The Impact of the Structure of Debt on Target Gains

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Consistent with prior literature, we find that increases in target leverage have a positive impact on returns to target shareholders irrespective of the source of debt. Even so, financing with bank debt has a remarkably different impact. If a target firm's debt is primarily sourced from banks, as opposed to when debt is dominated by public or private non-bank debt, we find that an increase in target leverage from the 25th to the 75th percentile (1) raises the probability of a bid leading to a successful takeover by 14%, but (2) lowers returns to target shareholders by 5.2% in the event a takeover occurs. (3) Supporting the coinsurance effect as an explanation, we find that an increase in leverage from the 25th to the 75th percentile lowers returns to target shareholders by 8.7% if target debt is relatively risky and bank-dominated. Finally, the transaction time to complete a takeover is also relatively smaller when debt is bank-dominated, since banks can more efficiently shift their debt to the typically more secure bidders.

JEL Classification: G32; G34
Keywords: Target Returns; Structure of Debt; Coinsurance

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1. Introduction

The primary purpose of this paper is to offer empirical evidence on the impact of the structure of target debt on target shareholders, although we also reexamine prior work on the impact of the level of leverage. In doing so, we join a considerable effort in finance to explain observed returns to target shareholders in completed takeovers.[1] According to Stulz (1988), increases in leverage raise the bargaining power of target shareholders relative to bidder shareholders. Stulz (1988), as do Harris and Raviv (1988) and Israel (1992) in related models, predicts a positive relation between returns to target shareholders and leverage. By concentrating equity in the hands of owners with higher reservation prices, debt can help extract greater payoffs for target shareholders from acquirers. Billett and Ryngaert (1997) find empirical support for just such a positive relation. However, there are reasons to reconsider this relation. The positive relation reported by Billet and Ryngaert (1997) between equity returns to target shareholders and the level of target leverage cannot be empirically distinguished from simply a pure leverage effect. Higher leverage reduces the number of target shares over which the gains are spread, and may thus mechanically raise equity returns.

The chief motivation for this paper is to consider how the target's debt structure, besides the level of leverage, affects gains to target shareholders. In Stulz (1988), Harris and Raviv (1988) and Israel (1992), debt is assumed to be homogeneous, and creditors are treated as passive providers of capital. Target equityholders are then seen as using "other people's money," namely that of creditors, to extract higher returns from bidders for solely their own welfare. Real world debt, however, is supplied by a variety of creditors whose stakes may be differentially affected by a takeover, and who are expected to proactively protect their own interests. Indeed in other contexts, recent work by Houston and James (1996), Johnson (1997), Cantillo and Wright (2000), Denis and Mihov (2003), and Faulkender and Pertersen (2005) shows that the source of capital does matter. Yet, the impact of the structure of target debt on target shareholders remains to be examined.[2] The main distinction made among creditors in this paper is derived from the better

[1] There is a large literature on the factors affecting target shareholders' returns. E.g., see the effect of insider, institutional, and bidder holdings (Stulz, Walkling, and Song, 1990); defensive stock repurchases (Dann and DeAngelo, 1988); poison pills (Brickley, Coles, and Terry, 1994, Comment and Schwert, 1995); multiple bidders (Bradley, Desai, and Kim, 1988); free cash flow (Lang, Stulz, and Walkling, 1991, Smith and Kim, 1994); Tobin's Q (Servaes, 1991); and method of payment (Travlos, 1987).

[2] Moreover, anecdotal evidence shows that debt can play an important role in mergers and acquisitions. E.g., in 1999, World Access, a NASDAQ-listed provider of international long distance service, merged with privately-held FaciliCom, a profitable firm with a digital network for voice and data services. As part of the merger agreement, holders of Facilicom 10.5% Senior Notes due 2008 were entitled, in exchange for

contractual protection and the superior ability of banks to actively monitor and re-negotiate, in contrast to the "passive" nature of arms-length public debt protected essentially by explicit debt covenants (Smith and Warner, 1979).

The gains from takeovers are sizable for some public bonds. According to Billet, King, and Mauer (2004), non-investment grade target bonds gain 4.3 percent at M&A announcements. We expect bank loans to potentially gain even more because of reasons highlighted in prior literature. Banks are likely to lend to riskier firms (Cantillo and Wright, 2000; Faulkender, 2004; and Petersen and Rajan, 1994), while bondholders generally lend to firms with better credit worthiness (Denis and Mihov, 2003; Krishnaswami, Spindt, and Subramanium, 1999; and Houston and James, 1996). Then, through the *coinsurance effect*, according to which a target's debt appreciates after being assumed by the typically more secure bidder (Shastri, 1990; Billet, 1996; and Billet and Ryngaert, 1997), bank debt could experience substantial gains. However, by itself the coinsurance potential is not enough to guarantee a wealth transfer to banks. After all, we expect target and bidder shareholders to actively prevent such transfers, for example by simply redeeming debt that is likely to gain. But, banks can have considerable bargaining power to hold on to their coinsurance gains, based on better contractual rights to withhold approval of a change in control (Gilson and Warner, 1996; Nash, Netter, and Poulsen, 2003; and Ross, Westerfield and Jaffe, 1999), and a superior ability to monitor and negotiate (Fama, 1985; Berlin and Loeys, 1988; Diamond, 1991; Chemmanur and Fulghieri, 1994; Krishnaswami, Spindt, and Subramaniam, 1999; Denis and Mihov, 2003). Most importantly, overwhelmingly bank debt is non-callable (none is callable in our sample). Unfortunately, the value gains to bank debt cannot be assessed directly because bank loans are not traded frequently. Even when they are traded, the price changes in loan values are not readily observed. Without being able to directly assess the value effects of M&A's on banks, who we find are usually the most important creditors, our paper documents the impact of various types of debt on target shareholders in other ways. Specifically, we test for the implications of creditors' value-maximizing behavior by studying how the presence of different types of target debt affects gains realized by target shareholders.

Our results, using a sample of 250 successful acquisitions and a control sample of 255 unsuccessful bids over a 15-year period, 1981-1995, confirm the previously reported positive

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a $1000 face, to receive: (1) $1000 face value of the new World Access 13.25% Senior Notes due 2008, (2) $10 in cash, and (iii) new World Access common stock having a market value of $50 at the time of the exchange. The concessions made to these privately-held bonds, an extra $60 and more per $1000 face, were to prevent these bonds from being put at still higher prices after the merger based on covenants regarding bondholders rights upon change in control.

impact of higher level of leverage on returns to target shareholders. However, we also find that financing with bank debt has a remarkably different impact. In particular, we find that, given a level of leverage, sourcing debt primarily from banks *adversely* affects target shareholders. Furthermore, we find that, as predicted by the coinsurance effect, target shareholders gain less when bank debt stands to shift from targets to relatively less risky bidders. Our results show:

(1) Increasing leverage for target firms in our sample of successful takeovers from the 25th percentile (10%) to the 75th percentile (42%) brings about an increase of 11.5% in returns to target shareholders, provided the debt is dominated by either bonds or private non-bank debt. However, the corresponding increase in returns to target shareholders is only 6.3% for bank-dominated debt. Thus, sourcing debt from banks, as opposed to public or private non-bank debt, affects target shareholders returns adversely by 5.2%.

(2) At the same time, bank-dominated debt increases the probability of a bid leading to a successful takeover. Whereas an increase in leverage for targets from the 25th to the 75th percentile reduces the probability of successful takeover by 25% when debt is dominated by non-bank lenders, the corresponding likelihood reduction is only 11% if target's debt is bank-dominated, a 14% difference.

(3) We also find support for the coinsurance effect: An increase in leverage from the 25th to the 75th percentile raises gains to target shareholders by about 10.4% if the debt of the target is relatively not risky, but the corresponding increase in target shareholder gains is 4.7% if target debt is risky, and only 1.7% if, in addition, this debt is primarily provided by banks. Thus, the difference can be as much as 8.7% if it is bank-dominated debt.

We also find that, while the overall level of leverage lengthens the time taken to complete a takeover, bank debt speeds up the process relative to other creditors. This suggests banks can act as efficient conduits to potential bidder firms for the special information they possess on target firms. If bidders are financially stronger than targets, banks may indeed prefer to hasten to have their debt transferred from the target to the bidder.

The rest of the paper is organized as follows. In the next section, we elaborate on how different sources of debt impact target shareholders. In Section 3, we describe our data. The analysis and results are presented in Section 4. We check the robustness of our findings in Section 5. In Section 6, we examine bond price changes around takeover announcements. We discuss alternative explanations for our findings in Section 7, and make concluding remarks in Section 8.

2. Hypotheses on the impact of the level and structure of debt

2.1. Impact of level of debt

As Stulz (1988) and others have argued, higher leverage helps buy out target shareholders with low reservation share values, increase ownership concentration, and to force the bidder to

pay more for the consent of the marginal shareholder. However, debt, empowered by covenants, can further help extract a larger share of gains from bidders by withholding its approval for mergers with low gains, similarly to other anti-takeover deterrents. Thus, target debt can redistribute wealth from bidder shareholders to target shareholders, with the possibility that creditors themselves gain in the process. There are three testable empirical implications of the impact of the level of leverage on target shareholders as hypothesized by Stulz (1988) and others: (L1) Target leverage is positively related to target equity concentration. (L2) Higher leverage lowers the probability of a firm becoming a successful target, since only the bidders who can pay the higher reservation price succeed. (L3) Finally, if a takeover occurs, *total gains* (to bidder and target shareholders) are positively related to target leverage. Though gains to bidder and target shareholders is not an exact measure of total gains because it ignores gains to bidder and target creditors, using this measure avoids the mechanical positive relation between target leverage and returns to target shareholders tested by Billet and Ryngaert (1997).

As far as we know, L3 is new to the literature. Prior evidence on L1 is mixed. While Friend and Lang (1988) find leverage and management holdings to be negatively related, Chaplinsky and Niehaus (1992) conclude that leverage and insider equity are independently determined. We examine L1 more comprehensively by analyzing managerial ownership, institutional ownership, blockholdings as well as a measure of overall concentration of equity. Prior evidence on L2 is also mixed. While Palepu (1986) reports a negative relation, Mikkelson and Partch (1989) and Song and Walkling (1993) fail to find a significant relation. Billet (1996) finds that the likelihood of an acquisition decreases with the amount of risky debt. We test a conditional version of L2 by looking at the likelihood that a bid will lead to a successful completion of takeover. Our main interest is the impact of both level and structure of debt on takeover likelihood, and debt structures are not available for the full population of firms.

2.2. Impact of structure of debt: Coinsurance effect on bank debt

In exchange for their approval, banks could bargain with bidder and target shareholders before acquisition to extract concessions regarding the priority of their claims (Welch, 1977, Gertner and Scharfstein, 1991, and Chemmanur and Fulghieri, 1994) or better financing terms (Wienstein and Yafeh, 1998). Even without explicit concessions, banks stand to benefit through *the coinsurance effect* -- gains from improved protection if the target's risk exceeds that of the combined assets of the target and the bidder.[3] According to Cantillo and Wright (2000),

[3] The coinsurance effect has a relatively long history, going back to Levy and Sarnat (1970), Lewellen (1971), and Higgins and Schall (1975). Though in the past there were several studies on the reaction of bonds to merger announcements, there is a renewed interest in testing the coinsurance effect (e.g., Billet,

Faulkender (2004), and Petersen and Rajan (1994), banks are more likely to provide financing to riskier, smaller firms. Bank loans – unlike public bonds - are issued to clients with generally lower creditworthiness (Denis and Mihov, 2003; Krishnaswami, Spindt, and Subramaniam, 1999; and, Houston and James, 1996). The lower ex-ante quality of debt provided by banks leads to greater potential ex-post appreciation. This makes coinsurance a likely mechanism by which banks can capture some of the takeover gains. However, the presence of coinsurance potential is not sufficient by itself to ensure that these gains go to banks. The superior bargaining power of banks, coming from the more stringent covenants, non-callability, or advantageously close financial relationship and an ability to renegotiate with the target firm, is a necessary factor (not previously emphasized in the literature) for banks to secure their greater gains. We expect target and bidder shareholders to take steps to prevent these transfers by issuing new debt (Ghosh and Jain, 2000) or use "clawback" provisions to redeem an issue that might gain. Relatively, these actions are likely to have better results in forestalling transfers to public bonds than to banks.

