Bank Dependence and Bank Financing in Corporate M&A*

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Abstract

We examine the impact of bank financing of M&As, and its associated benefits and costs to borrowing acquirers. We find that bank-financed deals have higher acquirer announcement returns relative to other cash deals, but such a value certification effect exists only for bank-dependent acquirers. In contrast to the conventional view that bank-dependent firms are more susceptible to hold-up by banks, banks do not impose higher loan pricing, but instead grant even more favorable non-pricing loan contract terms to bank-dependent acquirers relative to non-bank-dependent acquirers. Our findings highlight the specialness of banks to bank-dependent borrowers in certifying their decision making as well as a less-explored positive side of bank dependence for borrowers, i.e., a substitution between banks' informational advantage and loan contract stringency.

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1 Introduction

A large literature on financial intermediation has focused on the specialness of bank financing relative to other sources of capital. Early studies that established benefits of bank financing focused on valuation effects (James, 1987) while later studies examined lending terms (Petersen and Rajan, 1994; Berger and Udell, 1995). Similarly, a large set of papers starting with Rajan (1992) demonstrate the costs of bank financing. A more recent set of papers examine the impact of bank financing on borrowers' behavior in terms of investment (Chava and Roberts, 2008; Nini, Smith, and Sufi, 2012; Ozelge and Saunders, 2012). These studies depart from the traditional view that creditors are passive bystanders who play an active role only during payment defaults or in bankruptcy, and highlight the importance of creditor governance prior to extreme distress events as well.

We examine the impact of creditor governance on firm investment in a normal financial period – focusing on mergers and acquisitions (M&As) as well as design for M&A loan contracts. Specifically, we analyze bank financing of M&As with part or full cash payment – a situation where banks do not have any additional control rights, yet one where an acquiring firm's need for external financing for an M&A may allow the financing bank to influence this decision. In particular, we focus on differences between bank-dependent and non-bank-dependent acquiring firms.

We use M&A financing for bank-dependent acquiring firms as the setting to examine the effect of bank financing on account of three considerations. First, M&As are significant corporate investments that have a substantial impact on firm value. Bank financing can play a certification role (Diamond, 1984) on the quality of the M&A and create value to shareholders and debtholders. Second, by focusing on bank-dependent firms, we examine a set of firms where the potential benefits of such certification are the greatest, yet, one where the potential for banks to hold up the acquiring firms is also the greatest. Third,

by focusing on the universe of M&As paid in cash, the disclosure of which is mandatory, timely, and uniform by regulation – we circumvent some of the statistical criticisms raised in Maskara and Mullineaux (2011).[1]

Our key contribution is that we document a significantly positive value impact of bank financing on M&As only for bank-dependent firms, and not for non-bank-dependent firms. Further, this certification effect is not accompanied with a higher hold-up cost in terms of higher loan pricing. Rather, we find that banks grant even more favorable non-pricing loan terms to bank-dependent firms than to non-bank-dependent firms. Thus, inconsistent with the conventional wisdom that bank-dependent firms are more susceptible to the adverse impact of bank dependence (such as the hold-up problem), our study provides novel evidence of a less-explored positive side of bank dependence for borrowers, i.e., a substitution between banks' informational advantage (in bank-dependent firms) and loan contract stringency.

Our sample, derived from the Thomson Reuters SDC Platinum M&A database, consists of 7124 completed M&A transactions announced between 1990 and 2012 by U.S. public acquirers for which the method of payment is partly or fully in cash.[2] Among these transactions, 1544 are classified as being bank financed or BF transactions, and a loan used to finance a given M&A transaction is classified as an M&A loan (See Section 2.2 for details on the method of classification). We use two proxies for bank dependence based on the availability of a firm's credit rating (Faulkender and Petersen, 2006; Harford and Uysal, 2014) and its size (Bharath, Dahiya, Saunders, and Srinivasan, 2011). Firms that do not have a rating or are small (relative to the sample median) in asset size are classified

[1] Maskara and Mullineaux (2011) argue that the benefits of bank financing documented in earlier studies by examining market reactions to loan announcements were overstated and subject to selective disclosure bias.

[2] We employ this as our sample because M&As with no cash payment do not create any immediate need for bank financing.

as being bank-dependent.

First, consistent with the certification role of banks, bank financing is associated with an increase in acquirer announcement return between 0.67% and 0.87%. This finding is robust to controlling for a complete set of firm and deal characteristics, as well as firm fixed effects (Golubov, Yawson, and Zhang, 2015). A further analysis indicates that the higher abnormal returns associated with bank financing accrue only to bank-dependent (small or unrated) acquirers and these firms experience an increase in return between 1.59% and 1.77%. Rated firms or large firms do not exhibit any positive valuation effects of bank financing.

In the next part of the analysis, motivated by Billett, Flannery, and Garfinkel (2006) who document a negative long-run abnormal return for loan announcements, we examine two measures of long-term acquirer performance following an M&A. First, we compute three-year buy-and-hold abnormal returns as in Billett, Flannery, and Garfinkel (2006). We do not find any negative long-run returns for bank financing of M&A. Second, to account for the possibility that distress risk may increase after a M&A transaction, we use the Merton's Distance to Default model as a measure of credit risk. We classify a firm as experiencing future distress if it becomes distressed in any one of the three years following the announcement of the M&A transaction. We do not find any effect of bank financing on the acquirer's future distress as well. The above analyses suggest that bank financing has a positive valuation effect for bank-dependent firms, and that it is not associated with any value loss in the long run.

In the third part of the analysis, we examine loan contracts for M&A loans and their variations across bank-dependent acquiring firms and other acquiring firms. We are motivated in this analysis by the model of (Rajan and Winton, 1995) who suggest that covenants and collateral give banks incentive to monitor firm's activities. Given that M&A trans-

actions result in large changes in operations as well as capital structure of firms, banks should actively increase their monitoring following an M&A loan.

To test this, we analyze the difference of M&A loans relative to other loan types. Compared to other loan types, M&A loans have 13.5 basis points higher yield spread. Such loans also have a higher likelihood of being collateralized, a shorter maturity, and more covenants. The latter non-price results provide strong support for greater monitoring of M&A transactions.[3]

The more pertinent question for this study is to examine if the restrictive M&A loan contracts differ across bank-dependent acquirers and other acquirers. Do banks increase loan price and tighten up non-price contract terms more for bank-dependent acquirers, due to the greater certification benefits (so that banks extract some of the surplus from certification) or due to greater hold-up? Surprisingly, we find that M&A loans' interest rates do not differ significantly for bank-dependent and non-bank-dependent firms. The likelihood of being of a loan being collateralized also does not differ across these two sets of firms. Further, more interestingly, bank-dependent firms obtain M&A loans with fewer covenants and longer maturity relative to non-bank-dependent firms.

Therefore, not only is there no evidence for a greater extent of bank hold-up, bank-dependent firms also derive larger benefits for some of the non-price terms of their loans. The less stringent loan terms allow for more operation and financing flexibility, which is particularly valuable for bank-dependent firms. This is a novel result, which is in stark contrast to the common view from prior studies of hold-up in banking. In fact, in the case of M&A transactions, we expect an exacerbation of any potential bank hold-up due to the borrowing acquirer's immediate cash requirement. Yet, we find the opposite despite the higher valuation effect of bank financing for bank-dependent firms. We attribute this

[3]Since the focus of this study is to examine the impact of bank dependence, we leave a complete investigation of the higher price of M&A loans for future research.

to the greater informational advantage that banks have in financing small or unrated firms (Bharath, Dahiya, Saunders, and Srinivasan, 2011). That is, banks' informational advantage in financing bank-dependent firms reduces the need for monitoring through stringent loan contract terms.

To further substantiate the substitution effect, we reestimate our baseline loan contract specification using a more stringent definition of bank dependence. In particular, we define firms which are small as well as unrated to be bank dependent. For this sub-sample, we find that such firms also receive lower spreads by around 9 basis points for M&A loans, in addition to the less stringent non-price terms. Thus, even within the set of bank dependent firms, those which are most bank dependent receive a pricing benefit as well, which is more consistent with bank's substituting their information advantage for even more beneficial loan contract terms.

We examine a number of other explanations for the substitution effect due to differences among bank dependent and other acquirers on the following dimensions: (1) Relative frequencies of bridge loans, the hypothesis being that non-bank dependent firms may take more bridge loans, which may have higher spreads and covenants. (2) Cash: Bank dependent firms may have more cash available for acquisitions, which makes these less risky. Similarly, bank dependent firms undertake acquisitions which are smaller relative to their cash holdings. (3) Future bond market access: Acquisitions may disproportionately increase the size of bank dependent firms, which may enable them to access the bond market in the future, resulting in lower future spreads, and lower risk for their M&A loans. Alternately, it may also increase the bargaining power of bank dependent firms. (4) Past loan restrictions: Bank dependent firms may have outstanding loans that already have restrictive covenants, obviating the need for additional covenants on the M&A loans. In all these cases, we find that our main results continue to hold after additionally controlling for each

of the above. In addition, we also reestimate the impact of each one of these effects on the CAR differences and find that the direction as well as the magnitude of the CAR is not impacted by any of these additional factors.

Finally, unobservable firm-specific variables that affect an acquiring firm's acquisition quality may also affect its bank financing decision. For instance, acquirers with more capable managers are more likely to engage in higher value-creating M&A transactions. If such managers are more likely to obtain bank financing, the positive association between bank financing and acquirer announcement returns that we document may be partly due to this. In other words, our estimates of the impact of bank financing may be subject to an omitted variable bias.

Such a bias, however, is unlikely to be the main driver for our results. Better managers should be able to signal their quality by bank financing, regardless of the firms' bank dependence status. Hence, in contrast to what we find, all firms should be able to benefit from the certification effect of bank financing. Nonetheless, to formally account for the potential endogeneity of bank financing, we use two instrumental variables (IVs) that have been shown to impact bank financing in the previous literature.

Specifically, we use the average distance between a borrower and bank headquarters as the first IV. A shorter distance has been shown to impact the likelihood of bank financing (Petersen and Rajan, 2002; Agarwal and Hauswald, 2010). Our second IV uses data from the Senior Loan Office Opinion Survey on Bank Lending Standards conducted by the Federal Reserve. We use the fraction of banks that report a tightening of credit for Commercial and Industrial loans as the instrument for bank financing. Both IVs satisfy both the relevance condition that they affect the likelihood of bank financing and the exclusion condition that they are not directly related to the valuation impact of the M&As. Using these two IVs, we confirm that small or unrated bank-financed acquirers have higher

acquisition announcement returns.

Our paper is closely related to two prior studies. Bharadwaj and Shivdasani (2003) focus on a sample of 115 all-cash tender offers, and find a positive valuation effect of bank financing for those transactions that are fully financed by a bank. We demonstrate that the positive valuation effect of bank financing is also present for other M&A transactions that are paid for either fully or partially in cash, apart from all-cash-paid tender offers. Further, we do not require that the bank finance the entire M&A transaction. This suggests that the involvement of a bank probably matters more than the extent of bank financing, especially for bank-dependent firms. Harford and Uysal (2014) examine the impact of bond market access in an M&A context. They demonstrate that acquisitions by rated firms have lower returns than acquisitions by unrated firms because of underinvestment by firms that do not have access to bond market, regardless of whether or not cash was used for financing the acquisition. In contrast, we investigate the impact of bank financing in M&A transactions that use cash payment. Our study points to an alternate mechanism for higher returns for unrated acquirers on account of bank certification for a sub-sample of cash M&As.

Moreover, relative to both of the above studies, we are able to exploit the rich data on loan contracts in bank financing of M&As and examine both pricing and non-pricing terms in detail. This allows us to investigate the costs of bank financing, which is not the focus of the above two studies. Our novel finding is that banks do not hold up bank-dependent firms in loan pricing or impose less favorable non-price contract terms while providing valuable loan services in the M&A financing context. Instead, we document a less-explored positive side of bank dependence for borrowers, i.e., a substitution between banks' informational advantage (in bank-dependent firms) and loan contract stringency.

