Summer 2012

Essays in empirical corporate finance: social networks, M&A, and financial distress

Qianqian Huang
University of Iowa

ESSAYS IN EMPIRICAL CORPORATE FINANCE:

SOCIAL NETWORKS, M&A, AND FINANCIAL DISTRESS

by

Qianqian Huang

An Abstract

Of a thesis submitted in partial fulfillment of the
requirements for the Doctor of Philosophy
degree in Business Administration
in the Graduate College of
The University of Iowa

July 2012

Thesis Supervisor: Professor Erik Lie

ABSTRACT

This thesis studies a range of topics in empirical corporate finance, and consists of three essays. The first essay is sole-authored and is titled 'The Value of Social Networks during Periods of Distress.' The second essay 'The Role of Investment Banker Directors in M&A: Can Experts Help?' is a joint work with Feng Jiang, Erik Lie, and Ke Yang. The third essay is titled 'Acquisitions of Financially Distressed Firms: An Empirical Analysis' and is coauthored with Feng Jiang.

In the first essay, I examine the impact of social networks during (i) a financial crisis, (ii) industry downturns, and (iii) periods when firms are in financial distress. I find that socially well-connected firms exhibit better performance during the financial crisis of 2007-2009. Well-connected firms have better access to debt financing during the crisis, and this is especially true among financially constrained firms. During industry downturns, firms with more social connections also perform better. When firms become severely financially distressed, I find that personal connections to lenders reduce the probability of filing for bankruptcy and increase the likelihood of getting Debtor-in-Possession financing if they nevertheless have to file. Overall, the results suggest that social networks benefit firms in times of distress.

In the second essay, we examine how directors with investment banking experience affect firms' acquisition behavior. We find that firms have a higher probability of acquisition when an investment banker is a director. Furthermore, acquirers with investment banker directors on the board have significantly higher announcement returns, especially if the deal is relatively large and the bankers' experience and/or network is current. We also find evidence that investment banker directors help reduce

the takeover premium and advisory fees paid to outside consultants. Finally, the presence of investment banker directors is positively related to long-run operating and stock performance.

Lastly, in the third essay, we study acquisitions of distressed targets. We find distressed acquisitions are usually associated with debt restructuring of the target debt, and the deals can be implemented with or without the aid of the bankruptcy court. We find target stakeholders generally prefer to complete the acquisition without court help, unless the hold-out problem that resides in debt structures would jeopardize a deal outside of Chapter 11. Firms that choose to be acquired within Chapter 11 are found to have more debt contracts outstanding and more public debt. We also find that target CEOs are more likely to retain their jobs following non-bankruptcy acquisitions or pre-negotiated acquisitions than in post-negotiated acquisitions, consistent with our conjecture that management benefits personally from arranging a sale as a resolution to the financial distress of the firm.

Abstract Approved: _____
Thesis Supervisor

_____
Title and Department

_____
Date

ESSAYS IN EMPIRICAL CORPORATE FINANCE:

SOCIAL NETWORKS, M&A, AND FINANCIAL DISTRESS

by

Qianqian Huang

A thesis submitted in partial fulfillment of the
requirements for the Doctor of Philosophy
degree in Business Administration
in the Graduate College of
The University of Iowa

July 2012

Thesis Supervisor: Professor Erik Lie

Graduate College
The University of Iowa
Iowa City, Iowa

CERTIFICATE OF APPROVAL

_____

PH.D. THESIS

_____

This is to certify that the Ph.D. thesis of

Qianqian Huang

has been approved by the Examining Committee for the thesis requirement for the Doctor of Philosophy degree in Business Administration at the July 2012 graduation.

Thesis Committee: _____
Erik Lie, Thesis Supervisor

_____
Matthew Billett

_____
Jon Garfinkel

_____
Paul Hribar

_____
J. Tyler Leverty

To my parents

ACKNOWLEDGEMENTS

First and foremost, I would like to thank my advisor, Erik Lie, for his guidance, support, and availability during my time at the University of Iowa, especially in times of discouragement and frustration. I would also like to thank my other committee members: Matthew Billett, Jon Garfinkel, Paul Hribar, and J. Tyler Leverty. Their feedback and suggestions have been insightful and contributed a lot to this dissertation.

In addition, I would like to acknowledge the faculty and graduate students at the Department of Finance for their kindness and generous support. A special note of gratitude goes to Tong Yao and Feng Jiang for their unconditional help when I encountered difficulties. They indeed make my journey much more pleasant than I thought.

I am also indebted to my parents as well as my brother for letting me go abroad to pursue my passion, and for supporting me in anything I wanted to do. I am the luckiest person to have such a wonderful family. Finally, I want to thank my boyfriend Xinan Li. I would not have got here without the love and support of him, and I thank him for making my life wonderful in spite of all the hardships involved.

ABSTRACT

This thesis studies a range of topics in empirical corporate finance, and consists of three essays. The first essay is sole-authored and is titled 'The Value of Social Networks during Periods of Distress.' The second essay 'The Role of Investment Banker Directors in M&A: Can Experts Help?' is a joint work with Feng Jiang, Erik Lie, and Ke Yang. The third essay is titled 'Acquisitions of Financially Distressed Firms: An Empirical Analysis' and is coauthored with Feng Jiang.

In the first essay, I examine the impact of social networks during (i) a financial crisis, (ii) industry downturns, and (iii) periods when firms are in financial distress. I find that socially well-connected firms exhibit better performance during the financial crisis of 2007-2009. Well-connected firms have better access to debt financing during the crisis, and this is especially true among financially constrained firms. During industry downturns, firms with more social connections also perform better. When firms become severely financially distressed, I find that personal connections to lenders reduce the probability of filing for bankruptcy and increase the likelihood of getting Debtor-in-Possession financing if they nevertheless have to file. Overall, the results suggest that social networks benefit firms in times of distress.

In the second essay, we examine how directors with investment banking experience affect firms' acquisition behavior. We find that firms have a higher probability of acquisition when an investment banker is a director. Furthermore, acquirers with investment banker directors on the board have significantly higher announcement returns, especially if the deal is relatively large and the bankers' experience and/or network is current. We also find evidence that investment banker directors help reduce

the takeover premium and advisory fees paid to outside consultants. Finally, the presence of investment banker directors is positively related to long-run operating and stock performance.

Lastly, in the third essay, we study acquisitions of distressed targets. We find distressed acquisitions are usually associated with debt restructuring of the target debt, and the deals can be implemented with or without the aid of the bankruptcy court. We find target stakeholders generally prefer to complete the acquisition without court help, unless the hold-out problem that resides in debt structures would jeopardize a deal outside of Chapter 11. Firms that choose to be acquired within Chapter 11 are found to have more debt contracts outstanding and more public debt. We also find that target CEOs are more likely to retain their jobs following non-bankruptcy acquisitions or pre-negotiated acquisitions than in post-negotiated acquisitions, consistent with our conjecture that management benefits personally from arranging a sale as a resolution to the financial distress of the firm.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Figure

CHAPTER 1
THE VALUE OF SOCIAL NETWORKS DURING PERIODS OF DISTRESS

1.1 Introduction

Social networks serve as an important channel for interpersonal and inter-organizational influence and information flow. A growing literature in finance has investigated the effect of social networks on firm decisions and policies, such as corporate governance, finance policies, and acquisition performance (Fich and Shivdasani, 2006; Fracassi, 2011; Schonlau and Singh, 2009). This paper examines the impact of social networks in times of turmoil when, arguably, they are most valuable. Specifically, I investigate the association between social connectedness and firm performance during (i) a financial crisis, (ii) industry downturns, and (iii) periods when firms are in financial distress.

The study of social networks has a long tradition in sociology and social psychology. The literature in these fields has found that when handling stress, depression, or economic hardship, people often seek support from their networks, and greater access to social capital resources can ameliorate the negative effects of stressful life events (Cohen, and Wills, 1985; House, Landis and Umberson, 1988; Thoits, 1995; Cotter, Hermsen and Vanneman 2003).[1] Because firms are connected through interpersonal linkages, they are also likely to benefit from social networks in times of turmoil or distress.

---

[1] Studies also show that the perception that support is available from social networks appears to have a strong effect in lessening personal stress (Dunkel-Schetter and Bennett, 1990).

There are several mechanisms through which social connections might benefit firm performance. First, social ties provide firms with better access to valuable information about industry trends, regulatory changes, and the financial conditions of related parties. Such information can give firms a comparative advantage in strategic decision making. Second, social connections can act as a channel through which value-improving corporate practices such as effective corporate restructuring and innovative corporate governance mechanisms spread. When firms face high stress and uncertainty associated with a crisis or industry distress, both of these benefits can be amplified (Schoorman, Bazerman, and Atkin, 1981; Boyd, 1990).

A third way that social connections can positively affect performance is by mitigating information asymmetry and problems in contract enforcement. This can enhance a firm's ability to gain control over external resources, especially during times of agency stress (Schoorman, Bazerman, and Atkin, 1981; Boyd, 1990; Uzzi, 1999). For example, when a firm is in financial distress, both information asymmetry between the firm and its lenders and the need for external finance peak. In such circumstances, socially well-connected firms have better access to capital because of superior information exchange and contract enforceability. Similarly, social connections can act as a bonding mechanism that helps firms obtain or retain business relationships (e.g., customer, supplier) during distress.

Finally, social networks can affect competition between firms. In particular, connections might facilitate collusive competitive behavior between firms, creating unfair economic advantages in the marketplace (Pennings, 1980). For example, director

interlocking has historically been found to play an important role in stabilizing cartels. [2] Even though antitrust law now prohibits interlocking directorates among competitors, they are still common in the United States.[3] And there are no legal constraints on other types of social connections between firms. Furthermore, social connections can yield legitimate benefits by improving firm collaboration.[4] A well-known competitive action in the product market is that firms with deep pockets predate on financially constrained rivals to gain market share (Chevalier, 1995; Phillips, 1995). However, Ingram and Roberts (2000) study a group of competing hotels and find that friendships with competitors can actually improve performance through the mechanisms of enhanced collaboration and mitigated competition. Hence, socially well-connected firms are likely subject to less predatory risk during distressful periods.

I start my analysis by using biographical information on firms' key executives and directors to construct a measure of firms' social connectedness. To examine the impact of social networks, I first use the financial crisis of 2007-2009 as a natural experiment. The crisis entailed a combination of a negative shock to credit supply, a decrease in demand,

---

[2] A famous example is *DuPont*'s ownership of *General Motors* shares at a time when the companies shared directors on their respective boards. See *United States v. E.I. Du Pont de Nemours & Co.*, Supreme Court of the United States, 1957.

[3] *Clayton* Act (Section 8) prohibits potentially anti-competitive interlocking directorates among competitors. In particular, it prohibits a person from serving as a director or officer of two or more companies if they are "by virtue of their business and location of operation, competitors, so that the elimination of competition by agreement between them would constitute a violation of any of the antitrust laws". However, Wardrip-Fruin and Montfort (2003) shows that at least 1 in 8 of the interlocks in the United States are between corporations that are supposedly competitors.

[4] Montgomery (1998) shows that people are more likely to behave cooperatively in a repeated prisoners' dilemma game if they are acting in the role of "friend," rather than the role of "business person". This is consistent with the notion that social connections can facilitate the recognition of shared interests and thereby contribute to overcoming the free-rider problem that inhibits participation in collectively profitable activities.

and a significant increase in firm risk (Greenlaw, Hatzius, Kashyap, and Shin, 2008; Kahle and Stulz, 2010). Following Duchin, Ozbas, and Sensoy (2010), I control for firm fixed effects and perform tests in which I compare the performance of firms before and after the onset of the crisis as a function of their social connectedness. Focusing on a sample of non-financial S&P 1500 firms, I find that socially well-connected firms have significantly better performance during the crisis, and the positive relation is strongest for firms that are financially constrained, or operate in competitive industries.

I conduct additional analyses to determine the existence of a causal effect of social connectedness. Specifically, if firms with more social connections have better access to recourse, as emphasized by the literature, the negative effect of credit contraction should be relatively smaller for these firms. Consistent with this idea, I find that well-connected firms have better access to debt financing and have more corporate investments during the crisis. This is especially pronounced among financially constrained firms.

Next, I use periods of industry downturns to study the impact of social networks. To identify industries in economic distress, I follow Opler and Titman (1994) and classify an industry as being distressed if the median two-year sales growth of single-segment firms in the industry is negative and the median two-year stock return is less than -30%. Using stock returns to define distress ensures that the distress was unanticipated by the market, and that firms are less likely to adjust their network positions in anticipation. Using firm-years during the period 1998-2009, I find that firms with more social connections also have better performance during industry downturns, especially those operate in competitive industries.

Before I examine the influence of social ties on firms that undergo financial distress, I investigate whether, in general, a firm's social connectedness affects the probability of entering bankruptcy, delisting for financial reasons, or defaulting on public debt. To address the concern that a firm's probability of failure endogenously affects the firm's network position, I exclude all firm years with director departures. The results show a significant negative relation, suggesting that social networks reduce the likelihood of corporate failures.

When focusing on the subsample of severely distressed firms, however, I find that a firm's overall social connections do not affect subsequent bankruptcy probability. Because creditors gain more control as bankruptcy risk increases (Gilson, 1989; Gilson 1990; Roberts and Sufi, 2009), I examine whether personal connections to lenders affect the outcomes of distressed firms. Using hand-collected lender information, I find that distressed firms with socially connected bank lenders have a lower probability of bankruptcy, after controlling for the effect of relationship banking. Although I have not explored how connected lenders help firms avoid bankruptcy filings, I do examine their impact on "Debtor-in-Possession" (DIP) financing when firms enter Chapter 11. The results show that connections to pre-filing lenders increase a firm's likelihood of receiving DIP financing. In addition, firms obtaining DIP from connected lenders are more likely to emerge from Chapter 11. All of these results support the argument that social networks between lenders and firms can either lead to better information flow *ex ante* or better monitoring *ex post* (Engelberg, Gao, and Parsons, 2011).

Taken together, my findings suggest that social networks benefit firms in times of turmoil and reduce the cost of distress. This paper is related to several strands of literature.

First, it contributes to the growing literature on the impact of social networks on firm outcomes. Prior studies have identified both positive and negative consequences of social ties. On the positive side, studies have found that well-connected firms make better acquisition decisions (Schonlau and Singh, 2009), that politically connected firms have a higher likelihood of receiving bailout assistance (Faccio, McConnell, and Masulis, 2006), and that firms with bank connections receive more favorable terms of financing (Engelberg, Gao, and Parsons, 2011). On the negative side, social connections have been reported to play an important role in the spread of potentially value-destroying corporate practices, such as option backdating (Bizjak, Lemmon, and Whitby, 2009; Amstrong and Larcker, 2009), and antitakeover provision adoption (Davis, 1991; Davis and Greve, 1997). There is also evidence showing that directors with multiple board memberships, on average, result in weaker corporate governance and subsequent poor firm performance (Core, Holthausen, and Larcker, 1999; Fich and Shivdasani, 2006; Barnea and Guedj, 2009).[5] This paper contributes to the literature by examining the impact of social connections when they are likely to be most needed, i.e., during distress, and providing additional evidence for the benefits of social connections.

This study also contributes to research on firm policies. Since Jaffee and Russell (1976), many studies have looked at the effect of asymmetric information and financial constraint on firms' financing and investment behavior (Stiglitz and Weiss, 1981;

[5] Bouwman (2011) shows that observed governance practices are partly the outcome of network effects among firms with common directors. In addition, studies focusing on a firm's internal connections demonstrate that social ties can weaken corporate governance. For instance, it has been shown that connections between CEOs and board members can lead to higher CEO compensation, higher level of earnings management, and weaker board monitoring (Hwang and Kim, 2008; Hwang and Kim, 2011; Fracassi and Tate, 2011).

Holmstrom and Tirole, 1997; Lemmon and Roberts, 2009; Campello, Graham, and Harvey, 2010; Duchin, Ozbas, and Sensoy, 2010). I show that social networks reduce information asymmetry and financing frictions, and assist firms in undertaking value-increasing investments.

Lastly, by examining the impact of personal connections to lenders, I contribute to the literature on relationship lending. Numerous papers have explored whether banks are more inclined to help distressed borrowers with whom they have links. International evidence suggests that related banks reduce the cost of distress (Hoshi, Kashyap, and Scharfstein, 1990; Elsas and Krahnen, 1998; Peek and Rosengren, 2005; Charumilind, Kali, and Wiwattanakantang, 2006). However, Li and Srinivasan (2011), using data from the U.S., find that although relationship banks offer preferential terms to their borrowers (e.g., prior to distress and after bankruptcy filing), they do not appear to assist their borrowers in staving off distress or bankruptcy. In contrast, my results show that personal connections with lenders benefit firms in distress. This is consistent with Engelberg, Gao, and Parsons (2011), who shows that in relationship banking, it is the "human touch" that makes the difference, not necessarily familiarity with a firm's physical assets.

The remainder of this paper is organized as follows. Section 1.2 describes the data sources and the sample used in the empirical analyses. Section 1.3 presents the empirical results, as well as a discussion of the findings. Section 1.4 presents my conclusions.

1.2 Data and Sample Selection

1.2.1 Social Connection Measure and Main Sample

To measure a firm's social connectedness, I first merge the S&P 1500 firms during 1998-2009 with the BoardEx database, which provides extensive biographical

information of corporate directors and senior executives in major public firms.[6] Using biographical information on firms' key executives (e.g. CEO, CFO, COO, and President) and directors, I construct an annual matrix of firm networks that maps the social connections among all firms in the sample.[7] Specifically, two firms are defined as socially connected if their directors or top executives are connected in any of the following networks:

1) Education network: formed when two individuals went to the same school and graduated within one year of each other with the same professional, master's or doctoral degree;[8]

2) Employment network: formed when two individuals have worked in the same company at the same time, either on the board of directors or in the top management group;

3) Activity network: formed when two individuals are simultaneously active members in organizations such as charities, clubs, or civic groups.

For each firm, I calculate the fraction of companies in the network to which the firm is directly connected in a given year. This number is referred to as *Degree* in the

---

[6] To ensure the quality of the data integration procedure, I manually check all matches and make necessary adjustments. For example, the same firm might be assigned different identifiers in BoardEx, because the database collects biographical information from a variety of public sources which sometimes use different spellings or abbreviations. I go through the database to ensure each firm is associated with a unique identifier.

[7] For financial institutions, key executives also include Chief Risk Officer (CRO) and Chief Investment Officer (CIO).

[8] Following Fracassi (2011), I use professional degrees such as the MBA, JD and MD to construct social connections. Academic degrees generically indicated as Bachelor's, BS, BA, MA, or MS do not qualify as social connections.

social network literature and is a common measure of network centrality. In this paper, I denote this measure as *Tie Index*.

Since many studies have shown that political connections can affect firm performance, I therefore generate a variable indicating the existence of political connections following Goldman, Rocholl, and So (2009). Specifically, a firm is defined as being politically connected if its directors or executives at any time in their past held a position such as Senator, Member of the House of Representatives, or have been a director of some important organizations (e.g. CIA, IRS, FDA, SEC).[9]

The social network dataset is then merged with financial information from Compustat and stock returns from CRSP. The main sample has over 2,000 firms and 15,182 firm-year observations. Panel A of Table 1.1 reports summary statistics for this sample. All financial variables are winsorized at the 1st and 99th percentiles to lessen the influence of outliers. I detail the construction of all variables in Appendix A. On average, a firm is directly connected to 24.9% of other S&P 1500 firms in the network. 36.4% of firms have political connections. This ratio is comparable to the one in Goldman, Rocholl, and So (2009). The pairwise correlations among major firm characteristics are provided in Panel F of Table 1.1.

[9] Following Goldman, Rocholl, and So (2009), I classify a company as politically connected if it has at least one board member or top executive with the following former position: President, Presidential (Vice-Presidential) Candidate, Senator, Speaker or Member of the House of Representatives, (Assistant) Secretary, Deputy Secretary, Deputy Assistant Secretary, Under Secretary, Associate Director, Governor, Director (CIA, FEMA), Deputy Director (CIA, OMB), Commissioner (IRS, NRC, SSA, CRC, FDA, SEC), Representative to the United Nations, Ambassador, Mayor, Staff (White House, President, Presidential campaign), Chairman of the Party Caucus, Chairman or Staff of the Presidential Election campaign, and Chairman or member of the President's Committee/Council.

1.2.2 Data for Financial Crisis Analysis

For the first part of my analysis, I use Compustat quarterly data on the S&P 1500 firms that have social connection measures available. The sample period begins on July 1, 2005, and ends on March 1, 2009. Following the literature, I define the beginning of the financial crisis as July 1, 2007. [10] When firms change their fiscal year during the sample period, I keep the most recent fiscal year convention. The sample consists of 18,702 quarterly observations for 1,271 firms.

Panel B of Table 1.1 reports summary statistics of the sample around the crisis period. The average *Tie Index* and *Political Tie* are 26.9% and 37.7%, respectively. For financial variables, I adjust the quarterly value for the second, third and fourth quarters if the variable is reported on a year-to-date basis. The average quarterly ROA during 2005Q3 and 2009Q1 is 0.012, and the average Tobin's Q is 1.938. Capital expenditure (CAPEX) and net total debt issuance (Dissue) are, on average, 1.4% and 0.6% of firm assets.

1.2.3 Data for Industry Distress Analysis

For the second part of my analysis, I use S&P 1500 firm-year observations, as described in Section 1.2.1. I obtain information on segments from the Compustat business segment files.

To identify industries in economic distress, I follow the methodology outlined in Opler and Titman (1994). Specifically, I calculate the two-year stock return and sales growth for all firms with only one industry segment in a given year. That is, for year *t*, I

[10] The results are not sensitive to alternative definitions of the pre-crisis periods.

calculate the stock return and sales growth for the two year period starting from the beginning of year *t* until the end of year *t* + 1. I define a firm's industry using the 3-digit SIC code and classify an industry as distressed during year *t* if the median two-year sales growth in that industry is negative and the median two-year stock return is less than -30%.[11] As emphasized by Opler and Titman (1994), the negative stock return criterion is used to ascertain that the industry distress was unanticipated by the market. In other words, it ensures that firms are unlikely to have fully anticipated and endogenously adjusted their network positions prior to the distress period. Based on this procedure, I classify 5.3% of firm-years as distressed. The year-wise distribution of distressed industries and firms is given in Panel C of Table 1.1.[12] As can be seen, the number of industries in distress increases during the 2001 and 2007-2008 recessions.

1.2.4 Data for Firm Distress Analysis

For the third part of my analysis, I use two samples of financially distressed firms. The first sample is composed of distressed but non-bankrupt firms. I generate the sample using two distress measures: the Merton model's Expected Default Frequency (EDF), estimated using the procedure described by Bharath and Shumway (2008), and the measure from Campbell, Hilscher, and Szilagyi's (2008) model, denoted as CHS-Score. Both measures are commonly used in the literature to measure a firm's bankruptcy risk.[13] Details regarding the estimation of EDF and CHS-Score are provided in Appendix B. To

[11] I also require that distressed industries must have three or more single-segment firms.

[12] Two-year data is used to identify distressed industries, so the sample period ends in 2008.

[13] See Mansi, Maxwell, and Zhang (2010).

obtain a sizable sample of financially distressed firms and at the same time make my data collection manageable, I define a firm as financially distressed if both its EDF and CHS-Score are within the 80th percentile of all Compustat firms during 1998-2008. By further requiring no missing financial controls, I obtain 456 firm-year observations from the main S&P 1500 sample.

For each distressed firm, I manually collect information on its bank lenders from SEC filings, mainly from credit agreements and commitment letters.[14] I am able to gather detailed lender information for 385 firm-years out of a total of 456. Following the procedure described earlier, I identify all personal connections between firms and their bank lenders and generate a dummy *Bank Tie*, which indicates the existence of such connections. I also generate another dummy *Relationship Bank*, which equals one if the lender has extended loans to a firm in the past three years.

When considering the outcome of firms, I use two indicator variables: the bankruptcy dummy, and a broader failure indicator, equal to one if a firm files for bankruptcy, has bond-related defaults, or is delisted due to financial distress. The debt default events over the sample period are hand-collected from Moody's Default Research Database. The default events I consider are missed payment of interest/principal or distressed exchange. Firms delisted for performance reasons are obtained from CRSP. I

[14] The information is gathered from 13-Ds, 14-Ds, 10-Ks, 10-Qs, 8-Ks, and Registration Statements. For some firms, I can only obtain lead lenders' information. Nevertheless, such noise should bias against finding results. Data on detailed lenders is available upon request.

only retain firms delisted for financial reasons, which in CRSP correspond to the delisting codes starting with 4 and 5.[15]

Panel D of Table 1.1 reports summary statistics for this sample. The mean (median) value of ROA is -13.7% (-5.3%) and the mean (median) stock return is -42.1% (-54%). The average *Tie Index* is 21.7%. Among 385 firm years, 50.1% have connected bank lenders and 57.7% have loans from relationship banks.[16] The bankruptcy rate in this sample is 9%.

The second sample used in the third part of my analysis is a list of non-financial public firms that file for Chapter 11 during 1998-2008. This sample is not limited to S&P 1500 firms. I obtain all bankruptcy filings from Bankruptcy DataSource, maintained by New Generation Research. This database also provides information regarding each bankruptcy case's filing date, final outcome, and effective date.[17] I merge this sample with BoardEx and retain 314 bankruptcy cases. Following the previous procedure, I hand-collect each firm's pre-filing bank lender information whenever available and generate a dummy indicating the existence of personal connections between firms and their lenders. For 261 of 314 bankruptcies, I am able to gather detailed lender information. In addition, I collect the largest holders of unsecured debt claims, members of the unsecured creditors' committees, and providers of DIP financing from the Bankruptcy

---

[15] CRSP delisting codes indicate when a firm is delisted from its exchange and for what reason. Reasons for delisting include bankruptcy, insufficient capital, low stock price, and failure to make SEC and/or exchange-required filings in a timely manner, among others.

[16] The ratio of firms with relationship banks is very comparable to Li and Srinivasan (2011).

[17] Such information is cross-checked with Lynn M. LoPucki's Bankruptcy Research Database whenever possible. I thank Lynn LoPucki for generously providing his data. In case of an inconsistency, I resort to Public Access to Court Electronic Records (PACER), SEC filings and Factiva to resolve the difference.

DataSource database. I supplement and complete the above information using Public Access to Court Electronic Records (PACER), SEC filings, and Factiva.[18]

Panel E of Table 1.1 reports summary statistics for the bankruptcy sample. The average *Tie Index* is 14.5%. Among 261 bankruptcies, 59.9% have connected bank lenders and 68.6% have loans from relationship banks. Overall, 43.4% of firms receive DIP financing during Chapter 11 and 56.4% of firms emerge successfully.

1.3 Empirical Results

1.3.1 Social Networks during Financial Crisis

1.3.1.1 Firm Performance

I start my analysis by evaluating the impact of social networks on firm performance during the recent financial crisis. The exogenous nature of the 2007-2009 crisis to non-financial firms allows me to identify the causal effect of social connectedness. Following Duchin, Ozbas, and Sensoy (2010), I perform cross-sectional differences-in-differences tests in which I compare the performance of firms before and after the onset of the crisis as a function of their social connectedness. The estimation model is the following:

$$Firm\ Performance_{it} = \alpha + \beta_1 Tie\ Index_{it-1} * Crisis_t + \beta_2\ Crisis_t + \beta_3 Tie\ Index_{it-1} + \beta_4 x_{it-1} + \varepsilon_{it},$$

where *Firm Performance* is measured with ROA, Tobin's Q, or Sales Growth, and *Crisis* is an indicator variable equal to one for fiscal quarters with an end-date after July 1, 2007.

[18] I obtained fee waivers for Public Access to Court Electronic Records (PACER) from 50 U.S. bankruptcy courts. I thank the chief judge of each district for granting the exemption.

x is a set of controls that includes Political Tie, Size, Size Squared, Firm Age, Diverse, Leverage, Cash, Cash Flow, CAPEX and R&D. All variables are defined in greater detail in Appendix A. Since I use quarterly data, I add to the model indicator variables for the second, third, and fourth quarters to accommodate seasonal effects. Finally, firm fixed effects are included in all regressions to control for other time-invariant observed and unobservable factors.

The estimation results are reported in Table 1.2. P-values for the point estimate tests are based on standard errors clustered at the firm level. In Columns 1 and 2, the dependent variable is ROA. The negative coefficient on *Crisis* in Column 1 says that ROA declines significantly following the onset of the crisis. The coefficient on *Tie Index* is positive but insignificant. More importantly, the coefficient on *Tie Index* * *Crisis* is positive and significant, indicating that socially well-connected firms experience smaller declines in ROA during the crisis. An increase of one standard deviation in *Tie Index* mitigates the decline in ROA by 0.15 percentage points.

Several recent papers have identified some factors that may affect firm's performance during a financial crisis. For example, Duchin, Ozbas, and Sensoy (2010) show that firms with more cash reserve experience a smaller decline in corporate investment during the recent financial crisis. Kuppuswamy and Vilalonga (2010) show that diversification gives firms both financing and investment advantages during the crisis. To control for these effects, I interact each control variable with the *Crisis* dummy, and add all interaction terms to the regression, whose coefficients are suppressed for brevity but available upon request. The unreported coefficients indicate that on average firms with more cash reserve, higher cash flow, and multiple industry segments have

relatively higher ROA during the crisis, while firms with more R&D expenditure experience a larger decline in ROA. More importantly, the estimated coefficient on *Tie Index * Crisis* remains economically and statistically significant.

In Columns 3 and 4, I use Tobin's Q as the dependent variable. Results in Column 3 show that Tobin's Q also decreases significantly after the start of the crisis. Similarly, the value reduction is smaller for well-connected firms. An increase of one standard deviation in *Tie Index* mitigates the decline in Tobin's Q by 0.034. In Column 4, I control for all interaction effects, and find the coefficient on *Tie Index * Crisis* remains positive and significant. The unreported coefficients indicate that firms with greater size and multiple industry segments have higher Tobin's Q during the crisis, while older firms and firms with higher R&D expenditures experience a larger decline in Tobin's Q.

In Columns 5 and 6, the dependent variable is Sales Growth. The results in Column 5 indicate that, while firms on average experience declines in Sales Growth, socially well-connected firms have a higher growth rate than less-connected firms. A one standard deviation raise in *Tie Index* mitigates the decline in Sales Growth by 0.73 percentage points. When I control for the interaction effects in Column 6, the positive relation is still marginally significant. The unreported coefficients indicate that firms with higher cash flow experience a smaller decline in sales growth, while older firms have lower growth during the crisis.

The results so far show that socially well-connected firms have better performance during the recent financial crisis. This is consistent with the view that the social capital captured by a firm's central position in the network can benefit the firm when it is most needed. I next perform cross-sectional tests to see if the effects are

concentrated in specific subsamples. More specifically, if social networks can benefit firms by providing better access to recourses, the positive impact I observe should be greater for firms that are financially constrained and firms that operate in competitive industries.