2.3. Banks' better bargaining power

Bank loans contain more stringent protective covenants than bonds (Gilson and Warner, 1996, Nash, Netter, and Poulsen, 2003, and Ross, Westerfield and Jaffee, 1999). Virtually all bank loans contain restrictive covenants regarding changes in management, control, and ownership (Gilson and Warner, 1996, Table 3), whereas merger restrictions exist in only about 30% of bonds (Lehn and Poulsen, 1989, Table 1). In fact, the use of change of control covenants, "make-whole" provisions or "poison puts," which give bondholders the right to put the debt security usually at or slightly above par value, appears to have declined in use. According to Nash, Netter, and Poulsen (2003, Table 7), the percentage of Compustat firms with poison puts fell from 30.3% in 1989 to 25.3% in 1996. Bank loans also routinely contain a senior priority clause, perhaps to avoid the costs associated with their apparently inevitable, effective manipulation for a superior position in the event of financial distress (Welch, 1997). Also, unlike many public bonds, the vast majority of bank loans are non-callable. This feature increases the bargaining power of banks by preventing shareholders from repurchasing loans to avoid increases in the value of bank debt.[4] Furthermore, the bargaining power of banks may go beyond that derived from explicit takeover-related covenants. A high proportion of proposed takeovers do not

1996, Billet and Ryngaert, 1997, and Billet, King, and Mauer, 2004). Perhaps because of the difficulties in assessing changes in bank loan values, the coinsurance effect on bank loans has not been examined before.

[4] Interestingly, we find that 45 (i.e., 57%) of our 79 sample firms with public debt issues have a majority of their public bonds callable at the time of the acquisition announcement, and an additional 21 firms (i.e., 27%) have the majority of their public debt callable at some point after the announcement. None of the bank debt issued by our sample firms is identified by *Moody's Manuals* as callable.

go through (as we affirm below). This makes target firms –typically smaller, riskier, and more dependent on private loans-- subject to damaging, capricious lender behavior. As noted by Dichev and Skinner (2002, p. 1091), "We find that private lenders set covenants tightly and use them as "trip wires" for borrowers, that technical violations occur relatively often" in approximately 30% of all loans, and that violations are often waived for healthy firms. Fama (1985) also notes that, using their superior monitoring and better renegotiation abilities, banks can more proactively limit a firm's access to new financing if demands on greater share of positive NPV projects are not met.

We expect banks lending to target firms to take a proactive stance in response to potential changes in control. A bank may have much to lose from a successful takeover, including the potential loss of business and its investment in the financial relationship with the target firm. Consequently, we expect banks to use their stronger bargaining power to hold on to their coinsurance gains, leaving less for target shareholders and, *ceteris paribus*, impacting target equity returns negatively. Strictly, a division of takeover gains based on relative bargaining power implies that the *proportion* of the gains going to target shareholders is adversely affected by bank debt. As a result, in our empirical tests later, it is important to control for the size of total takeover gains when analyzing returns to target shareholders.

Unfortunately, due to non-tradability of bank debt, the consequences of banks' greater bargaining power in M&A's can not be assessed by directly examining changes in the values of their loans. Billet, King, and Mauer (2004) report that non-investment grade target *public bonds* gain at M&A announcements. There is no corresponding direct evidence for bank loans, despite bank loans being the dominant form of debt financing for the typical target firm in our sample. Since we cannot directly assess the value effects of M&A's on the most important creditors, we must infer the impact on target shareholders indirectly – by testing for the implications of creditors' value-maximizing behavior on the gains of target shareholders.

2.4. Testable implications of the impact of the structure of debt

There are several testable implications of the impact of the structure of debt on returns to target shareholders based on the arguments above: (S1) Target shareholders' returns in takeovers are adversely affected by bank debt, relative to being financed by public bonds and private non-bank debt. (S2) However, given a level of leverage, takeover bids for targets financed primarily by bank debt are more likely to succeed. Since banks can proactively act to protect and pursue their interests, they may be more likely to approve the M&A. Banks also face fewer free rider

problems. Less dispersed debt or concentrated debtholders, typical of bank-financed firms, can form more effective coalitions leading to lower transaction costs in bargaining.[5] (S3) In a test of the coinsurance effect, banks providing debt to riskier targets affect returns to target shareholders more adversely. This is because banks lending to riskier target firms stand to benefit more from the better protection that follows from being acquired by typically less risky bidders. In each case, the contrast is relative to public bonds. Private non-bank debt arguably behaves like a hybrid of bank and public bond debt. According to Denis and Mihov (2003) a substantial portion of private debt is placed under SEC Rule 144A, and has a combination of some features of both bank loans and low-grade public debt. Since the impact of the structure of target debt on target shareholders not been considered in prior literature, S1 – S3 have not been empirically tested before.

3. Data

3.1. Sample identification and descriptive statistics

The sample of successful and unsuccessful (withdrawn) takeover targets comes from the *SDC Worldwide Mergers&Acquisitions Database.* In order to be included in the sample, the initial acquisition announcement date must be between 1981 and 1995 (The unsuccessful acquisitions are tracked by SDC from 1985 onwards only). Both the target and the bidder must be on CRSP daily return tape for 280 days prior to the initial bid announcement and have leverage data on COMPUSTAT for the fiscal year immediately preceding the initial announcement (satisfying this criterion, 664 acquisitions were subsequently successful and another 558 were ultimately unsuccessful). We also require that the acquisition of the target be material for the bidder. Therefore, we put restrictions on the relative size of the target (similar to Bradley, Desai, and Kim, 1988). Both the total assets and the market value of equity of the target (measured at the fiscal year-end) must be at least 10% of the bidder values. The takeover target cannot be a regulated utility firm (SIC 49xx) or a financial institution (SIC 6xxx). In addition, the takeover target cannot be in default on its debt (this filter did not eliminate any acquisition). Lastly, we retain only those acquisitions for which both the *Moody's Manual* debt data and data on insider ownership (officer and director holdings gathered from proxy statements) of the targets are available. Our final sample consists of 250 successful and 255 unsuccessful takeover targets.

[5] Diamond (1991) argues that more concentrated debt has lower agency costs, due to fewer free-rider problems among providers of debt, and their consequent incentives to incur costs and monitor (Smith and Warner, 1979, and Diamond, 1984). Restructuring of public debt is governed by the Trust Indenture Act of 1939, prohibiting modifications of debt provisions without consent of every debt owner (Gertner and Scharfstein, 1991).

Table 1 reports the summary statistics for our sample. Most of the acquisitions in the sample occur in 1990's. The last sample year (1995) is over-represented in terms of successful takeovers compared to the previous years, though it is unremarkable with respect to unsuccessful takeovers. However, we did not find any unusual distribution of targets in terms of industry, leverage, or size for this year. Panel B shows the distribution of takeover targets by industry. Manufacturing, SIC codes 3xxx is the most popular industry for successful and unsuccessful takeover targets. Panel C reports the financial and ownership characteristics of the target firms. Mean and median of successful (unsuccessful) target total assets are $924 ($1,049) million and $193 ($135) million (in 1995 dollars), respectively. The median values are comparable to those reported in other studies that examine debt structures (Houston and James, 1996; Hadlock and James, 1997; Raad and Ryan, 1998). The somewhat higher median figures for our sample may be due to reporting more recent 1995-dollars, and requiring our targets to have a size that is at least 10% of the bidder assets. The mean and median of liabilities to market assets for successful (unsuccessful) takeovers are 42% (49%) and 44% (50%), respectively. Reflecting lower book values for equity, the mean and median of liabilities to book assets are 53% (57%) and 53% (56%), respectively. These values are also similar to the numbers reported in previous studies (Rajan and Zingales, 1995, and Billet and Ryngaert, 1997). Insider ownership (mean of 17% (21%); median of 11% (14%)) and bidder foothold (mean of 1.35% (2.50%); median of 0% (0%)) for our sample are largely comparable to those reported in Billett and Ryngaert (1997).

Selected merger characteristics for our sample are described in Table 2. The mean and median target abnormal returns for successful takeovers in Panel A are statistically significant with values of 25.91% and 25.94%, respectively.[6] The mean and median bidder abnormal returns are -2.62% and -3.02%, respectively. The returns are statistically different from zero. We also estimate the total abnormal returns created by the acquisition as an equity-weighted average of both target and bidder returns where we exclude the target shares owned by the bidder from the computation of target market equity to avoid double counting. The mean and median total abnormal returns are 4.46% and 3.95%, respectively. Both these values are statistically significant at the 1% level. Our results are consistent with findings of earlier studies (Jensen and Ruback, 1983, Bradley, Desai, and Kim, 1988, Stulz, Walkling, and Song, 1990) that document returns to

[6] The abnormal returns are estimated using the market model. The estimation period for the market model is from -280 to -60 days before the event date. In a manner similar to Stulz, Walkling, and Song (1990) and Billett and Ryngaert (1997), we cumulate abnormal returns from 5 days before the initial announcement date of the acquisition to 5 days after the final revision in the terms of the offer. We also computed the abnormal returns using the mean-adjusted model (utilizing both –5 to 5 and –10 to 10 windows). The values of abnormal returns were virtually the same.

targets in the ranges of 20%-35%, and small positive, statistically significant, total takeover gains.

For unsuccessful acquisitions, in Panel A the mean and median abnormal returns to targets at the initial bid announcement are 2.21% and 2.42%, respectively. These returns are significantly lower than those for successful acquisitions, suggesting that the market correctly anticipates that these takeovers and the related gains will not actually materialize.

The *SDC Mergers & Acquisitions Database* (particularly the *SDC Acquisition Synopsis*) and the *Wall Street Journal Index* were used to examine other merger characteristics reported in Panel B. We attempt to identify acquisitions where target debt is likely to play a significant role. We denote a particular successful takeover as one "with debt considerations," if the *SDC Acquisition Synopsis* reports the dollar value of target debt repurchased and or assumed as the result of the acquisition.[7] Forty-nine mergers fall into this category. We obtain target and bidder ownership data from *CDA Spectrum* (SEC 13f filings), *ExecuComp*, and proxy statements.

3.2. Target debt structure: Data collection and descriptive statistics

Since a machine-readable database of debt ownership structures is not available, we hand-collected this data from footnotes in annual reports and/or from *10K* filings made by the firm to the Security and Exchange Commission. We also cross-examined the data using *Moody's Manuals,* primarily to obtain data on public debt. The information collected includes the following items: the amount and the source of debt (public vs. bank vs. private non-bank debt), Moody's rating of the public debt, whether the debt is secured, whether the debt is a term loan, and whether the debt is a borrowing on lines of credit (including the amounts of unused credit).

In some cases, the annual report or *10K* indicates that the debt is privately owned but does not identify the lender (a bank vs. a private owner). In those cases we follow Houston and James (1996) and define bank borrowing broadly to include borrowing explicitly referred to as bank borrowing, as well as private borrowing where the identity of the lender is not revealed. We define private non-bank borrowing as private debt where the lender is unaffiliated with a bank. Such lenders can be private financial institutions (e.g., insurance companies, pension funds), private investors, development and other agencies, cities, communities, governments, etc. As a result of this classification, the measure of bank borrowing is likely to overstate the actual amount of borrowing from banks. Also, when the annual report or *10K* does not report whether the debt is

[7] The *SDC Acquisition Synopsis* summarizes the most important factors affecting the outcome of each particular acquisition. If the value of repurchased/assumed debt is specifically mentioned in the *Synopsis*, then it is likely that target debt was a significant decision factor in the takeover. Most importantly, the repurchase/assumption of debt is likely to decrease the amount of takeover gains left to be distributed among target and bidder shareholders. The interpretation of the "debt consideration" dummy is difficult, though, because it is highly correlated with actual leverage (statistically significant at 1%).

secured, we assume that the debt is unsecured.