Our paper makes contributions to different strands of literature. First, it contributes to the literature on the impact of a firm's bank dependence. Dell'Ariccia, Detragiache, and

Rajan (2008) show the negative real effects of bank dependence in a cross-country framework. Chava and Purnanandam (2011) demonstrate valuation losses for bank-dependent firms when their main banks suffered losses as a result of the Russian Crisis. Chodorow-Reich (2014) examines the impact of bank dependence on employment. Lo (2014) finds that deterioration of a bank's health leads to changes in its dependent borrowers' accounting disclosure policies. Unlike all the above papers, we focus on a scenario where neither the bank nor the borrower is financially distressed, and document a positive side of bank dependence in corporate decision certification and loan contracting during a normal time period.

Second, we contribute to the understanding of the net benefit of bank financing. One set of papers has focused on the borrowers' stock price reactions to bank lending announcements and suggested positive value added by banks (e.g., James (1987); Billett, Flannery, and Garfinkel (2006); Li and Ongena (2015); Ongena and Roscovan (2013)). Using meta-analysis of over 100 studies in different countries, Kysucky and Norden (2016) suggest that bank lending relationships are beneficial to borrowers due to increased future lending volumes and lower loan rates. Our study shows that banks may add value by impacting borrowers' corporate investment decisions, and more importantly, such a positive impact occurs only in bank-dependent firms.

Third, several studies highlight the cost of bank financing to borrowers due to hold-up by banks.[4] In theory, bank-dependent firms are more susceptible to the hold-up problem than non-bank-dependent firms due to their lack of alternative financing sources. Our evidence in the context of M&A financing does not support this. This calls for a better understanding of when and how banks may choose to capitalize on their information monopoly. To the best of our knowledge, our study is among the first in the literature

[4]See Santos and Winton (2008), Hale and Santos (2009), Ioannidou and Ongena (2010) and Schenone (2010).

to highlight a positive side of banks' information monopoly in loan contracting for bank-dependent firms.

The rest of the paper proceeds as follows. In Section 2, we describe the construction of the sample and various variables used for the empirical tests. We also present the summary statistics for the variables of interest. In Section 3, we conduct the main analyses and discuss the results. We conclude in Section 4.

2 Sample Selection, Variable Construction, and Summary Statistics

2.1 Sample construction

Our sample of M&A transactions is obtained from the Securities Data Company's (SDC) US Mergers and Acquisitions Database. We select domestic M&As with an announcement date between January 1, 1990 and December 31, 2012. We consider only those transactions in which an acquiring firm owns 100% of the target after the deal, but controlled less than 50% of the target before the announcement date. We exclude financial firms (SIC Code 6000-6999) and utility firms (SIC Code 4900-4949). We further require that (1) the transaction value is greater than US$ 1 million, (2) the transaction value is worth at least 1% of the acquirer's market value of equity measured on the 11th trading day prior to the announcement date, (3) the target firm is a public U.S. firm or a non-public subsidiary of a U.S. firm, and (4) the acquirer has annual financial statement information available from Compustat and stock return data (210 trading days prior to acquisition announcements) from the Center for Research in Security Prices (CRSP). Finally, we restrict our sample of M&As to deals paid for either partly or fully in cash. These data screening criteria result in a final sample of 7124 M&A transactions.

2.2 Definitions of key variables

2.2.1 Bank financing

To identify whether an acquisition is funded by bank loans, we match each acquirer with the Thomson Financial Dealscan database (Dealscan) with Compustat using the file provided by Michael Roberts on his website.[5] We classify an M&A transaction as bank financed if the acquiring firm takes any loans from one year prior to the M&A announcement date till the deal completion date, and the given loan's primary or secondary purpose is stated to be M&A financing. A loan that corresponds to a bank-financed M&A transaction is defined as an M&A loan. Using this definition, 1544 M&A transactions are classified as bank financed (BF), and the remaining transactions (NBF) are financed through alternate sources of cash. This results in a total of 2424 M&A loans with some M&As being financed by multiple loans.

2.2.2 Bank dependence

As discussed earlier, we use two measures for a firm's bank dependence – small in firm size, relative to the sample median of all 7424 acquirers (Bharath, Dahiya, Saunders, and Srinivasan, 2011), and the unavailability of a credit rating (Faulkender and Petersen, 2006; Harford and Uysal, 2014).

2.2.3 Acquisition performance

Our principal measure of acquisition performance is the acquirer's cumulative abnormal returns (CARs) over the three-day event window (-1,+1) around the M&A announcement date, estimated using the market model with the benchmark returns measured as the CRSP equally-weighted index returns. The market model parameters are estimated over

[5]The link file only matches Compustat firms with the Dealscan data till 2012. Hence, our sample of M&A transactions and bank loans ends in 2012.

the 200-day period from event day -210 to event day -11, where event day 0 is the deal announcement date.

Additionally, motivated by Billett, Flannery, and Garfinkel (2006), who find long-run underperformance of borrowers following bank loan announcements, we measure an acquiring firm's long-run performance using the three-year buy-and-hold abnormal stock returns (BHARs) subsequent to the M&A announcement date. We follow Barber, Lyon, and Tsai (1999) and estimate the BHARs as the return difference of the acquirer relative to its matched control firm based on size, book-to-market, and prior six-month returns.

As a second measure of long-run performance, we use the acquiring firm's distress risk in the three years after the completion date of the M&A transaction. To estimate this, we compute the distance to default as implied by the Merton model for the acquirer in the post-acquisition period on a monthly basis. If a given firm is in the top 10% of the distance to default for six months or more in a given year in any of the three years following the completion date, it is classified as distressed.

2.2.4 Loan contract terms

We focus on the four terms of a typical loan contract — yield spread, maturity, collateral, and covenant. We use the all-in-spread variable drawn from Dealscan as the yield spread measure of the loan. We take a loan's maturity in months. We define a dummy variable for collateral that takes the value of one if the loan is classified as secured and zero otherwise. We construct an index that sums up all the covenants contained in the loan, and two sub-indices that sum up the total number of financial and general covenants, respectively. Appendix A has detailed definitions of all variables used in this paper.

2.3 Summary statistics

Panel A of Table 1 presents summary statistics for certain M&A characteristics across BF and NBF transactions. Our choice of variables is motivated by the prior papers studying M&A. The relative size of BF transactions, which may positively impact acquiring firm returns (Asquith, Bruner, and Mullins, 1983), is significantly higher than that of NBF transactions. On the other hand, diversifying mergers, which are more likely to destroy value (Morck, Shleifer, and Vishny, 1990), tend not to be funded by banks. Acquisitions of private targets that have been shown to have a positive impact on acquiring firm returns (Fuller, Netter, and Stegemoller, 2002) are more commonly NBF transactions. Likewise, tender offers, which are associated with lower acquirer returns (Bradley, 1980), are more often BF transactions. Overall, these results suggest that there is no obvious difference between BF and NBF transactions that would suggest that one may be more value-enhancing than the other. Nevertheless, these differences are important to control for in the following multivariate analysis of acquiring firm returns.

Next, in Panel B of Table 1, we further stratify the BF transactions into two groups based on whether an acquiring firm is bank-dependent using the two measures of bank dependence, respectively. Small or unrated firms are more likely to acquire private targets, and their acquisitions are more likely to be diversifying relative to large or rated firms.

Panel C of Table 1 presents univariate valuation comparisons of BF and NBF transactions as measured by CARs and BHARs. On average, both types of transactions exhibit positive CARs[6]. However, both the mean and median CARs for the BF transactions are significantly higher than the corresponding values for the NBF transactions, which suggests that the evidence presented in Bharadwaj and Shivdasani (2003) for all-cash tender offers also extends to other forms of M&A transactions.

[6]This is consistent with the finding in the literature on cash deals. Recall that all the M&As in our sample are at least partially financed by cash.

Panel D shows that the difference in mean (median) CARs for BF transactions by small versus large firms is 2.64% (1.78%), which is more than double the difference in CARs between BF and NBF transactions. Panel E presents a similar finding as Panel D. The difference for BF transactions by unrated versus rated firms is much larger (2.13% mean value, 1.78% median value) than the difference between BF and NBF transactions.

Overall, these univariate results suggest that bank dependence is an economically important mechanism that has a first order impact on acquiring firm returns, over and above the unconditional effects of bank financing. Meanwhile, although the long-run performance of these M&As are negative, the differences between BF and NBF transactions are not statistically significant.

In Panel A of Table 2, we examine the differences in acquiring firm characteristics that have also been shown to have a significant impact on acquiring firm returns. BF firms are much smaller than NBF firms, which may result in larger gains from their acquisitions (Moeller, Schlingemann, and Stulz, 2005). By contrast, a larger proportion of NBF firms are not rated, implying that they are less likely to overpay for acquisitions (Harford and Uysal, 2014). The profitability and stock volatility of both sets of firms are comparable. BF firms have significantly higher leverage, which may be a result of their better access to bank financing. As with M&A transaction characteristics, we include all these variables and additional controls as the determinants of acquiring firm returns in our multivariate regressions. In Panel B of Table 2, we further stratify the BF transactions into two groups based on whether an acquiring firm is bank-dependent using the two measures of bank dependence, respectively. Overall, relative to large or rated firms, small or unrated firms have higher Tobin's q and stock volatility, and lower leverage and analyst coverage.

Panel A of Table 3 shows the univariate comparisons of loan contract terms (yield spread, maturity, collateral, and covenant) for M&A loans and other loans in the Dealscan

database. M&A loans have a higher yield spread of approximately 11 basis points than other loans. M&A loans are about 57% larger than other loans ($520 million relative to $331 million), which is expected, as M&A transactions are likely to be larger than typical corporate investments. M&A loans are 20% more likely to have a collateral requirement and have about 3.7 more covenants per loan (6.4 covenants for M&A loans versus 2.7 for other loans).

In Panel B of Table 3, we compare the loan contract terms of BF transactions by bank-dependent and non-bank-dependent firms. The average spread difference between small (unrated) and large (rated) firms is 51.8 (18.4) basis points. By contrast, the differences in covenants and collateral requirement are smaller. On average, M&A loans to small (unrated) firms have 0.9 (0.8) more covenants than M&A loans to large (rated) firms. Small firms are 20% more likely to be imposed a collateral requirement than large firms, whereas there is no difference in collateral requirement for unrated and rated firms. Not surprisingly, the average loan facility to small (unrated) firms is smaller by $680.6 ($574.6) million relative to large (rated) firms. In the multivariate analysis below, we examine whether the differences in loan contract terms between bank-dependent and non-bank-dependent firms remain after controlling for firm and loan characteristics.

3 Main Analyses and Findings

3.1 Short-run bidder performance

We conduct a multivariate analysis of acquiring firm CARs over a three-day (-1 to +1) window around the announcement date of the deal.[7] Our main variable of interest is the dummy variable for a bank-financed transaction. The control variables, motivated by prior studies, include target ownership status, a dummy for diversifying acquisition,

[7]Results are robust to use different event windows such as (-2, +2) and (-1,0).

relative size of the acquisition, as well as bidder characteristics such as firm size, Tobin's q, book leverage ratio, and profitability, etc.[8] In all regressions, we control for year and industry fixed effects and report standard errors clustered at the firm level. To account for the impact of any time-invariant firm-specific factors, we also apply firm fixed effects in some regressions to establish the robustness of our findings (Golubov, Yawson, and Zhang, 2015).

Table 4 presents the results of this regression. Model 1 shows that the coefficient on the main variable of interest (BF dummy) is 0.87, suggesting that bank financing has a positive valuation effect of 0.87% in abnormal announcement returns on acquiring firms. In comparison, Bharadwaj and Shivdasani (2003) also find a positive valuation effect of bank financing for all-cash tender offers (4% in (-1,1) event window); however, this is for a sample of tender offers that are entirely bank financed. Our finding suggests that the certification benefit of bank financing extends to other acquisition transactions than tender offers and transactions that are even partially financed by banks.

In models 2 and 3 of Table 4, we examine the difference in the valuation impact of bank financing for bank-dependent and non-bank-dependent acquirers. We include the interactions between the BF dummy and our two measures of bank dependence – small and unrated. We find that the *entire positive effect of bank financing is concentrated solely in acquisitions undertaken by small and/or unrated firms.* The positive impact of bank financing is 1.68% for small firms and 1.55% for unrated firms. Further, the coefficient on the BF dummy itself becomes insignificant, which suggests that bank financing yields no certification benefits for large or rated firms. The differences of CARs between bank-dependent and non-bank-dependent acquirers are highly significant. In models 4-6, we

[8]For example, Moeller, Schlingemann, and Stulz (2005) find evidence that bidder size is negatively correlated with the acquirer's announcement-period CAR. Lang, Stulz, and Walkling (1991) and Servaes (1991) document a positive relation regarding tender offer acquisitions and public firm acquisitions, respectively. Morck, Shleifer, and Vishny (1990) find that diversifying acquisitions typically destroy shareholder value.

present the results with the additional employment of firm fixed effects in estimation. The findings remain similar. We also try different event windows such as (-2, +2) and (-3, +3), and the results are qualitatively the same (untabulated). This evidence indicates that the certification benefit of bank financing accrues only to bank-dependent firms.