In Table 1.3, I repeat the earlier tests for subsamples. Firms are classified as constrained if their Hadlock and Pierce (2010) SA Index (or payout ratio) is above (or below) the 3-digit SIC industry median, measured at the end of the latest fiscal year ending before July 1, 2005.[19] Similarly, firms are classified as in competitive industries if their industry's HHI index is below the sample median as of July 1, 2005. Note that the number of observations can be different for these two subsamples because below-median firms can have longer or shorter panel data than above-median firms.

Results in Panel A and Panel B show that the positive impact of social connectedness on firm performance is mainly driven by financially constrained firms. The coefficient on *Tie Index * Crisis* for the financially constrained subsample is at least three times that for the unconstrained subsample. Results in Panel C indicate that the positive relation is also stronger for firms operating in competitive industries. Unreported tests confirm that the differences are statistically significant, supporting the casual interpretation of social connectedness on firm performance. To provide more direct evidence for the existence of a causal effect, I next examine firm's debt issuance and corporate investment behavior during the financial crisis period.

---

[19] Hadlock and Pierce (2010) find that the age and size of firms alone perform as good predictors of the level of financial constraint, and show that their SA Index has superiority over other common measures of financial constraints. The results are qualitatively similar if I use Kaplan-Zingales (1997) index in the empirical tests.

1.3.1.2 Debt Issuance and Corporate Investment

The 2007-2009 financial crisis represents a negative shock to the supply of external finance. If socially well-connected firms have lower information asymmetry and better access to recourse, then the negative effect of credit contraction should be relatively smaller for these firms. Therefore, I conjecture that during the financial crisis firms with more social connections experience less of a problem in raising debt to finance their investments.

I start by relating social connectedness to a firm's quarterly net total debt issuance using the following model:

$$Dissue_{it} = \alpha + \beta_1 Tie\ Index_{t-1} * Crisis_t + \beta_2 Crisis_t + \beta_3 Tie\ Index_{t-1} + \beta_4 x_{it-1} + \varepsilon_{it},$$

where *Dissue* is net total debt issuance (or change in total debt) during the quarter, and *Crisis* is an indicator variable for whether the quarter is after the onset of the crisis. x is a set of financial controls, which includes variables used by Kahle and Stulz (2010): the percentage change in assets from the previous quarter (dSize), Tobin's Q, Operating Cash Flow (OCF), dividend dummy (Dividend), an indicator variable equal to 1 if book equity is negative (Neg_BE), lagged Leverage (Lag_Leverage), lagged Cash (Lag_Cash), lagged log market capitalization (Lag_MC), the change in the stock price (Ret), lagged change in short-term debt (Lag_STdebt), R&D Expenditure (R&D) and CAPEX. All variables are defined in greater detail in Appendix A. Firm size is also controlled for given its high correlation with *Tie Index*. Finally, firm fixed effects, quarter fixed effects, and interaction effects are all included in the regression.

To examine the impact of social connections on corporate investment, I modify Duchin, Ozbas, and Sensoy's (2010) specification by adding more controls:

$$CAPEX_{it} = \alpha + \beta_1 Tie\ Index_{t-1} * Crisis_t + \beta_2\ Crisis_t + \beta_3 Tie\ Index_{t-1}\ + \beta_4 x_{it-1} + \varepsilon_{it},$$

where CAPEX is capital expenditures over book value of total assets, and *Crisis* is an indicator variable for whether the quarter is after the onset of the crisis. x is a set of financial controls that includes Size, Tobin's Q, Cash, and Cash Flow. Similarly, firm fixed effects, quarter fixed effects and interaction effects are all included in the regression.

As I argued earlier, if social connections help ameliorate credit constraints, the benefit should be greater for firms that face relatively higher costs in raising external capital. Therefore, I also consider how the impact of social connectedness varies in the cross-section of firms by financial constraints.

The regression results for debt issuance are reported in Table 1.4. P-values for the point estimate tests are based on standard errors clustered at the firm level. Column 1 provides estimates for the full sample. The estimates suggest that during the crisis, socially well-connected firms have more net debt issuance. The impact is also economically significant. A rise of one standard deviation in *Tie Index* increases the net debt issuance by 0.182% of firm assets. The next four columns report results for subsamples based on Hadlock and Pierce (2010) SA Index or payout ratio as of June 30, 2005. The results suggest that the positive relation between social connectedness and net debt issuance is mainly driven by firms that are financially constrained.

Table 1.5 presents the investment regression results. Estimates on the full sample are reported, followed by results for subsamples. Results in Column 1 confirm Duchin, Ozbas, and Sensoy's (2010) findings. Corporate investment declines significantly following the start of the crisis, and the decline is greater for firms that have lower cash reserves. More importantly, I find that socially well-connected firms also have more corporate investment. The effect is both statistically and economically significant. A one

standard deviation raise in *Tie Index* mitigates the decline in CAPEX by 0.05 percentage points. Results in the next four columns further illustrate that the positive relation between social connectedness and post-crisis investment is stronger for financially constrained firms.

Overall, results in this subsection show that socially well-connected firms have a greater ability to raise debt to finance their investments during the financial crisis. The positive impact is confined to the subsample of financially constrained firms, providing direct evidence for a causal effect of social connectedness on firm performance.

1.3.2 Social Networks during Industry Distress

Now I turn to study the impact of social networks during industry distress. As described earlier, I define industry distress in a way that minimizes the problem of reverse causality following Opler and Titman (1994). The estimation model is the following:

$$Firm\ Performance_{i,(t,t+1)} = \alpha + \beta_1\, Tie\ Index_{i,t-1} * Distress_{it} + \beta_2 Distress_{it} + \beta_3 Tie\ Index_{i,t-1} + \beta_4\, x_{i,t-1} + \varepsilon_{it}\ ,$$

where *Firm Performance* is measured by changes in ROA (ΔROA), stock returns, and sales growth over a two-year period centered on the base year (year *t*), *Distress* is an indicator variable for whether the firm year is in industry downturns, and x is a set of controls that includes Political Tie, Size, Size Squared, Firm Age, Diverse, Leverage, Cash, Cash Flow, CAPEX and R&D. In all regressions, firm fixed effects and year fixed effects are included.

Table 1.6 Panel A reports the regression results. P-values for the point estimate tests are based on standard errors clustered at the firm level. The dependent variable is ΔROA in the first two regressions. The negative coefficient on *Distress* in Column 1 says that on average, firms experience a decrease in ΔROA during industry downturns. The coefficient on *Tie Index* is negative but insignificant, suggesting that once I control for all explanatory variables, *Tie Index* has no significant impact on ΔROA during normal times. More importantly, the coefficient on *Tie Index* * *Distress* is positive and significant, indicating that socially well-connected firms have higher ΔROA in industry distress.

In Column 2, I interact each control variable with the *Distress* dummy, and add all interaction terms to the regression, whose coefficients are suppressed for brevity but available upon request. In this way, I control for other factors that may also affect firm performance during industry downturns. For example, Opler and Titman (1994) show that highly leveraged firms have greater operating difficulties in industry downturns, and Gopalan and Xie (2008) find that conglomeration enables segments to avoid financial constraints during industry distress. Results in Column 2 show that after controlling for all interaction effects, the estimated coefficient on *Tie Index* * *Distress* remains economically and statistically significant.

In Columns 3 and 4, I use cumulative two-year stock return as the dependent variable. Results in Column 3 show that socially well-connected firms have better stock returns during industry downturns, but the results become insignificant when I include interaction effects in Column 4. In the last two columns, the dependent variable is two-year sales growth. The results in Column 5 indicate that, while firms on average experience declines in sales growth, socially well-connected firms have a higher growth

rate than less-connected firms during industry distress. When I control for the interaction effects in Column 6, the positive relation is still statistically and economically significant.

In Table 1.6 Panel B, I repeat these tests for subsamples. Firms are classified as in competitive industries if their industry's HHI index is below the sample median. Results indicate that the positive impact of social connectedness on firm performance is stronger for firms operating in competitive industries. In an unreported analysis, I repeat the tests for constrained and unconstrained firms, and find that the effect exists for both subsamples.

Overall, the results in this subsection indicate that firms do benefit from greater social connections during industry downturns. This provides further support for the notion that social capital is valuable during periods of distress. In the next subsection, I investigate whether social networks affect the outcome of firms that experience financial distress.

1.3.3 Social Networks during Firm Distress

1.3.3.1 Corporate Failure

Before I examine the influence of social ties on firms that undergo financial distress, I start with the full sample to explore whether, in general, a firm's network position affects its probability of failure. The following logistic model is estimated using the S&P 1500 firm-year observations: [20]

[20] Once a firm has failed in a given year, it is no longer included in the sample of firm years, because many defaulting or delisting firms eventually file for bankruptcy within one or two years, and the bankruptcy process can last longer than a year. However, firms that filed for bankruptcy multiple times would re-enter the sample if they emerged from bankruptcy successfully and were included in the S&P 1500 index again during 1998-2009.

$$Corporate\ Failure_{it} = f(\ Tie\ Index_{t-1},\ x_{it-1})$$

where *Corporate Failure* is an indicator equal to one if a firm files for bankruptcy, has bond-related defaults, or is delisted due to financial distress. x is a vector of financial characteristics that includes Size, Tobin's Q, Leverage, ROA, Liquidity, Tangibility, R&D, Stock Returns, Return Std., and Dividend. Industry fixed effects and year fixed effects are also controlled. The hazard model is used as an alternative specification to predict corporate failures, where I follow Shumway (2001) and use Log (Firm Age) as the baseline hazard function. [21]

A potential concern with this estimation model is that a firm's failure probability may endogenously affect the firm's network position. For example, Fahlenbrach, Low, and Stulz (2010) show that outside directors have an incentive to resign when they anticipate that the firm will perform poorly. If socially well-connected directors leave the firm due to such anticipation, then any observed negative relation between social connectedness and failure likelihood can be due to reverse causality. To address this concern, I add CHS-Score in the regression to capture a firm's distress risk estimated on an *ex ante* basis.[22] To further alleviate the endogeneity concern, in a separate regression, I exclude firm years with director departures and meanwhile control for board characteristics.

---

[21] Shumway (2001) assumes a certain level of homogeneity across the characteristics of firms listed in the same period. This seems reasonable, since listing is conditional on fulfillment of certain requirements set by a regulator.

[22] I use CHS-Score since Campbell, Hilscher, and Szilagyi (2008) show that their model outperforms the EDF measure in predicting corporate failure, and Mansi, Maxwell, and Zhang (2010) also show that when compared to other three failure models, CHS-Score has the most explanatory power on the cost of debt, which is a market proxy for distress risk. I get similar results when I use other distress measures, such as Z-Score, O-score and EDF.

The regression results are reported in Table 1.7. The first two columns present estimates from the logistic model. P-values are based on standard errors clustered at the firm level. Column 1 shows a significant negative relation between *Tie Index* and the likelihood of corporate failure. The results hold when I control for board characteristics and exclude all firm-years with director departures, as shown in Column 2. The hazard model provides even stronger results, suggesting that greater social connectedness can reduce a firm's probability of failure.

I next focus on a sample of firms that are in financial distress, and investigate whether social networks affect subsequent bankruptcy probability. In particular, I estimate a logistic model in which the dependent variable equals one if a firm files for bankruptcy protection in the given year and zero otherwise. When a firm is delisted and then files for bankruptcy in the following year, I classify the delisting year as the bankruptcy year. The primary variable of interest is either *Tie Index* or *Bank Tie*. A potential concern for using the firm-bank connection measure is that firms may award the most accommodating banker with directorships or invitations to social organizations. To minimize the potential for such reverse causality, I follow Engelberg, Gao, and Parsons (2011) and construct another dummy, *Bank Tie2,* using connections formed at least five years ago.[23] To ensure that the effect of connected lenders is not simply stemming from repeated business between firms and banks, I add the indicator variable *Relationship Bank*. Panel A of Table 1.8 provides Pearson correlation coefficients between these

[23] Specifically, I only use connections formed through education network or formed when two individuals worked in the same place at least five years ago.

connection measures. Surprisingly, the correlation between *Bank Tie* and *Relationship Bank* is only 21.8%.

Panel B of Table 1.8 reports regression results. I control for all financial variables used in the previous test as well as year and industry fixed effects.[24] Column 1 shows that when a firm is severely financially distressed, its overall network position has no significant impact on subsequent bankruptcy probability. However, results in Columns 2 and 3 suggest that personal connections to bank lenders can lower a firm's probability of filing for bankruptcy. On the other hand, the insignificant coefficient on *Relationship Bank* indicates that maintaining a prior business relationship has no impact on the one-year-ahead likelihood of bankruptcy. This result is similar to that reported in Li and Srinivasan (2011).

My findings suggest that, on average, firms with more social connections have a lower probability of failure. When firms are severely financially distressed, their personal connections with lenders can reduce the likelihood of future bankruptcy. This is consistent with Engelberg, Gao, and Parsons (2011), who show that social connections between banks and firms can either lead to better information flow *ex ante* or better monitory *ex post*. In particular, social connections might lower firms' cost of renegotiation with bank lenders in the event of distress, and help firms obtain capital that otherwise might be unobtainable, or social connections can reduce lender's monitoring costs and alleviate firms' moral hazard incentive. Both mechanisms might reduce a firm's bankruptcy probability. I next focus on a sample of bankrupt firms and investigate the

[24] To achieve model fit validity, Fama-French 12-industry is used instead.

impact of social connections, particularly connections with lenders, on the reorganization process.

1.3.3.2 Bankruptcy Reorganization

Because Debtor-in-Possession (DIP) financing plays an important role in Chapter 11 reorganization, I first relate a firm's social networks to its probability of receiving DIP financing. In particular, I estimate a probit regression in which the dependent variable equals 1 if a firm obtains DIP financing during the bankruptcy process, and 0 otherwise. The primary variable of interest is either *Tie Index* or *Bank Tie*. Following Dahiya, John, Puri, and Ramirez (2003), I control for Size, Leverage, Prepack, Retail, and Current Assets in the regressions. Definitions of these variables are presented in Appendix A. In all cases the accounting data are for the last fiscal year before the year of the Chapter 11 filing. I also include year fixed effects to control for the historical growth of DIP financing. Since a prepackaged filing is different from a traditional Chapter 11 filing in many respects (Tashijian, Lease, and McConnell, 1996), I also estimate the regressions using only non-prepacked bankruptcies.

Results of the probit model are reported in Table 1.9. Column 1 shows that a firm's overall connections to the S&P 1500 firms have no influence on its probability of receiving DIP financing. However, the estimates in Column 2 indicate that the presence of personal connections to pre-filing lenders is positively related to its likelihood of obtaining DIP financing, and the positive relation is not driven by relationship banking. For other control variables, the results are similar to those reported in Dahiya, John, Puri, and Ramirez (2003). Larger firms, retail firms and firms without prepacked filings are more likely to obtain DIP financing. When using only non-prepacked bankruptcies, I

obtain similar results, but the significance level decreases because of the smaller sample size.

The next question I address is whether connections to creditors affect a firm's bankruptcy outcome. I estimate a probit model in which the dependent variable equals 1 if a firm emerges from Chapter 11, and 0 otherwise. The primary variable of interest is either *DIP Lender Tie*, an indicator for the presence of social ties between a firm and its DIP lenders, or *Unsecured Creditor Tie*, an indicator for the presence of social ties between firm and its major unsecured creditors. Following Dahiya, John, Puri, and Ramirez (2003), I control for Size, Leverage, Prepack, Retail, and Current Assets. I also estimate the regressions using non-prepacked bankruptcies only.

Table 1.10 reports the estimates of the probit model. The results show that larger firms and those with higher leverage are more likely to emerge from Chapter 11, consistent with Dahiya, John, Puri, and Ramirez (2003) and Denis and Rodgers (2007). Firms in the retail industry are also more likely to emerge from bankruptcy. However, the coefficient of *DIP Relationship Bank* is not significant, similar to Dahiya, John, Puri, and Ramirez (2003). More importantly, I find a positive association between *DIP Lender Tie* and the probability of emerging successfully. Again, the results support the argument that social networks between lenders and firms can either lead to better information flow *ex ante* or better monitoring *ex post* (Engelberg, Gao, and Parsons, 2011). The coefficient of *Unsecured Creditor Tie* is positive but not significant, suggesting that social connections with unsecured creditors have no significant impact on firms' final outcomes.

In an untabulated analysis, I examine the association between connections to creditors and the speed of bankruptcy resolution. I find that personal connection to DIP

lenders has no significant impact on the duration. However, connection to unsecured creditors is negatively related to a firm's bankruptcy duration.

1.4 Conclusion

Social networks have attracted lots of attention from researchers in finance in the past few years. Numerous studies examine the impact of social connections on firm outcomes. Most of the empirical work has focused on firms that operate in normal times, while to my knowledge few studies have examined the impact of social networks on firm performance during times of distress. This is an important distinction, because if social connections can benefit firms, then their benefits should be magnified during periods of distress. This paper seeks to fill this gap in the research by examining the impact of greater social connectedness on firm performance during a financial crisis, during industry downturns, and during periods when firms are in financial distress.

Using the financial crisis of 2007-2009 as a natural experiment, I find that socially well-connected firms have significantly better performance during the crisis. The positive relation is stronger for firms that are financially constrained, or operate in competitive industries. In addition, firms with more social connections have more net debt issuance and more capital expenditure, and similarly, the positive relation is found to be stronger for firms that are financially constrained, supporting the causal interpretation of social connectedness on firm performance. When focusing on industry downturns, I also find that firms with more social connections perform better.

I next examine the relation between social connectedness and firm distress. I find that firms with more social connections have a lower probability of entering bankruptcy, delisting for financial reasons, or defaulting on public debt. Such negative relation is not

driven by reverse causality. When focusing on a subsample of severely distressed firms, I find that firms with socially connected banks have a lower probability of bankruptcy, and the presence of a connected lender is also related to a higher likelihood of receiving DIP financing in Chapter 11 bankruptcy. Finally, I find that firms obtaining DIP financing from connected lenders are more likely to emerge from Chapter 11. Taken together, I show that social networks benefit firms in times of distress.

Table 1.1 Summary Statistics

Panel A: 1998-2009 Firm-Years

	Mean	Median	Std. Dev.	N
Tie Index	0.249	0.226	0.166	15,182
Political Tie	0.364	-	-	15,182
Size	7.624	7.480	1.501	15,005
Tobin's Q	1.967	1.541	1.262	15,121
Firm Age	2.973	3.091	0.748	15,182
Leverage	0.227	0.224	0.173	15,130
Cash	0.139	0.069	0.164	15,176
Cash Flow	0.137	0.132	0.108	15,141
CAPEX	0.056	0.041	0.050	15,182
R&D	0.029	0.000	0.050	15,182
ROA	0.038	0.048	0.102	15,182
Sales Growth	0.098	0.074	0.240	15,161
Diverse	0.393	-	-	15,182

Panel B: 2005Q3-2009Q1 Firm-Quarters

	Mean	Median	Std. Dev.	N
Tie Index	0.269	0.255	0.166	18,702
Political Tie	0.377	-	-	18,702
Size	7.664	7.535	1.498	18,702
Tobin's Q	1.938	1.609	1.078	18,634
Firm Age	3.066	3.091	0.695	18,702
Leverage	0.213	0.204	0.168	18,130
Cash	0.139	0.073	0.157	18,701
Cash Flow	0.026	0.024	0.025	18,630
CAPEX	0.014	0.009	0.015	18,666
R&D	0.007	0.000	0.012	18,700
ROA	0.012	0.014	0.029	18,702
Sales Growth	0.029	0.018	0.250	18,669
Diverse	0.353	-	-	18,702
Dissue	0.006	0.000	0.045	17,940

Table 1.1 Continued

Panel C: Year-wise Distribution of Distressed Industries and Firms

Year	Distressed Industries	Distressed Firms	Non-Distressed Firms
1999	9	43	1,219
2000	12	72	1,250
2001	16	218	1,087
2002	2	3	1,289
2003	0	0	1,276
2004	2	2	1,271
2005	2	9	1,266
2006	6	31	1,229
2007	23	138	1,109
2008	25	158	1,082
Total	97	674	12,078

Panel D: Distress Sample

	Mean	Median	Std. Dev.	N
Tie Index	0.217	0.193	0.153	456
Bank Tie	0.501	-	-	385
Relationship Bank	0.577	-	-	385
Bankruptcy	0.090	-	-	456
EDF	0.701	0.707	0.119	456
CHS-Score	-4.199	-4.329	1.457	456
Size	7.305	7.030	1.485	456
Tobin's Q	1.092	0.967	0.496	456
Leverage	0.401	0.410	0.181	456
ROA	-0.137	-0.053	0.177	456
Tangibility	0.318	0.283	0.214	456
Liquidity	1.767	1.543	1.035	456
R&D	0.026	0.000	0.054	456
Stock Return	-0.421	-0.540	0.444	456
Return Std.	0.848	0.838	0.250	456
Dividend	0.460	-	-	456

Table 1.1 Continued

Panel E: Bankruptcy Sample

	Mean	Median	Std. Dev.	N
Tie Index	0.145	0.103	0.149	314
Bank Tie	0.599	-	-	261
Relationship Bank	0.686	-	-	261
DIP Lender Tie	0.401	-	-	127
DIP Relationship Bank	0.677	-	-	127
Unsecured Creditor Tie	0.564	-	-	314
Emerge	0.564	-	-	314
DIP	0.434	-	-	314
Prepack	0.296	-	-	314
Size	6.709	6.515	1.276	314
Leverage	0.648	0.636	0.346	311
Current Assets	0.375	0.346	0.201	303

Table 1.1 Continued

Panel F: Pearson Correlation Matrix

	Tie Index	Political Tie	Size	Tobin's Q	Firm Age	Leverage	Cash	Cash Flow	CAPEX	R&D	ROA	Sales Growth	Diverse
Tie Index	1												
Political Tie	0.463	1											
Size	0.674	0.381	1										
Tobin's Q	-0.038	-0.015	-0.127	1									
Firm Age	0.333	0.149	0.382	-0.210	1								
Leverage	0.181	0.126	0.336	-0.290	0.163	1							
Cash	-0.219	-0.102	-0.343	0.391	-0.255	-0.442	1						
Cash Flow	0.040	0.016	0.040	0.372	-0.018	-0.111	-0.111	1					
CAPEX	-0.056	-0.037	0.005	0.062	-0.066	0.029	-0.180	0.224	1				
R&D	-0.111	-0.057	-0.234	0.314	-0.188	-0.275	0.555	-0.240	-0.148	1			
ROA	0.060	0.027	0.088	0.327	0.052	-0.195	-0.038	0.746	0.097	-0.241	1		
Sales Growth	-0.078	-0.038	0.009	0.234	-0.168	-0.025	0.019	0.197	0.101	-0.006	0.233	1	
Diverse	0.192	0.089	0.226	-0.195	0.303	0.156	-0.248	-0.038	-0.067	-0.186	-0.007	-0.050	1

Note: This table reports summary statistics for different samples used in the paper. Panel A provides summary for a sample of S&P 1500 firms covered by BoardEx during 1998-2009. Panel B reports summary statistics for the sample of firm-quarter observations from 2005Q3 to 2009Q1. Panel C presents the year-wise distribution of distressed industries and firms. Panel D reports firm characteristics for firms classified as financially distressed. Panel E contains summary statistics for a sample of public firms that file for Chapter 11 protection during 1998-2008. The last panel presents pairwise correlations among major firm characteristics. All variables are defined in detail in Appendix A. Financial variables are winsorized at the 1st and 99th percentiles.

Table 1.2 Firm Performance during Financial Crisis

	ROA		Tobin's Q		Sales Growth	
	(1)	(2)	(3)	(4)	(5)	(6)
Tie Index * Crisis	0.009***	0.011***	0.207***	0.218**	0.043**	0.058*
	[0.002]	[0.003]	[0.006]	[0.027]	[0.039]	[0.051]
Crisis	-0.008***	0.014	-0.295***	-0.740*	-0.039***	-0.007
	[0.000]	[0.176]	[0.000]	[0.073]	[0.000]	[0.921]
Tie Index	0.003	-0.001	-0.187	-0.089	0.022	-0.012
	[0.717]	[0.812]	[0.405]	[0.659]	[0.729]	[0.825]
Political Tie	0.0001	-0.0004	0.025	0.016	-0.009	-0.010
	[0.987]	[0.815]	[0.626]	[0.727]	[0.558]	[0.574]
Size	0.004	0.003	-1.369***	-1.267***	-0.071	-0.095
	[0.648]	[0.767]	[0.000]	[0.000]	[0.540]	[0.433]
Size Squared	-0.0005	-0.0004	0.057***	0.051***	-0.0007	0.0001
	[0.385]	[0.815]	[0.000]	[0.000]	[0.922]	[0.978]
Firm Age	-0.018***	-0.027***	-0.851***	-0.931***	-0.166***	-0.239***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Diverse	-0.001	-0.002	-0.045	-0.061	0.001	-0.005
	[0.462]	[0.163]	[0.245]	[0.079]	[0.899]	[0.689]
Leverage	-0.002	-0.007	-0.272*	-0.434***	-0.055	-0.078*
	[0.669]	[0.120]	[0.071]	[0.008]	[0.162]	[0.064]
Cash	0.011**	0.008*	1.047***	1.098***	-0.065	-0.061
	[0.020]	[0.088]	[0.000]	[0.000]	[0.126]	[0.151]
Cash Flow	0.318***	0.215***	6.439***	8.842***	-4.716***	-5.557***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
CAPEX	0.058**	0.061**	1.384*	1.859**	0.563*	0.685**
	[0.037]	[0.024]	[0.093]	[0.032]	[0.066]	[0.048]
R&D	-0.101	-0.037	2.133	4.863*	-3.832***	-3.851***
	[0.400]	[0.744]	[0.412]	[0.068]	[0.000]	[0.000]
Quarter Effect	Yes	Yes	Yes	Yes	Yes	Yes
Firm Effect	Yes	Yes	Yes	Yes	Yes	Yes
Interaction Effect	No	Yes	No	Yes	No	Yes
R-Squared	0.451	0.473	0.864	0.881	0.201	0.219
N	17,959	17,959	17,861	17,861	17,924	17,924

Note: This table presents estimates from regressions examining firm performance for quarters with an end-date between July 1, 2005 and March 31, 2009. The estimation model is:

$$\text{Firm Performance}_{it} = \alpha + \beta_1 \text{Tie Index}_{it-1} * \text{Crisis}_t + \beta_2 \text{Crisis}_t + \beta_3 \text{Tie Index}_{it-1} + \beta_4 x_{it-1} + \varepsilon_{it},$$

where Firm Performance is ROA, Tobin's Q or Sales Growth, *Tie Index* is the fraction of companies in the network to which the firm is directly connected in a given year, and *Crisis* is an indicator variable equal to one for fiscal quarters with an end-date after July 1,

Table 1.2 Continued

2007. x is a set of controls that includes Political Tie, Size, Size Squared, Firm Age, Diverse, Leverage, Cash, Cash Flow, CAPEX and R&D. Definitions of all variables are provided in Appendix A. All regressions control for firm fixed effects and quarter fixed effects. In Columns 2, 4 and 6, interaction effects are also included, where all control variables are interacted with the *Crisis* dummy. The coefficients are suppressed for brevity. P-values for the point estimate tests are based on standard errors clustered at the firm level and are reported in brackets. ***, **, and * stand for statistical significance at the 1%, 5%, and 10% level, respectively.

