. The significant effects of late announcements in Column (1) and (3) are consistent with the good news early and bad news late phenomenon mentioned in prior literature (see Kross and Schroeder (1984), Ashton et al. (1987), Begley and Fischer (1998), and etc.). In contrast, the insignificant effects of late announcements in Column (2) and (4) manifest bank monitoring effects in late earnings announcements, which supports Hypothesis 2 that the presence of a lending bank mitigates the concerns of managerial procrastination and therefore reduces the negative effect of a delay in the earnings announcement.

I report the estimation results for 2-day CAR sub-sample regressions in Table 3.8 and 3-day CAR sub-sample regressions in Table 3.9. Again, I obtain a consistent negative earnings announcement effect in "No Relationship" group, and similar insignificant coefficients in Late_dummy in "With Relationships" group, suggesting that banks certify the firm performance at the late earnings announcement dates and therefore reduce the negative impact of a delay in the announcement of abnormal returns to the earnings announcing firms.

3.5 Conclusion

As delegated monitors, banks are granted several contractual and legal rights to become involved in borrowing firms' daily operations. This paper indicates that banks become involved in routine tasks such as the timing of earnings announcements and the delivery of the financial reports. I find that periodic bank monitoring forces the borrowing company to provide timely financial reports and reduces the propensity that managers take advantage of any delay to engage in potential earnings management or other manipulations. Furthermore,

monitoring and certification services inherent in bank lending relationships may mitigate the information asymmetry out of the late announcements and provide an additional protection buffer to negative announcement effects even if the delay is unavoidable.

Utilizing a series of earnings announcements from 1999 to 2013, I find that bank monitoring can effectively reduce the propensity of the procrastination of earnings announcements and therefore the monitoring and certification services provided by lending banks offset the negative late announcement effect. Moreover, I find that the market is more tolerant to delays in public release of earnings information in the presence of a bank lending relationship. Thus, the negative abnormal return accompanying late releases of earnings information is observed only when a bank lending relationship is not present.

Table 3.1: Variable Notations and Definitions

Variable Notation	Definition
Main Variables	
Lag	The number of days between the actual earnings announcements and the last day of the reporting quarter.
Delay	The number of days between the actual earnings announcements and the predicted dates.
Late_dummy	Dummy variable=1 if the actual earnings announcements are made 7 days or more after the predicted dates.
Rel_dummy	Dummy variable=1 if the firm has established lending relationships with any banks in the past three years (-3,-1).
MM_CAR_VW_1day	One-day (0,0) (cumulative) abnormal returns based on value-weighted market model.
MM_CAR_VW_2day	Two-day (0,+1) cumulative abnormal returns based on value-weighted market model.
MM_CAR_VW_3day	Three-day (-1,+1) cumulative abnormal returns based on value-weighted market model.
MM_CAR_EW_1day	One-day (0,0) (cumulative) abnormal returns based on equal-weighted market model.
MM_CAR_EW_2day	Two-day (0,+1) cumulative abnormal returns based on equal-weighted market model.
MM_CAR_EW_3day	Three-day (-1,+1) cumulative abnormal returns based on equal-weighted market model.
X_{Firm}	
Positive_EPS	Dummy variable=1 if the firm has positive EPS announced
Surprise_mean	Difference of actual EPS and the mean of analyst forecast EPS on the earnings announcement date scaled by the stock price of the last trading day of the reporting quarter
Surprise_median	Difference of actual EPS and the median of analyst forecast EPS on the earnings announcement date scaled by the stock price of the last trading day of the reporting quarter
Number_Forecast	The number of analyst estimates as reported in I/B/E/S
Size	Natural logarithm of total assets
Sales	Quarterly sales amount
Leverage	The ratio of debt (both long term and short term portion) over total assets
MTB	Market to book ratio, or the ratio of market capital over book value of total assets
Mkt_cap	Market capital (in thousand dollars)
ROA	Return on Assets, or the ratio of quarterly EBIT over total assets
RnD_exp	Scaled quarterly research and development expenses by quarterly sales
Selling_exp	Scaled quarterly selling, general and administrative expenditures by quarterly sales
Cash_ratio	Scaled cash by total assets
FCF_ratio	Scaled quarterly free cash flow by total assets
Positive_Accruals	Dummy variable=1 if scaled total accruals by quarterly total assets is positive. Scaled total accruals is defined as ($\triangle$ current assets $-$ $\triangle$ current liabilities $-$ $\triangle$ cash + $\triangle$ short-term debt $-$ depreciation)/quarterly total assets (see Matsumoto (2002))
Turnover	The trading volume of the prior quarter divided by a million shares outstanding at the end of prior quarter
Reversal	The stock return of the prior month (t-1) of the announcing month
Momentum	The cumulated monthly stock return from month t-12 to t-2, while t is the announcing month
X_{Date}	
Monday	Dummy variable=1 if the earnings announcement date falls on Monday
Friday	Dummy variable=1 if the earnings announcement date falls on Friday
January	Dummy variable=1 if the earnings announcement date falls in January