3.2 Long-run bidder performance

Billett, Flannery, and Garfinkel (2006) find that borrowers experience long-run underperformance following bank loan announcements. Based on this, one concern is whether the value effect of bank financing that we have documented reverses in the long run. To address this concern, we test whether bank-financed acquirers exhibit underperformance in the long run. We use two measures to gauge a firm's long-run performance following its M&A deal – BHAR and the firm's financial distress status (see section 2.2 for definitions).

Table 5 presents the results of our regression analyses on the long-run performance of BF and NBF transactions. We do not find any significant differences between these two types of transactions for both long-run BHARs, as well as the distress indicator. In addition, we also find little difference between BF transactions by bank-dependent and non-bank-dependent firms. In most cases, the interactions of the BF dummy with the small or unrated firm dummy are insignificant. In one specification, unrated firms have a lower likelihood of future distress. Thus, the key takeaway from this analysis is that the positive announcement abnormal returns of BF transactions in bank-dependent firms are not reversed over the long term. The results on the reversal of returns of bank loan announcements documented by Billett, Flannery, and Garfinkel (2006) are not found for the case of M&A loans.[9]

[9]The empirical results are not fully comparable. They examine post-announcement returns for all loans (including other loans than M&A loans) from the announcement date of the loan. Here, we examine post-announcement returns after the M&A completion date, which can differ from the loan announcement date by over one year in some cases.

3.3 Loan contract terms for M&A loans

We start by examining the unconditional effect of a loan being used for M&A financing on its contract terms relative to other corporate loans in a multivariate regression framework. To the extent that M&As require a higher degree of monitoring, we should expect to see more stringent non-price terms – more covenants, higher likelihood of collateral, and lower maturity (Rajan and Winton, 1995). We include several firm-level characteristics to control for their impact on loan terms. Larger, more profitable, and less-leveraged firms are likely to borrow from banks on better terms. Because lenders can recover their loss from borrowers' tangible assets in the event of default, we expect firms with more tangible assets to secure better terms. Cash flow volatility is used to proxy for a firm's earnings risk and is expected to be positively correlated with the cost of debt. We control for loan maturity (in months) in regressing the loan yield spread because a lender requires a liquidity premium for longer-term debt, and this liquidity premium translates into higher loan spreads. We also include loan size, which captures economies of scale in bank lending and is thus expected to be inversely related to the loan rate. Performance pricing is a dummy variable that equals one when a loan contract has performance pricing as a feature, which is meant to account for the possibility that lenders price loans differently depending on whether they have performance pricing clauses.[10]

Macroeconomic conditions can also affect debt pricing. Prior papers suggest that credit spread and term spread are good proxies for macroeconomic conditions and help explain stock and bond returns (Chen, Roll, and Ross, 1986; Fama and French, 1993). In particular, credit spreads tend to widen during recessions and shrink during expansions (Collin-Dufresn, Goldstein, and Martin, 2001) because investors require more compensation for

[10]The performance pricing feature increases the loan interest rate in the event of adverse shocks to the borrower's credit risk. This feature has been shown to have a significant effect on the loan interest rate (Asquith, Beatty, and Weber, 2005).

increased default risk during bad economic times. High (low) term spreads are frequently used as an indicator of good (bad) economic prospects. We define the credit spread as the difference between the yields of BAA and AAA corporate bonds and the term spread as the difference between the yields of 10-year treasury bonds and 2-year treasury bonds. Both of these variables are measured as of one month before the loan origination date.

Finally, we include both loan type and loan purpose fixed effects in the regressions, as these may be associated with different levels of risk.[11] To ensure that our inference is not confounded by unobservable firm-specific factors, we also employ firm fixed effects in the estimation.

Table 6 presents the results of our regression analyses on the loan contract terms. We find that banks charge higher yield spreads for M&A loans by about 13.5 basis points.[12] In addition, banks are more likely to require collateral, impose more covenants, and shorten the maturity of M&A loans. The results provide strong support for the model of Rajan and Winton (1995), which suggests that banks would increase covenants and collateral for loans that require greater monitoring. Given the large changes – both operational and financial – that are likely to follow an M&A transaction, such loans are likely to require a much higher degree of monitoring.

Does the higher loan spread correspond to a higher default risk of M&A loans? While a full examination of this is outside the scope of this paper, we provide some preliminary evidence that does not support this. We add the distress dummy that we had earlier computed for long-run performance. Recall that this dummy reflects future distress that is not known at the time of loan origination. Nevertheless, if the bank, by virtue of its

[11] There are different types of loans that include 364-day facility, credit line, term loan, and others. The types of loan purpose that are frequently reported are corporate purpose, working capital, debt repayment, LBO, M&A loan, and others. We exclude the M&A loan from the loan purpose fixed effects as it is the main variable of interest in this regression.

[12] We also use the natural log of 1+spread percentage as a measure of the cost of loan and the results are qualitatively the same for all regressions.

inside information and better default prediction models, can predict the future distress, it will price such loans at a higher spread.

To examine this, we augment the model specification of regressing loan contract terms in Table 6 by interacting the M&A loan dummy with the firm's distress dummy (capturing the firm's distress risk in the next three years). If the observed more stringent contract terms are driven by higher future default risk, we should expect to see a significant effect on the interaction terms and a less significant effect on the M&A loan dummy. In Table 7, we find that the interaction terms are insignificant, while the estimated coefficients on the M&A loan dummy are similar to those in Table 6 in both economic and statistical significance.[13] This finding suggests that the more stringent contract terms for M&A loans do not reflect the higher future distress risks associated with the borrowers ex post. They rather seem to be M&A-specific, possibly due to the immediate demand for cash from acquirers in M&As and banks' precautionary protection against uncertainty on the borrowers' future increases in leverage after the M&A transactions.

The effect of other control variables are similar to those documented in the literature (e.g., Graham, Li, and Qiu (2008)). Non-price terms of the loan contract are equally important in explaining the cross-sectional variations in loan spreads.[14]. In addition, the performance pricing dummy is negative and significant in explaining the variation in loan spreads.

[13]We also use the average monthly Expected Default Frequency in the next three years as a measure of credit risk and find qualitatively the same results (untabulated).

[14]Studies such as Stulz and Johnson (1985) and others model the collateral decision as one in which higher-quality borrowers signal their confidence by pledging collateral. On the other hand, models of collateral based on risk shifting have riskier borrowers pledging collateral. Empirically, several papers – starting with Berger and Udell (1990) and Jimenez, Salas, and Saurina (2006) – find that collateral has a positive impact on loan rates, which is more consistent with the risk-shifting model than the signaling model of collateral.

3.4 M&A loans for bank-dependent firms

In the previous sub-section, we document that M&A loans have more stringent terms, consistent with greater monitoring of these loans. In this sub-section, we examine differences of contract terms in M&A loans given to bank-dependent firms and non-bank-dependent firms, which is the main focus of this study.

To test this, we augment the model specification of regressing loan contract terms in Table 6 by interacting the M&A loan dummy with the firm's bank dependence (small/unrated) dummies, respectively. If banks hold up bank-dependent firms, we expect the coefficients on the interaction terms to be significantly positive for loan pricing. On the other hand, if there is greater information sharing by bank-dependent firms, and some of these benefits are passed on to the firms, bank-dependent firms may have even lower spreads and less stringent loan contract terms relative to other firms for M&A loans. In other words, due to banks' informational advantage in bank-dependent firms, they may exert a lower level of monitoring through stringent loan contract terms.

Table 8 presents the results. We do not find higher loan pricing or more stringent non-price contract terms for M&A loans to bank-dependent firms than to non-bank-dependent firms. Our results are in the opposite direction - small or unrated firms are granted loans with even fewer covenants and longer maturity. That is, bank-dependent firms are able to enjoy more favorable non-price loan terms, but not at the expense of higher loan pricing.

This evidence suggests that banks do not hold up borrowers that are bank-dependent in an M&A financing setting. This is a fairly novel finding as the financing of an M&A is one where borrowing acquirers may be even more vulnerable to bank expropriation. The fact that bank-dependent firms enjoy even more favorable non-price terms in the loan contracts indicates a less-studied benefit of bank dependence: A substitution between banks' informational advantage and stringency of loan contracting. It is possible that

such a substitution is due precisely to banks' better assessment of risks associated with bank-dependent firms. Greater information sharing from bank-dependent firms reduces the need for monitoring through stringent loan contracts. A long-term relationship with bank-dependent firms would lead to more future businesses for banks, which can also be an underlying consideration for banks to grant these firms more favorable contracts (Bharath, Dahiya, Saunders, and Srinivasan, 2007). For non-bank-dependent firms, the M&A loans are more likely to be transaction-based (instead of information-based) and thus banks may simply impose stringent loan contract terms as precautionary protection against any uncertainty with M&As as discussed above.

3.5 Alternative explanations for the substitutions effect

The previous subsection found that bank dependent firms have less stringent loan contract terms, and we attributed this to a substitution in loan contract stringency and information available about bank dependent firms to their bankers. Here, we conduct a variety of tests to further validate the substitution hypothesis.

3.5.1 Are effects larger for small and unrated firms?

If substitution is the reason for lower loan contract stringency, it should be the case that the effects are larger for more bank dependent firms, within the set of bank dependent firms. We had two variables for bank dependence – unrated and small firms. It is logical to assume that firms that are both unrated as well as small are the most dependent on banks within the subset of firms which are either unrated or small or both. Therefore, we create a new bank dependence variable which takes the value of 1 for a firm that is both small and unrated. Thus, this is a subset of our previous bank dependence variable. For our total sample of 2262 M&A loans for which spread information is available, there are 764 M&A loans which are taken by small and unrated acquirers. We use these firm and redo

the spread and non-price terms regression (Table 9). The results for this sub-sample are even stronger. Apart from the easier non-price terms, small and unrated firms also have a lower spread by around 9 basis points. Thus, firms that are the most bank dependent in our sample have even larger benefits from M&A loan financing, which is further support for the substitution of bank's information for bank loan pricing, as this set of firms are those where the bank's information advantage is the largest.

3.5.2 Bridge Loans

One possible reason that small firms may obtain easier loan contract terms relative to large firms is that large firms may use bridge financing for financing the M&A transaction, and subsequently refinance this with other long term bond or bank financing. Anecdotally, bridge financing is said to have higher fees.[15] This is true in our sample as well, with bridge loans having an unconditional mean spread of 274 basis points as opposed to the overall M&A loan mean value of 206 basis points.

One possible source of bias for our results may therefore be that bridge M&A loans are only available for larger non-bank dependent acquiring firms, in which case, some of our results are driven by the higher spread for such loans. To examine this, we compute the total number of bridge loans in our sample. The total number of bridge loans is quite small – around 161 loans relative to the total M&A loan sample of 2262. Thus, bridge loans only constitute around 7% of the total M&A loans in our sample, consistent with their cost being high and therefore relatively lower usage for such loans.

Next, if we stratify by size or rating, we find that small (unrated) firms have a total of 36 (66) bridge loans, which is significantly lower than the unconditional proportion of M&A loans for small or unrated firms which is close to 50% of the sample. To account for

[15]Source: www.investopedia.com. See also "A view of the bridge: M&A bridge loans explained," by McDermott Will and Emery on www.lexology.com.

this, we add a bridge loan dummy to our baseline empirical specification in Table 6. The results are presented in Table 10, Panel A.

First, bridge loans do have significantly higher spreads – between 42 to 47 basis points, which suggests that the anecdotal evidence on this is justified for our data set. Such loans also tend to have lower maturity, lower collateral, and lower covenants, consistent with notion that they need to be refinanced quickly once the acquisition is completed with longer term issues.

However, from our point of view, the key result is that the easier non-contract terms – lower covenants and longer maturity continue to be present for M&A loans by unrated or small borrowers. Thus, the presence of bridge loans and its possibly differential use by bank dependent borrowers does not impact our results.

