

# BANK REPUTATION IN THE PRIVATE DEBT MARKET<sup>1</sup>

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## **Abstract:**

We examine the impact of lead arranger's reputation on the design of loan contracts such as spread, fees and the inclusion of restrictive covenants. We evidence that the loan market differs from the public bond market in many ways. It seems to be much more concentrated, in particular the last few years. Controlling for the non-randomness of the lender-borrower match (self-selection bias), we find that reputation of top tier arrangers leads to higher spreads, and that top tier arrangers retain smaller fractions of their loans in the syndicate. These larger spreads are especially pronounced for borrowers without credit rating that have most to gain from top tier arranger certification. Top tier arrangers are able to select the best deals and therefore to sell larger portions of their loans to junior banks by negotiating better terms with borrowers. This is consistent with the market power hypothesis for more established banks, but not the signaling hypothesis for which empirical support has been found in public markets (Fang, 2005). Interestingly, the effect is strongest for transactions done after the changes in banking regulations (including the Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994) that led to significant consolidations in the banking industry, also among the largest commercial banks. Top tier arrangers offer lower arranger fees only to borrowers with credit ratings that have little need for additional certification by lenders.

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Loan syndication is a major segment of the wholesale business of commercial banks in the United States.<sup>2</sup> With more than two trillions of dollars in commitment volume outstanding, the syndicated loan market is an increasingly important source of financing for corporations. Typically, a loan syndicate is formed by a mandated arranger, who is appointed by the borrower to bring together a group of institutional investors and banks that are prepared to lend money on specific terms to the borrower. The senior loan syndicate is created by the syndicate arranger who retains a portion of the loan and then sells on the participation rights to junior banks that constitute the second group of creditors. The reputation of the lead bank can be seen as a certification of quality of the loan being syndicated. This approach is consistent with papers on underwriter reputation associated with less severe underpricing and conflict of interest problems in IPOs (Carter and Manaster, 1990; Megginson and Weiss, 1991; Gomes, 2000).

Moreover, the role of underwriter reputation is known to have large price consequences for bond issuers, especially those underwriting below-investment grade bonds (see, e.g., Fang, 2005).<sup>3</sup> Top-tier underwriters offer better terms to their best clients in order to certify to the market a quality assurance about the issues they underwrite. Underwriters seeking to avoid a loss of reputation will attempt to gain commercially sensitive information about their clients which helps them identify and market high quality issues. In this way, investors can infer the quality of an issue when particular underwriters put their reputation at stake. Less experienced underwriters, on the other hand, avoid this signalling strategy if they are less capable or find it too costly to obtain information about the true quality of their borrowers. However, it is unclear whether this phenomenon is also at play in private debt markets. There are many reasons why reputation of an underwriter may have a different effect on bank loan

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<sup>2</sup> A recent survey of the literature on banking is provided by Drucker and Puri (2006a).

structures than on public bonds. While bond underwriters only act as intermediary, loan arrangers typically retain a substantial fraction of the loan being issued. This strongly affects the potential costs associated with certification of borrowers. What factors influence these differences may have important implications for investors.

In this paper, we investigate how investment bank reputation influences spreads and the structure of bank loan contracts. Do reputable commercial banks that have better access to good borrowers signal quality through the same channel as underwriters? If yes, how does it affect the spread, fees and restrictive covenants? Does reputation affect deal characteristics of private debt through other channels than pricing? Further, how does reputation influence the structure and composition of loan syndicates?

An important departure in this paper is the development of a unified model of bank reputation that takes into account both the lending and syndicate markets. This is important because it provides the reader with a more complete understanding of the costs and benefits of bank reputation. To see this point, consider the consequences of arrangers choosing not to resell any of their loans. It would be likely that there would be no need to signal to others the quality of the loans and thus we would witness few differences in loan structure between top tier arrangers and other banks with respect to certification. A number of papers on bond markets do not take this approach. With the bond market, it is reasonable to focus simply on a single market, the underwriting market, as there are only intermediaries that resell most of the issued securities. In contrast, lead arrangers in the private debt market will continue to hold a significant proportion of loans well after the issuers' offering. As a result, this provides commercial banks with an alternative tool to signal quality by retaining large fractions of the

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<sup>3</sup> A recent study provides evidence of similar effects in project finance (Gatti, Kleimeier, Megginson and

deal. Finally, offering better terms to the best borrowers will go at some costs if lenders retain higher fractions of their deals. This cost is not incurred by bond underwriters as they only play a role of intermediary. This analysis provides a novel perspective on existing empirical results and generates a number of testable predictions on how bank reputation matters in private debt markets.

The analysis in this paper provides a number of key empirical results. It shows, consistent with the differences between the bond and commercial loan market, that while reputation significantly affects the design of loan contracts, the channel is different from what has been observed in bond markets. While most reputable lenders do indeed offer better terms, this is consistent with the idea that they also arrange loans for the best borrowers. This strongly suggests that they are able to select the best deals. This potentially biases the results on the terms offered to borrowers. However, once controlling for the non-randomness of borrower-lender match, we find that the reputable arrangers charge *higher* spreads compared to a situation where reputation would not matter. The effect is strongest for borrowers without an investment grade or without any credit rating, which most likely face significant asymmetric information problems. This is consistent with the view that top-tier banks exploit the informational advantage that gives them more market power to charge higher spreads, compared to what borrowers would get in the absence of arranger reputation. Interestingly, the effect is strongest for transactions done after the 1994 banking deregulation that led to significant consolidations in the banking industry (the Riegle-Neal Interstate Banking and Branching Efficiency Act),<sup>4</sup> also among the largest commercial banks. While reputation significantly affects spreads, we find however no evidence that it affects the inclusion of restrictive covenants in loan agreements. The latter is best explained by credit rating of the

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Steaffanoni, 2007).

borrower, with no evidence of trading of price and protection. These results are robust to a number of alternative specifications. While Fang (2005) obtained different results for the bond market, both sets of results are consistent with important differences observed between the two markets, in particular with respect to market concentration on the top.

This raises the question whether top tier banks ask lower arranger fees, given their spread structure. We find weak evidence that top tier arrangers indeed charge lower arranger fees, even when controlling for the self-selection of borrowers by lenders. However, they do so only for borrowers with credit rating. In line with our results on loan design, this again suggests that borrowers that benefit most from the certification by top tier banks (namely those without a rating) are ready to pay more, not only in terms of spread but also fees to the arranger.

We also provide evidence that more reputable arrangers hold a larger fraction of the loans in a syndicate, once controlling for the self-selection bias. We argue that this may be due to top-tier arrangers wanting to retain a disproportionately larger fraction of their own deals either because these are precisely the better ones, or because they wish to signal quality by retaining larger fractions. In a similar vein, after controlling for a number of other factors, we observe that syndicates with top-tier banks as arrangers are on average smaller, which is probably due to their preference to retain a large fraction of the deal in the syndicate.

The rest of the paper is structured as follows. Section 1 reviews the related literature. Section 2 offers empirical predictions from our main hypotheses. Section 3 describes the data and

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<sup>4</sup> See, e.g., Kroszner and Strahan (1999), Levine (2004) and Huang (2006), for related discussion on the deregulation of the US banking industry.

variables. Section 4 provides details on how the loan syndicate market operates and differs from other debt markets. Section 5 presents the empirical findings. Section 6 concludes.

## 1. RELATED LITERATURE:

A significant quantity of research has been dedicated to understanding the lead arranger's activities in the private debt market. Many theories have emerged, for example, the monitoring hypothesis, that posits a negative relationship between the borrower's creditworthiness and delegation to the lead bank for monitoring. An increased need for monitoring would lead to smaller lender syndicates (Sufi, 2005). Early work by Smith and Warner (1977) discusses the agency cost of debt in terms of claim dilution, underinvestment, asset withdrawal and asset substitution. In response to agency problems, debt covenants may serve as an ex post monitoring device protecting lenders ex renegotiation. In general, researchers understand covenants and co-agents as substitutes from the perspective of mitigating asymmetries within loan syndicates (Goyal, 2005). Another strand of the literature analyses the costs and benefits of lending relationship (Boot, 2000, and Boot and Thakor, 2000).

Other relevant papers deal with the use of covenants to reduce agency costs in the bank loan or public debt markets. For example, Bradley and Roberts (2004) discuss the role of restrictive covenant in US bank loans made between 1993 and 2001, showing that a substantial number of loans included protective provisions. A few other papers deal with the monitoring role of covenants in the public debt market, showing that issuers compared to the loan market face fewer restrictions (Gilson and Warner, 1998). For example, Nash, Netter

and Poulsen (2003) find evidence that high growth firms include fewer debt and dividend covenants in their debt contracts reflecting a preference for flexibility in financing rather than contracting practices. Chava, Kumar and Warga (2004) show some variation in spread of covenants, finding no significant movement in the direction of bondholder protection, but in the cases of merger protection and poison puts.

There is surprisingly little empirical evidence on the relationship between reputation and security pricing in the private loan market. Empirical evidence on the impact of the lead arranger's reputation have been examined for the syndicated market sparsely only, where evidence indicates that more reputable arrangers are able to attract larger syndicates and hold smaller fraction of the loan (Lee and Millineaux, 2001).<sup>5</sup> Sufi (2005) studies the impact of asymmetric information between borrower and lead bank for the structure of the syndicate. His results are in line with the monitoring hypothesis that says that the lenders syndicate is more concentrated when asymmetric information is stronger, resulting in better monitoring incentives of syndicate members. Other papers deal with public debt markets. Fang (2005) evaluates empirically the role of certification hypothesis in the public bond market. She demonstrates that a reputable bank tends to be more selective in its underwriting decisions which are positively related to price improvements for the issuer, providing empirical support for a certification role of the underwriter. Her result holds even when controlling for possible self-selection bias. This result contrasts with ours for the private debt market (which has roughly the same size). Possible reasons for this difference are discussed later in the paper.

