Do Capital Structure Adjustments by Takeover Targets Influence Acquisition Gains?

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Abstract:
Existing theoretical models predict that takeover targets optimally increase debt and repurchase equity around takeover attempts. Ultimately, these leverage shifts should benefit target shareholders and enhance bargaining power in negotiations with acquiring firms. We show that target firms indeed issue higher levels of debt, and simultaneously repurchase more equity, relative to a set of matched firms during the period from one year prior to takeover announcement through completion. We find that bank debt is the primary source of these debt increases. Lastly, we find evidence consistent with the expectation of improved bargaining power for target equityholders with target debt issuances. We document that compared to debt issued by non-target firms, announcements of debt issuances by takeover targets are associated with additional positive abnormal returns to target stockholders. At least some of these target equity gains appear to come at the expense of bidder shareholders. The impact on target and bidder abnormal returns is more significant for debt issuances occurring in the periods immediately preceding and following takeover announcement, as well as for issuances of bank debt. Debt issuances occurring after takeover announcement appear to reverse lower (higher) abnormal returns experienced by targets (bidders) upon takeover announcement itself.

Keywords: Debt issuances, Bank debt, Mergers and Acquisition gains

JEL Classification: G32, G34

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1. Introduction

The purpose of this study is to empirically document capital structure adjustments undertaken by takeover targets around the time of an acquisition attempt, as well as to analyze abnormal returns to target and bidder equity following debt issuances surrounding the time of an acquisition attempt.

The determinants of optimal capital structure have been widely studied in corporate finance. Research has shown that firms' long-term use of debt to finance assets depends on factors such as corporate taxes (e.g. Graham, 2003), financial distress (e.g. Bris et al., 2006), information asymmetry between investors and managers (e.g. Murray and Goyal, 2003), agency costs (e.g. Jensen, 1986), and product market characteristics (e.g. Kale and Shahrur, 2007). Recently, a growing stream of literature links capital structure decisions to merger and acquisition (M&A) events. Leverage levels of targets have been shown to determine the choice of acquisition financing as well as the post-acquisition leverage adjustments made by bidders attempting to adjust leverage to an optimal level (e.g. Harford et al., 2009; Morellec and Zhdanov, 2008). Bidders appear to lower their leverage in anticipation of future acquisitions (Almazan et al., 2010). Higher leverage levels maintained by potential takeover targets are associated with lower takeover likelihood (Palepu, 1986; Billett and Xue, 2007), especially when targets are financed by risky debt (Billett, 1996).

In contrast to the above papers that mostly study the impact of mergers on optimal capital structure, the unique contribution of this study is the focus on *changes* in debt levels likely performed for short-term purposes such as influencing the outcomes of M&A attempts and changing the relative bargaining power of merger participants. For takeover targets, debt is expected to serve a role similar to antitakeover mechanisms (e.g. poison pills). Stulz (1988), Harris and Raviv (1988) and Israel (1992) argue that by increasing leverage levels, target managers are able to retire shares held by investors with the lowest reservation values while simultaneously boosting the relative size of managers' and other blockholders' stakes.[1] Ultimately, the above models predict debt levels of targets to increase in anticipation of takeover

[1]Israel (1991) further argues that target debtholders can gain during M&A's, in large part due to protective

attempts. Similar to antitakeover mechanisms, leverage increases enhance the bargaining power of target managers and increase the expected wealth transfer from bidder shareholders to target shareholders, while trading off higher gains against a lower likelihood of a merger completion.

To date, there is only limited empirical evidence addressing the impact of a target firm's leverage changes on the outcomes of acquisition events. Billett and Ryngaert (1997) document that targets with greater leverage indeed generate higher announcement abnormal returns during successful takeovers. Studying the outcomes of unsuccessful acquisitions, Berger et al. (1997), Saffiedine and Titman (1999) and Jandik and Makhija (2005a) document that the leverage of target firms increases from before takeover announcement until after takeover withdrawal.[2] Consistent with the role of debt as an antitakeover tool, Garvey and Hanka (1999) show that firms tend to lower leverage as alternative antitakeover mechanisms –state antitakeover laws in this case – are strengthened.

One of the unique contributions of this paper is our analysis of leverage increases for targets of successful takeover attempts. By studying 3,555 targets of successful takeover attempts from 1991 through 2010, we show that target firms significantly increase leverage (Total Debt / Total Assets) by 5.5% compared to an increase of 1.1% for similar, non-target firms over a period spanning from one year before takeover announcement through takeover completion. Target firms also significantly decrease book equity to total assets by 3.8% compared to a decrease of 1.6% for similar non-target firms.[3] The frequency of debt issuances by target firms overall is approximately 29%. Over 12% of target firms are found to issue debt during the period immediately surrounding the takeover attempt (i.e. during the quarter preceding takeover announcement through completion). The frequency of debt issues immediately

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covenants requiring debtholder consent to proceed with the takeover. Target debtholders should be able to extract higher shares of takeover synergies as target debt increases, leaving less for both target and bidder shareholders. However, in efficient markets, expected future gains to debtholders should be priced in the form of lower issuance costs of debt, and thus ultimately accrued to target shareholders.

[2] Safieddine and Titman (1999) argue the leverage increases improve corporate performance and reduce wasteful spending resulting from an abundance of free cash flows (Jensen, 1986). On the other hand, results of Jandik and Makhija (2005a) suggest leverage increases are undertaken by poorly performing management teams attempting to block acquisitions and increase entrenchment.

[3] Our findings on equity reductions by targets are consistent with Billett and Xue (2007) who show that takeover targets are likely to pursue open market share repurchases in response to potential takeover attempts.

surrounding the takeover attempt is comparable to the utilization of standard antitakeover provisions by typical takeover targets.

In addition to documenting changes in leverage levels of target firms, we also show that around M&A events, bank debt – as opposed to non-bank debt such as public or private, non-bank loans – is issued more often by takeover targets compared to similar non-target firms. Real-world debt is provided by a variety of investors that differ in their ability to protect the value of their stakes and also in the speed with which they are able to lend once a loan request has been made. Bank debt is associated with superior abilities to monitor and renegotiate (e.g. Fama, 1985; Diamond, 1991; Krishnaswami et al., 1999). Because banks are often the primary lenders to smaller and typically riskier, less-established firms (Denis and Mihov, 2003; Faulkender, 2005; Cantillo and Wright, 2000), banks and their borrowers tend to have long-standing relationships, through which borrowers often have access to pre-negotiated lines of credit (Houston and James, 1996). If target firms choose to recapitalize in reaction to an anticipated takeover event, these firms may find it optimal to issue bank debt, as banks more likely to quickly release requested funds relative to other creditors.[4]

Finally, our paper examines the value implications of leverage adjustments. Firms issuing debt typically realize positive abnormal equity returns around debt issuance announcements (e.g. Mikkelson and Partch, 1986)[5]. Debt issuance announcements provide a positive signal about the quality of issuer's assets (Myers and Majluf, 1984) and also about the willingness of external investors to commit their resources toward firm's assets. Debt issuance announcements can also signal improved corporate governance resulting from debtholder monitoring (Agrawal and Knoeber, 1996), especially when performed by bank lenders (Billett et al., 1995; Lummer and McConnell, 1989; James, 1987). In the case of debt issuances by takeover targets, there are two additional reasons for equity gains. First, as higher

[4] Throughout the paper, we study debt ownership in terms of bank vs. non-bank debt. The non-bank issues cover both public and private non-bank loans. As observations of private non-bank debt are relatively infrequent, these issuances are not separately addressed. However, our analysis based on bank vs. public loans (unreported, but available upon request) yields nearly identical results to those presented in this paper.

[5] Mikkelson and Partch (1986), in particular, find significantly positive equity reactions associated with new credit agreements.

debt can serve as an antitakeover mechanism (Stulz, 1988; Israel, 1991; Israel, 1992), new debt issuances signal improvements in the bargaining power of target management. Second, the signal of higher target asset quality may enable targets to demand a higher acquisition price and may also attract alternative bidders.

M&A negotiations involve not only shareholders, but also debtholders – and in this process, banks should have strong bargaining power. Compared to non-bank debt, bank loans are more frequently accompanied by covenants restricting material changes in management and control compared to other debt types (Gilson and Warner, 1998). In addition, bank debt protective covenants are more stringent (Dichev and Skinner, 2002; Nash et al., 2003). Also, in contrast to many non-bank loans, the vast majority of loans provided by banks are not callable – that is, bank debt cannot be quickly retired to prevent it from accruing value gains (Jandik and Makhija, 2005b). Because target debt frequently gains value in anticipation of potential acquisition due to the *coinsurance effect*,[6] superior bank bargaining power and the non-callability of bank debt potentially allows banks to extract significant value during M&A negotiations.[7] However, Israel (1991) predicts that the expected future gains to these debtholders will be priced in the form of lower issuance costs, and thus ultimately accrued to target shareholders. Consequently, targets may prefer to issue new bank debt shortly before or after takeover announcements, and announcements of bank debt issuances can carry additional gains to target equityholders.

Our empirical results show that, overall, target shareholders gain 3.1% more upon the announcement of new debt issues in the quarter leading up to takeover announcement compared to non-target firms. Debt issuances following the takeover announcement lead to even higher gains of 3.4% with these gains

[6] *Coinsurance effect* refers to the gains in the value of debt held by target debtholders in anticipation (and realization) of a successful takeover. These gains in target debt value occur when a firm with risky debt is acquired by a more financially healthy firm. The target firm's debt that is assumed by the acquirer will, upon merger completion, instantly become less-risky as this debt is subsequently backed by the assets and overall debt capacity of the typically larger, healthier acquirer (Shastri, 1990; Billett, 1996, Billett et al., 2004).

[7] Takeover gains are sizable for certain types of public bonds. Billett et al. (2004) show that non-investment rated bonds gain 4.3% during successful M&A. Even though gains cannot be measured directly for bank loans due to their non-tradability, we anticipate bank loans to potentially gain even more in value because of their non-callability and superior bargaining power.

primarily associated with the issuance of bank debt. We also find evidence that issuances of debt by takeover targets may indeed affect the bargaining power of targets and bidders. Our results suggest that issuances of debt by takeover targets lead to negative abnormal returns to bidder equity. Large (above-median) size issuances by target firms in the post-takeover announcement period are accompanied by an average 3.3% incremental drop in bidder equity value. Lastly, we document that target debt issuances – specifically, those made after takeover announcement – tend to reverse the relative imbalance of abnormal returns around takeover announcements. Targets issuing debt after takeover announcement are found to have 5.9% *lower* initial abnormal returns around the takeover announcement itself relative to targets that do not issue debt. On the other hand, bidders of targets issuing debt after takeover announcement are associated with 2.7% *greater* equity abnormal returns at takeover announcement (when the relative market value of target assets to bidder assets is above the median). Thus, targets issuing debt after takeover announcement appear to increase their initially insufficient bargaining power as implied at the time of takeover announcement.

The rest of the paper is organized as follows: In Section 2, three primary hypotheses are presented. Section 3 describes data and methodology in addition to results. Section 4 concludes.