3.5.3 Effect of cash

Bates, Kahle, and Stulz (2009) documents that US firms have increased their cash holdings in the last several decades in response to increased cash flow risk. Further, they document that cash holdings of firms with more cash flow risk increased their cash much more. This suggests that cash holdings may be a proxy for underlying credit risk of the firm. Harford, Klasa, and Maxwell (2014) finds that cash holdings mitigate refinancing risk. Acharya, Davydenko, and Strebulaev (2012) also documents that cash may be associate with lower credit risk at short horizons.

For our regressions, the main issue is if bank dependent firms have systematically different cash holdings relative to other firms. Motivated by the above, we add an additional control of cash to total assets of the firm to our spread regression (Table 10, Panel B). Unconditionally, we find a negative association of cash holdings to loan pricing, with an economically large effect – thus, more consistent with risk reduction. Additionally, our results on lower non-price contract terms continue to hold for both unrated and small

firms.

Cash could have a second effect on the pricing of loans. In particular, apart from the unconditional cash holdings, the proportion of a firms cash holdings to the deal value may be relevant. In particular, the deal level slack may be the relevant variable from a lender's perspective. To the extent that a firm can choose to finance an acquisition using its internal cash, a firm may have better power to bargain with a bank for lower spreads. If smaller firms tend to acquire smaller targets (relative to their cash holdings), this could result in easier terms for their loans.

To control for this, we construct a cash to deal value ratio and add it as an additional control in the loan regressions (Table 10, Panel C). The cash to deal value ratio is not as significant as cash itself, both in statistical significance as well as economic magnitude. In addition, the interactive effects of small and unrated with M&A loans continue to be as before.

3.5.4 Future access to bond market

An acquisition mechanically increases the size of a firm which may enable a firm to tap bond markets due to a fixed cost of access to the bond market. This effect is likely to be larger for smaller or unrated firms, relative to large firms which should have access to bond markets even prior to the acquisition. Since bond markets usually provide cheaper financing relative to bank loans, banks may be pricing the lower cost of future debt (and therefore lower risk) of small or unrated firms. This may be one possible reason for the lower spreads for M&A loans for small or unrated firms. On the other hand, if the current M&A loan matures prior to the bond issuance, there should be no impact. An alternate explanation is that the possibility of future bond market access changes the relative bargaining power of the firm relative to its bank. In either case, the less stringent loan contract terms reflect the possibility of future bond market access.

To control for this, we create a dummy variable indicating whether a firm issues at least a bond in the three years after the completion of the acquisition, and add this to the loan spread regression. Results are reported in Panel D of Table 10. Surprisingly, future bond market access has a positive (not negative) effect on spreads. In addition, it also results in more restrictive covenants.[16] Our main effects continue to hold.

3.5.5 Loans made prior to the M&A transaction

One possibility that may drive the results for the bank dependent firms is that such firms already have outstanding loans with restrictive covenants, which makes additional covenants for their M&A loans unnecessary. Hence, the substitution effect that we document is not driven by information, rather by substitution between outstanding loans non-price terms and M&A loan non-price terms. To control for this, we sum up covenants and collateral for all outstanding loans as of the date of initiation of the M&A loan (i.e. have a maturity date later than the date of initiation of the M&A loan), and use this as an additional control for the loan contract regression. Outstanding covenants do have a negative impact on covenants for the current loan, as hypothesized; however, this does not impact our results for bank dependent firms (Table 10, Panel E).

3.5.6 Impact on CAR

The above sub-sections demonstrated that all of the above additional alternative explanations do not alter the principal explanation of our paper - that the bank's information advantage for bank dependent firms leads to less stringent loan contract terms. To ensure the completeness of this argument, we now examine if any of these factors also impact the CAR results for bank dependent firms that we had earlier documented. For example, it is

[16] We do not investigate the reason for why future bond market access may have a positive effect on loan spreads. It may be that firms which have higher spreads have a larger incentive to tap bond market financing.

conceivable that bridge loans have a lower information effect on CAR's due to their short maturity. Likewise, firms that have a lot of cash may not derive much certification benefit from bank financing. Table 11 presents the results of this analysis. Similar to Table 10, the effect of bank dependence on CAR is not impacted by the loan type or other acquirer specific factors. Thus, the CAR results that the market perceives bank financing of bank dependent firms more positively continues to hold.

3.6 Endogeneity of bank financing

As a last alternative explanation of the substitution effect, we examine the potential endogeneity of bank financing can impact our results. For instance, it is possible that banks are more willing to lend to firms with more capable managers, who make better acquisition decisions. However, it is hard to justify why such a relation exists only for bank-dependent firms. Better managers should be able to signal their quality by bank financing, regardless of the firms' bank dependence status. In contrast to what we find, all firms should be able to benefit from the certification effect of bank financing. Hence, we believe such a possible omitted variable bias is less likely to be a serious concern in our setting.

Nonetheless, we conduct a formal test with a Heckman two-stage estimation approach to account for this potential bias. Specifically, we model the choice of bank financing and re-examine its valuation effects on acquisitions. We use two instrument variables (IVs) for bank financing for which both the relevance and exclusion conditions are satisfied. The first IV, following (Agarwal and Hauswald, 2010), is the natural logarithm of the average geographical distance (Ln(Distance)) between the acquirer's headquarter city and all banks in the LPC database. A firm is expected to be more likely to obtain bank financing when it is located closer to banks, but its location should not directly impact its M&A valuation.

The second IV uses the market-level credit condition — specifically, the market-wide tightening in bank lending standards (Credit Tighten). The rationale for using this instru-

ment is that bank financing of M&As is less likely when there is a market-wide contraction in credit supply due to a heightened bank lending standards. Following previous studies (e.g., Lown and Morgan (2002) and Bassett, Chosak, Driscoll, and Zakrajsek (2014)), we identify a tightening in bank lending standards from the Federal Reserve's Senior Loan Officer Opinion Survey of Bank Lending Practices. We use the net fraction of US domestic banks that tighten lending standards (over the previous quarter) for commercial and industrial (C&I) loans to large and middle-sized firms reported by the survey.[17] Banks may tighten their lending standards due to their internal reassessments of the inherent riskiness of their business lines, changes in banking regulations, changes in monetary policy, or changes in industry strategies (Bassett and Zakrajsek, 2003). The market-level credit condition, on the other hand, should not directly affect corporate firms' acquisition performance, especially after controlling for time fixed effects in the estimation.[18]

Table 12 presents the results of the two-stage regression analysis. If BF is endogenous, the interaction terms (BF x Small and BF x Not Rated) may also be endogenous. Following Wooldridge (2001), we construct interaction terms between our IVs and BF as additional IVs for BF x Small and BF x Not Rated. Columns (1) and (2) report the first-stage regression results for BF and BF x Small, respectively. The coefficients on the IVs have the expected sign. The greater the distance between a firm and banks, or the tighter the market-wide lending standards, the less likely is the acquiring firm to secure bank financing. The IVs are statistically significant and the F-values for the first-stage estimation are 11.48 and 13.32, respectively. The first-stage estimations further pass under-identification

[17]The Senior Loan Officer Opinion Survey asks banks about changes in their lending standards with regard to major categories of loans to households and businesses. Specifically, banks are asked to report whether they have changed their lending standards and whether loan demand has changed during the survey period (over the previous three months).

[18]In untabulated results, we also use the non-performing loan ratios on the banks' balance sheets as an alternative measure of credit tightening, and the results are qualitatively the same. We use the ratio of nonperforming loans (past due 90+ days plus nonaccrual) over total loans for all US commercial banks (Nptltl). The data come from the FRED database at the Federal Reserve Bank of Saint Louis.

tests and weak-instrument-robust-inference tests (results not tabulated for brevity). Column (3) reports the second-stage regression results. Consistent with the findings in the OLS regression, we find that the coefficient on the instrumented BF itself is statistically insignificant, and the coefficient on the instrumented BF x Small is positive with a greater economic magnitude than its OLS estimate and is statistically significant.

Columns (4) and (5) report the first-stage regression results for BF and BF x Not Rated. Similar to Columns (1) and (2), the coefficients on the IVs have the expected sign and the first-stage estimation F-values are 11.27 and 12.41, respectively. These first-stage regressions also pass under-identification tests and weak-instrument-robust-inference tests too. Column (6) reports the results from the second-stage regression. They are similar with the results in the case of BF and BF x Small. Overall, the two-stage IV regressions yield findings that are consistent with those obtained from the OLS regressions. We conclude that any potential omitted variable bias is not likely to overturn our main findings.

4 Conclusion

We examine bank financing of corporate M&As, and its associated benefits and costs to borrowing acquirers. Consistent with a certification role of banks in firms' acquisition decisions, we find a positive announcement effect of bank financing of M&As. However, such a positive certification effect exists exclusively for bank-dependent firms. This finding highlights the significance of banks to bank-dependent firms in their decision-making.

More interestingly, while banks monitor corporate M&As by imposing higher loan pricing and more stringent non-price loan terms in M&A financing relative to other types of loans, banks do not hold up their bank-dependent borrowing acquirers more than their non-bank-dependent borrowing acquirers. This is inconsistent with the conventional view that bank-dependent firms are more vulnerable to bank expropriation. Instead, compared to

non-bank-dependent acquirers, bank-dependent acquirers enjoy more favorable non-price terms in the loan contracts, as manifested by longer maturity and fewer covenants. Such favorable contracting is particularly important for bank-dependent firms who are short of alternative financing opportunities and often value flexibility more in their growth. Our study highlights a less well-known benefit of bank dependence: A substitution between banks' informational advantage and stringency of loan contracting. Such a substitution is due very likely to banks' better assessment of risks associated with bank-dependent firms. That is, better information sharing from borrowers reduces the need for bank monitoring through stringent loan contract terms. Our study has thus important policy implications on the importance of banks to bank-dependent firms in their major corporate decision-makings.

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Table 1: Summary statistics – M&A deals characteristics

This table presents the summary statistics of deal characteristics for acquirers. The sample consists of M&A transactions using non-zero cash announced during the January 1, 1990-December 31, 2012 period. The bidders are listed in the Securities Data Company's Mergers and Acquisitions database and have trading data in CRSP and annual financial report data in Compustat. BF is a dummy variable equal to 1 if the deal is financed by banks. NBF is a dummy variable equal to 1 if the deal is not financed by banks. Small is a dummy variable equal to 1 if the bidder has a deflated total asset less than that of the median of sample firms. Not Rated is a dummy variable equal to 1 if the firm does not have a credit rating. Deal Size is the deal value from the SDC. Relative Size is the deal size divided by total assets. Diversify is a dummy variable equal to 1 if the merger does not have the same Fama-French 48 industry code. Tender is a dummy variable equal to 1 if the M&A is a tender offer. Private is a dummy variable equal to 1 for private targets. All-cash is a dummy variable equal to 1 for a purely cash-financed deal. CAR3 denotes the three-day cumulative abnormal return (in percent) measured using a market model. BHAR denotes the three-year buy-and-hold abnormal return difference between sample firm returns and corresponding contemporaneous control firm returns. Significance at the 10%, 5%, and 1% level is indicated by *, **, and ***, respectively. See Appendix A for a detailed definition of all variables used in this table.