Table 3.2: Summary Statistics

	w/o Rel			w/ Rel				
	Obs	Mean	Std	Obs	Mean	Std	Mean_Diff	t-Stat
Lag	28371	36.01	13.95	22651	33.88	12.81	2.124	17.89
Delay	28371	-1.237	7.303	22651	-1.753	6.656	0.516	8.330
Late_dummy	28371	0.0727	0.260	22651	0.0523	0.223	0.0204	9.570
Positive_EPS	28371	0.770	0.421	22651	0.849	0.358	-0.0793	-22.97
Surprise_mean	28371	-0.00549	0.0953	22651	-0.0109	0.403	0.00543	1.983
Surprise_median	28371	-0.00471	0.0953	22651	-0.00995	0.400	0.00524	1.927
Number_Forecast	28371	10.24	8.735	22651	12.03	8.747	-1.797	-23.07
Size	28371	6.344	1.751	22651	7.460	1.618	-1.116	-74.63
Sales	28371	0.827	4.462	22651	1.828	6.419	-1.002	-19.95
Leverage	28371	0.170	0.218	22651	0.274	0.233	-0.104	-51.53
MTB	28371	1.658	1.592	22651	1.096	0.954	0.562	49.41
Mkt_cap	28371	4214.0	18315.3	22651	7734.0	25708.3	-3520.0	-17.38
ROA	28371	0.00109	0.0717	22651	0.00725	0.0580	-0.00616	-10.74
RnD_ratio	28371	0.688	65.79	22651	0.0265	0.0880	0.661	1.693
Selling_exp	28371	1.569	110.5	22651	0.232	1.164	1.337	2.037
Cash_ratio	28371	0.175	0.157	22651	0.0910	0.0963	0.0844	74.76
FCF_ratio	28371	0.00657	0.0552	22651	0.0119	0.0419	-0.00532	-12.37
Positive_Accruals	28371	0.367	0.482	22651	0.315	0.464	0.0527	12.53
Turnover	28371	0.568	0.571	22651	0.683	0.626	-0.114	-21.30
Reversal	28371	0.0173	0.139	22651	0.0122	0.150	0.00510	3.946
Momentum	28371	0.139	0.512	22651	0.120	0.526	0.0193	4.163
N	51022						51022	
MM_CAR_VW_1day	26923	0.0944	5.882	22262	0.214	6.220	-0.120	-2.181
MM_CAR_VW_2day	26923	-0.00969	9.576	22262	0.305	9.535	-0.315	-3.638
MM_CAR_VW_3day	26923	0.0819	9.951	22262	0.398	9.896	-0.316	-3.521
MM_CAR_EW_1day	26923	0.113	5.859	22262	0.231	6.189	-0.117	-2.141
MM_CAR_EW_2day	26923	0.0118	9.555	22262	0.310	9.504	-0.299	-3.460
MM_CAR_EW_3day	26923	0.113	9.924	22262	0.421	9.847	-0.308	-3.439
Monday	26923	0.137	0.344	22262	0.123	0.328	0.0140	4.600
Friday	26923	0.0529	0.224	22262	0.0572	0.232	-0.00434	-2.095
January	26923	0.0474	0.212	22262	0.0622	0.242	-0.0148	-7.148
N	49185						49185	

Table 3.3: Logit Regressions- The Timing of Earnings Announcements

Dependent variable: Late Dummy; Independent variable notations and definitions are provided in Table 3.1. Robust standard errors are clustered at the firm level and various fixed effects are also considered across specifications.