2. Hypotheses

2.1. Changes in leverage levels

Stulz (1988), Harris and Raviv (1988) and Israel (1992) create similar models whereby target management utilizes debt to extract a greater share of takeover gains from potential bidders, or to defeat an opponent during a corporate control contest. The additional debt allows target management to buy out shareholders with low reservation values and increase the ownership stakes of remaining shareholders, including the equity stake controlled by target management. These changes ultimately increase the bargaining power of target management and/or blockholders, forcing the bidding firm to allocate a greater

share of takeover gains to target shareholders.[8] The extent of additional gains must be balanced with the diminishing likelihood of a successful acquisition as a bidder's implied valuation of the merger target is approached – or even breached – by the demands made by of target management. The pool of skilled bidders possessing the ability to create sufficiently large synergies to satisfy both target and bidder shareholders shrinks as the bargaining power of target management increases.

In contrast to the above models, Israel (1991) models the ability of debtholders to capture a share of takeover gains during deal negotiations resulting from a combination of explicit protective covenants and implicit bargaining power with respect to the target management. The increases in the level of target debt enhance debtholder bargaining power and allow debtholders to capture a greater dollar share of takeover gains at the expense of both the bidding firm and target shareholders. However, under the assumption of efficient and competitive credit markets, target shareholders have the ability to capture essentially the full expected value of rents accrued to target debtholders upon successful acquisition in the form of lower debt costs at the initiation of new debt. Consequently, target shareholders are anticipated to be able to extract greater proportions of takeover gains through target debtholders upon debt issuance. Target debtholders then recoup this loss by subsequently extracting wealth from bidder shareholders upon successful acquisition, with the coinsurance gains as one possible source.

Ultimately, all of the theoretical models discussed in this subsection predict that targets will increase leverage in anticipation of a takeover attempts so that target shareholders can capture a higher share of takeover gains – either directly or indirectly through target debtholders. Additionally, since debt issuances occurring immediately before and after takeover announcement are more likely to be undertaken to recapitalize rather than to finance asset purchases, debt issuances should be accompanied by the retirement of equity. Consequently, the first hypothesis tested in our study is:

> *H1: Takeover targets increase leverage during the period surrounding successful acquisition attempts. Such firms should issue more debt and simultaneously repurchase more equity compared to similar non-target companies.*

[8] Stulz, Walkling and Song (1990) document that target shareholder gains increase with the size of target managerial block and the overall size of the other blockholders.

2.2. Equity abnormal returns around debt issuance announcements

Equity reactions to debt issuance announcements tend to be positive on average (e.g. Mikkelson and Partch, 1986). Debt issuance announcements serve as a signal about the overall value and quality of a firm's assets (Myers and Majluf, 1984). Insiders (managers) often find it difficult, or even impossible, to inform outside investors of the firm's value and the quality of its projects due to information asymmetry. As a result, prices of new securities may not fully reveal the full value of a firm's assets. Since the potential for undervaluation is smaller for debt (extraordinary gains to bondholders are limited due to pre-negotiated interest payments), companies may often prefer to issue debt – as opposed to equity – to finance value enhancing assets. Additionally, the mere fact that external investors are willing to provide their resources to the company should serve as an added signal of firm quality. Debt issuances should also be associated with improved corporate governance as debtholders can provide valuable additional monitoring of a firm's projects and activities (Agrawal and Knoeber, 1996). Existing financial research has primarily identified bank debt issuances as being associated with positive stock price reactions due to banks' superior ability to monitor and assess the value of existing assets and projects (Billett et al., 1995; Lummer and McConnell, 1989; James, 1987).

Debt issuance announcements by takeover targets should lead to even greater positive abnormal returns, as new debt likely increases target bargaining power during negotiations for the allocation of anticipated takeover synergies. This new debt can serve as an antitakeover mechanism, as the proceeds from debt issues can be used to repurchase equity held by those target shareholders with the lowest reservation prices, subsequently increasing the percentage equity stakes of management (Stulz, 1988; Israel, 1991; Israel, 1992). The signal of higher asset quality associated with debt issuance should also enhance target bargaining power directly in addition to potentially attracting alternative bidders. Gains to target equity should be particularly strong for debt issuances occurring after takeover announcement, as these debt issues are even more likely to affect relative bargaining power in ongoing merger negotiations.

Target equity gains should be strongest for the announcement of bank debt. First, banks tend to have

the superior ability to both monitor and to assess the value of borrower assets (facilitated by the long-standing, on-going relationships with their borrowers), thus making the signaling effect of bank debt more substantial (Fama, 1985; Berlin and Loeys, 1988; Diamond, 1991; Chemmanur and Fulghieri, 1994).

Second, bank debt is expected to have a strong potential to gain value during takeover negotiations. However, according to Israel (1991), in efficient markets most of these expected gains will be accrued to target shareholders in the form of lower debt issuance costs, ultimately increasing gains to equity upon the announcement of debt issuance. The rents bank loans are predicted to accrue can result from the superior bargaining power of banks. Bank loans contain more protective covenants than public bonds (Nash, Netter and Poulsen, 2003). Gilson and Warner (1998) show that almost all bank loans contain covenants requiring bank consent in cases of material changes in management or ownership control (i.e. 'event risk covenants'). In contrast, Lehn and Poulsen (1992) show that such restrictions are included only in a minority of public bond contracts. Dichev and Skinner (2002) show that bank covenants are more stringent – and thus easier to violate – than those associated with public debt. Additionally, bank debt can be more difficult to retire prematurely. Jandik and Makhija (2005b) document that 84% of public bonds held by takeover targets in their sample are callable (57% at the time of takeover announcement) while none of the bank debt held by the targets is found to be callable.

Bank debt issued by targets is also expected to realize superior gains upon successful acquisition due to the coinsurance effect. Since typical M&A's involve combinations of smaller, riskier targets and larger, more-profitable bidders, the riskiness of target debt declines in association with the merger, consequently increasing the value of this debt (Shastri, 1990; Billett, 1996; Billett et al., 2004). Superior bargaining power combined with the lower ability of target firms to call debt may allow banks to extract a larger share of expected synergy gains during takeover negotiations relative to public bonds.

If target equity abnormal returns upon target debt announcement reflect a redistribution of a fixed amount of expected takeover synergies, then bidder equity abnormal returns should be the opposite, as this redistribution favors target shareholders over bidder shareholders. In other words, bidder equity should react negatively to the issuance of target debt. These negative bidder returns should be more

significant for issuances of bank debt as it is likely to further enhance target bargaining power. Consequently, the second hypothesis tested in our study is:

H2: Target (bidder) equity abnormal returns around announcements of target debt should be positive (negative). The abnormal returns should be more significant for the announcement of bank debt issues. The abnormal returns should be more significant for target debt announcements following the announcement of the takeover attempt.

2.3. Equity abnormal returns around takeover announcements

If target debt issuances improve relative bargaining power, then targets with weak ex-ante bargaining power at the time of takeover announcement (expected to be indicated by lower target acquisition abnormal returns) should be more likely to issue debt. If bank debt enhances target bargaining power the most, then the link between debt issuances and takeover announcement returns should be strongest in cases of bank debt issues. Consequently, the third hypothesis tested in our study is:

H3: The relation between target debt issuances and target acquisition abnormal returns should be negative for debt issuances following takeover announcement. The relation between these debt issuances and bidder acquisition abnormal returns should be positive. Both effects should be the strongest for bank debt issues.

3. Data, Methodology and Results

3.1. Sample description

The SDC Mergers and Acquisitions database is utilized to identify all proposed U.S. merger targets from the beginning of 1991 through the end of 2010. To be included in our sample, the acquirer must ultimately be successful in acquiring 100% of the target firm. Target firms are required to be listed on the NYSE, AMEX or NASDAQ and to have necessary Compustat and CRSP data available. Target firms in the financial services and utilities industries are eliminated due to regulation and unique industry capital structures. Our final sample consists of 3,555 target firms.

The primary sources for data on debt issuances are Reuters Dealscan database for bank loans and SDC Global New Issues database for non-bank debt. In order to match data from Dealscan with data from SDC Global New Issues, Compustat and CRSP, we create an algorithm which matches firm names based on sound in combination with key common letters as Dealscan does not provide numbered identifiers. To

finalize the dataset, false matches are deleted through manual screening.

Insert Table I

Table I provides summary statistics on the two types of debt issued by target firms and matched firms on a quarterly basis from one year before takeover announcement through completion. Matched firms are determined by utilizing a propensity score approach which reduces self-selection bias by allowing for matching on multiple dimensions. Closely following the methodology by Petrova and Shafer (2010), a one-to-one nearest neighbor technique is utilized.

First, in order to control for macro-economic effects, a Probit model is estimated for each year in the sample based on the overall universe of firms from the Compustat database intersected with the SDC Global Mergers and Acquisitions database. For these Probit models, the dependent variable is assigned a value of one if the observed firm is subject to a takeover attempt in a given year, zero otherwise. Independent variables include those for the observed firm's:

- Size, measured as the natural log of market value of assets
- Profitability, measured as EBITDA divided by total revenue
- Relative Value, measured as market value of assets divided by book value of assets

In order for a firm to initially be considered as a potential match for a given target firm, it must first be included in the same two-digit SIC industry category. Next, a propensity score is estimated for the given target firm and for all potential matches in a given year based on the Probit model estimates. The appropriate matched firm is then selected based on the lowest absolute difference in propensity scores.

Matched firms are included in the sample for the same calendar quarters as their corresponding target firms as a result of matched firms dropping from the sample as paired target firms are successfully acquired. As the number of target firms declines with each completed acquisition, so too does the number of matched firms. The statistics are separated into quarters relative to the date at which takeover announcement occurs. For example, the quarter leading up to takeover announcement is indicated as quarter '-1.' The number, the mean, the median and the total aggregate amount of the debt issuances are presented for the total debt issues, as well as for the bank vs. non-bank issues. Panel A reports statistics

on debt issuances by target firms while Panel B provides the same information for a corresponding set of matched companies.

In the year prior to announcement the total amount of debt issued by target firms, at $247 billion, is nearly 50% more than that of matched firms, at $168 billion. In the period from announcement to completion, the total amount of debt issued by target firms ($167 billion) is nearly twice that of matched firms ($85 billion). The total number of debt issuances, measured on the deal level – as opposed to the facility or tranche level – is also considerably higher for target firms over the relative timeframe. Bank debt is the primary source of new debt issues for both target and matched firms.

Of the 3,555 target firms in the sample, 21.5% issue debt in the year prior to takeover announcement compared to less than 14% of matched firms. In the timeframe spanning from takeover announcement to completion the difference is even greater with 8.5% of target firms issuing debt compared to only 4.1% of matched firms. A total of 437 (12.3%) targets issue debt in the period immediately surrounding the takeover attempt (the quarter preceding the takeover announcement and from the announcement to completion), compared to only 260 (7.3%) matched firms.[9] Target firms tend to issue relatively more bank debt (83% of all debt issues), compared to matched firms (65% of all debt issues). In an unreported analysis, we perform a Logit analysis of the determinants of bank vs. non-bank debt issuances. Target companies were found to be significantly more likely to issue bank debt – more than twice as much compared to matched firms. The decision to issue bank debt was also significantly related to unrated status (positively) and firm size (negatively).