Panel A: Deals characteristics for bank financed (BF) deals vs. not bank financed deals (NBF)

	NBF		BF		
	Obs.	mean	Obs.	mean	Diff
Deal Size	5580	330.1	1544	1049.7	-719.6***
Relative size	5580	0.17	1544	0.51	-0.33***
Diversify	5580	0.91	1544	0.85	0.063***
Tender	5580	0.050	1544	0.11	-0.064***
Private	5580	0.50	1544	0.34	0.16***
All-cash	5580	0.55	1544	0.52	0.032**

Panel B: Deal characteristics for bank dependence subgroups

	BF-Large	BF-Small		BF-Rated	BF-Not Rated	
	mean	mean	Diff	mean	mean	Diff
Deal Size	1863.1	177.4	1685.7***	1784.4	535.2	1249.2***
Relative size	0.51	0.50	0.0030	0.49	0.51	-0.023
Diversify	0.78	0.91	-0.13***	0.80	0.88	-0.080***
Tender	0.16	0.068	0.088***	0.13	0.10	0.025
Private	0.22	0.48	-0.26***	0.24	0.41	-0.17***
All-cash	0.53	0.50	0.033	0.50	0.53	-0.033
N of Obs.	799	745		636	908	

Panel C: Short-run and long-run return

	NBF		BF			
	Mean	Median	Mean	Median	Mean Diff	Median Diff
CAR3	0.96***	0.55***	2.05***	1.26***	-1.09***	-0.71***
BHAR	-0.12***	-0.066**	-0.082***	-0.071*	-0.038	0.005

Panel D: Short-run and long-run return vor Large vs. small BF

	BF-Large		BF-Small			
	Mean	Median	Mean	Median	Mean Diff	Median Diff
CAR3	0.78***	0.58*	3.42***	2.36***	-2.64***	-1.78***
BHAR	-0.091**	-0.053	-0.072*	-0.088*	-0.019	0.035

Panel E: Short-run and long-run return for rated vs. not-rated BF

	BF-Rated		BF-Not Rated			
	Mean	Median	Mean	Median	Mean Diff	Median Diff
CAR3	0.80***	0.40	2.93***	2.18***	-2.13***	-1.78***
BHAR	-0.085*	-0.081	-0.080*	-0.067*	-0.005	-0.014

Table 2: Summary statistics – acquirer characteristics

This table presents the summary statistics of firm characteristics for acquirers. The sample consists of M&As using non-zero cash announced during the January 1, 1990-December 31, 2012 period. The bidders are listed in the Securities Data Company's Mergers and Acquisitions database and have trading data in CRSP and annual financial report data in Compustat. BF is a dummy variable equal to 1 if the deal is financed by banks. NBF is a dummy variable equal to 1 if the deal is not financed by banks. Small is a dummy variable equal to 1 if the bidder has a deflated total asset less than that of the median of sample firms. Not Rated is a dummy variable equal to 1 if the firm does not have a credit rating. Total asset is the book value of the assets. Tobin's q is the bidder's market value divided by the book value of the bidder's assets. FreeCF is operating income before depreciation minus interest expenses, income taxes, and capital expenditures, scaled by the book value of total assets. Run-up is bidder's buy-and-hold abnormal return during the period (âĹŠ210, âĹŠ11). Leverage is the book value of debt over total asset. Volatility is the bidder's return volatility over the past three years. Not Rated is a dummy variable equal to 1 if the firm does not have a credit rating. IO is the fraction of the bidder's common stock held by institutional investors. N Analyst is the number of analysts covering the firm. Significance at the 10%, 5%, and 1% level is indicated by *, **, and ***, respectively. See Appendix A for a detailed definition of all variables used in this table.

Panel A: Firm characteristics for bank financed (BF) deals vs. not bank financed deals (NBF)

	NBF		BF		
	Obs.	mean	Obs.	mean	Diff
Total Asset	5580	5867.3	1544	3547.4	2320.0**
Tobin's q	5580	2.04	1544	1.91	0.14***
FreeCF	5580	0.037	1544	0.054	-0.017***
Run-up	5580	-0.022	1544	0.00038	-0.023
Leverage	5580	0.31	1544	0.47	-0.15***
Volatility	5580	0.028	1544	0.025	0.0024***
Not Rated	5580	0.72	1544	0.59	0.13***
IO	5580	0.56	1544	0.60	-0.041***
N Analyst	5580	9.66	1544	9.07	0.59**

Panel B: Firm characteristics for bank dependence subgroups

	BF-Large		BF-Small			BF-Rated		BF-Not Rated		
	Obs.	mean	Obs.	mean	Diff	Obs.	mean	Obs.	mean	Diff
Total Asset	799	6670.5	745	197.8	6472.7***	636	7023.6	908	1112.4	5911.2***
Tobin's q	799	1.72	745	2.10	-0.38***	636	1.69	908	2.06	-0.36***
FreeCF	799	0.057	745	0.050	0.0074	636	0.053	908	0.054	-0.0016
Run-up	799	-0.042	745	0.046	-0.089***	636	-0.0078	908	0.0061	-0.014
Leverage	799	0.52	745	0.40	0.12***	636	0.62	908	0.36	0.26***
Volatility	799	0.021	745	0.031	-0.010***	636	0.022	908	0.028	-0.005***
Not Rated	799	0.33	745	0.86	-0.53***	636	0	908	1	-1
IO	799	0.69	745	0.50	0.19***	636	0.68	908	0.54	0.13***
N Analyst	799	12.6	745	5.22	7.43***	636	11.8	908	7.14	4.68***

Table 3: Summary statistics – loan characteristics

This table presents the summary statistics for loan characteristics. M&A loan is a dummy variable equal to 1 if the loan is issued during the M&A event window (-12 month, deal completion). Small is a dummy variable equal to 1 if the bidder has a deflated total asset less than that of the median of sample firms. Not Rated is a dummy variable equal to 1 if the firm does not have a credit rating. Spread (bps) is measured as the all-in spread drawn from the Dealscan database. All-in spread drawn is defined as the amount the borrower pays in basis points over LIBOR or LIBOR equivalent for each dollar drawn down. Collateral is a dummy variable equal to 1 if the loan facility is secured by collateral and zero otherwise. Maturity is the debt maturity measured in months. Loan Size is the loan facility amount measured in millions dollar. Financial covenant is the number of financial covenants. General covenant is the number of general covenants. All covenant is the number of total covenants. Refinance is a dummy variable equal to 1 if the loan is a refinanced loan. Significance at the 10%, 5%, and 1% level is indicated by *, **, and ***, respectively. See Appendix A for a detailed definition of all variables used in this table.

Panel A: Loan characteristics for M&A loan vs. Not M&A loan

	Not M&A loan		M&A loan		
	Obs.	mean	Obs.	mean	Diff
Spread	40083	194.7	2262	206.1	11.4***
Collateral	53469	0.4	2424	0.6	0.2***
Maturity	49109	46.3	2342	53.8	7.5***
Facility amt	53444	331.2	2424	520.6	189.5***
Financial covenant	53469	0.9	2424	1.9	1.0***
General covenant	53469	1.8	2424	4.5	2.7***
All covenant	53469	2.7	2424	6.4	3.7***

Panel B: Bank dependence subgroups for M&A loan

	MA-Large		MA-Small			MA-Rated		MA-not rated		
	Obs.	mean	Obs.	mean	Diff	Obs.	mean	Obs.	mean	Diff
Spread	1268	183.3	994	235.1	-51.8***	1061	196.3	1201	214.7	-18.4***
Collateral	1350	0.5	1074	0.7	-0.2***	1127	0.6	1297	0.6	-0.1***
Maturity	1300	50.7	1042	57.7	-6.9***	1088	53.4	1254	54.2	-0.8
Loan size	1350	822.2	1074	141.6	680.6***	1127	828.1	1297	253.5	574.6***
Financial covenant	1350	1.7	1074	2.1	-0.4***	1127	1.9	1297	1.9	0.1
General covenant	1350	4.3	1074	4.7	-0.4***	1127	4.9	1297	4.2	0.7***
All covenant	1350	6.0	1074	6.9	-0.9***	1127	6.8	1297	6.0	0.8***

Table 4: Effect of bank financing and bank dependence on acquirers' CAR

This table presents the regression result of short-run performance on bank financing and bank dependence. The dependent variable (CAR3) in all specifications is the abnormal return (in percent) of the acquiring firm in a time window from -1 to +1 day relative to the announcement date of the merger. BF is a merger paid for partly or completely by cash and in which the acquiring firm took a loan from the LPC database during the M&A window (-1yr, completion). Small is a dummy variable equal to 1 if the bidder has a deflated total asset less than that of the median of sample firms. Not Rated is a dummy variable equal to 1 if the firm does not have a credit rating. All models have year fixed effects that are not reported in the table. Significance at the 10%, 5%, and 1% level is indicated by *, **, and ***, respectively. See Appendix A for a detailed definition of all variables used in this table.

	CAR3	CAR3	CAR3	CAR3	CAR3	CAR3
BF	0.87***	0.066	-0.22	0.67**	-0.038	-0.22
	(0.23)	(0.28)	(0.33)	(0.32)	(0.36)	(0.42)
BF x Small		1.61***			1.66***	
		(0.43)			(0.62)	
BF x Not Rated			1.77***			1.59***
			(0.44)			(0.60)
Small		-0.21			-0.14	
		(0.27)			(0.49)	
Not Rated			-0.44*			0.052
			(0.23)			(0.49)
Relative size	1.00***	1.01***	0.99***	1.16***	1.16***	1.12***
	(0.21)	(0.21)	(0.21)	(0.40)	(0.39)	(0.41)
Diversify	0.27	0.27	0.25	-0.23	-0.22	-0.23
	(0.36)	(0.36)	(0.36)	(0.46)	(0.46)	(0.46)
Tender	0.82**	0.83**	0.79**	1.11**	1.08**	1.07**
	(0.38)	(0.38)	(0.38)	(0.51)	(0.50)	(0.50)
Public	-2.19***	-2.15***	-2.17***	-2.38***	-2.28***	-2.34***
	(0.32)	(0.32)	(0.32)	(0.43)	(0.42)	(0.42)
Private	-0.84***	-0.85***	-0.83***	-0.20	-0.20	-0.22
	(0.20)	(0.20)	(0.20)	(0.27)	(0.27)	(0.27)
All-cash	0.11	0.068	0.059	0.23	0.19	0.18
	(0.18)	(0.18)	(0.18)	(0.26)	(0.26)	(0.26)
Ln(Mcap)	-0.39***	-0.36***	-0.39***	-0.54*	-0.50*	-0.52*
	(0.10)	(0.11)	(0.11)	(0.29)	(0.30)	(0.29)
IO	0.053	0.12	0.087	-1.68*	-1.53	-1.58*
	(0.51)	(0.51)	(0.51)	(0.93)	(0.94)	(0.93)
Tobin's q	-0.064	-0.076	-0.063	-0.15	-0.17	-0.16
	(0.092)	(0.094)	(0.094)	(0.21)	(0.21)	(0.21)
FreeCF	1.14	1.02	1.05	-1.03	-0.91	-1.02
	(1.11)	(1.11)	(1.11)	(2.19)	(2.19)	(2.19)
Leverage	0.47*	0.47	0.47	0.074	0.097	0.20
	(0.29)	(0.29)	(0.30)	(0.64)	(0.64)	(0.65)
Volatility	21.6*	22.4*	21.9*	20.2	22.1	22.0
	(12.3)	(12.3)	(12.3)	(21.0)	(21.0)	(21.3)
N Analyst	0.011	0.0093	0.010	-0.0043	-0.0050	-0.0049
	(0.015)	(0.015)	(0.015)	(0.031)	(0.031)	(0.031)
Run-up	-0.30	-0.33*	-0.30	-0.43	-0.44	-0.44
	(0.19)	(0.20)	(0.19)	(0.32)	(0.32)	(0.32)
HHI	-0.29	-0.29	-0.29	0.12	0.12	0.11
	(0.21)	(0.21)	(0.21)	(0.35)	(0.35)	(0.35)
Uniqueness	-0.17	-0.19	-0.16	-0.25	-0.24	-0.23
	(0.27)	(0.27)	(0.27)	(0.48)	(0.48)	(0.48)
Constant	-0.31	-0.33	0.037	3.67**	3.42*	3.30*
	(2.17)	(2.23)	(2.22)	(1.84)	(2.01)	(1.97)
N	7124	7124	7124	7124	7124	7124
adj. R^2	0.051	0.053	0.054	0.035	0.037	0.037

Table 5: Effect of bank financing and bank dependence on acquirers' long-run performance

This table presents the regression results of long-run performance measures on bank financing and bank dependence. BHAR denotes the three-year buy-and-hold abnormal return difference between sample firm returns and corresponding contemporaneous control firm returns. Future Distress is a dummy variable equal to 1 if the firm ever fails into distress in the future 3 years. BF is a merger paid for partly or completely by cash, where the acquiring firm secured a loan from the LPC database during the M&A window (-1yr, completion). Small is a dummy variable equal to 1 if the bidder has a deflated total asset less than that of the median of sample firms. Not Rated is a dummy variable equal to 1 if the firm does not have a credit rating. All models have year fixed effects that are not reported in the table. Significance at the 10%, 5%, and 1% level is indicated by *, **, and ***, respectively. See Appendix A for a detailed definition of all variables used in this table.