In order to focus on corporate *financing* (rather than operating) decisions, we exclude the debt that is likely to be employed for operating purposes from our debt measures, again following Houston and James (1996) and Hadlock and James (1997). Namely, short term debt (other than long-term debt in current liabilities) and capitalized leases are not included in the measure of total debt (the impact of leases is discussed in Section 5). Also, the definition of leverage used in this study utilizes only the security values that most likely influence firm's *financing* decisions – total debt, common stocks and preferred stocks. Total leverage is thus defined as follows:[8,9]

Total leverage = Total debt / (Total debt + Market value of equity + Preferred Stock)

Similarly, leverage for any class of debt (public, bank, or private non-bank) is defined as:

Leverage for class = Debt in class / (Total debt + Market value of equity + Preferred Stock)

Table 3 provides the descriptive statistics concerning the debt structure for the 211 (233) targets out of the original 250 successful (255 unsuccessful) takeovers that have positive levels of total debt. Bank debt is the most prevalent form of debt financing for our sample targets. While 202 firms out of 211 firms in the sample of successful targets have some bank debt, 220 of the 233 firms in the unsuccessful sample have some bank debt. The mean and median proportions of bank debt to total debt are also high. They are 67% (59%) and 83% (67%), respectively, for the "successful" ("unsuccessful") sample. Only 37% (36%) of the firms in successful (unsuccessful) sample issue some public debt. However, for firms with public debt outstanding, the corresponding mean and median proportions of public to total debt are high at 61% (58%) and 61% (59%), respectively. Only a relatively smaller fraction of targets (about 25%) issue private non-bank debt among firms with successful acquisitions. However, among firms with withdrawn bids, the proportion of firms with private non-bank debt is much higher at 55%. Again, for the sample of successful (unsuccessful) takeovers sample with private non-bank debt, the mean and median proportions of private non-bank to total debt are substantial at 41% (36%) and 37% (26%), respectively. The debt structure of sample targets is generally similar to debt structures of random samples of U.S. firms reported in the previous studies (Houston and James, 1996, Hadlock and James, 1997, Denis and Mihov, 2003, and Faulkender and Petersen, 2005).

[8] It has been documented (see e.g., Damodaran, 1996, and Ross, Westerfield, and Jaffe, 1999) that in the 1980's and 1990's, market leverage measures are significantly less volatile than book measures. This suggests that U.S. firms may be paying greater attention to management of market rather than book leverage. However, results of this study are not affected if book value of equity is used instead.

[9] Preferred stock is included in the broad definition of equity in this leverage measure. Since this study deals with debt levels and debt structure, incorporation of preferred stock into the numerator of leverage could complicate the analysis and the interpretation of results. More importantly, Dennis and McConnell (1986) show that many target preferred stockholders actually have voting rights during acquisitions.

The debt dispersion measure introduced in Table 3 is created to proxy for the likelihood of moral hazard and free rider problems in debtholder negotiation and monitoring (see e.g., Berlin and Loeys, 1988). Two equal levels of leverage should have entirely different free-rider problems and the incentives to incur monitoring costs depending on the number of creditors providing loans. The power of debt should be diminished by dispersion, so that a level of leverage with high dispersion of debt ownership is effectively a lower level of leverage in terms of its bargaining ability. Our dispersion measure is defined as (1 – Debt Herfindahl Index). The Debt Herfindahl Index equals to the sum of squared proportions of debt issues in the debt structure of each sample firm. However, since that the bank debt issues are likely to be monitored by the same bank (or the same bank syndicate in case of multiple bank relationships), the proportions of bank debt issues are added together in the computation of the Debt Herfindahl Index. Private non-bank debt proportions are not similarly lumped together, because we rarely encounter cases where the same non-bank creditor issues more than one debt issue. The results of the study are not affected materially if the alternative definition (adding up private non-bank proportions as well) is used. A mean debt dispersion value of 0.29 (0.33) for the sample of successful (unsuccessful) takeovers is equivalent to the case where the firm has a single debt owner with about 84% (82%) of the debt and the rest is distributed across a large number of atomistic creditors.

4. Results

4.1. Level of target debt and returns to target shareholders

In Appendix A, we provide a list of control variables identified by previous research as determinants of returns to target shareholders in completed takeovers, along with brief explanations. Following Stulz, Walkling, and Song (1990), we also include the total takeover gains normalized by target assets in the regression analysis to control for any synergies unaccounted for by other explanatory variables. Thus, the regression coefficients of the remaining variables (most importantly leverage) can be interpreted as the effect of these determinants on the target's abnormal returns *conditional* on the total takeover gain.[10] Like Stulz et al., we also allow for a different effect of positive and negative total gains on the target abnormal return.

[10] Our theoretical discussion emphasizes the division of takeover gains based on the extent of bargaining power. Thus strictly, our dependent variable should be the *proportion* of takeover gains captured by target shareholders. However, we are able to do so most closely in spirit by using as dependent variable the abnormal returns to target shareholders *conditional on total gains* (that is, with total gains as a control variable). A variable directly measuring the fraction of gains captured by target shareholders would be actually difficult to create and interpret (especially for mergers with negative bidder or total gains). In fact, in a study of the impact of ownership structure on target gains, Stulz, Walkling, and Song (1990) utilize total gains as an independent determinant of target gains for exactly this same reason.

Primary independent variable, Leverage: The independent variable of interest is Total Leverage. We focus on the impact of takeover announcements on the returns to target equityholders, reasonably treating the capital structure to be exogenous at that time. To control for the ownership structure of debt, we include a debt dispersion measure defined as [1-Debt Herfindahl Index]. The basic regression equation has the following form:

Target Abnormal Returns or Total (Target plus Bidder) Abnormal Returns =
$= a_0 + a_1$ * target's size + a_2 * bidder's size +
+ $\boldsymbol{a_3}$ *** target's leverage +** a_4 * target's debt dispersion + a_5 ***** debt consideration dummy **+**
+ a_6 * anti-takeover defense dummy + a_7 * hostile takeover dummy + a_8 * target inside holdings
+ a_9 * bidder foothold + a_{10} * stock acquisition dummy + a_{11} * multiple bidders dummy +
+ a_{12} * target's M/B + a_{13} * target's Free Cash Flow/Assets +
+ a_{14} * total takeover gains (positive) + a_{15} * total takeover gains (negative)

Results: Table 4 presents the results of the regression analysis of the impact of leverage on target abnormal returns. It contains the results for the full sample of 250 targets (models 1 and 2) as well as the sample of 211 targets with positive leverage (models 3-7). Models 1-5 have target abnormal returns, and models 6-7 have Total Returns (target plus bidder) as the dependent variable. The findings strongly support predictions of a positive link between target or total returns and leverage, even when we control for target's bargaining power with target insider and bidder equity ownership, antitakeover defense and hostile takeover dummies in models 3-4. Based on these findings, increasing leverage from the 25th to the 75th percentile in our sample results in an economically significant 7.6% increase in target gains. Model 6 suggests total gains increase by 3.1% when leverage rises from the 25th to the 75th percentile. The finding that equity returns go up with target leverage affirms the results in Billet and Ryngaert (1997). Additionally, we also find evidence supporting prediction (L3) that *total* takeover gains are significantly positively affected by leverage – a result that cannot be attributed to pure premium leveraging.

Although not our primary focus here, the coefficients of the control variables are generally consistent with prior literature (see Appendix A).[11] The additional control variable, debt dispersion, is significant and negative in all the models in which it is included, consistent with the notion that levels of leverage and dispersion have opposing effects on target and total returns. In unreported results, we included targets' "carryforwards/TA" as an additional control variable to

[11] The use of total takeover gains as a regressor can create concerns since it includes a transformation of the dependent variable. Therefore, in an unreported analysis, we re-estimate the regressions using normalized bidder gains (i.e., bidder's total gains divided by the target assets), as well as a dummy variable equal to one if the total takeover gains are positive. Our results are unaffected by different specifications of total takeover gains variable.

take into account the tax benefits to bidders. It does not affect targets' returns significantly, and the coefficients of leverage-related variables remain essentially unchanged. Using offered takeover premiums (based on offer target price rather than post-announcement target price) as dependent variable also yields very similar results, thus the findings can not be attributed to a pattern of greater surprises in stock reactions for more highly leveraged firms.

4.2. Level of leverage vs. concentration of equity and the probability of successful bid

Stulz (1988) also spells out the mechanism that leads to the positive relation between takeover gains and target leverage. In particular, higher leverage is used to buy out shareholders with low reservation values for the stock of the firm, concentrating equity in the hands of shareholders with higher reservation values.

Table 5 contains a comparison between the mean and median ownership held by institutions, managers, blockholders with 5% or greater stakes, as well as the sum of their ownership (total concentrated ownership), in firms with low leverage versus firms with high leverage. High leverage firms are defined as those with total market leverage in the top quartile for our sample of target firms with successful takeovers. In every case, comparing means or medians, the ownership is more concentrated in the sample with the higher leverage firms. Except for managerial ownership, the mean differences are statistically significant. Overall, the findings in Table 5 are consistent with the prediction (L1) that target leverage and shareholders equity concentration are positively related, though not with Friend and Lang (1988) who emphasized managerial ownership and report a negative relation.

If the owners of the concentrated stakes in the firm have higher reservation values, fewer bidders will be able to offer adequate successful bids. Table 6 contains a probit analysis of the probability of a successful takeover using our samples of 250 successful and 255 unsuccessful takeovers. While leverage and related variables are of primary interest, several other explanatory variables are included to control for factors that may affect the likelihood of a successful takeover. These controls are target size, a relatedness dummy, insider holdings in the target, bidder foothold, friendly/hostile acquisition dummy, use of an anti-takeover defense mechanism, and a stocks as a method of payment dummy. In each of the three specifications, target leverage adversely affects the probability of a successful acquisition (at a 1% level of significance). These findings support our prediction (L2), and can be taken to affirm those in Palepu (1986), although we study the likelihood of success conditional on a takeover attempt.

In models 2 and 3 of Table 6, additional debt-related variables are included. In model 2, target leverage is interacted with a dummy for bank-dominated debt, i.e. debt structure where the relative majority of a firm's debt is provided by banks. The coefficient of the interaction term is

positive and significant at the 1% level. Adding the coefficients on the leverage the interaction terms, even bank debt negatively affects the probability of a successful takeover. However, compared to firms with debt dominated by public bonds or private non-bank debt, bank debt as a dominant source of debt financing helps increase the likelihood of a successful takeover. Model 3 shows that this effect of bank debt cannot be attributed to the concentrated nature of bank debt. When debt dispersion is included as a control variable, bank-dominated debt still has a positive and significant impact (albeit at a 10% significance level).

Our results are highly economically significant. Model 2 coefficients imply that if all variables are kept constant at their mean levels, the target is 11% more likely to be successfully acquired if its debt is bank-dominated, rather than non-bank-dominated. In addition, whereas an increase in leverage dominated by non-bank lenders from the 25th to the 75th percentile reduces the probability of successful takeover by 25%, the corresponding likelihood reduction is only 11% if target's debt is bank-dominated. Thus, our findings support (S2): Given a level of leverage, takeover bids for targets with greater bank debt are more likely to succeed.[12,13] In the next sections, we explore further the role of the structure of debt in takeovers.

4.3. Type of debt and returns to target shareholders

An obvious specification to study the impact of debt type involves decomposing total firm leverage into its three separate component parts, using public, bank, and private non-bank leverages as independent variables. However, this specification ignores the effect of the relative dominance of a particular class of debt. Instead, we explicitly recognize the dominant class of debt, noting whether a firm has public (bank, or private non-bank) dominated debt if public (bank, or private non-bank) debt comprises the highest proportion of the firm's debt. Thus, the regression model includes total target leverage as well as total target leverage interacted with two (0, 1) dummy variables: one for bank-dominated debt and another for private non-bank dominated debt. This approach still allows us to take into account the impact of total leverage on takeover gains. We adopt this latter specification for our further analysis, though we obtain similar results when we include three separate coefficients for the three types of debt.

Table 7 presents a univariate analysis of leverage characteristics for different dominant

[12] Our results are inconsistent with the claim that bank debt merely proxies for the presence of difficult-to-value assets that are subject to substantial information asymmetry (assets that banks specialize in valuing and monitoring). Greater information asymmetry would make it less likely for takeovers to succeed.
It should also be noted that, since we consider probabilities of a successful takeover conditional on a bid, our larger probability effects are not strictly comparable to Palepu (1986).

[13] Interestingly, debt dispersion affects the probability of a successful takeover negatively, suggesting that dispersed debt may find it costlier and harder to coalesce and grant approval or otherwise help in the successful completion of a takeover.

classes of debt. Out of 211 targets with positive leverage, the majority of firms (143 targets) have debt dominated by bank debt, followed by 48 targets that have debt dominated by public bonds, and finally 20 firms that have private non-bank dominated debt. The fractions of dominating debt to total debt are sizeable for all three classes of debt. This should alleviate concerns that minority debt types are ignored in the analysis. The median fractions are 1.00 for bank, 0.83 for public and 0.69 for private non-bank dominated debt. It should be also noted that the dominating fractions are almost always bigger than 50%. Only 5 firms out of the total of 211 (3 with bank and 2 with private non-bank dominated debt) have dominating fractions of debt smaller than 50%.