	(1) Late Dummy	(2) Late Dummy	(3) Late Dummy	(4) Late Dummy
Rel_dummy	-0.174***	-0.165***	-0.174***	-0.165***
	(0.002)	(0.003)	(0.002)	(0.003)
Surprise_mean	-0.0157	-0.0177		
	(0.783)	(0.735)		
Surprise_median			-0.0162	-0.0184
			(0.780)	(0.730)
Positive_EPS	-0.446***	-0.446***	-0.446***	-0.446***
	(0.000)	(0.000)	(0.000)	(0.000)
Positive_EPS × Surprise_mean	0.00334	0.154		
	(0.995)	(0.750)		
Positive_EPS × Surprise_median			0.0213	0.158
			(0.967)	(0.757)
Number_Forecast	-0.0531***	-0.0528***	-0.0531***	-0.0528***
	(0.000)	(0.000)	(0.000)	(0.000)
Size	-0.268***	-0.289***	-0.268***	-0.289***
	(0.000)	(0.000)	(0.000)	(0.000)
Sales	-0.00437	-0.0129	-0.00437	-0.0129
	(0.716)	(0.297)	(0.716)	(0.297)
Leverage	0.524***	0.459***	0.524***	0.459***
	(0.000)	(0.000)	(0.000)	(0.000)
MTB	-0.138***	-0.112***	-0.138***	-0.112***
	(0.000)	(0.000)	(0.000)	(0.000)
Mkt_cap	0.00000565*	0.00000788***	0.00000565*	0.00000788***
	(0.076)	(0.004)	(0.076)	(0.004)
ROA	-0.639***	-0.697***	-0.639***	-0.697***
	(0.005)	(0.002)	(0.005)	(0.002)
RnD_ratio	-0.00146	-0.000593	-0.00146	-0.000593
	(0.396)	(0.781)	(0.397)	(0.781)
Selling_exp	0.000876	0.000354	0.000876	0.000354
	(0.413)	(0.787)	(0.413)	(0.787)
Cash_ratio	-0.636***	-0.464**	-0.636***	-0.464**
	(0.002)	(0.025)	(0.002)	(0.025)
FCF_ratio	-0.559	-0.795*	-0.559	-0.796*
	(0.211)	(0.072)	(0.211)	(0.071)
Positive_Accruals	-0.00716	-0.0195	-0.00721	-0.0195
	(0.884)	(0.698)	(0.883)	(0.698)
Turnover	0.181***	0.162***	0.181***	0.162***
	(0.000)	(0.000)	(0.000)	(0.000)
Reversal	-0.396***	-0.393***	-0.396***	-0.393***
	(0.006)	(0.006)	(0.006)	(0.006)
Momentum	-0.189***	-0.202***	-0.189***	-0.202***
	(0.000)	(0.000)	(0.000)	(0.000)
Constant	-1.242***	-1.583***	-1.242***	-1.583***
	(0.000)	(0.000)	(0.000)	(0.000)
Calendar Quarter FE	Yes	Yes	Yes	Yes
Fiscal Quarter FE	Yes	Yes	Yes	Yes
Industry FE	No	Yes	No	Yes
Observations	51022	50864	51022	50864
Pseudo R^2	0.255	0.263	0.255	0.263

p-values in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 3.4: OLS Regressions- The Timing of Earnings Announcements

Dependent variable: Delay; Independent variable notations and definitions are provided in Table 3.1. Robust standard errors are clustered at the firm level and various fixed effects are also considered across specifications.

