

Stockholm School of Economics
Department of Finance
Master Thesis in Corporate Finance
Fall 2014

Mitigating Information Asymmetry in Syndicated Lending: Evidence from Swedish Loan Market

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Abstract

This paper explores syndicated lending in Sweden theoretically and empirically, focusing on how information asymmetry between lead arranger(s) and participating banks affects syndicate structure and how asymmetric information can be mitigated through various mitigation factors. In particular, we introduce business groups as a way to enhance information flow among the members of the same group. Consistent with moral hazard in monitoring, the syndicate becomes more concentrated when the borrower requires heavy monitoring and due diligence. Significant reduction in information asymmetry is achieved when a relation, defined by previous researches as having had a prior lending relationship and redefined in this paper as belonging to the same business group, exists between the lead arranger and the borrowing firm. Another factor that is proved to mitigate information asymmetry is geographic proximity.

Keywords: Syndicated loan, Information asymmetry, Moral hazard, Adverse selection, Business groups

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Acknowledgements

First of all, we would like to express our gratefulness to Mariassunta Giannetti for all the assistance and guidance provided. She has been most supportive throughout the entire process, giving us valuable insights. Secondly, we would like to thank Kristofer Nivenius from Nordea for taking the time and effort to help us understand the Swedish market for syndicated loans.

Stockholm, December 8, 2014

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1 - Introduction

Banks play a vital role in corporate financing and syndicated loans alone exceed public finance and equity issuance (Ferreira and Matos (2012)). As the world recovered from the recent global financial crisis, we saw a revitalization of banks' balance sheet worldwide, resulting in excess cash to be invested. The syndicated lending market took off and shifted from a lender's market to a buyer's market (see Appendix I - Diagram I & II for global and Swedish lending volumes). In 2013, the global syndicated lending reached \$4.2 trillion, a 29% increase compared to 2012 and the strongest annual period for lending since 2007¹. Nearly 9 500 transactions were closed during 2013, an increase of 10% compared to full year 2012.² Europe accounts for approximately 20% of the total proceeds, at \$837 billion. Sweden's total proceeds from syndicated loan issues in year 2013 reaches \$21 billion (0.5% of global volume), a 16.3% increase from 2012³.

A syndicated loan is a loan with more than one lender. In the past 15 years, syndicated lending has become an increasingly popular research area in the academic world. The addition of a lender-to-lender relationship among syndicate members differentiates a syndicated loan from a sole-lender loan and adds another prospective to the classic asymmetric information problem between borrower and lead arranger. For traditional sole lender loans, information asymmetry may exist between the borrower and the lender, which leads to an information asymmetry premium for opaque firms. When several lenders are involved in a loan, the information asymmetry may exist both between the borrower and the lender as well as between different lenders. Specifically, this is common between the lead arranger(s), who often have more knowledge about the borrower, and the participating banks. This complicates the underlying principal-agent problem and gives the lead arranger(s) a double identity, i.e. the principal in the lead-borrower relationship and the agent in the lead-participant relationship. In a hierarchy ranking the various parties of a syndicate according to information richness, we would observe the borrowing firm at the top, followed by the mandated lead arranger(s) and participating banks at the bottom.

Information asymmetry, depending on where the asymmetry lies can lead to two outcomes: adverse selection or moral hazard. In syndicated lending, adverse selection (Dennis and Mullineaux (2000), Lee and Mullineaux (2004), Jones, Lang and Nigro (2005)) assumes

¹ http://dmi.thomsonreuters.com/Content/Files/4Q2013_Global_Syndicated_Loans_Review.pdf

² Ibid

³ Ibid

information asymmetry between the lead arranger(s) and participating banks and predicts that the lead arranger(s)' information advantage about the borrower over the participants is anticipated by the participants, who in turn force the lead arranger(s) to take a large share of the loan itself as a signal for "good quality". Moral hazard, on the other hand, assumes that the lead arranger(s) and the participants are equally uninformed about the borrower from the very beginning and the participants need the lead arranger(s) to monitor the borrower in order to minimize shirking (Sufi (2007), Holmstrom and Tirole (1997)). It argues that if there is a previous lending relationship between the borrower and the lead arranger(s), the need for monitoring will be reduced so the next syndicate between the same borrower and lead arranger should require the lead arranger to take a smaller share of the loan itself and bring in more participants. Furthermore, Sufi (2007) argues that other factors, such as borrower's exposure to the syndicate market, geographic proximity and whether or not the loan is secured also reduce information asymmetry.

In the paper, we investigate empirically and theoretically the impact of various mitigation factors on information asymmetry in syndicated lending based in Sweden. As an extension to the bank-firm relationship defined as repeated lending interactions by existing research, we introduce a new definition of relationship, board/ownership relationship, represented by interlocking directorates between banks and other members owned by a business group as well as companies held as core assets by the group's investment company. In this paper, it is included as a dummy variable with value of one if the borrowing firm and the lead arranging bank of a syndicate either share a common board directorate or belong to the same business group. This is interesting to investigate given the existence of large business groups in Sweden. The two major groups are the Wallenberg Group and the Handelsbanken Group and they influence companies within the group through ownership held by their respective investment companies, Investor and Industrivärden, and through interlocking directorates. Also, the long-term ownership perspective of these business groups creates a long-lasting relationship between firms within the same group, making it a suitable candidate for mitigating information asymmetry. Furthermore, board/ownership relationship and its impact on syndicate structure to our knowledge is a new area of research which few have written about.

To summarize, the hypotheses we intend to test in this paper are:

I. Information asymmetry exists in the syndicated loan market and affects the syndicate structure.

II. Moral hazard is the most severe consequence of information asymmetry. It is expected that a prior lending relationship or board/ownership relationship between lead arranger(s) and borrowers reduces moral hazard.

Using a sample of 1005 Swedish non-financial syndicated loans made from 1994 to 2013, we test our hypotheses using OLS regressions controlling for year, industry, loan type, loan purpose fixed effects. In summary, the results show conclusive evidence of asymmetric information, with transparent firms being able to form large diffuse syndicate with significantly more lenders. Furthermore, our findings confirm moral hazard as the predominant feature of the market and show that when there is either a previous lending relationship or a board/ownership relationship between the borrower and the lead arranger(s), borrowers are able to form diffuse syndicates with more lenders. In addition, geographic proximity, measured as number of Swedish leads involved in each facility, is also a good mitigation factor for information asymmetry.

The rest of the paper is organized as follows. Section 2 describes the syndicated lending market in general, Swedish business groups and existing research relevant to this paper. Section 3 presents methodology, data and summary statistics. Section 4 details the results from empirical analysis in connection to the theoretical background. Finally, Section 5 concludes.

2 - Background and Existing Research

2.1 The Syndicated Loan Market

i. What is A Syndicated Loan?

Borrowing through a loan facility provides the borrower with efficient and flexible funding for an acquisition, bridging financing, working capital or medium-term financing. When the facility is large and sophisticated or of different types, it is commonly provided by a group of lenders known as a syndicate under a syndicated loan agreement⁴. The borrower could be a company, a project or an organization. The simplest form of a syndicated loan involves two banks, an arranger or a leading bank who is mandated to arrange the syndication and a participating bank. Most often there are many participating banks and several arrangers depending on e.g. the size of the loan. It is a way for lenders to manage risk and the likelihood of syndication increases with the borrower's transparency, the arranger's reputation, the loan's maturity and capital constraints (Dennis and Mullineaux (2000)).

There are three types of underwritings for syndicated loans: an underwritten deal in which the arrangers guarantee the whole commitment; a best-effort deal in which the arrangers commits to less or equal to the entire amount of the loan; and a club deal which is a smaller loan pre-marketed to a group of relationship lenders⁵. The type of a syndication deal depends largely on the geography. In Europe, underwritten deals dominates the syndicated loan market whereas the American firms often opt for best effort deals (Carey and Nini, 2004). In Sweden, the syndicated market primarily consists of traditional syndication deals, including a large number of insurance backstop facilities provided to large corporations, and club deals (privately placed deals) that involved more informed (about each other) parties⁶. Notably, there are a number of large privately placed deals (e.g. the Ahlsell LBO), consisting of more than one hundred lenders, arranged by private equity firms in the recent years. They are often characterized by many lead arrangers, a large number of international lenders as well as many institutional lenders.

Additionally, banks dominates the syndicated loan market in Europe due to the intrinsically regional nature of the continent, although institutional investors have increased

⁴ http://www.lma.eu.com/uploads/files/Introductory_Guides/Guide_to_Par_Syndicated_Loans.pdf

⁵ "Primer | LeveragedLoan.com." LeveragedLoan.com. N.p., n.d. Web. 1 Dec. 2014.

⁶ Kristofer Nivenius, Head of Structured Loan Operations, Nordea

their presence in the recent years. By contrast, capital markets play a bigger role in the U.S. with more active institutional investors. The price of loans differs quite extensively between the European and U.S. market, with syndicated loan spreads significantly smaller in Europe, holding everything else equal.