Other important contributions to this literature were done by Puri (1996), Gande, Puri, Saunders and Walter (1997), Gande, Puri and Saunders (1999), Cremers, Nair and Wei

(2004), Gatti, Kleimeier, Megginson and Steffanoni (2007), and Narayanan, Rangan and Rangan (2007). These papers however focus on the public bond market or project finance. For instance, Cremers, Nair and Wei (2004) show that the inclusion of specific covenants in bond contracts depends on the severity of potential shareholder-bondholder conflicts. Gatti et al. (2007) find that reputable banks provide overall lower spreads for project finance, generating a positive impact on lenders. Narayanan et al. (2007) examine whether commercial banks can use their reputation in private markets to their bond-underwriting activities.

Our study is also related to the literature strand on syndication. The early work by Wilson (1968) and others (Chowdry and Nanda, 1996) considers the rationale for syndication and has shown the risk-sharing effect of syndication drives the market. More recently, Pichler and Wilhelm (2001) explore the effect of members of a syndicate group delegating some of the monitoring responsibilities to the lead bank. They emphasize that a lead bank's ability to control the composition of the syndicate appears to play a large role in eliminating conflicts of interests between lead bank and syndicate member. Panyagometh and Roberts (2003) show how syndicate members learn about the reputation effects of lead banks. This result can document lead bank by reputation by average yearly amount of loans syndicated, but does not document the good or bad loans these banks arrange when evaluating lead arranger reputation.

Other relevant papers deal with the effect of political risk on the size of lending syndicates. For example, Esty and Megginson (2003) show that for project finance the relationship between country risk and syndicate size tends to be non-linear, revealing that an arranger's

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<sup>5</sup> However, this study did not account for the self-selection bias that arises from the non-randomness of the

share will decline with an index of political risk, but begin to increase at higher levels of risk. This framework highlights that investors will prefer larger syndicates in countries with weaker creditor protection and poor legal enforcement to deter strategic defaults by borrowers. Another literature focuses on the effects of capital constraints or informational deficits on the size and distribution of syndicate shares (Jones, Lang and Nigro, 2005).

## 2. THEORY AND HYPOTHESES:

In this section, we discuss two alternative hypotheses on the impact of bank reputation: the *certification hypothesis* and the *market power hypothesis*. Both rely on the implicit assumption that more established arrangers possess better information on borrowers. We focus our discussion on empirical predictions that specifically relate to the design of loan contracts and the structure of syndicate.

### *Certification Hypothesis:*

The syndicated loan market is one in which lead arrangers intermediate between corporate borrowers and syndicate partners. Lead arrangers typically pass on part of the deal to other lenders by seeking syndicate partners after the deal is signed. Therefore, they may want to signal the quality of the deal by including less restrictive covenants and/or a lower spread in their loan when negotiating with borrowers. Given that such a signal can only be credible from an established player that has better information on borrowers, deals with better terms for borrowers are more likely to be observed by top tier lead arrangers. They then put their own reputation at stake. If top tier arrangers were not interested in signaling the quality of loans, there would be no reason (for the purpose of certifying) why arrangers would want to

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arranger-borrower match. In this paper, we evidence that this is critical and in fact provides opposite

accept fewer covenants while at the same time not being compensated with a higher spread (unless it is costly to include such covenants, which is hardly conceivable).

This argument supposes that top tier arrangers are better at identifying the true quality of borrowers so that at the time deals are negotiated, they have useful private information that less reputable banks do not have. This is indeed only worthwhile if the arranger possesses private information that leads to conclude that the borrower has lower risk than assumed by non-informed actors. Such a signal is then costlier to other arrangers if they were to accept similar deals, since a lower spread would translate into lower expected returns while fewer covenants into higher risk for them. Thus, under the certification hypothesis we should expect more reputable arrangers to charge lower spreads and include fewer covenants. In practice, this informational advantage for more established arrangers may stem from the increased information already collected from past deals (i.e., from previous relationship lending with same borrowers, consistent with Boot and Thakor, 2000) or from better access to shared information between syndicate partners. In both cases, top tier banks would have better capabilities in screening borrowers.

The certification hypothesis also has prediction with regards to syndicate structure. Signaling quality by the mean of contract design allows the lead arranger to sell larger fraction of the loan to syndicate partners, and possibly also being able to attract larger syndicates. Therefore we expect reputable arrangers to retain a smaller fraction of deals in the syndicate if contracting is used as mean of signaling quality. This in turn provides arrangers with greater diversification as more loan participation can be held. In that way, they can benefit from their signal.

These predictions on the structure of syndicates however only hold if the arrangers do not use the syndicate structure itself as way to signal the quality of borrowers. Indeed, an alternative signaling method is when arrangers retain a larger fraction of the loan within the syndicate (in the spirit of Leland and Pyle, 1976, that takes a more general view of signaling). This then conveys the information that they are willing to hold larger fractions of the loan themselves, which would be costly to them if it were a bad loan. In this case, we would expect top tier arrangers to retain larger stakes. However, this alternative signaling method provides no empirical predictions as to the optimal design of loans.<sup>6</sup> In the empirical section, we investigate both channels of certification.

*Market Power Hypothesis:*

An alternative hypothesis is the market power hypothesis that postulates that top tier arrangers hold more market power against borrowers than other arrangers due to their informational advantage. This may then be used to extract some of the benefits through higher spreads to borrowers. In the same vein, this may lead to the inclusion of *more* covenants in order to keep most of the risk on the side of the borrower and thus reduce their own risk. The implicit assumption is that reputable arrangers with private information will select borrowers from whom they can extract most benefits.

Different reasons may explain why more reputable banks may have more market power than less reputable ones. As mentioned above, the primary reason is that banks with greater market shares may obtain informational advantages. They may exploit these by offering worse terms to the best borrowers that suffer from adverse selection (while still offering slightly better

terms than what borrowers would get from uninformed banks). In other words, they may extract some of the benefits of borrowers through informational rents. In this case, we would observe loans arranged by top tier banks to incorporate more restrictive covenants and/or having higher spreads after controlling for the non-randomness of borrower-lender match.<sup>7</sup> If we would not control for this potential source of endogeneity, we may merely measure a *clientele effect* specific to reputable arrangers. Moreover, more established banks have better networking capabilities so that borrowing very large amounts of debt may only be done through large banks, which generally are the most established ones who are able to bring together a sufficient large syndicate. Banks with less networking capabilities may find it more difficult to attract enough banks in the syndicate to sufficiently spread the risk. As a result of this lack of diversification, they may not be able to offer the same terms to borrowers. This gives more established banks a comparative advantage, especially for particularly large deals. Other banks, in turn, may have limited capacity to serve very large loans. This would imply that established arrangers offer a differentiated product. Finally, borrowers may themselves be willing to pay higher spreads if a loan that is arranged by a top tier bank sends a positive signal to investors in the equity markets. Cook, Schellhorn and Spellman (2001) provide evidence for such benefits, suggesting indeed that borrowers may then be ready to accept higher spreads from certifying loan arrangers.

This hypothesis therefore yields opposite empirical predictions to the certification hypothesis.

When controlling for the non-randomness of the borrower-lender match, we expect reputation

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<sup>6</sup> Further signal mechanisms such as debt maturity yield similar conclusions (see, e.g., Flannery, 1986, Diamond, 1991, and Wei, 2005) from the perspective of lead arrangers (not for borrowers).

<sup>7</sup> When not controlling for this self-selection bias, we should however obtain opposite results under this hypothesis, namely that overall top tier arrangers still include fewer covenants than other arrangers. Therefore, in the presence of informational advantages for more reputable arrangers, it is not possible to disentangle both hypotheses without controlling for the self-selection bias. We examine this in the empirical section of the paper.

to have a positive effect on spreads and the inclusion of more restrictive covenants in loan contracts they arranged.

However, the empirical implications of this hypothesis for the structure of the loan syndicate are ambiguous. On the one hand, a top tier arranger that was able to extract higher spreads and more restrictive covenants from their borrowers may decide to sell a smaller portion of the deal, since it provides better terms than other deals. The size of the syndicate may then be smaller. On the other hand, it is possible that the lead arranger builds a larger syndicate, since the top tier arranger is able to sell more easily the deal to other banks (again due to the better deal obtained). Therefore, the ultimate effect on the syndicate structure is unclear, and we leave it as an empirical question that needs to be examined further in case we find support for the market power hypothesis when examining the effect on contract design.

### 3. DESCRIPTION OF DATA AND VARIABLES:

In this study, we use the *DealScan* database from Loan Pricing Corporation. It comprises data on a large sample of syndicated loans done since 1987. It provides information on the structure of the deals (including positive and negative covenants), the borrower, the arrangers and syndicate members. We limit our sample to deals that include a Tear Sheet and for which we have complete information on our relevant variables. Tear sheets are useful documents that are derived from the loan documents and provide comprehensive details on the terms and conditions of deals, which allow us to crosscheck the information provided by the main database (that can be downloaded in spreadsheet format) if needed and to fill many of the

missing information of the deals.<sup>8</sup> The time period considered is 1987-2005. The final sample includes 2368 observations.

Table 1 provides a complete overview of the definition of variables. One of our main variables is the distinction between top tier arranger and other arrangers. We define a bank as a top tier arranger in a particular year if it was one of the biggest market players in the year before the considered loan transaction. To construct this dummy variable, we proceeded as follows. We first calculated the market share of all the market participants in each year, based on total annual deal amount done. The variable *Top Tier Bank* then takes the value of one for all the lead arrangers that were on the list of the three biggest players in the year before the considered deal. For the years prior to 2000, we used the five largest players, given that the lack of consolidation makes the cutoff at the top 3 less clear. This means that the list of top tier banks is updated every year based on market shares in the previous year.<sup>9</sup> We also corrected values for all mergers and acquisitions that took place in the commercial banking industry.

The dependent variables for the structure of loan contracts are the spread and various restrictive covenants. We use the spread of the loan in basis points above the Libor rate (the main rate for inter-bank deposits). All loan contracts included in the *DealScan* database are based on this same spread. This also eliminates the need for controlling for levels of interest rates in the regression analyses. For the restrictive covenants, we construct indices that

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<sup>8</sup> For instance, the name of the lead arranger is not always mentioned in the actual database (especially for earlier transactions). However, this information is reported in the tear sheet, either directly or in form of comments. Where information was missing, we checked whether it could be found in the tear sheet. This was done for the most important variables.