	(1)	(2)	(3)	(4)
	Delay	Delay	Delay	Delay
Rel_dummy	-0.256***	-0.279***	-0.256***	-0.279***
	(0.001)	(0.000)	(0.001)	(0.000)
Surprise_mean	-0.286	-0.287		
	(0.302)	(0.290)		
Surprise_median			-0.291	-0.292
			(0.300)	(0.288)
Positive_EPS	-0.631***	-0.625***	-0.631***	-0.626***
	(0.000)	(0.000)	(0.000)	(0.000)
Positive_EPS × Surprise_mean	-0.480	-0.121		
	(0.725)	(0.929)		
Positive_EPS × Surprise_median			-0.392	-0.0418
			(0.782)	(0.976)
Number_Forecast	-0.0514***	-0.0493***	-0.0514***	-0.0493***
	(0.000)	(0.000)	(0.000)	(0.000)
Size	-0.345***	-0.359***	-0.345***	-0.359***
	(0.000)	(0.000)	(0.000)	(0.000)
Sales	0.0119	-0.00351	0.0119	-0.00352
	(0.124)	(0.629)	(0.123)	(0.628)
Leverage	0.723***	0.776***	0.722***	0.775***
	(0.000)	(0.000)	(0.000)	(0.000)
MTB	-0.175***	-0.132***	-0.175***	-0.132***
	(0.000)	(0.002)	(0.000)	(0.003)
Mkt_cap	0.00000265	0.00000564***	0.00000265	0.00000564***
	(0.300)	(0.010)	(0.301)	(0.010)
ROA	-3.689***	-3.891***	-3.694***	-3.895***
	(0.001)	(0.000)	(0.001)	(0.000)
RnD_ratio	-0.00981***	-0.00927***	-0.00981***	-0.00927***
	(0.000)	(0.000)	(0.000)	(0.000)
Selling_exp	0.00585***	0.00553***	0.00585***	0.00553***
	(0.000)	(0.000)	(0.000)	(0.000)
Cash_ratio	-1.219***	-0.937***	-1.220***	-0.937***
	(0.000)	(0.003)	(0.000)	(0.003)
FCF_ratio	0.00296	-0.471	0.00374	-0.471
	(0.997)	(0.596)	(0.997)	(0.597)
Positive_Accruals	0.0647	0.00519	0.0646	0.00511
	(0.340)	(0.940)	(0.340)	(0.941)
Turnover	0.0501	0.00665	0.0504	0.00685
	(0.422)	(0.916)	(0.419)	(0.913)
Reversal	-0.504*	-0.519**	-0.504*	-0.520**
	(0.055)	(0.048)	(0.055)	(0.048)
Momentum	-0.500***	-0.530***	-0.500***	-0.530***
	(0.000)	(0.000)	(0.000)	(0.000)
Constant	1.854***	1.256***	1.854***	1.256***
	(0.000)	(0.003)	(0.000)	(0.003)
Calendar Quarter FE	Yes	Yes	Yes	Yes
Fiscal Quarter FE	Yes	Yes	Yes	Yes
Industry FE	No	Yes	No	Yes
Observations	51022	51022	51022	51022
Adjusted R^2	0.160	0.167	0.160	0.167

p-values in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 3.5: SUR Regressions- The Timing of Earnings Announcements

Delay and Surprise_mean serve as dependent variables in each set of seemingly unrelated regressions (SUR). Independent variable notations and definitions are provided in Table 3.1. Robust standard errors are clustered at the firm level and fixed calendar, fiscal quarter and industry effects are also considered in all specifications.

	(1)		(2)		(3)	
	Full Sample		Negative Delay		Positive Delay	
	Delay	Surprise_mean	Delay	Surprise_mean	Delay	Surprise_mean
Rel_dummy	-0.278***	-0.00330	-0.0971*	-0.00161	-0.208*	-0.00785
	(0.000)	(0.222)	(0.074)	(0.161)	(0.058)	(0.319)
Positive_EPS	-0.630***	0.0158***	-0.0213	0.0146***	-0.975***	0.0243**
	(0.000)	(0.000)	(0.782)	(0.000)	(0.000)	(0.013)
Number_Forecast	-0.0495***	0.000812***	-0.00804*	0.000400***	-0.0607***	0.00147**
	(0.000)	(0.000)	(0.051)	(0.000)	(0.000)	(0.024)
Size	-0.358***	-0.00193	0.0419*	-0.00133**	-0.342***	-0.00392
	(0.000)	(0.108)	(0.088)	(0.010)	(0.000)	(0.256)
Sales	-0.00363	0.000391	0.0105	0.000197	-0.0208	0.000483
	(0.677)	(0.293)	(0.142)	(0.193)	(0.212)	(0.687)
Leverage	0.779***	-0.0133**	0.0775	-0.00716***	0.651***	-0.0158
	(0.000)	(0.033)	(0.551)	(0.009)	(0.006)	(0.355)
MTB	-0.132***	-0.00200*	0.0167	-0.00133***	-0.0831*	-0.00153
	(0.000)	(0.069)	(0.455)	(0.005)	(0.059)	(0.628)
Mkt_cap	0.00000568***	-0.000000143	-0.00000617***	-6.74e-08*	0.0000143***	-0.000000216
	(0.009)	(0.122)	(0.000)	(0.072)	(0.001)	(0.478)
ROA	-4.097***	0.708***	0.933*	0.320***	-5.283***	1.096***
	(0.000)	(0.000)	(0.059)	(0.000)	(0.000)	(0.000)
RnD_ratio	-0.00921	-0.000201	-0.0132	-0.000351	0.00283	-0.000153
	(0.114)	(0.420)	(0.281)	(0.174)	(0.685)	(0.761)
Selling_exp	0.00549	0.000125	0.00816	0.000213	-0.00137	0.0000951
	(0.114)	(0.399)	(0.265)	(0.169)	(0.713)	(0.721)
Cash_ratio	-0.946***	0.0291***	-0.105	0.0121***	-1.580***	0.0483
	(0.000)	(0.006)	(0.631)	(0.009)	(0.000)	(0.105)
FCF_ratio	-0.362	-0.383***	-0.302	-0.140***	1.750*	-0.739***
	(0.595)	(0.000)	(0.628)	(0.000)	(0.099)	(0.000)
Positive_Accruals	0.0102	-0.0179***	-0.0483	-0.00297**	-0.0119	-0.0438***
	(0.876)	(0.000)	(0.388)	(0.012)	(0.916)	(0.000)
Turnover	0.00752	-0.00319	-0.0986**	-0.00244**	0.241**	-0.00502
	(0.889)	(0.166)	(0.032)	(0.012)	(0.011)	(0.463)
Reversal	-0.528***	0.0270***	0.288	0.0118***	-0.619*	0.0431*
	(0.008)	(0.001)	(0.104)	(0.002)	(0.055)	(0.063)
Momentum	-0.537***	0.0263***	-0.139***	0.0114***	-0.703***	0.0505***
	(0.000)	(0.000)	(0.007)	(0.000)	(0.000)	(0.000)
Calendar Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
Fiscal Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	51022		34165		16857	
R^2	0.168	0.033	0.113	0.049	0.126	0.043