In a syndicated loan, all lending banks involved receive identical documentation, which implies that everyone holds the same seniority status if a default is to occur⁷. In this way, all banks are treated equally in terms of pricing and protection. This is also beneficial to the borrower thanks to less administrative work and easier renegotiation/restructuring procedures.

ii. Syndication Process

The syndication process is often initiated by a borrowing firm, who appoints a lender through the grant of a mandate (a preliminary agreement) to make it the arranger of the deal (Carey and Nini, 2004). Mandated arrangers are usually top-tier banks that often have Mandated Lead Arranger (MLA) as their title. The lead arranger(s) then signs this preliminary agreement with the borrower that specifies covenants, fees and collateral. Also specified in the mandate are the loan amount and a range of the interest rate. The arranger(s) takes the responsibility of providing the borrower with advices on various types of facilities it requires. It then negotiates broad terms of those facilities. At the same time, the lead arranger(s) is also responsible for putting together a syndicate of participating banks (Sufi (2007)). However, it is not always the lead arranger who takes this responsibility and often the borrowing company also takes part in the selection of participants. According to Kristofer Nivenius, the borrower sometimes makes a “whitelist”, naming a wide range of banks/financial institutions that could be a potential participant in the syndicate. The lead arranger(s) then provides all potential participants with an information memorandum on the borrower. Once the participating banks agree to be a part of the syndicate, they sign the loan agreement.

Banks have several motivations to syndicating loans. Simons (1993) argues that the main reason for bank syndication being the desire to achieve diversification in their loans portfolios because syndicated loans can give these banks an opportunity to lend to borrowers in regions and industries to which they might otherwise have no convenient access. Also, Dennis and Mullineaux (2000) mention that syndication can be a way to avoid “overline loans” as

⁷ Rhodes (2006), p. 14

regulators limit the maximum size of any single loan to a portion of the bank's equity. Additional motivations for engaging in syndicated lending could be enhanced fee incomes and better interest rate risk management.

Sufi (2007) argues that lead arrangers and participating banks are two distinct lender groups with major differences. First of all, they have very different relationships with the borrowing firm. Participating banks almost never negotiate with the borrower directly but maintain an "arm's-length" relationship through the lead arranger(s). The lead arranger(s) is the point of contact between the borrower and the participants. It collects information and conduct monitoring on the borrowing firm. This seems to be the view held by the majority of researchers from the academic world. However, the Mandated Lead Arranger(s) does not always bear as much responsibility as it should theoretically, according to Kristofer Nivenius. He mentioned that the role of the "Mandated Lead Arranger" is somewhat varying in the Swedish market and he has occasionally experienced syndicates who deem a lending bank "Mandated Lead Arranger" just to get it involved in the deal. Secondly, Sufi argues that the lead arranger(s) typically holds a larger share of the loan in comparison to other participants. Furthermore, Franscois and Missonier-Piera (2004) suggest that multiple lead arrangers in a syndicate bear different duties given they possess different competitive advantages. Dennis and Mullineaux (2000) point out that the agreement often exculpates the lead arranger from any potential liability to the syndicate members except where it results from "gross negligence or willful misconduct."

Syndication often occur in stages. The initial group of lenders agreeing to finance the loan are usually referred to as co-arrangers, who then find additional lenders to take part in the syndication (Simons 1993). To facilitate administration of the loan, one bank from the syndicate (often the lead arranger(s)) is appointed as the "agent" of loan. Its main responsibilities include monitoring borrower compliance with facility terms, being a point of contact between the borrower and the syndicate group, administering drawdowns of funds and interest payment.

iii. Syndication Costs

Typically, there are two types of cost faced by the borrower, interest payment and upfront fees. The interest charged is usually a margin over Libor and it is paid throughout the loans maturity. Upfront fees varies between 25 and 175 basis points of the total loan amount

and can be shared by the lead arranger(s) and other syndicate members⁸. They include: i) a participation fee to syndicate participants to reflected the amount they contributed to the loan; ii) an arrangement fee to the MLA for putting together the syndicate; iii) an agency fee paid to the agent for its administrative work⁹.

The pricing of the loan is usually set at the same time as the structure and basic terms of the loan are agreed upon. Once the mandate is won by one or several banks, the final terms are negotiated with the borrower. Additional banks can join later under the already agreed terms and pricing¹⁰. Sometimes the borrower can only raise a portion of the desired amount if market responds negatively to the issuing. In this case, including a market flex clause enables the arranging banks to make changes to the terms, pricing and structure in order to attract more participants.¹¹

2.2 Information Asymmetry

If markets were perfects, loans would be correctly priced according to risk and funds would always be available for positive NPV projects. However, in reality markets are not perfect and information asymmetry may exist between borrowers and lenders and between leads and participants.

Asymmetric information is defined as a situation in which one party in a transaction has more or superior information compared to another. This often happens in situations where the seller knows about its products than the buyer. Likewise, in a syndicated loan, a borrower knows more about its financial conditions and future prospects than the lead arranger(s), who in turn have superior information about the borrower than the participating banks. This can lead to two types of problems, adverse selection and moral hazard, which will be discussed in the following sections.

i. Adverse Selection

This problem arises when people take advantage of their superior information before a transaction. It is demonstrated by George A. Akerlof's (1970) article "The Market for Lemons", where he uses the second hand car market to illustrate that owners of good quality cars will

⁸ Rhodes (2006), p. 543

⁹ Ibid

¹⁰ Rhodes (2006), p 199

¹¹ Rhodes (2006), p 134

withdraw from the market given that the car dealer can't distinguish the quality of the car before the transaction. In syndicated lending, a lead arranger may syndicate more or less out of a loan for its own benefits if it has private information on a borrower, depending on whether the information indicates good or bad borrower quality. In anticipation of this behavior, participant lenders demand the lead arranger to hold a large portion of the loan, thereby taking on more risk itself. This acts as a signal for "good quality", although not fully eliminating the information asymmetry problem. Also, a more concentrated syndicate is likely to be formed when information asymmetry is severe, i.e. when the borrower is opaque.

Existing researches that emphasize adverse selection as the main consequence of information asymmetry include Dennis and Mullineaux (2000), Lee and Mullineaux (2004), Jones, Lang and Nigro (2005) and Panyagometh and Roberts (2010). Dennis and Mullineaux (2000) found evidence that the likelihood of a loan being syndicated increases with borrower transparency and the lead arranger(s) holds larger share of information-lacking loans in its own portfolio. Lee and Mullineaux (2004) indicates that smaller, more concentrated loan is formed when the borrower is opaque and when the credit risk is relatively high to enhance monitoring efforts. Jones, Lang and Nigro (2005) extend the previous researches on information asymmetry and lead arranger's share of a syndicate by estimating a multivariate cross section/time-series regression model. Their results show that bank capital, loan seasoning also have significant effects on the average loan portion retained by the lead arranger. Furthermore, they found that although lead arrangers retain larger share of information-problematic loans in general there are certain banks specializing in the lower end of the credit spectrum and they often retain a larger share of the low-quality loans. Panyagometh and Roberts (2010) offer an alternative view on the adverse selection problem caused by information asymmetry, arguing that since banks understand the importance of repeated business in loan syndication, lead arrangers do not use their private information to exploit syndicate participants in equilibrium but rather focus on accurately certifying loan quality.

In addition to these researches, there are also other lines of research. Ivashina (2009) approaches information asymmetry and adverse selection in loan syndicate from a cost perspective, taking into account the impact on loan spread in addition to syndicate structure. Bolton and Scharfstein (1996) argues that the number of participating lenders increases for opaque firms, in contrast to what adverse selection predicts, as a way to prevent easy defaults.

ii. Moral Hazard

Moral hazard is a problem that occurs when one party takes more risks because another party has agreed to bear the consequences of those risks. It arises when one party's actions can cause another party troubles after a transaction has taken place. Moral hazard is a result of a type of asymmetric information where the risk-taking party in the financial transaction knows more about its intentions or actions than the parties bearing the consequences. It is also a principal-agent problem where the risk-taking party, called the agent, acts on behalf of the risk-bearing party, called the principal. The agent often has more information than the principal, which may give him/her the incentive to take inappropriate actions when the interests of the agent and the principal are not aligned or when the agent's actions cannot be fully monitored. This situation is common in insurance, labor contracting and the delegation of decision-making. Under the setting of syndicated lending, Sufi (2007) argues that there exists a moral hazard problem, since the lead arranger's monitoring and due diligence effort is unobservable. The theoretical framework he uses is based on prominent models of moral hazard by Holmstrom (1979) and Holmstrom and Tirole (1997), which suggest that borrowers with limited public information need monitoring and due diligence from the lead arranger(s) before other lenders participate in the syndicate. To ensure that the lead arranger(s) fulfill its monitoring and due diligence responsibilities, other lenders demand it to retain a larger financial stake in the borrowing firm, thereby aligning the interest of the agent with that of the principal.

iii. Difference between Adverse Selection and Moral Hazard

The key difference between adverse selection and moral hazard hypotheses is the assumption on where information asymmetry lies and when the parties take advantage of asymmetric information. Adverse selection assumes asymmetric information on the quality of something between two unequally informed parties whereas moral hazard assumes asymmetric information on the intention of an agent in a principal agent situation. Under the adverse selection hypothesis, it is assumed that the lead arranger(s) knows more about the borrower than the participants prior to the syndication. Under moral hazard, it is assumed that the lead arranger(s) does not have private information prior to the transaction and that it knows more about its intention to exert effort on monitoring the borrower than the participating banks after the transaction.

Under both moral hazard and adverse selection, we would expect the syndicate to be less concentrated when the borrower is opaque. If a relationship between the lead arranger and the borrower increases the information advantage held by the lead arranger compared to the participating banks, adverse selection would lead to a situation where the lead arranger takes on a larger share of the loan to signal that borrower is of good quality and the concentration of the syndicate would decrease. Under moral hazard, there is no information advantage held by a lead arranger from the beginning, but if there is a relationship between the borrower and the lead arranger the effort required to carry out monitoring decreases. Consequently, the minimum share of the loan held by the lead arranger to make monitoring a rational decision decreases and participants would allow a less concentrated syndicate.