<sup>9</sup> This approach of identifying top tier banks is the same as, e.g., in Megginson and Weiss (1991) and Asker and Ljungqvist (2006). However, Fang (2005) follows another approach for the public bond market. She only constructs a single league table that comprises all deals of the complete time period considered so that the list of top tier banks remains constant over the complete time period. This is not sensible here, given the changes in

aggregate different covenants on related issues, namely on the free cash flow problem, voting rights, dividend payout<sup>10</sup>, and financial covenants. A complete list of covenants considered in each index is provided in Table 1. Each index equals to the number of covenants included in the deal. For the analysis of arranger fees, we consider the two most important fees at the time of deal arrangement: upfront fees and commitment fees. Our variable on fees takes the sum of both, and gives the total basis points.

Finally, for all the listed companies, we collected information on the large shareholders at time deals were done. Using the proxy statements from the SEC Filings & Forms (EDGAR), we constructed two variables: the size of the largest blockholder and the number of blockholders. In this paper, a blockholder is any shareholder with at least 5% ownership in the borrowing company.<sup>11</sup>

#### 4. THE MARKET FOR SYNDICATED LOANS:

##### *A. Development of the Market*

In this section we describe certain characteristics of the syndicated lending market in the US and explain how its landscape has evolved over the period 1987 to 2005. The syndicated loan market, which brings together a primary loan distribution process and secondary loan market, is a widely used channel for large corporations and middle sized firms. Syndicated credits are a hybrid of private and public debt involving the sale of a loan to a group of commercial

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annual rankings observed in the first half of our time period (cf. Table 3, Panel A) and the mergers and acquisitions among banks in more recent years.

<sup>10</sup> Cremers, Nair and Wei (2004) also build an index for shareholder-bondholder conflict that partially relates to this issue. However, since they examine public bonds, the specific covenants included differ from ours.

<sup>11</sup> The SEC filings only record shareholders that hold at least 5% of outstanding shares ([www.sec.gov](http://www.sec.gov)).

banks arranged as a syndicate. The nature of the syndicated loan market implies a banking model in which banks are mostly concerned with deal-specific transactions.

The development of syndicated lending first developed in the US in the late 1980s. Between 1986 and 1989, a new type of transaction form, the leveraged buyout (LBO), was widely used to acquire public companies. In order to manage the lending volumes, large New York commercial banks established a syndication process which resulted in underwriting groups arranging, underwriting and distributing non-investment grade loans to a group of institutional participants. While it is difficult to generalize, the market for investment grade syndicated loans grew in the early 1990s when banks, due to a change in the credit cycle, became less interested in financing corporate acquisitions and more interested in arranging loans for lower-g geared borrowers. Syndicated lending to top-tier corporate firms has grown strongly throughout the 1990s as companies have taken advantage of the new liquidity in the secondary loan market to access funds for general corporate purposes (Jones, Lang, and Nigro, 2000). The increasing tendency for banks to trade credit participations on the secondary market was reflected in the prevalence of transferability clauses in loan contracts (Drucker and Puri, 2006b). The total size of the US secondary market was 25% of total loans between 1993 and 2003 (Gadanecz, 2004). In some respects, the syndicated lending market resembles the public debt market in terms of the notable division of the market between investment and non-investment grade lending.

A new pattern in the syndicated loan market developed between 1995 and 1997 when institutional investors began to accept syndicated loans facilities as an alternative to bonds. As a consequence, syndicated lending has increased from \$1.2 trillion in 1996 to almost \$2.1 trillion in 2001, with gross issuance of facilities increasing from \$214 billion in 1990 to

\$1,196 billion in 2001 (Armstrong, 2003). Refinancing of new facilities also increased in trading volume, totalling approximately \$US 145 billion in 2003, with distressed loans making up a large share of the market (Gadanecz, 2004).

Over the last decade and a half, the US syndicated loan market has clearly become a major source of financing on behalf of a range of different borrowers. In particular, acquisition-led lending played an important role in the early years and provided the market with an important stimulus to introduce syndication to structure the issuance of loans. During the mid-1990s, the market for syndicated loans for the investment-grade sector, in response to an enormous demand stimulus, provided a complex array of facilities to meet the changing needs of the general corporate borrowers. More recently, leveraged lending for acquisition-related transactions has grown to reflect changes in the mergers and acquisitions and private equity market. While the demand for syndicated loans will continue to fluctuate across some sectors, the continuing demand for primary loans by corporate borrowers and the deepening of the secondary market suggest that the development of this sector of the market will continue.

#### *B. Market Share of Commercial Banks*

Table 2 shows a list of the top commercial banks involved as arranging or participating banks in the syndicated loan market during the 1991-2005 and 2001-2005 time periods, by the number of deals and the amounts arranged. In the US market, the syndicated loan market is highly concentrated. The top three domestic banks, JP Morgan Chase, Bank of America and Citigroup, accounted for about 69% of all deals during the 1991-2005 period.

Table 3 gives further insights into how the syndicated loan market has evolved over time to eventually lead to the highly concentrated market as we see today. The table shows market

share (calculated for deal amounts) of the largest, three largest and five largest banks in each year. It indicates that market concentration has increased over time, with the three largest arrangers taking 60.8% of the deals in 2005 as compared to 40.6% in the late 1980s (Panel A). Moreover, while there are changes in the top arrangers over time in earlier years, there has been little change in the top 3 ranking the last years, with JP Morgan Chase taking the first position, Bank of America as second and Citigroup as third.

Much of this shift in concentration is driven by mergers and acquisitions (in Table 2, all the deals of the acquired banks was imputed to the acquiring bank). This largely explains the disappearance of some banks in the ranking provided in Table 3, Panel A. For instance, Chase Manhattan Bank acquired Chemical Bank in 1996, which subsequently was acquired by JP Morgan in 2000. Further major mergers and acquisitions in the US commercial banking industry are listed in Panel C of Table 3. Finally, Panel B in Table 3 presents the evolution of syndicate structure over the same time period.

Tables 2 and 3 provide a good picture of the changes in the contemporary loan market. During the 1990s, key structuring changes in both segments of the loan market distinguished it from the public bond market on many respects. First, the role of banks in the loan market is very different. It is not limited to intermediation but rather arrangers retain usually the largest fraction of the deal after the transaction is completed. In the bond market, underwriters primarily play the intermediary between the borrower and a large number of investors that each buy a small fraction of the securities issued. The exact content of the deal is therefore of much greater interest to loan arrangers than bond underwriters. Second, the latter seems to be less concentrated on the top. Indeed, Fang (2005) estimates that the five largest bond underwriters in the US hold a market share of 60% for the period 1991-2000, while top five

US lenders account for about 75% of the market during the same time period. Moreover, the distinction between top tier bond underwriters and other bond underwriters seems less clear as the decay is relatively smooth. This contrast with the private debt market, where there is a sharp drop after the top three (Table 2). Third, Fang (2005) identified 51 unique bond underwriters in the US during the same period 1991-2000. For private debt, the number of lenders is by far larger. Finally, as you would expect for the US due to regulation, the players are quite different. The top tier bond underwriters (which are investment banks) are Goldman Sachs, Merrill Lynch, Morgan Stanley, Salomon Brothers, CSFB, Lehman Brothers, JP Morgan and Donaldson, Lufkin & Jenrette (Fang, 2005). For private debt, they are reported in Table 2. In any case, major players in the US private debt market are not the same as in the US public bond market.

## 5. ANALYSIS:

In this section, we first present summary statistics of the sample. In the multivariate analysis that follows, we then investigate the effect of having a top tier bank as lead arranger on the structure of loans (in particular the level of spread and the inclusion of restrictive covenants). We further investigate the impact on arranger fees to examine whether top tier arranger charge higher fees for arranging loans. Given the observed loan contracts, we then examine how top tier lead arrangers behave in terms of syndicate structure and fraction of loan they retain.

As done in many related studies (Puri, 1996; Gande, Puri, Saunders and Walter, 1997; Gande, Puri and Saunders, 1997; Fang, 2005),<sup>12</sup> we use Heckman two-stage selection models to estimate the impact of top tier banks on contracting. This is due to the fact that we deal with private information that may lead to self-selection. Our empirical predictions rely on the assumption that more established arrangers possess superior information. In this case, deals done by top tier banks may not be a random sample as we are not able to observe the relevant private information. As indicated later, our results exhibit a strong self-selection bias that justifies the use of this methodology. To show this, we also provide OLS estimations that do not take into account for self-selection.

It is important to stress the difference in interpretation between the OLS estimation and the one that controls for self-selection. The first one gives us information as to whether top tier banks on average offer better terms to borrowers. The second one rather examines the impact of private information (and thus reputation) by comparing the observed outcome with the one that would have occurred if top tier arrangers did not have private information (which in equilibrium we do not observe if self-selection occurs). What does this mean for the market power hypothesis? In equilibrium with informed and uninformed arrangers, the best borrowers self-select to be financed by the informed arrangers and the other borrowers by the uninformed ones. It means that the impact of reputation is positive on the spread obtained, and thus that borrowers that self-select themselves to top tier arrangers are worse off than in the absence of better informed arrangers (although they obtain a lower spread than when contracting with an arranger without reputation). In contrast, the certification hypothesis implies a negative impact of reputation on spread and covenants.<sup>13</sup>

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<sup>12</sup> See also Li and Prabhala (2005) for a general discussion on the use of this type of models in corporate

Finally, note that in all the regressions we include controls for market conditions such as Nasdaq Composite Index (in natural log), industry dummies (using in total 12 categories) and year dummies.

### 5.1 Summary Statistics

Table 4 provides summary statistics of our sample as well as sub-samples. It highlights a number of interesting facts. First, 56.3% of loans involve at least one top tier bank as lead arranger (the variable *Top Tier Bank* is equal to one if at least one lead arranger is top tier bank). This percentage is roughly in the same size as the average market size of top tier banks (see league tables in Tables 2 and 3).

Second, the lead arranger holds on average 24.7% of total amount after the syndicate is structured. A top tier lead arranger retains significantly less in the syndicate (19.6% versus 31.2%). This suggests that lead arrangers retain significant fraction of participation rights in the loans they arrange, but that top tier banks are able to sell a substantial larger fraction to junior banks participating in the syndicate.