p-values in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 3.6: OLS Regressions- Earnings Announcement Effects

Dependent variable: CARs with different specifications (VW= Value-weighted, EW= Equal-weighted; 1D= 1-day (0,0), 2D=2-day (0,+1), 3D=3-day (-1,+1)); Independent variable notations and definitions are provided in Table 3.1. Robust standard errors are clustered at the firm level and fixed calendar, fiscal quarter and industry effects are also considered in all specifications.

	(1) CAR-VW-1D	(2) CAR-EW-1D	(3) CAR-VW-2D	(4) CAR-EW-2D	(5) CAR-VW-3D	(6) CAR-EW-3D
Rel_dummy	0.0307	0.0325	0.103	0.0914	0.132	0.131
	(0.628)	(0.606)	(0.281)	(0.336)	(0.186)	(0.188)
Late_dummy	-0.416**	-0.441***	-0.978***	-1.011***	-0.684**	-0.707**
	(0.015)	(0.010)	(0.000)	(0.000)	(0.015)	(0.011)
Rel_dummy × Late_dummy	0.677**	0.696**	1.202***	1.248***	0.898*	0.950**
	(0.028)	(0.023)	(0.007)	(0.005)	(0.056)	(0.043)
Surprise_mean	0.178	0.201	0.163	0.215	0.122	0.193
	(0.182)	(0.153)	(0.305)	(0.194)	(0.475)	(0.275)
Positive_EPS	0.835***	0.818***	2.042***	2.021***	2.072***	2.041***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Positive_EPS × Surprise_mean	17.18***	17.21***	36.38***	36.49***	39.07***	39.01***
	(0.002)	(0.002)	(0.000)	(0.000)	(0.000)	(0.000)
Number_Forecast	-0.000987	-0.000940	0.00279	0.00395	0.00341	0.00516
	(0.822)	(0.831)	(0.704)	(0.593)	(0.659)	(0.503)
Size	-0.125***	-0.124***	-0.173***	-0.176***	-0.228***	-0.235***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Sales	0.00499	0.00493	0.0129	0.0134	0.0164*	0.0160
	(0.394)	(0.407)	(0.160)	(0.150)	(0.094)	(0.106)
Leverage	0.262	0.232	0.519**	0.490**	0.680***	0.659***
	(0.105)	(0.150)	(0.035)	(0.045)	(0.008)	(0.010)
MTB	-0.120***	-0.123***	-0.153***	-0.160***	-0.210***	-0.214***
	(0.000)	(0.000)	(0.003)	(0.002)	(0.000)	(0.000)
Mkt_cap	-0.000000400	-0.000000463	-0.00000601***	-0.00000613***	-0.00000477**	-0.00000472**
	(0.753)	(0.723)	(0.003)	(0.003)	(0.021)	(0.023)
ROA	0.0282	0.0685	2.520*	2.537*	2.053	2.093
	(0.978)	(0.945)	(0.085)	(0.081)	(0.216)	(0.201)
RnD_ratio	-0.00859***	-0.00840***	-0.0108***	-0.0111***	-0.00924**	-0.00930**
	(0.000)	(0.000)	(0.002)	(0.001)	(0.015)	(0.013)
Selling_exp	0.00558***	0.00547***	0.00678***	0.00695***	0.00586**	0.00590***
	(0.000)	(0.000)	(0.001)	(0.001)	(0.011)	(0.009)
Cash_ratio	0.192	0.221	0.725*	0.727*	0.742*	0.722*
	(0.467)	(0.398)	(0.078)	(0.076)	(0.081)	(0.089)
FCF_ratio	5.689***	5.523***	16.74***	16.44***	18.31***	17.82***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Positive_Accruals	0.0731	0.0715	-0.259**	-0.256**	-0.200*	-0.200*
	(0.260)	(0.269)	(0.014)	(0.015)	(0.067)	(0.066)
Turnover	0.0601	0.0608	-0.269**	-0.275**	-0.255**	-0.272**
	(0.413)	(0.411)	(0.015)	(0.013)	(0.026)	(0.017)
Reversal	-0.238	-0.305	0.156	0.0586	0.444	0.210
	(0.410)	(0.289)	(0.742)	(0.902)	(0.374)	(0.671)
Momentum	-0.564***	-0.454***	-1.022***	-0.795***	-1.428***	-1.073***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Monday	-0.0313	-0.00392	-0.326**	-0.224*	-0.208	-0.195
	(0.706)	(0.962)	(0.016)	(0.095)	(0.140)	(0.165)
Friday	0.0160	-0.0740	-0.0505	-0.100	0.0956	0.0156
	(0.916)	(0.625)	(0.816)	(0.642)	(0.669)	(0.944)
January	0.0936	-0.0342	0.130	-0.149	0.0739	-0.301
	(0.447)	(0.782)	(0.518)	(0.459)	(0.720)	(0.146)
Constant	0.551	0.412	0.516	0.314	1.030	0.814
	(0.265)	(0.394)	(0.527)	(0.695)	(0.207)	(0.314)
Calendar Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
Fiscal Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	49187	49187	49185	49185	49185	49185
Adjusted R^2	0.013	0.012	0.033	0.031	0.036	0.032