2.3 Firm Opaqueness

Firm opaqueness has been defined and measured in different ways under existing research. Zeckhauser and Pond (1990) argue that firms whose earnings are dependent on new investment opportunities, rather than on assets in place, are opaque. They argue that shareholders of firms relying on new investments are less able to detect actions taken of management to enhance earnings in the short term, with lower future earnings as a consequence. Zeckhauser and Pond argue that R&D to sales is a good measure for how dependent a firm is on new investment opportunities. Gaver and Gaver (1995) make a similar argument and consider firms with high market-to-book ratios to be opaque. Schipper (1989) shows that the inability of shareholders to counteract earnings management increases manipulation and Trueman and Titman (1989) shows that managers inflate valuations by reducing earnings volatility. Skinner (1993) suggests the use of the value of property, plant and equipment divided by the market value as a measure of transparency.

Didier, Levine and Schmukleroften (2014) use firm size to proxy for transparency as they argue that larger firms tend to be older and more thoroughly researched than smaller firms. Also, they conclude that sales and number of employees are good proxies for firm transparency. Berger, Klapper and Udell (2001) argue that borrower size is an inverse measure of informational opacity as because smaller firms have less informative financial statements, less experience, and lower public profiles.

2.4 Mitigation Factors

In addition to investigating the consequences of information asymmetry in the syndicated loan market, this paper also attempts to incorporate potential factors that mitigate information asymmetry. The so-called mitigation factors cover the impact of the geographical distance between the lead arranger and the borrower, the reputation of the lead arranger and, most importantly, the existing relationship between the lead arranger and the borrower. The existing relationship between the lead arranger(s) and the borrower is divided into two different categories. First, previous transactions between the borrowing firm and its lead arranger are regarded as Mitigation Factor 1. We expect the lead arranger to have accumulated information on the borrower during their previous interactions. Second, firms within the same business group are expected to share information with each other and the information asymmetry between a borrower and a lead arranger within the same business group is expected to decrease. The relationship between a borrower and bank generated by being part of business group is regarded as Mitigation Factor 2 and will be discussed in detail in the following sections. Also, the effect of being a known borrower in the syndicated loan market is examined as Mitigation Factor 3 and it is defined as the number of years the borrower has been active in the syndicated lending market in the previous five years. For Mitigation Factor 4, the impact on asymmetric information from the loan being secured or not is being investigated. Last, we examine the impact on asymmetric information from the reputation and the geography of the lead arranger(s) and Mitigation Factor 5 is subsequently defined as the number of Swedish banks who are lead arrangers in the syndicate. Mitigation Factor 1 and 2 are motivated by previous research on relationship banking and discussed in the following section.

i. Relationship Banking

Relationship banking is not sharply defined in literature. Generally, three conditions need to be met when relationship banking is present according Berger (1999):

- i. The intermediary gathers information beyond readily available public information
- ii. Information gathering takes place over time through multiple interactions with the borrower, often through the provision of multiple financial services
- iii. The information remains confidential.

Boot (2000) described it as the provision of financial services by a financial intermediary that invests in obtaining customer-specific information, often propriety in nature,

through multiple interactions over time or across products. Under the setting of syndicated lending, this information can be obtained through monitoring services (Diamond, 1984; Winton, 1995) provided by banks. This information can be used in later interactions with the same borrower. Such proximity between the bank and the borrower has been shown to facilitate monitoring and screening and thereby reduces information asymmetry. Generally, only the lead bank in a syndicated loan develops such relationship with the borrower, and the relationship is somewhere in between a bank loan and a public debt (Dennis and Mullineaux (1999)).

Boot (2000) reviewed contemporary literature on relationship banking by listing its benefits and costs. Starting with benefits, the borrower is more likely to reveal proprietary information to its bank that it would never have revealed to the financial market and the lead arranger bank has higher incentives to invest in information production about the borrower because of its role as an enduring and dominant lender. This can lead to better information flow between borrowers and lenders. Relationship lending also encourages long-term contracting and repeated interactions. Bharath et al. (2007) show that lending banks increase the probability of attracting future lending business with nearly 40% if they have a prior loan relationship with the borrowing bank. Also, the price margin is reduced by 5% if a loan relationship exists.

Nevertheless, there are several potential problems linked with relationship banking: i) soft-budget problem where borrowers who realize that they can renegotiate contracts ex post (due to closer relationship with the bank the borrower on the brink of default may approach the lender for more credit) may have perverse incentives ex ante (Bolton and Scharfstein, 1996; Dewatripont and Maskin, 1995) and ii) hold-up problem where lenders use the proprietary information obtained about borrowers to "lock in" the company and charge ex post high loan interest rates.

ii. Interlocking Board Members and Common Ownership

A study by Heemskerk, 2013, shows that the European network of board interlocks has increased in the period from 2005 to 2010. Furthermore, a study of American firms by Mizruchi and Stearns (1988) shows that industrial firms are more likely to appoint board members from financial institutions in an economic environment with declining solvency, declining profit rate and declining interest rates. Schoorman, Bazerman and Atkin, 1981, argue that there are four potential benefits of having interlocking directorates. First, it has the potential to reduce horizontal uncertainty through communication and coordination among competitors. Second, it

facilitates vertical coordination between the firm and its suppliers of inputs. The third potential benefit is the knowledge and skills an outside director might provide. Finally, the fourth potential benefit is the image a company might gain from having a certain composition of its board. For the sake of this paper, the potential gain from vertical coordination is instrumental. According to Katz & Kahn, 1978, organizations can be viewed as open systems that have exchange relationships with adjacent organizations (receivers of output and providers of input). Board interlocks reduce uncertainty regarding outputs and inputs, as well as providing a more efficient method of dealing with the firm's environment. In this study, our aim is to investigate whether the vertical benefits of interlocking directorates can reduce the information asymmetry between borrower and bank.

Ferreira and Matos, 2012, investigate the effect of bank control through interlocking directorates and holding equity in borrowing firms in the market for syndicated loans. They argue that when a bank is connected to a borrowing firm through a board seat or an institutional holding it has superior information over other banks because screening (Allen 1990) and monitoring (Diamond 1984) may improve information flow. Compared with a pure transaction-oriented relation, a borrowing firm with board/ownership relation to a lender may be inclined to reveal more information and the lender may have stronger incentives to invest in information collection. Their findings suggest that there are costs and benefits from banks' involvement in firm governance. They show that bank-firm governance links generated higher credit spreads in the credit boom of 2003-2006 and lower spreads in the financial crisis of 2007-2008. Furthermore, they also argue that banks with firm-bank governance links are more likely to be lead arrangers. Ferreira and Matos define ownership links as when "fund management companies affiliated with the same financial group as the lead arranger bank have equity holdings in the firm". This definition does not make a distinction between active and passive ownership. In this study, the effects of having a common active owner is examined.

iii. Business Groups in Sweden

The two major business groups in Sweden in the post-world war II-era are the group of companies surrounding the Wallenberg family and the group of companies associated with Handelsbanken. In 1995, the Wallenberg group had some sense of control over 39 percent of the stock value on the Stockholm stock exchange while the Handelsbanken group controlled 13 percent. Both business groups have historically been closely tied to the banks SEB, in the case of the Wallenberg Group, and Handelsbanken. This relationship has in part been replaced with

close ties to their respective investment companies, Investor (Wallenberg Group) and Industrivärden (Handelsbanken Group). The Wallenberg Group has a pyramidal structure with the Wallenberg family at the top. The Handelsbanken Group on the other hand is of a more spherical nature with cross-ownership and historical relationships playing a major role. Within both groups, interlocking directorates links together all companies within the business group. With the exception of Ericsson, companies in one group do not have extensive relationships with companies in the other group. (Collin, 1998).

The investment companies Investor and Industrivärden have made strategic changes during our sample period. In general, the investment companies have held three categories of asset, core-assets, non-core assets and non-listed companies owned by a subsidiary. Non-core assets are stocks held in a trading portfolio and the investment companies do not act as active owners in these companies. Non-listed companies that are not part of the core assets are owned through a subsidiary. Investor invests in private companies through its stake in the PE-firm EQT. Industrivärden on the other hand chose to list its last fully owned subsidiary in 2005 and now only owns listed securities.¹² Both Investor and Industrivärden emphasize their intention to be an active owner in the core assets:

”Based on substantive knowledge in strategic company development and corporate governance, financial strength and an extensive network, active ownership is exercised through board representation. Industrivärden thereby contributes to maximizing the portfolio companies’ growth in value over time. Since its establishment seventy years ago, Industrivärden has generated long-term competitive shareholder value at a low cost and low risk.”¹³

“Our business model is based on significant ownership positions in each company, allowing us to have an impact on key decisions ... The boards of the holdings are at the core of our active ownership model. The board appoints the CEO, sets strategies and goals, and monitors financial performance and the capital structure. It also supervises and supports the management.”¹⁴

The longevity of the relationship between firms within a business group creates a structure well-suited for a thorough investigation on its effect on information asymmetry. In

¹² Industrivärden annual report 2005

¹³ Industrivärden, <http://www.industrivarden.se/en-GB/About-us/Industrivarden-in-brief/>, 2014-11-16

¹⁴ Investor, <http://www.investorab.com/about-investor/business-concept/>, 2014-11-16

our sample, we have defined the boundaries of the business group based on interlocking directorates between the bank in the business group and other members of the group as well as all companies held as core assets by the group's investment company.

iv. Common Owners and Board Interlocks within Swedish Business Groups

In this paper, the effect on information asymmetry from having a common board directorate or ownership relationship is investigated. Investor's and Industrivärden's core assets are defined as companies to which the banks SEB and Handelsbanken have a relationship with. Companies owned through subsidiaries are not included in this definition, as the strength of relationship becomes problematic to measure with every degree of separation. We have identified relationships as all interlocking directorates between Swedish companies and any of the four major Swedish banks, Handelsbanken, Swedbank¹⁵, Nordea¹⁶ and SEB. In line with our definition for ownership relationships, no interlocking directorates through the ownership of subsidiaries, either by the bank or by an outside company, is defined as a relationship. Also, only board members appointed by the annual general meeting are included. Board positions held in other companies by either board members selected by the union or by the government or board positions held by the bank's top management are not included.