Third, loans issued by top tier lead arrangers differ in many respects from loans provided by other arrangers: spreads are lower, loan maturity is shorter, as well as the relative use of financial covenants, covenants related to free cash flow problems, voting rights and shareholder-debtholder conflict. The average spread is about 35 basis points lower for deals arranged by top tier banks (165.0 versus 200.6 basis points). Also the loan size is much larger. Arranger fees are on average about 38 basis points, which is significantly lower in

magnitude than the loan spread. General covenants are included in all deals in our sample; there is no variation with respect to this type of covenants. We therefore drop this last set of covenants from our analysis.

Finally, top tier arrangers are less involved in deals where the borrower has either no S&P rating or lacks an investment grade (i.e., a grade of BBB or higher). Therefore, top tier arrangers are more involved in borrowing to companies with an investment grade. This is consistent with the previous finding that spreads are lower, possibly due to lower risk transactions.

### 5.2 Deals done by Top Tier Banks

Table 5 presents results on the likelihood of having a top tier bank as lead arranger. This analysis will be useful in follow-up analyses, as we will use self-selection models to estimate the impact of top tier arrangers on contract characteristics. This requires estimating the likelihood of having a specific transaction arranged by a top tier bank.

Panel A shows results for the full sample. In sum, top tier banks are more likely to arrange larger deals (variable *Loan Amount*). This is in line with the view that large banks are necessary for large transactions. Moreover, borrowers with investment grade are more likely to raise private debt from more reputable arrangers. Both of these results are robust to alternative specifications as shown in the table. On the other hand, concentrated ownership

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<sup>13</sup> Put differently, a negative coefficient means that the certification effect outweighs the market power effect.

does not seem to matter; both variables, *Size of Largest Block* and *Number of Blockholders*, are not significant.<sup>14</sup>

In Panel B of Table 5, we show results for different sub-samples: Regressions (6) and (7) for deals with investment grades, Regressions (8) and (9) for deals that do not have an investment grade (i.e., either have no rating at all or a rating below BBB), and Regressions (10) and (11) for deals with ratings below BBB. Again, the largest deals are most likely to be arranged by top tier banks, regardless the sub-sample considered. Concentrated ownership seems to matter only for low rated deals (Regression (11)). However, this result is only significant for ownership variable *Size of Largest Block* (regression with *Number of Blockholders* not reported).

### 5.3 The Effect on Deal Terms

In this section, we examine the effect of the presence of a top tier lead arranger on contract design. Given that its design is multi-dimensional, we examine the effect of the presence of a top tier arranger on the inclusion of covenants related to the free cash flow problem, voting rights, shareholder-debtholder problem, financial ratios, as well as on the negotiated spread. We control for a number of borrower characteristics, its rating and the deal type. Rating is used as measure of risk. The number of observations varies depending on information availability of each dependent variable.

#### 5.3.1 The Effect on the Loan Spread

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<sup>14</sup> The main reason for including these variables is to see whether more established arrangers are needed when

Table 6 shows the results on the level of the spread (above Libor rate). From the OLS estimation (Regression (1)), it appears that top tier arrangers provide loans at a lower spread than other arrangers. The coefficient is negative and significant at the 1% level. This would support the certification hypothesis. However, when controlling for self-selection (Heckman estimations), we obtain the opposite results (the parameter  $\lambda$ , which refers to the inverse Mills' ratio).<sup>15</sup> For the full sample (Regression (2)), the parameter  $\lambda$  is significantly positive at 5% level. The fact that we obtain very different outcomes from the two estimations clearly indicates that top tier arrangers are able to self-select deals. While top tier arrangers on average do charge lower spreads, it is largely due to self-selection. This instead is in line with the second hypothesis, the market power hypothesis. The selected borrowers therefore are charged higher spreads than in a scenario where reputation would not matter (but still lower than loans arranged by non-reputable banks).

Some additional results are worth being mentioned. First, the spread is lower if the borrower is the parent company as opposed to a subsidiary. This is in line with the idea that loans are better secured if issued by the parent company, since more assets may be available. And second, the better the rating of the borrower, the lower the spread. This is perfectly in line with intuition that less risky borrowers obtain better terms. However, it appears that companies without any S&P rating obtain a lower spread than those with a rating. This suggests that the pool of borrowers without rating is better than rated companies without

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the borrower has concentrated ownership and thus may require more monitoring. If top tier banks were better monitors, we would expect a positive effect.

<sup>15</sup> For the first-step regression, we use the same specification as in Table 5. While instrumental variables are not needed in Heckman regressions due to the non-linear specification, we nevertheless use a different specification than in the second regression equation. In practice, an identification problem may still arise if the non-linearity is not large enough (Li and Prabhala, 2005). We therefore use the variables Sales (as measure for borrower size) and the Previous Loan Dummy as instrumental variables. We also use a dummy variable for investment grade instead of dummies for each rating to reduce this risk. In that way, we do not encounter any identification problem here. This is also true for all other Heckman estimations done throughout this study.

investment grade (i.e., with a rating below BBB), where the spread can be significantly higher.

Regressions (4) – (16) show the same model specification but for different sub-samples. Overall, these results strongly suggest that top tier arrangers are able to exploit their dominance with borrowers that do not have an investment grade (either because they have a rating below BBB or no rating at all<sup>16</sup>; see Regressions (5) and (8)) but not the others. For the very best deals (those with an investment grade), competition is fierce. This suggests that borrowers with investment grade are not ready to pay more for taking loans from top tier banks, but others well do, possibly as a way to enhance their profile. Indeed, if top tier banks are able to select the best deals, obtaining a loan from a top tier bank may improve the credibility of a company that does not have an investment grade (Regressions (5) and (6)) or that has no rating at all (Regression (8)). They are then ready to pay a premium. On the other hand, companies with an investment grade have already their creditworthiness from their high rating (Regression (4)). This limits top tier banks in charging higher spreads to the credit-worthiest borrowers.

In Regressions (9) and (10), we examine whether there is a difference between large deals and smaller deals. It is possible that lead arranger reputation affects larger deals more, since presumably smaller banks find it more difficult to arrange large deals for which larger syndicates must be built. In these cases, large banks with more networking capabilities and resources may have a comparative advantage and be in a less competitive environment than for smaller deals. This then could affect the terms, since the market power of reputable arrangers may be even higher. We therefore split the full sample into two sub-samples: one

comprising all deals with *Loan Amount* smaller than the average sample size of \$770.1 million (cf. Table 4), and another one with all other deals.<sup>17</sup> In this case, lead arranger reputation is not significant for both sub-samples.

Further worthwhile analysis pertains to deals done after the change in US regulation of mid 1990s that triggered a wave of important mergers and acquisitions in the commercial banking industry (see Section 4.B). Since competition among largest banks was reduced, we may expect market power of top tier arrangers to have increased during the more recent sample. In line with this intuition, we find that indeed top tier banks were primarily able to extract higher spreads during the second time period but not in the first (Regressions (11) and (12)).

The last analyses deals with the possible presence of asymmetric information that may be particularly severe in some subsets of deals considered. We therefore split the sample according to firm size (base on sales) and whether the borrower is listed. In the first case, we use the mean of Firm Sales as threshold level. The rationale is that smaller firms are potentially more opaque, given their size. In the second case, the intuition is that listed firms are more scrutinized by analysts and thus are more likely to exhibit less asymmetric information than firms that are not listed. We expect the impact of reputation to be strongest for firms that are small and not listed, since these are most likely suffering the most from asymmetric information. Our results show that firm size does not matter, but well whether the borrower is listed or not. Only non-listed firms obtain higher spreads from top tier arrangers. One possible reason for why we find no effect for differences in size might be the fact that we

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<sup>16</sup> This is roughly similar to Sufi (2005), who categorizes borrowers without rating as those with highest asymmetric information.

<sup>17</sup> As robustness, the same tests were performed using sample median as threshold level for splitting up the sample into two sub-samples. Results are qualitatively similar.

do not have in our sample very small firms. Even firms in the smallest decile are “quite large” compared to the universe of US firms.

### 5.3.2 The Effect on Loan Covenants

Table 7 provides results of the effect of the presence of a top tier lead arranger on the inclusion of various groups of covenants. Again, comparing standard estimations with the ones corrected for self-selection indicates that the deals done by top tier banks are not random (standard OLS results not reported in the table but available upon request by the authors). We therefore focus our attention on the results of the Heckman-type regressions.

The estimations indicate little difference between top tier lead arrangers and others. This holds for all types of covenants, even when considering various alternative specifications of indices. The coefficient is only significant at the 10% level for financial covenants (Regression (4)). A similar picture is obtained for loan maturity. Thus, for the various sets of covenants considered here, credit ratings are a useful piece of information for estimating the covenants that banks will include in loan arrangements. This view is consistent by arguments made by Boot, Milbourn and Schmeits (2006). Summarizing, this suggests that while covenants and loan maturity are important in the negotiation process between lead arrangers and borrowers, only the spread seems to have a different impact in the presence of reputable arrangers. While the analysis of covenants does not support either hypothesis, the combined analysis of covenants and spread still provides support for the market power hypothesis. In particular, it indicates that the main parameter where top tier arrangers use their greater market power is the spread.

The impact of most control variables is quite intuitive. In general, the inclusion of restrictive covenants and loan maturity go down as the borrower's rating improves. This is in line with the notion that companies with better rating are less risky for lenders, since ratings are directly related to default risk. Surprisingly, however, borrowers with no S&P rating tend to raise loans with less covenants and lower spread. This goes against economic intuition, since these companies issue less information to the public and thus should be less transparent. This in turn increases the degree of asymmetric information between borrower and investors. However, one possible explanation for this counter-intuitive result is the same one as for spreads (see discussion above).