Insert Table II

The distribution of takeovers is presented in Table II. Acquisition announcements from the beginning of 1991 through the end of 2010 are divided into seven industry categories. Acquisition announcements peak in 1998 and 1999. These two years correspond to relatively high equity valuations and high overall economic growth. Manufacturing and services are associated with the highest incidence of takeovers.

[9] The subtotals for debt-issuing firms are smaller than the sum of issuing firms per quarters because some sample firms are associated with multiple debt issues over time.

3.2. Debt issuances by takeover targets

Insert Table III

The evolution of firm leverage is examined in Table III. Panel A (Panel B) provides descriptive statistics on target (matched) firms sampled at three points in time relative to the quarter in which the takeover announcement is made – this data is taken from the Compustat quarterly database. 'Announcement' indicates the calendar quarter in which the takeover announcement occurs, '1 Year Prior' indicates the calendar quarter one year before announcement and 'Completion' represents the final quarter of data reported for a firm prior to completion of the takeover.

For target firms, the increase in median and mean levels of total debt to total assets are found to be statistically significant, particularly from '1 Year Prior' to 'Completion' with the median level rising from 26.3% to 31.8%. Also, from '1 Year Prior' to 'Completion,' median and mean levels of book equity to total assets are found to significantly decrease, with the median falling from 53.5% to 49.7%. For matched firms, only the change in the mean value of total debt to total assets from '1 Year Prior' to 'Completion' is marginally significant, while median leverage changes, as well as changes in equity do not change significantly. The statistics presented in Table I and Table III support hypothesis H1 – target firms both issue more debt and repurchase more equity compared to matched firms.

Insert Table IV

Table IV presents firm characteristics for target firms and matched firms separated by whether or not debt is issued from one year prior to merger announcement through completion. Data from Compustat is used to calculate the mean and median values for the financial ratios as of the fiscal year prior to merger announcement. In addition to the ratios, the table contains the percentage of target firms utilizing any form of anti-takeover provision as reported in the SDC Mergers and Acquisitions database.

Median market leverage (Debt / Market Value of Assets) is 0.182 for target firms that issue debt compared to 0.192 for matched firms that issue debt. Overall, firms that do not issue debt – target and matched – are shown to have lower median market leverage ratios (0.078 for target firms and 0.104 for matched firms). Median market equity to book equity ratio is 2.010 for target firms that issue debt and

2.073 for matched firms that issue debt.

Firm size, measured as the natural log of total revenue, is expected to be positively associated with a greater degree of debt issuance – larger firms generally have a greater debt capacity, as they are more stable and have better access to creditors. Both target firms and matched firms issuing debt are shown to be larger than firms not issuing debt, with target firms issuing debt having a median of 5.907 compared to target firms not issuing with a median of 4.675.

Levels of fixed assets held by a firm are expected to be positively associated with the likelihood of debt issuance, as these assets may be used as collateral (Titman and Wessels, 1988; Harford et al., 2009). In our sample, median values of 'Property, Plant and Equipment / Total Assets' are higher for both target and matched firms that issue debt compared to firms that do not issue debt (0.247 vs. 0.148 for the targets; 0.297 vs. 0.179 for the matched firms). Levels of 'R&D Expense / Total Revenue' are shown to be higher for target firms and matched firms that do not issue debt. This is consistent with the expectation that firms with greater research and development expenses have a greater degree of their value associated with intangible assets. A greater degree of specialization – and consequently a greater degree of risk – may also make these firms less likely to issue debt (Harford et al., 2009).

Greater profitability potentially increases a firm's debt capacity and the ability to issue debt. In our sample, median values of 'Net Operating Income Before Depreciation / Total Assets' are higher for both target firms and matched firms that issue debt. Sample firms not issuing debt tend to have larger cash reserves (median values of 'Cash / Total Assets' are 0.141 vs. 0.052 for the targets; 0.097 vs. 0.044 for the matched firms). This is consistent with pecking order theory (e.g. Myers and Majluf, 1984) which anticipates a negative relation between profitability and leverage as firms prefer funding projects with internally generated funds.

Antitakeover provisions are held by 9.5% of target firms that do not issue debt over the relative timeframe, compared to 8.0% of targets that do issue debt. These results may preliminarily indicate that the decision to issue debt can be seen as a substitute for the presence of antitakeover provisions.

Overall, the analysis of firm characteristics in Table IV suggests that decisions to issue debt for both

target and matched firms crucially depend on factors identified by previous research to be correlated with leverage use (e.g. size, growth opportunities, asset tangibility and cash holdings). Consequently, in order to make meaningful inferences regarding debt issuances, our subsequent multivariate analysis specifically controls for these determinants.

Insert Table V

In Table V, we estimate a set of multivariate Probit models examining the probability of debt issuance and (Panel A), and a set of Tobit models estimating the determinants of the total amount of debt issued (Panel B). In Panel A, the dependent variable is a dummy variable assigned a value of one if a target firm or matched firm issues any type of debt over the period beginning one year before announcement through completion, zero otherwise. 'Target Dummy Variable' is assigned a value of one if the firm in an observation is a target firm. 'Takeover Defense Dummy' is assigned a value of one if the target firm is shown to possess any antitakeover provision as reported in the SDC Mergers and Acquisitions database. Other independent variables are measured at the year ended prior to the year of takeover announcement. Additionally, industry and year fixed-effects are utilized in all models.

The results presented in Panel A indicate that targets are more likely to issue debt in the period surrounding an ultimately successful takeover attempt, as the coefficient of 'Target Dummy' variable is significantly positive in all four models. Models 1 and 3 suggest that the decision to issue debt is positively correlated with the existing market leverage. However, when we include additional determinants, the leverage coefficient becomes insignificant in Models 2 and 4. Models 2 and 4 indicate that larger firms holding smaller cash reserves are more like to issue debt. Models 3 and 4 additionally analyze the relationship between the presence of antitakeover provisions and the decision to issue debt. The results from Models 3 and 4 suggest that antitakeover provisions and debt issuances are regarded by targets as substitutes, though the relation is only statistically significant in Model 4.

The results of four Tobit model specifications estimating the determinants of the total amount of debt issued – scaled by total assets – are presented in Panel B. The dependent variable is calculated as the sum of both debt types (bank and non-bank) issued from one year prior to takeover announcement to

completion, divided by total assets. Independent variables are the same as in the Probit model specifications from Panel A and industry and year fixed-effects are again utilized in all models.

Most importantly, our results suggest that after controlling for other factors, targets issue significantly more debt relative to matched firms around takeover announcement. The coefficient for 'Target Dummy' variable is positive and statistically significant in all four models, ranging from 0.406 to 0.425. In order to interpret these coefficients, the mean marginal effects associated with the target dummy variable estimates are calculated. The target dummy variable is found to have a mean marginal effect of 0.064 for the first model and 0.067 for the second model. This indicates that holding all other variables constant, target firms issue over 6% more debt – as a percentage of total assets – relative to matched firms during the period surrounding takeover announcement. Consistent with findings from existing literature, the results in Panel B also show that larger firms, as well as those holding lower cash reserves, tend to issue greater amounts of debt. Models 3 and 4 show that the amount of debt issued during the period surrounding a takeover attempt is negatively related to the availability of antitakeover provisions (once again suggesting that debt issuances and antitakeover provisions are substitutes). However, this coefficient is only statistically significant in Model 4.

Overall, the results in Table V indicate that relative to matched firms, target firms are more likely to issue debt and issue greater proportions of debt from one year prior to the takeover announcement through completion, consistent with Hypothesis H1.

Insert Table VI

In addition to a higher degree of debt issuance, we also predict a greater degree of equity repurchases by target firms around acquisition attempts. In Table VI we estimate a set of heteroskedasticity-consistent OLS models of stock repurchase determinants. The dependent variable is calculated as the net equity repurchases from one year prior to takeover announcement through completion, scaled by total assets. The data used to calculate the net amount of stock repurchases is taken from the Compustat quarterly database. Independent variables are measured at the fiscal year prior to the year of merger announcement, and industry and year fixed-effects are again specified in all four models.

In all models, the coefficients associated with 'Target Dummy Variable' are found to be statistically positively significant, implying that target firms repurchase greater proportions of equity than matched firms around takeover attempts. In addition, the coefficients associated with the interaction term 'Target Dummy Variable * (Combined Debt Issued / Total Assets)' are significantly positive. These results suggest a direct link between the amount of debt issued and equity repurchases – the more debt a target firm issues, the greater the amount of equity that is repurchased. We also address the impact of antitakeover defenses on the decision to repurchase equity by adding 'Target Dummy * (Combined Debt Issued / Total Assets) * Defense Dummy' to Models 3 and 4. However, the coefficient for this interaction term is not statistically significant in either of the two models.

Combined with the results found in Table V, which imply a greater degree of debt issuance by target firms, the results found in Table VI provide additional support for Hypothesis H1 – targets appear to simultaneously reduce book equity via stock repurchases around takeover announcement.

3.3. Valuation impact of targets' debt issuances

In this section, we analyze the equity abnormal returns around debt issuances. The abnormal returns are computed as the firm's stock return less the expected return based on the four-factor Fama-French / Carhart specification. In order to capture a period of typical returns while attempting to avoid potential market reactions resulting from other debt issuances, or from merger-related information, we estimate market beta (β), SMB sensitivity (s), HML sensitivity (h) and momentum sensitivity (m) for each firm from 300 calendar days prior to 60 calendar days prior to either the first debt issuance or the takeover announcement date (whichever comes first) in the following form:

$$r_{it} = \alpha_{iT} + \beta_{iT}(\text{RMRF}_t) + s_{iT}(\text{SMB}_t) + h_{iT}(\text{HML}_t) + m_{iT}(\text{UMD}_t) + e_{it}$$

where r_{it} is the daily return on firm i at time t and RMRF_t is the daily value-weighted market excess (over the risk-free rate) return at time t. SMB_t and HML_t are the daily Fama-French factors (small-big market capitalization and high-low book-to-market) while UMD_t is the daily Carhart momentum factor.

Based on the estimated parameters for each firm, cumulative abnormal returns around each debt event are calculated by summing daily abnormal returns between seven trading days prior to the debt event and

three trading days following the debt event. This window is selected to allow for the possibility that market participants learn about the debt issue prior to the CAR event date.[10] Similarly to previous research, in the case of bank debt and private non-bank debt, the actual issuance date is utilized as the CAR event date. In the case of public debt, the filing date is utilized as the CAR event date. In most instances the announcement of public debt should be made near the filing date.[11]

3.3.1. Target abnormal returns around debt issuances by targets

Insert Table VII

Table VII presents the univariate analysis of cumulative abnormal returns to target firms and matched firms around debt event dates for bank debt and non-bank debt. Mean and median cumulative abnormal returns for target and matched firms are reported for three sub-periods: the fourth quarter prior through the second quarter prior to takeover announcement ('Quarter -4 through Quarter -2'), the first quarter prior to takeover announcement (Quarter -1) and the period from takeover announcement through completion ('After'). We study debt issuances occurring in the quarter immediately preceding takeover announcement separately in order to capture the potential anticipation of takeover announcement by equity markets.