We have gathered yearly data for the holdings of the investments companies and the board composition of the banks from their respective annual reports. Descriptive statistics on number of companies per year related to each bank and investment company are displayed in the table below.

¹⁵ Incl. Föreningssparbanken, Föreningsbanken, Sparbanken.

¹⁶ Incl. Nordbanken, Göta Bank

Table I – Swedish Business Groups

Number of relationships between the Swedish banks and Swedish corporations. The columns “Industrivärden” and “Investor” indicates the number of companies owned by the investment companies during 1990-2013. All other columns indicate the number of interlocking directorates between Swedish companies and the respective banks in the period 1990-2013.

	Handelsbanken Group		Wallenberg Group		Swedbank	Nordea
	Industrivärden	SHB ¹⁷	Investor	SEB		
Mean	10	31	12	30	15	10
Max	14	38	16	30	25	21
Min	6	25	8	28	8	3

The ownership structure of Industrivärden and Investor are similar throughout the period, with Industrivärden having on average 10 core investments per year and the corresponding figure for Investor is 12. The number of interlocking directorates for Handelsbanken and Nordea has also been similar during the period. We note that both groups have strong ties through interlocking directorates within the group. Swedbank and Nordea are to some extent of different nature, with a smaller network of board interlocks to Swedish firms. The relatively small network of Swedbank is partly explained by the structure of the Swedbank board. A large fraction of the Swedbank board have close ties to the network of semi-independent savings banks who founded Sparbanken. Interlocking directorates to the savings banks are not included in our sample. Nordea on the other hand has a more international board than the rest of the group, and the number of interlocking directorates to Swedish firms are subsequently lower.

¹⁷ Handelsbanken

3 - Methodology and Descriptive Statistics

In the following section, we examine how the opacity of the borrowing firm affects the syndicate structure and if the effect of information asymmetry is consistent with the theory discussed in the previous section. The general specification of our OLS-regressions is:

$$Synd_i = \alpha + Opacity Proxy_i \beta + Mitigation Factor_i \gamma + Control Dummies + \varepsilon_i$$

The dependent variable are measures of the syndicate. Different measures, such as fraction held by the lead arranger(s), number of members, loan size per member, can be used. In our data sample, we have limited data on the fraction held by each syndicate member and will subsequently use the number of syndicate members as independent variable. The OLS-regression are performed using robust standard errors, as the results indicate that we do not have constant variance in the residuals.

We proxy opaqueness in three different ways, with similar results. First we use the natural log of firm sales as a proxy for firm transparency. The same approach is used for natural log of the book value of assets. Last, we use the natural log of number of employees. Both assets and sales are measures for firm size and large firms are expected to provide more extensive financial reporting to outside stakeholders. The same intuition is applicable for the number of employees, with the addition that the amount of information transferred to outsiders are likely to be more extensive for a firm with many employees.

The mitigation factors included are the following:

Mitigation Factor 1 = If the borrower and the lead arranger have had lead-borrower agreement in the last 5 years.

Mitigation Factor 2 = If the lead arranger and the borrower are part of the same business group.

Mitigation Factor 3 = The borrower's frequency on the syndicated loan market.

Mitigation Factor 4 = If the loan is secured.

Mitigation Factor 5 = The number of Swedish lead arrangers.

The control variables include the natural log of the loan size, the purpose of the loan, the type of loan and the industry group of the borrowing firm. The industry groups are based on the Standardized Industrial Classification (SIC) system. In order to keep the number of groups at a reasonable level, we have used the major groups based on the two first digits in the SIC code. The companies in our data are divided into the following SIC industries:

- 1=Agriculture, Forestry and Fishing
- 2= Mining
- 3=Construction
- 4= Manufacturing
- 5= Transportation, Communications, Electric, Gas and Sanitary service
- 6= Wholesale Trade
- 7= Retail Trade
- 8= Finance, Insurance and Real Estate
- 9= Services
- 10= Public Administration
- 99= Non-classifiable

The purpose of the loan varies substantially and we have created as broad categories as possible. All loans taken in order for general purposes, such as financing working capital, are found in the first category. Loans taken in order to finance different forms of buyouts and acquisitions are found in the second category, loans taken during restructuring processes are in the third category and loans related to recapitalizations and changes in capital structure are located in the fourth category. Loans that did not fit into any of the categories are located in the category “Other purposes”.

- 1= General corporate purpose
- 2= M&A
- 3= Restructuring
- 4= Refinancing of existing capital structure or recapitalization
- 5= Other purposes

Last, we also control for the type of loan. We have identified three main categories and the loans are sorted accordingly:

- 1= Term loan
- 2= Revolver/line
- 3= Others

3.1 Dataset

The primary sample of syndicated loan are obtained from Loan Pricing Corporation's Dealscan, which encompasses detailed information on syndicated loan characteristics such as contract terms, lead arrangers and participant lenders. Dealscan in turn obtained its data from primary sources including SEC filing, reports from loan originators, and the financial press. Our sample includes 1005 syndicated loan deals issued in Sweden to 211 firms from 1994 to 2013. After adjusting for non-Swedish firms and financial institutions the final sample includes 211 unique Swedish firms, many of which have accessed the syndicated loan market multiple times during our selected sample period. The full Dealscan database includes 1172 syndicated loan facilities issued in Sweden for these years.

For firm characteristics including total assets, total sales, number of employees, data are collected from other databases including Factset, Thomson Reuters Datastream well as Retriever. For listed firms, borrower characteristics including total assets, total sales, are obtained from Factset and number of employees are obtained from Datastream. For private firms, these values are collected from annual reports obtained through Retriever.

The data collected on interlocking board directorates is obtained from the annual reports of the four biggest Swedish banks (SEB, Handelsbanken, Swedbank, Nordea) and the business group ownership data are obtained from their respective annual reports. Using the complete sample of syndicated and sole-lender loans from 1994 to 2013, the measures of previous loan relationship and borrower frequency are calculated for our sample period.

3.2 Summary Statistics

Table II - Summary Statistics for Syndicated Loan Deals

This table presents statistics for the sample of 1005 syndicated loan deals from 1994 through 2013. Summary statistics of firm characteristics, syndicated loan characteristics and syndicated structure are all calculated at facility level.

	No. of Obs	Mean	SD	Distribution		
				10th	50th	90th
Borrower Characteristics						
Total assets (MSEK)	864	32736	71554	378	7926	77181
Total sales (MSEK)	864	25455	49679	398	7347	65685
No. of employees	821	14919	33648	117	2370	38502
Borrowing frequency	1005	1.0	1.1	0.0	1.0	3.0
Syndicated Loan Characteristics						
Loan size (MUSD)	1005	326	570	9	117	867
Maturity	890	69	34	25	60	108
Secured	353	0.8	0.4	0.0	1.0	1.0
Syndicate Structure						
Total number of lenders	1005	7.3	6.6	1.0	5.0	17.0
Total number of lead arrangers	1005	3.0	3.5	0.0	2.0	6.0
Total number of Swedish lead arrangers	1005	1.3	1.4	0.0	1.0	4.0
Total number of participant lenders	1005	4.3	6.3	0.0	1.0	13.0
% kept by the lead arranger	194	64	37	13	78	100
Amount kept by the lead arranger (MUSD)	194	235	356	5	85	756

Table II presents summary statistics. Summary statistics for firms are calculated at the facility level, meaning that a firm which has taken on multiples loans at different times are included multiple times, given that its size varies with time. On average, borrowing firms have 32 736 MSEK in total assets, and the median is 7 926 MSEK. The average and median of total sales for borrowing firms are 25 455 MSEK and 7 347 MSEK respectively. In terms of number of employees, the average number is 14919 people for borrowers and the median is 2370. Assets, sales and number of employees are three different size measures used as proxies for firm transparency. The fact that the means are significantly higher than the medians indicates that there are some extraordinarily large firms in our sample, both in terms of assets, sales and number of employees. In addition, the borrowing frequency, measured as the number of years the borrower has been active in the syndicated lending market in the past five years, average at 1.0. This implies that on average the borrower has been active in one out of five years. The median borrowing frequency is also at 1.0.

Given that LPC Dealscan reports facility amounts in the currency that the loans were issued in and the only exchange rates provided were converted to USD, we kept all facility data in USD. On average, a syndicated loan is 326 MUS\$ in size and 69 months in maturity. The median of loan amount is only about half as big as the average loan amount. This is in line with results for firm size. Moreover, information on whether a facility is secured or not is only available for 353 observations. Out of these 353 observations, 80% is secured.