Overall, it is worthwhile mentioning that this goes against the idea that top tier arrangers might just tradeoff restrictive covenants for a higher spread in a different way than other arrangers, as suggested by the *Agency Theory of Covenants* or the *Costly Contracting Hypothesis* (see, e.g., Bradley and Roberts, 2004, Reisel, 2004, and Chava, Kumar and Warga, 2004, for a related discussion). These hypotheses postulate that restrictive covenants and spread are substitutes so that some arrangers may differ in their preferred mix of covenants and spread. Given that lead arranger reputation here affects spread but not covenants, our analysis does not simply capture some form of variation of these hypotheses. At the same time, our results do not refute these hypotheses either (since we do not directly test them) but our evidence indicates that the picture is much richer than what has been suggested by previous studies.

#### 5.4 The Effect on Arranger Fees

These findings raise important questions about the fee structures charged by top tier arrangers compared to other arrangers. Given that they charge higher spreads, do they give up some of these benefits to borrowers through lower fees, or are they capable in extracting further rents through extra fees? Fang (2005) finds that reputable bond underwriters offer lower yield spreads to companies but indeed charge higher underwriter fees, making their certification ability valuable.

Results for the syndicated loan market are provided in Table 8, and summarized as follows. Fees on average tend to be about 5 basis points lower for deals arranged by top tier arrangers, suggesting that they indeed pass on to borrowers some of the benefits they extract through higher spreads. However, this result is only weakly significant when controlling again for the non-randomness of borrower-lender matches. Only borrowers with credit ratings benefits from these lower arranger fees (Regression (6)). Interestingly, these are precisely the group of borrowers that were not charged higher spreads due to arranger reputation. In line with previous results, this suggests that borrowers requiring certification are paying most for having their loans arranged by top tier arrangers, most likely because they are also benefiting most from the resulting certification. However, overall they seem to be worse off in terms of spreads charged compared to a situation where lender reputation would not matter (and thus borrowers would be allocated randomly to lenders).

### 5.5 The Effect on the Structure of Loan Syndicate

Conditional on contracts observed, we now analyze the impact on the syndicate structure. We analyze how it affects the syndicate size (number of lenders in the syndicate) and the fraction of total deal amount retained by the lead arranger. Again, we control for a number of

borrower characteristics, the borrower's rating and deal type, as well as market conditions. As before, we use a Heckman two-step procedure to estimate the effects, next to the OLS estimations.

Results are shown in Table 9. Regressions (1), (3), (5) and (7) in Panel A use standard OLS estimation, and are again meant to evidence the presence of a self-selection bias. It indicates that not correcting for it would again yield wrong conclusions with regards to the impact of bank reputation. Regression (2) shows that top tier banks build smaller syndicates than other banks, although we found earlier that they also arrange the largest deals. This contrasts with results of earlier studies that came to opposite conclusions (e.g., Lee and Mullineaux, 2001). However, these did not control for self-selection bias. Indeed, estimations of the same specification without Heckman correction (Regression (1)) also suggest in our sample that top tier banks would lead to larger syndicates (on average about 2 lenders less). Correcting for self-selection leads to the opposite conclusion.

The effect remains statistically significant when including the fraction of the deal amount retained by the lead arranger (note however that this variable is endogenous so that we need to be careful). At the same time, a top tier arranger on average holds a significantly larger fraction of closed deals than other lead arrangers (Regression (6), Panel A). This indicates that top tier arrangers sell a smaller stake of the loan to other banks, possibly either because of the fact that these are better deals or because there are fewer lenders participating in the syndicate.

Since both variables, *Number of Lenders in Syndicate* and *Fraction of Deal Retained by Lead Arranger*, are simultaneously determined, we propose an alternative analysis approach that

circumvents the endogeneity issues at hand.<sup>18</sup> We compare the fraction actually held by the lead Arranger (the variable *Fraction of Deal Retained by Lead Arranger*) with the fraction that the lead arranger would hold if the loan were shared uniformly among the N lenders; i.e., the fraction  $1 / N$  (e.g., if there were  $N = 5$  partners in the syndicate, the loan would be shared uniformly if each held 20%). The dependent variable used here is the ratio of both fractions (*Fraction of Deal Retained by Lead Arranger* divided by  $1/N$ ; i.e., *Fraction of Deal Retained by Lead Arranger*  $\times N$ ). This measure is meant to correct for syndicate size but by adjusting the dependent variable directly instead of including a variable on the right-hand side. A positive effect of the presence of a top tier arranger then means that the latter retains a larger fraction of the deal amount than under the equal sharing rule  $1/N$ .

Results are provided in Panel B of Table 9. The OLS estimation indicates no significant impact (Regression (9)). However, when adjusting for the non-randomness of borrower selection by top tier arrangers, we find that top tier banks retains significantly less than under equal sharing. This suggests that they are able to sell participation in the syndicate more easily and thus do not need to signal borrower quality through this secondary channel. This result is robust to controlling for the presence of a large blockholder in the borrowing firm (Regression (11)).

Further analysis indicates that the impact of top tier arrangers is most pronounced for selected sub-samples where certification is least important, namely for borrowers with investment grade (see Regressions (12) – (16) in Table 9, Panel B). For other borrower types, top tier arrangers are not able or willing to sell larger participations to other syndicate members.

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<sup>18</sup> Moreover, the overall picture is unclear as to the impact of reputation and the signaling channel. The question whether top tier arrangers hold larger fractions to signal borrower quality or because the syndicate is smaller still remains unanswered.

## 6. CONCLUSIONS:

In this paper, we have examined the relation between the reputation of top tier arrangers and the design of loan contracts. We show, using a framework that controls for endogenous matching between arrangers and borrowers, that syndicated loans placed by top tier banks are characterized by higher spreads for borrowers than when reputation would have no impact on outcome. The lower spreads offered by top tier arrangers that are observed are largely due to the fact that top tier arrangers can self-select the best borrowers, leaving the rest to other arrangers. Moreover, not only are these arrangers involved in larger deals, but are more strongly linked with borrowers that exhibit high credit ratings, which reinforce the idea that top tier arrangers can select deals of superior quality.

Consistent with the certification hypothesis, it appears at first sight that loan arranged by top tier banks have lower spreads than credits underwritten by lower tier lead banks. However, if we control for self-selection the opposition result obtains. Our finding suggests that increased loan selectivity of top tier arrangers is positively related to higher spreads, which can be interpreted as consistent with increased market power hypothesis. This pattern is further supported by our findings that top tier arrangers exploit their dominance with borrowers that do not enjoy an investment grade rating. This suggests that borrowers with investment grade are not ready to pay more from taking loans from top tier banks, but other may well do so, possibly as a way to enhance their profile. At the same time, our results support the notion that the market for syndicated loans is different from the public bond markets, where reputation is used as certification mechanism by established underwriters.

Our findings raise several interesting questions about the role of covenants in loan contracts. First, we find that loan spread, not maturity and covenant incidence, account for a significantly larger portion of the differential between high and low reputation arrangers. Second, firms with higher credit ratings, based on our evidence, have loan contracts with relatively weaker creditor protection measures. The evidence in this paper runs up against the view that the market will allow borrowers to trade-off contractual protection for loan spreads. On the other hand, we do find that some instances where borrowers with lower or no credit rating are able to raise loans that include fewer restrictive terms in their loan contracts and with lower spreads. While there may be some anomalies in the market, our results suggest that credit rating explain more the level of restrictive provisions than other factors in syndicated credits. Top tier arranger in turn only offer lower arranger fees to borrowers with credit ratings. These are also the ones that potentially benefit most from lender certification.

Finally, this study has examined the size and structure of loan syndicates and drawn implications of lead arranger quality. Since they are not simply intermediaries like bond underwriters, top tier arrangers could indeed signal borrower quality not only from terms offered but also by holding a larger fraction of the deal. We show after correcting for self-selection bias between borrower and arranger, top-tier banks tend to form smaller syndicates than other banks. Overall however, they retain a smaller fraction than under the equal sharing rule, but only for those with investment grade that do not need to be certified.

In summary, we have been able to account for the differences between the loans and syndicate structures assembled by top tier arrangers and other banks. We have provided explicit estimates about the size of the loan spreads and fees, accounting for the impact of top

tier arrangers in obtaining superior pricing and have shown that credit ratings account for the level of protective measures in syndicated loans. In this market, the leading banks that underwrite the more attractive deals prefer smaller syndicates in which they typically also take less credits for themselves.

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**Table 1: Definition of Variables**

Variables	Definition
<i>Loan Characteristics:</i>	
Covenants on Free Cash Flow	Number of covenants included in the loan contract on whether the loan must be repaid in case of excess asset sales, excess debt issuance, equity issuance, or excess cash flow
Covenants on Voting	Number of covenants included in the loan contract on changes requested in the tenor or life of the loan and on a minimum percentage of lenders that must approve non-material amendments and waivers
Covenants on Dividend Payout	Dummy = 1 if the loan contract includes covenants restricting payments of dividends
Financial Covenants Included	Dummy = 1 if the loan contract includes financial covenants on at least one of these items: cash interest coverage, current asset-liability ratio, debt to cash flow, debt service coverage, debt to equity, debt to tangible net worth, fixed charge coverage, interest coverage, leverage ratio, maximum loan to asset value, net worth (= asset minus liabilities), and senior debt to cash flow
General Covenants Included	Dummy = 1 if General Covenants are included
Arranger Fees	Fees obtained by arrangers; defined as the sum of upfront fee and commitment fee (in basis points)
Spread	Spread of the loan in basis points above the LIBOR rate
Loan Amount	Size of the loan in million of USD
<i>Lead Arranger Characteristics:</i>	
Top Tier Bank	Dummy = 1 if at least one lead arranger is a top tier bank (as defined in Section 3)
<i>Borrower Characteristics:</i>	
Borrower is Parent Company	Dummy = 1 if the Borrower is the parent company (and therefore equal to 0 if the borrower is a subsidiary)
Sales	Company's Sales in million of USD at date of deal closure
Previous Loan Dummy	Dummy = 1 if borrower raised previously a syndicated loan and the deal is included in the sample
Size of Largest Blockholder	Fraction of outstanding shares held by the largest blockholder (equal to zero if the largest blockholder holds less than 5%)
Number of Blockholders	Number of shareholders that hold at least 5% of outstanding equity
<i>Borrower's Rating:</i>	
Borrower has no Rating	Dummy = 1 if the borrower has no S&P Rating Index. This proxies opaqueness of the borrower
AAA_Rating	Dummy = 1 if the S&P Rating Index of the borrower's senior debt is AAA
AA_Rating	Dummy = 1 if the S&P Rating Index of the borrower's senior debt is AA
A_Rating	Dummy = 1 if the S&P Rating Index of the borrower's senior debt is A
BBB_Rating	Dummy = 1 if the S&P Rating Index of the borrower's senior debt is BBB
Lower_Rating	Dummy = 1 if the S&P Rating Index of the borrower's senior debt is not an investment grade (i.e., is below BBB)
Investment Grade	Dummy = 1 if the S&P Rating Index of the borrower's senior debt is BBB or higher
<i>Deal Type Dummies:</i>	
Merger and Acquisition	Dummy = 1 if the deal purpose is to finance a merger and acquisition
LBO / MBO	Dummy = 1 if the deal purpose is to finance a LBO / MBO
<i>Characteristics of Loan Syndicate:</i>	
Number of Lenders in Syndicate	Number of participants in the loan syndicate, including lead arrangers
Fraction of Deal Retained by Lead Arranger	Percentage of the loan that is retained by the largest lead arranger in the syndicate