The results suggest that debt issuances by targets benefit target shareholders, especially for debt issued shortly before or after the takeover attempt is publicly announced. Issuances of debt in the quarter immediately preceding takeover announcement are found to have significantly positive equity abnormal returns with mean (median) abnormal returns of 3.37% (1.87%). This positive reaction is primarily due to issuances of bank debt, while announcements of non-bank debt issues during this sub-period are not

[10] We also test several other CAR window lengths. These alternative specifications do not significantly affect the key findings of our analysis.

[11] For the debt events in which the CAR measurement window intersects a three-day (-1,+1) window around the takeover announcement date, we calculate CAR as a summation of daily abnormal returns with the days intersecting the three-day takeover announcement window excluded. For example, if a debt event date occurs three trading days before merger announcement, CAR is calculated as the summation of daily abnormal returns from seven days prior to the debt event date through one day after the debt event date. We also adjust for overlapping CAR windows (which are relatively rare) associated with multiple debt issuance events by splitting the event windows between the two CAR windows.

found to have a significant impact on target equity returns. Target mean (median) abnormal equity returns for debt issuances undertaken between takeover announcement and completion are also significantly positive at 3.58% (2.48%), mainly driven by bank debt.[12] Debt issuances by targets made during the 'Quarter -4 through Quarter -2' sub-period are not found to have statistically significant effects on target equity. Also, abnormal returns associated with debt issuances by matched firms are largely insignificant.

The results in Table VII are consistent with Hypothesis H2. Target equityholders benefit from debt issuances, especially if the debt issues are announced immediately before or after the takeover bid is revealed. These findings suggest that target equityholders may enhance their bargaining power during takeover negotiations, as predicted by Stulz (1988), Harris and Raviv (1988), and Israel (1991, 1992), or due to positive asset revaluation signaled by debt issuance (e.g. Denis and Mihov, 2003; Billett et al., 1995). However, debt announcement abnormal returns are affected by many firm-specific factors (e.g. Billett et al., 1995). Therefore, we continue our analysis of the impact of target debt issuances utilizing multivariate models.

Insert Table VIII

Table VIII presents a set of heteroskedasticity-consistent OLS models estimating the determinants of cumulative abnormal returns around debt events during the period from one year prior to takeover announcement until completion. 'Quarter -1 Dummy Variable' is assigned a value of one if the observation occurs in the quarter preceding takeover announcement. Similarly, 'After Dummy Variable' is assigned a value of one if the observation is after the takeover announcement. These two dummy variables separate the analysis of cumulative abnormal returns into distinct time periods in which the

[12] It is unlikely that the positive abnormal returns for debt issuances made after the takeover attempt is made public are due to the post-takeover-announcement return run-up. We find that the average abnormal return for debt issuances is 3.6% over the (-7,+3) event window which includes 11 trading days. Meanwhile, the average cumulative abnormal return from two days after takeover announcement until the completion is 6.0%, and the average number of trading days in this period is 91. Consequently, the debt announcement window is less than one-eighth the length, yet it is associated with nearly two-thirds of the abnormal return value from takeover announcement to completion. It is thus likely that the debt announcement abnormal returns are due to changes in bargaining power or to asset revaluation as opposed to independent equity run-up. Nevertheless, in our subsequent multivariate analysis on debt issuance abnormal returns, we specifically control for the potential impact of post-takeover-announcement equity run-up.

market either is aware of a takeover attempt (i.e. after takeover announcement) or is potentially anticipating such an event (i.e. the quarter before takeover announcement).

The variable 'Post Takeover Announcement Runup' is added to the set of independent variables to control for the potential run-up in target equity occurring in the period after takeover announcement as the market realizes the increasing probability of a completed acquisition in the case of ultimately successful takeover attempts. This independent variable controls for the possible contribution of a run-up in target equity value following takeover announcement to the abnormal returns to equity surrounding a debt event itself. 'Post Takeover Announcement Runup' is the summation of daily abnormal returns to equity (for target firms only) beginning two trading days after takeover announcement through the completion of the takeover.[13] Other control variables are similar to those utilized by Billett et al. (1995). We also indicate debt issuance observation counts to the right of the associated variable. For example, 'Target Dummy Variable * Quarter -1 Dummy Variable' has an observation count of 138. Therefore, there are 138 relevant debt events for target firms occurring in the quarter prior to takeover announcement.

The results in Table VIII suggest that target equityholders benefit from debt issuances. While the coefficient associated with 'Target Dummy Variable' in Model 2 is not significant, the results in Model 3 suggest that target shareholders benefit from debt issuances shortly before or after the takeover announcement. The impact of debt issuances made between Quarter -4 and Quarter -2 is insignificant based on the coefficient for 'Target Dummy Variable.' However, the marginal coefficient for debt issuances in Quarter -1 is statistically significant at 3.1%. Consistent with results in Table VII, the marginal impact of debt issuances after the takeover announcement is even more positive at 3.4%.[14]

[13] Average 'Post Takeover Announcement Runup' in our sample is 6.0% generated over an average of 91 days from the two days after the takeover announcement through takeover completion. In order to directly test the impact of equity runup on abnormal returns around debt issuances following acquisition announcements, 'Post Takeover Announcement Runup' *includes* the cumulative abnormal returns around debt events.

[14] The (interactive) coefficients for debt issuances during particular sub-periods measure the *marginal* impact compared to debt issuances during Quarter -4 through Quarter -2. However, the abnormal returns for debt issuances in Quarter -1 and after the takeover announcement are also significantly greater than zero overall, based on the sum of the coefficients for the sum of the coefficients for 'Target Dummy Variable' (-0.6%) and the marginal coefficient

Model 4 results suggest that the positive impact of target debt issuance announcements on target equity is primarily driven by bank debt. Bank debt issuances do not have a significant impact on target abnormal returns if they occur during Quarter -4 through Quarter -2 (measured by the coefficient for 'Bank Dummy * Target Dummy'). However, the marginal impact of target bank debt issuances in Quarter -1 is a statistically significant at 3.0% and the marginal abnormal return for bank debt issuances made after takeover announcement is even more positive and statistically significant at 3.8%. Model 5 examines the impact of debt issuances for both bank and non-bank loans. Bank debt issuances in 'Quarter -1' and after takeover announcement continue to be associated with significantly positive abnormal returns to target shareholders, consistent with Model 4, while non-bank issues are not associated with significant abnormal returns.

Coefficients for other determinants of abnormal returns around debt issuances suggest that larger firms are associated with lower gains. Interestingly, 'Post Takeover Announcement Runup' is not significantly related to the gains of targets around debt issuances in any of the models.

Overall, Table VIII offers support for Hypothesis H2. Targets appear to significantly benefit from debt issuances – primarily from announcements of bank loans occurring immediately preceding or following takeover announcement. These results are consistent with the univariate analysis presented in Table VII and with the predictions made by the theoretical models previously discussed in this study.

3.3.2. Bidder abnormal returns around debt issuances by targets

Insert Table IX

Table IX presents a series of heteroskedasticity-consistent OLS models analyzing the hypothesized impact of target debt issuances on bidder equity. These models estimate the determinants of cumulative abnormal returns to bidder equity around debt events undertaken by the target firms. The methodology used to estimate cumulative abnormal returns mirrors that utilized in Table VIII. For the models in this table, the number of observations is reduced because only bidders associated with sampled target firms

for the respective period (+3.1% for Quarter -1; +3.4% for the period after takeover announcement). The statistical significance of sums of coefficients related to target debt issuances is reported at the bottom of Table VIII.

are included in the analysis presented in Table IX, whereas the models in Table VIII include both target and matched firms. Also, acquiring firms without observable stock returns (such as private, non-traded bidders) are necessarily excluded because of unavailable return data, leaving a sample size of 438 debt issues in Table IX.

Existing M&A research shows that bidders tend to be substantially larger than targets. It is unlikely that the bidder equity should be impacted by a relatively small debt issuance by the target. The 'Large Issue Dummy Variable' is thus intended to capture the more significant impact of large debt issuances by larger target firms. These large debt issuance events are expected to be of more economic significance to acquirers than relatively small target debt issuances. The control variables are the same as those used in Table VIII, but the firm-specific control variables (measured the fiscal year end preceding the takeover announcement) are characterizing the *target* firm, as opposed the acquiring firm.

The results presented in Table IX suggest that after the takeover announcement, large debt issuances by targets *negatively* affect bidder equity returns. Model 2 indicates that the interaction of 'Large Issue Dummy Variable' and 'After Dummy Variable' yields a significant coefficient of -3.3%. Models 3 and 4 provide evidence that this negative impact is primarily associated with large bank debt issuances made by targets. The coefficient associated with the interaction of 'Bank Dummy Variable*Large Issue Dummy Variable*After Dummy Variable' is significantly negative at -3.3% in both Model 3 and Model 4. Additionally, both Model 3 and Model 4 suggest that bank debt issuance may lead to value losses for the bidders even before the acquisition announcement, as evidenced by the marginally significantly negative coefficient for the interaction term, 'Bank Dummy * Large Issue Dummy * Quarter -1 Dummy' at -2.4%.[15] Non-bank debt issuances by targets appear to have no significant impact on bidder equity.[16]

[15] The (interactive) coefficients for debt issuances during particular sub-periods measure the *marginal* impact compared to debt issuances during Quarter -4 through Quarter -2. However, the abnormal returns for large debt issuances after the takeover announcement (Model 2), and for large bank debt issuances after the takeover announcement (Models 3 and 4) are also significantly greater than zero overall, based on the sum of the coefficients for the sum of the coefficients for 'Large Issue Dummy' and the marginal coefficient for the debt issuance after takeover announcement. The statistical significance of sums of coefficients related to target debt issuances is reported at the bottom of Table IX.

Overall, the results of Table IX provide support for Hypothesis H2. Our findings suggest that target debt issues affect the relative distribution of gains between the target and the bidder. Target equity holders appear to gain following the announcement of new target debt issues, consistent with the prediction of improved bargaining power held by target equityholders and/or the positive impacts of debt issuance signaling. Based on Table VIII and Table IX, target equityholder gains appear come at the expense of bidder equityholders as bargaining power is shifted and expected synergy gains are reallocated.

3.3.3. Target abnormal returns around takeover announcements

The results in Tables VIII and IX suggest that the debt issuances by targets – especially those occurring in the period following the takeover announcement – lead to changes in bargaining power of the targets and the bidders. Consequently, target companies should issue debt especially in cases when their *ex-ante* bargaining power is weak at takeover announcement. We now turn our attention to examining the link between target abnormal returns surrounding the takeover announcements themselves and subsequent debt issuance decisions.