	BHAR	F_distress	BHAR	F_distress
BF	0.029	0.50	-0.044	0.70
	(0.055)	(0.45)	(0.068)	(0.44)
BF x Small	-0.019	-0.60		
	(0.10)	(0.60)		
BF x Not Rated			0.12	-0.96*
			(0.094)	(0.58)
Small	0.11	0.30		
	(0.085)	(0.49)		
Not Rated			0.049	0.43
			(0.082)	(0.51)
Relative size	-0.018	0.58	0.0033**	0.59
	(0.035)	(0.40)	(0.035)	(0.40)
Diversify	-0.039	-0.29	-0.040	-0.23
	(0.072)	(0.59)	(0.072)	(0.60)
Tender	0.067	0.11	0.063	0.028
	(0.083)	(0.59)	(0.082)	(0.59)
Public	-0.065	-0.31	-0.063	-0.27
	(0.072)	(0.58)	(0.072)	(0.59)
Private	0.012	-0.24	0.0093	-0.24
	(0.048)	(0.33)	(0.048)	(0.32)
All cash	0.0079	-0.11	0.0039	-0.13
	(0.045)	(0.29)	(0.045)	(0.29)
Ln(Mcap)	-0.50***	0.56**	-0.51***	0.61**
	(0.052)	(0.27)	(0.050)	(0.27)
IO	0.065	2.34**	0.067	2.26**
	(0.17)	(1.14)	(0.17)	(1.14)
Tobin's q	-0.0070	0.11	-0.0068***	0.11
	(0.026)	(0.18)	(0.025)	(0.18)
FreeCF	-0.11	-4.36**	-0.11	-4.54**
	(0.38)	(1.78)	(0.38)	(1.80)
Leverage	-0.030	-0.14	-0.034	-0.15
	(0.12)	(0.57)	(0.12)	(0.57)
Volatility	-0.042	1.75	0.18	5.23
	(3.63)	(13.1)	(3.63)	(13.1)
N Analyst	-0.0073	-0.012	-0.0081	-0.010
	(0.0055)	(0.036)	(0.0055)	(0.036)
Run-up	-0.11***	-0.43	-0.11**	-0.43
	(0.044)	(0.27)	(0.043)	(0.27)
HHI	-0.18**	-1.33***	-0.18**	-1.33***
	(0.086)	(0.45)	(0.085)	(0.44)
Uniqueness	-0.15	-0.24	-0.15	-0.19
	(0.11)	(0.59)	(0.12)	(0.59)
Constant	2.92***		2.99***	
	(0.36)		(0.37)	
N	6813	738	6813	738
adj. R^2	0.090		0.090	
pseudo R^2		0.470		0.473

Table 6: Effect of M&A financing on loan contract terms

This table presents the regression results of loan contracts terms on M&A loan. The dependent variable in each regression is reported at the top of the column. Spread (bps) is measured as the all-in spread drawn from the Dealscan database. Collateral is a dummy variable equal to 1 if the loan facility is secured by collateral and zero otherwise. Maturity is the debt maturity measured in months. Fin Cov is the number of financial covenants. Gen Cov is the number of general covenants. All Cov is the total number of covenants. M&A loan is a dummy variable equal to 1 if the loan is issued during the M&A event window (-12 month, deal completion). All models have firm, year, loan type and loan purpose fixed effects that are not reported in the table. We run OLS regression for the spread and maturity, a logit model for collateral, and a Poisson model for three covenant measures. Standard errors are clustered at the firm level and reported in parentheses. Significance at the 10%, 5%, and 1% level is indicated by *, **, and ***, respectively. See Appendix A for a detailed definition of all variables used in this table.

	Spread	Collateral	Ln(maturity)	Fin Cov	Gen Cov	All Cov
M&A Loan	13.5***	0.53***	-0.046***	0.15***	0.19***	0.18***
	(2.87)	(0.082)	(0.016)	(0.024)	(0.016)	(0.014)
Tangibility	-1.84	-0.69***	0.093**	-0.087	0.14**	0.070
	(8.44)	(0.23)	(0.044)	(0.085)	(0.060)	(0.049)
Profitability	-229.8***	-3.32***	0.30***	-0.0059	-0.57***	-0.36***
	(8.92)	(0.27)	(0.047)	(0.085)	(0.066)	(0.052)
Current ratio	-3.30***	-0.030**	0.0048**	-0.0050	-0.0064**	-0.0060***
	(0.46)	(0.012)	(0.0024)	(0.0037)	(0.0026)	(0.0021)
Asset maturity	0.024	0.0012*	-0.000063	0.0000063	-0.00019	-0.00014
	(0.022)	(0.00065)	(0.00011)	(0.00026)	(0.00013)	(0.00012)
Ln(asset)	-12.6***	-0.43***	0.0046	-0.049***	-0.0076	-0.021***
	(1.28)	(0.035)	(0.0067)	(0.013)	(0.0088)	(0.0072)
Book-to-Market	1.58***	0.21***	-0.00059	0.0062***	0.0070***	0.0066***
	(0.20)	(0.026)	(0.00097)	(0.0020)	(0.0013)	(0.0011)
Leverage	30.6***	0.32***	-0.054***	0.027	0.061***	0.050***
	(2.89)	(0.077)	(0.015)	(0.027)	(0.018)	(0.015)
Ln(loansize)	-14.2***	-0.19***	0.047***	-0.017***	0.061***	0.035***
	(0.66)	(0.017)	(0.0033)	(0.0065)	(0.0046)	(0.0038)
Perform-pricing	-25.0***	1.30***	0.082***	0.87***	0.87***	0.87***
	(1.43)	(0.042)	(0.0076)	(0.014)	(0.0095)	(0.0078)
Credit Spread	42.6***	0.25**	-0.070***	0.095***	0.11***	0.11***
	(3.47)	(0.098)	(0.017)	(0.032)	(0.023)	(0.019)
Term Spread	17.8***	0.034	-0.020	0.096***	0.026	0.050***
	(2.33)	(0.066)	(0.012)	(0.023)	(0.017)	(0.013)
Constant	317.7***		3.65***			
	(9.72)		(0.051)			
adj. R^2	0.125		0.242			
pseudo R^2		0.157				
N	33127	27097	38146	33316	32439	34888

Table 7: Do the more stringent M&A loan contract terms reflect the change in distress risk?

This table presents the regression results of loan contracts terms on M&A loan interacted with future distress. The dependent variable in each regression is reported at the top of the column. Spread (bps) is measured as the all-in spread drawn from the Dealscan database. Collateral is a dummy variable equal to 1 if the loan facility is secured by collateral and zero otherwise. Maturity is the debt maturity measured in months. Fin Cov is the number of financial covenants. Gen Cov is the number of general covenants. All Cov is the total number of covenants. M&A loan is a dummy variable equal to 1 if the loan is issued during the M&A event window (-12 month, deal completion). Future Distress is a dummy variable equal to 1 if the firm ever fails into distress in the future 3 years. All models have firm, year, loan type and loan purpose fixed effects that are not reported in the table. We run OLS regression for the spread and maturity, a logit model for collateral, and a Poisson model for three covenant measures. Standard errors are clustered at the firm level and reported in parentheses. Significance at the 10%, 5%, and 1% level is indicated by *, **, and ***, respectively. See Appendix A for a detailed definition of all variables used in this table.

	Spread	Collateral	Ln(maturity)	Fin Cov	Gen Cov	All Cov
M&A Loan	16.3***	0.56***	-0.074***	0.15***	0.21***	0.20***
	(3.18)	(0.096)	(0.018)	(0.029)	(0.019)	(0.016)
Future Distress	-2.14	0.20***	-0.025*	0.028	0.040**	0.035***
	(2.45)	(0.066)	(0.013)	(0.023)	(0.016)	(0.013)
M&A Loan x Future Distress	-0.22	0.13	0.061*	0.054	0.0045	0.021
	(6.65)	(0.19)	(0.037)	(0.052)	(0.035)	(0.029)
Tangibility	-11.0	-0.15	0.18***	-0.073	0.073	0.029
	(9.25)	(0.27)	(0.050)	(0.096)	(0.067)	(0.055)
Profitability	-224.6***	-3.57***	0.28***	0.036	-0.51***	-0.31***
	(9.69)	(0.32)	(0.053)	(0.094)	(0.074)	(0.058)
Current ratio	-3.09***	-0.038***	0.0033	-0.0060	-0.009***	-0.008***
	(0.50)	(0.014)	(0.0027)	(0.0040)	(0.0030)	(0.0024)
Asset maturity	0.0025	0.00023	0.000009	-0.0003	-0.001***	-0.001***
	(0.023)	(0.00071)	(0.00012)	(0.00037)	(0.00017)	(0.00015)
Ln(asset)	-11.9***	-0.45***	0.0011	-0.055***	-0.0069	-0.022***
	(1.41)	(0.040)	(0.0075)	(0.014)	(0.0099)	(0.0081)
Book-to-Market	8.35***	0.23***	-0.015***	0.013***	0.019***	0.017***
	(0.58)	(0.031)	(0.0033)	(0.0036)	(0.0026)	(0.0021)
Leverage	29.5***	0.32***	-0.070***	0.055*	0.061***	0.058***
	(3.09)	(0.086)	(0.017)	(0.029)	(0.020)	(0.017)
Ln(loansize)	-13.3***	-0.18***	0.057***	-0.017**	0.064***	0.037***
	(0.72)	(0.020)	(0.0038)	(0.0071)	(0.0052)	(0.0042)
Perform-pricing	-23.5***	1.26***	0.080***	0.84***	0.85***	0.85***
	(1.53)	(0.047)	(0.0084)	(0.015)	(0.010)	(0.0085)
Credit Spread	41.3***	0.16	-0.071***	0.092**	0.12***	0.11***
	(3.87)	(0.12)	(0.021)	(0.037)	(0.026)	(0.022)
Term Spread	17.3***	0.0060	-0.017	0.10***	0.042**	0.063***
	(2.53)	(0.075)	(0.014)	(0.025)	(0.018)	(0.015)
Constant	309.4***		3.66***			
	(10.3)		(0.055)			
adj. R^2	0.113		0.248			
pseudo R^2		0.165				
N	27040	21070	30183	27432	26724	28645

Table 8: Effect of M&A financing on loan contract terms – bank dependence subgroups

This table presents the regression results for the effect of M&A financing on loan contract terms within bank dependence subgroups. The dependent variable in each regression is reported at the top of the column. Spread (bps) is measured as the all-in spread drawn from the Dealscan database. Collateral is a dummy variable equal to 1 if the loan facility is secured by collateral and zero otherwise. Maturity is the debt maturity measured in months. Fin Cov is the number of financial covenants. Gen Cov is the number of general covenants. All Cov is the total number of covenants. M&A loan is a dummy variable equal to 1 if the loan is issued during the M&A event window (-12 month, deal completion). Small is a dummy variable equal to 1 if the bidder has a deflated total asset less than that of the median of sample firms. Not Rated is a dummy variable equal to 1 if the firm does not have a credit rating. All models have firm, year, loan type and loan purpose fixed effects that are not reported in the table. We run OLS regressions for spread and maturity, logit model for collateral, and Poisson model for three covenant measures. Standard errors are clustered at the firm level and reported in parentheses. Significance at the 10%, 5%, and 1% level is indicated by *, **, and ***, respectively. See Appendix A for a detailed definition of all variables used in this table.