The last part of Table II displays summary statistics for syndicate structure. The average loan in our sample has 7.3 lenders, 3.0 lead arrangers and 4.3 participants. The medians are lower for all these measures, which indicates that there are a few extraordinarily large syndicated loans with a large number of participants, in agreement with firm size and loan size. As a proxy for geographic proximity, we also examined the number of Swedish lead arrangers for all facilities. On average, there are 1.3 Swedish lead arrangers for loans made to Swedish firms. For the proportion kept by the lead arrangers, only 194 observations were collected which substantially reduces the sample size. For the limited data found, 64% of an average facility is kept by the lead arrangers and the corresponding amount is 235 MUS\$. The medians for the percentage kept by the lead arranger and the amount kept by the lead are 78% and 85 MUS\$ respectively. In addition, we observed that for 194 observations provided, an unproportionately large number of loans (77 observations) contains one sole lender.

Table III - Summary Statistics for Syndicated Loan Deals by Categories

This table displays statistics for the sample of 1005 syndicated loan deals from 1994 through 2013 sorted in three ways: by loan type, loan purpose and industry. These three categories are used as control variables in subsequent regressions. Another category, year, is omitted in this table due to size (please see Appendix I for more information).

	% of Total No. of Loans	Average Loan Amount (MUSD)	SD	Average No. of Lenders	SD
Loan Type					
Term loan	34%	203	429	6.2	5.4
Revolver/line	48%	448	571	8.8	7.1
Other	19%	239	714	5.4	6.5
Purpose of Loan					
General corporate purpose	42%	356	584	6.6	6.5
M&A	29%	257	626	6.7	6.9
Restructuring	0%	1214	797	6.0	0.0
Refinancing/ recapitalization	27%	352	478	9.0	6.4
Other	1%	243	309	6.5	5.1
Industry					
Agriculture, Forestry and Fishing	1%	444	546	8.9	8.5
Mining	4%	411	474	8.5	4.1
Construction	2%	389	399	8.0	5.3
Manufacturing	46%	350	599	8.5	7.7
Transportation, Communications, Electric, Gas and Sanitary service	12%	429	956	6.6	6.0
Wholesale Trade	5%	251	258	6.2	3.6
Retail Trade	1%	74	55	5.0	4.8
Finance, Insurance and Real Estate	9%	169	217	5.8	6.0
Services	18%	266	458	5.5	4.6
Public Administration	0%	18	.	2.0	.
Non-classifiable	2%	442	449	8.1	8.2

Table III displays summary statistics for syndicated loan deals by three categories, loan type, loan purpose and industry. In terms of loan type, revolvers/line facilities have the highest average loan amount (448 MUSD) and largest number of lenders (8.8). For loan purposes, loans with the purpose refinancing/recapitalization have largest average number of lenders, thus least concentrated. From an industry point of view, most firms in our sample are categorized under manufacturing, services and transportation and communication services (over 78% together). About half of the industries have an average number of lenders over 8.

Table IV - Summary Statistics for Relationship Loans

This table displays statistics on relationship loans for the sample of 1005 syndicated loan deals from 1994 through 2013. Relationship loans are used as mitigation factors in subsequent regressions.

	No. Of Obs	Sum
Previous Loan Relationship	1005	267
Board/Ownership Relationship	1005	159

Table IV displays the number of relationship loans. Relationship is defined in two ways, the first definition being when the borrower and the lead arrangers of a facility have had a previously loan relationship in the past five years. This definition is frequently used in existing researches. In our sample, 267 out of 1005 facilities conforms to the first definition. The second definition of relationship, which is unique for Sweden and differentiates from existing researches, is defined as when the borrowing firm and the lead arranger have an interlocking directorate(s) or are owned by the same investment company. In our sample, 159 out of 1005 facilities conform to the second definition.

4 - Results

Table V – Information Asymmetry

Table V reports coefficients estimates from regressions relating the number of participants in loan syndicates to information asymmetry of the borrower. $\ln(\text{assets})$, $\ln(\text{sales})$ and $\ln(\text{employees})$ are used as proxies for opacity. $\ln(\text{amount})$, which stands for log of loan amount, is used as a control variable. In addition to values reported, all regressions include year, industry loan amount and loan purpose dummies. Standard errors are heteroskedasticity robust, clustered at the facility level.

	Opacity proxy (1)	Opacity proxy (2)	Opacity proxy (3)
$\ln(\text{amount})$	1.31*** (10.58)	1.38*** (11.16)	1.38*** (10.46)
$\ln(\text{assets})$	0.40*** (3.74)		
$\ln(\text{sales})$		0.33*** (3.51)	
$\ln(\text{employees})$			0.31*** (3.46)
Constant	-0.84 (-0.32)	-1.94 (-0.72)	-1.10 (-0.40)
R-squared	0.36	0.36	0.35
N	864	856	805
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$			

4.1 Evidence of Information Asymmetry

Table V supports the theoretical framework discussed earlier in this paper. As expected, the number of participants increases with the size of the loan. Using three different proxies of transparency, namely size of assets, annual sales and number of employees, we see that the syndicate is less concentrated when the borrowing firm is transparent. In all three cases, the transparency proxies are significant at 1%-level. In terms of magnitude, the regression with opacity proxy 1 indicate that the number of participants in the syndicate increases by 0.40 banks when the assets of the borrower doubles. In case of opacity proxy 2, we see that the number of participating banks increases by 0.33 as sales doubles. Lastly, the number of participating banks on average increases by 0.31 when the number of employees doubles. The results show that the concentration of the syndicate decreases when the borrower is opaque. Opaque firms are more difficult to monitor and the regressions show that there is an information asymmetry problem in the market. Hence, hypothesis I is confirmed. However, these results are not sufficient to

conclude if there is a moral hazard problem or an adverse selection problem. In the case of moral hazard, we expect a concentrated syndicate since the lead arranger must retain a sufficiently large share to motivate monitoring. An opaque firm requires more monitoring and therefore we would expect the concentration to increase with opacity. In case of adverse selection, we expect the lead arranger to signal the quality of an opaque firm by retaining a large share of the loan.

Table VI – Mitigation Factor 1

The table reports coefficients estimates from regressions relating the number of participants in loan syndicates to information asymmetry of the borrower. ln(assets), ln(sales) and ln(employees) are used as proxies for opacity. Lead-borrower relation, i.e. Mitigation factor 1, is a dummy for whether or not there is a previous loan between the firm and the lead arranger. ln(amount), which stands for log of loan amount, is used as a control variable. In addition to values reported, all regressions include year, industry, loan type and loan purpose dummies. Standard errors are heteroskedasticity robust, clustered at the facility level.

	Opacity proxy 1 (1)	Mitigation factor 1 (2)	Opacity proxy 2 (3)	Mitigation factor 1 (4)	Opacity proxy 3 (5)	Mitigation factor 1 (6)
ln(amount)	1.31*** (10.58)	1.19*** (9.68)	1.38*** (11.16)	1.24*** (10.09)	1.38*** (10.46)	1.23*** (9.17)
ln(assets)	0.40*** (3.74)	0.13 (1.13)				
ln(sales)			0.329*** (3.51)	0.09 (0.83)		
ln(employees)					0.31*** (3.46)	0.16 (1.82)
lead-borrower relation		4.14*** (6.94)		4.06*** (6.97)		3.59*** (5.79)
lead-borrower relation x small [*]		-2.03* (-2.44)		-1.85* (-2.27)		-0.33 (-0.41)
Constant	-0.84 (-0.32)	2.41 (0.92)	-1.94 (-0.72)	1.64 (0.61)	-1.10 (-0.40)	2.00 (0.69)
R-squared	0.36	0.41	0.36	0.41	0.35	0.40
N	864	864	856	854	805	803

* p<0.1, ** p<0.05, *** p<0.01

^{*}Where small is defined as all firms who are below the median in the respective proxy for opacity, i.e. size of assets is used in column (2), size of sales in column (4) and number of employees in column (6)

4.2 Mitigation Factor 1 – Lead - Borrower Relationship

Table VI displays the effect on syndicate composition from adding a dummy variable indicating if there is a previous loan relationship, as defined previously in this paper, between the borrowing firm and the lead arranger. The regressions displayed in Table V are shown in column 1, 3 and 5 to facilitate a comparison to the regressions in column 2, 4 and 6, where the variable lead-borrower relation is added. Also after adding the variable lead-borrower relation, the control variable loan amount is significant at 1%-level. When adding the lead-borrower relationship variable to the regression using assets as a proxy for transparency, we see that it adds on average 4.14 participants to the syndicate when the borrower is large. The interaction effect between lead-borrower relationship and the group containing small firms is negative and significant at 10%-level. Also, the coefficient on log of assets decreases in magnitude and is now no longer statistically significant. Similar results are found when making the same addition to the regression using the borrower's sales as a proxy of transparency. A lead-borrower relationship adds on average 4.06 members to the syndicate when the borrower is large. The interaction effect between the small group and lead.-borrower relationship is negative and significant at 10%-level. Also, the log of assets is no longer of statistical significance. Lastly, we perform the regression using the log of the borrower's number of employees as a proxy for transparency and add the board/owner relationship dummy. The regression indicates that a board/owner relationship adds an average of 3.59 members to the syndicate. In this case, the interaction effect is not of statistical significance. Also, the coefficient for the natural log of the number of employees is no longer significant.