Insert Table X

Table X presents descriptive statistics of cumulative abnormal returns to target firms around takeover announcement. Mean and median cumulative abnormal returns are reported for targets that: do not issue debt over the relative timeframe; do issue debt over the relative timeframe (Panel A); issue debt only before takeover announcement; issue debt before and after takeover announcement and issue debt only after takeover announcement (Panel B). 'P-Val Difference' indicates the significance of the difference between the mean and median CAR's for targets that do vs. do not issue. In addition, targets that do issue debt are further classified into those that issue primarily bank debt ('Mostly Bank'), or primarily non-bank debt ('Mostly Non-Bank). The primary debt type is determined by simply determining the primary source of debt issued over the period on a dollar basis for each firm. The classification of targets into categories of primary debt types (i.e. 'Mostly Bank', 'Mostly Non-Bank') helps to clarify later analysis by

[16] For non-bank debt, we do not separately measure the impact of debt issuances in Quarter -1 and after the takeover announcement, because the number of large non-bank issues is only 2 in each of the respective subgroups.

assigning one dominant source of debt for each target that issues debt. The number of each observed combination of primary debt type and timing of debt issuance is indicated in the columns titled 'Obs.'

In Panel A, both the mean and median CARs around takeover announcement are significantly smaller for targets that issue debt (20.6% and 16.2%) versus those that do not (24.7% and 19.4%). Also, the mean and median CAR's are even smaller for targets that issue mostly bank debt (20.4% and 16.1%). No significant CAR differences (with respect to CAR of targets issuing no debt) were found for targets issuing mostly non-bank debt.

In Panel B, we study the CAR differences based on when the target issues debt: only before the takeover announcement ('Before Only'), both before and after the takeover announcement ('Before and After') or only after the takeover announcement ('After Only'). We find that the largest differences in takeover announcement CAR are primarily found between targets that do not issue debt and targets that issue at least some debt after takeover announcement. The mean and median CAR are found to be significantly smaller for targets that issue debt both before and after takeover announcement (13.9% and 10.2%) as well as for targets that issue debt only after the announcement (18.5% and 16.9%) relative to those that do not issue debt. The return differences appear to be associated primarily with targets issuing bank debt.[17] All of these results provide support for Hypothesis H3 – debt issuances made after takeover announcement appear to be associated with targets experiencing lower takeover announcement returns, consistent with lower target bargaining power.

Insert Table XI

To control for additional determinants of takeover announcement abnormal returns, heteroskedasticity-consistent OLS models estimating the determinants of CAR to target equityholders at announcement are presented in Table XI. Our models control for various firm- and deal-specific characteristics analyzed by existing research (especially Billett and Ryngaert, 1997). The independent

[17] We find some evidence of significant takeover announcement CAR differences for targets issuing mostly non-bank debt after takeover announcement. However, there are only 6 targets issuing mostly non-bank debt in the 'Before and After' sub-period and only 16 targets issuing mostly non-bank debt in the 'After Only' sub-period.

variables include firm characteristics such as 'Cash / Market Value of Equity', 'Natural Log of Market Value of Equity', and 'Leverage Ratio,' (total debt scaled by the market value of target equity). Additionally, we control for deal characteristics, including 'All Cash Dummy Variable,' 'Challenged Deal Dummy Variable,' 'Takeover Defense Dummy Variable,' 'Unsolicited Bid Dummy Variable' and 'Square Root of Bidder Foothold.'[18]

Consistent with existing M&A research, all of the models indicate that the presence of an antitakeover mechanism, the acquirer's use of cash as a transaction payment, and the classification of a bid as 'unsolicited' result in greater target takeover announcement returns.[19] Firm size (Natural Log of Market Value of Equity), the degree of target equity held by the bidder at announcement (Square Root of Bidder Foothold), and regulatory challenges to the deal (Challenged Dummy Variable) are all negatively related to the target's takeover announcement equity returns.

Most importantly, Table XI documents that the issuance of debt is negatively related to target announcement abnormal returns. While the impact of all debt is insignificant in Model 2, Model 3 indicates that targets issuing at least some debt after takeover announcement experience significantly lower takeover announcement returns relative to targets that do not issue any debt as evidenced by the coefficient for 'Any Debt Dummy Variable * Some After' at -5.9%. Model 4 further shows this negative relationship between target takeover announcement returns and debt issuances following the acquisition announcement is primarily due to bank debt, as evidence by an estimated return discount of -6.0%. On the other hand, the issuance of primarily non-bank debt is not significantly related to target takeover returns regardless of whether or not the debt is issued before or after takeover announcement is made. Overall, the results shown in Table XI support Hypothesis H3.

[18] 'Unsolicited Bid Dummy Variable' indicates whether or not the takeover bid was classified as unsolicited and 'Challenged Dummy Variable' indicates whether or not the merger faces a regulatory challenge. 'All Cash Dummy Variable' indicates if the acquirer utilizes only cash as payment in the acquisition.

[19] Billett and Ryngaert (1997) show leverage to be positively related to target acquisition abnormal return, consistent with target debt enhancing target bargaining power during acquisitions. We show similar results for the 'Leverage Ratio' coefficient. In all models in Table XI this coefficient is positive, though statistically insignificant.

3.3.4. Bidder abnormal returns around takeover announcements

Our findings in the previous section suggest that targets issuing debt following takeover announcement earn relatively lower abnormal returns around the announcement of the takeover attempt. If this is due to targets having weak ex-ante bargaining power, then the corresponding bidders for such target firms should experience *higher*, or less-negative, abnormal returns at takeover announcement reflecting relatively better ex-ante bargaining power.

Insert Table XII

Table XII presents the analysis of determinants of bidder acquisition announcement returns. The heteroskedasticity-consistent OLS models mirror those shown in Table XI with a few exceptions. First, the firm characteristics, as well as debt issuance variables utilized as controls, are measured for the target as opposed to the bidder. Also, since the impact of the acquisition of relatively large targets is expected to have a greater effect compared to the acquisition of smaller targets, the 'Large Relative Size Dummy Variable' (or 'Large RS Dummy Variable') is included to capture this effect. This variable is assigned a value of one if the ratio of target's market value of assets to the acquirer's market value of assets is above the median for the sample.

Consistent with existing M&A research, Model 1 shows that acquirers involved in all-cash bids and/or tender offers experience greater acquisition abnormal returns. Additionally, bidders attempting to takeover relatively large firms experience more-negative returns at announcement. Model 2 shows that bidders acquiring large, debt-issuing targets experience significantly higher incremental abnormal returns at announcement by 1.3%. Additionally, Model 3 indicates that bidders with large targets issuing debt after takeover announcement experience even more-positive incremental returns of 2.7%. Furthermore, Model 4 shows that this effect is primarily tied to large targets issuing primarily bank debt following takeover announcement.

Overall, results in both Table XI and Table XII provide support for Hypothesis H3. The findings suggest that targets tend to issue debt following the takeover announcement if *ex-ante* bargaining power is weak, as evidenced by lower acquisition abnormal returns for such targets and correspondingly higher (or

less-negative) acquisition returns for their bidders. As shown in Table VII, Table VIII and Table IX, the subsequent targets' debt issuances following takeover announcement lead to target gains and losses for bidders. The debt issuances thus enhance target bargaining power and reverse the perceived bargaining power imbalances experienced by both targets and bidders upon acquisition announcement.

4. Conclusion

A considerable amount of research has studied the effects of capital structure following merger completions while a relatively small number of papers have addressed capital structure decisions by firms in anticipation of, in direct response to, M&A activity. This paper is the first to our knowledge to empirically study incremental capital structure adjustments of targets prior to and following takeover announcements.

We show that target firms increase leverage to a significantly greater degree before and after takeover announcements compared to similar non-target firms over the same period. Approximately 29% of the targets issue debt from one year before the takeover announcement until takeover completion, and over 12% of these targets do so immediately surrounding takeover announcement. Such frequencies are comparable to the presence of antitakeover provisions held by targets overall.

Consistent with expected improvements in target bargaining power (e.g. Stulz, 1988; Harris and Raviv, 1988; and Israel, 1991, 1992) and/or signaling of improved borrower asset values (e.g. Billett et al., 1995; Lummer and McConnell, 1989), we find that debt issuances – especially those made during the quarter immediately preceding takeover announcement and those after takeover announcement – are associated with significant gains to target equityholders. Interestingly, at least some of these gains appear to come at the expense of bidder shareholders who experience a negative impact on equity returns following large debt issuances by targets. Supporting the role of banks as lenders with superior monitoring, bargaining and valuation skills (e.g. Denis and Mihov, 2003; Billett et al., 1995; Fama, 1985), we find the strongest effects on target and bidder equity value are associated with large target bank debt issuances. We also show that debt issuances made after takeover announcement appear to reverse the

relative return imbalances experienced by both the targets and the bidders upon takeover announcement as debt is issued primarily by targets in acquisitions characterized by lower target acquisition returns and higher bidder acquisition returns.

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Table I
Debt Issuances by Type of Debt

The sample consists of 3,555 takeover announcements from the beginning of 1991 to the end of 2010 taken from the SDC Global database. Only takeover announcements resulting in 100% of the target firm owned by the acquirer following a successful takeover are included in the sample. Descriptive statistics on debt issuances are listed in Panel A for target firms on a quarterly basis for two types of debt including bank debt and non-bank debt, with non-bank debt consisting of private and public debt. Bank debt issuances are taken from the Reuters Dealscan database and non-bank issuances are taken from the SDC Global database. Statistics are presented quarterly relative to the date at which the takeover announcement is made with quarter '-1' representing the quarter preceding takeover announcement. The number of debt issuances by quarter is based on deal-level data as opposed to facility- or tranche-level data. The total amount of debt issued, the median amount of debt issued and the mean amount of debt issued are listed in millions of dollars, indicated by ^.

The same statistics are provided in Panel B for the set of matched firms over the same relative timeframe as the respective target firms. A target firm – matched firm pair is included in the sample for the same days. As target firms are successfully acquired, the number of target firms in the sample drops over time, as does the number matched firms. The set of matched firms is created utilizing a propensity matching procedure based on the likelihood of a firm becoming a takeover target in the subsequent year. A detailed description of this matching procedure is included in the 'Data, Methodology and Results' section.