Investigating the impact of different types of debt on returns to target shareholders, in Table 8 the impact of public-dominated debt is measured directly by the coefficient of "target leverage" (e.g., 0.41 for model 1). However, for the impact of private non-bank dominated debt, we sum the coefficients on "target leverage" and "target leverage*private non-bank dominated debt," or 0.41 + 0.29 = 0.71 in model 1. In contrast to public or private non-bank dominated debt, bank-dominated debt is associated with significantly smaller target gains (model 1, impact of bank-dominated debt is 0.41 - 0.17, or 0.24). Other models yield results similar to model 1.

The impacts of public-dominated debt and of private non-bank dominated debt were found to be statistically not different. Consequently, in model 2 we compare the impact of bank-dominated debt against the impact of non-bank dominated debt, combining private non-bank dominated debt with public-dominated debt. The impact of bank-dominated debt is smaller by 0.21 than that for non-bank dominated debt. Again, this suggests that bank-dominated debt reduces returns to target equityholders. Similarly in model 3, where by dropping "debt dispersion" we are picking up the cumulative effects of debt ownership and dispersion, an increase in total leverage from the 25^{th} (0.10) to 75^{th} (0.42) percentile for positive-debt firms should lead to an increase in target gains of 11.5% if the leverage were non-bank dominated, and only by 6.3% if the leverage were bank-dominated. Overall, holding total leverage constant, increases in bank-dominated debt significantly reduce returns to target shareholders.

In models 1-3, we control for total takeover gains, so that our results show how bank debt participates in the division of takeover gains. Model 4 in Table 8 shows that total gains (defined here as bidder plus equity returns) is not significantly related to debt structure. This suggests that the size of the total shareholder gains is not affected by bank debt. [14]

[14] In an unreported analysis, we find that the bidder abnormal returns are positively, albeit insignificantly, related to total target leverage. Bidder returns are also unrelated to the extent of bank debt. These results suggest that bidder shareholders do not subsidize gains of either target shareholders or target bondholders.

4.4. Impact of debt coinsurance on target gains

The ability of a particular creditor type to capture part of the takeover gains may also depend on the coinsurance potential of the debt claim. If the default risk of target debt decreases following the acquisition because the bidder is less risky than the target, the value of target debt will increase. This increase comes at the expense of target and bidder shareholders (and potentially of bidder debtholders). Of course, capturing coinsurance gains assumes that the bidder and target shareholders do not take steps to stop bondholders from realizing these benefits.

Table 9 contains the results of regression models linking target gains to the credit quality of target debt and to the identity of the lender. The findings suggest that the lower returns to targets in the case of bank-dominated leverage, as seen in Table 8, may be partly explained by the greater coinsurance potential of bank-dominated debt. We examine the general effects of coinsurance potential on target gains in models 1 and 2. While target gains are positively related to target leverage, the net coefficient (the sum of the leverage coefficient and interaction terms) is considerably reduced when target debt has strong coinsurance potential (from 0.3 to 0.1 in models 1 and 2). The coinsurance potential is measured by a dummy variable equal to one when the target's modified Z-score (an inverse measure of probability of financial distress, see Graham, Lemmon, and Schallheim, 1998) falls into the lowest tercile of the sample distribution (modified Z-scores smaller than 1.50). Since the probability of financial distress negatively influences debt quality, firms with low Z-scores should have the highest debt coinsurance potential. In selecting the lowest tercile, we are forming a large sample of financially-challenged firms. Similar findings are obtained when we form smaller samples consisting of firms in worse financial conditions.

Target firms in our sample should have coinsurance potential, since they are on average significantly riskier than the bidders. The mean and median of differences between modified Z-scores of the bidder and the target are 0.16 (significant at 10% level), and 0.17 (significant at 5% level), respectively. Not surprisingly, the Z-score difference between bidders and targets is even bigger for targets in the lowest Z-score tercile (mean and median differences are 0.80 and 0.70, respectively, with both values significant at the 1% level).[15] Our findings presented in models 1

[15] Our additional analysis shows that targets with the lowest values of Z-scores are indeed, on average, significantly more risky than the bidders. For every sample year, we computed Z-scores for all firms on Compustat, and then placed our firms in the appropriate percentile ranges (with 5 percentile intervals). We find that targets with Z-scores below 1.5 fall into the 25^{th}-30^{th} percentile range (mean) or the 30^{th}-35^{th} percentile range (median) of overall Z-score distribution of Compustat firms, whereas the corresponding bidders for those targets have average Z-score values in the 45^{th}-50^{th} percentile range (mean) or the 50^{th}-55^{th} percentile range (median). Thus, debtholders of targets with low absolute levels of Z-scores should indeed benefit if the targets are acquired. In an unreported analysis, we repeated the regressions in Table 8, utilizing an alternative definition of targets with coinsurance potential. Instead of focusing at the absolute

and 2 are similar to those of Billett and Ryngaert (1997) who measure coinsurance potential by dividing sample firms into 9 groups according to *Value Line's* rating of financial condition. We also repeated our analysis by defining targets with coinsurance potential as firms in the lowest tercile of Z-scores and in the top tercile among targets with the largest differences in Z-scores between target and bidder Z-scores. We again obtained similar results.

Models 3 and 4 show that the coinsurance effect is likely to be primarily associated with bank-dominated capital structures. The coefficient for "Target Leverage*Coinsurance" is not significantly different from zero, but the coefficient for "Target Leverage*Coinsurance*Dummy for bank-dominated debt" is large, negative, and statistically significant. The same conclusion is supported by the findings in models 5 and 6, where the effect of coinsurance is analyzed separately for 143 (68) targets with bank (non-bank) dominated leverages. The coefficient of "target leverage*coinsurance" is significantly negative only for the sample with bank-dominated leverage (model 5), while it is not significant in model 6 where non-bank debt is dominant.

Our results are economically significant. The coefficients for models 2 and 3 imply that an increase from the 25th to the 75th percentile of leverage values should be associated with an increase in gains to target shareholders of about 10.4%, if the debt of the target is relatively not risky. However, the corresponding increase in target shareholder gains is 4.7% if target debt has coinsurance potential, and only 1.7% if, in addition, this debt is primarily provided by banks.

Overall, our findings, while confirming prior work, add an important caveat. We find that the coinsurance effect is significantly associated with only bank debt.

5. Robustness of findings

5.1. Gains to targets, role of debt ownership, and the leveraging of premiums

By appealing to the structure of debt, the results of this study show that target leverage affects takeovers gains in ways that go beyond a simple leveraging of returns or premiums (Billett and Ryngaert, 1997). Nevertheless, pure premium leveraging may be a concern for the interpretation of differences in the impact of different classes of debt on returns. If different classes of debt served as a proxy for the *level* of leverage, then the observed differences in impact of different classes of debt could actually arise from premium-leveraging. The differences in the means and medians of the total leverage for non-bank and bank-dominated firms are insignificant

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value of Z-scores, we defined targets with coinsurance potential as those with low relative values of Z-scores (in the lowest tercile of overall Compustat distribution). Even though we believe that the absolute value of Z-scores more properly estimates the actual financial health of a company, repeating the regression analysis with relative Z-scores yielded results similar to those reported above with absolute Z-scores.

(Table 7). This suggests that the differences in the impact of different types of documented in Table 8 arise indeed from the factors associated with the ownership of debt.

5.2. Gains to targets, leverage, and capitalized leases

Capitalized lease obligations were excluded from the measure of debt in order to facilitate comparison with earlier work (Houston and James, 1996, Hadlock and James, 1997). In unreported analysis, we implemented two robustness checks to examine the impact of leases. First, we repeated the analysis presented in Tables 4 and 8 with an added dummy for airlines (SIC 45xx) and department stores (SIC 53xx) targets, and this dummy interacted with a measure of total and bank-dominated debt (since airlines and department stores have wide usage of leases). In none of the specifications did any of these variables turn out to be significant, whether analyzed separately or jointly. Second, we repeated the same analysis with lease values added to the amount of private non-bank debt. The results were similar to those presented in Table 8.

5.3. Gains to targets in different time periods

All our leverage-related results are similar to the results presented above when the analysis is run separately for mergers announced in 1980's and 1990's, respectively.

6. Bond price effects

6.1. Target bond prices

Thus far, we have documented the impact of debt structure on target gains, which is the main focus of our paper. Nevertheless, these effects, triggered by debt providers, should be reflected in target debt values themselves. Unfortunately, changes in the value of bank loans – argued to have the greatest potential for gain thanks to banks' bargaining power – are virtually unobservable due to the their non-tradability. Still, some of the bargaining power ascribed to banks should be, though admittedly to a smaller degree, available to public debtholders as well.

In Table 10, we test the effect of covenants (call feature) and coinsurance effect (speculative grade) on the prices and yields of public bonds in our sample. Using the *Fixed Income Securities Database*, we found price/yield data on 78 bonds, issued by 41 sample targets. Overall, based on the full sample of target bonds shown in Panel A, we find that bonds do not experience any significant changes in price or yield, consistent with some prior studies on the announcement effect of takeovers on bonds (Dennis and McConnell, 1986). However, when we compare subsamples, formed according to features that underlie bargaining strength, we find significant price effects. In Panel B, we show that non-callable bonds experience significant gains, as seen in their positive mean (6.3%) and median (2.0%) price changes. These gains are significantly greater than the insignificant price changes for callable bonds, which can potentially

be repurchased without substantially sharing takeover gains.[16] In Panel C, we test the coinsurance effect on bonds. We find that speculative bonds see a substantial gain of 7.4% (4.4%) in mean (median) prices (just as in Billet, King, and Mauer, 2004), while non-speculative bonds have no significant price changes. Again, the difference is highly significant (1% level).[17] Nevertheless, as seen above in section 4.4 on the coinsurance effect, it is bank debt which primarily affects target shareholders negatively and not the gains seen by speculative bonds here. One can only conjecture that the coinsurance gains of banks are relatively much larger.

6.2. Bidder bond prices

The above analysis of target bond price effects shows that target debtholders gain upon successful acquisition due to the strength of covenant provisions (the lack of callability feature) and/or the coinsurance potential. Our results presented in section 4.4 suggest that these gains come at the expense of target shareholders (we found that targets with strong coinsurance potential debt cannot apparently use it to lever up target shareholders' acquisition gains). To complete such an argument, we need to show that target bondholders' gains – especially those associated with bonds with strong coinsurance potential – do not come at the expense of bidder bondholders. Arguably, bidder bank debt is even better protected than bidder bonds.

The analysis of bidder bond returns is also presented in Table 10. Using the *Fixed Income Securities Database*, we found price/yield data on 179 bonds, issued by 62 sample bidders. As shown in Panel A, similarly to target bonds, the bidder bonds also do not experience any significant changes in price or yield. In addition, the magnitude of changes in bidder debt values is considerably smaller than that of target debt prices. In Panel D, we compare the bidder debt price changes depending on whether the target did or did not have callable debt outstanding (such debt is arguably less likely to gain upon acquisition). There are no significant differences in bidder debt price changes, and only small differences in bond yields (there is no difference in median yield changes and a statistically significant difference in mean yield changes of 0.5%). Such a difference is economically negligible. Our results thus suggest that bidder bonds do not subsidize the gains of target bonds. In fact, it seems that bonds of bidders taking over targets with non-callable debt may even mildly gain upon the acquisition (together with the target bonds). Such a finding is in contradiction with the hypothesis that target bondholders gain at the expense

[16] We also examined the effect of bond callability on target shareholder returns by decomposing leverage according to its callability. We find that "callable leverage" has a significantly positive relation with target shareholders' returns. Moreover, the coefficient of "callable leverage" is significantly greater than the coefficient of "non-callable leverage."