p-values in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 3.7: Subsample OLS Regressions- Earnings Announcement Effects

Dependent variable: 1-day CARs with different specifications (VW= Value-weighted, EW= Equal-weighted, 1D= 1-day (0,0)); Independent variable notations and definitions are provided in Table 3.1. Column (1) and (3) include the subsample of firms without any prior lending relationship, while Column (2) and (4) include the subsample of firms with prior lending relationships. Robust standard errors are clustered at the firm level and fixed calendar, fiscal quarter and industry effects are also considered in all specifications.

	(1) CAR-VW-1D No Relationship	(2) CAR-VW-1D With Relationships	(3) CAR-EW-1D No Relationship	(4) CAR-EW-1D With Relationships
Late_dummy	-0.381**	0.223	-0.404**	0.222
	(0.033)	(0.409)	(0.023)	(0.409)
Surprise_mean	0.0508	0.164	0.161	0.179
	(0.966)	(0.177)	(0.891)	(0.156)
Positive_EPS	0.769***	1.004***	0.748***	0.994***
	(0.000)	(0.000)	(0.000)	(0.000)
Positive_EPS × Surprise_mean	21.90**	13.42**	21.93**	13.38**
	(0.031)	(0.020)	(0.031)	(0.019)
Number_Forecast	-0.00448	0.00543	-0.00472	0.00554
	(0.441)	(0.432)	(0.419)	(0.422)
Size	-0.0685*	-0.198***	-0.0681*	-0.193***
	(0.066)	(0.000)	(0.068)	(0.000)
Sales	0.00448	0.00309	0.00479	0.00265
	(0.596)	(0.700)	(0.563)	(0.749)
Leverage	-0.0683	0.580**	-0.0670	0.530**
	(0.783)	(0.010)	(0.787)	(0.019)
MTB	-0.0765**	-0.322***	-0.0784**	-0.320***
	(0.013)	(0.000)	(0.010)	(0.000)
Mkt_cap	-0.000000845	0.00000133	-0.000000876	0.00000126
	(0.591)	(0.487)	(0.575)	(0.524)
ROA	-0.617	1.582	-0.621	1.603
	(0.660)	(0.333)	(0.658)	(0.321)
RnD_ratio	-0.00681***	0.799**	-0.00665***	0.674*
	(0.003)	(0.032)	(0.003)	(0.066)
Selling_exp	0.00452***	0.0237*	0.00442***	0.0212
	(0.001)	(0.096)	(0.001)	(0.102)
Cash_ratio	-0.0842	0.867	-0.0588	0.914
	(0.772)	(0.163)	(0.838)	(0.139)
FCF_ratio	4.611***	8.417***	4.560***	8.130***
	(0.000)	(0.000)	(0.000)	(0.000)
Positive_Accruals	0.0843	0.119	0.0903	0.109
	(0.299)	(0.243)	(0.265)	(0.279)
Turnover	-0.0428	0.144	-0.0380	0.144
	(0.650)	(0.167)	(0.688)	(0.170)
Reversal	-0.327	-0.148	-0.384	-0.220
	(0.400)	(0.730)	(0.322)	(0.606)
Momentum	-0.438***	-0.674***	-0.357***	-0.534***
	(0.000)	(0.000)	(0.001)	(0.000)
Monday	-0.0439	-0.00742	-0.0366	0.0476
	(0.674)	(0.956)	(0.726)	(0.720)
Friday	-0.0728	0.126	-0.140	0.0111
	(0.725)	(0.578)	(0.499)	(0.961)
January	0.0758	0.0850	-0.0496	-0.0448
	(0.645)	(0.640)	(0.763)	(0.806)
Constant	0.584	0.462	0.436	0.323
	(0.318)	(0.488)	(0.452)	(0.613)
Calendar Quarter FE	Yes	Yes	Yes	Yes
Fiscal Quarter FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Observations	26925	22262	26925	22262
Adjusted R^2	0.013	0.014	0.013	0.012