Panel A – Debt Issuances by Target Firms around Merger Announcement

			Total Debt				**Bank Debt**				**Non-Bank Debt**			
Quarter	Total Firms	Issuing Firms	# of Issues	Mean^	Median^	Total^	# of Issues	Mean^	Median^	Total^	# of Issues	Mean^	Median^	Total^
-4	3,555	241	246	275	126	67,681	204	281	118	57,382	42	245	179	10,299
-3	3,555	203	209	276	125	57,623	165	277	104	45,687	44	271	150	11,936
-2	3,555	193	196	406	123	79,532	149	472	100	70,267	47	197	150	9,265
-1	3,555	136	138	303	110	41,798	128	313	110	40,114	10	168	140	1,684
Subtotal - Before		763	789	313	125	246,634	646	330	100	213,450	143	232	150	33,184
1	2,022	147	151	396	150	59,844	132	427	150	56,326	19	185	150	3,518
2	560	111	113	620	165	70,047	97	646	163	62,695	16	460	198	7,352
3	174	33	34	648	185	22,033	26	772	213	20,078	8	244	160	1,955
4	65	12	12	906	280	10,875	10	833	280	8,333	2	1271	1271	2,542
5+	28	7	7	599	286	4,196	4	528	236	2,111	3	695	550	2,085
Subtotal - After		301	317	527	165	166,995	269	556	165	149,543	48	364	163	17,452
Total		1045	1106	374	139	413,629	915	397	125	362,993	191	265	160	50,636

Panel B – Debt Issuances by Matched Firms around Merger Announcement

			Total Debt				Bank Debt				Non-Bank Debt			
Quarter	Total Firms	Issuing Firms	# of Issues	Mean^	Median^	Total^	# of Issues	Mean^	Median^	Total^	# of Issues	Mean^	Median^	Total^
-4	3,555	132	133	209	105	27,836	88	178	100	15,682	45	270	140	12,154
-3	3,555	141	141	307	150	43,329	98	300	130	29,376	43	324	225	13,953
-2	3,555	108	110	350	88	38,454	69	380	65	26,218	41	298	100	12,236
-1	3,555	113	117	497	141	58,107	75	607	90	45,527	42	300	188	12,580
Subtotal - Before		492	501	335	125	167,726	330	354	100	116,803	171	298	150	50,923
1	2,022	99	104	547	172	56,939	66	508	150	33,531	38	616	194	23,408
2	560	32	35	445	200	15,592	21	526	250	11,056	14	324	175	4,536
3	174	9	10	274	113	2,742	4	208	182	828	6	319	95	1,914
4	65	6	6	1,145	504	6,869	5	1,354	835	6,769	1	100	100	100
5+	28	3	3	942	750	2,825	1	350	350	350	2	1238	1238	2,475
Subtotal - After		147	158	538	175	84,966	97	542	174	52,535	61	532	188	32,431
Total		636	659	383	141	252,693	427	397	120	169,338	232	359	153	83,355

Table II
Merger Announcements by Industry and Year

Successful takeover announcements are indicated by year of announcement and by seven general industry categories. The sample consists of 3,555 takeover announcements from the beginning of 1991 to the end of 2010.

	INDUSTRY							
YEAR	Agriculture	Construction / Mining	Manufacturing	Transportation / Communication	Wholesale / Retail Trade	Services	Other	TOTAL
1991	0	7	22	8	3	14	2	56
1992	0	3	17	4	7	10	1	42
1993	1	2	26	3	6	27	2	67
1994	0	13	56	17	14	33	3	136
1995	0	7	91	16	20	49	4	187
1996	2	8	70	22	31	52	9	194
1997	1	18	108	28	32	73	5	265
1998	1	25	149	28	40	94	5	342
1999	0	14	171	37	30	100	2	354
2000	1	13	154	20	30	91	3	312
2001	0	14	89	16	22	97	8	246
2002	1	12	55	6	6	65	3	148
2003	1	10	51	7	17	61	10	157
2004	0	10	55	5	15	55	4	144
2005	0	8	74	15	16	56	3	172
2006	1	11	70	14	13	66	11	186
2007	0	9	96	18	14	47	14	198
2008	0	3	62	4	10	32	2	113
2009	0	9	45	8	6	33	1	102
2010	1	8	64	12	3	45	1	134
TOTAL	10	204	1,525	288	335	1,100	93	3,555
	0.3%	*5.7%*	*42.9%*	*8.1%*	*9.4%*	*30.9%*	*2.6%*	*100.0%*

Table III
Leverage Changes

Descriptive statistics based on data from Compustat are listed for target firms (Panel A) and matched firms (Panel B) at three points in time relative to merger announcement. Mean and median values are reported at each of these points with 'Announcement' indicating the quarter in which the announcement occurs. '1 Year Prior' indicates the quarter one year before the merger announcement quarter while 'Completion' indicates the last quarter of data prior to merger completion. One quarter must follow the merger announcement quarter in order to have data on a separate 'Completion' quarter.

Three statistics are listed at each point for target firms and for matched firms. The significance levels of changes in median and mean values of these statistics from '1 Year Prior' to 'Announcement' and from '1 Year Prior' to 'Completion' are indicated to the right of the later respective estimates. $^{(+++)}$, $^{(++)}$ and $^{(+)}$ indicate a statistically significant increase from '1 Year Prior' at the 1%, 5% and 10% levels, respectively, while $^{(---)}$, $^{(--)}$ and $^{(-)}$ indicate a statistically significant decrease at the 1%, 5% and 10% levels, respectively. Significance levels for changes in medians are found using the Wilcoxon signed-rank test.

Panel A – Target Firms

		1 Year Prior	Announcement	Completion
	n	3,555	3,494	1,549
Total Debt / Total Assets	Mean	22.1%	24.6% $^{(+)}$	29.2% $^{(+++)}$
	Median	26.3%	29.0% $^{(++)}$	31.8% $^{(+++)}$
Book Equity / Total Assets	Mean	50.7%	48.8%	45.7% $^{(---)}$
	Median	53.5%	52.4% $^{(-)}$	49.7% $^{(---)}$

Panel B – Matched Firms

		1 Year Prior	Announcement	Completion
	n	3,555	3,494	1,549
Total Debt / Total Assets	Mean	28.9%	29.2%	32.3% $^{(+)}$
	Median	32.1%	31.6%	33.2%
Book Equity / Total Assets	Mean	46.3%	45.9%	44.4%
	Median	50.6%	50.5%	49.0%

Table IV
Firm Characteristics

Descriptive statistics based on data from Compustat are listed for target firms and for matched firms with mean and median values reported for these statistics measured as of the year ended one year prior to merger announcement. Target firms and matched firms are also split into 'No Debt Issued' and 'Debt Issued' categories based on the occurrence of any debt issuances during the relative timeframe from one year prior to takeover announcement through completion of the merger. In addition, the percentages of target firms indicated as employing any type of anti-takeover provision are listed based on data from the SDC Mergers and Acquisitions database (i.e. 'Takeover Defense').

	Market Leverage	Market Equity / Book Equity	Natural Log of Total Revenue	Property Plant and Equipment / Total Assets	NOI Before Depreciation / Total Assets	R&D Expense / Total Revenue	Cash / Total Assets	Takeover Defense
Target Firms - No Debt Issued								
Mean	0.155	2.101	4.711	0.232	0.029	0.339	0.238	0.095
Median	0.078	1.850	4.675	0.148	0.098	0.009	0.141	0.000
Matched Firms - No Debt Issued								
Mean	0.176	1.051	4.660	0.261	0.033	0.268	0.196	NA
Median	0.104	1.810	4.663	0.179	0.097	0.000	0.097	NA
Target Firms - Debt Issued								
Mean	0.217	2.608	5.977	0.315	0.113	0.054	0.114	0.080
Median	0.182	2.010	5.907	0.247	0.123	0.000	0.052	0.000
Matched Firms - Debt Issued								
Mean	0.220	2.251	5.996	0.336	0.106	0.065	0.116	NA
Median	0.192	2.073	5.945	0.297	0.124	0.000	0.044	NA

Table V
Determinants of Debt Issuance

Determinants of the debt issuance are estimated using a set of Probit (Panel A) and Tobit (Panel B) models for target firms and matched firms from one year prior to merger announcement through completion of the merger. The dependent variable is assigned a value of one if any debt is issued over the timeframe, zero otherwise (Panel A) and the total amount of debt issued over the timeframe scaled by total assets (Panel B). Independent variables are measured at the fiscal year prior to merger announcement – immediately before the timeframe considered for the event of debt issuance. 'Target Dummy Variable' has a value of one if the firm in a given observation is a target and a value of zero if the firm is a matched firm. 'Takeover Defense Dummy' has a value of one if a target firm is shown as having any of the anti-takeover provisions in place that are indicated in the SDC Mergers and Acquisitions database. For all models, industry and year fixed-effects are specified. Significance levels are in parentheses.

Panel A: Likelihood of Debt Issuance

Model	**(1)**	**(2)**	**(3)**	**(4)**
Target Dummy Variable	**0.360**	**0.376**	**0.361**	**0.386**
	(0.000)	*(0.000)*	*(0.000)*	*(0.000)*
Target Dummy * Takeover Defense Dummy			-0.021	**-0.163**
			(0.809)	*(0.087)*
Market Leverage	0.830	0.148	0.829	0.143
	(0.000)	*(0.184)*	*(0.000)*	*(0.199)*
Market Equity to Book Equity	0.000	0.000	0.000	0.000
	(0.598)	*(0.836)*	*(0.599)*	*(0.843)*
Natural Log of Total Revenue		0.181		0.182
		(0.000)		*(0.000)*
Property Plant and Equipment / Total Assets		0.266		0.265
		(0.006)		*(0.007)*
NOI Before Depreciation / Total Assets		-0.002		-0.003
		(0.980)		*(0.976)*
R&D Expense / Total Revenue		0.005		0.005
		(0.689)		*(0.691)*
Cash / Total Assets		-0.875		-0.868
		(0.000)		*(0.000)*
Number of Observations	7,110	7,110	7,110	7,110
Pseudo R^2	0.395	0.433	0.395	0.434

Table V (contd.)
Determinants of Debt Issuance

Panel B: Determinants of Debt Issuance Amounts

Model	**(1)**	**(2)**	**(3)**	**(4)**
Target DummyVariable	**0.406**	**0.413**	**0.411**	**0.425**
	(0.000)	*(0.000)*	*(0.000)*	*(0.000)*
Target Dummy * Takeover Defense Dummy			-0.072	**-0.193**
			(0.423)	*(0.048)*
Market Leverage	0.870	0.266	0.865	0.257
	(0.000)	*(0.016)*	*(0.000)*	*(0.025)*
Market Equity to Book Equity	0.000	0.000	0.000	0.000
	(0.246)	*(0.376)*	*(0.249)*	*(0.386)*
Natural Log of Total Revenue		0.143		0.144
		(0.000)		*(0.000)*
Property Plant and Equipment / Total Assets		0.249		0.251
		(0.010)		*(0.009)*
NOI Before Depreciation / Total Assets		0.182		0.183
		(0.107)		*(0.105)*
R&D Expense / Total Revenue		0.004		0.004
		(0.835)		*(0.840)*
Cash / Total Assets		-0.791		-0.783
		(0.000)		*(0.000)*
Number of Observations	7,110	7,110	7,110	7,110
Pseudo R^2	0.081	0.148	0.083	0.151

Table VI

Determinants of Stock Repurchases

Determinants of the amount spent on stock repurchases less stock issuances, relative to total assets, are estimated using a set of heteroskedasticity-consistent OLS models for target and matched firms during the relative timeframe from one year prior to merger announcement to completion of the merger. The dependent variable, taken from quarterly Compustat data, is calculated as the amount spent on stock repurchases less the amount of stock issuances over the timeframe, divided by total assets as of the end of the year immediately preceding the timeframe.