Table 1.3 Firm Performance during Financial Crisis for Subsamples

Panel A: Subsamples based on Hadlock and Pierce (2010) SA Index

	ROA		Tobin's Q		Sales Growth	
	Constrained	Unconstrained	Constrained	Unconstrained	Constrained	Unconstrained
	(1)	(2)	(3)	(4)	(5)	(6)
Tie Index * Crisis	0.021***	0.005	0.286*	0.097	0.156***	0.024
	[0.001]	[0.322]	[0.088]	[0.338]	[0.001]	[0.510]
Crisis	0.028	0.008	-1.074*	0.452	0.255	0.246
	[0.148]	[0.752]	[0.087]	[0.406]	[0.299]	[0.126]
Tie Index	-0.008	0.002	-0.219	0.518	-0.083	0.057
	[0.499]	[0.876]	[0.244]	[0.110]	[0.439]	[0.497]
Political Tie	0.0003	-0.001	0.011	-0.010	0.014	-0.035
	[0.954]	[0.542]	[0.925]	[0.785]	[0.554]	[0.163]
Size	0.003	-0.007	-1.313***	-1.004***	0.007	0.04
	[0.821]	[0.625]	[0.000]	[0.006]	[0.946]	[0.848]
Size Squared	-0.0004	0.0002	0.054**	0.035*	-0.003	-0.007
	[0.648]	[0.863]	[0.019]	[0.092]	[0.625]	[0.529]
Firm Age	-0.027***	-0.072***	-0.891***	-2.728***	-0.252***	-0.890***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Diverse	-0.009***	0.002	-0.149***	-0.005	-0.019	0.005
	[0.001]	[0.451]	[0.005]	[0.911]	[0.240]	[0.818]
Leverage	-0.008	-0.004	-0.398	-0.362*	-0.153***	-0.039
	[0.271]	[0.552]	[0.158]	[0.066]	[0.006]	[0.549]
Cash	0.006	0.009	1.183***	0.898***	-0.006	-0.177**
	[0.329]	[0.225]	[0.000]	[0.000]	[0.899]	[0.015]
Cash Flow	0.241***	0.157***	9.758***	6.723***	-4.559***	-6.824***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
CAPEX	0.052	0.091**	2.735**	0.621	0.881**	0.469
	[0.207]	[0.022]	[0.033]	[0.592]	[0.014]	[0.468]
R&D	-0.117	0.057	3.300	4.379*	-2.856**	-3.836**
	[0.470]	[0.709]	[0.423]	[0.051]	[0.014]	[0.010]
Quarter Effect	Yes	Yes	Yes	Yes	Yes	Yes
Firm Effect	Yes	Yes	Yes	Yes	Yes	Yes
Interaction Effect	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.481	0.438	0.858	0.893	0.172	0.233
N	8,143	8,312	8,120	8,282	8,143	8,312

Table 1.3 Continued

Panel B: Subsamples based on Payout Ratio

	ROA		Tobin's Q		Sales Growth	
	Constrained	Unconstrained	Constrained	Unconstrained	Constrained	Unconstrained
	(1)	(2)	(3)	(4)	(5)	(6)
Tie Index * Crisis	0.021***	0.004	0.171	0.069	0.136***	0.020
	[0.006]	[0.151]	[0.101]	[0.889]	[0.005]	[0.597]
Crisis	0.035	0.005	-1.484**	-0.065	0.170	0.134
	[0.171]	[0.757]	[0.025]	[0.920]	[0.244]	[0.321]
Tie Index	-0.004	-0.003	-0.538	0.326	-0.158	0.108
	[0.766]	[0.708]	[0.334]	[0.351]	[0.179]	[0.233]
Political Tie	-0.001	0.001	-0.041	0.073	-0.021	0.001
	[0.646]	[0.453]	[0.625]	[0.148]	[0.457]	[0.948]
Size	0.005	-0.002	-1.775***	-0.289*	0.008	-0.071
	[0.704]	[0.878]	[0.000]	[0.091]	[0.911]	[0.701]
Size Squared	-0.0006	-0.0001	0.080***	-0.007	-0.003	-0.002
	[0.487]	[0.891]	[0.000]	[0.751]	[0.527]	[0.841]
Firm Age	-0.031***	-0.032***	-1.046***	-1.061***	-0.320***	-0.365***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Diverse	-0.0007	-0.005**	-0.137**	-0.029	0.001	-0.022
	[0.813]	[0.011]	[0.024]	[0.479]	[0.951]	[0.122]
Leverage	-0.005	-0.006	-0.295	-0.469*	-0.131**	-0.018
	[0.527]	[0.205]	[0.227]	[0.083]	[0.024]	[0.800]
Cash	0.009	0.005	1.123***	1.064***	-0.046	-0.073
	[0.219]	[0.380]	[0.000]	[0.000]	[0.439]	[0.256]
Cash Flow	0.223***	0.180***	8.131***	9.141***	-5.052***	-6.080***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
CAPEX	0.014	0.143***	1.936	2.006	0.499	0.877
	[0.721]	[0.001]	[0.116]	[0.146]	[0.127]	[0.237]
R&D	-0.161	0.176*	0.091	7.708***	-4.070***	-2.256**
	[0.360]	[0.091]	[0.981]	[0.006]	[0.007]	[0.029]
Quarter Effect	Yes	Yes	Yes	Yes	Yes	Yes
Firm Effect	Yes	Yes	Yes	Yes	Yes	Yes
Interaction Effect	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.445	0.457	0.857	0.883	0.18	0.224
N	8,381	8,636	8,347	8,055	8,381	8,074

Table 1.3 Continued

Panel C: Subsamples based on Industry Competitiveness

	ROA		Tobin's Q		Sales Growth	
	Competitive	Concentrated	Competitive	Concentrated	Competitive	Concentrated
	(1)	(2)	(3)	(4)	(5)	(6)
Tie Index * Crisis	0.020***	0.003	0.143*	0.105	0.134***	0.005
	[0.001]	[0.507]	[0.062]	[0.443]	[0.006]	[0.888]
Crisis	0.028	0.003	-0.405	-0.998	0.063	-0.036
	[0.154]	[0.873]	[0.391]	[0.111]	[0.644]	[0.808]
Tie Index	0.006	-0.013	-0.104	-0.138	-0.050	0.016
	[0.658]	[0.177]	[0.794]	[0.523]	[0.654]	[0.834]
Political Tie	-0.004	0.003	0.071	-0.024	-0.036	0.014
	[0.138]	[0.328]	[0.223]	[0.754]	[0.216]	[0.522]
Size	-0.004	0.010	-1.459***	-0.951***	-0.069	-0.094
	[0.707]	[0.474]	[0.000]	[0.005]	[0.629]	[0.666]
Size Squared	-0.0001	-0.0008	0.052***	0.042**	-0.003	0.001
	[0.897]	[0.335]	[0.009]	[0.024]	[0.749]	[0.911]
Firm Age	-0.037***	-0.023***	-1.102***	-1.007***	-0.322***	-0.216**
	[0.000]	[0.004]	[0.000]	[0.000]	[0.000]	[0.037]
Diverse	-0.003	-0.002	-0.036	-0.069	0.016	-0.013
	[0.385]	[0.316]	[0.468]	[0.155]	[0.523]	[0.350]
Leverage	-0.005	-0.008	-0.256	-0.636**	-0.058	-0.093
	[0.442]	[0.269]	[0.224]	[0.012]	[0.298]	[0.168]
Cash	0.000	0.021**	0.835***	1.348***	-0.102*	-0.015
	[0.639]	[0.028]	[0.000]	[0.000]	[0.084]	[0.842]
Cash Flow	0.302***	0.125***	9.162***	8.231***	-5.238***	-5.845***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
CAPEX	0.024	0.093**	0.655	3.521**	0.133	1.312***
	[0.554]	[0.012]	[0.512]	[0.034]	[0.801]	[0.003]
R&D	-0.017	-0.048	2.185	15.794**	-3.301***	-5.792***
	[0.885]	[0.820]	[0.417]	[0.011]	[0.004]	[0.004]
Quarter Effect	Yes	Yes	Yes	Yes	Yes	Yes
Firm Effect	Yes	Yes	Yes	Yes	Yes	Yes
Interaction Effect	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.494	0.429	0.886	0.85	0.161	0.28
N	8,471	9,323	8,443	9,291	8,471	9,323

Note: This table presents estimates from regressions examining firm performance for quarters with an end-date between July 1, 2005 and March 31, 2009. The estimation model is:

$$\text{Firm Performance}_{it} = \alpha + \beta_1 \text{Tie Index}_{it-1} * \text{Crisis}_t + \beta_2 \text{Crisis}_t + \beta_3 \text{Tie Index}_{it-1} + \beta_4 x_{it-1} + \varepsilon_{it},$$

where Firm Performance is ROA, Tobin's Q or Sales Growth, *Tie Index* is the fraction of companies in the network to which the firm is directly connected, and *Crisis* is an indicator variable equal to one for fiscal quarters with an end-date after July 1, 2007. x is a set of controls that includes Political Tie, Size, Size Squared, Firm Age, Diverse, Leverage, Cash, Cash Flow, CAPEX and R&D. All variables are defined in greater detail in Appendix A.

Table 1.3 Continued

The sample is divided into subsamples based on the Hadlock and Pierce (2010) SA Index, payout ratio, or the industry's HHI index measured at the end of the latest fiscal year ending before July 1, 2005. In Panel A, firms are classified as financially constrained if their Hadlock and Pierce (2010) SA Index is above the industry (3-digit SIC code) median as of July 1, 2005. In Panel B, firms are classified as financially constrained if the payout ratio is below the industry (3-digit SIC code) median. In Panel C, firms are classified as in competitive industries if their industry's HHI index is below the sample median. All regressions control for firm fixed effects and quarter fixed effects. Interaction effects are also included, where all of the control variables are interacted with the *Crisis* dummy. The coefficients are suppressed for brevity. P-values for the point estimate tests are based on standard errors clustered at the firm level and are reported in brackets. ***, **, and * stand for statistical significance at the 1%, 5%, and 10% level, respectively.

Table 1.4 Firm Net Debt Issuance during Financial Crisis

	Full-Sample	Hadlock and Pierce (2010) SA Index		Payout Ratio	
		Constrained	Unconstrained	Constrained	Unconstrained
	(1)	(2)	(3)	(4)	(5)
Tie Index * Crisis	0.011**	0.014*	0.009	0.018**	0.007
	[0.034]	[0.093]	[0.294]	[0.013]	[0.393]
Crisis	0.010	0.016	0.003	0.017	0.009
	[0.160]	[0.200]	[0.143]	[0.153]	[0.303]
Tie Index	0.005	-0.004	-0.001	-0.016	0.018
	[0.684]	[0.839]	[0.932]	[0.400]	[0.316]
Size	-0.043***	-0.046***	-0.040***	-0.044***	-0.041***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
dSize	-0.048***	-0.045***	-0.049***	-0.054***	-0.040***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.004]
Tobin's Q	-0.003**	-0.007***	0.001	-0.005**	-0.001
	[0.029]	[0.000]	[0.507]	[0.023]	[0.567]
OCF	0.030	0.035	0.011	0.070*	-0.062
	[0.317]	[0.291]	[0.843]	[0.048]	[0.374]
Dividend	0.001	-0.0003	0.003	0.0004	0.003
	[0.727]	[0.931]	[0.355]	[0.849]	[0.352]
Neg_BE	0.010	0.012	0.0002	0.015	-0.048*
	[0.269]	[0.380]	[0.980]	[0.148]	[0.066]
Lag_Leverage	-0.140***	-0.116***	-0.166***	-0.121***	-0.158***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Lag_Cash	-0.006	0.001	-0.005	0.007	-0.017
	[0.460]	[0.893]	[0.743]	[0.569]	[0.114]
Lag_MC	0.012***	0.020***	0.007*	0.016***	0.015***
	[0.000]	[0.000]	[0.098]	[0.000]	[0.001]
Lag_STdebt	-0.038**	-0.066***	-0.023	-0.061***	-0.043
	[0.010]	[0.000]	[0.304]	[0.000]	[0.142]
Stock Return	0.007***	0.016***	0.003	0.007**	0.010*
	[0.009]	[0.001]	[0.284]	[0.037]	[0.096]
R&D	-0.284*	-0.413*	-0.113	-0.214	-0.361
	[0.068]	[0.073]	[0.610]	[0.320]	[0.139]
CAPEX	0.159**	0.157*	0.124	0.191**	0.103
	[0.016]	[0.079]	[0.268]	[0.020]	[0.430]
Firm Effect	Yes	Yes	Yes	Yes	Yes
Quarter Effect	Yes	Yes	Yes	Yes	Yes
Interaction Effect	Yes	Yes	Yes	Yes	Yes
R-Squared	0.185	0.201	0.180	0.193	0.186
N	14,459	6,652	6,683	6,916	6,419

Table 1.4 Continued

Note: This table presents estimates from regression examining firm-level quarterly net debt issuance for quarters with an end-date between July 1, 2005 and March 31, 2009. The estimation model is:

$$\text{Dissue}_{it} = \alpha + \beta_1 \text{Tie Index}_{it-1} * \text{Crisis}_t + \beta_2 \text{Crisis}_t + \beta_3 \text{Tie Index}_{it-1} + \beta_4 x_{it-1} + \varepsilon_{it},$$

where Dissue is total net debt issuance during the quarter, *Tie Index* is the fraction of companies in the network to which the firm is directly connected, and *Crisis* is an indicator variable equal to one for fiscal quarters with an end-date after July 1, 2007. x is a set of controls that includes Size, the percentage change in assets from the previous quarter (dSize), Tobin's Q, operating cash flow (OCF), dividend dummy (Dividend), an indicator variable equal to 1 if book equity is negative (Neg_BE), lagged leverage (Lag_Leverage), lagged cash (Lag_Cash), lagged log market capitalization (Lag_MC), the change in the stock price (Ret), lagged change in short-term debt (Lag_STdebt), R&D expenditure (R&D) and CAPEX. All variables are defined in greater detail in Appendix A. The regression is estimated for the full sample, and then for subsamples formed on the basis of financial constraint (Hadlock and Pierce (2010) SA Index or payout ratio) measured at the end of the latest fiscal year ending before July 1, 2005. All regressions control for firm fixed effects and quarter fixed effects. Interaction effects are also included, where all of the control variables are interacted with the Crisis dummy. The coefficients are suppressed for brevity. P-values for the point estimate tests are based on standard errors clustered at the firm level and are reported in brackets. ***, **, and * stand for statistical significance at the 1%, 5%, and 10% level, respectively.

Table 1.5 Corporate Investment during Financial Crisis

	Full-Sample	Hadlock and Pierce (2010) SA Index		Payout Ratio	
		Constrained	Unconstrained	Constrained	Unconstrained
	(1)	(2)	(3)	(4)	(5)
Tie Index * Crisis	0.003**	0.006**	0.002	0.007***	0.001
	[0.014]	[0.016]	[0.296]	[0.004]	[0.651]
Crisis	-0.003***	-0.005*	-0.002***	-0.001	-0.001**
	[0.008]	[0.064]	[0.003]	[0.648]	[0.046]
Tie Index	-0.002	0.006	-0.008*	-0.006	0.003
	[0.479]	[0.108]	[0.056]	[0.242]	[0.432]
Size	-0.001*	-0.001*	-0.001	-0.001	-0.003***
	[0.093]	[0.079]	[0.197]	[0.362]	[0.001]
Tobin's Q	0.002***	0.002***	0.002***	0.002***	0.002***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Cash	-0.005***	-0.007***	-0.002	-0.005**	-0.005***
	[0.000]	[0.001]	[0.291]	[0.016]	[0.003]
Cash Flow	0.017***	0.019**	0.024**	0.011	0.031***
	[0.009]	[0.049]	[0.012]	[0.203]	[0.005]
Size * Crisis	0.0001	0.0003	0.0001	-0.0003	0.0005**
	[0.489]	[0.479]	[0.475]	[0.340]	[0.040]
Tobin's Q * Crisis	-0.0001	-0.0001	0.0001	-0.0003	0.0002
	[0.663]	[0.716]	[0.839]	[0.365]	[0.494]
Cash *Crisis	0.004***	0.007***	0.001	0.005**	0.003**
	[0.001]	[0.001]	[0.527]	[0.041]	[0.023]
Cash Flow *Crisis	0.022	0.019*	0.020	0.030**	0.007
	[0.118]	[0.089]	[0.127]	[0.013]	[0.471]
Firm Effect	Yes	Yes	Yes	Yes	Yes
Quarter Effect	Yes	Yes	Yes	Yes	Yes
R-Squared	0.772	0.760	0.780	0.775	0.777
N	18,455	8,315	8,614	8,611	8,318

Note: This table presents estimates from regression examining firm-level quarterly investment for quarters with an end-date between July 1, 2005 and March 31, 2009. The estimation model is:

$$\text{CAPEX}_{it} = \alpha + \beta_1 \text{Tie Index}_{t-1} * \text{Crisis}_t + \beta_2 \text{Crisis}_t + \beta_3 \text{Tie Index}_{t-1} + \beta_4 x_{it-1} + \varepsilon_{it},$$

where CAPEX is capital expenditures over book value of total assets, *Tie Index* is the fraction of companies in the network to which the firm is directly connected, and *Crisis* is an indicator variable equal to one for fiscal quarters with an end-date after July 1, 2007. x includes Size, Tobin's Q, Cash, and Cash Flow. All variables are defined in greater detail in Appendix A. The regression is estimated for the full sample, and then for subsamples formed on the basis of financial constraint (Hadlock and Pierce (2010) SA Index or payout ratio) measured at the end of the latest fiscal year ending before July 1, 2005. All regressions control for firm fixed effects and quarter fixed effects, whose coefficients are suppressed for brevity. P-values for the point estimate tests are based on standard errors clustered at the firm level and are reported in brackets. ***, **, and * stand for statistical significance at the 1%, 5%, and 10% level, respectively.

Table 1.6 Firm Performance during Industry Distress

Panel A: Full Sample

	ΔROA		Stock Return		Sales Growth	
	(1)	(2)	(3)	(4)	(5)	(6)
Tie Index * Distress	0.075**	0.127**	0.228*	0.191	0.188***	0.185**
	[0.024]	[0.015]	[0.085]	[0.375]	[0.001]	[0.044]
Distress	-0.070***	0.214	-0.203***	-2.366	-0.204***	-0.18
	[0.000]	[0.135]	[0.000]	[0.153]	[0.000]	[0.540]
Tie Index	-0.006	-0.008	0.364**	0.373**	-0.161	-0.161
	[0.769]	[0.702]	[0.038]	[0.034]	[0.111]	[0.111]
Political Tie	-0.006	-0.006	-0.100	-0.089	-0.050	-0.051
	[0.274]	[0.233]	[0.428]	[0.617]	[0.128]	[0.236]
Size	-0.111***	-0.109***	-1.460***	-1.477***	-0.010	-0.015
	[0.000]	[0.000]	[0.000]	[0.000]	[0.907]	[0.869]
Size Squared	0.004**	0.004**	0.055***	0.056***	-0.020***	-0.020***
	[0.012]	[0.012]	[0.000]	[0.000]	[0.001]	[0.001]
Firm Age	0.015**	0.014*	0.181**	0.173**	-0.021	-0.016
	[0.047]	[0.060]	[0.012]	[0.014]	[0.470]	[0.570]
Diverse	0.006*	0.007**	0.039	0.027	-0.021	-0.022
	[0.071]	[0.048]	[0.256]	[0.419]	[0.197]	[0.179]
Leverage	0.129***	0.129***	0.848***	0.878***	-0.043	-0.049
	[0.000]	[0.000]	[0.000]	[0.000]	[0.371]	[0.322]
Cash	-0.043*	-0.039*	-0.774***	-0.783***	0.135**	0.144**
	[0.056]	[0.093]	[0.000]	[0.000]	[0.030]	[0.023]
Cash Flow	-0.644***	-0.633***	-1.956***	-1.977***	-0.574***	-0.578***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
CAPEX	-0.094**	-0.117***	-0.088	0.043	-0.427***	-0.453***
	[0.013]	[0.002]	[0.868]	[0.945]	[0.007]	[0.005]
R&D	1.002***	1.007***	0.708	0.694	-0.816***	-0.823***
	[0.000]	[0.000]	[0.289]	[0.298]	[0.007]	[0.007]
Year Effect	Yes	Yes	Yes	Yes	Yes	Yes
Firm Effect	Yes	Yes	Yes	Yes	Yes	Yes
Interaction Effect	No	Yes	No	Yes	No	Yes
R-Squared	0.387	0.399	0.37	0.373	0.498	0.52
N	12,657	12,657	12,450	12,450	12,664	12,664

Table 1.6 Continued

Panel B: Subsamples based on Industry Competitiveness

	ΔROA		Stock Return		Sales Growth	
	Competitive	Concentrated	Competitive	Concentrated	Competitive	Concentrated
	(1)	(2)	(3)	(4)	(5)	(6)
Tie Index * Distress	0.276***	0.013	0.252*	0.099	0.247**	0.098
	[0.007]	[0.849]	[0.053]	[0.193]	[0.021]	[0.335]
Distress	0.346	0.086	-0.737	-3.439	0.668	-0.021
	[0.162]	[0.776]	[0.573]	[0.277]	[0.492]	[0.967]
Tie Index	-0.050	0.053*	0.403	0.464*	-0.070	-0.185
	[0.256]	[0.078]	[0.143]	[0.097]	[0.687]	[0.190]
Political Tie	-0.005	-0.011	-0.083	-0.127	-0.089	-0.011
	[0.624]	[0.229]	[0.181]	[0.329]	[0.272]	[0.689]
Size	-0.044	-0.177***	-1.591***	-1.513***	0.098	-0.189
	[0.257]	[0.000]	[0.000]	[0.009]	[0.508]	[0.134]
Size Squared	0.0001	0.008***	0.059***	0.061*	-0.027***	-0.006
	[0.951]	[0.001]	[0.000]	[0.059]	[0.003]	[0.444]
Firm Age	-0.001	0.023**	0.176*	0.213	0.025	-0.040
	[0.911]	[0.025]	[0.066]	[0.106]	[0.651]	[0.329]
Diverse	0.012*	0.005	0.014	0.046	-0.003	-0.040*
	[0.055]	[0.333]	[0.812]	[0.338]	[0.897]	[0.087]
Leverage	0.143***	0.111***	0.491***	1.228***	-0.035	-0.103
	[0.000]	[0.000]	[0.002]	[0.007]	[0.667]	[0.135]
Cash	-0.079**	0.028	-1.143***	-0.166	0.142	0.199**
	[0.021]	[0.406]	[0.000]	[0.483]	[0.139]	[0.045]
Cash Flow	-0.663***	-0.640***	-1.354***	-3.599***	-0.648***	-0.619***
	[0.000]	[0.000]	[0.000]	[0.002]	[0.000]	[0.000]
CAPEX	-0.123**	-0.062	-0.608	1.196	-0.264	-0.523**
	[0.042]	[0.290]	[0.203]	[0.357]	[0.289]	[0.038]
R&D	1.001***	0.439**	0.347	1.159	-0.915**	-0.536
	[0.000]	[0.037]	[0.638]	[0.531]	[0.015]	[0.526]
Year Effect	Yes	Yes	Yes	Yes	Yes	Yes
Firm Effect	Yes	Yes	Yes	Yes	Yes	Yes
Interaction Effect	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.441	0.405	0.419	0.389	0.521	0.548
N	6,163	6,456	6,077	6,334	6,166	6,459

Note: This table reports the results of regressions examining performance of firms during 1998-2009. The estimation model is:

$$Firm\ Performance_{i,(t,t+1)} = \alpha + \beta_1\, Tie\ Index_{i,t-1} * Distress_{it} + \beta_2 Distress_{it} + \beta_3 Tie\ Index_{i,t-1} + \beta_4\, x_{i,t-1} + \varepsilon_{it},$$

where Firm Performance is changes in ROA, stock returns, or sales growth over a two-year period centered on the base year (*year t*), *Tie Index* is the fraction of companies in the network to which the firm is directly connected, *Distress* is an indicator variable for whether the firm year is in industry downturns. x is a set of controls that includes Political Tie, Size, Size Squared, Firm Age, Diverse, Leverage, Cash, Cash Flow, CAPEX and R&D. Definitions of all

Table 1.6 Continued

variables are Age, Diverse, Leverage, Cash, Cash Flow, CAPEX and R&D. Definitions of all variables are provided in Appendix A. Panel A reports estimates for the full sample. All regressions control for firm fixed effects and year fixed effects. In Columns 2, 4 and 6, interaction effects are also included, where all control variables are interacted with the *Distress* dummy. The coefficients are suppressed for brevity. Panel B reports estimates for the subsample based on the HHI Index (3-digit SIC code) of the firm's industry at year *t-1*. Firms are classified as in competitive industries if their industry's HHI index is below the sample median. All regressions in Panel B control for firm fixed effects, year fixed effects, and interaction effects, whose coefficients are suppressed for brevity. P-values for the point estimate tests are based on standard errors clustered at the firm level and are reported in brackets. ***, **, and * stand for statistical significance at the 1%, 5%, and 10% level, respectively.

Table 1.7 The Likelihood of Corporate Failure

	Logit Model		Hazard Model	
	(1)	(2)	(3)	(4)
Tie Index	-3.091***	-2.862**	-3.865***	-3.195***
	[0.002]	[0.011]	[0.000]	[0.008]
Log (Board Size)		-0.624**		-0.758***
		[0.025]		[0.009]
Board Independence		0.469		0.342
		[0.617]		[0.910]
Size	0.410***	0.453***	0.229**	0.218**
	[0.001]	[0.003]	[0.050]	[0.091]
Tobin's Q	-0.047	-0.015	0.020	0.035
	[0.858]	[0.961]	[0.911]	[0.858]
Leverage	1.586**	2.367***	1.830***	3.108***
	[0.020]	[0.002]	[0.005]	[0.000]
ROA	-4.367***	-3.518***	-3.508***	-2.941***
	[0.000]	[0.001]	[0.000]	[0.004]
Liquidity	-0.462**	-0.383*	-0.383**	-0.308
	[0.026]	[0.064]	[0.016]	[0.059]
Tangibility	-0.012	-0.035	0.065	0.160
	[0.960]	[0.968]	[0.927]	[0.842]
R&D	-12.044***	-9.563**	-9.328**	-7.248*
	[0.001]	[0.027]	[0.014]	[0.079]
Stock Return	-1.365***	-1.245***	-1.302***	-1.199***
	[0.001]	[0.003]	[0.000]	[0.001]
Return Std.	2.823***	2.755***	2.440***	2.022***
	[0.000]	[0.000]	[0.000]	[0.001]
Dividend	-0.603**	-0.456	-1.162***	-1.027***
	[0.019]	[0.108]	[0.000]	[0.000]
CHS-Score	0.252***	0.279***	0.222***	0.227***
	[0.000]	[0.000]	[0.000]	[0.000]
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
N	14,283	11,021	14,281	11,019

Note: This table examines the relation between social connectedness and the likelihood of corporate failures, using firm-year observations in 1998-2009. The estimation model is:

$$\text{Corporate Failure}_{it} = f(\text{ Tie Index}_{t-1},\ x_{it-1})$$

where Corporate Failure is an indicator variable, which equals one if a firm files for bankruptcy, has bond-related defaults, or is delisted due to financial distress, and *Tie Index* is the fraction of companies in the network to which the firm is directly connected in a given year. The first two columns report logistic regression results. Column 3 and 4 present estimates from the hazard model, where Log (Firm Age) is used as the baseline hazard function. Definitions of other control variables are provided in Appendix A. The regression is estimated for the full sample,

Table 1.7 Continued

and then for firm-years without director departures. All regressions control for industry (Fama-French 48 industry) fixed effects and year fixed effects, whose coefficients are suppressed for brevity. P-values for the point estimate tests are based on standard errors clustered at the firm level and are reported in brackets. ***, **, and * stand for statistical significance at the 1%, 5%, and 10% level, respectively.

Table 1.8 The Likelihood of Bankruptcy Conditional on Distress

Panel A: Pearson Correlation between Connection Measures

	Tie Index	Bank Tie	Bank Tie2	Relationship Bank
Tie Index	1			
Bank Tie	0.479	1		
Bank Tie2	0.382	0.486	1	
Relationship Bank	0.156	0.218	0.111	1

Panel B: Future Bankruptcy Probability Condition on Distress

	(1)	(2)	(3)
Tie Index	-2.068	0.076	0.474
	[0.231]	[0.971]	[0.902]
Bank Tie		-1.282**	
		[0.042]	
Bank Tie2			-1.862*
			[0.068]
Relationship Bank		0.713	0.772
		[0.151]	[0.145]
Financial Variables	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
N	456	385	385

Note: This table examines the relation between social connectedness and the likelihood of bankruptcy for a sample of distressed firms. Panel A provides correlation coefficients between connection measures. Panel B report the results of logistic regression, where the dependent variable is an indicator variable, which equals one if a firm files for bankruptcy and zero otherwise. *Tie Index* is the fraction of S&P 1500 companies in the network to which the firm is directly connected in a given year. *Bank Tie* is a dummy indicating the existence of personal connections between firms and their bank lenders and *Bank Tie2* is a dummy indicating the existence of personal connections between firms and their bank lenders that formed at least five years ago. Definitions of other control variables are provided in Appendix A. All regressions control for industry fixed effects, and year fixed effects, whose coefficients are suppressed for brevity. P-values for the point estimate tests are based on standard errors clustered at the firm level and are reported in brackets. ***, **, and * stand for statistical significance at the 1%, 5%, and 10% level, respectively.

Table 1.9 DIP Financing Determinants

	(1)	(2)	(3)	(4)
	Bankruptcy Sample		Non-Prepack Sample	
Tie Index	-0.357	-1.101	-0.090	-0.774
	[0.644]	[0.219]	[0.919]	[0.461]
Bank Tie		0.433**		0.362*
		[0.031]		[0.091]
Relationship Bank		0.295*		0.283
		[0.091]		[0.202]
Size	0.354***	0.282***	0.348***	0.256**
	[0.000]	[0.003]	[0.000]	[0.012]
Leverage	0.241	-0.083	0.535*	0.210
	[0.347]	[0.779]	[0.076]	[0.558]
Retail	0.587**	0.618**	0.793**	0.772**
	[0.025]	[0.029]	[0.009]	[0.021]
Current Assets	-0.677	-0.565	-0.380	-0.403
	[0.137]	[0.302]	[0.476]	[0.502]
Prepack	-0.417**	-0.544***	-	-
	[0.023]	[0.007]	-	-
Year FE	Yes	Yes	Yes	Yes
N	301	251	211	174

Note: This table reports the results of probit regressions relating social connectedness to the probability of DIP financing using a sample of public firms that file for Chapter 11 during 1998-2008. The dependent variable is an indicator variable, which equals one if the firm obtains DIP financing and zero otherwise. *Tie Index* is the fraction of S&P 1500 companies to which the firm is directly connected in a given year. *Bank Tie* is a dummy indicating the existence of personal connections between firms and their bank lenders. The regression is first estimated for all bankruptcy cases, and then for non-prepacked bankruptcies only. Definitions of other control variables are provided in Appendix A. All regressions control for year fixed effects, whose coefficients are suppressed for brevity. P-values for the point estimate tests are based on standard errors clustered at the firm level and are reported in brackets. ***, **, and * stand for statistical significance at the 1%, 5%, and 10% level, respectively.

Table 1.10 Bankruptcy Outcomes

	(1)	(2)	(3)	(4)
	Bankruptcy Sample		Non-Prepacked Sample	
DIP Lender Tie	0.708**	0.705**	0.766**	0.750**
	[0.019]	[0.020]	[0.020]	[0.025]
Unsecured Creditor Tie		0.018		0.066
		[0.931]		[0.779]
DIP Relationship Bank	-0.259	-0.259	0.005	0.007
	[0.358]	[0.357]	[0.988]	[0.981]
DIP	0.094	0.093	-0.028	-0.029
	[0.714]	[0.717]	[0.921]	[0.917]
Size	0.314***	0.312***	0.326***	0.319***
	[0.000]	[0.001]	[0.001]	[0.002]
Leverage	1.455***	1.453***	1.399***	1.398***
	[0.000]	[0.000]	[0.000]	[0.000]
Retail	0.840**	0.841**	0.923***	0.929***
	[0.011]	[0.011]	[0.007]	[0.007]
Current Assets	-0.040	-0.043	-0.076	-0.087
	[0.942]	[0.938]	[0.904]	[0.890]
Prepack	1.094***	1.094***	-	-
	[0.000]	[0.000]	-	-
Year FE	Yes	Yes	Yes	Yes
N	251	251	174	174

Note: This table reports the results of probit regressions relating social connectedness to the bankruptcy outcome using a sample of public firms that file for Chapter 11 during 1998-2008. The dependent variable is an indicator variable, which equals one if the firm emerges from Chapter 11 and zero otherwise. *DIP Lender Tie* is an indicator for the presence of social ties between the firm and its DIP lenders, and *Unsecured Creditor Tie* is an indicator for the presence of social ties between the firm and its major unsecured creditors. The regression is first estimated for all bankruptcy cases, and then for non-prepacked bankruptcies only. Definitions of other control variables are provided in Appendix A. All regressions control for year fixed effects, whose coefficients are suppressed for brevity. P-values for the point estimate tests are based on standard errors clustered at the firm level and are reported in brackets. ***, **, and * stand for statistical significance at the 1%, 5%, and 10% level, respectively.

CHAPTER 2
THE ROLE OF INVESTMENT BANKER DIRECTORS IN M&A: CAN EXPERTS HELP?

2.1 Introduction

Following a wave of accounting scandals in early 2000s, regulators adopted several new rules and stressed the need for more financial experts on the board.[1] The underlying assumption is that financial experts can provide better oversight of financial reporting and, thereby, prevent similar failures of corporate governance. A large body of research finds evidence in support of this argument. For instance, the presence of financial expertise on the board is negatively related to the likelihood of artificial earnings management, fraud and restatement (McMullen and Raghunandan, 1996; Xie, Davidson, and DaDalt, 2003; Agrawal and Chadha, 2005; Abbott, Parker, and Peters, 2004), and the market reacts favorably when firms name new audit committee members with accounting expertise (Defond, Hann, and Hu, 2005).[2]

The influence of the board members' financial expertise on corporate policies, however, extends beyond monitoring. Both the Business Roundtable and the American Law Institute list advising as another central function of the board of directors. Some

---

[1] For example, the Sarbanes-Oxley Act of 2002 requires that the audit committee of public firms should be entirely composed of independent directors and should have at least one financially knowledgeable member. Since 2003, all major stock exchanges (NYSE, NASDAQ, and AMEX) have required that each member of the audit committee must be financially literate.