Our results are in line with those of Sufi (2007) and indicate that a past lending relationship between the borrower and lead arranger reduces the need for monitoring. Also, for two of the three proxies for transparency, they are no longer statistically significant for the syndicate's concentration. The most significant finding in this regression, as we interpret it, is that it supports the moral hazard hypothesis. Under moral hazard, a lead arranger with a previous lending relationship with the borrower is able to retain less of the loan and form a more diffuse syndicate, since the monitoring is less costly when information has been acquired previously. If there is a problem with adverse selection, we would expect an informed lender to be tempted to syndicate out more of a loan when the private information is negative. Participating banks would expect this behavior and the lead arranger would subsequently be forced to retain a larger share of the loan to signal that the borrower's quality is good. In our dataset, a previous relationship between the lead arranger and the borrower increases the

number of participants in the syndicate. Our conclusion is that moral hazard is a more significant problem than adverse selection, i.e. the lead arranger(s) does not have private information beforehand and monitoring is required. Also, the mitigation effect from having a lead-borrower relationship is stronger when the firm is large. The mitigation effect when the information asymmetry problem is severe appears to be limited.

Table VII – Mitigation Factor 2

The table reports coefficients estimates from regressions relating the number of participants in loan syndicates to information asymmetry of the borrower. ln(assets), ln(sales) and ln(employees) are used as proxies for opacity. Board/ownership relation, i.e. Mitigation factor 2, is a dummy equals to one when there is a board/ownership relationship between the firm and the lead arranger. ln(amount), which stands for log of loan amount, is used as a control variable. In addition to values reported, all regressions include year, industry, loan type and loan purpose dummies. Standard errors are heteroskedasticity robust, clustered at the facility level.

	Opacity proxy 1 (1)	Mitigation factor 2 (2)	Opacity proxy 2 (3)	Mitigation factor 2 (4)	Opacity proxy 3 (5)	Mitigation factor 2 (6)
ln(amount)	1.31*** (10.58)	1.18*** (9.96)	1.38*** (11.16)	1.24*** (10.43)	1.38*** (10.46)	1.28*** (10.04)
ln(assets)	0.40*** (3.74)	0.09 (0.82)				
ln(sales)			0.33*** (3.51)	0.12 (1.13)		
ln(employees)					0.31*** (3.46)	0.14 (1.44)
board/ownership relation		5.02*** (6.27)		4.41*** (5.60)		3.95*** (5.31)
board/ownership relation x small ^x		-6.07*** (-5.60)		-4.21*** (-3.44)		-3.00* (-2.17)
Constant	-0.84 (-0.32)	5.18* (1.99)	-1.94 (-0.72)	3.53 (1.31)	-1.10 (-0.40)	3.89 (1.43)
R-squared	0.36	0.41	0.36	0.40	0.35	0.38
N	864	864	856	854	805	803

* p<0.1, ** p<0.05, *** p<0.01

^x Where small is defined as all firms who are below the median in the respective proxy for opacity, i.e. size of assets is used in column (2), size of sales in column (4) and number of employees in column (6)

4.3 Mitigation Factor 2 – Board/Ownership Relationship

Table VII displays the effect of adding a dummy variable indicating if there is a board- or ownership relationship, as defined previously in this paper, between the borrowing firm and the lead arranger(s). The regressions displayed in table V are shown in column 1, 3 and 5 to facilitate comparison to the regressions in column 2, 4 and 6, where the variable board/owner relationship is added. Similar to the previous table where Mitigation factor 1 is used, the control variable loan amount is significant at 1% -level after adding the variable board/owner relationship. When adding the board/owner relationship variable to the regression using assets as proxy for transparency, we see that a board/owner relationship on average adds another 5.02 participants to the syndicate if the firm is large. However, the interaction effect between the dummy variable for the group of small firms and the board/owner variable is negative and significant at 1%-level. It shows that no significant impact from having a relationship through either interlocking directorates or having the same owner can be found when the borrower is small. Also, the log of assets decreases in magnitude and is now no longer statistically significant at 10%-level. Similar results are found using the borrower's sales as proxy of transparency. A board/owner relationship adds on average 4.41 members to the syndicate for large firms. As in the previous regression, the interaction variable between the variable for the group of small firms and board/owner relationship has a coefficient of -3.00 and is significant at the 10%-level. Also, the log of assets is no longer of statistical significance. Lastly, we perform the regression using the log of the borrower's number of employees as a proxy for transparency. The results indicate that a board/owner relationship adds an average of 3.95 members to the syndicate when the firm is large. The interaction variable between the variable for the group of small firms and board/owner relationship is negative, of similar magnitude as the coefficient for board/owner relationship and significant at the 1%-level. Also, the log of the number of employees is no longer statistically significant.

The findings from the regression provide evidence that a company with a board or ownership relationship with the bank who is lead arranger will take on a less concentrated syndicate. The results are similar to what we've seen in the previous section and indicate that being members of the same business groups decreases moral hazard. Also, we see no evidence of adverse selection, since banks are not forced to retain a larger share of the loan to signal to participants that the quality of the borrower is good. Finally, the mitigation effect from having a board/owner relationship is stronger when the firm is large. In case of small firms, the mitigation effect appears to be limited.

Table VIII – Joint Effect for Mitigation Factor 1 & 2

The table reports coefficients estimates from regressions relating the number of participants in loan syndicates to information asymmetry of the borrower. In addition to values reported, all regressions include year, industry, loan type and loan purpose dummies. Standard errors are heteroskedasticity robust, clustered at the facility level.

	Joint effect – Assets	Joint effect – Sales	Joint effect – Employees
	(1)	(2)	(3)
ln(amount)	1.13*** (9.93)	1.16*** (10.16)	1.14*** (9.26)
ln(assets)	0.09 (0.84)		
ln(sales)		0.07 (0.76)	
ln(employees)			0.11 (1.22)
lead-borrower relation	3.17*** (6.22)	3.14*** (6.17)	3.07*** (5.94)
board/ownership relation	2.57*** (3.71)	2.57*** (3.77)	2.52*** (3.75)
Constant	4.95* (1.98)	4.56 (1.74)	5.12 (1.93)
R-squared	0.42	0.42	0.41
N	864	856	805
* p<0.1, ** p<0.05, *** p<0.01			

4.4 Lead-Borrower & Board/Ownership Relationship – Joint Effect

Table VIII displays a regression using both board/owner relationships and lead-borrower relationships as mitigation factors of information asymmetry. In line with previous regressions, we use the natural log of assets, sales and employees as different proxies of the borrowing firm's transparency. As expected, the number of participants in the syndicates increases with the amount of the loan. Also, both a lead-borrower and a board/ownership relationship add more members to the syndicate. A board/owner relationship adds on average 2.57, 2.57 and 2.52 members respectively to the syndicate using assets, sales and employees as proxies for opacity. The corresponding coefficients for a lead-borrower relationship are 3.17, 3.14 and 3.07. The results show that information asymmetry between the borrower and the lead arranger can be mitigated by different factors. Also, it is natural to assume a correlation between the two relationship mitigation factors as companies with a board/owner relationship to a bank are more likely to borrow from that bank. The lead arranger might use information gained from a previous monitoring commitment, or use the information advantage created by belonging to the same business group as the borrower. The results show that the flow of information within a business group share some characteristics with the flow of information created by a bank's monitoring effort.

Table IX – Mitigation Factor 3

The table reports coefficients estimates from regressions relating the number of participants in loan syndicates to information asymmetry of the borrower. ln(assets), ln(sales) and ln(employees) are used as proxies for opacity. Borrowing frequency, i.e. Mitigation factor 3, is a variable for number of active years the borrower have had five years prior to the current facility. ln(amount), which stands for log of loan amount, is used as a control variable. In addition to values reported, all regressions include year, industry, loan type and loan purpose dummies. Standard errors are heteroskedasticity robust, clustered at the facility level.

	Opacity proxy 1 (1)	Mitigation factor 3 (2)	Opacity proxy 2 (3)	Mitigation factor 3 (4)	Opacity proxy 3 (5)	Mitigation factor 3 (6)
ln(amount)	1.31*** (10.58)	1.32*** (10.55)	1.38*** (11.16)	1.38*** (11.11)	1.38*** (10.46)	1.38*** (10.43)
ln(assets)	0.40*** (3.74)	0.40*** (3.51)				
ln(sales)			0.33*** (3.51)	0.32** (3.07)		
ln(employees)					0.31*** (3.46)	0.32*** (3.67)
borrowing frequency		-0.02 (-0.12)		0.04 (0.18)		-0.10 (-0.50)
Constant	-0.84 (-0.32)	-0.88 (-0.33)	-1.94 (-0.72)	-1.85 (-0.67)	-1.10 (-0.40)	-1.29 (-0.46)
R-squared	0.36	0.36	0.36	0.36	0.35	0.35
N	864	864	856	856	805	805
* p<0.1, ** p<0.05, *** p<0.01						

4.5 Mitigation Factor 3 – Borrowing Frequency

A potential critique against our conclusions outlined in conjunction with Table VI and VII is that the information asymmetry might decrease when the borrower repeatedly access the syndicated loan market and what we capture with the variable lead-borrower relationship is nothing but a borrower that is well known in the market. Companies who frequently access the syndicated loan market are mechanically more likely to have a previous borrower-lead arranger relationship and this might be the reason to why a previous loan relationship seems to mitigate information asymmetry. In table IX, we have included a variable showing how active during the last five year period the borrowing company was in the syndicated loan market in Sweden. Column 1, 3, 5 show the original regressions without mitigation factor in order to facilitate a comparison. Column 2, 4, 6 show the results with the new independent variable indicating the number of years the borrower have accessed the syndicated loan market. The coefficient for the control variable loan size is still positive and statistically significant. The proxy for opacity are significant at 1%-level when using the natural log of assets and employees, and at 5%-level when using the natural log of sales. Most importantly, the new variable borrowing frequency has little impact on the number of participants in the syndicate. Apparently, frequent utilization of the syndicated loan market does not mitigate information asymmetry and only a specific relationship between lead and borrower through either a previous lead arranger-borrower agreement or being part of the same business group can mitigate information asymmetry.