'Target Dummy Variable,' has a value of one if the observed firm is a target and a value of zero if the firm is a matched firm. 'Defense Dummy' has a value of one if a target firm is indicated as having any of the anti-takeover provisions in place as listed in the SDC Mergers and Acquisitions database. 'Combined Debt Issued / Total Assets' is the total amount of debt issued over the relative timeframe scaled by the firm's total assets. Other independent variables are measured as of the year ended one year prior to merger announcement. For all models, industry and year fixed-effects are specified. Significance levels are in parentheses.

Model	**(1)**	**(2)**	**(3)**	**(4)**
Target Dummy Variable	**0.053**	**0.061**	**0.053**	**0.061**
	(0.000)	*(0.000)*	*(0.000)*	*(0.000)*
Target Dummy Variable * (Combined Debt Issued / Total Assets)	**0.061**	**0.030**	**0.061**	**0.031**
	(0.000)	*(0.050)*	*(0.000)*	*(0.049)*
Target Dummy * (Combined Debt Issued / Total Assets) * Defense Dummy			0.007	-0.022
			(0.819)	*(0.235)*
Market Leverage	0.201	0.083	0.201	0.083
	(0.000)	*(0.000)*	*(0.000)*	*(0.000)*
Market Equity to Book Equity	-0.000	-0.000	-0.000	-0.000
	(0.889)	*(0.119)*	*(0.890)*	*(0.119)*
Natural Log of Total Revenue		0.025		0.025
		(0.000)		*(0.000)*
NOI Before Depreciation / Total Assets		0.401		0.401
		(0.000)		*(0.000)*
Cash / Total Assets		-0.119		-0.119
		(0.017)		*(0.017)*
Property Plant and Equipment / Total Assets		-0.050		-0.05
		(0.015)		*(0.015)*
R&D Expense / Total Revenue		0.002		0.002
		(0.435)		*(0.435)*
Number of Observations	7,110	7,110	7,110	7,110
R^2	0.056	0.158	0.056	0.158

Table VII

Debt Issuance Abnormal Returns for Target Firms and Matched Firms

Cumulative abnormal returns to shareholders surrounding new debt issuances are summarized for both target firms and matched firms. The four-factor Fama-French / Carhart model is used to estimate a returns generating model for each firm. This model is then applied in order to calculate the cumulative abnormal return from seven days prior to the debt event to three days after. The mean and median cumulative abnormal returns are given by each debt type categories for both target firms and matched firms. This is further broken down into three sub-periods including: the fourth quarter prior to takeover announcement through the second quarter prior to takeover announcement ('Quarter -4 through Quarter -2'); the first quarter prior to takeover announcement ('Quarter -1'); and the sub-period from takeover announcement through completion ('After'). Mean and median estimates that are significantly different from zero are indicated by $^{(***)}$, $^{(**)}$ and $^{(*)}$, indicating statistical significance at the 1%, 5% and 10% levels, respectively.

			All Debt	Bank Debt	Non-Bank Debt
Quarter -4 through Quarter -2					
	Target Firms	Mean	0.30%	0.38%	0.01%
		Median	0.04%	0.26%	-0.43%
	Matched Firms	Mean	1.35%	0.26%	3.38% $^{(*)}$
		Median	0.15%	0.26%	-0.04%
Quarter -1					
	Target Firms	Mean	3.37% $^{(**)}$	3.36% $^{(**)}$	4.14%
		Median	1.87% $^{(*)}$	1.75% $^{(*)}$	4.63%
	Matched Firms	Mean	0.85%	1.03%	0.54%
		Median	0.05%	0.07%	-0.14%
After					
	Target Firms	Mean	3.58% $^{(***)}$	4.10% $^{(***)}$	0.76%
		Median	2.48% $^{(**)}$	2.74% $^{(**)}$	1.09%
	Matched Firms	Mean	-0.54%	-0.02%	-1.33%
		Median	0.14%	0.41%	-0.74%

Table VIII
Determinants of Abnormal Returns to Target Firms around Target Debt Issuances

Determinants of cumulative abnormal returns surrounding debt issuances by both target firms and matched firms are estimated using a set of heteroskedasticity-consistent OLS models over the timeframe beginning one year prior to the quarter of the merger announcement until completion of the merger. 'Target Dummy Variable' has a value of one if the firm in an observation is a target firm and a value of zero if the firm in an observation is a matched firm. The debt type dummy variables (e.g. 'Bank Dummy Variable') are assigned a value of one for observations in which the corresponding debt type comprises the issuance and a value of zero otherwise. 'Quarter -1 Dummy Variable' is assigned a value of one if the debt event occurs in the quarter preceding the takeover announcement, zero otherwise. 'After Dummy Variable' is assigned a value of one if the debt event occurs after takeover announcement, zero otherwise. 'Post Takeover Announcement Runup' is calculated as the sum of daily abnormal returns to target firm equity from two trading days after takeover announcement through takeover completion – the cumulative abnormal return around debt issuance (the dependent variable) is included in this summation. 'Post Takeover Announcement Runup' is assigned a value of zero if the debt issuance is made by a matched firm or if the debt issuance occurs before takeover announcement. Other control variables are measured at the year ended one year prior to merger announcement. Observation counts are listed for various periods in which debt is issued and for each debt type. Significance levels are in parentheses.

Model	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	Observation Counts
Intercept	0.058	0.054	0.059	0.063	0.060	
	(0.018)	*(0.039)*	*(0.024)*	*(0.019)*	*(0.021)*	
Issuance Amount / Market Assets	0.008	0.006	-0.009	-0.009	-0.011	
	(0.563)	*(0.659)*	*(0.601)*	*(0.579)*	*(0.517)*	
Target Dummy Variable		0.007	-0.006[a,b]			*1106*
		(0.318)	*(0.449)*			
Target Dummy Variable * Quarter -1 Dummy Variable			**0.031**[a]			*138*
			(0.027)			
Target Dummy Variable * After Dummy Variable			**0.034**[b]			*317*
			(0.000)			
Bank Dummy Variable				-0.009		*1342*
				(0.402)		
Bank Dummy * Target Dummy				0.000[c,d]	-0.005[e,f]	*915*
				(0.983)	*(0.532)*	
Bank Dummy * Target Dummy * Quarter -1 Dummy				**0.030**[c]	**0.030**[e]	*128*
				(0.038)	*(0.037)*	
Bank Dummy * Target Dummy * After Dummy				**0.038**[d]	**0.039**[f]	*269*
				(0.000)	*(0.000)*	

Table VIII *(continued)*

Model	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	Observation Counts
Non-Bank Dummy * Target Dummy					-0.007[g,h]	*191*
					(0.527)	
Non-Bank Dummy * Target Dummy * Quarter -1 Dummy					0.030[g]	*10*
					(0.485)	
Non-Bank Dummy * Target Dummy * After Dummy					0.008[h]	*48*
					(0.587)	
Post Takeover Announcement Runup			0.031	0.029	0.029	
			(0.330)	*(0.346)*	*(0.346)*	
Not Rated Dummy Variable	-0.008	-0.007	-0.007	-0.007	-0.008	
	(0.312)	*(0.319)*	*(0.346)*	*(0.359)*	*(0.298)*	
Market to Book Assets	0.000	0.000	0.000	0.000	0.000	
	(0.857)	*(0.858)*	*(0.950)*	*(0.874)*	*(0.939)*	
Market Leverage	-0.026	-0.026	-0.024	-0.024	-0.023	
	(0.209)	*(0.212)*	*(0.247)*	*(0.247)*	*(0.269)*	
Natural Log of Total Revenue	-0.006	-0.006	-0.006	-0.006	-0.006	
	(0.025)	*(0.025)*	*(0.013)*	*(0.011)*	*(0.012)*	
Number of Observations	1,765	1,765	1,765	1,765	1,765	
R^2	0.007	0.008	0.019	0.020	0.020	

[a] Combined effect significance of *0.081*

[b] Combined effect significance of *0.001*

[c] Combined effect significance of *0.041*

[d] Combined effect significance of *0.000*

[e] Combined effect significance of *0.086*

[f] Combined effect significance of *0.000*

[g] Combined effect significance of *0.567*

[h] Combined effect significance of *0.851*

Table IX
Determinants of Abnormal Returns to Acquiring Firms around Target Debt Issuances

Determinants of cumulative abnormal returns to acquiring firms surrounding debt issuances by corresponding target firms are estimated using a set of heteroskedasticity-consistent OLS models over the timeframe beginning one year prior to merger announcement until completion of the merger. 'Large Issue Dummy Variable' has a value of one if the ratio of the debt issuance amount to the market value of the acquiring firm's assets is greater than the sample median. The debt type dummy variables (e.g. 'Bank Dummy Variable) are assigned a value of one for observations in which the corresponding type of debt comprises the issuance and a value of zero otherwise. 'After Dummy Variable' is assigned a value of one if the debt issuance occurs after merger announcement and a value of zero if the debt issuance occurs before merger announcement. 'Quarter -1 Dummy Variable' is assigned a value of one if the debt event occurs in the quarter preceding the takeover announcement, zero otherwise. Control variables are measured as of the year ended one year prior to merger announcement. Significance levels are in parentheses.

Model	**(1)**	**(2)**	**(3)**	**(4)**	Observation Counts
Intercept	-0.039	-0.038	-0.041	-0.036	
	(0.009)	*(0.012)*	*(0.033)*	*(0.014)*	
Issuance Amount / Acquirer Market Assets	-0.015	-0.009	-0.010	-0.010	
	(0.087)	*(0.295)*	*(0.259)*	*(0.285)*	
Large Issue Dummy Variable		0.007[a,b]			*219*
		(0.408)			
Large Issue Dummy Variable * Quarter -1 Dummy Variable		-0.018[a]			*34*
		(0.186)			
Large Issue Dummy Variable * After Dummy Variable		**-0.033**[b]			*37*
		(0.017)			
Bank Dummy Variable			0.005		*357*
			(0.624)		
Bank Dummy Variable * Large Issue Dummy Variable			0.004[c,d]	0.006[e,f]	*190*
			(0.655)	*(0.578)*	
Bank Dummy * Large Issue Dummy * Quarter -1 Dummy			**-0.024**[c]	**-0.024**[e]	*32*
			(0.097)	*(0.099)*	
Bank Dummy * Large Issue Dummy * After Dummy			**-0.033**[d]	**-0.033**[f]	*35*
			(0.020)	*(0.020)*	

Table IX *(continued)*

Model	**(1)**	**(2)**	**(3)**	**(4)**	Observation Counts
Non-Bank Dummy Variable				-0.011	*81*
				(0.331)	
Non-Bank Dummy Variable * Large Issue Dummy Variable				0.019	*29*
				(0.236)	
Not Rated Dummy Variable (*Target Firm*)	0.000	-0.001	-0.001	-0.001	
	(0.984)	*(0.932)*	*(0.901)*	*(0.947)*	
Market to Book Assets *(Target Firm)*	0.009	0.009	0.009	0.009	
	(0.019)	*(0.017)*	*(0.019)*	*(0.016)*	
Market Leverage *(Target Firm)*	0.043	0.043	0.045	0.044	
	(0.148)	*(0.137)*	*(0.135)*	*(0.140)*	
Relative Size Ratio	0.029	0.029	0.031	0.028	
	(0.013)	*(0.023)*	*(0.015)*	*(0.034)*	
Number of Observations	438	438	438	438	
R^2	0.062	0.074	0.075	0.078	

[a] Combined effect significance of *0.431*

[b] Combined effect significance of *0.066*

[c] Combined effect significance of *0.176*

[d] Combined effect significance of *0.037*

[e] Combined effect significance of *0.216*

[f] Combined effect significance of *0.048*

Table X
Cumulative Abnormal Returns to Target Equity at Takeover Announcement

Cumulative abnormal returns to target shareholders at takeover announcement are summarized below. These statistics are split into the various debt types with 'Mostly Bank' indicating that the dominant source of debt among the debt types is bank debt, for example. Panel A reports cumulative abnormal returns to firms that issue debt and for firms that do not issue debt over the timeframe. Panel B reports cumulative abnormal returns to firms that do not issue debt along with those for firms that issue debt only before takeover announcement; with firms that issue debt only after takeover announcement; and with firms that issue debt both before and after takeover announcement. In both Panel A and Panel B, 'P-Val Difference' indicates the significance level of the difference between the mean (median) CAR for firms that do not issue debt and the mean (median) for firms that do issue debt according to the timing and type of the debt issuances indicated.