[2] Another set of papers find that financial expertise leads to higher financial statement quality, more conservative accounting and a propensity to provide or update managerial forecasts containing adverse rather than favorable news (Felo, Krishnamurthy, and Solieri 2003, Krishnan and Visvanathan 2008, and Karamanou and Vaeas 2005). Moreover, greater expertise is associated with more timely dismissal of Arthur Andersen, less-frequent suspicious auditor switching, and lower likelihood of material weaknesses in internal controls (Archambeault and DeZoort 2001, Chen and Zhou 2007, and Zhang, Zhou, and Zhou. 2007).

recent studies have found evidence that boards provide valuable advice, but the evidence on the advisory role of the board of directors with financial expertise is mixed.[3] On the positive side, Dionne and Triki (2005) find that financially educated directors encourage corporate hedging, and Brochet and Welch (2011) find that top executives with working experience in investment banking or the auditing sector are more likely to report goodwill impairment when there is a director with a similar functional background on the board. On the negative side, Güner, Malmendier, and Tate (2008) show that bank executives on boards can affect corporate decisions, but sometimes to benefit themselves rather than the firm, and Minton, Taillard, and Williamson (2010) find that financial experts on banks' board of directors failed to alleviate the effect of the recent financial crisis.

We extend this literature by examining the advisory role of outside directors with investment banking background. More specifically, we investigate the effect of directors who once held or currently hold senior positions at investment banks (henceforth, IB directors) on firms' acquisition decisions and performance. We focus on acquisitions for two main reasons. First, they are one of the most value relevant corporate events that require the involvement of the board of directors. From a legal perspective, board decisions in takeovers are subject to enhanced scrutiny. For example, in situations where the board adopts defensive tactics, courts often apply the more stringent "Unocal Standard", rather than the traditional Business Judgment Rule.[4] Hence, board needs to deliberate thoroughly before making any critical decision related to acquisitions. Second,

---

[3] See, Schmidt (2009), Adams (2009), Goldman, Rocholl, and So (2009), and Duchin, Matsusaka, and Ozbas (2010).

[4] Under the Business Judgment Rule courts will not second-guess business decisions of the board, so long as the members of the board acted in compliance with established standards of conduct.

the uncertainty of the target value to the acquirer, the complexity of the deal, and the negotiation make directors' investment banking background particularly relevant.[5]

We conjecture that IB directors use their expertise and network to affect a firm's acquisition decisions in two ways. First, IB directors might improve the screening of the target candidates. On the one hand, they might assist in identifying good targets that otherwise would not have been pursued, in which case the probability of making acquisitions would increase with the presence of IB directors. On the other hand, they might assist the firm in dodging value-destroying acquisitions, in which case the probability of making acquisitions would decrease with the presence of IB directors. These alternatives are not mutually exclusive, and both effects might be at work simultaneously, in which case the acquisition probability could be unrelated to the presence of IB directors. Second, we conjecture that IB directors assist in negotiating acquisition terms, especially the acquisition premium, thereby increasing the share of merger gains towards the acquiring firm.

We start our analysis by identifying IB directors for a large set of public firms. IB directors are defined as outside directors who have past or concurrent working experience as either top executives or senior managers in one of the most active M&A advising firms. Using a sample of 41,393 firm-year observations from 1998-2008, we document a positive relation between the presence of IB directors and the firms' probability of making acquisitions. *Ceteris paribus,* firms with IBs on the board are 13.6% more likely to make acquisitions in the following year, suggesting that IB directors help firms to be

[5] Board members might serve as generalists and lack the financial knowledge needed to understand some firm policies. For example, Buckley and Van Der Nat (2003) reported disturbing levels of ignorance among independent directors in the matter of derivatives policy.

more active in the takeover market. Furthermore, we show that our findings are not driven by the reverse causality where firms appoint directors with investment banking experience in anticipation of acquisition activities. Our results remain robust when we remove observations where the IB directors were appointed in the three years leading up to the announcement of the acquisition.

Next, we examine whether acquirers with IB directors make better acquisitions. Using a sample of 2,465 acquisitions announced during 1999-2008, we find that acquiring firms with IB directors experience significantly higher abnormal stock returns around the acquisition announcements. Acquirers with IB directors are associated with 0.8% higher abnormal announcement returns. This translates into $36 million in enhanced shareholder value for the mean-sized acquirer. The effect is more pronounced when (i) the relative deal size is larger and (ii) at least one outside director on the acquirer's board holds a concurrent senior position at an investment bank. These results suggest that IB directors are especially valuable when the deal is economically more significant to the acquirer, and when the director has concurrent affiliation with an investment bank.

The more favorable market reaction towards acquisitions by firms with IB directors is consistent with our conjecture that directors' investment banking experience helps firms make better acquisition decisions. We next investigate the source of the value gains by examining target announcement returns, target premium, the advisory fees paid by acquirers, acquirers' long-run operating performance, and the acquirers' buy-and-hold abnormal returns. We find the presence of IB directors is associated with a significantly lower takeover premium when the relative size of the target is large, lending support to

the view that IB directors assist in determining and/or negotiating the price for their shareholders in important deals. We also find that acquirers with IB directors pay lower advisory fees than do other acquirers, suggesting that IB directors assist in negotiating a lower advisory fee and/or help reduce the firm's reliance on outside advisory services in making acquisitions. Finally, we find the presence of IB directors is positively related to the operating and stock performance of the firm in the long-run. Taken together, our results suggest that IB directors help firms identify better targets and negotiate the deals.

The work most related to our study is Güner, Malmendier, and Tate (2008). Using a novel data set on the board composition of 282 large firms during 1988-2001, they study how directors with financial expertise affect corporate policies. They focus their analysis on commercial banker directors and document that having commercial bankers on the board leads to increased external funding and decreased investment-cash flow sensitivity. They also examine the impact of IB directors on firms' acquisition performance, but find no evidence that having IB directors leads to better acquisitions. As pointed out by Güner, Malmendier, and Tate (2008), their sample consists of large and mature firms, and the results might not be generalized to a larger population. Our analysis, based on a much larger and more recent sample, in addition to the different measure of the directors' investment banking financial expertise, suggests that directors with investment banking background help firms make better acquisitions.

Our study contributes to the literature by providing new insights on the influence of financial experts on corporate policies. We find that, in addition to offering more vigilant monitoring as documented by prior studies, directors with financial expertise benefit shareholders through their advisory roles. Our analysis also complements a large

literature that relates corporate governance to a firm's decision to acquire, with particular attention to the impact of board independence and board size on acquisition performance (Byrd and Hickman 1992; Cotter, Shivdasani, and Zenner, 1997; Harford 2003; Moeller, 2005; Masulis, Wang, and Xie, 2007). More importantly, our study adds to a growing body of research that analyzes the effects of directors with specific attributes. Masulis and Mobbs (2010) find that firms with inside directors holding outside directorships make better acquisition decisions. Fahlenbrach, Low, and Stulz (2010) document that CEO directors have no impact on firms' acquisition performance. Our analysis reveals that directors' current and past professional experience can be valuable to shareholders in the context of acquisitions.

The remainder of the paper is structured as follows. Section 2.2 discusses the data and provides descriptive statistics. Section 2.3 presents empirical results for the relation between the presence of IB directors and firms' acquisition propensity. Section 2.4 presents empirical evidence on the impact of IB directors on firms' acquisition performance. Section 2.5 explores the sources of acquisition value gains. Section 2.6 concludes.

2.2 Data and Variables

The data in this study are collected from various sources. We start with all U.S. publicly traded firms in 1998-2008. To obtain directors' background information, we merge the sample with the BoardEx database, which provides extensive biographical information, such as employment history and educational background, of corporate directors and senior executives in major public firms. To ensure the quality of the data

integration procedure, we manually check all matches and make necessary adjustments.[6] For example, the same firm might be assigned different identifiers in BoardEx, because it collects individuals' biographical information from various public sources which sometimes use different spellings or abbreviations. We go through the BoardEx database to make sure that each firm is associated with a unique identifier. Our matching procedure yields a sample of 8,007 unique public firms, of which 1,128 financial and utility firms are eliminated. This initial sample corresponds to 41,393 firm-year observations.

To identify directors with investment banking experience, we first aggregate the deal values of U.S. mergers and acquisitions for investment bank advisers from 1980 to 2008. We then merge these M&A advising firms with the BoardEx data and compile a list of the 100 most active investment banks. A director serving on the board of a public firm in our sample is identified as an IB director if she, at some point in her career, held a senior position at any of these 100 investment banks. A senior position is defined as a top executive position (e.g., CEO, CFO, Chairman or President) or a senior manager position (e.g., managing director, Regional CEO, Regional CFO, or executive president). Junior job titles—such as *division VP, analyst, associate* or *consultant*—are not included. Table 2.1 provides a list of the ten most active M&A advisors by the aggregate deal value and by the number of connected directors at public firms with whom they once shared an employment relation. As expected, there is a large overlap between the two.

---

[6] There are several papers using BoardEx to examine the role of social networks. Our procedure is very similar to those in Cohen, Frazzini, and Malloy (2008), Fracassi and Tate (2010), Ishii and Xuan (2010) and Engelberg, Gao, and Parsons (2010).

Table 2.2 presents summary statistics for the 41,393 firm-year observations. Panel A reports the presence of IB directors by year. The proportion of firms appointing IB directors to the board increases monotonically over time. For example, while 17.3% of the firms have at least on IB director on the board in 1998, the ratio increases to 29.7% in 2008. On average, 24% of the firm-year observations have at least one IB director on their board. Panel B describes the presence of IB directors by industry. Our sample covers ten Fama-French industries, as financial and utility firms are excluded. The Consumer Nondurables industry has the highest ratio of IBs on their board (33.0%), followed by the Telephone and Television industry (31.5%).

To examine the influence of IB directors on a firm's acquisition decisions, we collect deal information from SDC's M&A database. Following the previous literature, we exclude all transactions labeled as spinoffs, recapitalizations, self-tender offers, exchange offers, repurchases, minority stake purchases, acquisitions of remaining interest, or privatizations. We further require that the deal be completed with a deal value greater than $1 million and that the acquirer possess more than 95% of the target's stock after the transaction. This procedure gives us a total of 2,057 firm-years with at least one acquisition. We obtain financial information from COMPUSTAT and stock returns from CRSP. For a subsample, we supplement our data with CEO information from ExecuComp and firms' governance characteristics from RiskMetrics.

2.3 IB Directors and the Probability of Making Acquisitions

We first investigate whether IB directors affect a firm's likelihood of making an acquisition. Panel A of Table 2.3 reports the number and percent of firms that make at least one acquisition in a year. It also reports these values for firms with and without an

IB Director. For 9 out of the 10 years, the percentage of firms making acquisitions is significantly higher in the subsample of firms with IB directors. Therefore, the univariate results suggest a positive relation between the presence of IB directors and the firms' likelihood of making an acquisition.

We next conduct the analysis in a multivariate setting. In particular, we estimate a probit regression in which the dependent variable equals one if a firm announces at least one acquisition in the year and zero otherwise. The primary variable of interest is an indicator variable (*IB Director*) that equals one if the firm has an IB director in the previous year and zero otherwise. Similar to the prior literature (Asquith, Bruner, and Mullins 1983; Harford 1999), we control for a number of other determinants of a firm's acquisition likelihood, including firm size, market-to-book ratio, leverage, previous acquisition experience, cash, sales growth, noncash working capital, price-to-earnings ratio, and average abnormal return. Panel B of Table 2.3 provides the summary statistics for these control variables. We also control for calendar year and industry (Fama-French 48 industry) fixed effects in the regression.

Model 1 in Table 2.4 presents the results of the probit regression. Consistent with Asquith, Bruner, and Mullins (1983) and Harford (1999), we find that firms with higher abnormal returns, higher sales growth, higher market-to-book ratio, or larger asset base are more likely to make acquisitions. Turning to our variable of interest, we find that the coefficient on the *IB Director* dummy is 0.057 and it is statistically significant. The effect

on the acquisition likelihood is also economically meaningful. *Ceteris paribus*, firms with IBs on the board are 13.6% more likely to make an acquisition than other firms.[7]

A potential concern for our analysis is the endogeneity of board composition, as pointed out by Hermalin and Weisbach (1998, 2003). In particular, it is possible that firms appoint directors with investment banking experience in anticipation of acquisition activities. To address this potential concern, we employ a two-stage regression model. In the first stage, we estimate the probability of having an IB on the board. Since geographic proximity increases the chance that there are personal and professional ties between executives of the firm and investment bankers and decreases the personal cost (primarily travel time) for investment bankers to serve on the board, we expect firms located in states close to financial centers to have more IB directors.[8] We also include variables that could affect a firm's decision to appoint IBs to the board. Large boards are usually composed of directors with different backgrounds and thus are more likely to have directors with investment banking experience. Accordingly, we include board size in the regression. In addition, the Sarbanes-Oxley Act of 2002 requires firms to have financial experts on the board, so we expect the presence of IB directors to be more common after 2002. Moreover, firms might hire IB directors to provide advice on other capital market activities, such as equity offerings and debt issuances, so we control for these corporate

---

[7] Prior research has shown that CEO and board characteristics have significant effects on firms' acquisition policy (Lewellen, Loderer, and Rosenfeld, 1985; Cotter, Shivdasani, and Zenner, 1997; Bertrand and Schoar, 2003; Yim, 2010). In untabulated regressions, we include CEO and board variables, and find similar results. The effect of investment banker directors remains the same when we add Gompers, Ishii, and Metrick (2003) G-index as an additional control. We also use total deal value as our alternative dependent variable and find that the positive relation between investment banker presence and acquisitions likelihood still holds.

[8] Fahlenbrach, Low, and Stulz (2010) and Masulis, Wang, and Xie (2010) use a similar instrumental strategy in their study.

events. In the second stage, we re-estimate the probit regression by replacing the *IB Director* dummy with the predicted probability of having at least one IB director on firms' boards.

Model 2 in Table 2.4 presents the two-stage regression results. In the first stage, we find most of our explanatory variables are significant in predicting the presence of IB directors. The coefficient on the predicted *IB Director* in the second stage is positive and significant at the one percent level, confirming the positive association between the presence of IB directors and a firm's acquisition propensity.

In untabulated analyses, we conduct additional tests to further confirm that our results are not driven by the reverse causality. [9] First, if an IB director is appointed to the board to facilitate anticipated acquisitions, the deal is likely to be announced shortly after the director's appointment. Accordingly, we exclude deals where IB directors have three or fewer years of tenure on the board. Our results are robust to this exclusion. Second, since directors who gain investment banking experience after joining the board should be free of such selection bias, we re-estimate the probability of acquisition using this subsample of IB directors. We still find a positive association between this type of IB director and a firm's likelihood of acquisition. Overall, the evidence indicates that the positive impact of IB directors on the probability of acquisitions is not driven by the reverse causality.

[9] Several papers use similar methods to alleviate reverse causality concerns (Güner, Malmendier, and Tate 2008; Stuart and Yim 2010).

2.4 IB Directors and the Acquirer Announcement Returns

If directors with investment banking experience provide valuable advice to firms in making acquisition decisions, we expect such firm to make better acquisitions and receive more favorable market reactions around the acquisition announcements. In this section, we examine whether acquiring firms experience higher abnormal announcement returns when they have at least one IB director on their board.

2.4.1 Acquisition Sample

Our sample of M&A deals consists of 2,465 acquisitions of U.S targets by 1,390 unique U.S public acquirers during 1999-2008. Among these deals, 808 deals (33%) have at least one IB director on the acquirer's board. Panel A of Table 2.5 shows the distribution of acquisitions by announcement year. The deals are roughly evenly distributed over the ten-year period**.** We further divide the sample of acquisition into two subgroups based on whether the acquiring firm has at least one IB director in the year prior to the acquisition announcement. The percentage of deals by acquirers with IB directors increases from 26% in 1999 to 39% in 2008. The aggregate deal value by such acquirers is $1.14 trillion, representing 51% of the aggregate transaction value over our sample period.

Panel B of Table 2.5 reports the distribution of acquisitions by acquirer industry. The industry distribution is similar across the two subsamples. The most active industry is Business Equipment (1,031 acquisitions). Acquisitions by acquirers with an IB director are more prevalent in some industries than others. For example, 49% of deals in the Telephone and Television industry are announced by acquirers with IB directors, but only 28% of the deals in the Business Equipment industry.

Panel C and Panel D contain descriptive statistics for control variables used in this section. On average, acquirers with IB directors are larger and have lower market-to-book ratios, higher leverage and higher cash flows. The average transaction value is $908 million, or 27% of the acquirer's total assets. About 42% of the target firms are publicly traded. Acquirers with IB directors are more likely to target public firms and use cash as payment.

Panel E describes our measures of the presence of IB directors. Besides the *IB Director* dummy, we construct two other variables: *IB Director_Size*, defined as the total number of IB directors, and *IB Director (%)*, defined as the proportion of IB directors on the acquirer's board. As we showed earlier, 33% of acquiring firms have investment bankers on the board. The average number of investment bankers is 0.41, representing 5% of board members. For the subsample of deals by acquirers with an IB director, a typical acquiring firm has one IB director, representing 15% of the board size. Among these acquirers, more than 20% have multiple IB directors.

2.4.2 Acquirer Announcement Returns

To calculate the abnormal returns around the acquisition announcements, we use the CRSP value-weighted return as the market return and estimate the market model for each deal over a 200-day period ending 11 days before the announcement dates. We then use the estimated parameters to calculate the cumulative abnormal returns (CAR) over the three-day event window centered on the announcement date.

Table 2.6 reports the mean and median CAR for acquiring firms over the three-day event window. On average, the acquirers' stock reaction is positive but not significantly different from zero. We then split the sample into two groups based on the

presence of IB directors on the acquiring firms' board. The mean CAR for acquirers without IB directors is not significantly different from zero. In contrast, the mean CAR for acquirers with IB directors is 0.7% and it is statistically significant from zero at the 5% level. This suggests that, unconditionally, the presence of IB directors is associated with an increase in acquirers' shareholders wealth upon the acquisition announcement. The table also shows that the higher mean excess announcement returns for acquirers with IB director persist across size quartiles.

Next, we estimate regressions of acquisition returns to control for the determinants of acquirer announcement returns documented in previous studies (Asquith, Bruner, and Mullins, 1983; Travlos, 1987; Byrd and Hickman, 1992; Yermack, 1996; Chang, 1998; Moeller, Schlingemann, and Stulz, 2005). These control variables include firm and deal characteristics, such as acquirer board size, board independence, firm size, the market-to-book ratio, leverage, cash flow, whether the acquirer owns more than 5% of the target's stock prior to the announcement date, method of payment, and identifiers for deal competition, conglomerate deals, tender offers, and target public status. We also control for year and industry fixed effects in all of our regressions.

Table 2.7 presents the OLS regression results. The dependent variable is the three-day CAR for acquirers. The primary explanatory variables of interest are the *IB Director* dummy or *IB Director(%)*. The results in Columns 1 and 2 suggest that both *IB Director* and *IB Director(%)* have positive and significant effects on acquirer announcement returns. The presence of an investment banker on the board increases the acquirer's three-day CAR by 80 basis points in comparison with the sample average of 30 basis points. Increasing *IB Director(%)* by one standard deviation raises the three-day CAR by 64

basis points. For other control variables, our estimated coefficients are similar to those reported in earlier studies. We find a strong negative correlation between acquirer size and acquirer abnormal returns, consistent with Moeller, Schlingemann, and Stulz (2004). We also find that deals involving cash financing or tender offers have higher acquirer abnormal returns, whereas deals involving public targets or competing offers are associated with lower returns.

Li and Prabhala (2007) argue that a firm's decision to attempt an acquisition is not random and that deal anticipation might affect market reactions to acquisition announcements. Cai, Song, and Walkling (2010) find evidence consistent with such an anticipation effect. They find that when deals are less anticipated, returns to bidders are less negative (or more positive). Because our results suggest that firms with IB directors have a higher propensity to make acquisitions, deals by such firms might be less surprising to the market and thus are associated with a more favorable market reaction as suggested by the anticipation hypothesis. To control for a potential anticipation effect, we employ a two-stage Heckman Selection model. The first stage employs a probit regression of the acquisition likelihood as shown in Table 2.4 Model 1. In the second stage, we add the Inverse Mills ratio as an additional independent variable in our estimation of acquirer announcement returns. Columns 3 and 4 of Table 2.7 present the regression results. The coefficients on our key explanatory variables, *IB Director* and *IB Director(%)* remain positive and significantly different from zero.

Güner, Malmendier, and Tate (2008) examine the effect of IB directors on acquisition performance by studying 526 acquisitions made by large and mature firms during 1988–2001. They show that having investment banker executives on the board has

no significant impact on acquirer announcement returns.[10] In Columns 5 and 6, we repeat our regressions in Columns 1 and 2 using firms within the largest size quartile. The coefficient on the *IB Director* dummy is not significantly different from zero, similar to what Güner, Malmendier, and Tate (2008) report. However, the coefficient on *IB Director(%)* is still positive and significant, suggesting that *IB Director(%)* better captures the effect of IB directors on acquirer returns. In a subsample of acquisitions by acquirers with IB directors (i.e., *IB Director* = 1), we also find significant positive relation between *IB Director(%)* and acquirer returns, indicating that the proportion of IB directors matters. Therefore, in our following analyses, we only report results for *IB Director(%)*. Our results, however, are qualitatively similar if we use the *IB Director* dummy instead.

In an untabulated analysis, we add CEO ownership, CEO age, CEO gender, and GIM-index/BCF-index in our baseline regression for a subsample of 850 deals, for which we have information available from ExecuComp and RiskMetrics. The estimated coefficients of *IB Director* and *IB Director(%)* are persistently positive, though the significance level decreases from 1% to 5% level, presumably due to a significant reduction in sample size. We also verify that our findings are not driven by outliers, as our results remain robust when we winsorize the dependent variables at the 1st and 99th percentile.

[10] For deals involving private targets, Güner, Malmendier, and Tate (2008) find a negative relation between the presence of investment banker director and acquirer announcement returns.

2.4.3 Identification Concern

The positive relation between the presence of IB directors and acquirer abnormal announcement returns might be subject to selection bias. For instance, firms that foresee good acquisition opportunities might decide to hire IB director to facilitate the acquisition process. Such an endogeneity concern is mitigated by the observation that the mean tenure of IB directors in our acquisition sample is 5.9 years when the deal is announced. It is unlikely that these directors are appointed to the board to facilitate a planned acquisition. Nevertheless, we examine more carefully whether selection bias drives our results.

First, we remove deals where the acquiring firms' IB directors are appointed in the three years leading up to the deal (i.e. IB directors with short tenure) or deals where the IB directors gained investment banking experience before they joined the board. The results (not tabulated) are largely unchanged. Second, instead of excluding the aforementioned acquisitions, we construct dummy variables identifying the IB directors associated with such deals. We do not find that such IB directors have a significantly different impact on the acquirer announcement returns than other IB directors. Finally, we employ a two-stage regression model. In the first stage, we use the probit regression from Table 2.4 to predict the presence of investment banker directors. We then use *IB Director (predicted)* in the second stage acquirer CAR regression. The coefficient on *IB Director (predicted)* is still significantly positive. Overall, our findings suggest that the positive relation between the presence of IB director on the acquirer board and the acquirer acquisition announcement returns is not driven by the selection bias discussed above.

2.4.4 Supplemental Results

To the extent that the financial expertise of IB directors is valuable to firms in making acquisition decisions, their influence is likely to be more pronounced in acquisitions where the target's size constitutes a significant proportion of the combined entity. To test this conjecture, we construct an indicator variable for deals with a relative target size above the sample median and interact this indicator variable with our IB director measure, *IB director(%)*. We then repeat our baseline regression of acquirer CARs with this additional interaction term and report the results in Table 2.8.[11] The positive and significant coefficient on the interaction term suggests that IB directors are especially helpful when the deal is economically significant. Second, we conjecture that directors with current experience and/or a current network have a greater influence on the deal process. Accordingly, we account for the director's employment status at the time of the announcement of the deal. If the director is currently employed by an investment bank when the deal is announced, then we define him/her as an investment banker director with *Current experience*. The results, reported in Column 2, show current investment bankers have a stronger positive effect.

In untabulated analyses based on a subsample of 1,082 deals for which we have acquirer CEO information, we find that acquirers with young and short-tenured CEOs benefit more from the presence of IB directors, suggesting that the impact of the IB directors increases with the importance of their advisory roles. We also predict that directors with more recent investment banking experience should have a greater impact in

[11] We only report the coefficients on key independent variables for simplicity, as the coefficients on control variables are similar to those reported in our baseline regression in column 2 of Table 7.

this subsample of firms. We consider an IB's experience to be recent if it was gained in the 10 years prior to the announcement of the deal. We find that recently gained experience does indeed matter more.

Furthermore, we partition IB directors based on their employment history at different tiers of investment banks. A director is classified as having top investment bank experience if she, at some time in her career, worked for one of the top 10 most active investment banks serving as M&A advisors listed in Table 2.1. The two groups of directors have a similar impact on acquirer returns, suggesting our results are not driven by IB directors with top investment banks experience. In addition, we identify all directors that have junior job experience in investment banks and examine whether they exert any influence. We find that junior directors have no significant impact on acquirer announcement returns. Finally, we investigate whether conflicts of interest hamper a director's advisory role. An IB director is denoted as having conflicts of interest if he/she is currently employed by acquirer or target financial advisors. We do not find any evidence that affiliated directors destroy value for the shareholders of the acquiring firms to benefit themselves.

Overall, we find that the acquiring firms with IB directors are associated with higher abnormal announcement returns. This favorable market reaction is consistent with investment bankers improving either the screening process or the implementation of the deal. It is also consistent with an alternative argument that the observed positive relation is purely driven by a certificate effect, whereby the market reacts more favorably to acquirers with investment banker directors, even though these directors have no significant impact on the process. We next investigate the potential sources of the value

gains associated with the acquisitions by examining target announcement returns, target premium, advisory fee paid by acquirers, long-run operating performance, and buy-and-hold abnormal return.

2.5 Sources of the Value Gain

2.5.1 Target Announcement Returns and Takeover Premium

Table 2.9 presents our analysis of the effect of IB directors on target announcement returns and takeover premiums for deals involving public targets. In Columns 1 – 3, the dependent variable is the three-day target CAR. In Columns 4 – 6, the dependent variable is the acquisition premium defined as the difference between the price paid per share and the target share price four weeks prior to the deal announcement date. All regressions control for the acquiring firm characteristics and deal characteristics as specified in the acquirer CAR regressions as well as target firm characteristics such as target market to book ratio, leverage, and cash flow.

In Column 1, we find that the presence of an IB director does not seem to influence the target's stock reaction to the acquisition announcement on average. *IB Director(%)* is negatively related to the target abnormal returns, but not significantly different from zero. In Column 2, we add an interaction term between *IB Director(%)* and the *Large Deal* dummy. We find that for the sample of large deals relative to the acquirers' size, the presence of investment banker directors is negatively related to the target abnormal returns. For large deals, a one standard deviation increase in *IB Director(%)* is associated with a 3.5 percentage point decrease in the target three-day CAR. In Column 3, we add an additional interaction to test whether directors with current investment banking experience have any different impact on target returns. The results

show that current investment bankers do not have stronger effects than other investment banker directors.

If acquiring firms benefit from the financial expertise of the IB directors in better evaluating the target, such acquirers are less likely to overpay. Therefore, we expect acquirers with IB directors, on average, to pay lower acquisition premium. Columns 4 to 6 in Table 2.9 report the regression results of the takeover premium. We find that the presence of IB directors is negatively related to the takeover premium, though the effect is not statistically significant. For the subsample of deals where the relative target size is large, we find the presence of the IB directors significantly reduces the takeover premium. For example, a one standard deviation increase in *IB Director(%)* is associated with a 6.3% decrease in target premium. In the last column, we find that directors with current investment banking experience do not have significantly greater ability to reduce the premium.

2.5.2 Acquirer Advisory Fees

To facilitate M&A transactions, firms generally hire investment bankers to provide professional advice. If acquirers have investment bankers on the board, their need for outside financial advisors is likely to be lower and they might be in a better position to negotiate the fee. Thus, we expect that advisory fees are lower for acquirers with IB directors.

We collect the M&A advisor data from SDC and investigate the dollar amount of financial advisory fees paid by the acquirers. Table 2.10 reports the results. The

dependent variable is the natural logarithm of the financial advisory fees. [12] In all regressions, we control for acquirer firm characteristics and deal characteristics, as well as industry and year fixed effects.

Consistent with our conjecture, the presence of an IB director is associated with significantly lower advisory fees paid by the acquirers. For example, a one standard deviation increase in *IB Director(%)* is associated with a 12% decrease in the advisory fees paid by acquirers. Furthermore, the negative relation between the presence of the IB directors and the advisory fees is more pronounced when the relative target size is large and when the IB directors have a concurrent affiliation with an investment bank.

2.5.3 Post-acquisition Operating Performance

In addition to helping reduce the takeover premium and advisory fees, IB directors might also help acquirers pick targets with greater synergy potential. We test this conjecture by investigating the post acquisition performance of the combined firms.

We use two operating performance measures. The first one is the raw operating performance, calculated as earnings before the deduction of interest, tax and amortization expenses (EBITDA) scaled by sales. [13] The second measure is industry benchmark-adjusted operating performance. Barber and Lyon (1996) show that tests of changes in operating performance are only well specified when the sample firms are matched to control firms of similar pre-event performance. We construct the industry-performance benchmark for each sample firm following Barber and Lyon (1996) and Vijh and Yang

[12] We also use percentage advisory fees, defined as the amount of fees scaled by deal value, as another dependent variable and obtain similar results.

[13] Results are similar based on cash flow return on assets.

(2009). For each acquirer (target), we first identify all firms with the same two-digit SIC code in the same year, but excluding the acquirer and target firms. Among these firms, we select those that have operating performance between 90% and 110% of the acquirer/target firm's operating performance during the year before the acquisition announcements. If no firm meets the industry-performance criteria, we apply the 90% to 110% filter without imposing the same industry requirement. If still no matching firm is found, we select the single firm with operating performance closest to that of the sample firm. The benchmark-adjusted operating performance is then defined as the difference between the performance of the sample firm and the median performance of the control group described above.