[17] We obtained the same qualitative results when we repeated the analysis in Table 10 after averaging all bonds for a given target (yielding 41 target-specific observations).

of bidder bondholders. Finally, the analysis in Panel E tests whether the bidder bond price changes are a function of the credit quality of the eventually assumed targets. Our findings suggest that bidder bondholders do not lose when the bidders take over targets with strong coinsurance potential.[18] Again, there are no significant differences in price changes of bidder debt whether or not the company takes over a target with debt of bad quality. Only mildly significant differences exist in mean yield changes. However, our findings again suggest that bidder bondholders may actually experience mild gains upon acquisition of a target with a strong coinsurance potential (target bondholders gain significantly in such takeovers). Once more, our results contradict the claim that bidder bondholders subsidize target bondholders' gains.[19]

7. Alternative explanations for our findings

7.1. The corporate governance effects of banks

According to e.g. Fama (1985) and James (1987), or Ivashina, Nair, Saunders, Massoud, and Stover (INSMS, 2005), banks have been viewed as "insiders," and attributed a positive corporate governance role in firms. Thus, the negative relation between returns to target shareholders and a bank-dominated debt documented previously could reflect the smaller gain potential when debt is bank-dominated (and the target is better managed), rather than the negative impact of the bargaining power of banks at the time of takeover. We examine this possibility in multiple ways.

In a univariate comparison, we find that for our sample of targets with non-bank dominated debt the absolute levels of mean (median) profitability, EBIT/TA, was 6.11% (9.47%) two years prior to the takeover, and 4.13% (8.14%) in the year of the takeover. The corresponding figures for targets with bank-dominated debt were 7.99% (8.38%) for year -2 and 7.53 (7.96%) for year 0. Statistical tests on differences between means or medians essentially show no difference. We repeated the analysis with industry-adjusted performance relative to other firms in the same 2-digit SIC codes. The firms with non-bank dominated debt had means (medians) for profitability of 0.40% (3.18%) for year -2 and -1.26% (2.18%) for year 0. The corresponding figures for firms with bank-dominated debt are 1.74% (0.90%) and 1.82% (1.40%). In general, we find that means for firms with bank-dominated debt are higher, but their medians are lower, and that there is no statistically significant discernible pattern of differences between firms with

[18] Similarly to our analysis presented in section 4.4, we consider a target as likely to suffer from financial distress, if its Z-score is in the lowest tercile of sample distribution.

[19] We obtained the same qualitative results when we repeated the analysis in Table 10 after averaging all bonds for a given bidder (yielding 62 bidder-specific observations).

non-bank and bank-dominated debt structures. These findings are consistent with the view taken by Demsetz and Lehn (1985). Banks are one of the mechanisms available to firms for monitoring (Agrawal and Knoeber, 1996). Those firms that have not chosen sizeable debt are expected to have adopted other appropriate mechanisms so that their performance is not relatively impaired.

We also undertook a cross-sectional analysis by including profitability, EBIT/TA, as an additional explanatory variable in our basic analysis shown in Table 8. In our unreported analysis, we find that the coefficient of profitability is positive (and significant at the 5% or 10% level in different models). The coefficients for the other variables remain largely unaffected, including those for our debt-related variables of interest. Contrary to the expectations that sizeable bank-debt reduces potential takeover gains and consequent returns to target shareholders, these findings are consistent with higher payoffs to target shareholders for better performing target firms.

7.2. Banks as transmitters of information to bidders

INSMS (2005) have recently highlighted the role of banks as conduits of information to potential bidders. Courts have apparently upheld the rights of banks to pass along information about targets to potential bidders, including information that they may have routinely gathered in the course of their lending business to the target firms. While we derive implications for the bargaining power banks draw from their traditional role as collectors of information and their superior ability to monitor and negotiate, INSMS focus on their role as information transmitters. These are not necessarily competing views. Motivated by coinsurance benefits and their agility, we offer a direct test to show that banks can relatively expedite the takeover process.

In Table 11 we examine how leverage affects the time it takes to complete a merger. We allow for a non-linear relation, assuming a diminishing marginal impact of leverage increases on the completion time. The dependent variable is the number of days between the original announcement and completion dates of the takeover. Each of the three models shows that increases in leverage lengthen the time to complete the process. The coefficient of leverage is positive and significant at the 1% or 5% level. Understandably, targets with higher leverage have more demanding equityholders, according to Stulz (1988) and others. However, if this debt is bank-dominated, the process is relatively faster compared to when the target is financed with other sources of debt. The coefficient on the interaction term, (Target leverage)*Bank dominated debt dummy, is negative (significant at the 10% level). If leverage is raised from the 25th to the 75th percentile, transaction time increases by 36 days if debt is non-bank dominated. If, however, the debt is bank-dominated, then the corresponding increase in average transaction time is 22

days. Given a median transaction time of 126 days, this represents a substantial savings in time.[20]

INSMS argue that loan intensity is positively related to the success of a takeover bid, where loan intensity is the total amount of loans issued to the target over a previous 3-year window standardized by total assets. According to INSMS, an important reason for this is that banks, being well-informed through their banking relations with the target firm, might help the acquirer finance the deal, as seen in the frequent new loan issuances to acquirers that occur in these events. Indeed, they find that loan intensity for successful bids is nearly twice as high as that for unsuccessful bids. Since their loan intensity variable and our dummy for bank-dominated debt are likely to be highly correlated by construction, our findings in Table 6 constitute a test and support of their proposition as well, though motivated from a different perspective. Because INSMS do not deal with the structure of target debt or the relative bargaining power of different creditors, they do not examine the *differential* impact of bank debt, in general or in the context of the risk of the target (coinsurance).

8. Conclusion

Even though the impact of the level of leverage on target shareholders has received attention in the literature, the impact of the structure of debt has not been examined before. Pursuing their value-maximizing self-interest, various creditors are expected to partake in takeover gains based on their relative bargaining power. In particular, bank debt has better contractual protection, is largely non-callable and has superior abilities to monitor and negotiate compared to other debt. Thus, banks are predicted to take a larger share of takeover gains compared to other debt.

Unfortunately, gains to bank debt cannot be measured directly due to non-tradability of such debt (at the same time, bank debt is typically the most important source of debt financing). Consequently, we test for the implication of creditors' value maximizing behavior by observing how the presence of certain types of debt affects gains to target shareholders. Ultimately, we expect gains to bank debt to adversely affect target shareholders' returns.

Our empirical results are based on the sample of 250 successful acquisitions and a control sample of 255 unsuccessful takeover bids over the 15-year period, 1981-1995. First, we document that while higher leverage reduces the probability of a successful takeover, it positively affects

[20] Most of the other control variables have expected coefficients. It takes longer to complete the process if there are multiple bidders, and if the takeover is challenged in court. The takeover process is more complex if target shareholders are being paid with stock. The process is expected to go faster for more profitable firms without the likely problems from debtholders that might occur in financially distressed firms.

the returns to target shareholders. This is consistent with the view in Stulz (1988), Harris and Raviv (1988), and Israel (1992) and the prior evidence in Billet and Ryngaert (1997). Moreover, higher leverage is also positively related to total returns to all (bidder and target) shareholders, which cannot be explained by a mechanical leverage effect. Second, and more importantly, we find that bank debt has indeed a significantly different impact on target shareholders compared to that of other creditors.

Increasing market leverage for target firms in our sample of successful takeovers from the 25th percentile (10%) to the 75th percentile (42%) brings about an increase of 6.3% in returns to target shareholders if the debt is dominated by banks. Otherwise, the increase in target shareholders' returns is 11.5%. However, bank-dominated debt improves the probability of success of a bid by 11%, in contrast to debt dominated by public bonds or private non-bank debt.

Since banks lend to riskier firms, bank debt benefits from the better protection that comes from an acquisition by a typically less risky bidder, which is the coinsurance effect. Their stronger bargaining power helps them better secure the coinsurance benefits. An increase in leverage from the 25th to the 75th percentile raises gains to target shareholders by about 10.4% if the debt of the target is relatively not risky. However, supporting a coinsurance effect, the corresponding increase in target shareholders' gains is 4.7% if target debt is risky. Furthermore, the returns are only 1.7% if this debt is primarily sourced by bank lenders. Thus, for targets with coinsurance potential, returns to target shareholders are 8.7% lower if the debt is dominated by banks, compared to targets that are relatively not risky and are financed from other sources.

Finally, the transaction time required to complete a takeover is also relatively smaller when debt is bank-dominated, since banks can more efficiently shift their debt to the typically more secure bidders. If leverage is raised from the 25th to the 75th percentile, the median transaction time is 14 days shorter if debt is bank-dominated compared to when it is non-bank dominated. Given that the median transaction time needed to complete a takeover is 126 days, this represents a substantial savings in time.

In understanding the returns to target shareholders in completed takeovers, the prior literature has considered the role of the level of leverage. Our findings suggest that it is important to also take into account the structure of target debt. In particular, we find that bank debt, compared to public bonds and private non-bank debt, has a remarkably different impact on the likelihood of success of a takeover bid and the returns to target shareholders, as well as the time required to process the transaction. We also find support for the coinsurance effect, which explains how banks gain, with a consequent adverse impact on target shareholders.

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Appendix A:
Control Variables Influencing Target Gains

Variable ***Proxy***	**Possible Relationship to Leverage *(discussion)***	**Predicted Relationship to Target Gains *(discussion)***
Target Size *Ln[Target Total Assets]*	**Positive:** Titman and Wessels (1988) *(larger firms are more stable, profitable, and they have advantage in lower flotation costs)*	**Negative**: Billett and Ryngaert (1997), Houston and Ryngaert (1994), Jarrell and Poulsen (1989) *(target investors may care more for dollar rather than percentage returns, bidders may be more apt to overpay in acquisitions of smaller targets)* **Positive**: Stulz, Walkling, Song (1990) *(large targets have stronger negotiating power)*
Bidder Size *Ln[Bidder Total Assets]*		**Positive**: Billett and Ryngaert (1997), Houston and Ryngaert (1994), Jarrell and Poulsen (1989) *(larger bidders have better expertise and opportunities to create synergies)* **Negative**: Stulz, Walkling, Song (1990) *(large bidders have stronger negotiating power)*
Target Growth Opportunities *Target M/B of Assets*	**Negative**: Rajan and Zingales (1995), Titman and Wessels (1988) *(Firms with growth opportunities lose more in hold-up situations, have higher probability of financial distress)*	**Negative** Lang, Stulz, Walkling (1991), Servaes (1991) *(lower extra synergies can be created by acquisitions of better managed targets)*
Target Free Cash Flows *Target FCF/ Total Assets* *(target FCF are measured as in Lehn and Poulsen (1989))*	**Positive**: Jensen (1986) *(higher debt levels reduce agency problems due to free cash flows)*	**Positive**: Smith and Kim (1994) *(free cash flows are a valuable source of financing for cash poor bidders)*
Target Insider Holdings *Ownership of officers and directors reported in proxy statement*	**Positive**: Stulz (1988) *(target managers increase debt to increase the relative value of their ownership stake)* **Negative**: Agrawal and Knoeber (1997) *(leverage and insider ownership are substitutes in solving agency problems)*	**Positive**: Stulz, Walkling, Song (1990) *(higher bargaining power of target management leads to higher target acquisition gains)*
Bidder Foothold (i.e. bidder's ownership of target stocks) *Bidder foothold (reported by SDC) prior to the initial announcement date*		**Positive**: Stulz, Walkling, Song (1990) *(bidders with prior stock ownership in targets have stronger negotiating power vis-à-vis targets)*
Presence of Multiple Bidders *Multiple bidder dummy (multiple bidder presence as reported by SDC)*		**Positive**: Billett and Ryngaert (1997), Bradley, Desai, Kim (1988) *(the ultimate winner of multiple bidder auction tends to pay higher price for the target)*
Antitakeover Defense Used by the Target *Dummy for used antitakeover defense(s) (as reported by SDC)*		**Positive**: Billett and Ryngaert (1997), Comment and Schwert (1995), Brickley, Coles, Terry (1994) *(used antitakeover defense increases target's bargaining power)*
Negative Attitude of Target Management toward Acquisition *(Dummy for hostile takeovers as reported by SDC)*		**Positive** *(ability to express resistance toward takeover is a sign of stronger target's bargaining power)*
Usage of Stocks as a Means of Payments in Acquisition *Pure stock offers dummy (as reported by SDC)*		**Negative**: Travlos (1987) *(bidders using stocks to pay target shareholders are unlikely to pursue value-enhancing acquisitions*

Table 1
Sample Description

Financial characteristics are obtained from CRSP and Compustat using the most recent information prior to the initial announcement date of the acquisition. Market value of assets is measured as (Total assets – Book value of equity + Market value of equity). Free cash flows are estimated using the methodology of Lehn and Poulsen (1989). Insider ownership is measured as the holdings of officers and directors reported in the latest proxy statement prior to the acquisition announcement. Bidder ownership in target prior to the announcement is obtained from *SDC Mergers&Acquisitions* database.