	Spread	Collateral	Ln(maturity)	Fin Cov	Gen Cov	All Cov
Panel A: Small vs. Large firm loan						
M&A Loan	17.0***	0.51***	-0.14***	0.19***	0.26***	0.24***
	(3.66)	(0.11)	(0.020)	(0.034)	(0.022)	(0.018)
Small	-2.71	0.042	-0.029	0.034	0.026	0.029
	(3.90)	(0.10)	(0.021)	(0.033)	(0.023)	(0.019)
M&A Loan x Small	-3.42	0.048	0.20***	-0.094**	-0.089***	-0.094***
	(4.94)	(0.15)	(0.027)	(0.041)	(0.027)	(0.023)
Firm characteristics	Y	Y	Y	Y	Y	Y
Loan characteristics	Y	Y	Y	Y	Y	Y
adj. R^2	0.236		0.326			
pseudo R^2		0.172				
N	17245	15181	19169	18899	18893	19505
panel B: Rated vs. Not rated firm loan						
M&A Loan	16.8***	0.56***	-0.100***	0.18***	0.22***	0.21***
	(3.83)	(0.11)	(0.021)	(0.032)	(0.021)	(0.017)
Not Rated	0.81	-0.25***	-0.036***	-0.086***	-0.020	-0.034***
	(2.39)	(0.064)	(0.012)	(0.023)	(0.015)	(0.013)
M&A Loan x Not Rated	-6.50	-0.053	0.11***	-0.056	-0.068**	-0.068***
	(5.05)	(0.15)	(0.028)	(0.041)	(0.027)	(0.023)
Firm characteristics	Y	Y	Y	Y	Y	Y
Loan characteristics	Y	Y	Y	Y	Y	Y
adj. R^2	0.125		0.243			
pseudo R^2		0.158				
N	33127	27097	38146	33316	32439	34888

Table 9: Effect of M&A financing on loan contract terms – small x NR

This table presents the regression results for the effect of M&A financing on loan contract terms within bank dependence subgroups. The dependent variable in each regression is reported at the top of the column. Spread (bps) is measured as the all-in spread drawn from the Dealscan database. Collateral is a dummy variable equal to 1 if the loan facility is secured by collateral and zero otherwise. Maturity is the debt maturity measured in months. Fin Cov is the number of financial covenants. Gen Cov is the number of general covenants. All Cov is the total number of covenants. M&A loan is a dummy variable equal to 1 if the loan is issued during the M&A event window (-12 month, deal completion). Small is a dummy variable equal to 1 if the bidder has a deflated total asset less than that of the median of sample firms. Not Rated is a dummy variable equal to 1 if the firm does not have a credit rating. All models have firm, year, loan type and loan purpose fixed effects that are not reported in the table. We run OLS regressions for spread and maturity, logit model for collateral, and Poisson model for three covenant measures. Standard errors are clustered at the firm level and reported in parentheses. Significance at the 10%, 5%, and 1% level is indicated by *, **, and ***, respectively. See Appendix A for a detailed definition of all variables used in this table.

	CAR3	Spread	Collateral	Ln(maturity)	Fin Cov	Gen Cov	All Cov
BF	0.13						
	(0.36)						
BF x SmallNR	1.41**						
	(0.65)						
SmallNR	0.031	-3.27	-0.21**	-0.085***	-0.018	-0.046**	-0.035*
	(0.50)	(3.65)	(0.099)	(0.020)	(0.032)	(0.023)	(0.019)
MALoan		19.0***	0.60***	-0.11***	0.19***	0.27***	0.25***
		(3.44)	(0.11)	(0.019)	(0.031)	(0.021)	(0.017)
SmallNR x MALoan		-9.97*	-0.090	0.19***	-0.092**	-0.092***	-0.099***
		(5.23)	(0.15)	(0.029)	(0.043)	(0.030)	(0.024)
Deal characteristics	Y						
Firm characteristics	Y	Y	Y	Y	Y	Y	Y
Loan characteristics		Y	Y	Y	Y	Y	Y

Table 10: Alternative explanations for the substitution effect on loan contract terms

This table presents the regression results for the effect of M&A financing on loan contract terms within bank dependence subgroups. The dependent variable in each regression is reported at the top of the column. Spread (bps) is measured as the all-in spread drawn from the Dealscan database. Collateral is a dummy variable equal to 1 if the loan facility is secured by collateral and zero otherwise. Maturity is the debt maturity measured in months. Fin Cov is the number of financial covenants. Gen Cov is the number of general covenants. All Cov is the total number of covenants. M&A loan is a dummy variable equal to 1 if the loan is issued during the M&A event window (-12 month, deal completion). Small is a dummy variable equal to 1 if the bidder has a deflated total asset less than that of the median of sample firms. Not Rated is a dummy variable equal to 1 if the firm does not have a credit rating. All models have firm, year, loan type and loan purpose fixed effects that are not reported in the table. We run OLS regressions for spread and maturity, logit model for collateral, and Poisson model for three covenant measures. Standard errors are clustered at the firm level and reported in parentheses. Significance at the 10%, 5%, and 1% level is indicated by *, **, and ***, respectively. See Appendix A for a detailed definition of all variables used in this table.

Panel A: Bridge loans

	Spread	Collateral	Ln(maturity)	Fin Cov	Gen Cov	All Cov
Small	-1.27	-0.071	-0.023	0.0068	0.040*	0.028
	(3.83)	(0.11)	(0.019)	(0.033)	(0.023)	(0.019)
MALoan	16.7***	0.56***	-0.048***	0.19***	0.27***	0.25***
	(3.67)	(0.11)	(0.018)	(0.035)	(0.022)	(0.019)
Small x MALoan	-5.36	0.11	0.12***	-0.050	-0.070**	-0.068***
	(4.91)	(0.15)	(0.024)	(0.041)	(0.028)	(0.023)
Bridge Loan	42.1***	-1.05***	-1.70***	-0.27***	0.031	-0.044
	(5.35)	(0.15)	(0.026)	(0.059)	(0.034)	(0.029)
	Spread	Collateral	Ln(maturity)	Fin Cov	Gen Cov	All Cov
Not Rated	1.03	-0.18***	-0.013	-0.085***	-0.0088	-0.026**
	(2.39)	(0.066)	(0.011)	(0.024)	(0.016)	(0.013)
MALoan	15.1***	0.63***	-0.025	0.19***	0.24***	0.23***
	(3.82)	(0.11)	(0.019)	(0.032)	(0.021)	(0.018)
Not Rated x MALoan	-5.28	-0.098	0.062**	-0.063	-0.077***	-0.077***
	(5.01)	(0.15)	(0.025)	(0.041)	(0.027)	(0.023)
Bridge Loan	47.8***	-0.77***	-1.67***	-0.27***	0.031	-0.040*
	(4.28)	(0.11)	(0.021)	(0.049)	(0.027)	(0.024)

Panel B: Cash holding

	Spread	Collateral	Ln(maturity)	Fin Cov	Gen Cov	All Cov
Small	-1.35	-0.069	-0.023	0.0067	0.039*	0.028
	(3.83)	(0.11)	(0.019)	(0.033)	(0.023)	(0.019)
MALoan	16.7***	0.57***	-0.048***	0.19***	0.27***	0.25***
	(3.67)	(0.11)	(0.018)	(0.035)	(0.022)	(0.019)
Small x MALoan	-5.36	0.11	0.12***	-0.050	-0.069**	-0.068***
	(4.91)	(0.15)	(0.024)	(0.041)	(0.028)	(0.023)
Cash	-27.3**	-0.056	0.091	0.17	-0.081	0.0032
	(12.4)	(0.36)	(0.060)	(0.12)	(0.087)	(0.069)
	Spread	Collateral	Ln(maturity)	Fin Cov	Gen Cov	All Cov
Not Rated	0.87	-0.18***	-0.013	-0.085***	-0.0093	-0.026**
	(2.39)	(0.066)	(0.011)	(0.024)	(0.016)	(0.013)
MALoan	15.1***	0.63***	-0.025	0.19***	0.24***	0.23***
	(3.82)	(0.11)	(0.019)	(0.032)	(0.021)	(0.018)
Not Rated x MALoan	-5.13	-0.097	0.062**	-0.063	-0.076***	-0.076***
	(5.01)	(0.15)	(0.025)	(0.041)	(0.027)	(0.023)
Cash	-33.6***	-0.044	0.035	-0.031	-0.17***	-0.13**
	(9.13)	(0.25)	(0.044)	(0.092)	(0.064)	(0.052)

Table 10 – Continued

Panel C: Cash to deal value ratio

	Spread	Collateral	Ln(maturity)	Fin Cov	Gen Cov	All Cov
Small	-1.18	-0.071	-0.022	0.0076	0.039*	0.028
	(3.83)	(0.11)	(0.019)	(0.033)	(0.023)	(0.019)
MALoan	18.1***	0.59***	-0.038**	0.20***	0.27***	0.25***
	(3.77)	(0.12)	(0.019)	(0.035)	(0.023)	(0.019)
Small x MALoan	-5.33	0.11	0.12***	-0.050	-0.069**	-0.068***
	(4.91)	(0.15)	(0.024)	(0.041)	(0.028)	(0.023)
Cash/Deal Value Ratio	-3.85	-0.056	-0.024**	-0.022	0.017	0.0032
	(2.37)	(0.066)	(0.011)	(0.020)	(0.013)	(0.011)
	Spread	Collateral	Ln(maturity)	Fin Cov	Gen Cov	All Cov
Not Rated	0.95	-0.18***	-0.013	-0.085***	-0.0085	-0.026**
	(2.39)	(0.066)	(0.011)	(0.024)	(0.016)	(0.013)
MALoan	16.8***	0.65***	-0.017	0.20***	0.24***	0.23***
	(3.90)	(0.12)	(0.020)	(0.033)	(0.021)	(0.018)
Not Rated x MALoan	-4.98	-0.098	0.063**	-0.060	-0.078***	-0.077***
	(5.01)	(0.15)	(0.025)	(0.041)	(0.027)	(0.023)
Cash/Deal Value Ratio	-4.89**	-0.048	-0.022*	-0.021	0.013	0.00050
	(2.45)	(0.066)	(0.012)	(0.020)	(0.013)	(0.011)

Panel D: Future access to bond market

	Spread	Collateral	Ln(maturity)	Fin Cov	Gen Cov	All Cov
Small	-0.87	-0.074	-0.039*	0.0051	0.039*	0.027
	(3.84)	(0.10)	(0.021)	(0.033)	(0.023)	(0.019)
MALoan	19.0***	0.49***	-0.15***	0.17***	0.27***	0.25***
	(3.67)	(0.11)	(0.020)	(0.034)	(0.022)	(0.019)
Small x MALoan	-7.79	0.16	0.22***	-0.039	-0.073***	-0.067***
	(4.91)	(0.15)	(0.027)	(0.041)	(0.028)	(0.023)
Bond Market Access in 3 year	6.46*	-0.069	0.050***	0.079**	0.089***	0.082***
	(3.46)	(0.100)	(0.018)	(0.037)	(0.025)	(0.020)
	Spread	Collateral	Ln(maturity)	Fin Cov	Gen Cov	All Cov
Not Rated	3.59	-0.20***	-0.019	-0.078***	0.0022	-0.016
	(2.49)	(0.068)	(0.013)	(0.024)	(0.016)	(0.013)
MALoan	17.1***	0.59***	-0.100***	0.18***	0.24***	0.23***
	(3.82)	(0.11)	(0.021)	(0.032)	(0.021)	(0.018)
Not Rated x MALoan	-6.80	-0.080	0.100***	-0.057	-0.081***	-0.079***
	(5.02)	(0.15)	(0.028)	(0.041)	(0.027)	(0.023)
Bond Market Access in 3 year	8.81***	-0.073	0.033**	0.045	0.057***	0.053***
	(2.89)	(0.080)	(0.015)	(0.030)	(0.020)	(0.017)

Panel E: Outstanding loan contract terms

	Spread	Collateral	Ln(maturity)	Fin Cov	Gen Cov	All Cov
Small	-0.91	-0.068	-0.041*	0.012	0.041*	0.031
	(3.84)	(0.11)	(0.021)	(0.033)	(0.023)	(0.019)
MALoan	19.3***	0.48***	-0.15***	0.18***	0.27***	0.25***
	(3.67)	(0.11)	(0.020)	(0.034)	(0.022)	(0.019)
Small x MALoan	-7.89	0.17	0.22***	-0.040	-0.074***	-0.069***
	(4.92)	(0.15)	(0.027)	(0.041)	(0.028)	(0.023)
Outstanding Collateral	3.35	-0.33***	0.063***	-0.069**	0.038*	-0.00070
	(2.93)	(0.080)	(0.016)	(0.028)	(0.020)	(0.017)
Outstanding Fin Cov	1.26	-0.064*	-0.0059	-0.046***	0.030***	0.0040
	(1.67)	(0.037)	(0.0091)	(0.010)	(0.0080)	(0.0063)
Outstanding Gen Cov	-0.51	0.011	0.0062*	-0.00023	-0.030***	-0.021***
	(0.59)	(0.017)	(0.0032)	(0.0052)	(0.0037)	(0.0030)

Table 10 – Continued

	Spread	Collateral	Ln(maturity)	Fin Cov	Gen Cov	All Cov
Not Rated	1.55	-0.20***	-0.026**	-0.092***	-0.013	-0.032**
	(2.40)	(0.066)	(0.013)	(0.024)	(0.016)	(0.013)
MALoan	17.2***	0.58***	-0.100***	0.19***	0.24***	0.23***
	(3.82)	(0.11)	(0.021)	(0.032)	(0.021)	(0.018)
Not Rated x MALoan	-6.05	-0.12	0.11***	-0.068*	-0.092***	-0.091***
	(5.03)	(0.15)	(0.028)	(0.041)	(0.027)	(0.023)
Outstanding Collateral	3.29	-0.51***	0.050***	-0.0010	0.078***	0.044***
	(2.23)	(0.059)	(0.012)	(0.022)	(0.016)	(0.013)
Outstanding Fin Cov	0.34	-0.059**	-0.0016	-0.072***	0.037***	-0.0026
	(1.34)	(0.028)	(0.0073)	(0.0081)	(0.0064)	(0.0050)
Outstanding Gen Cov	-0.093	0.020	0.0027	-0.0033	-0.045***	-0.031***
	(0.48)	(0.013)	(0.0026)	(0.0041)	(0.0029)	(0.0024)

Table 11: Alternative explanations for the substitution effect on CAR

This table presents the regression result of short-run performance on bank financing and bank dependence. The dependent variable (CAR3) in all specifications is the abnormal return (in percent) of the acquiring firm in a time window from -1 to +1 day relative to the announcement date of the merger. BF is a merger paid for partly or completely by cash and in which the acquiring firm took a loan from the LPC database during the M&A window (-1yr, completion). Small is a dummy variable equal to 1 if the bidder has a deflated total asset less than that of the median of sample firms. Not Rated is a dummy variable equal to 1 if the firm does not have a credit rating. All models have year fixed effects that are not reported in the table. Significance at the 10%, 5%, and 1% level is indicated by *, **, and ***, respectively. See Appendix A for a detailed definition of all variables used in this table.