For the pre-acquisition years, we calculate operating performance as the weighted-average performance of the acquirer and target firms, where the weights correspond to the relative sales of the two firms. The calculation of benchmark operating performance uses the same weighting procedure. For the post-acquisition years, the calculation of benchmark operating performance follows the same weighing procedure, where the weights correspond to the total sales of the acquirer and the target firms during the year before acquisition announcement. The calculation of the post acquisition operating performance for the combined firms is obvious and does not require weighting procedure.

We then compare changes in operating performance for acquiring firms from pre-acquisition to post-acquisition years across subgroups. We focus on changes rather than levels because Barber and Lyon (1996) show that the change models dominate the level models in detecting abnormal operating performance. Table 2.11

reports median changes in operating performance.[14] We find that acquirers with IB directors experience greater improvement in operating performance than other firms.

2.5.4 Long-run Buy-and-Hold Abnormal Returns

We next examine whether acquirers with IB directors outperform other firms in terms of buy-and-hold returns. We analyze buy-and-hold abnormal returns (BHARs) over 36 months for each acquisition, compounding monthly over the relevant period. Two buy-and-hold abnormal returns are calculated: market-adjusted BHARs and Fama-French adjusted BHARs. To calculate the market-adjusted BHARs, we subtract market returns (CRSP value-weighted index) from the monthly raw returns before compounding. To calculate the Fama-French adjusted BHARs, we first regress monthly returns on the Fama-French three factors using five-year data leading up to the acquisition event, and then use the estimated coefficients to calculate monthly abnormal returns before compounding.

Table 2.12 reports the median buy-and-hold abnormal returns from quarter 1 to quarter 12. Focusing on market-adjusted BHARs, we find that acquirers with investment bank directors outperform other acquirers. The difference between the two subsamples is statistically different. Over the three-year period, acquirers with IB directors outperform the other group by 8.1%. We find similar results when we use Fama-French adjusted BHARs. Figure 2.1 depicts the median Fama-French adjusted BHARs for two subsamples, as well as the difference between them.

[14] Mean changes have a similar pattern.

We reported earlier that deals in the two subsamples are different in both deal size and method of payment. Accordingly, in Table 2.13 we divide the whole sample into several subsamples based on deal characteristics and report the median buy-and-hold abnormal returns. The results show that within each subsample, acquirers with IB directors still outperform other acquirers, and most of the differences are statistically significant. Overall, the long-run performance evidence is consistent with the idea that IB directors enhance the firm's ability to identify suitable targets and, hence, generate greater synergy in the long run.

2.6 Conclusion

We analyze how investment banker directors affect firms' acquisition behavior and acquisition performance. We test several hypotheses using the employment history of outside directors serving on boards of U.S public firms. Our results indicate that firms having directors who, at some time in their career, held senior positions at investment banks (i.e., IB directors) are more likely to make acquisitions and experience higher abnormal returns upon their acquisition announcements. On average, having an IB director on the board increases the acquirer's three-day CAR by 80 basis points. The positive wealth effect of IB directors is more prominent when the target size constitutes a significant proportion of the combined entity, suggesting that the importance of the financial expertise of IB directors increases with the economic significance of the acquisition. Our results are robust to tests for endogeneity.

We next explore potential sources of the value gains to the acquirers with IB directors. We find that when the relative target size is large, the presence of IB directors on the acquiring firms' board is associated with lower acquisition premium and advisory

fees and greater improvement in the operation performance after the acquisitions. Our findings suggest that directors with investment banking experience help the acquiring firms in (i) selecting better target candidates, (ii) better evaluating the target valuation, and (iii) reducing the firms' reliance on the outside M&A advisory service and/or negotiating lower advisory fees.

Our study contributes to the literature with further insights on the roles of boards of directors. We provide additional evidence on the advisory roles of the board of directors in the context of mergers and acquisitions, which are one of the most value relevant corporate decisions. In particular, we document the benefit of the financial expertise of board members.

Table 2.1 Top 10 Investment Banks

Ranking	Ranked by Aggregate Deal Value	Ranked by Number of Affiliated Directors
1	GOLDMAN SACHS	MORGAN STANLEY
2	MORGAN STANLEY	LEHMAN BROTHERS
3	MERRILL LYNCH	GOLDMAN SACHS
4	J.P. MORGAN	BEAR STEARNS & CO INC
5	CITIGROUP	SALOMON BROTHERS
6	CREDIT SUISSE	J.P. MORGAN
7	BARCLAYS CAPITAL	MERRILL LYNCH
8	UBS	CITIGROUP
9	LAZARD	CREDIT SUISSE
10	DEUTSCHE BANK AG	LAZARD

Note: This table presents two lists of investment banks. The first is the 10 most active M&A advisors in terms of aggregate deal value in the U.S. market during 1980-2008, based on data from SDC's M&A database. The next list is the 10 most commonly affiliated investment banks, ranked based on the total number of affiliated directors in our sample.

Table 2.2 Summary Statistics for the Aggregate Sample

Panel A: Distribution of Observations by Year

Year	Number of Firms	IB Director = 1
1998	3,827	17.30%
1999	3,989	18.40%
2000	4,084	19.50%
2001	3,906	20.90%
2002	3,787	22.60%
2003	3,728	25.30%
2004	3,794	26.40%
2005	3,782	27.30%
2006	3,713	28.40%
2007	3,570	28.90%
2008	3,213	29.70%
Total	41,393	23.90%

Panel B: Distribution of Observations by Industry

Fama-French Industry	Number of Firm Years	IB Director = 1
Consumer nondurables	2,654	33.0%
Consumer durables	1,120	18.4%
Manufacturing	5,172	22.6%
Oil, gas and coal	1,887	25.1%
Chemical products	1,116	25.7%
Business equipment	10,637	19.6%
Telephone and television	1,624	31.5%
Wholesale and retail	5,115	27.2%
Healthcare	5,820	21.7%
Other	6,248	25.8%
Total	41,393	23.9%

Note: This table reports the summary of our firm-year observations. Panel A presents the distribution of observations by year. Number of firms in each year is reported, followed by the percentage of firms with investment banker directors. Panel B presents the distribution of observations by industry. Industries are defined by the Fama-French 12-industry category. Our sample covers ten Fama-French industries, as financial and utility firms are excluded from the sample. Number of firm years in each industry is reported, followed by the percentage of firm years with investment banker directors.

Table 2.3 Preliminary Results of Acquisitions Propensity

Panel A: Percentage of Firms Making Acquisitions

	Firms with IB Director		Firms without IB Director	
Year	Number of firms	% of Firms Making Acquisitions	Number of Firms	% of Firms Making Acquisitions
1999	661	6.66%	3,166	5.09%**
2000	733	9.41%	3,256	7.00%**
2001	795	5.91%	3,289	4.93%
2002	818	5.38%	3,088	4.11%*
2003	857	6.18%	2,930	3.28%***
2004	944	6.36%	2,784	4.99%*
2005	1,001	7.49%	2,793	5.05%***
2006	1,032	7.56%	2,750	5.16%***
2007	1,054	7.50%	2,659	5.45%**
2008	1,030	5.73%	2,540	4.25%**
Total	8,925	6.81%	29,255	4.95%***

Panel B: Summary Statistics for Some Control Variables

	Acquisition = 1 (N = 2,057)		Acquisition = 0 (N = 36,123)	
	Mean	Median	Mean	Median
IB Director	0.30	-	0.23***	-
Acquisition Dummy	0.38	-	0.17***	-
Size	6.68	6.59	5.77***	5.68***
Market-to-Book	2.99	2.06	2.26***	1.58***
Leverage	0.18	0.14	0.22***	0.17***
Cash	0.24	0.16	0.21***	0.11***
Avg. Abnormal Return	-0.34	-0.78	-0.28**	-0.65**
Sales Growth	0.19	0.14	0.14***	0.07***
Noncash Working Capital	0.05	0.04	0.05	0.04
Price-to-Earnings	19.61	18.25	12.03***	11.39***

Note: This table reports some univariate results for the relation between investment banker directors and acquisition behavior, and provides descriptive statistics for some control variables. Panel A reports the percentage of firms in each year that make at least one acquisition for subsamples based on the presence of investment banker directors. Panel B reports mean and median differences in some control variables broken out by acquisition dummy. Variable definitions are provided in the Appendix A. All unbounded variables are winsorized at the 1st and 99th percentiles and all dollar values are adjusted to 2009 dollars. Asterisks denote statistically significant differences between the two sub-samples at the 1% (***), 5% (**), or 10% (*) level, based on t-tests for differences in mean and on Wilcoxon tests for differences in median.

Table 2.4 Probit Regressions of Acquisition Propensity

	Predicting Acquisitions (Acquisition = 1)		
	(1)	(2)	
		First stage	Second stage
IB Director	0.057**		
	[0.027]		
IB Director (predicted)			1.432***
			[0.000]
Size	0.128***	0.117***	0.069***
	[0.000]	[0.000]	[0.000]
Market-to-Book	0.052***	0.004	0.048***
	[0.000]	[0.313]	[0.000]
Leverage	-0.261***	0.198***	-0.334***
	[0.000]	[0.000]	[0.000]
Firm Age		-0.059***	
		[0.000]	
Board Size		0.077***	
		[0.000]	
Post-SOX		0.081***	
		[0.000]	
Location		0.168***	
		[0.000]	
SEO Dummy		0.066***	
		[0.000]	
Debt issuance Dummy		0.008	
		[0.687]	
Acquisition Dummy	0.399***	0.021	0.362***
	[0.000]	[0.298]	[0.000]
Cash	0.167**		0.187**
	[0.023]		[0.014]
Avg. Abnormal Return	0.208***		0.223***
	[0.008]		[0.002]
Sales Growth	0.073***		0.069***
	[0.001]		[0.001]
Noncash Working Capital	0.417***		0.449***
	[0.000]		[0.000]
Price-to-Earnings	0.001***		0.001***
	[0.002]		[0.001]
Intercept	-2.843***	-2.218***	-2.351***
	[0.000]	[0.000]	[0.000]
Industry dummy	Yes	Yes	Yes
Year dummy	Yes	No	Yes
N	38,180	41,393	38,180
Pseudo R-squared	0.036	0.102	0.043

Table 2.4 Continued

Note: This table reports results of probit regressions of the probability that a firm has at least one acquisition in a given year. The dependent variable is one if a firm completes an acquisition and zero otherwise. In Model 1, we report the regular probit regression results. In Model 2, the two-stage regression results are reported, where we replace the *IB Director* dummy in the second-stage probit with its predicted value. Definitions of the independent variables are in the Appendix A. Both regressions control for calendar year-fixed effects and industry (Fama-French 48 industry) fixed effects whose coefficients are suppressed for brevity. P-values are reported in brackets. ***, **, and * stand for statistical significance at the 1%, 5%, and 10% level, respectively.

Table 2.5 Summary Statistics for the Acquisition Sample

Panel A: Number of Acquisitions by Year

	All Deals		Non-IB Director Deals		IB Director Deals	
Year	N	%	N	%	N	%
1999	326	13.23%	240	14.48%	86	10.64%
2000	384	15.58%	277	16.72%	107	13.24%
2001	227	9.21%	163	9.84%	64	7.92%
2002	187	7.59%	132	7.97%	55	6.81%
2003	188	7.63%	114	6.88%	74	9.16%
2004	228	9.25%	155	9.35%	73	9.03%
2005	257	10.43%	167	10.08%	90	11.14%
2006	252	10.22%	155	9.35%	97	12.00%
2007	247	10.02%	151	9.11%	96	11.88%
2008	169	6.86%	103	6.22%	66	8.17%
Total	2,465	100.00%	1,657	100.00%	808	100.00%

Panel B: Number of Acquisitions by Industry of Acquirer

	All Deals		Non-IB Director Deals		IB Director Deals	
Fama-French Industry	N	%	N	%	N	%
Consumer nondurables	117	4.75%	75	4.53%	42	5.20%
Consumer durables	44	1.78%	30	1.81%	14	1.73%
Manufacturing	259	10.51%	169	10.20%	90	11.14%
Oil, gas and coal	110	4.46%	62	3.74%	48	5.94%
Chemical products	35	1.42%	21	1.27%	14	1.73%
Business equipment	1,031	41.83%	742	44.78%	289	35.77%
Telephone and television	82	3.33%	42	2.53%	40	4.95%
Wholesale and retail	165	6.69%	108	6.52%	57	7.05%
Healthcare	310	12.58%	211	12.73%	99	12.25%
Other	312	12.66%	197	11.89%	115	14.23%
Total	2,465	100.00%	1,657	100.00%	808	100.00%

Panel C: Acquirer Characteristics

	All Deals		Non-IB Director Deals		IB Director deals	
	Mean	Median	Mean	Median	Mean	Median
Size	6.81	6.65	7.42	7.34	6.51***	6.36***
Market-to-Book	3.08	2.09	3.19	2.20	2.82***	1.98***
Leverage	0.18	0.14	0.16	0.11	0.21***	0.18***
Cash Flow	0.10	0.13	0.09	0.13	0.13***	0.14***
Board Size	8.32	8.00	7.74	7.00	9.51***	9.00***
Board Independence	0.75	-	0.74	-	0.77***	-
Acquisition Dummy	0.39	-	0.37	-	0.44***	-

Table 2.5 Continued

Panel D: Deal Characteristics

	All Deals		Non-IB Director Deals		IB Director deals	
	Mean	Median	Mean	Median	Mean	Median
Transaction Value	907.94	94.20	661.34	83.96	1,413.65***	121.99***
Relative Transaction Value	0.27	0.09	0.27	0.09	0.25	0.08**
Related Deal	0.62	-	0.63	-	0.60	-
Toehold	0.03	-	0.03	-	0.04	-
Cash Deal	0.41	-	0.38	-	0.48***	-
Stock Deal	0.24	-	0.26	-	0.20***	-
Tender Offer	0.09	-	0.07	-	0.11***	-
Competition	0.02	-	0.02	-	0.02	-
Public Target	0.42	-	0.39	-	0.49***	-
Private Target	0.49	-	0.52	-	0.41***	-
Subsidiary Target	0.09	-	0.09	-	0.10	-

Panel E: Investment Banker Directorship Characteristics

	All Deals (N = 2465)		IB Director Deals (N = 808)	
	Mean	Median	Mean	Median
IB Director	0.33	0.00	1.00	1.00
IB Director_Size	0.41	0.00	1.25	1.00
IB Director (%)	0.05	0.00	0.15	0.13

Note: The acquisition sample consists of 2,465 completed U.S. mergers and acquisitions between 1999 and 2008. This table reports the distribution of acquisitions by year and by acquirer industry, and provides some summary statistics for acquirer and deal characteristics. In Panel A, year is defined as the year when the deal is announced. In Panel B, industries are defined by the Fama-French 12-industry category, and acquisitions are assigned to one of the industry based on the SIC code of the acquirer. Our sample covers ten Fama-French industries, as financial and utility firms are excluded from the sample. Panel C presents mean and median values for acquirer characteristics and Panel D presents mean and median values for deal characteristics. For all panels, numbers are first reported for the full sample and then for subsamples based on the presence of investment banker directors. *Non_IB Director Deals* refer to deals where acquirer has no investment banker director on the board when the deal is annunced. *IB Director Deals* refer to deals where acquirer has at least investment banker director when the deal is announced. All variable definitions are in the Appendix A. All unbounded variables are winsorized at the 1st and 99th percentiles and all dollar values are adjusted to 2009 dollars. Asterisks denote statistically significant differences between the two subsamples at the 1% (***), 5% (**), or 10% (*) level, based on t-tests for differences in mean and on Wilcoxon tests for differences in median.

Table 2.6 Acquirer Cumulative Abnormal Returns around Acquisition Announcement

	All Deals			Non-IB Director Deals			IB Director Deals			Difference	
	N	Mean	Median	N	Mean	Median	N	Mean	Median	Mean	Median
Total	2465	0.003	0.001	1657	0.001	-0.001	808	0.007**	0.005**	*	**
Q1 (Small acquirers)	616	0.014**	0.007**	486	0.011**	0.005*	130	0.024***	0.014**	*	**
Q2	617	0.009**	0.005**	445	0.007*	0.004*	172	0.015**	0.012**	-	**
Q3	616	-0.001	0.001	399	-0.006	-0.002	217	0.009*	0.011**	**	***
Q4 (Large acquirers)	616	-0.010***	-0.006**	327	-0.013***	-0.008***	289	-0.007**	-0.002	-	**

Note: The acquisition sample consists of 2,465 completed U.S. mergers and acquisitions between 1999 and 2008. This table presents mean and median of acquirer cumulative abnormal returns (CAR) over the three-day event windows around acquisition announcement dates. CAR are reported for the full sample and then for subsamples based on the presence of investment banker directors. The market returns are measured by the CRSP value-weighted index returns. Data over the period from event day -211 to event day -11 are used to estimate the market model. CAR for size quartile subsamples are also reported. Asterisks denote statistically significant from zero at the 1% (***), 5% (**), or 10% (*) level, based on t-tests for mean and on Wilcoxon tests for median. In the last two columns, asterisks denote statistically significant differences between the two sub-samples.

Table 2.7 Regressions of Acquirer Cumulative Abnormal Returns

	[-1, +1] Acquirer CARs					
	Full Sample		Heckman Correction		Large Acquirer	
	(1)	(2)	(3)	(4)	(5)	(6)
IB Director	0.008**		0.008**		0.006	
	[0.031]		[0.034]		[0.154]	
IB Director (%)		0.072***		0.072***		0.056**
		[0.002]		[0.004]		[0.036]
Acquirer Characteristics:						
Acquirer Size	-0.004***	-0.004***	-0.004**	-0.004**	-0.001	-0.001
	[0.008]	[0.006]	[0.017]	[0.015]	[0.825]	[0.768]
Acquirer Market-to-Book	0.001	0.001	0.000	0.000	-0.001	-0.001
	[0.439]	[0.450]	[0.674]	[0.707]	[0.412]	[0.422]
Acquirer Leverage	0.017	0.016	0.015	0.015	0.013	0.015
	[0.173]	[0.195]	[0.249]	[0.282]	[0.493]	[0.455]
Acquirer Cash Flow	-0.022	-0.022	-0.022	-0.022	0.057	0.056
	[0.363]	[0.354]	[0.388]	[0.381]	[0.104]	[0.106]
Board Independence	0.002	0.001	0.002	0.002	0.008	0.007
	[0.802]	[0.898]	[0.832]	[0.748]	[0.461]	[0.517]
Board Size	0.001	0.001	0.001	0.001	0.000	0.000
	[0.189]	[0.212]	[0.307]	[0.153]	[0.844]	[0.625]
Acquisition Dummy	-0.005	-0.005	-0.009	-0.009	-0.008	-0.008
	[0.242]	[0.251]	[0.142]	[0.154]	[0.107]	[0.109]
Deal Characteristics:						
Relative Transaction Value	0.014*	0.013*	0.013*	0.013*	-0.017	-0.017
	[0.065]	[0.078]	[0.084]	[0.083]	[0.038]	[0.038]
Toehold	0.004	0.004	0.004	0.004	-0.001	-0.001
	[0.541]	[0.542]	[0.544]	[0.547]	[0.897]	[0.920]
Competition	-0.024	-0.025*	-0.025	-0.025	-0.016	-0.016
	[0.108]	[0.097]	[0.110]	[0.103]	[0.196]	[0.201]
Stock Deal	-0.008	-0.008	-0.008	-0.008	0.008	0.008
	[0.276]	[0.263]	[0.235]	[0.224]	[0.338]	[0.354]
Cash Deal	0.011**	0.010**	0.011**	0.011**	0.022***	0.021***
	[0.017]	[0.038]	[0.017]	[0.018]	[0.001]	[0.001]
Conglomerate	-0.001	-0.001	-0.001	-0.001	0.000	-0.001
	[0.872]	[0.863]	[0.864]	[0.857]	[0.951]	[0.862]
Tender Offer	0.020***	0.019***	0.019***	0.019***	0.008	0.008
	[0.001]	[0.001]	[0.002]	[0.002]	[0.188]	[0.205]
Private Target	0.003	0.003	0.004	0.004	0.014*	0.015*
	[0.653]	[0.673]	[0.519]	[0.547]	[0.079]	[0.068]
Public Target	-0.036***	-0.036***	-0.034***	-0.035***	-0.001	-0.001
	[0.000]	[0.000]	[0.000]	[0.000]	[0.872]	[0.940]
Inverse Mills Ratio	No	No	Yes	Yes	No	No
Industry Dummy	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes
N	2465	2465	2396	2396	616	616
R-squared	0.067	0.071	0.066	0.069	0.142	0.145

Table 2.7 Continued

Note: The acquisition sample consists of 2,465 completed U.S. mergers and acquisitions between 1999 and 2008. This table reports results of OLS regressions for acquirer cumulative abnormal returns. The dependent variable is the three-day cumulative abnormal returns for the acquirer. Definitions of the independent variables are in the Appendix A. All regressions control for calendar year-fixed effects and industry (Fama-French 48 industry) fixed effects whose coefficients are suppressed for brevity. P-values based on standard errors adjusted for firm clustering are reported in brackets. ***, **, and * stand for statistical significance at the 1%, 5%, and 10% level, respectively.

Table 2.8 Supplemental Tests for Acquirer Cumulative Abnormal Returns

	[-1, +1] Acquirer CAR		
	(1)	(2)	(3)
IB Director(%)	0.039*	0.046*	0.008
	[0.092]	[0.057]	[0.842]
IB Director(%) x Large Deal	0.092**		0.090**
	[0.019]		[0.021]
IB Director(%) x Current		0.095**	0.094**
		[0.016]	[0.018]
Acquirer Characteristics:	Yes	Yes	Yes
Deal Characteristics:	Yes	Yes	Yes
Industry dummy	Yes	Yes	Yes
Year dummy	Yes	Yes	Yes
N	2,465	2,465	2,465
R-squared	0.076	0.071	0.079

Note: The acquisition sample consists of 2,465 completed U.S. mergers and acquisitions between 1999 and 2008. This table reports results of OLS regressions for acquirers with different characteristics. The dependent variable is the three-day cumulative abnormal returns for the acquirer. Acquirer Characteristics include acquirer board size, board independence, firm size, market-to-book ratio, leverage, and cash flow. Deal Characteristics include relative transaction value, whether the acquirer owns more than 5% of the target's stock prior to the announcement date, deal competition, method of payment, whether the acquisition is diversifying, whether the deal involves a tender offer, and target public status. All regressions control for calendar year-fixed effects and industry (Fama-French 48 industry) fixed effects whose coefficients are suppressed for brevity. P-values based on standard errors adjusted for firm clustering are reported in brackets. ***, **, and * stand for statistical significance at the 1%, 5%, and 10% level, respectively.

Table 2.9
Regressions of Target Cumulative Abnormal Returns and Takeover Premium

	[-1, +1] Target CAR			PREM4WK from SDC		
	(1)	(2)	(3)	(4)	(5)	(6)
IB Director (%)	-0.023	0.166	0.198	-0.059	0.343	0.381
	[0.857]	[0.351]	[0.285]	[0.796]	[0.306]	[0.259]
IB Director (%) x Large Deal		-0.381**	-0.397**		-0.781**	-0.803**
		[0.039]	[0.033]		[0.024]	[0.029]
IB Director(%) x Current			-0.101			-0.168
			[0.531]			[0.466]
Acquirer Characteristics:						
Acquirer Size	0.012	0.011	0.010	0.007	0.006	0.006
	[0.201]	[0.244]	[0.264]	[0.627]	[0.732]	[0.841]
Acquirer Market-to-Book	0.003	0.002	0.002	0.011*	0.010	0.010
	[0.419]	[0.495]	[0.496]	[0.074]	[0.101]	[0.138]
Acquirer Leverage	-0.018	-0.012	-0.012	-0.126	-0.111	-0.121
	[0.774]	[0.847]	[0.849]	[0.271]	[0.328]	[0.295]
Acquirer Cash Flow	-0.046	-0.056	-0.055	-0.221	-0.195	-0.204
	[0.618]	[0.545]	[0.546]	[0.193]	[0.248]	[0.227]
Board Independence	-0.006	-0.004	-0.004	-0.009	-0.004	-0.005
	[0.839]	[0.890]	[0.890]	[0.884]	[0.952]	[0.931]
Board Size	-0.003	-0.002	-0.002	-0.009	-0.008	-0.008
	[0.531]	[0.583]	[0.583]	[0.137]	[0.173]	[0.156]
Acquisition Dummy	-0.031	-0.029	-0.029	-0.051	-0.055	-0.056
	[0.118]	[0.136]	[0.135]	[0.303]	[0.272]	[0.265]
Target Characteristics:						
Target Market-to-Book	-0.011	-0.011	-0.011	-0.009	-0.010	-0.009
	[0.116]	[0.107]	[0.108]	[0.388]	[0.368]	[0.410]
Target Leverage	-0.001	-0.006	-0.006	0.055	0.041	0.044
	[0.993]	[0.913]	[0.914]	[0.604]	[0.696]	[0.675]
Target Cash Flow	0.026	0.026	0.025	0.034	0.034	0.033
	[0.714]	[0.728]	[0.764]	[0.329]	[0.318]	[0.0331]
Deal Characteristics:						
Relative Transaction Value	-0.047***	-0.038**	-0.038**	-0.011	-0.032	-0.031
	[0.005]	[0.025]	[0.024]	[0.778]	[0.384]	[0.417]
Toehold	-0.074	-0.071	-0.071	-0.069	-0.061	-0.049
	[0.227]	[0.235]	[0.235]	[0.389]	[0.426]	[0.520]
Competition	-0.074**	-0.075**	-0.075**	-0.081	-0.078	-0.085
	[0.038]	[0.035]	[0.037]	[0.184]	[0.181]	[0.152]
Stock Deal	-0.009	-0.010	-0.010	0.019	0.018	0.018
	[0.716]	[0.711]	[0.711]	[0.689]	[0.695]	[0.700]
Cash Deal	0.099***	0.093***	0.093***	0.166***	0.151**	0.152**
	[0.003]	[0.001]	[0.001]	[0.005]	[0.012]	[0.012]
Related Deal	0.038*	0.041*	0.040*	0.019	0.026	0.024
	[0.081]	[0.062]	[0.062]	[0.569]	[0.450]	[0.477]
Tender Offer	0.065*	0.069*	0.069*	0.006	0.014	0.012
	[0.072]	[0.060]	[0.059]	[0.931]	[0.845]	[0.861]
Industry Dummy	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes
N	843	843	843	843	843	843
R-squared	0.229	0.233	0.233	0.134	0.144	0.146

Table 2.9 Continued

Note: This table reports results of OLS regressions for target cumulative abnormal returns and takeover premium. In regression 1 – 3, the dependent variable is the three-day target cumulative abnormal returns. In regression 4 – 6, the dependent variable is PREM4WK from the SDC database. Definitions of the independent variables are in the Appendix A. All regressions control for calendar year-fixed effects and industry (Fama-French 48 industry) fixed effects whose coefficients are suppressed for brevity. P-values based on standard errors adjusted for firm clustering are reported in brackets. ***, **, and * stand for statistical significance at the 1%, 5%, and 10% level, respectively.

Table 2.10 Regressions of Financial Advisory Fees Paid by Acquirer

	Log (Advisory Dollar Fees)		
	(1)	(2)	(3)
IB Director(%)	-1.350*	0.562	1.114
	[0.068]	[0.564]	[0.210]
IB Director(%) x Large Deal		-2.669**	-2.826**
		[0.026]	[0.017]
IB Director(%) x Current			-2.849**
			[0.019]
Acquirer Characteristics:			
Acquirer Size	0.096	0.139**	0.124*
	[0.106]	[0.049]	[0.080]
Acquirer Market-to-Book	-0.038	-0.033	-0.032
	[0.190]	[0.271]	[0.269]
Acquirer Leverage	-0.734*	-0.800**	-0.709*
	[0.059]	[0.039]	[0.065]
Acquirer Cash Flow	0.139	0.172	0.185
	[0.663]	[0.614]	[0.583]
Board Independence	0.093	0.102	0.126
	[0.647]	[0.608]	[0.529]
Board Size	0.024	0.019	0.024
	[0.173]	[0.254]	[0.178]
Acquisition Dummy	-0.259**	-0.243**	-0.236**
	[0.019]	[0.027]	[0.030]
Deal Characteristics:			
Log (Deal Value)	0.618***	0.578***	0.577***
	[0.000]	[0.000]	[0.000]
Toehold	0.005	-0.007	-0.021
	[0.987]	[0.981]	[0.944]
Competition	0.165	0.221	0.209
	[0.522]	[0.379]	[0.415]
Stock Deal	-0.091	-0.078	-0.059
	[0.479]	[0.546]	[0.649]
Cash Deal	-0.087	-0.036	-0.017
	[0.612]	[0.839]	[0.924]
Related Deal	0.074	0.069	0.089
	[0.537]	[0.551]	[0.447]
Tender Offer	0.092	-0.043	0.024
	[0.659]	[0.839]	[0.914]
Private Target	-0.424	-0.386	-0.483
	[0.288]	[0.316]	[0.210]
Public Target	0.013	0.038	-0.066
	[0.967]	[0.898]	[0.822]
Industry dummy	Yes	Yes	Yes
Year dummy	Yes	Yes	Yes
N	211	211	211
R-squared	0.853	0.858	0.861

Table 2.10 Continued

Note: The table presents OLS regression results of financial advisory fees paid by acquirer. The dependent variable is the natural logarithm of dollar value of advisory fees paid by acquirer. Definitions of the independent variables are in the Appendix A. All regressions control for calendar year-fixed effects and industry fixed effects whose coefficients are suppressed for brevity. P-values based on standard errors adjusted for firm clustering are reported in brackets. ***, **, and * stand for statistical significance at the 1%, 5%, and 10% level, respectively.

Table 2.11 Changes in Operating Performance

	IB Director Deals			Non-IB Director Deals		
	N	Raw Performance	Benchmark-Adjusted	N	Raw Performance	Benchmark-Adjusted
[-1, +1]	253	0.25	1.12*	423	-0.11	0.89
[-1, +2]	229	0.23*	1.10*	394	-0.82	0.63
[-1, +3]	187	0.44**	1.43**	350	-1.25	0.77
[-1, +4]	152	0.69**	2.08**	308	-0.44	1.38
[-1, +5]	123	1.16***	3.31***	265	-0.55	1.45

Note: This table reports the median changes in operating performance of combined firms for subsamples based on the presence of investment banker directors. Performance measure is based on earnings before the deduction of interest, tax and amortization expenses (EBITDA) scaled by sales. Changes in both raw performance and benchmark-adjusted performance are reported. To obtain benchmark firms, each acquirer and target firm is paired with a set of matching firms following the procedure of Barber and Lyon (1996), which involves selecting firms with the same 2-digit SIC code in year 0 and operating performance within 90% to 110% of the operating performance of sample firms in year -1. Benchmark-adjusted performance is the calculated as the difference between the performance of sample firm and the median performance of matching firms. Asterisks denote statistically significant differences between the two sub-samples at the 1% (***), 5% (**), or 10% (*) level based on Wilcoxon tests for differences in median.