Panel A: Distribution of targets by announcement (or withdrawal) year:

Year	Targets of attempts		Year	Targets of attempts	
	Successful	Unsuccessful		Successful	Unsuccessful
1981	4		1989	18	37
1982	5		1990	11	22
1983	5		1991	10	12
1984	11		1992	10	14
1985	17	24	1993	15	12
1986	21	27	1994	27	11
1987	19	34	1995	59	23
1988	18	39			
Total				*250*	*255*

Panel B: Distribution of targets by SIC codes and most frequent SIC codes

Successful attempts

SIC code range	Number of targets	SIC code	Number of targets
0100-0999	3	73 (Business Services)	26
1000-1999	26	35(Industrial, Comm. Machinery, Comp. Eq)	23
2000-2999	35	13 (Oil and Gas Extraction)	21
3000-3999	90	38 (Meas. Instrum., Photo Goods, Watches)	20
4000-4999	19	36 (Electronic Equipment)	15
5000-5999	21	80 (Health Services)	15
7000-7999	32	28 (Chemicals and Allied Products)	14
8000-8999	24	48 (Communications)	10
		34 (Fabr. Metals, Machinery, Trans. Eq.)	9
		87 (Svcs - Engin., Acc., Research, Mgmt.)	9
Total	*250*		*162*

Unsuccessful attempts

SIC code range	Number of targets	SIC code	Number of targets
0100-0999	1	35 (Industrial, Comm. Machinery,Comp. Eq)	19
1000-1999	17	28 (Chemicals and Allied Products)	16
2000-2999	50	36 (Electronic Equipment)	15
3000-3999	87	73 (Business Services)	14
4000-4999	23	38 (Meas. Instr., Photo Goods, Watches)	12
5000-5999	40	34 (Fabr. Metals, Machinery, Trans. Eq.)	11
7000-7999	21	20 (Food and Kindred Products)	9
8000-8999	16	45 (Transportation by Air)	9
		80 (Health Services)	9
		29 (Petroleum Refinement)	7
		37 (Transportation Equipment)	7
		53 (General Merchandise Stores)	7
Total	*255*		*134*

Table 1 (Continued)

Panel C – Financial and Ownership Characteristics of Target

	Successful attempts			Unsuccessful attempts		
	N	Mean	Median	N	Mean	Median
Total Assets (1995 $ Mil)	250	924.59	193.06	255	1,049.10	134.92
MV of Equity (1995 $ Mil)	250	623.90	158.63	255	440.48	75.38
Sales (1995 $ Mil)	250	1,098.90	201.81	255	1,096.76	173.16
Tot. Liab./ (MV of Ast) (%)	250	42.07	43.67	255	49.04	50.41
Total Liab./ Tot. Assets (%)	250	53.14	53.20	255	56.55	56.03
EBIT / Total Assets (%)	250	6.26	8.20	255	3.45	6.42
M/B of Assets	248	1.53	1.23	255	1.29	1.10
Free CF / Total Assets (%)	237	5.55	7.10	250	5.57	6.15
Insider Ownership (%)	250	16.76	10.71	255	21.00	13.95
Bidder Ownrsp in Tgt. (%)	250	1.35	0.00	255	2.50	0.00

Table 2
Announcement Returns and Merger Characteristics

This table presents the announcement returns and merger characteristics for the sample of 250 successful and the sample of 255 unsuccessful control acquisitions. Abnormal returns for successful acquisitions are measured using market model returns from five days prior to the initial announcement date to five days after the final revision in the terms of the offer. Total abnormal returns are measured as the market value-weighted sum of target and bidder returns. Bidder share of target market value is excluded from the computation of target market value. Total takeover gain is the sum of target and bidder dollar gains. The dollar gains are the product of abnormal return and MV of equity. Transaction time is measured as the number of days between the initial announcement and effective dates of a takeover. A successful takeover is characterized as "with debt concerns" if *SDC acquisition synopsis* reports the dollar value of debt assumed and/or repurchased. An unsuccessful takeover is characterized as "with debt problems" if it is associated with some event(s) increasing financial distress surrounding the acquisition attempt (default, covenant violation, downgrades, auditor concerns). Announcement-to-termination returns for unsuccessful acquisitions are measured from five days prior to the initial announcement to five days after the termination of the offer. Statistical significance is measured using t-test (mean) and sign rank test (median).

Panel A: Abnormal returns:

Successful Acquisitions:

Variable	Mean	Median	Min.	Max.	St. Dev.
Target Abnormal Return (%)	25.91 ***	25.94 ***	-78.90	134.46	28.61
Bidder Abnormal Returns (%)	-2.62 *	-3.02 ***	-101.10	168.66	22.50
Total Abnormal Returns (%)	4.46 ***	3.95 ***	-78.42	138.79	19.29
Tot. Takvr. Gain / Target Assets (%)	-4.36	8.62 *	-1557.51	790.02	136.11
Target Total Assets (1995 $ Mil)	925	193	6	18,022	2,109
Bidder Total Assets (1995 $ Mil)	2,240	420	13	51,126	5,865
Transaction Time (days)	148.7	126	8	639	91.2

Unsuccessful Acquisitions:

Variable	Mean	Median	Min.	Max.	St. Dev.
Tgt. Announc-Termin. Abn. Ret (%)	2.21	2.42	-127.63	97.78	32.65
Target Total Assets (1995 $ Mil)	1,049	135	6	51,038	4,217

Panel B: Sample proportions:

	Successful Acquisitions		Unsuccessful Acquisitions	
Variable:	Number	Sample Prop.	Number	Sample Prop.
Stock Acquisition (pure stock financing)	105	0.420	32	0.125
Antitakeover Defense Used	9	0.036	40	0.156
Hostile Takeovers	23	0.092	62	0.429
Takeover with Debt Concerns	49	0.196		
Takeover with Debt Problems			50	0.247
Multiple Bidder Merger	54	0.216		
Takeover Challenged by Lawsuit(s)	50	0.200		
Takeover with Positive Offer Price Adjustments	65	0.260		
Takeover with Neg. Offer Price Adjustments	22	0.080		

***, **, * denotes the statistical significance of difference from zero on 1%, 5%, and 10% levels, respectively.

Table 3
Target Debt Structure

Table 3 presents the data on debt for the sample of 211 targets of successful and 233 targets of unsuccessful acquisitions with positive levels of debt reported in the footnotes to firms' annual reports and *10K* reports. Market value of assets equals to (Market value of equity + Total assets – Book value of equity). Target leverage is measured as (Total debt) / (MV of equity + Preferred Stock + Total Debt). Total debt is the value of debt disclosed in firm annual report footnotes and *10K* reports, less the value of capital leases. Values and proportions of public, bank, and private non-bank debt are obtained from the annual report footnotes, *10K* reports and *Moody's* manuals. Bank leverage equals to Bank debt / (MV of equity + Preferred Stock + Total Debt). Public and Private nonbank leverages are defined analogously. Debt dispersion equals to 1-Debt Herfindahl Index (with 3 types of debt – public, bank, and private non-bank). Statistical significance is determined using t-test (mean) and Wilcoxon signed rank test (median). Values in parentheses denote the numbers of non-zero observations for targets of successful and unsuccessful acquisitions, respectively.

	Successful acquisitions		Unsuccessful acquisitions	
Variable	Mean	Median	Mean	Median
Target Leverage – Total	0.2724	0.2485	0.3127	0.2853
Debt Dispersion	0.2853	0.2147	0.3275	0.3260
Modified Z-score	1.9863	2.1320	2.1365	2.1650
Bank Debt / Total Debt (202,220)	0.6683	0.8263	0.5932	0.6715
Bank Debt / Total Debt (non-zero proportions)	0.6981	0.8976	0.6282	0.6927
Public Debt / Total Debt (79,83)	0.2296	0.0000	0.2075	0.0000
Public Debt / Total Debt (non-zero proportions)	0.6132	0.6125	0.5826	0.5917
Private Non-bank Debt / Total Debt (53,128)	0.1021	0.0000	0.1991	0.0276
Private Non-bank Debt / Total Debt (non-zero prop.)	0.4065	0.3749	0.3625	0.2635
Bank Leverage (202,220)	0.1713	0.1156	0.1684	0.1249
Bank Leverage (non-zero proportions)	0.1789	0.1234	0.1783	0.1330
Public Leverage (79,83)	0.0766	0.0000	0.0869	0.0000
Public Leverage (non-zero proportions)	0.2045	0.1778	0.2439	0.2069
Private Non-bank Leverage (53,128)	0.0245	0.000	0.0574	0.0064
Private Non-bank Leverage (non-zero proportions)	0.0975	0.0653	0.1045	0.0546
Bank Secured Debt / Total Debt (31,106)	0.0810	0.0000	0.1811	0.0000
Bank Secured Debt / Total Debt (non-zero prop.)	0.5515	0.5072	0.3982	0.2975
Borrowing on Lines / Total Debt (77,88)	0.1701	0.0000	0.2532	0.0000
Borrowing on Lines / Total Debt (non-zero prop.)	0.4663	0.4089	0.6706	0.3951
Convertible Debt / Total Debt (55,51)	0.1232	0.0000	0.0900	0.0000
Convertible Debt / Total Debt (non-zero prop.)	0.4729	0.3396	0.4112	0.3436
Unused Lines of Credit / Total Assets (117,109)	0.0961	0.0344	0.0599	0.0000
Unused Lines of Credit / Total Assets (non-zero p.)	0.1733	0.1279	0.1280	0.1057

Table 4
Gains to Targets and Target Leverage

Table 4 contains cross sectional weighted least-square regression results for the sample of 250 completed acquisitions between 1981-1995 (models 1-2) and the sample of 211 of those targets which have positive leverage (models 3-7). The dependent variable is target abnormal returns estimated using market model from 5 days before the initial announcement to 5 days after the final revision in terms of the offer (models 1-5) and weighted total abnormal returns (models 6-7). Market value weighted abnormal returns of both the target and the bidder are estimated using market model from 5 days before the initial announcement to 5 days after the final revision in terms of the offer. Target leverage is measured as (Total debt)/(Market value of equity + Preferred stock +Total debt), where total debt is the value of debt disclosed in firm annual report footnotes and *10K* reports, less the value of capital leases. Debt dispersion equals to 1-Debt Herfindahl index. The debt structure is obtained from *Moody's* manuals, footnotes to firm annual reports, and firm *10K* reports. Total takeover gain is the sum of target and bidder dollar gains normalized by target assets. Target insider holdings are measured as stock ownership of officers and directors from the last proxy statement before the announcement. Bidder foothold is measured as bidder stock ownership in target at the announcement date as reported by *SDC*. Debt consideration dummy equals to one if *SDC acquisition synopsis* reports the value of target debt retired and/or assumed. Free cash flows are measured as in Lehn and Poulsen (1989). P-values of heteroskedasticity-adjusted t-tests are in parentheses.