Panel A: Bridge loans

	CAR3	CAR3	CAR3
BF	0.89***	0.21	-0.12
	(0.34)	(0.40)	(0.45)
Small		-0.100	
		(0.50)	
Not Rated			0.095
			(0.49)
BF x Small		1.51**	
		(0.65)	
BF x Not Rated			1.72***
			(0.62)
Bridge Loan Financed	-1.74**	-1.46	-0.67
	(0.81)	(0.90)	(1.02)
Bridge Loan Financed x Small		-0.14	
		(2.19)	
Bridge Loan Financed x Not Rated			-2.29
			(1.87)

Panel B: Cash holding

	CAR3	CAR3	CAR3
BF	0.66**	-0.046	-0.21
	(0.32)	(0.36)	(0.42)
BF x Small		1.66***	
		(0.62)	
BF x Not Rated			1.58***
			(0.60)
Small		-0.17	
		(0.49)	
Not Rated			0.056
			(0.49)
Cash	-0.035	-0.024	0.095
	(1.34)	(1.34)	(1.34)

Table 11 – Continued

Panel C: Cash to deal value ratio			
	CAR3	CAR3	CAR3
BF	0.65**	-0.060	-0.22
	(0.32)	(0.36)	(0.42)
BF x Small		1.67***	
		(0.62)	
BF x Not Rated			1.58***
			(0.60)
Small		-0.17	
		(0.50)	
Not Rated			0.050
			(0.49)
Cash/Deal Value Ratio	-0.016	-0.016	-0.015
	(0.014)	(0.014)	(0.014)

Panel D: Future access to bond market			
	CAR3	CAR3	CAR3
BF	0.64**	-0.070	-0.21
	(0.32)	(0.36)	(0.42)
BF x Small		1.65***	
		(0.62)	
BF x Not Rated			1.51**
			(0.60)
Small		-0.10	
		(0.49)	
Not Rated			0.25
			(0.49)
Bond Market Access in 3 year	1.31**	1.32**	1.38***
	(0.52)	(0.52)	(0.53)

Panel E: Outstanding loan contract terms			
	CAR3	CAR3	CAR3
BF	0.73**	0.0051	-0.14
	(0.33)	(0.38)	(0.43)
BF x Small		1.66***	
		(0.62)	
BF x Not Rated			1.54**
			(0.60)
Small		-0.18	
		(0.50)	
Not Rated			0.041
			(0.49)
Outstanding Collateral	-0.48	-0.59	-0.50
	(0.57)	(0.58)	(0.57)
Outstanding Fin Cov	0.13	0.14	0.100
	(0.24)	(0.24)	(0.24)
Outstanding Gen Cov	-0.079	-0.042	-0.041
	(0.11)	(0.11)	(0.11)

Table 12: Endogeneity of bank financing decision

This table presents the two-stage least square regression results of short-run performance on bank financing and bank dependence. Ln(Distance) and Credit Tighten are instrumental variables. Ln(Distance) is the natural logarithm of average geographical distance between the acquirers and all banks in the region in which the acquirers' headquarters is located. Credit Tighten is tightening in bank lending standards at the market level. The dependent variable in each regression is reported at the top of the column. All models have year fixed effects that are not reported in the table. Standard errors are reported in parentheses. Significance at the 10%, 5%, and 1% level is indicated by *, **, and ***, respectively. See Appendix A for a detailed definition of all variables used in this table.

	First stage		Second stage	First stage		Second stage
	BF	BFxSmall	CAR3	BF	BFxNot Rated	CAR3
BF			-2.74			-11.5
			(4.17)			(16.2)
BF x Small			8.12*			
			(4.52)			
BF x Not Rated						15.6**
						(7.97)
Ln(Distance)	-0.12***	0.047		-0.053	0.017	
	(0.042)	(0.030)		(0.059)	(0.047)	
Credit Tighten	0.00035	0.00017		0.00033	0.000076	
	(0.00030)	(0.00021)		(0.00038)	(0.00030)	
Ln(Distance) x Small	-0.058	-0.26***				
	(0.056)	(0.040)				
Ln(Distance) x Not Rated				-0.12*	-0.22***	
				(0.067)	(0.053)	
Credit Tighten x Small	-0.00073*	-0.00042				
	(0.00042)	(0.00030)				
Credit Tighten x Not Rated				-0.00048	-0.00020	
				(0.00045)	(0.00036)	
Small	0.54	2.31***	-1.74	0.095***	0.093***	-0.025
	(0.44)	(0.31)	(1.12)	(0.014)	(0.012)	(0.47)
Not Rated				0.91*	1.92***	-4.34
				(0.53)	(0.42)	(4.21)
Firm characteristics	Y	Y	Y	Y	Y	Y
Deal characteristics	Y	Y	Y	Y	Y	Y
adj. R^2	0.112	0.175	0.006	0.114	0.141	-0.139
F-value	11.48	13.32		11.27	12.41	
N	7073	7073	7073	7073	7073	7073

Appendices

A Definitions of variables

A.1 KEY VARIABLES USED IN THE EMPIRICAL ANALYSIS

- *BF*: Dummy variable: 1 if there is at least one loan issued during (-12 month, deal completion) the M&A event window.
- *BHAR*: Denotes the three-year buy-and-hold abnormal returns difference between sample firm returns and corresponding contemporaneous control firm returns.
- *CAR3*: Denotes the three-day cumulative abnormal return (in percent) measured using market model residuals.
- *Collateral*: A dummy variable that equals one if the loan facility is secured by collateral and zero otherwise.
- *Covenant*: Number of Covenants is the total number of covenants included in the debt agreement. Number of General (Financial) Covenants is the total number of general (financial) covenants in the debt agreement.
- *Distress*: Defined by the default probability estimated using the Black-Scholes-Merton option-pricing model. For each month, the default probability is estimated and if, over at least six months of a certain year, the default probability is equal to or higher than the 90th percentile, that year is defined as a distress year. At the end of this process, each rm year when the rm has sufficient trading and accounting data available is either classified as distressed (Distress=1) or not distressed (Distress=0).
- *Future Distress*: Dummy variable: 1 if the firm ever fails into distress in the future 3 years.
- *Ln(Distance)*: The log of mean geographic distance between firm headquarters and all the banks in the LPC dataset.
- *Credit Tighten*: The net fraction of US domestic banks that tighten lending standards (over the previous quarter) for commercial and industrial (C&I) loans to large and middle-sized firms reported by the survey (Federal Reserve's Senior Loan Officer Opinion Survey of Bank Lending Practices).
- *Ln(Maturity)*: The natural log of the loan maturity. Maturity is measured in months.
- *M&A loan*: Dummy variable: 1 if the loan is issued during the M&A event window(-12 month, deal completion).
- *Not Rated*: Dummy variable: 1 if the firm does not have a credit rating.
- *Small*: Dummy variable equal to one if the acquirer has a deflated total asset equal to or less than that of the median of all firms in the sample.
- *SmallNR*: Dummy variable equal to one if the acquirer is Small and NR.
- *Spread* : Measured as the all-in spread drawn from the Dealscan database. All-in spread drawn is defined as the amount the borrower pays in basis points over LIBOR or LIBOR equivalent for each dollar drawn down. (For loans not based on LIBOR, LPC converts the spread into LIBOR terms by adding or subtracting a differential that is adjusted periodically.) This measure adds the borrowing spread of the loan over LIBOR to any annual fee paid to the bank group.

A.2 OTHER CONTROL VARIABLES USED

- *All-cash*: Dummy variable: 1 for purely cash-financed deals, 0 otherwise.
- *Bond Market Access in 3 year*: Dummy variable: 1 if the firm issues at least one bond in the three years after M&A, 0 otherwise.
- *Bridge Loan*: Dummy variable: 1 for loan type is bridge loan, 0 otherwise.
- *Cash*: Cash and short-term investment scaled by total asset.
- *Cash/Deal Value Ratio*: Cash and short-term investment scaled by the deal size.
- *Credit Spread*: The difference between the BAA corporate bond yield and the AAA corporate bond yield. (Data source: Federal Reserve Board of Governors.)
- *Diversify*: Dummy variable: 1 if bidder and target do not share a Fama-French 48 industry, 0 otherwise.
- *FreeCF*: Operating income before depreciation (item13) - interest expenses (item15) - income taxes (item16) - capital expenditures (item128), scaled by the book value of total assets (item6).
- *IO*: The fraction of the bidder's common stock held by institutional investors.
- *Ln(Mcap)*: Natural log of the number of shares outstanding multiplied by the stock price on the 11th trading day prior to the announcement date.
- *Market to Book*: (Market value of equity plus the book value of debt)/Total Assets=(data25*data199+data6-data60)/data6
- *Leverage* : (Long Term Debt + Debt in Current Liabilities)/Total Assets=(data9+data34)/data6
- *Ln(Loan Size)*: Natural log of the loan facility amount. Loan amount is measured in millions of dollars.
- *Loan Purpose Dummies*: Dummy Variable for loan purposes, including corporate purposes, debt repayment, working capital, etc.
- *Loan Type Dummies*: Dummy variable for loan types, including term loan, revolving role greater than one year, revolving loan less than one year, and 364 day facility.
- *N Analyst*: The number of analysts covering the firm.
- *Outstanding Collateral*: Loan size weighted average of collateral requirement of outstanding loans.
- *Outstanding Fin Cov*: Loan size weighted average of financial covenants of outstanding loans.
- *Outstanding Gen Cov*: Loan size weighted average of general covenants of outstanding loans.
- *Perform-pricing*: A dummy variable that equals one if the loan facility uses performance pricing.
- *Private*: Dummy variable: 1 for private targets, 0 otherwise.
- *Profitability*: EBITDA/Total Assets=data13/data6
- *Public*: Dummy variable: 1 for public targets, 0 otherwise.
- *Relative size*: Deal value (from SDC) over the bidder's market value of equity, as defined above.
- *Run-up*: Bidder's buy-and-hold abnormal return (BHAR) during the period (-210, -11).

- *Term Spread* : The difference between the 10-year Treasury yield and the 2-year Treasury yield. (Data source: Federal Reserve Board of Governors.)

- *Tobin's q*: Bidder's market value divided by the book value of bidder's assets.

- *Tangibility*: Net Property, Plant and Equipment/Total assets=data8/data6

- *Uniqueness*: Dummy variable: 1 if the bidder's industry is in the top quartile of all 48 FamaâĂŞFrench industries annually sorted by industry-median product uniqueness, 0 otherwise, where product uniqueness is defined as selling expense (item189) scaled by sales (item12).

- *Volatility*: the standard deviation of the market-adjusted residuals of the daily stock returns measured during the period starting from 205 to 11 days prior to the acquisition announcement.