p-values in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 3.8: Subsample OLS Regressions- Earnings Announcement Effects

Dependent variable: 2-day CARs with different specifications (VW= Value-weighted, EW= Equal-weighted, 2D= 2-day (0,+1)); Independent variable notations and definitions are provided in Table 3.1. Column (1) and (3) include the subsample of firms without any prior lending relationship, while Column (2) and (4) include the subsample of firms with prior lending relationships. Robust standard errors are clustered at the firm level and fixed calendar, fiscal quarter and industry effects are also considered in all specifications.

	(1) CAR-VW-2D No Relationship	(2) CAR-VW-2D With Relationships	(3) CAR-EW-2D No Relationship	(4) CAR-EW-2D With Relationships
Late_dummy	-0.854***	0.0898	-0.880***	0.105
	(0.001)	(0.823)	(0.001)	(0.793)
Surprise_mean	-0.153	0.111	-0.00978	0.156
	(0.888)	(0.447)	(0.993)	(0.299)
Positive_EPS	1.988***	2.282***	1.956***	2.281***
	(0.000)	(0.000)	(0.000)	(0.000)
Positive_EPS × Surprise_mean	41.35**	32.41***	41.38**	32.52***
	(0.011)	(0.008)	(0.011)	(0.008)
Number_Forecast	0.00447	0.00704	0.00446	0.00893
	(0.647)	(0.530)	(0.648)	(0.425)
Size	-0.112**	-0.255***	-0.114**	-0.257***
	(0.047)	(0.000)	(0.043)	(0.000)
Sales	0.0124	0.00529	0.0134	0.00524
	(0.315)	(0.648)	(0.280)	(0.658)
Leverage	0.368	0.557*	0.382	0.498
	(0.317)	(0.091)	(0.298)	(0.125)
MTB	-0.0592	-0.599***	-0.0619	-0.605***
	(0.286)	(0.000)	(0.263)	(0.000)
Mkt_cap	-0.00000659*	-0.00000249	-0.00000651*	-0.00000266
	(0.063)	(0.322)	(0.063)	(0.296)
ROA	1.211	6.524***	1.220	6.457***
	(0.540)	(0.003)	(0.536)	(0.003)
RnD_ratio	-0.00703*	0.917	-0.00722**	0.778
	(0.055)	(0.137)	(0.045)	(0.202)
Selling_exp	0.00449**	0.0332	0.00460**	0.0375
	(0.045)	(0.377)	(0.037)	(0.303)
Cash_ratio	0.506	0.986	0.485	1.064
	(0.283)	(0.249)	(0.303)	(0.210)
FCF_ratio	14.42***	23.88***	14.31***	23.37***
	(0.000)	(0.000)	(0.000)	(0.000)
Positive_Accruals	-0.183	-0.204	-0.174	-0.207
	(0.188)	(0.178)	(0.210)	(0.170)
Turnover	-0.432***	-0.161	-0.430***	-0.168
	(0.003)	(0.321)	(0.003)	(0.307)
Reversal	-0.291	0.575	-0.344	0.440
	(0.607)	(0.456)	(0.543)	(0.568)
Momentum	-0.799***	-1.239***	-0.629***	-0.953***
	(0.000)	(0.000)	(0.000)	(0.000)
Monday	-0.320*	-0.303	-0.254	-0.155
	(0.072)	(0.145)	(0.153)	(0.452)
Friday	-0.173	0.106	-0.234	0.0720
	(0.503)	(0.770)	(0.362)	(0.841)
January	0.408	-0.203	0.132	-0.486*
	(0.148)	(0.459)	(0.639)	(0.078)
Constant	0.367	0.677	0.152	0.460
	(0.674)	(0.546)	(0.862)	(0.667)
Calendar Quarter FE	Yes	Yes	Yes	Yes
Fiscal Quarter FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Observations	26923	22262	26923	22262
Adjusted R^2	0.031	0.037	0.030	0.034