Table 2.12 Buy-and-Hold Abnormal Returns

	Market-Adjusted Buy-and-Hold Return			Fama-French Adjusted Buy-and-Hold Return		
	Non-IB Director deal	IB Director Deal		Non-IB Director Deal	IB Director Deal	
Quarter	Median	Median	Difference	Median	Median	Difference
1	-0.018	0.008	**	-0.011	-0.005	
2	-0.035	0.019	**	-0.037	-0.016	*
3	-0.070	-0.020	***	-0.062	-0.024	*
4	-0.079	-0.025	***	-0.070	-0.040	*
5	-0.109	-0.030	***	-0.083	-0.039	**
6	-0.123	-0.058	***	-0.108	-0.064	**
7	-0.127	-0.045	***	-0.116	-0.059	**
8	-0.142	-0.049	***	-0.123	-0.067	**
9	-0.159	-0.060	***	-0.136	-0.069	***
10	-0.160	-0.060	***	-0.142	-0.070	***
11	-0.166	-0.087	***	-0.160	-0.084	***
12	-0.185	-0.104	***	-0.157	-0.086	***

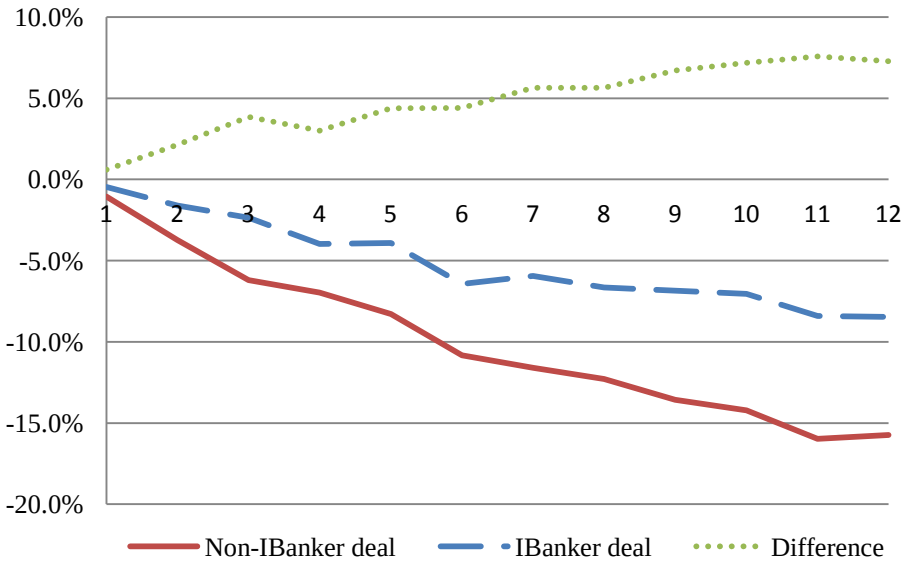
Note: This table reports the median buy-and-hold abnormal returns for subsamples based on the presence of investment banker directors. Starting on the day after the acquisition announcement date, a buy-and-hold return is calculated for the acquirer for up to 3 years (or 12 quarters) after the acquisition. Two buy-and-hold abnormal returns are reported: market-adjusted BHARs, where market returns (CRSP value-weighted index) are subtracted from the monthly raw returns before compounding, and Fama-French adjusted BHARs, where 5-year monthly returns leading up to merger events are regressed on the Fama-French three factors, and the estimated coefficients are then used to calculate the monthly abnormal returns before compounding. Asterisks denote statistically significant differences between the two sub-samples at the 1% (***), 5% (**), or 10% (*) level based on Wilcoxon tests for differences in median.

Table 2.13 Buy-and-Hold Abnormal Returns for Subsamples

		Fama-French Adjusted Buy-and-Hold Return		
		Non-IB Director Deal	IB Director Deal	
	Year	Median	Median	Difference
All	1	-0.070	-0.040	*
(N = 2,465)	2	-0.123	-0.067	**
	3	-0.157	-0.086	***
Large deal	1	-0.065	-0.026	**
(N = 1,232)	2	-0.174	-0.067	***
	3	-0.186	-0.085	**
Small deal	1	-0.076	-0.051	
(N = 1,233)	2	-0.090	-0.069	*
	3	-0.133	-0.088	**
Cash	1	-0.054	-0.034	
(N = 1,016)	2	-0.073	-0.048	*
	3	-0.097	-0.047	*
Stock	1	-0.072	-0.068	
(N = 600)	2	-0.147	-0.097	*
	3	-0.282	-0.062	**
Mixed	1	-0.103	-0.034	**
(N= 849)	2	-0.182	-0.104	**
	3	-0.221	-0.124	**

Note: This table reports the median buy-and-hold abnormal returns for different deal characteristics sorted subsamples, broken out by IB Director dummy. Starting on the day after the acquisition announcement date, a buy-and-hold return is calculated for the acquirer for up to 3 years after the acquisition. Fama-French adjusted BHARs are reported, where 5-year monthly returns leading up to acquisition events are regressed on the Fama-French three factors, and the estimated coefficients are then used to calculate the monthly abnormal returns before compounding. Asterisks denote statistically significant differences between the two sub-samples at the 1% (***), 5% (**), or 10% (*) level based on Wilcoxon tests for differences in median.

Figure 2.1 Fama-French Risk-Adjusted Buy-and-Hold Abnormal Returns



Note: This figure depicts the Fama-French risk-adjusted buy-and-hold abnormal returns (BHARs) over 36 months after the deal announcement. It first plots the median BHARs for subsamples based on the presence of investment banker directors, and then the differences between two subsamples. Five-year monthly returns leading up to the acquisition events are used to estimate the Fama-French three factor model. Returns are calculated using the estimated coefficients and then compounded monthly over the relevant period.

CHAPTER 3
ACQUISITIONS OF FINANCIALLY DISTRESSED FIRMS: AN EMPIRICAL ANALYSIS

3.1 Introduction

As the current economic downturn persists, more firms are driven into financial distress. When a firm is in financial distress, it can attempt to restructure its debt through a private workout or under the protection of the bankruptcy court (Gilson, John, and Lang, 1990; Franks and Torous, 1994). However, Gilson (1997) shows private workouts are often incomplete and leave the firms with too much debt, such that a costly formal bankruptcy process might still be necessary. A third option available to the firm is to sell the entire firm to an acquirer with the capital muscle to remedy the financial difficulties. In this study, we examine firms that have chosen to resolve their financial distress via such sales.

Acquisitions of financially distressed firms can be implemented with or without the aid of the bankruptcy court. In particular, a financially distressed firm can be sold in what seems like a regular acquisition, except that creditors play a more important role. We call these acquisitions *non-bankruptcy acquisitions*. Alternatively, the firm can engage in a *pre-negotiated acquisition* in which it first negotiates the terms of the acquisition and then completes the transaction under the umbrella of Chapter 11 of the bankruptcy code, analogous to a prepackaged bankruptcy. It is also possible for firms to first file for Chapter 11, and later negotiate a sale to a third party. We call these acquisitions *post-negotiated acquisitions*, and we regard them as fundamentally different from the other acquisitions because the acquisition outcome might have been the result of failed negotiations and not the preferred restructuring choice of management.

We conjecture that stakeholders generally prefer to complete the acquisition without the aid of Chapter 11 because of the additional costs and stigma associated with formal bankruptcy. However, because creditor involvement and approval might be required in all acquisitions of financially distressed firms, the aid of Chapter 11, especially the voting procedures therein, might be necessary to bypass the hold-out problems that reside in complex debt structures. In addition, Chapter 11 can provide financial benefits if the firm has substantial operating leases or other executory contracts that weigh on the firm, because the court can terminate such contracts.[1] We further conjecture that management benefits personally from arranging a sale prior to bankruptcy as a resolution to the financial distress of the firm. In particular, we expect that management is more likely to retain their jobs following non-bankruptcy acquisitions or pre-negotiated acquisitions than in post-negotiated acquisitions or other Chapter 11 filings.

Our sample consists of 34 non-bankruptcy acquisitions, 43 pre-negotiated acquisitions, and 69 post-negotiated acquisitions between 1995 and 2008. In all of the acquisition types, we find that creditors are intensely involved in the acquisition process. In bankruptcy acquisitions (i.e., pre- and post-negotiated acquisitions), creditors can impose pervasive control on the process as their approval is generally needed to complete the transaction. This is also the case for non-bankruptcy acquisitions. We find about 60% of these non-bankruptcy deals take place concurrently with a restructuring of the distressed target's debt, suggesting that creditor approval is a prerequisite to completing

[1] When a firm tries to acquire a bankrupt target, it can choose desired contracts and reject others under court approval.

these transactions. For the remaining 40%, creditor consent is often mentioned to be necessary even though there is no explicit evidence of debt restructuring during the acquisition process.

Consistent with our conjecture, the potential hold-out problem associated with debt negotiations appear to be more severe in firms that are acquired in pre-negotiated deals than in non-bankruptcy deals. Firms that are acquired in pre-negotiated deals have both more debt contracts outstanding and more public debt, which Gilson, John, and Lang (1990) argue are related to hold-out problems. This suggests that firms will seek the help of Chapter 11 to complete an acquisition when the complex debt structure would jeopardize a deal outside Chapter 11. On the other hand, we find no evidence that firms with higher operating leases are more likely to be acquired within Chapter 11, which suggests that potential benefit from lease contract renegotiation is not a major reason for Chapter 11 filings.

Next, we report that target-managers are much more likely to retain their jobs in non-bankruptcy acquisitions and pre-negotiated acquisitions than in post-negotiated acquisitions. The CEO of the target retains employment in the new firm in 44% of non-bankruptcy acquisitions and 42% of pre-negotiated acquisitions, but only in 21% of post-negotiated acquisitions. Other studies have found that managers of firms that file for Chapter 11 retain their jobs in 30% of the cases (Betker, 1995; Hotchkiss, 1995; LoPuchi and Whitford, 1993). Thus, management stands to personally benefit from a sale of the company over a traditional Chapter 11, even if the latter eventually results in an acquisition.

Finally, we examine the stock returns around the deal announcements. Upon announcements of non-bankruptcy deals, the mean (median) three-day stock return of the target is 36.8% (26.1%), whereas the mean (median) acquirer return is 0.1% (-0.8%). Upon announcements of pre-negotiated acquisitions, the mean (median) three-day stock return of the target is -24.1% (-7.4%), and the mean (median) acquirer return is 3.3% (2.7%). A caveat is that these returns are based on small samples, because many of the firms are delisted before the deal announcements. In comparison, Chapter 11 announcements are associated with a mean (median) stock return of -26.5% (-27.8%). The return statistics support our conjecture that stakeholders, or at least equityholders, benefit greatly from a sale without the aid of Chapter 11 as a resolution to the firms' financial woes. Debtholders presumably also benefit, because they are involved in these negotiations. The aid of Chapter 11 makes the acquisition substantially less appealing for shareholders, but, as we noted above, this aid might be necessary to complete the acquisition in the presence of substantial hold-out problems, and this alternative might still be more appealing than an outright Chapter 11 filing, especially for management who are more likely to retain their jobs.

Our study also contributes by describing the process of bankruptcy acquisitions. We find that most bankrupt firms are acquired through asset acquisitions. The market for distressed firms is more competitive than that for healthy firms. Besides, we find some acquirers choose to purchase debt from the distressed target to facilitate the acquisition transactions, a strategy similar to the toehold investment in healthy acquisitions.

Our study is most related to Hotchkiss and Mooradian (1998). Hotchkiss and Mooradian use a sample of 55 acquisitions in Chapter 11 to examine whether takeovers

can facilitate the efficient redeployment of assets of bankrupt firms. They document firms merged with bankrupt targets show significant improvements in operating performance. However, they do not include acquisitions of financially distressed firms outside of Chapter 11 and lump pre- and post-negotiated acquisitions together.

Our study is also related to Clark and Ofek (1994). They study the operating performance following 38 acquisitions of targets that had experienced a stock price decline and some sort of operating troubles. They find negative post-merger performance on average, but are reluctant to conclude that the restructuring attempts were unsuccessful, because it is unclear what the performance would have been in the absence of the mergers. However, only 12 of these were classified as financially distressed, and results were not reported for these.

The remainder of the paper is organized as follows. Section 3.2 describes the data and sample selection. Section 3.3 provides empirical results. Section 3.4 discusses the bankruptcy acquisition process. Section 3.5 concludes the paper.

3.2 Data and Sample

3.2.1 The Sample of Bankruptcy Acquisitions

We construct a sample of distressed acquisitions during 1995 and 2008, which consists of two groups of transactions: acquisitions involving bankrupt targets, and acquisitions involving financially distressed but non-bankrupt targets. The bankruptcy acquisition sample requires intensive manual collection efforts. We obtain a preliminary sample of 2,098 bankruptcy filings from 1996 to 2008 using the Bankruptcy DataSource database maintained by New Generation Research. The database includes all firms that filed for Chapter 11, with at least one public security and at least $50 million in assets.

We restrict our sample to firms with assets above $100 million at the time of the bankruptcy filing, which gives us 908 bankruptcy filings. We discard 135 cases because the case was either dismissed or is still pending in Chapter 11. We further exclude regulated utilities (SIC codes 4900-4949) and financial firms (SIC codes 6000-6999) and end up with a major sample of 709 Chapter 11 filings over the period 1996 through 2008.

The Bankruptcy DataSource database also provides information regarding each bankruptcy case's final outcome. However, when we cross check the outcome with Lynn M. LoPucki's Bankruptcy Research Database, we find some inconsistencies.[2] Therefore, we use Factiva, SEC filings and Public Access to Court Electronic Records (PACER) to determine each case's final status, with outcomes updated to the end of 2009.

We identify 112 acquisitions from the major bankruptcy sample. In Appendix C, three examples are provided to show how we define an acquisition in Chapter 11. For each acquisition transaction, we collect additional information, such as deal announcement date, deal close date, acquirer characteristics, and sale process from SEC filings, Factiva, and PACER.

3.2.2 The Sample of Non-bankruptcy Acquisitions

The non-bankruptcy acquisition sample is obtained from Thompson's Securities Data Corporation (SDC) dataset. Panel A in Table 3.1 summarizes our sample selection process, a procedure similar to Gilson, John, and Lang (1990). First, we obtain a group of acquisitions announced during 1995 to 2008, in which the target have at least $30 million in assets and the acquirer gains 100% ownership after the deal. We keep 351 transactions

[2] Lynn M. LoPucki's Bankruptcy Research Database covers a sample of large U.S. firms that filed for Chapter 11 since the 1980s.

where the target's cumulated prior three-year stock return (or prior one-year stock return) is in the bottom 10% of stock returns of all firms listed on the three exchanges. As argued by Gilson, John and Lang (1990), if the extreme stock price declines reflect extreme declines in firms' cash flows, firms with extreme negative stock returns are more likely to be those experiencing financial distress. Second, we identify financially distressed targets by manually searching through SEC filings and Factiva to find indications of financial distress in the two years prior to the acquisition announcement. Default, difficulties to service debt, and debt restructuring are used as signals of financial distress, which leaves us with 37 acquisitions. Three deals involving regulated financial targets are eliminated, leaving us a final sample of 34 non-bankruptcy acquisitions. Among them, 31 (91%) targets have cumulated prior three-year stock return (or prior one-year stock return) in the bottom 5% of all listed firms' stock returns, suggesting that extreme negative stock return is a good indicator of poor financial performance.

Panel B in Table 3.1 lists the incidence of various factors we used to identify financially distressed targets. Among 34 targets, 19 firms (56%) have defaulted on their debt, with either payment default or technical default. These firms are often associated with debt downgrade or delisting warning. There are 13 firms where no default has happened, but either managers or auditors expressed serious doubt about the firms' ability to continue as a going concern because of liquidity problems. Two other firms mentioned a specific debt restructuring in progress. All of these characteristics are reasonable signs of financial distress.

3.2.3 Debt Structure and Other Information

Debt structure information is hand-collected from SEC 10K filings for the year prior to the acquisition. Following Rauh and Sufi (2010), we examine the debt financial footnotes contained in 10K filings and classify debt issues into categories based on seniority and type. Specifically, we classify each debt issue into one of the following three seniority categories -- secured, senior and subordinated, and one of the three type categories -- bank debt, public debt and private-nonbank debt. When there is insufficient information in the footnotes to categorize a debt issue, we turn to issuing year's SEC filings and Thompson's Securities Data Corporation (SDC) Platinum to confirm. [3]

We collect target CEO retention data from a variety of sources, including SEC filings and Factiva. All other financial information is obtained from COMPUSTAT, and is for the last fiscal year before the year of acquisition. Appendix A provides definitions for all variables used in the paper.

3.3 Empirical Results

3.3.1 Three Types of Distressed Acquisitions

As we mentioned earlier, there are three types of distressed acquisitions. One of them is *non-bankruptcy acquisition*, where a financially distressed firm is acquired without any court help. We identify 34 such deals occurring during the sample period. Among another 112 deals implemented under court supervision, we identify 43 *pre-negotiated acquisitions*, where firms first negotiate the terms of the acquisition and then complete the transaction under the umbrella of Chapter 11 of the bankruptcy code,

[3] The debt issuing year's SEC filings usually provide more detailed information than filings thereafter. SDC debt issue data provides information about public or private placement.

analogous to a prepackaged bankruptcy. In the remaining 69 cases, firms first file for bankruptcy, and later negotiate a sale to a third party. We call these acquisitions *post-negotiated acquisitions*.

Table 3.2 reports yearly and industry distribution of the total 146 distressed deals across types. The yearly distribution in Panel A shows a clustering of distressed acquisitions in the early 2000s, consistent with the timing of an economic recession. The industry distribution based on Fama and French (1997) in Panel B suggests that a large part of the deals take place in the following four industries: Consumer Nondurables, Manufacturing, Telephone and Television Transmission and Wholesale and Retail.

Table 3.3 provides acquisition characteristics and targets' summary statistics. Panel A shows 23% of the deals are associated with financial buyers, a ratio higher than that reported by Bargeron, Schlingemann, Stulz, and Zutter (2008), where they show only 14% of the deals involving financial buyers in a sample of 1,263 acquisitions during the period of 1994-2006. The difference is consistent with the argument that hedge funds and private equities are playing an active role in distressed deals, especially deals in Chapter 11 (Jiang, Li, and Wang, 2011). We find 44% of the deals involve a private bidder, similar to Hotchkiss and Mooradian (1998).

We also examine how closely the industries of buyers and targets matched. We find 60% of the deals have a three-digit match, where the buyer and the target share the same primary three-digit SIC code. 52% of buyers are from the same industry of the targets if we use the four-digit SIC code. The results are consistent with Clark and Ofek (1994) and Hotchkiss and Mooradian (1998), indicating that asymmetric information can

deter an acquisition since acquirers in the same industry are more likely to be informed with respect to the value of the distressed target's assets. [4]

The relative size, measured by the ratio of the target to the combined acquirer and target, is on average 30% based on total assets and 32% based on sales (medians are 24% and 28% respectively). The average relative size is higher than Clark and Ofek (1994) and Hotchkiss and Mooradian (1998). To have a comparable target is important in our study since target management would otherwise have little bargaining power if there are extreme size disparities between buyers and targets.

Panel B of Table 3.3 presents summary statistics for distressed targets across types. Firms acquired within Chapter 11, in both pre- and post-negotiated deals, are relatively larger than those acquired in non-bankruptcy deals. The differences in size (measured by book values of assets or sales) between non-bankrupt targets and bankrupt targets are statistically significant at 0.05 (0.01) level. Unreported in the table, the average size of all distressed targets, measured by total assets, is $778 million (median $331 million). [5] It is important to note that there is no significant difference in other financial variables, including leverage (measured by the ratio of total liability or total long-term debt to total book assets) or stock performance prior to the acquisition (market-adjusted stock return), confirming that targets in non-bankruptcy deals are also in serious

---

[4] Kaplan and Weisbach (1992) find that the bidder and target have at least one matching primary line of business for 35% of the transactions in a study of non-bankrupt acquisitions. Hotchkiss and Mooradian (1998) report a three-digit match in 66% of the transactions. Clark and Ofek (1994) report that 55% transactions have a four-digit match.

[5] The sample in Hotchkiss and Mooradian (1998) sample mean (median) firm size of $141 million ($36 million).

financial distress as those bankrupt targets. We find no evidence that firms acquired in pre-negotiated deals have higher operating leases than those in non-bankruptcy deals.

3.3.2 Choice between Non-bankruptcy and Pre-negotiated Acquisitions

Firms acquiring a financially distressed target may need to help restructure the target's debt to revive the distressed firm. Clark and Ofek (1994) study a sample of 38 distressed transactions during the period of 1981 to 1988 and found that five acquirers obtained concessions from creditors when the targets experienced financial distress prior to the acquisition. However, the authors do not disclose if these financially distressed targets had filed for Chapter 11 at the time of acquisition. [6] It is possible that these acquirers obtain concession from creditors simply because they acquire a Chapter 11 target, as a Chapter 11 filing is usually associated with debt restructuring. It is still unknown how often a distressed target's debt is restructured when it is taken over outside of Chapter 11.

We first provide some evidence that a distressed takeover usually entails debt restructuring, even if the takeover takes place outside Chapter 11. As an example, on September 17, 1997, *Stokely USA, Inc.*, announced that it had entered into an Agreement and Plan of Reorganization with *Chiquita Brands International, Inc.* In connection with the merger: (i) certain holders of $31.8 million principal amount of *Stokely* debt have agreed to exchange that indebtedness for shares of *Chiquita* Common Stock; (ii) certain *Stokely* suppliers have agreed to forgive $1.0 million in accounts receivable; and (iii) it is

---

[6] Clark and Ofek's (1994) sample includes 12 financially distressed firms, which are those that violated debt covenants, were unable to service debt, defaulted on debt, required cash for operations, or filed for Chapter 11 protection. The number of Chapter 11 cases is not disclosed.

a condition to closing that *Stokely*'s revolving credit lender will agree to leave in place at least $20 million of outstanding revolving credit indebtedness.

Table 3.4 Panel A reports the incidence of debt restructuring of distressed targets in a sample of 34 non-bankruptcy acquisitions in our study. 20 (59%) of non-bankruptcy acquisitions take place concurrently with a restructuring of the distressed target's debt. Among their acquisitions, 16 are associated with private debt restructuring and 4 deals involve public debt restructuring. Panel B reports a brief summary of restructuring terms. Maturity is extended in nine cases, interest or principal payment is reduced in eight cases, and security is exchanged in four cases. However, we note that all of the above numbers only represent lower bounds on the frequency of debt restructuring, since firms do not always disclose debt restructuring, even though creditor approval is explicitly mentioned to be necessary. [7] Moreover, in our bankruptcy acquisition sample, we find some cases in which firms fail to close an acquisition transaction out of court due to a lack of creditor approval, and then file for Chapter 11 to complete the transaction. For example, Paging *Network Inc.* reached a merger agreement with *Arch Wireless, Inc.* which required a certain level of acceptance by the holders of *Paging Network*'s Senior Subordinated Notes and the other lenders under the credit agreement. Creditor approval was not obtained and the firm later filed for bankruptcy to close the deal. [8] All of these facts suggest that creditor involvement is pervasive in distressed acquisitions.

---

[7] For example, *Rally's Hamburgers, Inc.* and *Checkers Drive-In Restaurants, Inc.* entered into a merger agreement, and stated that the transaction was subject to certain approvals, including but not limited to approval by the shareholders of Checkers and Rally's and the holders of Rally's Senior Notes.

[8] Another example can be *Cone Mills Corp.* It attempted to sell their business to WL Ross & Co., LLC through the issuance of convertible notes before it files Chapter 11, but that proposed transaction failed because its senior secured creditors refused to grant their respective consents. It later filed for Chapter 11 and conducted a going-concern sale.

Given that creditor approval is a prerequisite to distressed transactions, the aid of Chapter 11, especially the voting procedures therein, should help facilitate and speed up these deals. However, formal bankruptcy filings are always associated with additional costs and negative publicity. We conjecture that target stakeholders generally prefer to complete the acquisition without the aid of Chapter 11, unless the hold-out problem that resides in debt structures would jeopardize a deal outside of Chapter 11. Specifically, we expect that firms with more severe hold-out problems prefer pre-negotiated deals. [9] Following Gilson, John, and Lang (1990), we use three variables to proxy for the severity of the hold-out problem: the number of debt contracts, the public-debt ratio, and the market-to-book ratio.

Another benefit associated with Chapter 11 is that acquirers can use Chapter 11 to cleanse some unfavorable contracts by renegotiating or terminating financing leases, operating leases or other executory contracts. Lemmon, Ma, and Tashjian (2010) provide some empirical evidence that the put option inherent in lease contracts is frequently exercised in Chapter 11, which leads us to further conjecture that firms with more leases and contracts are more likely to choose to be acquired within Chapter 11.

We next provide some evidence for our conjectures. Table 3.5 presents means and medians for debt structure variables. Firms acquired in pre-negotiated deals have more public debt (or are more likely to have public debt) and have more debt contracts than firms acquired in non-bankruptcy deals, consistent with our hold-out problem explanation. The univariate test shows the mean (median) difference in these variables is significant at

---

[9] Earlier empirical work shows that firms with more severe hold-out problems are more likely to choose formal bankruptcy to restructure debt (Gilson et al., 1990; Franks and Torous, 1994; Chatterjee et al., 1995).

the 5%level. On the other hand, as we have shown in Panel B of Table 3.3, there is no significant difference in operating leases. We next conduct a probit regression analysis that relates firm characteristics to the probability of pre-negotiated acquisitions.

Table 3.6 reports the regression results with several specifications. The dependent variable equals 1 if the firm is acquired in a pre-negotiated deal and zero if acquired in a non-bankruptcy deal. The primary variables of interest are the number of debt contracts, the public-debt ratio, the market-to-book ratio and the operating leases ratio. We find the estimated coefficient on the number of debt contracts is consistently positive and significant across different regressions, even when we control for size and leverage. The coefficient on the public debt or the public debt dummy is also found to be positive and significant. Thus, the hold-out problem does appear to enter into the decision about whether a firm chooses to be acquired within Chapter 11. Another thing to note is that firm size and leverage level have no significant impact when controlling for the debt structure. Consistent with univariate results, there is no evidence that firms prefer Chapter 11 acquisition if it can benefit more from leasing contract renegotiation. The estimated coefficients on operating leases are not significant in all regressions. Therefore, we conclude that even though put option inherent in lease contracts is frequently exercised in Chapter 11, contract renegotiation benefit is not the main factor that induces a distressed firm to sell itself within Chapter 11. Instead, the severe hold-out problem resulting from a complex debt structure appears to be the major reason for firms to choose pre-negotiated acquisitions.

3.3.3 CEO's Incentive to Sell the Firm

With provisions such as "automatic stay" and "exclusivity period", Chapter 11 is argued to be a debtor-friendly bankruptcy regime. Hence, a remaining question is: Why so many distressed firms choose to sell themselves without making more effort to reorganize using Chapter 11. Some empirical studies show that target CEOs often negotiate their personal benefits when they make merger and acquisition decisions. For instance, Hartzell, Ofek, and Yermack (2004) find that target CEOs often negotiate personal benefits at the expense of shareholders[10]. Arguing along similar lines, self-interested CEOs may choose to resolve financial distress via sales to pursue their personal interests and therefore refuse to make any further effort to reorganize the firms. The following story is summarized from *Cone Mills Corp*'s bankruptcy filings: *Cone Mills Corp* filed a voluntary petition for relief under Chapter 11 on Sep 24, 2003, with a letter of intent from *WL Ross & Co.* to purchase substantially all of the assets of the Company. On Oct 10, 2003, the firm filed a motion for order approving sale procedures. Shortly after, the firm's independent directors, the official creditor's committee and another major creditor filed separate objections to that motion, arguing that "they haven't explored alternative forms of financing…", "management seeks to have their employment agreements assumed by *WL Ross*...", or "sale procedures create an unduly hurried and coercive process that unfairly favors *WL Ross*".

Gilson (1989) and Hotchkiss (1995), among others, document an abnormally high turnover of managers for distressed firms. We conjecture that target CEOs may arrange a

---

[10] Hartzell et al. (2004) find that target shareholders receive lower acquisition premium in deals involving extraordinary personal treatment of the CEO. However, Bargeron et al. (2010) find no evidence that the premium paid is lower when the CEO is retained by the acquirer.

sale of the firm to retain their jobs. As creditors gain more control after a firm enters Chapter 11, it becomes relatively difficult for target CEOs to negotiate personal benefits. In particular, we expect that management is more likely to retain their jobs following non-bankruptcy acquisitions or pre-negotiated acquisitions than in post-negotiated acquisitions.

Table 3.7 reports whether a target CEO is retained and, if retained, her position in the surviving firm. For seven deals, we cannot obtain CEO information. There are another seven deals where target CEOs are replaced by turnaround specialists, whose employment is usually terminated upon the resolution of a bankruptcy filing. Among the remaining 132 acquisitions, a target CEO is considered retained if she becomes the officer or director of the new firm. Panel A of Table 3.7 indicates that CEO of the target retains employment in the new firm in 44% of non-bankruptcy acquisitions and 42% of pre-negotiated acquisitions. The ratios are close to Agrawal and Walking (1994) and Hartzell, Ofek, and Yermack (2004).[11] Bargeron, Schlingemann, Stulz, and Zutter (2010) further find that the probability of CEO retention increases with the performance of the target. Given the extreme poor performance of our distressed targets, the retention ratio appears to be much higher than it should be. On the other hand, for post-negotiated deals, only 21% (13 out of 62) of the target CEOs are retained. The results are consistent with our conjecture that target CEOs in non-bankruptcy and pre-negotiated transactions are more likely to be retained than in post-negotiated deals. Panel B of Table 3.7 presents detailed information about the target CEOs' new positions. Among 43 retained CEOs, 63%

[11] Agrawal and Walking (1994) show that 45% of target CEOs are retained one year after a takeover bid, and Hartzell et al. (2004) find a slightly higher ratio of 50%.

of them remain as the top manager of the target after the firm becomes a wholly owned subsidiary and 16% become the top officer of the parent.

However, there are some other factors that might affect the target CEOs' retention by the acquiring firms. For instance, Bargeron, Schlingemann, Stulz, and Zutter (2010) find that, besides target performance, the presence of a private bidder and the target firm's Tobin's Q also have some significant effects.[12] We estimate a probit regression to control for these documented determinants, where the dependent variable is a CEO retention dummy that equals one if the target CEO is retained and zero otherwise. The primary control variable of interest is an indicator variable that equals one if the distressed target is acquired in non-bankruptcy deals or in pre-negotiated deals and zero otherwise.

Table 3.8 reports the regression results. The coefficient on the private buyer dummy, which takes a value of 1 if the acquirer is a private equity (or operating) firm, is significantly positive in all regressions, consistent with Bargeron, Schlingemann, Stulz, and Zutter (2010). The market-to-book ratio is also found to be positive and significant. More importantly, the coefficient on the acquisition dummy (i.e. non-bankruptcy or pre-negotiated acquisitions) is positive and significant, confirming that target CEOs in non-bankruptcy and pre-negotiated transactions are more likely to be retained than in post-negotiated deals.