Dependent Variable	Target Abnormal Returns					Weighted Total Abnormal Return	
Model	All targets		Targets with positive leverage				
	1	2	3	4	5	6	7
Intercept	0.1814 *** (0.0001)	0.2383 ** *(0.0128)*	0.2427 *** *(0.0044)*	0.1984 * *(0.0594)*	0.3308 *** *(0.0015)*	0.0131 *(0.4147)*	0.0080 *(0.8784)*
Target leverage	**0.1719 ** *(0.0117)***	**0.2633 *** *(0.0045)***	**0.2123 *** *(0.0027)***	**0.3469 *** *(0.0005)***		**0.0975 ** *(0.0433)***	**0.1314 ** *(0.0155)***
Debt dispersion		-0.1280 * *(0.0509)*		-0.1122 * *(0.0965)*			-0.0927 ** *(0.0172)*
Debt consideration dummy		-0.0398 *(0.3103)*		-0.0669 * *(0.0750)*			-0.0062 *(0.8005)*
Ln (Target total assets)		-0.0421 * *(0.0523)*	-0.0518 ** *(0.0135)*	-0.0444 ** *(0.0499)*	-0.0492 ** *(0.0347)*		0.0334 *** *(0.0077)*
Ln (Bidder total assets)		0.0433 *** *(0.0076)*	0.0418 ** *(0.0138)*	0.0447 *** *(0.0102)*	0.0396 ** *(0.0303)*		-0.0260 ** *(0.0204)*
Used antitakeover defense dummy		0.1978 *** *(0.0010)*	0.2068 *** *(0.0025)*	0.1901 *** *(0.0039)*	0.2057 *** *(0.0048)*		0.0493 *(0.3978)*
Hostile takeover dummy		0.0521 *(0.3604)*	0.0685 *(0.2667)*	0.0681 *(0.2845)*	0.0594 *(0.3713)*		0.0460 *(0.1630)*
Sq. Root(Target insider holdings)		-0.0117 *(0.1560)*	-0.0092 *(0.2894)*	-0.0128 *(0.1496)*	-0.0097 *(0.2978)*		-0.0043 *(0.4016)*
Sq. Root(Bidder foothold)		-0.0087 *(0.5691)*	-0.0051 *(0.7176)*	-0.0082 *(0.5822)*	-0.0084 *(0.6121)*		0.0062 *(0.3857)*
Stock acquisition dummy		-0.1197 *** *(0.0001)*	-0.1123 *** *(0.0001)*	-0.1295 *** *(0.0001)*	-0.1191 *** *(0.0001)*		-0.0533 *** *(0.0057)*
Multiple bidders dummy		0.0125 *(0.7175)*	0.0196 *(0.5865)*	0.0218 *(0.5440)*	0.0196 *(0.5919)*		0.0233 *(0.3016)*
Target M/B of assets		-0.0190 *(0.4531)*		-0.0036 *(0.8905)*	-0.0267 *(0.3556)*		0.0309 *(0.6002)*
Target FCF/Assets		0.2778 * *(0.0764)*		0.2463 *(0.1647)*	0.1553 *(0.3796)*		0.2482 ** *(0.0213)*
Total gains if positive	0.1210 *** *(0.0001)*	0.1550 *** *(0.0001)*	0.1325 *** *(0.0001)*	0.1447 *** *(0.0001)*	0.1307 *** *(0.0001)*		
Total gains if negative	0.0249 *(0.2056)*	0.0142 *(0.2740)*	0.0144 *(0.4220)*	0.0141 *(0.3032)*	0.0181 *(0.2168)*		
Adj R-square	0.0851	0.2144	0.1923	0.2214	0.1708	0.0115	0.1324
N	250	235	211	202	202	211	202

***, **, * denotes the statistical significance of difference from zero on 1%, 5%, and 10% levels, respectively.

Table 5
Debt Levels and Ownership Concentration of Targets

This table contains a binary comparison for the sample of 211 targets with positive leverage. "High Debt" sample contains observations with Total Leverage (measured as (Total debt)/(Market value of equity + Preferred stock +Total debt)) in the highest quartile of sample distribution for Total Leverage. Institutional, managerial, (5-percent) block ownership, as well as data on number of (5-percent) blocks is gathered from proxy statements. Total concentrated ownership is measured as the sum of institutional, managerial, and blockholders' ownership. Data on institutional ownership and blockholdings are obtained from Thompson Financial's *CDA Spectrum* (SEC 13f filings). Insider ownership is obtained from S & P's *ExecuComp*. In some cases proxy statements were also used. Statistical significance is determined by Wilcoxon test (median) and T-test (mean).

Ownership	Low Debt sample median (mean)	High Debt sample median (mean)
Institutional	26.06% (32.35%)	33.29% (34.83%)
Managerial	9.25% (17.86%)	15.13%* (19.23%)
5-percent block	31.84% (34.81%)	39.40%** (42.49%)*
Number of blocks	3.00 (3.24)	3.50** (4.04)**
Total concentrated	81.21% (85.11%)	97.78%** (97.69%)*

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Table 6
Probit Analysis of Acquisition Success

This table contains probit analysis results for the sample of 250 targets that were acquired and 255 that were not. The dependent variable is a dummy variable equal to one if the acquisition was completed. Target leverage is measured as (Total debt)/(Market value of equity + Preferred stock +Total debt). Bank dominated dummy equals one if bank debt has the highest proportion of all ownership classes in total debt. Debt dispersion equals to 1-Debt Herfindahl index. Related acquisition dummy equals one if target and bidder 2-digit SIC codes are identical. Target insider holdings are measured as stock ownership of officers and directors from the last proxy statement before the announcement. Bidder foothold is measured as bidder stock ownership in target at the announcement date as reported by *SDC*. T-statistics are in parentheses.

Indep. Variable	(1)	(2)	(3)
Intercept	0.5496 (3.01)***	0.5735 (3.11)***	0.9390 (4.35)***
Target leverage	**-1.1796** **(4.05)***	**-1.7436** **(4.74)***	**-1.1193** **(2.74)***
Targ. leverage*Bank dominated debt		**0.9774** **(2.69)***	**0.6777** **(1.80)***
Debt dispersion			-1.0309 (3.42)***
Ln (Target Total Assets)	0.1311 (2.84)***	0.1492 (3.17)***	0.2225 (4.26)***
Related acquisition dummy	0.7176 (5.21)***	0.7092 (5.11)***	0.6550 (4.66)***
Sq. root (Target insider holdings)	-0.0692 (2.08)**	-0.0717 (2.13)**	-0.0783 (2.30)**
Sq. root (Bidder foothold)	0.0272 (0.52)	0.0351 (0.67)	0.0393 (0.74)
Hostile takeover dummy	-0.4580 (2.10)**	-0.4689 (2.13)**	-0.4915 (2.21)**
Used antitakeover defense dummy	-0.6951 (2.44)**	-0.7057 (2.47)**	-0.6928 (2.39)**
Stock acquisition dummy	0.7019 (4.61)***	0.7399 (4.81)***	0.6960 (4.48)***
Log Likelihood	*-278.5*	*-274.8*	*-268.9*

***,**,* denotes statistical significance on 1%, 5%, 10%, respectively.

Table 7
Target Debt Structure When One Source of Debt is Dominant

This table presents the data on debt for the sample of 211 takeover targets of successful acquisitions with positive levels of total debt reported in the footnotes to firm annual reports and firm *10K* reports. Market value of assets equals to (Market value of equity + Total assets – Book value of equity). Target leverage is measured as (Total debt) / (Market value of equity + Preferred Stock + Total Debt). Total debt is the value of debt disclosed in firm annual report footnotes and *10K* reports, less the value of capital leases. Bank (public, private non-bank) dominated debt denotes leverage structures with the relatively highest proportion of debt provided by bank (public, private non-bank) lenders. Values and proportions of public, bank, and private non-bank debt are obtained from the annual report footnotes, *10K* reports and *Moody's* manuals. Bank leverage equals to Bank debt / (Market value of equity + Preferred Stock + Total Debt). Public and Private nonbank leverages are defined analogously. Debt dispersion equals to 1-Debt Herfindahl Index. Statistical significance is determined using t-test (mean) and Wilcoxon signed rank test (median).

	Bank Dominated Debt (143)		Public Bond Dominated Debt (48)		Private Non-Bank Dominated Debt (20)	
Variable	Mean	Median	Mean	Median	Mean	Median
MV of Equity + Pref. Stock + Total Debt (Mil)	519.00 ***	145.99 ***	1772.88 ***	732.18 ***	345.41	205.81
Total Debt / Total Assets	0.2547 *	0.1956 ***	0.3276 **	0.2598 **	0.2172	0.2238
Total Debt / Market Value of Assets	0.2188	0.1510 **	0.2416 **	0.2122 **	0.1567	0.1076
Target Leverage – Total	0.2616 *	0.2263 **	0.3261 **	0.2867 **	0.2204	0.1315
Dominating Debt / Total Debt	0.8951 ***	1.0000 ***	0.8003	0.8316	0.7573 ***	0.6927 ***
Bank Debt / Total Debt	0.8951 ***	1.0000 ***	0.1878	0.1636	0.1999 ***	0.1973 ***
Public Debt / Total Debt	0.0641 ***	0.0000 ***	0.8003 ***	0.8316 ***	0.0428	0.0000
Private Non-bank Debt / Total Debt	0.0407 **	0.0000	0.0120 ***	0.0000 ***	0.7573 ***	0.6927 ***
Dominating Leverage	0.2233	0.1743 *	0.2557 **	0.2249 ***	0.1561 *	0.1093
Bank Leverage	0.2233 ***	0.1743 ***	0.0666	0.0342	0.0507 ***	0.0345 ***
Public Leverage	0.0253 ***	0.0000 ***	0.2557 ***	0.2249 ***	0.0136	0.0000
Private Non-bank Leverage	0.0130 **	0.0000	0.0038 ***	0.0000 ***	0.1561 ***	0.1093 ***
Debt Dispersion	0.2104 ***	0.0000 ***	0.4584	0.4988	0.4059 ***	0.4537 ***
Bank Secured Debt / Total Debt	0.1078 ***	0.0000	0.0175	0.0000	0.0418 *	0.0000
Borrowing on Lines / Total Debt	0.2249 ***	0.0000 ***	0.0359	0.0000 **	0.1012 **	0.0000
Term Borrowing / Total Debt	0.0890 ***	0.0000	0.0206	0.0000	0.0788	0.0000
Convertible Debt / Total Debt	0.0653 ***	0.0000 ***	0.3070 **	0.0000 *	0.0971	0.0000
Unused Lines of Credit / MV of Assets	0.0770	0.0198	0.0742	0.0246	0.0592	0.0391
Modified Z-score	2.0384	2.1330	1.8887	1.6295	1.8517	2.4360

***, **, * denotes the statistical significance on 1%, 5%, and 10% levels.

Significance marks in "Bank Dominated Debt" columns reflects the difference between bank and public bond dominated debt.

Significance marks in "Public Bond Dominated Debt" columns reflects the difference between public bond and private non-bank dominated debt.

Significance marks in "Private Non-bank Dominated Debt" columns reflects the difference between bank and private non-bank dominated debt.

Table 8
Target Gains as a Function of their Level and Structure of Debt

Table 8 contains cross sectional weighted least-square regression results for the sample of 211 completed acquisitions from 1981 to 1995 for targets having positive leverage. The dependent variable is abnormal returns for targets, and weighted total abnormal returns. Target abnormal returns are estimated using market model from 5 days before the initial announcement to 5 days after the final revision in terms of the offer. Market value weighted abnormal returns of both the target and the bidder are estimated using market model from 5 days before the initial announcement to 5 days after the final revision in terms of the offer. Target leverage is measured as (Total debt)/(Market value of equity + Preferred stock +Total debt). Debt dispersion equals to 1-Debt Herfindahl index. Total takeover gain is the sum of target and bidder dollar gains normalized by target assets. Target insider holdings are measured as stock ownership of officers and directors from the last proxy statement before the announcement. Bidder foothold is measured as bidder stock ownership in target at the announcement date as reported by *SDC*. Debt consideration dummy equals to one if *SDC acquisition synopsis* reports the value of target debt retired and/or assumed. Bank (private non-bank) dominated dummy equals one if bank debt (private non-bank debt) has the highest proportion of all ownership classes in total debt. P-values of heteroskedasticity-adjusted t-tests are in parentheses.