Panel A

	ANY DEBT		*Obs.*	**Mostly Bank**		*Obs.*	**Mostly Non-Bank**		*Obs.*
	Mean	Median		Mean	Median		Mean	Median	
No Debt Issued	0.247	0.194	*2771*						
Debt Issued	0.206	0.162	*784*	0.204	0.161	*669*	0.220	0.171	*115*
P-Val Difference	*(0.001)*	*(0.002)*		*(0.002)*	*(0.003)*		*(0.348)*	*(0.222)*	

Panel B

	ANY DEBT		*Obs.*	**Mostly Bank**		*Obs.*	**Mostly Non-Bank**		*Obs.*
	Mean	Median		Mean	Median		Mean	Median	
No Debt Issued	0.247	0.194	*2771*						
Before Only	0.226	0.175	*529*	0.224	0.174	*436*	0.239	0.181	*93*
P-Val Difference	*(0.150)*	*(0.235)*		*(0.135)*	*(0.273)*		*(0.796)*	*(0.596)*	
Before and After	0.139	0.102	*115*	0.142	0.107	*109*	0.087	0.076	*6*
P-Val Difference	*(0.000)*	*(0.000)*		*(0.000)*	*(0.000)*		*(0.016)*	*(0.079)*	
After Only	0.185	0.169	*140*	0.188	0.168	*124*	0.165	0.177	*16*
P-Val Difference	*(0.000)*	*(0.042)*		*(0.001)*	*(0.065)*		*(0.057)*	*(0.173)*	

Table XI
Determinants of Cumulative Abnormal Returns to Target Equity at Takeover Announcement

Determinants of cumulative abnormal returns to target shareholders around takeover announcement are estimated using a set of heteroskedasticity-consistent OLS models. The dependent variable is the sum of daily abnormal returns from one trading day prior to takeover announcement through one trading day after takeover announcement. 'Any Debt Dummy Variable' is assigned a value of one if any debt is issued during the timeframe. 'Mostly Bank Debt Dummy Variable' is assigned a value of one if the firm issues primarily bank debt over the period, zero otherwise. 'Some After' is assigned a value of one if the observed firm issues some debt after takeover announcement, zero otherwise. 'Takeover Defense Dummy Variable' is assigned a value of one if the firm utilizes a takeover defense strategy as indicated, zero otherwise. 'Unsolicited Bid Dummy Variable' indicates whether or not the takeover bid is classified as unsolicited and 'All Cash Dummy Variable' indicates if the acquirer utilizes only cash in the acquisition. 'Challenged Deal Dummy Variable' indicates whether or not the merger faces a regulatory challenge. Other control variables, with the exception of 'Square Root of Bidder Foothold' are measured as of the year ended prior to the takeover announcement year. Observation counts are listed for various combinations of dominant debt types and time frames. Significance levels are in parentheses.

Model	**(1)**	**(2)**	**(3)**	**(4)**	**Obs.**
Intercept	0.244	0.246	0.249	0.250	
	(0.000)	*(0.000)*	*(0.000)*	*(0.000)*	
Any Debt Dummy Variable		-0.016			*784*
		(0.125)			
Any Debt Dummy Variable * Before Only			0.003		*529*
			(0.800)		
Any Debt Dummy Variable * Some After			**-0.059**		*255*
			(0.000)		
Mostly Bank Debt Dummy Variable * Before Only				-0.002	*436*
				(0.889)	
Mostly Bank Debt Dummy Variable * Some After				**-0.060**	*233*
				(0.000)	
Mostly Non-Bank Debt Dummy Variable * Before Only				0.029	*93*
				(0.394)	
Mostly Non-Bank Debt Dummy Variable * Some After				-0.031	*22*
				(0.446)	

Table XI *(continued)*

	(1)	(2)	(3)	(4)	Obs.
Leverage Ratio	0.001	0.001	0.001	0.001	
	(0.851)	*(0.798)*	*(0.769)*	*(0.781)*	
Cash / Market Value of Equity	0.021	0.021	0.021	0.020	
	(0.222)	*(0.231)*	*(0.235)*	*(0.240)*	
Square Root of Bidder Foothold	-0.010	-0.010	-0.010	-0.010	
	(0.000)	*(0.000)*	*(0.000)*	*(0.000)*	
Takeover Defense Dummy Variable	0.028	0.028	0.028	0.029	
	(0.074)	*(0.079)*	*(0.078)*	*(0.070)*	
Public Bidder Dummy Variable	0.049	0.047	0.040	0.040	
	(0.000)	*(0.000)*	*(0.003)*	*(0.003)*	
Natural Log of Market Value of Equity	-0.018	-0.017	-0.016	-0.017	
	(0.000)	*(0.000)*	*(0.000)*	*(0.000)*	
All Cash Dummy Variable	0.114	0.113	0.113	0.114	
	(0.000)	*(0.000)*	*(0.000)*	*(0.000)*	
Unsolicited Bid Dummy Variable	0.055	0.056	0.057	0.057	
	(0.003)	*(0.003)*	*(0.002)*	*(0.002)*	
Challenged Deal Dummy Variable	-0.078	-0.077	-0.075	-0.075	
	(0.000)	*(0.000)*	*(0.000)*	*(0.000)*	
Number of Observation	3,555	3,555	3,555	3,555	
R^2	0.055	0.055	0.057	0.058	

Table XII
Determinants of Cumulative Abnormal Returns to Acquirer Equity at Takeover Announcement

Determinants of cumulative abnormal returns to bidder shareholders around takeover announcement are estimated using a set of heteroskedasticity-consistent OLS models. The dependent variable is the sum of daily abnormal returns from one trading day prior to takeover announcement through one trading day after takeover announcement. 'Large Relative Size Dummy Variable' has a value of one if the ratio of the target's market value of assets to the acquirer's market value of assets is greater than the sample median, zero otherwise. 'Any Debt Dummy Variable' is assigned a value of one if any debt is issued during the timeframe by the corresponding target firm. 'Mostly Bank Debt Dummy Variable' is assigned a value of one if the target firm issues primarily bank debt over the timeframe, zero otherwise 'Some After' is assigned a value of one if the target firm issues some debt after takeover announcement, zero otherwise. 'Takeover Defense Dummy Variable' is assigned a value of one if the target firm has a takeover defense mechanism in place, zero otherwise. 'All Cash Dummy Variable' indicates if the acquirer utilizes only cash in the acquisition. 'Challenged Dummy Variable' indicates whether or not the merger faces a regulatory challenge. Other control variables, with the exception of 'Square Root of Bidder Foothold,' are measured as of the year ended prior to the takeover announcement year. Observation counts are listed for various combinations of dominant debt types and time frames. Significance levels are in parentheses.

Model	**(1)**	**(2)**	**(3)**	**(4)**	**Obs.**
Intercept	0.021	0.022	0.022	0.022	
	(0.000)	*(0.000)*	*(0.000)*	*(0.001)*	
Large Relative Size Dummy Variable	-0.004	-0.007	-0.007	-0.007	*881*
	(0.297)	*(0.114)*	*(0.122)*	*(0.124)*	
Large RS Dummy Variable * Any Debt Dummy Variable		**0.013**			*215*
		(0.035)			
Large RS Dummy Variable * Any Debt Dummy Variable * Before Only			0.010		*170*
			(0.160)		
Large RS Dummy Variable * Any Debt Dummy Variable * Some After			**0.027**		*45*
			(0.016)		
Large RS Dummy Variable * Mostly Bank Debt Dummy Variable *Before Only				0.012	*132*
				(0.109)	
Large RS Dummy Variable * Mostly Bank Debt Dummy Variable * Some After				**0.027**	*43*
				(0.023)	
Large RS Dummy Variable * Mostly Non-Bank Debt Dummy Variable * Before Only				0.018	*38*
				(0.897)	
Large RS Dummy Variable * Mostly Non-Bank Debt Dummy Variable * Some After				0.039	*2*
				(0.446)	

Table XII *(continued)*

	(1)	(2)	(3)	(4)	Obs.
Leverage Ratio (*Target Firm*)	-0.000	-0.000	-0.000	-0.000	
	(0.749)	*(0.653)*	*(0.650)*	*(0.646)*	
Cash / Market Value of Equity (*Target Firm*)	0.001	0.002	0.002	0.002	
	(0.746)	*(0.694)*	*(0.704)*	*(0.696)*	
Square Root of Bidder Foothold	0.001	0.001	0.001	0.001	
	(0.236)	*(0.195)*	*(0.195)*	*(0.195)*	
Tender Offer Dummy Variable	0.010	0.010	0.010	0.010	
	(0.027)	*(0.024)*	*(0.021)*	*(0.020)*	
Takeover Defense Dummy Variable (*Target Firm*)	-0.007	-0.007	-0.007	-0.008	
	(0.262)	*(0.278)*	*(0.245)*	*(0.233)*	
Natural Log of Market Value of Equity (*Target Firm*)	-0.007	-0.008	-0.008	-0.008	
	(0.000)	*(0.000)*	*(0.000)*	*(0.000)*	
Relative Size Ratio	-0.007	-0.007	-0.007	-0.008	
	(0.266)	*(0.259)*	*(0.245)*	*(0.235)*	
All Cash Dummy Variable	0.020	0.020	0.020	0.020	
	(0.000)	*(0.000)*	*(0.000)*	*(0.000)*	
Challenged Dummy Variable	-0.003	-0.004	-0.005	-0.005	
	(0.716)	*(0.666)*	*(0.613)*	*(0.603)*	
Number of Observations	1,763	1,763	1,763	1,763	
R^2	0.067	0.070	0.071	0.071	