Sufi (2007) uses repeated market access as a measure for the information held by participating banks (i.e. all participating banks, including the lead arranger(s)). Assuming that the information regarding the quality of the borrower available to participating banks increases every time the borrower access the syndicated loan market and that the adverse selection hypothesis is valid, we would expect information asymmetry between the informed lead arranger and the participating banks to decrease. Subsequently, the lead arranger would no longer need to signal the quality of the borrower by taking on a large share of the loan and concentration would decrease. However, this is not the case in our sample.

Table X – Mitigation Factor 4

The table reports coefficients estimates from regressions relating the number of participants in loan syndicates to information asymmetry of the borrower. ln(assets), ln(sales) and ln(employees) are used as proxies for opacity. Secured, i.e. Mitigation factor 4, is a dummy variable indicating whether or not the loan is secured. ln(amount), which stands for log of loan amount, is used as a control variable. In addition to values reported, all regressions include year, industry, loan type and loan purpose dummies. Standard errors are heteroskedasticity robust, clustered at the facility level.

	Opacity proxy 1	Mitigation factor 4	Opacity proxy 2	Mitigation factor 4	Opacity proxy 3	Mitigation factor 4
	(1)	(2)	(3)	(4)	(5)	(6)
ln(amount)	1.31*** (10.58)	0.79*** (4.61)	1.38*** (11.16)	0.86*** (5.09)	1.38*** (10.46)	1.01*** (5.11)
ln(assets)	0.40*** (3.74)	0.62*** (4.08)				
ln(sales)			0.33*** (3.51)	0.43*** (3.93)		
ln(employees)					0.31*** (3.46)	0.24 (1.85)
secured		-1.93* (-2.28)		-2.05* (-2.43)		-2.45** (-2.69)
Constant	-0.84 (-0.32)	-15.50*** (-3.81)	-1.94 (-0.72)	-14.80*** (-3.66)	-1.10 (-0.40)	-8.38 (-1.85)
R-squared	0.36	0.48	0.36	0.47	0.35	0.46
N	864	319	856	318	805	289

* p<0.1, ** p<0.05, *** p<0.01

4.6 Mitigation Factor 4 – Secured Loans

In table X, we examine the impact on the concentration of the syndicate from the loan being secured. To facilitate a comparison, regression without mitigation factor indicating whether or not the loan is secured is displayed in column 1, 3, 5. In all regressions, the coefficients on log of loan amount are statistically significant and positive. In column 2, 4, 6, a dummy variable for secured is added to the regressions with sales, assets and number of employees respectively as proxies for transparency. The pattern we see when adding the dummy for a secured loan is somewhat unclear. The coefficients on assets and sales are still significant at 1%-level and larger in magnitude. The coefficient on number of employees on the other hand is no longer statistically significant. Also, being secured reduces the number of participants by 1.93 on average when using log of assets as a proxy for transparency, by 2.05 when using log of sales and 2.45 when using log of employees and is significant at 10%-level in the first two regressions and at 5%-level in the third. However, due to a large amount of missing values the sample size used in these regressions is significantly reduced and the results should thus be viewed with caution.

On one hand, it is reasonable to assume that participating banks would force lead arrangers to hold a larger share in order to reduce shirking. The existence of a collateral should reduce the expected loss in case of default and the lead arranger should subsequently be allowed to retain a smaller share of the loan. On the other hand, the lead arranger(s) also need to monitor the asset used as collateral and restrict the borrower from selling it. The lead arranger(s) must thus have sufficient incentives to carry out this more extensive monitoring and agency problems might therefore be more severe when a collateral is placed. It is difficult to tell whether one hypothesis dominates the other and we are reluctant to draw any strong conclusions from the outcome. In the entire sample consisting of 1005 facilities originated in Sweden, only 353 observations are found for whether the loan is secured or not. Also, given that 83% of the 353 loans we do have data on are reported as ‘secured’ we suspect that secured loans are more likely to report this information.

Table XI – Mitigation Factor 5

The table reports coefficients estimates from regressions relating the number of participants in loan syndicates to information asymmetry of the borrower. ln(assets), ln(sales) and ln(employees) are used as proxies for opacity. Number of Swedish leads, i.e. Mitigation factor 5, is a variable indicating the number of Swedish lead arrangers present per facility. ln(amount), which stands for log of loan amount, is used as a control variable. In addition to values reported, all regressions include year, industry, loan type and loan purpose dummies. Standard errors are heteroskedasticity robust, clustered at the facility level.

	Opacity proxy 1 (1)	Mitigation factor 5 (2)	Opacity proxy 2 (3)	Mitigation factor 5 (4)	Opacity proxy 3 (5)	Mitigation factor 5 (6)
ln(amount)	1.31*** (10.58)	1.00*** (8.76)	1.38*** (11.16)	1.08*** (9.33)	1.38*** (10.46)	1.06*** (8.72)
ln(assets)	0.40*** (3.74)	-0.11 (-0.95)				
ln(sales)			0.33*** (3.51)	-0.08 (-0.79)		
ln(employees)					0.31*** (3.46)	0.10 (1.05)
number of Swedish leads		1.99*** (10.84)		1.93*** (10.16)		1.76*** (9.05)
number of Swedish leads x small ^x		-1.33*** (-6.36)		-0.95*** (-4.24)		-0.67** (-2.98)
Constant	-0.84 (-0.32)	7.03** (2.95)	-1.94 (-0.72)	5.17* (2.12)	-1.10 (-0.40)	5.98* (2.30)
R-squared	0.36	0.44	0.36	0.43	0.35	0.42
N	864	864	856	854	805	803

* p<0.1, ** p<0.05, *** p<0.01

Where small is defined as all firms who are below the median in the respective proxy for opacity, i.e. size of assets is used in column (2), size of sales in column (4) and number of employees in column (6).

4.7 Mitigation Factor 5 – Number of Swedish Lead Arrangers

In Table XI, we include a new mitigation factor (mitigation factor 5) for number of Swedish lead arrangers in each facility. In column 1, 3, 5 the original regressions from Table V are displayed to facilitate comparison. When using log of assets as a proxy for transparency, mitigation factor 5 adds on average 1.99 members to the syndicate and is significant at 1%-level. However, the interaction variable shows that the effect is on average only 0.66 for the small group. Similar to the regression displayed in Table VI and VII, the log of assets is no longer of statistical significance. Similar results are obtained when using log of sales as a proxy for transparency. For large firms, the number of participants increases on average by 1.93 with every additional Swedish lead arranger and the coefficient is significant at the 1%-level. For the small firms, the impact is reduced to 0.98 more participants per Swedish lead arranger. The positive coefficient on the log of the loan amount is still significant at the 1%-level with the new mitigation factor. Finally, we see the same pattern when using the number of employees as a proxy for transparency. Each Swedish lead arranger adds on average another 1.76 members to the syndicate when the borrower is part of the group with large firms and the coefficient is significant at 1%-level. For small firms, the impact is limited to an average of 1.09 more members per Swedish lead arranger. The coefficient for log of employees is no longer significant.

The syndicated loan market is characterized by repeated interactions between a limited number of firms and an even more limited number of banks. A lead arranger with good reputation might be able to overcome moral hazard concerns without increasing its share in the loan. Furthermore, a lender who is geographically close to the borrower might be able to monitor the borrower with lower cost compared to foreign lenders and subsequently be able to create a less concentrated syndicate. Mitigation factor 5 is likely to catch both of these effects. Sufi (2007) defines market reputation as market share over the last year. However, due to the high degree of concentration within the Swedish banking industry, all Swedish banks who are active on the syndicated loan market also have large market shares, and would subsequently be defined as lead arrangers with strong reputation. It is therefore difficult to separate the effect of geographical proximity from the effect of having a lead arranger(s) with a good reputation.

Table XII – Public and Private Borrowers

The table reports coefficients estimates from regressions relating the number of participants in loan syndicates to information asymmetry of the borrower. $\ln(\text{assets})$, $\ln(\text{sales})$ and $\ln(\text{employees})$ are used as proxies for opacity. Public is a dummy equal to one when the borrower is a publicly listed firm. In addition to values reported, all regressions include year, industry, loan type and loan purpose dummies. Standard errors are heteroskedasticity robust, clustered at the facility level.