[12] Bargeron, Schlingemann, Stulz, and Zutter (2010) find the fraction of target shares held by insiders is another determinant. For distressed firms, shareholders have relatively lower bargaining power.

3.3.4 Stock and Cash Flow Performance

We next investigate whether a sale of a distressed firm produces economic gains. Table 3.9 Panel A reports both market-adjusted and risk-adjusted three-day cumulative abnormal returns for acquirers. Upon announcements of non-bankruptcy acquisitions, the mean (median) market-adjusted stock return of the acquirer is 0.1% (-0.8%), similar to most studies of announcement returns to acquirers. For pre-negotiated acquisitions, the mean (median) acquirer return is 3.3% (2.7%). If we lump pre- and post-negotiated acquisitions together, the mean (median) market-adjusted stock return of the acquirer is 3.8% (1.4%). These results show that acquisitions in Chapter 11 can create value for the acquirer, consistent with Hotchkiss and Mooradian (1998).

Panel B reports three-day cumulative abnormal returns for targets. Upon announcements of non-bankruptcy acquisitions, the mean (median) stock return of the target is 36.8% (26.1%). For pre-negotiated acquisitions, the mean (median) stock return of the target is -24.1% (-7.4%). In comparison, Chapter 11 announcements are associated with a mean (median) stock price decrease of about 27% (28%). A caveat is that these returns are based on small samples, because many of the firms are delisted before the announcements. The return statistics support our conjecture that stakeholders, or at least equityholders, benefit greatly from a sale without the aid of Chapter 11 as a resolution to the firms' financial woes.

3.4 Acquisition Process

The process of acquiring a distressed but non-bankrupt firm is similar to that described in Boone and Mulherin (2007), except that creditors play a more important role

in the sale process. However, the sale process within Chapter 11 has some unique characteristics, and we discuss them in detail in this session.

3.4.1 Types of Transactions

There are generally two ways by which a firm can be sold or acquired in Chapter 11, through a confirmed plan of reorganization or through a Section 363 of the U.S. Bankruptcy Code sale.

Under the context of a Chapter 11 plan, a bankrupt firm files a reorganization plan with the bankruptcy court and proposes an acquisition of the firm by a potential acquirer. An open bid is sometimes required by the court before a reorganization plan is filed. Once the "exclusive period" for the debtor to propose a plan has expired, any party in interest could propose a competing plan that seeks approval of an alternative transaction. [13] The firm can be acquired when an acquisition plan is accepted by every impaired class of creditors and confirmed by the bankruptcy court. [14]

Under a Section 363 sale, a firm can sell substantially all of its assets to an acquirer even if some creditors do not support the proposed transaction. Figure 3.1 provides a timeline of the Section 363 sale process. The process is most comparable to the "formal auction" process in Boone and Mulherin (2007), where a structured bidding procedure is followed. Specifically, once a bankrupt firm makes a Section 363 sale

---

[13] Under 11 U.S.C. § 1121(b), the debtor has a 120-day period during which it has an exclusive right to file a plan. This exclusivity period may be extended or reduced by the court. But in no event may the exclusivity period, including all extensions, be longer than 18 months according to 11 U.S.C. § 1121(d).

[14] A class of creditor accepts the plan if over half the creditors in number and at least two-thirds in amount vote to accept. The court can also "cram down" the plan on dissenting classes under Section 1129. See http://www.uscourts.gov/bankruptcycourts/bankruptcybasics/chapter11.html.

decision, it usually selects a "stalking horse" by going through a process of negotiating and documenting the contract that is basically the same as the private bidding process in non-bankruptcy situation. The stalking-horse bidder establishes the minimum entry point for other bidders that have interests in participating in the public auction. The court later confirms the winning bid from the auction and grants final approval of the asset sale.

Table 3.10 provides a summary of the bankruptcy acquisition process. Panel A shows that in our sample of 115 acquisitions involving bankrupt targets, 72 (63%) firms are sold through Section 363 sales and 43 (37%) firms are sold under plans of reorganization. There is a trend that Section 363 sales are becoming more popular over time. [15] Therefore, we next examine the Section 363 sale process in more detail.

Panel B of Table 3.10 provides some information about stalking-horse bidders in Section 363 sales. Among 72 sales, 70 (97%) bankrupt firms conduct public auctions. Within them, 59 (84%) firms identify a stalking-horse bidder before the public auction, and 49 (83%) of these stalking horses acquire the target successfully. The fact that stalking-horse bidders are likely to be the final acquirers is consistent with LoPucki and Doherty's (2007) argument that the bankruptcy sale market is very thin.

However, as shown by Boone and Mulherin (2007), the private bidding process may provide more information about market competitiveness. Following their method, we identify some key aspects of the Section 363 sale process. *Contact* reports the number of potential buyers contacted by the target and its investment bank. *Confidential* reports

---

[15] A Section 363 sale is often argued to be less time-consuming and therefore less costly than a sale under a plan of reorganization. Without taking self-selection issue into consideration, we find, for pre-negotiated deals, the median (mean) days between the bankruptcy filing date and the transaction completion date is 95 (114) for the 363 sales and is 107 (122) for sales under the reorganization plan, consistent with this argument.

the number of potential buyers that engaged in a confidentiality agreement. *Private Bidders* reports the number of potential buyers that submitted a private offer, which is used to determine the stalking-horse bid. *Public Bidders* reports the number of bidders that turn in qualified bids for the public auction. Panel B shows, on average, a bankrupt firm in the sample contacts 59 potential buyers. Among them, 28 sign confidentiality agreements. During the private bidding process, 4.6 bidders turn in a formal proposal. This process decides a minimum bid for the public auction. There are on average 2.5 public bidders participating in the auction. Comparing to Boone and Mulherin (2007), we find the average number of potential bidders is generally greater for the bankruptcy takeover market.

3.4.2 Acquisition Methods

Generally, there are two ways to acquire a financially distressed firm, the first of which is "equity acquisition", where an acquirer obtains the ownership by either purchasing or exchanging its current debt holding for a majority of the firm's equity (i.e. >90%). The other way is "asset acquisition", where an acquirer becomes the owner pursuant to an asset purchase agreement. A Section 363 sale is one kind of asset acquisition. A buyer can also acquire a bankrupt firm's assets through a plan of reorganization. Table 3.11 shows that there are 88 (77%) asset acquisitions and 27 (23%) equity acquisitions, among which 5 acquirers obtain ownership through a debt-to-equity exchange.

In healthy acquisitions, acquirers often purchase targets' stocks in the open market prior to the acquisition announcement, which is known as a toehold. To acquire a bankrupt target, however, acquirers may purchase debt instead of equity to facilitate a

deal, since debt holders have more bargaining power to influence the transaction. In our 115 deals, there are 27 (24%) cases where the acquirers are also the targets' main creditors. Moreover, 17 (15%) acquirers provide targets with debtor-in-possession financing, which can further increase their bargaining leverage in the acquisition process.

3.5 Conclusion

In this paper, we examine distressed firms that choose acquisition to resolve their financial difficulties. In particular, we study three types of transaction, *non-bankruptcy acquisition, pre-negotiated* and *post-negotiated acquisitions*, by examining a sample of 146 distressed transactions occurring between 1996 and 2008.

Our study contributes to the growing literature of how debt structure affects corporate policy. We find that creditors are intensively involved in distressed acquisition process even when targets are not bankrupt. Though formal bankruptcy always entails additional costs, it may become necessary when the hold-out problems associated with debt negotiations would otherwise jeopardize a deal outside of Chapter 11. We find firms acquired in pre-negotiated deals have more debt contracts outstanding and more public debt. However, we find no evidence that firms with higher operating leases are more likely to be acquired within Chapter 11, suggesting that lease contract renegotiation may not be a major reason for Chapter 11 filings.

We also contribute to the literature of whether self-interested managers benefit from selling the firms. We find the retention ratio of target CEOs is much higher for non-bankruptcy acquisitions and pre-negotiated acquisitions, suggesting that management may benefit personally from arranging a sale as a resolution to the financial distress of the firm. Stock return analysis shows that target shareholders prefer to complete the

acquisition without the aid of Chapter 11, but this alternative might become more appealing than an outright Chapter 11 filing for management who are more likely to retain their jobs.

Last but not least, our study also contributes by describing the process of bankruptcy acquisition. We find the market for distressed targets is more competitive than that for healthy firms. Acquirers usually take over distressed targets through asset acquisitions. Further, acquirers sometime purchase debt from the distressed targets to facilitate the acquisition transactions, a strategy similar to the toehold investment in healthy acquisitions.

Table 3.1 Non-bankruptcy Distressed Acquisitions

Panel A: Sample Selection Procedure

Sample selection	Number of Deals
Public target with assets greater than $30 million; and acquirer obtains 100% ownership after the deal during 1995-2008 from SDC	5347
Targets with complete CRSP information	4719
Targets with 1-year or cumulated 3-year stock return in the bottom 10%	351
Targets in severe financial distress	37
Targets not in financial or utility sector	34

Panel B: Financial Distress Indication

Default and firm indicates difficulties to continue as a going concern	19
Firm predicts default or possible bankruptcy, and indicates difficulties to continue as a going concern	9
Auditors express doubt about firm's ability to continue as a going concern	4
Debt restructuring in progress	2
Total	34

Note: This table summarizes our non-bankruptcy acquisition sample selection process. Selection of the sample is a two-step process similar to Gilson et al. (1990). First, we obtain a group of acquisitions announced during 1995-2008 from Thompson's Securities Data Corporation (SDC) dataset, with public target's asset greater than $30 million and acquirer's post-acquisition ownership equals 100%. We keep 351 transactions where the target's cumulated prior three-year stock return (or prior one-year stock return) is in the bottom 10 percent of stock returns of all firms listed on the three exchanges. Second, we identify financially distressed firms by searching through SEC filings and Factiva to find indications of financial distress in the two years prior to the acquisition announcement. Default, difficulties to service debt and debt restructuring are used as signals of financial distress. This leaves us with 37 acquisitions. Three regulated financial firms are eliminated, leaving us a final sample of 34 non-bankruptcy acquisitions.

Table 3.2 Yearly and Industry Distribution of Distressed Acquisitions

Panel A: Distribution of Announcement Dates of Distressed Acquisitions

Year	Non-bankruptcy Acquisitions	Pre-negotiated Acquisitions	Post-negotiated Acquisitions	Total
1995	2	1	0	3
1996	3	2	1	6
1997	3	2	1	6
1998	2	0	2	4
1999	3	4	6	13
2000	1	5	8	14
2001	3	5	11	19
2002	3	10	13	26
2003	1	5	9	15
2004	2	4	6	12
2005	1	1	5	7
2006	2	1	2	5
2007	4	2	2	8
2008	4	1	3	8
Total	34	43	69	146

Panel B: Industry Distribution of Distressed Targets

Fama- French Industry	Non-bankruptcy Acquisitions	Pre-negotiated Acquisitions	Post-negotiated Acquisitions	Total
Consumer Non-Durables	2	8	7	17
Consumer Durables	0	2	5	7
Manufacturing	1	8	10	19
Oil, Gas, and Coal Extraction and Products	1	1	1	3
Chemicals and Allied Products	1	1	3	5
Business Equipment	5	4	1	10
Telephone and Television Transmission	3	5	12	20
Wholesale, Retail, and Some Services	5	4	15	24
Healthcare, Medical Equipment, and Drugs	4	1	3	8
Others	12	9	12	33
Total	34	43	69	146

Note: This table reports yearly and industry distribution of a sample of 146 distressed deals across three types of acquisitions. There are 34 *non-bankruptcy acquisitions* when a financially distressed firm is sold without bankruptcy filings. There are 43 *pre-negotiated acquisitions* when the firm first negotiate the terms of the acquisition and then complete the transaction under the umbrella of Chapter 11 of the bankruptcy code. We also identify 69 *post-negotiated acquisitions* when the firm first files for Chapter 11 and later negotiate a sale to a third party. Panel A reports the distribution of announcement dates of acquisitions and Panel B reports industry wide distribution of distressed targets following Fama- French (1997).

Table 3.3
Deal Characteristics and Summary Statistics of Distressed Targets

Panel A: Deal Characteristics

	Non-bankruptcy Acquisitions	Pre-negotiated Acquisitions	Post-negotiated Acquisitions	Total
Dummy variable equals 1 if financial acquisition	0.21	0.26	0.25	0.23
Dummy variable equals 1 if the buyer is private	0.38	0.47	0.45	0.44
Dummy variable equals 1 if 3-digit SIC match	0.54	0.5	0.66	0.6
Dummy variable equals 1if 4-digit SIC match	0.42	0.5	0.56	0.52
Relative size of target to combined firm	0.28	0.35	0.3	0.3
Sales target/combined sales	0.32	0.35	0.3	0.32

Panel B. Summary Statistics of Distressed Targets

	Non-bankruptcy Acquisitions		Pre-negotiated Acquisitions		Post-negotiated Acquisitions	
	Mean	Median	Mean	Median	Mean	Median
Assets (in $ millions)	345.20[b]	225.42[a]	669.40	505.20	1140.73	339.20
Sales (in $ millions)	371.74[b]	244.44[a]	746.34	426.22	886.30	463.30
Leverage	0.67	0.58	0.71	0.63	0.61	0.53
Liability	1.01	0.84	1.07	1.01	0.92	0.89
Market-to-book	1.68[b]	1.13	1.26	1.12	1.43	1.12
OCF	-0.03	0.00	-0.02	-0.01	-0.01	0.01
EBITDA	-0.03	0.03	0.02	0.03	-0.02	0.04
Operating Lease	0.07	0.03	0.07	0.04	0.12	0.04
Prior one-year return	-0.72	-0.73	-0.76	-0.76	-0.82	-0.85
Prior three-year return	-0.82	-0.88	-0.90	-0.93	-0.88	-0.93

Note: This table reports deal characteristics and summary statistics of distressed targets. Our sample has 34 *non-bankruptcy acquisitions*, 43 *pre-negotiated acquisitions*, and 69 *post-negotiated acquisitions*. Panel A reports the deal characteristics and Panel B reports summary statistics of distressed targets. All variables are formally defined in Appendix A. We test the mean (median) difference between target firms in non-bankruptcy deals and target firms in pre-negotiated deals using t-test (Wilcoxon rank sum test). “a”, “b” and “c” indicate significance at the 1%, 5% and 10% levels, respectively.

Table 3.4 Debt Restructuring of Distressed Targets in Non-bankruptcy Deals

Panel A: Incidence of Debt Restructuring	Number	Percentage
Debt restructured 2 years prior to deal announcement	4	11.8%
Debt restructured as part of the deal	20	58.8%
Private debt restructured (by firms with private debt)	16	69.6%
Public debt restructured (by firms with public debt)	4	36.4%
Panel B: Restructuring Terms		
Extension of maturity	9	45.0%
Reduction of interest or principal	8	40.0%
Securities exchanged	4	20.0%

Note: This table reports the incidence of debt restructuring of distressed targets in a sample of thirty-four non-bankruptcy acquisitions. We define a firm has a debt restructuring following Gilson, John, and Lang (1990). Panel B reports the summary of restructuring terms. *Extension of maturity* includes deferral of promised interest or principal payments. *Reduction of interest or principal* includes foregiveness of overdue or future promised payments, in addition to reductions in the stated rate of interest. *Securities exchanged* includes distributions of common or preferred stock, as well as securities that can be converted into either class of stock (e.g., warrants and convertible bonds); also included are provisions in the debt contract that give firms the option to make payments either in cash or equity securities.

Table 3.5 Debt Structure of Distressed Targets

	Non-bankruptcy Acquisitions		Pre-negotiated Acquisitions	
	Mean	Median	Mean	Median
Secured	0.61	0.74	0.51	0.49
Subordinated	0.16	0.00	0.21	0.00
Bank	0.37	0.36	0.35	0.25
Bank Dummy	0.68	1.00	0.69	1.00
Public	0.25[a]	0.00[b]	0.54	0.60
Public Dummy	0.35[a]	0.00[b]	0.67	1.00
Number of Debt Contracts	2.52[a]	3.00[a]	4.26	4.00

Note: This table reports detailed debt structure information of distressed targets. The sample includes 34 *non-bankruptcy acquisitions* and 36 *pre-negotiated acquisitions.* All transactions took place between 1995 and 2008. Following Rauh and Sufi (2010), we examine the debt financial footnotes contained in 10-K filings and classify each debt issue based on seniorities and types. We classify each debt issue into one of the following three seniority categories -- secured, senior and subordinated, and one of the three type categories -- bank debt, public debt and private-nonbank debt. The variables are formally defined in Appendix A. We also test the mean (median) difference between target firms in non-bankruptcy acquisitions and target firms in pre-negotiated acquisitions using t-test (Wilcoxon rank sum test). “a”, “b” and “c” .

Table 3.6 Probit Regression of Distressed Acquisitions

	(1)	(2)	(3)	(4)
Number of Debt Contracts	0.405***	0.352***	0.403**	0.396**
	[0.002]	[0.006]	[0.012]	[0.018]
Public	1.175**		1.086**	
	[0.015]		[0.039]	
Public Debt Dummy		1.023***		1.233**
		[0.008]		[0.011]
Market-to-Book	-0.314	-0.348	-0.192	-0.143
	[0.130]	[0.124]	[0.453]	[0.600]
Operating Lease			-1.879	-2.56
			[0.572]	[0.479]
Size			0.283	0.238
			[0.287]	[0.383]
Leverage			0.693	0.264
			[0.342]	[0.734]
Intercept	-1.385**	-1.308**	-2.949*	-2.822*
	[0.016]	[0.022]	[0.072]	[0.091]
Log Likelihood	-29.26	-28.67	-27.4	-27.16
N	59	59	57	57

Note: This table reports probit regressions relating firm characteristics to the decision of bankruptcy filing to complete the deal. Sample consists of 34 *non-bankruptcy acquisitions* when a financially distressed firm is sold without bankruptcy filings and 36 *pre-negotiated acquisitions* when the firm first negotiates the terms of the acquisition and then completes the transaction under the umbrella of Chapter 11 of the bankruptcy code. All transactions took place between 1995 and 2008. The dependent variable equals one if the target is in a pre-negotiated deal otherwise equals zero. All variables are formally defined in Appendix A. The significance levels for individual coefficients are reported in parentheses. "*", "**" and "***" indicate significance at the 10%, 5% and 1% levels, respectively.

Table 3.7 CEO Retention following the Acquisitions

	Non-bankruptcy Acquisitions	Pre-negotiated Acquisitions	Post-negotiated Acquisitions
Panel A: CEO employment after M&A			
Total observations	34	43	69
Deals without CEO information	0	4	3
CEO replaced by turnarounds specialists	0	3	4
Final observations	34	36	62
CEOs became officers and directors of the buyer	15 (44.1%)	15 (41.7%)	13 (21.0%)
Panel B: New position after M&A			
CEO, president, chairman	2	3	2
Other executive officer	6	0	3
Executive in a subsidiary	7	12	8
Total	15	15	13

Note: This table presents distressed target CEOs' employment after acquisitions in a sample 132 distressed acquisitions over the period of 1995 to 2008. We manually collect the data of the retention of the target CEO from a variety of resources, including merger-related SEC filings, Factiva and PACER.

Table 3.8 Probit Regression of CEO Retention

	(1)	(2)	(3)
Non-bankruptcy or Pre-negotiated Deal	1.716***	1.761**	2.466**
	[0.00]	[0.02]	[0.01]
Private Buyer	1.409***	1.718**	2.099**
	[0.01]	[0.01]	[0.02]
OCF		1.293	4.902
		[0.59]	[0.26]
ROA		1.536	0.809
		[0.23]	[0.56]
Market-to-Book			1.238**
			[0.03]
Size		-0.023	0.120
		[0.94]	[0.75]
Leverage		2.041*	2.698**
		[0.07]	[0.04]
Intercept	-1.363	-1.211	-3.554
	[0.00]	[0.05]	[0.17]
Industry dummy	Yes	Yes	Yes
Year dummy	Yes	Yes	Yes
Log Likelihood	-30.12	-27.51	-18.99
N	134	120	107

Note: This table report Probit regression analysis relating deal characteristics to target CEO's retention. The dependent variable is a CEO retention dummy variable that equals one if the target CEO is retained and zero otherwise in all three models. Non-bankruptcy or pre-negotiated deal is a dummy variable that equals one if the distressed target is acquired in non-bankruptcy deals or in pre-negotiated deals and zero otherwise. Private buyer is an indicator variable which takes a value of 1 if the acquirer is a private equity (or operating) firm. Other control variables are formally defined in Appendix A. Industry and year fixed effects have been included in all regressions. The significance levels for individual coefficients are reported in parentheses. "*", "**" and "***" indicate significance at the 10%, 5% and 1% levels, respectively.

Table 3.9 Stock Price Effects at the Announcement of Acquisitions

		Market-Adjusted		Risk-Adjusted	
	N	Mean	Median	Mean	Median
Panel A: Acquirer Return					
Non-bankruptcy deals	21	0.001	-0.008	0.006	-0.008
Pre-negotiated deals	16	0.033	0.027	0.034*	0.033
Post-negotiated deals	29	0.041*	0.014*	0.043*	0.026**
All deals in Chapter 11	45	0.038**	0.014**	0.040**	0.029***
Panel B: Target Return					
Non-bankruptcy deals	34	0.368***	0.261***	0.376***	0.279***
Pre-negotiated deals	7	-0.241	-0.074	-0.209	-0.038
Prepack bankrupt filings	44	-0.198***	-0.206***	-0.176***	-0.179***
Non-prepack bankrupt filings	201	-0.265***	-0.278***	-0.246***	-0.234***

Note: Panel A of this table reports cumulative three-day abnormal returns for buyers at the announcement of the deal. Panel B of this table reports cumulative three-day abnormal returns for targets at the announcement of the deal. We also report cumulative three-day abnormal returns for firms that filed for Chapter 11 but not acquired in Panel B. Both market-adjusted and risk-adjusted abnormal returns are reported. We test whether the mean (median) of the abnormal return is different from zero using t-test (Wilcoxon rank sum test). "***", "**" and "*" indicate significance at the 1%, 5% and 10% levels, respectively.

Table 3.10 Chapter 11 Acquisition Characteristics

	N	Percentage
Panel A. Acquisition type		
363 Sale	71	62.6%
Reorganization Plan	41	37.4%
Panel B. Stalking-horse bidder in 363 sales		
Total Sample	71	100.00%
With public auction	69	97.20%
With stalking-horse bidder	58	84.30%
Stalking-horse buyer	48	83.10%

Panel C. 363 sale process	Contact	Confidential	Private Bidders	Public Bidders
Mean	59	28	4.6	2.5
Median	40	18	4.0	2.0

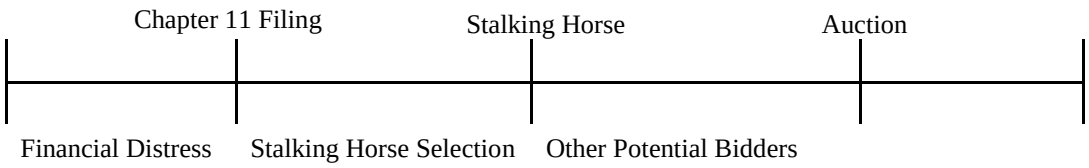
Note: This table provides a summary of the bankruptcy acquisition process. Panel A shows a summary of acquisition types. Panel B and C provides information regarding Section 363 sales. Key aspects of the Section 363 sale process in Panel C is defined following Boone and Mulherin (2007). All information is obtained from Factiva or PACER.

Table 3.11 Chapter 11 Acquisition Methods

	N	Percentage
Panel A: Acquisition Method		
Asset acquisitions	86	76.8%
Equity acquisition	26	23.2%
Debt to equity exchange	5	4.4%
Panel B: Acquirer's Debt/Equity Holding		
Major pre-petition claim holder	27	24.10%
Debtor-in-possession financing provider	17	15.20%
Major equityholder	10	8.92%

Note: This table provides additional information about bankruptcy acquisition methods. All information is obtained from Factiva or PACER.

Figure 3.1 The Timeline of the Section 363 Sale Process



Note: This figure provides a timeline of the Section 363 sale process. The process is most comparable to the "formal auction" process in Boone and Mulherin (2007), where a structured bidding procedure is followed. Specifically, once a bankrupt firm makes a Section 363 sale decision, it usually selects a "stalking horse" by going through a process of negotiating and documenting the contract that is basically the same as the private bidding process in non-bankruptcy situation. The stalking-horse bidder establishes the minimum entry point for other bidders that have interests in participating in the public auction. The court later confirms the winning bid from the auction and grants final approval of the asset sale.

APPENDIX A
VARIABLE DEFINISIONS

Acquisition Dummy	Dummy variable: equals 1 if the firm makes any acquisitions in past three years and 0 otherwise.
Advisory Dollar Fees	Total advisory fees paid by acquirer.
Assets	Total book assets.
Avg. Abnormal Return	Average daily market-model abnormal return.
Bank Debt	The ratio of bank debt to total long-term debt.
Bank Debt dummy	Dummy variable: equals 1 if the distressed target has bank debt outstanding and 0 otherwise.
Bank Tie	Dummy variable: equals 1 if the firm is socially connected with its bank lenders and 0 otherwise.
Bankruptcy	Dummy variable: equals 1 if the firm files for bankruptcy and 0 otherwise.
BCF Index	Governance index based on 6 antitakeover provisions, taken from BCF (2004).
Board Independence	Dummy variable: equals 1 if over 60% of directors are independent and 0 otherwise.
Board Size	Number of directors on the board.
Board Tenure	The average number of years that directors have served on the board.
CAPEX	Capital expenditure over book value of total assets (zero if missing).
CAR [-1,1]	Three-day cumulative abnormal return calculated using the market model estimated over the 200-day period ending 11 days before the announcement dates, with the CRSP value-weighted return as the market index.
Cash	Cash and cash equivalent holdings over book value of total assets.
Cash Deal	Dummy variable: equals 1 for deals are paid for 100% by cash and 0 otherwise.
Cash Flow	Operating income before depreciation (EBITDA) over book value of total assets.
CEO Age	The age of acquirer CEO.
CEO Gender	Dummy variable: equals 1 if acquirer CEO is a male and 0 otherwise.
CEO Ownership	Acquirer CEO's percentage ownership of the firm, including both stock and stock options.
CHS-Score	A distress measure constructed using specification in Campbell et al. (2008). See Appendix B for more detail.
Competition	Dummy variable: equals 1 if a deal has competing bidders and 0 otherwise.
Conglomerate Deal	Dummy variable: equals 1 if the target and the acquirer have the same two-digit SIC code and 0 otherwise.
Corporate Failure	Dummy variable: equals 1 if the firm files for bankruptcy, has bond-related defaults, or is delisted due to financial distress.

Crisis	Dummy variable: equals 1 if the quarter is during the priod July 1, 2007 (2007Q3) to March 31, 2009 (2009Q1), and 0 otherwise.
Current Assets	Current assets over book value of total assets.
Current	Dummy variable: equals 1 there is one investment banker director who still works as an investment banker when the deal is announced.
Debt Issuance Dummy	Dummy variable: equals 1 if the firm has any debt issuance in past three years and 0 otherwise.
DIP	Dummy variable: equals 1 if the firm obtains DIP financing during Chapter 11 and 0 otherwise.
DIP Lender Tie	Dummy variable: equals 1 if the bankrupt firm is socially connected with its Debtor-in-Possession (DIP) lenders and 0 otherwise.
DIP Relationship Bank	Dummy variable: equals 1 if the firm's DIP lender has extended loans to the firm in past three years and 0 otherwise.
Dissue	Total net debt issuance over book value of total assets.
Distress	Dummy variable: equals 1 if the firm is in industry distress and 0 otherwise.
Diverse	Dummy variable: equals 1 if the firm has more than one industry segment in a given year and 0 otherwise.
Dividend	Dummy variable: equals 1 if the firm pays devidend in a given year and 0 otherwise.
dSize	Change in book assets from the previous quarter.
EBITDA	The ratio of EBITDA to book assets.
EDF	A distress measure based on Merton (1974) model. See Appendix B for more detail.
Emerge	Dummy variable: equals 1 if the firm emerges from Chapter 11 and 0 otherwise.
Firm Age	Number of years a firm has been listed.
GIM Index	Governance index based on 24 antitakeover provisions, taken from GIM (2003).
IB Director	Dummy variable: equals 1 if there is at least one director having investment banking experience when the deal is announced and 0 otherwise.
IB Director(%)	Percentage of outside directors with investment banking experience on board.
IB Director_Size	Number of directors with investment banking experience.
Large Deal	Dummy variable: equals 1 if relative transaction value is above the median value and 0 otherwise.
Leverage	Sum of long-term debt and debt in current liabilities over book value of total assests.
Liability	Total liability over book assets.
Liquidity	Current assets over current liability.
Location	Dummy variable: equals 1 if the firm is located in NY, NJ, CA, IL, or MA, and 0 otherwise.
Market-to-Book	(Total Assets - Book Equity + Market Value of Equity) / Total Assets.

MC	Log of market value of equity.
Neg_BE	Dummy variable: equals 1 if book equity is less than zero .
Noncash Working Capital	Net working capital minus cash and cash equivalents over total assets.
Number of Debt Contracts	The distressed firm's total number of debt contracts.
OCF	The ratio of operating cash flow to book assets.
Operating Lease	The ratio of rental expense under all existing noncancelable leases to book assets.
Political Tie	Dummy variable: equals 1 if the firm's directors or executives at any time in their past held a position such as Senator, Member of the House of Representatives, or have been a director of some important organizations (e.g. CIA, IRS, FDA, SEC)
Post-SOX	Dummy variable: equals 1 for years > 2002 and 0 otherwise.
PPM4WK	Premium of offer price to target trading price 4 weeks prior to the original announcement date.
Prepack	Dummy variable: equals 1 if the firm files for prepacked Chapter 11 filing and 0 otherwise.
Price-to-Earnings	Stock price over earnings per share.
Prior One-year Return	Market-adjusted cumulative one-year stock return prior to deal announcement.
Prior Three-year Return	Market-adjusted cumulative three-year stock return prior to deal announcement.
Private Target	Dummy variable: equals 1 for private target and 0 otherwise.
Public	The ratio of public debt to total long-term debt.
Public Debt dummy	Dummy variable: equals 1 if the distressed target has public debt outstanding and 0 otherwise.
Public Target	Dummy variable: equals 1 for public target and 0 otherwise.
R&D	Research and development expense over book value of total assets (zero if missing).
Related Deal	Dummy variable: equals 1 if the acquirer and the target share the same 2-digit SIC code and 0 otherwise.
Relationship Bank	Dummy variable: equals 1 if the firm's lender has extended loans to the firm in past three years and 0 otherwise.
Relative Transaction Value	Transaction value over acquirer market value of equity.
Retail	Dummy variable: equals 1 if the firm's SIC code is in the range 5200–5999 and 0 otherwise.
Return Std.	Annualized standard deviation of the daily sock returns for the fiscal year.
ROA	Income before extraordinary items over book value of total assets.
SA Index	Financial constraint index proposed by Hadlock and Pierce (2009), where SA = (-0.737*Size) + (0.043*Size^2) - (0.040*Age)
Sales	Sales measured in 2009 constant dollars.
Sales Growth	Growth rate in sales.
Secured Debt	The ratio of secured debt to total long-term debt.
Senior Debt	The ratio of senior debt to total long-term debt.