Dependent Variable	Target Abnormal Returns			Weighted Total Abnormal Return
Model	1 [A,X]	2 [A]	3 [A]	4
Intercept	0.2241 *** *(0.0093)*	0.2375 *** *(0.0056)*	0.2720 *** *(0.0010)*	-0.0047 *(0.9087)*
Target leverage	**0.4072** *** ***(0.0001)***	**0.4518** *** ***(0.0001)***	**0.3622** *** ***(0.0001)***	**0.1584** ** ***(0.0178)***
Targ. lev * bank dominated debt	**-0.1660** * ***(0.0601)***	**-0.2119** ** ***(0.0169)***	**-0.1606** * ***(0.0696)***	**-0.0471** ***(0.4155)***
Targ. lev. * pvt. Non-bank dom. dbt.	**0.2901** ***(0.1647)***			
Debt dispersion	-0.1470 ** *(0.0228)*	-0.1330 ** *(0.0418)*		-0.0959 ** *(0.0144)*
Debt consideration dummy	-0.0600 * *(0.0831)*	-0.0643 * *(0.0671)*	-0.0592 *(0.1022)*	-0.0098 *(0.6859)*
Ln (Target total assets)	-0.0474 ** *(0.0222)*	-0.0499 ** *(0.0159)*	-0.0599 *** *(0.0033)*	0.0357 *** *(0.0015)*
Ln (Bidder total assets)	0.0479 *** *(0.0038)*	0.0476 *** *(0.0044)*	0.0455 *** *(0.0068)*	-0.0271 ** *(0.0125)*
Used antitakeover defense dummy	0.2171 *** *(0.0006)*	0.2167 *** *(0.0011)*	0.2133 *** *(0.0031)*	0.0515 *(0.3660)*
Hostile takeover dummy	0.0653 *(0.2422)*	0.0582 *(0.3064)*	0.0672 *(0.2813)*	0.0513 *(0.1081)*
Sq. Root(Target insider holdings)	-0.0108 *(0.2317)*	-0.0112 *(0.2131)*	-0.0093 *(0.2885)*	
Sq. Root(Bidder foothold)	-0.0151 *(0.2619)*	-0.0117 *(0.3921)*	-0.0110 *(0.4174)*	
Stock acquisition dummy	-0.1354 *** *(0.0001)*	-0.1345 *** *(0.0001)*	-0.1256 *** *(0.0001)*	-0.0596 *** *(0.0022)*
Multiple bidders dummy	0.0231 *(0.5074)*	0.0240 *(0.5019)*	0.0215 *(0.5517)*	0.0236 *(0.2995)*
Target M/B of assets				0.0180 *(0.7702)*
Target FCF/Assets				0.2399 ** *(0.0260)*
Total gains if positive	0.1374 *** *(0.0001)*	0.1395 *** *(0.0001)*	0.1330 *** *(0.0001)*	
Total gains if negative	0.0137 *(0.4312)*	0.0139 *(0.4247)*	0.0147 *(0.4161)*	
Adj R-square	0.2166	0.2132	0.2028	0.1339

***, **, * denotes the statistical significance of difference from zero on 1%, 5%, and 10% levels, respectively.
A: coefficients (Target leverage + Target leverage * Bank dominated debt dummy) statistically significantly different from zero on 5% level.
X: sums of coefficients (Target leverage + Target leverage * Bank dominated debt dummy) and (Target leverage + Target leverage * Private non-bank dominated debt dummy) statistically significantly different on 5% level

Table 9
Gains to Targets and Coinsurance of Target Debt

Table 9 contains cross-sectional weighted least-square regression results for the sample of 211 completed acquisitions between 1981-1995 with positive leverage (models 1-4), the 143 targets with bank-dominated debt (model 5) and the 68 targets with non-bank dominated debt (model 6). The dependent variable is target abnormal returns estimated using market model from 5 days before the initial announcement to 5 days after the final revision in terms of the offer. Target leverage is measured as (Total debt)/(Market value of equity + Preferred stock +Total debt), where total debt is the value of debt disclosed in firm annual report footnotes and *10K* reports, less the value of capital leases. Coinsurance is a dummy variable that equals one if target modified Z-score is in the bottom tercile of the sample distribution (firms with low Z-scores are likely to experience financial distress, their debt is likely riskier, and thus more probable to re-valuate after the acquisition). Bank (non-bank) dominated dummy equals one if bank debt (public debt or private non-bank debt) has the highest proportion of all ownership classes in total debt. The debt structure is obtained from *Moody's* manuals, footnotes to firm annual reports, and firm *10K* reports. Total takeover gain is the sum of target and bidder dollar gains normalized by target assets. Other control variables in Table 8 were dropped for readability, since they did not enter significantly or affected coefficients of relevant variables. P-values of heteroskedasticity-adjusted t-tests are in parentheses.

Dependent Variable:	Target Abnormal Return					
	Whole Sample				Dominated Debt	
					Bank(143)	Non-Bank(68)
Model	1	2	3	4	5	6
Intercept	0.1574 ***	0.1286 *	0.1324 **	0.0918	0.1064	0.1892
	(0.0479)	*(0.0518)*	*(0.0479)*	*(0.2173)*	*(0.1613)*	*(0.1947)*
Ln (Target total assets)		-0.0312 *	-0.0326 *	-0.0232	-0.0230	-0.0276
		(0.0860)	*(0.0693)*	*(0.2128)*	*(0.2768)*	*(0.4417)*
Ln (Bidder total assets)		0.0319 **	0.0323 **	0.0333 **	0.0311 *	0.0136
		(0.0487)	*(0.0423)*	*(0.0344)*	*(0.0910)*	*(0.6328)*
Target leverage	**0.2929** ***	**0.3196** ***	**0.3245** ***	**0.3737** ***	**0.2589** **	**0.4617** ***
	(0.0015)	***(0.0005)***	***(0.0004)***	***(0.0014)***	***(0.0302)***	***(0.0001)***
Targ. leverage* Coinsurance	**-0.1727** *	**-0.1920** **	**-0.0326**	**-0.0205**	**-0.2661** **	**-0.0462**
	(0.0520)	***(0.0284)***	***(0.7922)***	***(0.8840)***	***(0.0128)***	***(0.7277)***
Targ. lev.*bk.dom.* Coinsurance			**-0.2380** *,AAA	**-0.2681** AAA		
			(0.0531)	***(0.1221)***		
Targ. lev. *bank dominated debt				**-0.0074**		
				(0.9518)		
Debt dispersion				-0.0992		
				(0.1559)		
Total gains if positive	0.1383 ***	0.1305 ***	0.1306 ***	0.1356 ***	0.1641 ***	0.1131 ***
	(0.0003)	*(0.0005)*	*(0.0005)*	*(0.0001)*	*(0.0094)*	*(0.0018)*
Total gains if negative	0.0235	0.0323	0.0326	0.0326	0.0129	0.1390 ***
	(0.2588)	*(0.1544)*	*(0.1543)*	*(0.1480)*	*(0.4109)*	*(0.0006)*
Adj R-square	0.1068	0.1123	0.1171	0.1166	0.0695	0.2621
N	211	211	211	211	143	68

***, **, * denotes the statistical significance of difference from zero on 1%, 5%, and 10% levels.
AAA denotes the statistical significance of difference of the sum of coefficients (Target leverage * Coinsurance + Target leverage * coinsurance * Bank dominated debt dummy) from zero on 1% level.

Table 10
Prices and Yields of Publicly Traded Bonds Surrounding Acquisition Announcements

This table presents the analysis of changes in prices and yields of 78 bonds issued by 41 sample targets, and 179 bonds issued by 62 sample bidders that have pricing data available in Fixed Income Securities Database. For targets (bidders), the changes are measured from one month prior the acquisition announcement to one month prior (after) the completion of the acquisition. Investment grade bonds correspond to Moody's rating of *Baa* and better. Financial distress-prone targets have Z-scores in the lowest tercile of sample distribution. Statistical significance of the difference with respect to zero is determined using t-test (mean) and Wilcoxon signed rank test (median).

Panel A: Full Sample

Targets:

	N	Mean	*p-value*	Median	*p-value*
ΔPrices (%)	78	1.9818	*0.095*	0.1250	*0.282*
ΔYields (%)	78	-0.6228	*0.099*	-0.1240	*0.232*

Bidders:

	N	Mean	*p-value*	Median	*p-value*
ΔPrices (%)	179	-0.1006	*0.777*	0.0000	*0.791*
ΔYields (%)	179	0.0506	*0.510*	0.0000	*0.955*

Panel B: Targets: Non-callable vs. Callable Bonds

	Bond Status:	N	Mean	*p-value*	Median	*p-value*
ΔPrices (%)	Non-callable	29	6.2490	*0.028*	2.0090	*0.003*
	Callable	49	-0.5437***	*0.499*	-0.6700***	*0.299*
ΔYields (%)	Non-callable	29	-1.9092	*0.050*	-0.3890	*0.001*
	Callable	49	0.1386***	*0.368*	0.3050***	*0.305*

Panel C: Targets: Speculative vs. Investment Grade Bonds

	Bond Status:	N	Mean	*p-value*	Median	*p-value*
ΔPrices (%)	Speculative	22	7.3732	*0.051*	4.3750	*0.014*
	Investment	56	-0.1363***	*0.846*	-0.4415***	*0.584*
ΔYields (%)	Speculative	22	-2.3048	*0.074*	-0.9845	*0.009*
	Investment	56	0.0380***	*0.776*	-0.0090***	*0.649*

Panel D: Bidders: Bidding for Targets with Non-callable vs. Callable Bonds

	Target Has Callable Debt:	N	Mean	*p-value*	Median	*p-value*
ΔPrices (%)	No	120	0.2965	*0.432*	0.0000	*0.595*
	Yes	59	-0.9086	*0.232*	0.0000	*0.225*
ΔYields (%)	No	120	-0.1153	*0.042*	0.0000	*0.054*
	Yes	59	0.3883***	*0.053*	0.2060**	*0.052*

Panel E: Bidders: Bidding for Targets Financially Healthy vs. Distress-Prone

	Distress-Prone Target	N	Mean	*p-value*	Median	*p-value*
ΔPrices (%)	Yes	74	0.1067	*0.815*	0.0000	*0.936*
	No	105	-0.2468	*0.632*	0.0000	*0.721*
ΔYields (%)	Yes	74	-0.1040	*0.173*	0.0000	*0.194*
	No	105	0.1596*	*0.181*	0.0000	*0.401*

***,**,* denotes the statistical significance of the difference between sub-samples of non-callable and callable (or speculative and investment) bonds on 1%, 5%, and 10% levels, respectively.

Table 11
Takeover Transaction Time

This table contains cross-sectional ordinary least-square regression results for the sample of 211 completed acquisitions with positive target leverage for the period, 1981-1995. The dependent variable is the number of days between the original announcement and completion dates of the takeover. Relative equity size is the ratio of target equity to bidder equity. Target leverage is measured as (Total debt) / (Market value of equity + Preferred Stock + Total Debt). Total debt is the value of debt disclosed in firm annual report footnotes and *10K* reports, less the value of capital leases. Target insider holdings are measured as stock ownership of officers and directors from the last proxy statement before the announcement. Bidder foothold is measured as bidder stock ownership in target at the announcement date as reported by *SDC*. Industry-adjusted EBIT/Assets is measured as the difference between the company's EBIT/Assets and the median EBIT/Assets value of firms with the same 2-digit SIC code. Free cash flows are measured as in Lehn and Poulsen (1989). Bank dominated debt dummy equals to one if the majority of target's debt was provided by banks (as opposed to public or private non-bank lenders). P-values of heteroskedasticity-adjusted t-tests are in parentheses.

Model	(1)	(2)	(3)
Intercept	61.72***	21.29	22.57
	(0.0038)	(0.3714)	(0.3422)
Relative size	10.73	10.92	10.63
	(0.2722)	(0.2651)	(0.2684)
Sq. Root (Target leverage)	50.60**	85.64***	106.68***
	(0.0405)	(0.0011)	(0.0003)
Sq. Root (Target leverage)*Bank dominated debt dummy			-38.87*
			(0.0943)
Stock acquisition	43.08***	37.02**	33.02**
	(0.0018)	(0.0174)	(0.0302)
Multiple bidders	56.02***	51.78***	51.84***
	(0.0020)	(0.0039)	(0.0036)
Acquisition challenged by lawsuit(s)	60.33***	52.78***	53.87***
	(0.0010)	(0.0038)	(0.0030)
Industry-adjusted abnormal EBIT/Assets	-141.90***	-318.26***	-323.55***
	(0.0050)	(0.0001)	(0.0001)
Used antitakeover defense	-27.01	-32.49	-32.28
	(0.4534)	(0.3556)	(0.3503)
Hostile takeover	-32.80	-29.34	-30.89
	(0.1838)	(0.2623)	(0.2287)
Sq. Root(Insider holdings)	5.50*	3.24	4.17
	(0.0724)	(0.2795)	(0.1694)
Sq. Root (Bidder foothold)	13.73***	16.99***	16.81***
	(0.0018)	(0.0001)	(0.0001)
Target M/B of assets		15.20**	14.39*
		(0.0446)	(0.0509)
Target FCF/Assets		216.52***	221.10***
		(0.0016)	(0.0024)
Adjusted R^2	0.2127	0.2252	0.2320
N	211	202	202

***, **, * denotes the statistical significance of difference from zero on 1%, 5%, and 10% levels.