p-values in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 3.9: Subsample OLS Regressions- Earnings Announcement Effects

Dependent variable: 3-day CARs with different specifications (VW= Value-weighted, EW= Equal-weighted, 3D= 3-day (-1,+1)); Independent variable notations and definitions are provided in Table 3.1. Column (1) and (3) include the subsample of firms without any prior lending relationship, while Column (2) and (4) include the subsample of firms with prior lending relationships. Robust standard errors are clustered at the firm level and fixed calendar, fiscal quarter and industry effects are also considered in all specifications.

	(1) CAR-VW-3D No Relationship	(2) CAR-VW-3D With Relationships	(3) CAR-EW-3D No Relationship	(4) CAR-EW-3D With Relationships
Late_dummy	-0.619**	0.102	-0.639**	0.142
	(0.030)	(0.806)	(0.024)	(0.731)
Surprise_mean	-1.849	0.171	-1.732	0.234
	(0.168)	(0.353)	(0.191)	(0.229)
Positive_EPS	2.068***	2.281***	2.033***	2.264***
	(0.000)	(0.000)	(0.000)	(0.000)
Positive_EPS × Surprise_mean	43.08**	37.00***	42.93**	36.99***
	(0.010)	(0.006)	(0.010)	(0.006)
Number_Forecast	0.00917	0.00337	0.00905	0.00648
	(0.357)	(0.776)	(0.365)	(0.581)
Size	-0.208***	-0.264***	-0.212***	-0.271***
	(0.000)	(0.000)	(0.000)	(0.000)
Sales	0.0236*	0.00352	0.0245*	0.00204
	(0.082)	(0.756)	(0.072)	(0.859)
Leverage	0.674*	0.627*	0.698*	0.573*
	(0.078)	(0.062)	(0.067)	(0.081)
MTB	-0.111*	-0.661***	-0.109*	-0.662***
	(0.060)	(0.000)	(0.062)	(0.000)
Mkt_cap	-0.00000576	-0.00000108	-0.00000555	-0.00000105
	(0.105)	(0.664)	(0.118)	(0.677)
ROA	1.239	5.869**	1.238	5.847**
	(0.526)	(0.038)	(0.521)	(0.037)
RnD_ratio	-0.00539	0.870	-0.00530	0.647
	(0.157)	(0.200)	(0.153)	(0.352)
Selling_exp	0.00355	0.0605	0.00350	0.0652
	(0.125)	(0.149)	(0.121)	(0.109)
Cash_ratio	0.461	1.272	0.411	1.363
	(0.346)	(0.153)	(0.402)	(0.122)
FCF_ratio	16.28***	24.49***	16.01***	23.74***
	(0.000)	(0.000)	(0.000)	(0.000)
Positive_Accruals	-0.0650	-0.236	-0.0592	-0.242
	(0.648)	(0.129)	(0.678)	(0.119)
Turnover	-0.479***	-0.103	-0.480***	-0.126
	(0.001)	(0.551)	(0.001)	(0.465)
Reversal	-0.235	1.079	-0.358	0.750
	(0.705)	(0.170)	(0.562)	(0.337)
Momentum	-1.179***	-1.655***	-0.906***	-1.214***
	(0.000)	(0.000)	(0.000)	(0.000)
Monday	-0.249	-0.122	-0.242	-0.101
	(0.180)	(0.569)	(0.194)	(0.636)
Friday	-0.0854	0.310	-0.173	0.237
	(0.745)	(0.411)	(0.508)	(0.526)
January	0.246	-0.128	-0.119	-0.507*
	(0.399)	(0.645)	(0.684)	(0.069)
Constant	1.108	0.886	0.879	0.650
	(0.184)	(0.474)	(0.306)	(0.583)
Calendar Quarter FE	Yes	Yes	Yes	Yes
Fiscal Quarter FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Observations	26923	22262	26923	22262
Adjusted R^2	0.033	0.042	0.031	0.037

p-values in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

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