**Table 2: League Tables of Banks for Different Time Periods**

This table gives the ranking of the largest banks based on the total volume of syndicated loans. Reported values are based on the full sample of syndicated loans available in DealScan for the period 1991-2005 (45,149 observations). For syndicated loans, an equal fraction 1/N of deal amount was imputed to each participant in the syndicate (where "N" stands for the syndicate size). For banks that merged or were acquired, the amounts and deals previously done were included in the values of the new entity or acquiring bank.

Rank	Time Period 1991-2005			Time Period 2001-2005		
	Arranger	Amount (US\$)	# Deals	Arranger	Amount (US\$)	# Deals
1	JP Morgan Chase	6,402,060,029,139	10,923	JP Morgan Chase	2,951,682,866,274	4,324
2	Bank of America	3,392,439,423,031	11,702	Bank of America	1,830,499,745,881	5,104
3	Citigroup	2,449,922,165,300	3,170	Citigroup	1,565,939,809,659	1,623
4	Deutsche Bank	684,009,181,264	1,575	Wachovia Corp	408,633,868,859	1,501
5	Wachovia Corp	573,101,120,335	2,549	Deutsche Bank	323,554,297,830	554
6	CSFB	552,727,055,846	1,015	CSFB	278,527,243,793	506
7	Bank of New York	242,213,573,318	928	Barclays Bank	156,360,911,496	191
8	Barclays Bank	202,922,060,678	376	Lehman Brothers	146,558,061,917	234
9	Wells Fargo Bank	200,403,294,039	1,551	Goldman Sachs	138,176,089,256	223
10	Lehman Brothers	198,814,693,937	405	Wells Fargo Bank	131,748,246,019	963
11	Goldman Sachs	198,731,303,625	304	ABN AMRO Bank	94,969,009,354	639
12	UBS	191,794,064,090	494	Merrill Lynch	94,533,477,973	210
13	ABN AMRO Bank	164,317,936,110	1,051	General Electric Capital	88,050,597,950	660
14	Scotia Capital	158,202,101,253	533	BNP Paribas	82,827,446,093	293
15	Toronto Dominion Bank	143,905,053,532	394	Bank of New York	74,789,695,777	337

**Table 3 -- Evolution of Syndicated Loan Market from 1987 to 2005**

<b>Panel A: Market Shares and Bank Concentration in Syndicated Loan Market</b>					
Reported values are based on the full sample to syndicated loans available in DealScan for the period 1991-2005 (45,149 observations). Market shares are based on loan amounts, not number of deals done. Abbreviations: ChemB = Chemical Bank, BT = Bankers Trust, BoA = Bank of America.					
Year	# Deals in DealScan database	Market Share of largest Arranger	Market Share of 3 largest Arrangers	Market Share of 5 largest Arrangers	Five Largest Arrangers (in Descending Order)
1987-1990	2,433	0.148	0.406	0.552	Citigroup, Manufacturers Hanover Trust, BT, JP Morgan, ChemB
1991	734	0.187	0.396	0.541	Citigroup, ChemB, First Chicago, JP Morgan, BT
1992	1,060	0.184	0.400	0.545	ChemB, Citigroup, First Chicago, BT, BoA
1993	1,359	0.212	0.467	0.587	ChemB, Citigroup, JP Morgan, BT, Chase Manhattan
1994	2,141	0.219	0.462	0.593	ChemB, Citigroup, JP Morgan, BoA, Chase Manhattan
1995	2,617	0.254	0.454	0.577	ChemB, Citibank, JP Morgan, Chase Manhattan, BoA
1996	3,322	0.239	0.471	0.631	Chase Manhattan, JP Morgan, BoA, Citigroup, NationsBank
1997	3,975	0.282	0.485	0.634	Chase Manhattan, JP Morgan, Citigroup, BoA, NationsBank
1998	3,529	0.212	0.478	0.600	Chase Manhattan, BoA, JP Morgan, Citigroup, First Chicago
1999	3,487	0.300	0.591	0.678	Chase Manhattan, BoA, Citigroup, JP Morgan, Bank One
2000	3,831	0.322	0.631	0.725	JP Morgan Chase, BoA, Citigroup, CSFB, Bank One
2001	3,488	0.335	0.675	0.740	JP Morgan Chase, BoA, Citigroup, Bank One, CSFB
2002	3,463	0.316	0.640	0.725	JP Morgan Chase, BoA, Citigroup, Bank One, Deutsche Bank
2003	3,634	0.248	0.580	0.680	JP Morgan Chase, BoA, Citigroup, Bank One, Deutsche Bank
2004	4,256	0.302	0.657	0.756	JP Morgan Chase, BoA, Citigroup, Wachovia, CSFB
2005	4,253	0.263	0.608	0.697	JP Morgan Chase, BoA, Citigroup, Wachovia, Deutsche Bank
1991-2005	45,149	0.360	0.688	0.758	JP Morgan Chase, BoA, Citigroup, Deutsche Bank, Wachovia
1996-2005	37,238	0.346	0.685	0.757	JP Morgan Chase, BoA, Citigroup, Deutsche Bank, Wachovia
2001-2005	19,094	0.312	0.672	0.749	JP Morgan Chase, BoA, Citigroup, Wachovia, Deutsche Bank

### Panel B: Structure of Syndicated Loans

Reported values are averages for the full sample included in the LPC database, except for the two columns in italic (where the sample with tearsheets is used). For the "Percentage of Deals Arranged by at Least one Top Tier Arranger", values are weighted by deal amount. For "Percentage of Deals with Investment Grade" and "Percentage of Investment Grade Deals Arranged by Top Tier Arranger", only the subsample of deals with rating is used.

Year (or Period)	Percentage of Deals Arranged by at Least one Top Tier Arranger	Percentage of Deals with Investment Grade	Percentage of Investment Grade Deals Arranged by Top Tier Arranger	<i>Average Number of Lead Arrangers</i>	Average Number of Lenders in Syndicate	<i>Average Percentage of Loan Retained by Largest Arrangers</i>
1987-1990	0.561	0.540	0.195	<i>1.140</i>	4.540	<i>23.678</i>
1991	0.541	0.513	0.189	<i>1.128</i>	4.184	<i>15.213</i>
1992	0.515	0.516	0.238	<i>1.097</i>	4.499	<i>19.034</i>
1993	0.596	0.529	0.268	<i>1.059</i>	5.157	<i>13.698</i>
1994	0.625	0.572	0.344	<i>1.056</i>	5.795	<i>14.317</i>
1995	0.643	0.578	0.370	<i>1.055</i>	5.968	<i>15.712</i>
1996	0.669	0.473	0.341	<i>1.068</i>	5.830	<i>13.195</i>
1997	0.637	0.400	0.280	<i>1.030</i>	5.504	<i>19.102</i>
1998	0.623	0.352	0.259	<i>1.086</i>	5.100	<i>21.526</i>
1999	0.619	0.418	0.312	<i>1.054</i>	5.908	<i>23.431</i>
2000	0.643	0.514	0.413	<i>1.142</i>	5.867	<i>19.055</i>
2001	0.616	0.591	0.434	<i>1.237</i>	5.756	<i>28.915</i>
2002	0.610	0.574	0.393	<i>1.357</i>	5.682	<i>26.588</i>
2003	0.571	0.497	0.328	<i>1.208</i>	5.849	<i>16.858</i>
2004	0.608	0.396	0.287	<i>1.368</i>	6.131	<i>22.336</i>
2005	0.615	0.380	0.289		6.039	

### Panel C: Major Mergers & Acquisitions of Commercial Banks in the US

#### Chase Manhattan Bank

- Chemical Bank (acquired in 1996)

#### JP Morgan

- Chase Manhattan Bank (acquired in 2000 -- new name: JP Morgan Chase)
- Bank One (acquired in 2004)

#### Wachovia Bank

- First Union (merged in 2001)
- SouthTrust (acquired in 2004)

#### Bank of America

- Security Pacific National Bank (acquired in 1992)
- NationsBank (merged in 1998)
- FleetBoston (acquired in 2004)

#### Deutsche Bank

- Bankers Trust (acquired in 1998)

#### Wells Fargo Bank

- First Interstate Bank (acquired in 1996)

**Table 4: Descriptive Statistics of Variables**

All the variables are defined in Table 1. For some variables, a smaller sample was used to calculate summary statistics, depending on available information. In particular, 1092 observations were used for the "Fraction of Deal Retained by Lead Arranger" (609 done by top tier arrangers and 482 not), while 1612 observations were used for variables related to various Covenant indices (877 done by top tier arrangers and 734 not).