SEO Dummy	Dummy variable: equals 1 if the firm has any seasoned equity offerings in past three years and 0 otherwise.
Size	Log (Total book assets).
Size Squared	Square of Size.
STdebt	Change in debt in current liabilities, scaled by lagged total assets.
Stock Deal	Dummy variable: equals 1 for deals are paid for 100% by stock and 0 otherwise.
Stock Return	Firm's fiscal year raw return.
Subsidiary Target	Dummy variable: equals 1 for subsidiary target and 0 otherwise.
Tangibility	Net property, plant, and equipment over book value of total assets.
Tender Offer	Dummy variable:equals 1 for tender offers and 0 otherwise.
Tie Index	The fraction of companies in the network (S&P1500) to which the firm is directly connected in a given year.
Tobin's Q	(Book Value of Liability + Market Value of Equity) / Total Assets.
Toehold	Dummy variable: equals 1 if acquirer holds 5% or more of the target stock prior to the announcement and 0 otherwise.
Transaction Value	Deal value from SDC, adjusted to 2009 dollar.
Unsecured Creditor Tie	Dummy variable: equals 1 if the firm is socially connected with its unsecured creditors and 0 otherwise. Unsecured creditors are creditors in the list of top 20 unsecured claim holders or in the unsecured creditor's committee.

APPENDIX B
DISTRESS MEASURES

One of the most commonly used distress measure is the expected default frequency from the Merton (1974) Model. The model assumes that the value of the firm's total assets follows a geometric Brownian motion process, and computes the values of the firm's equity and debt based on the values of call and put options on the firm's total assets. To obtain expected default probability (EDF), we first need to estimate asset value and asset volatility by solving the following two equations simultaneously:

$$ME = \text{TA}\, N(d_1) - BD \exp(-R_{bill}T)\, N(d_2) \quad (1)$$

$$SIGMA_{Equity} = N(d_1)\frac{TA}{BD}SIGMA \quad (2)$$

where *TA* is the value of assets, *SIGMA* is the volatility of assets, *ME* is the value of equity, *BD* is the face value of debt maturing at time *T*, R_{bill} is the Treasure bill rate, $SIGMA_{Equity}$ is the volatility of equity, $d_1 = \frac{\log\left(\frac{TA}{BD}\right)+(R_{bill}+\frac{1}{2}SIGMA^2)T}{SIGMA\sqrt{T}}$ and $d_2 = d_1 - SIGMA\sqrt{T}$. Following convention in the literature, *T* is assumed to be 1 and *BD* is short-term debt plus one half long term book debt. Using the estimation procedure described by Bharath and Shumway (2008), I obtain the distance to default:

$$DD = \frac{\log\left(\frac{TA}{BD}\right) + (R_{bill} - \frac{1}{2}SIGMA^2)T}{SIGMA\sqrt{T}}$$

The corresponding expected default frequency in a given month is estimated as *N* (-DD). EDF is then calculated as the yearly averages of the monthly expected default frequency.

The second distress measure is obtained following Campbell, Hilscher, and Szilagyi (2008). Campbell, Hilscher, and Szilagyi estimate a dynamic panel model that

includes both market and accounting data to measure the probability a firm enters bankruptcy, is delisted for financial reasons, or defaults over a given period. In this paper, CHS-Score is constructed using the coefficients in the last column of Table 3 in Campbell et al. (2008) as follows:

$$CHS\_Score = -9.08 - 29.67 * NIMTAVG + 3.36 * TLMTA - 7.35 * EXRETAVG + 1.48 * SIGMA + 0.082 * RSIZE - 2.40 * CASHMTA + 0.054 * MB - 0.937 * PRICE,$$

where *NIMTAAVG* and *EXRETAVG* are the moving average of lagged profitability ratio (*NIMTA*, defined as Net Income divided by Market-valued Total Assets) and monthly log excess returns (*EXRET*, calculated as the monthly log excess return relative to the S&P 500 index), with geometrically declining weights on lags. More specifically,

$$NIMTAVG_{t-1,t-12} = \frac{1-\emptyset^3}{1-\emptyset^{12}}\left(NIMTA_{t-1,t-3} + \cdots + \emptyset^9 NIMTA_{t-10,t-12}\right)$$

$$EXRETAVG_{t-1,t-12} = \frac{1-\emptyset}{1-\emptyset^{12}}\left(EXRET_{t-1} + \cdots + \emptyset^{11} EXRET_{t-12}\right)$$

where TLMTA is the ratio of total liabilities divided by the sum of market equity and book liabilities, SIGMA is the standard deviation of each firm's daily stock return over the past 3 months, RSIZE is the relative size of each firm measured as the log ratio of its market capitalization to that of the S&P 500 index, CASHMTA is the ratio of cash and short-term assets to the market value of its asset, MB is the market-to-book ratio, and PRICE is each firm's log price per share, truncated above at $15.

APPENDIX C
BANKRUPTCY ACQUISITION EXAMPLES

The followings are three examples showing how we define an acquisition in Chapter 11:

1. Video Update, Inc. filed for Chapter 11 bankruptcy protection on September 18, 2000 to restructure its operations. In May 2001, Movie Gallery, Inc. purchased some senior secured bank debt of Video Update, Inc. from a syndication of financial institutions led by BNP Paribas. On December 21, 2001, the U.S. Bankruptcy Court confirmed Video Update, Inc.'s plan of reorganization, and it becomes a wholly owned subsidiary of Movie Gallery, Inc.
2. Nu-Kote Holdings, Inc filed for Chapter 11 on November 6, 1998. The firm decided to sell the company as a going concern. During an open auction process, Richmont Capital Partners submitted the highest bid and obtained 100% of the ownership. On October 25, 2000, the firm emerged.
3. Thorn Apple Valley, Inc. filed for Chapter 11 on May 3, 1999. On July 12, 1999, Thorn Apple Valley sold substantially all of its assets to IBP, Inc. for $112.2 million. Under the purchase agreement, IBP would purchase the company as a going concern and continue operations of all plants with current management and personnel intact. On July 31, 2001, the case was converted to Chapter 7.

REFERENCES

Abbott, L., S. Parker, and G. Peters, 2004. Audit Committee Characteristics and Restatements. *Auditing: A Journal of Practice & Theory* 23, 69–87.

Adams, R., 2009. Asking Directors about Their Dual Roles. Working Paper, University of Queensland and ECGI.

Adams, R., and D. Ferreira, 2007. A Theory of Friendly Boards. *Journal of Finance* 62, 217-250.

Adams, R., B. Hermalin, and M. Weisbach, 2008. The Role of Boards of Directors in Corporate Governance: A Conceptual Framework and Survey. Working Paper. National Bureau of Economic Research.

Agrawal, A., and S. Chadha, 2005. Corporate Governance and Accounting Scandals. *Journal of Law and Economics* 48, 371–406.

Agrawal, A., and R. Walkling, 1994. Executive Careers and Compensation Surrounding Takeover Bids. *Journal of Finance* 49 (3), 985-1014.

Archambeault, D., and F. DeZoort, 2001. Auditor Opinion Shopping and the Audit Committee: An Analysis of Suspicious Auditor Switches. *International Journal of Auditing* 5, 33-52.

Asquith, P., R. Bruner, and D. Mullins, 1983. The Gains to Bidding Firms from Merger. *Journal of Financial Economics* 11, 121–139.

Barber, B., and J. Lyon, 1996. Detecting Abnormal Operating Oerformance: The Empirical Power and Specification of Test Statistics. *Journal of Financial Economics* 41, 359-399.

Bargeron, L., F. Schlingemann, R. Stulz, and C. Zutter, 2008. Why Do Private Acquirers Pay So Little Compared to Public Acquirers. *Journal of Financial Economics* 89, 375–390.

Bargeron, L., F. Schlingemann, R. Stulz and C. Zutter, 2010. Do Targe CEO's Sell Out Their Shareholders to Keep Their Job in a Merger. Working Paper, University of Pittsburgh.

Barnea, A., and I. Guedj, 2009. Director Networks. Working paper, University of Texas.

Betker, B., 1995. Management's Incentives, Equity's Bargaining Power, and Deviations from Absolute Priority in Chapter 11 Bankruptcies. *Journal of Business* 68(2), 161–183.

Bertrand, M., and A. Schoar, 2003. Managing with Style: The Effect of Managers on Firm Policies. *Quarterly Journal of Economics* 118, 1169-1208.

Bharath, S., and T. Shumway, 2008. Forecasting Default with the KMV-Merton Model. *Review of Financial Studies* 21, 1339-1369.

Bizjak, J., M. Lemmon, and R. Whitby, 2009. Option Backdating and Board Interlocks. *Review of Financial Studies* 22, 4821-4847.

Boone, A., and H. Mulherin, 2007. How Are Firms Sold? *Journal of Finance* 62 (2), 847-875.

Bouwman, C., 2011. Corporate Governance Propagation through Overlapping Directors. *Review of Financial Studies* 24, 2358-2394.

Boyd, B., 1990. Corporate Linkages and Organizational Environment: A Test of the Resource Dependence Model. *Strategic Management Journal* 11, 419-430.

Brochet, F., and K. Welch, 2011. Top Executive Background and Financial Reporting Choice: The Case of Goodwill Impairment. Working paper, Harvard University.

Braggion, F., 2011. Managers and (Secret) Social Networks: The Influence of the Freemasonry on Firm Performance. *Journal of the European Economic Association*, forthcoming.

Buckley, A., and M. Van Der Nat, 2003. Derivatives and the Non-executive Director. *European Management Journal* 21, 389-397.

Byrd, J., and K. Hickman, 1992. Do Outside Directors Monitor Managers? Evidence from Tender Offer Bids. *Journal of Financial Economics* 32, 195-221.

Cai, Y., and M. Sevilir, 2009. Board Connections and M&A Transactions. *Journal of Financial Economics*, forthcoming.

Cai, J., M. Song, and R. Walkling, 2010. Anticipation, Acquisitions and Bidder Returns: Industry Shocks and the Transfer of Information across Rivals. *Review of Financial Studies*, forthcoming.

Campello, M., J. Graham, and C. Harvey, 2010. The Real Effects of Financial Constraints: Evidence from a Financial Crisis. *Journal of Financial Economics* 97, 470-487.

Campbell, J., J. Hilscher, and J. Szilagyi, 2008. In Search of Distress Risk. *Journal of Finance* 63, 2899-2939.

Chang, S., 1998. Takeovers of Privately Held Targets, Methods of Payment, and Bidder Returns. *Journal of Finance* 53, 773-784.

Charumilind, C., R. Kali, and Y. Wiwattanakantang, 2006. Connected lending: Thailand before the Financial Crisis. *Journal of Business* 79, 181-218.

Chatterjee, S., U. Dhillon, and G. Ramirez, 1995. Coercive Tender and Exchange Offers in Distressed High-yield Debt Restructurings: An Empirical Analysis. *Journal of Financial Economics* 38, 333–360.

Chen, K., and J. Zhou, 2007. Audit Committee, Board Characteristics, and Auditor Switch Decisions by Andersen's Clients. *Contemporary Accounting Research* 24, 1085-117.

Chevalier, J., 1995a. Capital Structure and Product-Market Competition: Empirical Evidence from the Supermarket Industry. *American Economic Review* 85, 415-435.

Chevalier, J., 1995b. Do LBO Supermarkets Charge More? An Empirical Analysis of the Effects of LBOs on Supermarket Pricing. *Journal of Finance* 50, 1095-1112.

Clark, K., and E. Ofek, 1994. Mergers as a Means of Restructuring Distressed Firms: An Empirical Investigation. *Journal of Financial and Quantitative Analysis* 29, 541–565.

Cohen, L., A. Frazzini, and C. Malloy, 2008. The Small World of Investing: Board Connections and Mutual Fund Returns. *Journal of Political Economy* 116, 951-979.

Cohen, S., and T. Wills, 1985. Stress, Social Support, and the Buffering Hypothesis. *Psychological Bulletin* 98, 310-357.

Coles, J., N. Daniel, and L. Naveen, 2008. Boards: Does One Size Fit All? *Journal of Financial Economics* 87, 329-356.

Core, J., R. Holthausen, and D. Larcker, 1999. Corporate Governance, Chief Executive Officer Compensation, and Firm Performance. *Journal of Financial Economics* 51, 371-406.

Cotter, D., J. Hermsen, and R. Vanneman, 2003. Social Capital and Economic Hardships across Metropolitan Areas. Working Paper.

Cotter, J., A. Shivdasani, and M. Zenner, 1997. Do Independent Directors Enhance Target Shareholder Wealth During Tender Offers? *Journal of Financial Economics* 43, 195-218.

Cowen, L, A. Frazzini, and C. Malloy, 2010. Sell Side School Ties. *Journal of Finance* 65, 1409–1437

Dahiya, S., K. John, M. Puri, and G. Ramirez, 2003. Debtor-in-Possession Financing and Bankruptcy Resolution: Empirical Evidence. *Journal of Financial Economics* 69, 259-280.

Davis, G., 1991. Agents without Principles? The Spread of the Poison Pill through the Intercorporate Network. *Administrative Science Quarterly* 36, 583-613.

Davis, G., and H. Greve, 1997. Corporate Elite Networks and Governance Changes in the 1980s. *American Journal of Sociology* 103, 1-37.

Defond, M., R. Hann, and X. Hu, 2005. Does the Market Value Financial Expertise on Audit Committees of Boards of Directors? *Journal of Accounting Research* 43, 153–193.

Denis, D., and R. Rodgers, 2007. Chapter 11: Duration, Outcome, and Post-Reorganization Performance. *Journal of Financial and Quantitative Analysis* 42, 101-118.

Dionne, G., and T. Triki, 2005. Risk Management and Corporate Governance: The Importance of Independence and Financial Knowledge for the Board and the Audit committee. Working Paper. HEC – Montreal.

Duchin, R., J. Matsusaka, and O. Ozbas, 2010. When Are Outside Directors Effective? *Journal of Financial Economics* 96, 195-214.

Duchin, R., O. Ozbas, and B. Sensoy, 2010. Costly External Finance, Corporate Investment, and the Subprime Mortgage Financial Crisis. *Journal of Financial Economics* 97, 418-435.

Dunkel-Schetter, C., and T. Bennett, 1990. Differentiating the Cognitive and Behavioral Aspects of Social Support. *Social Support: An Interactional View*, edited by B. Sarason, I. Sarason, and G.Pierce. New York: Wiley, 267-296.

Elsas, R., and J. Krahnen, 1998. Is Relationship Lending Special? Evidence from Credit-File Data in Germany. *Journal of Banking and Finance* 22, 1283-1316.

Engelberg, J., P. Gao, and C. Parsons, 2010. The Price of a CEO's Rolodex. Working Paper, University of North Carolina and University of Notre Dame.

Engelberg, J., P. Gao, and C. Parsons, 2011. Friends with Money. *Journal of Financial Economics*, forthcoming.

Faccio, M., J. McConnell, and R. Masulis, 2006. Political Connections and Corporate Bailouts. *Journal of Finance* 61, 2597-2635.

Fahlenbrach, R., A. Low, and R. Stulz, 2010. The Dark Side of Outside Directors: Do They Quit When They are Most Needed? Working Paper, Swiss Finance Institute.

Fahlenbrach, R., A. Low, and R. Stulz, 2010. Why Do Firms Appoint CEOs as Outside Directors? *Journal of Financial Economics,* forthcoming.

Fama, E., and K. French, 1997. Industry Costs of Equity. *Journal of Financial Economics* 43, 153-193.

Felo, A., S. Krishnamurthy, and S. Solieri. 2003. Audit Committee Characteristics and the Perceived Quality of Financial Reporting: An Empirical Analysis. Working paper, Pennsylvania State University.

Fich, E., and A. Shivdasani, 2006. Are Busy Boards Effective Monitors? *Journal of Finance* 61, 689–724.

Fracassi, C., 2011. Corporate Finance Policies and Social Networks. Working Paper, University of Texas at Austin.

Fracassi, C., and G. Tate, 2011. External Networking and Internal Firm Governance. *Journal of Finance,* forthcoming.

Franks, J., and W. Torous, 1994. A Comparison of Financial Recontracting in Distressed Exchanges and Chapter 11 Reorganizations. *Journal of Financial Economics* 35, 349–370.

Gilson, S., 1989. Management Turnover and Financial Distress. *Journal of Financial Economics* 25, 241-262.

Gilson, S., 1990. Bankruptcy, Board, Banks, and Blockholders: Evidence on Changes in Corporate Ownership and Control When Firms Default. *Journal of Financial Economics* 26, 1-33.

Gilson, S., 1997. Transaction Costs and Capital Structure Choice: Evidence from Financially Distressed Firms. *Journal of Finance* 52, 161-196.

Gilson, S., K. John, and L. Lang, 1990. Troubled Debt Restructurings: An Empirical Study of Private Reorganization of Firms in Default. *Journal of Financial Economics* 27, 315–353.

Goldman, E., J. Rocholl, and J. So, 2009. Do Politically Connected Boards Affect Firm Value? *Review of Financial Studies* 22, 2331-2360.

Gompers, P., J. Ishii, and A. Metrick, 2003. Corporate Governance and Equity Prices. *Quarterly Journal of Economics* 118, 107-155.

Gopalan, R., and K. Xie, 2008. Conglomerates and Industry Distress. *Review of Financial Studies*, forthcoming.

Goyal, S., 2003. Learning in Networks. Chapter 4 in Group Formation in Economics: Networks, Clubs, and Coalitions" ed. G. Demange and M. Wooders, Cambridge University Press, Cambridge U.K.

Graham, J., 2000. How Big Are the Tax Benefits of Debt? *Journal of Finance* 55, 1901-1942.

Greenlaw, D., J. Hatzius, A. Kashyap, and H. Shin, 2008. Leveraged Losses: Lessons from the Mortgage Market Meltdown. U.S. Monetary Policy Forum Report No. 2.

Guner, A., U. Malmendier, and G. Tate, 2008. Financial Expertise of Directors. *Journal of Financial Economics* 88, 323-354.

Hadlock, C., and J. Pierce, 2010. New Evidence on Measuring Financial Constraints: Moving Beyond the KZ Index. *Review of Financial Studies* 23, 1909–1940.

Harford, J., 1999. Corporate Cash Reserves and Acquisitions. *Journal of Finance* 54, 1969-1997.

Harris, M., and A. Raviv, 2008. A Theory of Board Control and Size. *Review of Financial Studies* 21, 1797–1832.

Hartzell, J., E. Ofek, and D. Yermack, 2004. What's In It For Me? Personal Benefits Obtained by CEOs Whose Firms Are Acquired. *Review of Financial Studies*17, 37-61.

Hellmann, T., and M. Puri, 2002. Venture Capital and the Professionalization of Start-up Firms: Empirical Evidence. *Journal of Finance* 57, 169–197.

Hermalin, B., and M. Weisbach, 1998. Endogenously Chosen Boards of Directors and Their Monitoring of the CEO. *American Economic Review* 88, 96-118.

Hermalin, B., and M. Weisbach, 2003. Boards of Directors as an Endogenously Determined Institution: A Survey of the Economic literature. *Economic Policy Review* (April), 7-26.

Hirano, K., G. Imbens, and G. Ridder, 2003. Efficient Estimation of Average Treatment Effects Using the Estimated Propensity Score. *Econometrica* 71, 1161-1189.

Holmstrom, B., and J. Tirole, 1997. Financial Intermediation, Loanable Funds, and the Real Sector. *Quarterly Journal of Economics* 112, 663-691.

Hoshi, T., A. Kashyap, and D. Scharfstein, 1990. The Role of Banks in Reducing the Costs of Financial Distress in Japan. *Journal of Financial Economics* 27, 67 – 88.

Hotchkiss, E., 1993. Investment Decisions under Chapter 11 Bankruptcy. Doctoral dissertation, New York University.

Hotchkiss, E., 1995. Postbankruptcy Performance and Management Turnover. *Journal of Finance* 57, 135-168.

Hotchkiss, E., and R. Mooradian, 1998. Acquisitions as a Means of Restructuring Firms in Chapter 11. *Journal of Financial Intermediation* 7, 240–262.

House, J., K. Landis, and D. Umberson, 1988. Social Relationships and Health. *Science* 241, 540–545.

Hwang, B., and S. Kim, 2008. It Pays to Have Friends. *Journal of Financial Economics* 93, 138-158.

Hwang, B., and S. Kim, 2011. Earnings Management and Social Ties. Working Paper, Purdue University.

Imbens, G., and J. Wooldridge, 2007. Lecture 1: Estimation of Average Treatment Effects under Unconfoundedness. National Bureau of Economic Research, Summer Seminar.

Ingram, P., and P. Roberts, 2000. Friendships among Competitors in the Sydney Hotel Industry. *American Journal of Sociology* 106, 387-423.

Ioannides, Y., and L. Loury, 2004. Job Information Networks, Neighborhood Effects, and Inequality. *Journal of Economic Literature* 42, 1056-1093.

Ishii, J., and Y. Xuan, 2010. Acquirer-Target Social Ties and Merger Outcomes. Working Paper, Stanford University and Harvard University.

Ivashina, V., and D. Scharfstein, 2010. Bank Lending During the Financial Crisis of 2008. *Journal of Financial Economics* 97, 319-338.

Jaffee, D., and T. Russell, 1976. Imperfect Information, Uncertainty, and Credit Rationing. *Quarterly Journal of Economics* 90, 651-666.

Jensen, M., 1993. The Modern Industrial Revolution, Exit, and the Failure of Internal Control Systems. *Journal of Finance* 48, 831-880.

Jiang, W., K. Li, and W. Wang, 2011. Hedge Funds in Chapter 11. *Journal of Finance*, forthcoming.

Kahle, K., and R. Stulz, 2010. Financial Policies, Investment, and the Financial Crisis: Impaired Credit Channel or Diminished Demand for Capital? Working Paper, University of Arizona and Ohio State University.

Kaplan, S., and M. Weisbach, 1992. The Success of Acquisitions: Evidence from Divestitures. *Journal of Finance* 47, 107–138.

Kaplan, S., and L. Zingales, 1997. Do Investment-Cash Flow Sensitivities Provide Useful Measures of Financing Constraints? *Quarterly Journal of Economics* 112,169-215.

Karamanou, R., and N. Vafeas, 2005. The Association between Corporate Boards, Audit Committees, and Management Earnings Forecasts: An Empirical Analysis. *Journal of Accounting Research* 43, 453–73.

Krishnan, V., and G. Visvanathan, 2008. Does the SOX Definition of an Accounting Expert Matter? The Association between Audit Committee Directors' Accounting Expertise and Accounting Conservatism. *Contemporary Accounting Research* 25,827–58.

Kortum, S., and J. Lerner, 2000. Assessing the Contribution of Venture Capital to Innovation. *RAND Journal of Economics* 31, 674–692.

Kuppuswamy, V., and B. Villalonga, 2010. Does Diversification Create Value in the Presence of External Financing Constraints? Evidence from the 2007–2009 Financial Crisis. Working Paper, Harvard Business School.

Larcker, D., E. So, and C. Wang, 2011. Boardroom Centrality and Stock Returns. Working Paper. Stanford University.

Lemmon, M., Y. Ma, and E. Tashjian, 2009. Survival of the Fittest? Financial and Economic Distress and Restructuring Outcomes in Chapter 11. Working Paper, University of Utah.

Lemmon, M., and M. Roberts, 2010. The Response of Corporate Financing and Investment to Changes in the Supply of Credit. *Journal of Financial and Quantitative Analysis* 45, 555-587.

Lewellen, W., C. Loderer, and A. Rosenfeld, 1985. Merger Decisions and Executive Stock Ownership in Acquiring Firms. *Journal of Accounting and Economics* 7, 209-231.

Li, K., and N. Prabhala, 2007. Self-selection Models in Corporate Finance. In Eckbo, B. E. (Ed.), *Handbook of Corporate Finance*, Vol. 1: Empirical Corporate Finance. North-Holland, Amsterdam, 37-86.

Li, Y., and A. Srinivasan, 2011. Relationship Bank Behavior during Borrower Distress and Bankruptcy. Working Paper, Korea University and National University of Singapore.

Lin, M., S. Viswanathan, and N. Prabhala, 2011. Judging Borrowers by the Company They Keep: Social Networks and Information Asymmetry in Online Peer-to-Peer Lending. Working Paper, University of Maryland.

LoPucki, L., and W. Whitford, 1993. Patterns in the Bankruptcy Reorganization of Large, Publicly Held Companies. *Cornell Law Review* 78, 597–618.

Loughran T., and A. Vijh, 1997. Do Long-Term Shareholders Benefit from Corporate Acquisitions? *Journal of Finance* 52, 1765-1790.

Manconi, A., and M. Massa, 2010. Bondholder Concentration, the Cost of Default, and Firm Policies. Working Paper, Tilburg University.

Mansi, S., W. Maxwell, and A. Zhang, 2010. Bankruptcy Prediction Models and the Cost of Debt. Working Paper, Virginia Tech University.

Masulis, R., and S. Mobbs, 2010. Are All Inside Directors the Same? *Journal of Finance*, forthcoming.

Masulis, R., C. Wang, and F. Xie, 2007. Corporate Governance and Acquirer Returns. *Journal of Finance* 62, 1851-1889.

McMullen, D., and K. Raghunandan, 1996. Enhancing Audit Committee Effectiveness. *Journal of Accountancy*, 79-81.

Minton, B., J. Taillard, and R. Williamson, 2010. Do Independence and Financial Expertise of the Board Matter for Risk Taking and Performance? Working paper, Ohio State University, Boston College, and Georgetown University.

Mizruchi, M., 1990. What Do Interlocks Do? An Analysis, Critique, and Assessment of Research on Interlocking Directorates. *Annual Review of Sociology* 8, 16-32.

Moeller, T., 2005. Let's Make a Deal! How Shareholder Control Impacts Merger Payoffs. *Journal of Financial Economics* 76, 167-190.

Moeller, S., F. Schlingemann, and R. Stulz, 2005. Wealth Destruction on a Massive Scale? A Study of Acquiring-firm Returns in the Recent Merger Wave. *Journal of Finance* 60, 757−782.

Montgomery, J., 1991. Social Networks and Labour Market Outcomes: Toward and Economic Analysis. *American Economic Review* 81, 1408-1418.

Montgomery, J., 1998. Toward a Role-Theoretic Conception of Embeddedness. *American Journal of Sociology* 104, 92–125.

Opler, T., and S. Titman, 1994. Financial Distress and Corporate Performance. *Journal of Finance* 49, 1015-1040.

Peek, J., and E. Rosengren, 2005. Unnatural Selection: Perverse Incentives and the Misallocation of Credit in Japan. *American Economic Review* 95, 1144–1166.

Pennings, J., 1980. Interlocking Directorates. San Francisco: Josey-Bass Publishers.

Phillips, G., 1995. Increased Debt and Industry Product Markets an Empirical Analysis. *Journal of Financial Economics* 37, 189-238.

Rauh, J., and A. Sufi, 2010. Capital Structure and Debt Structure. *Review of Financial Studies*, forthcoming.

Roberts, M., and A. Sufi, 2009. Control Rights and Capital Structure: An Empirical Investigation, *Journal of Finance* 64, 1657–1695.

Schmidt, B., 2009. Costs and Benefits of "Friendly" Boards during Mergers and Acquisitions. Working paper, Emory University.

Schonlau, R., and P. Singh, 2009. Board Networks and Merger Performance. Working Paper, University of Washington.

Schoorman, F., M. Bazerman, and R. Atkin, 1981. Interlocking Directorates: A Strategy for Reducing Environmental Uncertainty. *Academy of Management Review* 6, 243-251.

Shue, K., 2011. Executive Networks and Firm Policies: Evidence from the Random Assignment of MBA Peers. Working Paper, University of Chicago.

Shumway, T., 2001. Forecasting Bankruptcy More Accurately: A Simple Hazard Model. *Journal of Business* 74, 101-124.

Snyder, P., R. Priem, and E. Levitas, 2009. The Diffusion of Illegal Innovations among Management Elites. *Academy of Management Proceedings*, 1-6.

Stiglitz J. and A. Weiss, 1981. Credit Rationing in Markets with Imperfect Information. *American Economic Review* 71, 393-410.

Stuart, T., and S. Yim, 2010. Board Interlocks and the Propensity to Be Targeted in Private Equity Transactions. *Journal of Financial Economics* 97, 174-189.

Sufi, A., 2007. Information Asymmetry and Financing Arrangements: Evidence from Syndicated Loans. *Journal of Finance* 62, 629-668.

Tashijian, E., R. Lease, and J. McConnell, 1996. Prepacks: An Empirical Analysis of Prepackaged Bankruptcies. *Journal of Financial Economics* 40, 135-162.

Thoits, P., 1995. Stress, Coping, and Social Support Processes: Where Are We? What Next? *Journal of Health and Social Behavior* 35, 53-79.

Travlos, N., 1987. Corporate Takeover Bids, Method of Payment, and Bidding Firm's Stock Returns. *Journal of Finance* 52, 943-963.

Uzzi, B., 1996. The Sources and Consequences of Embeddedness for the Economic Performance of Organizations: The Network Effect. *American Sociological Review* 61, 674-698.

Uzzi, B., 1999. Embeddedness in the Making of Financial Capital: How Social Relations and Networks Benefit Firms Seeking Financing. *American Sociological Review* 64, 481-505.

Vijh, A., and K. Yang, 2009. The Acquisition Performance of S&P 500 Firms. Working Paper, University of Iowa.

Wardrip-Fruin, N., and N. Montfort, 2003. New Media Reader. MIT Press.

Xie, B., W. Davidson, and P. DaDalt, 2003. Earnings Management and Corporate Governance: The Role of the Board and the Audit Committee. *Journal of Corporate Finance* 9, 295-316.

Yermack, D., 1996. Higher Market Valuation of Companies with a Small Board of Directors. *Journal of Financial Economics* 40, 185-213.

Yim, S., 2010. The Acquisitiveness of Youth: CEO Age and Acquisition Behavior. Working Paper, Harvard University.

Zhang, Y., J. Zhou, and N. Zhou, 2007. Audit Committee Quality, Auditor Independence, and Internal Control Weaknesses. *Journal of Accounting and Public Policy* 26, 300–27.