Variable	Full sample			Sub-sample of deals for Top Tier Bank = 1		Sub-sample of deals for Top Tier Bank = 0		Difference in mean of both sub-samples
	Mean	Median	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	P-Value
<i>Lead Arranger Characteristics:</i>								
Top Tier Bank (dummy)	0.563	1.000	0.541	1.000	---	0.000	---	---
Fraction of Deal Retained by Lead Arranger	24.70	13.37	26.87	19.56	22.77	31.23	30.08	0.000
<i>Borrower Characteristics:</i>								
Borrower is Parent Company	0.878	1.000	0.327	0.859	0.349	0.902	0.297	0.001
Sales	2709.3	784.6	7666.3	3548.2	7924.5	1648.1	7194.2	0.000
<i>Loan Characteristics:</i>								
Spread (basis points)	180.6	187.5	112.8	165.0	110.4	200.4	112.8	0.000
Loan Maturity (months)	57.80	60.00	27.28	55.87	27.28	60.24	27.11	0.000
Loan Amount (US\$ million)	770.1	440.0	1048.2	992.4	1260.5	489.2	583.1	0.000
Financial Covenants Included	0.855	1.000	0.352	0.829	0.377	0.887	0.317	0.000
General Covenants Included	1.000	1.000	0.000	1.000	0.000	1.000	0.000	---
Covenants on Free Cash Flow	2.501	3.000	1.575	2.369	1.602	2.661	1.528	0.000
Covenants on Voting	1.832	2.000	0.397	1.798	0.418	1.872	0.366	0.000
Covenants on Shareholder-Debtholder	0.883	1.000	0.321	0.856	0.351	0.916	0.278	0.000
Arranger Fees	38.55	22.50	54.55	34.31	54.31	43.92	54.42	0.000
<i>Borrower's Rating:</i>								
Borrower has no Rating	0.017	0.000	0.129	0.021	0.144	0.011	0.107	0.061
AAA_Rating	0.002	0.000	0.041	0.003	0.055	0.000	0.000	0.045
AA_Rating	0.007	0.000	0.082	0.011	0.102	0.002	0.044	0.006
A_Rating	0.074	0.000	0.262	0.104	0.306	0.035	0.185	0.000
BBB_Rating	0.152	0.000	0.360	0.181	0.386	0.116	0.320	0.000
Lower_Rating	0.453	0.000	0.498	0.438	0.496	0.473	0.500	0.086
<i>Deal Type Dummies:</i>								
Merger and Acquisition	0.378	0.000	0.485	0.367	0.482	0.392	0.488	0.210
LBO / MBO	0.116	0.000	0.320	0.119	0.324	0.113	0.317	0.670
Number of Observations	2368			1324		1044		

**Table 5: Analysis on the Type of Deals Done by Top Tier Arrangers**

The dependent variable in all the Logit regressions is "Top Tier Bank", a dummy variable equal to one if at least one lead arranger is a top tier bank (as defined in Section 3). The method of estimation is the Logistic regression. All the variables are defined in Table 1. A constant term is included in all the regressions, whose coefficient is not reported. Robust standard errors are used. Significance levels: \*\*\* for 1%, \*\* for 5%, and \* for 10%.

Panel A: Full Sample Analysis						
Variables	(1)	(2)	(3)	(4)	(5)	
<i>Borrower Characteristics:</i>						
Borrower is Parent Company	-0.30 **	-0.27 **	-0.29 **	-0.18	-0.16	
Loan Amount	0.001 ***	0.001 ***	0.001 ***	0.001 ***	0.001 ***	
Sales	0.01	0.01	0.01	-0.01	-0.01	
Previous Loan Dummy	0.19 *	0.18 *	0.19 *	0.28 **	0.29 **	
Size of Largest Block				0.003		
Number of Blockholders					-0.06	
<i>Borrower's Rating (Control Variables):</i>						
Borrower has no Rating	-0.14	-0.11	-0.13	0.05	0.03	
Investment Grade Dummy	0.38 ***	0.38 ***	0.37 ***	0.75 ***	0.73 ***	
<i>Deal Type Dummies (Control Variables):</i>						
Merger and Acquisition	-0.21 **	-0.13	-0.22 **	-0.04	0.06	
LBO / MBO	0.29 *	0.29 **	0.29 *	-0.29	-0.23	
Ln(Nasdaq Composite Index)	0.47	No	No	1.02 *	1.02 *	
Industry Dummies Included?	Yes	No	Yes	Yes	Yes	
Year Dummies Included?	Yes	No	Yes	Yes	Yes	
Number of Observations	2368	2368	2368	1191	1210	
Log Pseudo-Likelihood	-1466.01	-1506.78	-1466.65	-719.86	-729.41	
Wald Chi-squared	202.33 ***	126.25 ***	201.11 ***	146.13 ***	147.81 ***	
Pseudo-R squared	9.77%	7.26%	9.73%	12.54%	12.68%	
Panel B: Analysis of Different Sub-Samples						
Variables	(6)	(7)	(8)	(9)	(10)	(11)
	Sub-sample for Investment Grade = 1		Sub-sample for Investment Grade = 0		Sub-sample for Lower Grades	
<i>Borrower Characteristics:</i>						
Borrower is Parent Company	0.33	-0.73	-0.36 **	0.11	-0.36	-0.53
Loan Amount	0.001 ***	0.002 ***	0.001 ***	0.001 ***	0.0004 ***	0.001 ***
Sales	-0.001	0.01	0.11 ***	0.11 ***	0.09 ***	0.09 ***
Previous Loan Dummy	0.13	-0.03	0.21 *	0.32 *	0.11	0.04
Size of Largest Block		-0.02		0.01		0.02 ***
<i>Borrower's Rating (Control Variables):</i>						
Borrower has no Rating			-0.20 *	-0.02		
Investment Grade Dummy						
<i>Deal Type Dummies (Control Variables):</i>						
Merger and Acquisition	-0.73 **	-0.86 **	-0.05	0.12	-0.05	0.08
LBO / MBO	-0.67	-1.31	0.45 ***	-0.38	0.48 **	0.01
Ln(Nasdaq Composite Index)	-0.63	0.55	0.54	1.01	-0.54	-0.18
Industry Dummies Included?	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies Included?	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	556	310	1812	881	1073	468
Log Pseudo-Likelihood	-255.12	-119.78	-1154.98	-554.95	-676.99	-277.04
Wald Chi-squared	90.13 ***	58.18 ***	153.37 ***	85.34 ***	115.25 ***	80.65 ***
Pseudo-R squared	23.54%	25.63%	8.00%	8.76%	8.56%	13.29%

**Table 6: Regression Analysis on the Loan Spread (Panel A)**

The dependent variable in all the regressions is "Spread" indicated in the loan agreement, defined as the rate (in basis points) above the LIBOR rate. All the variables are defined in Table 1. The method of estimation is the two-step Heckman selection model estimation, except the first specification that is estimated by OLS (for comparison purposes). In regressions (9) and (10), we estimate the model for the sub-sample of deals with Loan Amount greater and lower than the average loan amount of the full sample (=770.1 million; cf. Table 4). In regressions (13) and (14), we estimate the model for the sub-sample of deals with Sales greater and lower than the average Sales of the full sample (=2712.1 million; cf. Table 4). The first-step regression of the Heckman's selection models is based on the regression specifications as shown in Table 5 (and thus depends on the specific sub-sample considered). Instrumental variables used in the first-step regression are Sales (as measure of firm size) and "Previous Loan Dummy". A constant term is included in all the regressions, whose coefficient is not reported. Heckman's two-step standard errors are used. Significance levels: \*\*\* for 1%, \*\* for 5%, and \* for 10%.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Full Sample (OLS Regression)	Full Sample	Full Sample	Sub-sample Investment Grade = 1	Sub-sample Investment Grade = 0	Sub-sample of Deals w/ Low_Rating	Sub-sample of Deals w/ Rating	Sub-sample of Deals w/ no Rating
<i>Lead Arranger Characteristics:</i>								
Top Tier Bank (dummy)	-16.41 ***		-8.27					
LAMBDA (Inverse Mills' Ratio)		106.53 ***	106.55 ***	16.72	152.49 ***	182.17 **	59.07 *	111.99 ***
<i>Borrower Characteristics:</i>								
Borrower is Parent Company	-11.91 **	-22.62 **	-22.58 **	-0.19	-32.12 **	-40.85 *	-17.75 **	-2.53
Loan Amount (million US\$)	-0.01 ***	0.01 *	0.01 *	0.001	0.01	0.02	0.01	-0.001
<i>Borrower's Rating (Control Variables):</i>								
Borrower has no Rating	-42.51 ***	-47.42 ***	-47.19 ***		-51.72 ***			
AAA_Rating	-203.14 ***	-195.68 ***	-195.71 ***	-38.58			-213.23 ***	
AA_Rating	-172.49 ***	-167.77 ***	-167.82 ***	-			-181.47 ***	
A_Rating	-155.38 ***	-138.36 ***	-138.35 ***	35.40 *			-156.29 ***	
BBB_Rating	-128.38 ***	-109.74 ***	-109.81 ***	61.42 ***			-124.61 ***	
<i>Deal Type Dummies (Control Variables):</i>								
Merger and Acquisition	-22.27 ***	-36.56 ***	-36.69 ***	-14.62	-38.30 ***	-33.33 **	-28.32 ***	-41.88 ***
LBO / MBO	46.42 ***	38.34 ***	38.29 ***	110.47 ***	39.53 ***	33.47	22.95 **	61.59 **
Ln(Nasdaq Composite Index)	7.51	39.50	39.47	-18.78	86.70 **	17.99	15.87	136.66 **
Industry Dummies Included?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies Included?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	2368	2368	2368	556	1812	1073	1629	739
Wald Chi-squared		822.03 ***	823.47 ***	214.38 ***	267.25 ***	131.14 ***	1012.20 ***	409.98 ***
F-Statistics	389.85 ***							
R-squared	84%							

**Table 6: Regression Analysis on the Loan Spread (Panel B)**

Variables	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
	Sub-sample of Above- Average Size Deals	Sub-sample of Below- Average Size Deals	Sub-sample of All Deals Done Before 1996	Sub-sample of All Deals Done from 1996 on	Sub-sample of Larger Firm Size (based on Sales)	Sub-sample of Smaller Firms (based on Sales)	Sub-sample of Listed Firms	Sub-sample of Non- Listed Firms
<i>Lead Arranger Characteristics:</i>								
LAMBDA (Inverse Mills' Ratio)	44.18	156.36 *	89.53 *	117.67 ***	32.73	43.98	23.65	137.70 ***
<i>Borrower Characteristics:</i>								
Borrower is Parent Company	-11.49	-26.60	-33.47 *	-20.92 **	-21.59 *	-10.01	-10.23	-15.74
Loan Amount (million US\$)	-0.0002	0.11	0.01	0.01 *	0.003	0.01	0.001	0.01
<i>Borrower's Rating (Control Variables):</i>								
Borrower has no Rating	-64.41 ***	-44.64 ***	-40.01 *	-48.47 ***	-84.25 ***	-34.74 ***	-43.83 ***	-40.00 ***
AAA_Rating	-173.91 **	-194.84 ***	-187.98 ***	-182.01 ***	-193.96 ***	-248.38 ***	-151.85 *	-214.19 ***
AA_Rating	-160.98 ***	-160.49 ***	-	-148.04 ***	-162.11 ***	-170.99 ***	-172.46 ***	-183.88 ***
A_Rating	-135.87 ***	-164.89 ***	-139.70 ***	-127.10 ***	-147.15 ***	-147.74 ***	-146.45 ***	-143.55 ***
BBB_Rating	-119.91 ***	-123.71 ***	-109.43 ***	-101.94 ***	-126.18 ***	-109.87 ***	-100.99 ***	-139.99 ***
<i>Deal Type Dummies (Control Variables):</i>								
Merger and Acquisition	-30.62 ***	-45.32 ***	-83.54 ***	-27.04 ***	-26.45 **	-37.83 ***	-26.13 ***	-48.61 ***
LBO / MBO	42.23	37.16 **	-1.88	41.77 ***	37.69	25.75 **	46.43 **	18.56
Ln(Nasdaq Composite Index)	1.37	83.70 *	168.38 **	28.25	12.11	56.36 **	73.02 **	-10.63
Industry Dummies Included?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies Included?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	683	1685	460	1908	503	1865	1210	1158
Wald Chi-squared	567.60 ***	357.86 ***	274.70 ***	11566.64 ***	2115.09 ***	681.20 ***	598.54 ***	384.46 ***

**Table 7: Analysis of the Loan Structure**

The dependent variables are various Covenants indices and loan maturity indicated in the loan agreement. All the variables are defined in Table 1. The method of estimation is the two-step Heckman selection model estimation, except the first row of full sample that is estimated by OLS (for comparison purposes). The first-step regression of the Heckman's selection models is based on the regression specifications as shown in Table 5 (and thus depends on the specific sub-sample considered). Instrumental variables used in the first-step regression are Sales (as measure of firm size) and "Previous Loan Dummy". A constant term as well as all borrower characteristics (Borrower is Parent Company, Sales, Loan Amount), borrower's rating, deal type dummies (Merger and Acquisition, LBO/MBO) and the various market condition variables (Ln(Nasdaq Composite Index), Year dummies, Industry dummies) used in previous tables are included in all the regressions, whose coefficients are not reported. Heckman's two-step standard errors are used. Significance levels: \*\*\* for 1%, \*\* for 5%, and \* for 10%.

Variables	Covenants on Free Cash Flow	Covenants on Voting	Covenants on Dividend Payouts	Financial Covenants	Loan Maturity	Covenants on Free Cash Flow and Dividends	Nbr. of Financial Covenants
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<u>Full sample (OLS or standard Logit regressions):</u>							
Top Tier Bank (dummy)	-0.157	0.041	-0.051	0.086	-1.749 **	-0.050	-0.110 **
<u>Full sample:</u>							
LAMBDA (Inverse Mills' Ratio)	-0.261	0.399	0.044	0.430 *	0.840	-0.873	0.230
<u>Sub-sample of borrowers with Investment Grade (Investment Grade Dummy = 1)</u>							
LAMBDA (Inverse Mills' Ratio)	-1.845	0.785	0.094	0.938	2.641	-1.831	0.505
<u>Sub-sample of borrowers without Investment Grade (Investment Grade Dummy = 0)</u>							
LAMBDA (Inverse Mills' Ratio)	2.314	0.920	0.867	0.337	21.606 *	1.677	1.038
<u>Sub-sample of borrowers without Rating (Borrower has no Rating = 1)</u>							
LAMBDA (Inverse Mills' Ratio)	-15.462	-0.979	-0.116	-1.559	1.203	71.304	0.924
<u>Sub-sample of borrowers with Rating but below BBB (Low Rating = 1)</u>							
LAMBDA (Inverse Mills' Ratio)	6.482	1.447	0.555	0.866	8.912	7.059	-1.722



**Table 9: Regression Analysis on the Structure of Loan Syndicate (Panel A)**

The dependent variable is the "Number of Lenders in Syndicate" in Regressions (1) - (4), "Fraction of Deal Retained by Lead Arranger" in Regressions (5) - (8) and "Number of Lenders in Syndicate" times "Fraction of Deal Retained by Lead Arranger" in Regressions (9) - (16). All the variables are defined in Table 1. The method of estimation is the two-step Heckman selection model estimation, expect Regressions (1), (5) and(9) that are estimated by OLS (for comparison purposes). The first-step regression of the Heckman's selection models is based on the regression specifications as shown in Table 5 (and thus depends on the specific sub-sample considered). Instrumental variables used in the first-step regression are Sales (as measure of firm size) and "Previous Loan Dummy". A constant term is included in all the regressions, whose coefficient is not reported. Heckman's two-step standard errors are used. Significance levels: \*\*\* for 1%, \*\* for 5%, and \* for 10%.

Variables	Dep. Var.: Number of Lenders in Syndicate				Dep. Var.: Fraction of Deal Retained by Lead Arranger			
	(1) -- OLS	(2)	(3)	(4)	(5) -- OLS	(6)	(7)	(8)
<i>Lead Arranger Characteristics:</i>								
Top Tier Bank (dummy)	1.92 ***		0.07		-5.21 ***		-1.05	
LAMBDA (Inverse Mills' Ratio)		-25.24 ***	-25.24 ***	-9.90 ***		19.67 ***	19.71 ***	5.15
% Deal Retained by Lead Arranger				-0.20 ***				
Number of Lenders in Syndicate								-1.06 ***
<i>Borrower Characteristics:</i>								
Borrower is Parent Company	-1.13	1.12	1.12	-4.60 ***	2.00	-1.86	-1.86	-6.34 **
Loan Amount (US\$ million)	0.005 ***	0.002	0.002	0.003 ***	-0.003 ***	-0.0002	-0.0002	0.003 ***
<i>Borrower's Rating (Control Variables):</i>								
Borrower has no Rating	-2.44 ***	-2.49	-2.50	-4.29 ***	-3.10	-0.44	-0.38	-4.89 **
AAA_Rating	-1.90	-7.32	-7.32	-11.76 *	26.41	43.38 ***	43.39 ***	22.00
AA_Rating	-5.04 *	-10.29 *	-10.29 *	-8.37 ***	-0.17	10.97	10.99	-0.12
A_Rating	-0.08	-5.73 **	-5.73 **	-6.30 ***	-9.94 ***	3.32	3.35	-4.02
BBB_Rating	2.23 ***	-2.65	-2.65	-4.86 ***	-12.72 ***	-0.57	-0.54	-5.59
<i>Deal Type Dummies (Control Variables):</i>								
Merger and Acquisition	0.61	2.36	2.36	2.75 **	-2.62 -3.52	-8.65 ***	-8.68 ***	-3.96 *
LBO / MBO	-1.21 *	-4.48 **	-4.48 **	1.24	-3.77	-8.16 **	-8.17 **	-5.16
Nasdaq Composite Index	-0.62	-3.39	-3.39	-2.13	-9.98	-0.40	-0.36	-2.56
Industry Dummies Included?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies Included?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	2368	2368	2368	1659	1659	1659	1659	1659
Wald Chi-squared		266.17 ***	266.18 ***	570.60 ***		225.16 ***	225.38 ***	419.66 ***
F-Statistics	19.10 ***				6.70 ***			
R-squared	31%				15%			

**Table 9: Regression Analysis on the Structure of Loan Syndicate (Panel B)**

Variables	Dep. Var.: Fraction Held by Largest Lead Arranger * Nbr. Lenders							
	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
	Full Sample (OLS Regression)	Full Sample	Full Sample	Sub-sample Investment Grade = 1	Sub-sample Investment Grade = 0	Sub-sample of Deals w/ Low_Rating	Sub-sample of Deals w/ Rating	Sub-sample of Deals w/ no Rating
<i>Lead Arranger Characteristics:</i>								
Top Tier Bank (dummy)	10.69							
LAMBDA (Inverse Mills' Ratio)		-130.76	-120.70	-475.31 **	113.40	-70.72	-316.40 **	126.18 **
<i>Borrower Characteristics:</i>								
Borrower is Parent Company	-10.61	-77.24	-9.57	-192.03 **	122.43 *	75.88	-115.80 *	100.29
Loan Amount (US\$ million)	0.02 ***	0.01	-0.01	-0.02	0.10 ***	0.03	-0.01	0.11 ***
Size of Largest Block			0.85					
<i>Borrower's Rating (Control Variables):</i>								
Borrower has no Rating	-47.29 ***	-72.92 **	-68.86		-33.97			
AAA_Rating	-109.84 ***	-242.34	--	--			-345.85	
AA_Rating	-99.12 ***	-171.37	-90.25	170.84			-273.13 **	
A_Rating	-24.95	-116.90 *	-166.28	170.30			-244.79 **	
BBB_Rating	-69.78 ***	-167.19 ***	-179.96 *	136.70			-271.73 ***	
<i>Deal Type Dummies (Control Variables):</i>								
Merger and Acquisition	-10.82	0.40	-27.54	106.83	-54.38	17.09	87.28	-126.86 ***
LBO / MBO	28.07	22.78	7.43	--	21.81	42.83	30.19	-133.61 *
Nasdaq Composite Index	-91.16	-219.93 *	-130.80	158.77	-324.03 **	-405.50 *	-105.77	-204.52
Industry Dummies Included?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies Included?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	1659	1659	1339	424	1235	681	1105	554
Wald Chi-squared		198.33 ***	157.55 ***	85.29 ***	179.58 ***	131.39 ***	162.54 ***	131.37 ***
F-Statistics	2.78 ***							
R-squared	4.94%							