	Opacity measure 1 (1)	Private (2)	Public (3)	Opacity measure 2 (4)	Private (5)	Public (6)	Opacity measure 3 (7)	Private (8)	Public (9)
$\ln(\text{amount})$	1.35*** (10.82)	1.01*** (5.94)	1.75*** (7.77)	1.42*** (11.42)	0.98*** (5.81)	1.92*** (8.58)	1.43*** (10.85)	1.05*** (5.54)	1.96*** (8.89)
$\ln(\text{assets})$	0.47*** (4.33)	-0.04 (-0.35)	0.87*** (3.59)						
$\ln(\text{sales})$				0.39*** (4.12)	0.08 (0.67)	0.61** (2.64)			
$\ln(\text{employees})$							0.42*** (4.61)	0.15 (1.23)	0.40* (2.25)
public	-0.82 (-1.87)			-0.78 (-1.75)			-1.19* (-2.50)		
Constant	-1.50 (-0.58)	-8.07* (-2.02)	-15.40*** (-3.46)	-2.75 (-1.03)	-8.57* (-2.17)	-16.25*** (-3.52)	-2.36 (-0.87)	-10.06* (-2.38)	-15.81*** (-3.43)
R-squared	0.36	0.35	0.37	0.36	0.35	0.37	0.35	0.36	0.36
N	864	467	397	856	464	392	805	430	375

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

4.8 Information Asymmetry in Public and Private Firms

In Table XII the impact on information asymmetry from being publicly listed is investigated. First, in column 1, 4 and 7 we investigate if there are any signs of information asymmetry when regressing number of members in the syndicate on a dummy variable indicating if borrower is publicly traded or not. Somewhat surprisingly, we see no such evidence in the regressions, as the variable ‘public’ is only significantly separated from zero when using the natural log of the number of employees as a proxy for opacity. We interpret the results as evidence of the variable ‘public’ being unable to mitigate information asymmetry. To look into the impact of a firm being private further, we regress the number of syndicate participants on public and private firms separately. As we split the data sample, we get fewer observations per sample and the quality of the regressions decrease. We are subsequently cautious to draw strong conclusions from these regressions, but would still like to highlight some interesting patterns. The proxy for transparency is not significant in any of the three regressions when only include private firms. When we use public firms, the coefficient on log of assets is positive and significant at 1%-level, the coefficient for log of sales is positive and significant at 5%-level and the coefficient for the log of number of employees is positive and significant at 10%, implying that public firms have significantly larger assets, sales and number of employees.

Table XIII – Differences in Distribution Method

The table reports coefficients estimates from regressions relating the number of participants in loan syndicates to information asymmetry of the borrower. ln(assets), ln(sales) and ln(employees) are used as proxies for opacity. ln(amount), which stands for log of loan amount and club deal, which stands for privately place deals are used as control variables. In addition to values reported, all regressions include year, industry, loan type and loan purpose dummies. Standard errors are heteroskedasticity robust, clustered at the facility level.

	Number of participants			Number of leads			Number of participants		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
ln(amount)	1.33*** (10.72)	1.39*** (11.32)	1.39*** (10.60)	0.48*** (6.61)	0.53*** (7.04)	0.64*** (7.42)	1.20*** (10.09)	1.25*** (10.56)	1.26*** (10.18)
ln(assets)	0.42*** (3.88)			0.47*** (7.20)			0.11 (0.96)		
ln(sales)		0.34*** (3.62)			0.38*** (6.29)			0.14 (1.33)	
ln(employees)			0.32*** (3.61)			0.19*** (3.69)			0.15 (1.58)
board/ownership relation							5.03*** (6.34)	4.42*** (5.66)	3.95*** (5.36)
board/ownership relation x small ^x							-6.05*** (-5.60)	-4.20*** (-3.43)	-2.98* (-2.16)
club deal	-1.28* (-2.55)	-1.25* (-2.42)	-1.18* (-2.19)	1.96*** (3.92)	2.04*** (3.97)	2.04*** (3.70)	-1.34** (-2.92)	-1.33** (-2.75)	-1.25* (-2.50)
Constant	-1.65 (-0.64)	-2.73 (-1.02)	-1.87 (-0.69)	-11.02*** (-6.30)	-12.10*** (-6.52)	-11.85*** (-6.10)	4.35 (1.67)	2.69 (0.99)	3.09 (1.14)
R-squared	0.36	0.36	0.35	0.38	0.37	0.36	0.41	0.40	0.38
N	862	854	803	862	854	803	862	852	801

* p<0.1, ** p<0.05, *** p<0.01

^x Where small is defined as all firms who are below the median in the respective proxy for opacity, i.e. size of assets is used in column (2), size of sales in column (4) and number of employees in column (6)

4.9 Controlling for Distribution Method

In Table XIII we control for the impact of different distribution methods. Champagne and Coggins (2011) argues that syndicates distributed as club deals are more concentrated than traditionally syndicated deals because they are privately placed and often used by opaque firms. Our results with market participants point in the same direction. In column 1, 2 and 3 we have regressed number of participants on control variables for size, opacity, purpose, industry and type of loan, as well a dummy variable indicating whether or not the loan is a club deal. The results are consistent with previous findings, and show that in privately placed deals the number of participants decreases by 1.28 members on average when using assets as a proxy for opacity, 1.25 when using sales and 1.18 when using employees. In all three cases, the coefficients are significant at 10%-level. Column 4, 5, 6 display regressions with number of lead arrangers as dependent variable. As previously argued by Champagne and Coggins (2011), the number of lead arrangers increases in club deals, which means that the lead arranger(s)' share of the loan is likely to be higher as well. In our sample, this effect is significant at 1%-level using all three opacity proxies. Kristofer Nivenius at Nordea also pointed out that club deals generally contains closer relationships between syndicate members and more lead arrangers. Our results are in line with both of these arguments to a certain extent, the variable club deal can also be interpreted as another proxy for opacity, as the number of participants decreases club deals and the share held by the lead arranger(s) increases.

Last, we control for loans that are club deals when regressing the number of syndicate members on the variable for board/ownership relationships and the same control variables as previously. The results are displayed in column 7, 8 and 9 and the findings are in line with previous results. The coefficient for the size of the loan is positive and significant at 1%-level. Furthermore, a board/ownership relationship adds members to the syndicate when the firm is in the large group and the coefficients are significant at 1%-level. However, the interaction term between the small group and the board/ownership variable is negative and statistically significant. The effect on the number of participants from being part of a club deal is negative and in line with the results displayed in column 1-6. The natural log of assets, sales and employees are no longer statistically significant in any of the regression displayed in column 7-9.

5 - Conclusion

The first question in need of an answer is whether or not there is asymmetric information between the different actors on the syndicated loan market. We see conclusive evidence of asymmetric information, as more transparent borrowers are able to form less concentrated syndicates with more banks participating. Thus, hypothesis I is confirmed.

The next question is where information asymmetry lies and how different actors act in syndicated lending. We interpret our findings as evidence of moral hazard being the predominant outcome of asymmetric information. In the case of adverse selection, the lead arranger(s) are assumed to have private information unknown to other participating banks. In the case of moral hazard, all lenders are assumed to be equally uninformed on the borrower and moral hazard increases when the borrower is opaque. If there is a problem with adverse selection, we would expect the informed lead arranger(s) to be forced to form a concentrated syndicate and retain a larger share itself to signal that the borrower is of good quality. However, our sample shows the opposite behavior. When the lead arranger(s) have more knowledge on the borrower through either a previous loan transaction or are part of the same business group, more banks are added to the syndicate. This implies that lead arranger(s) have little private information on the borrower beforehand and that the underlying information asymmetry lies in the lead arranger(s)' intention to conduct monitoring, which is unknown to the participating banks. Therefore, our results support the findings of Sufi (2007) and the theoretical framework outlined by Holmstrom (1979) and Holmstrom and Tirole (1997) on moral hazard being the key issue in syndicated lending. Nevertheless, our results also show that moral hazard can be mitigated. Thus, hypothesis II is confirmed.

Furthermore, this paper shows interesting findings regarding the relationship between borrowers and lenders. In accordance with the definition of relationship banking by Boot (2000), borrowers share information with banks that they have a relationship with and this has an impact on future loan agreements. Also, while much of the previous research focused on how the pricing of loans is affected by strong relationships between borrowers and banks, our results indicate that the information shared within the syndicate is able to significantly reduce moral hazard. In particular, we have investigated the effect business groups have on the syndicated loan market and the finding is that group members share important information with each other to enhance trust. Schoorman, Bazerman and Atkin's (1981) theory of the role of business groups and their ability to facilitate vertical coordination between the firm and its suppliers of inputs, in this case the supplier of capital, is confirmed by our results. Moreover,

the results are also consistent with Ferreira and Matos' conclusion that when a bank is connected to a borrowing firm through a board seat or an institutional holding it has superior information over other bank because screening (Allen 1990) and monitoring (Diamond 1984) may improve information flow. As mentioned previously, Heemskerk (2013) shows that the European network of board interlocks has increased in the period 2005 to 2010 and this makes our findings interesting beyond the Swedish syndicated loan market. Even though Sweden is a particularly well-suited environment to study business groups we expect the effects of the information sharing between borrowers and banks to be similar in other geographic areas.

Our results confirm that asymmetric information is mitigated by specific lead arranger-borrower relationships, as borrower frequency does not have an impact on syndicate structure. Due to limited sample size, no conclusion can be drawn on the impact of the borrower being public or having collateral. Nevertheless, geographic proximity between borrower and lead arranger mitigates moral hazard.

For future research, it would also be interesting to investigate how pricing of loans are affected by information asymmetry and by relationships within business groups. Additionally, a comparison of mitigation effects across countries can be made. Specifically, a comparison between countries where banks have many interlocking directorates with borrowers, such as Germany and Japan, and countries with few, like France and the U.K., would provide valuable insights on geographical and cultural variations.

In conclusion, we find evidence of information asymmetry, and moral hazard as the main consequence, in the Swedish syndicated loan market. Also, it can be concluded that there are factors capable of mitigating moral hazard. In addition to previous loans taken by a borrower with the same lead arranger, our research provide a brand new approach, i.e. employing banks and borrowers from the same business group to mitigate asymmetric information.

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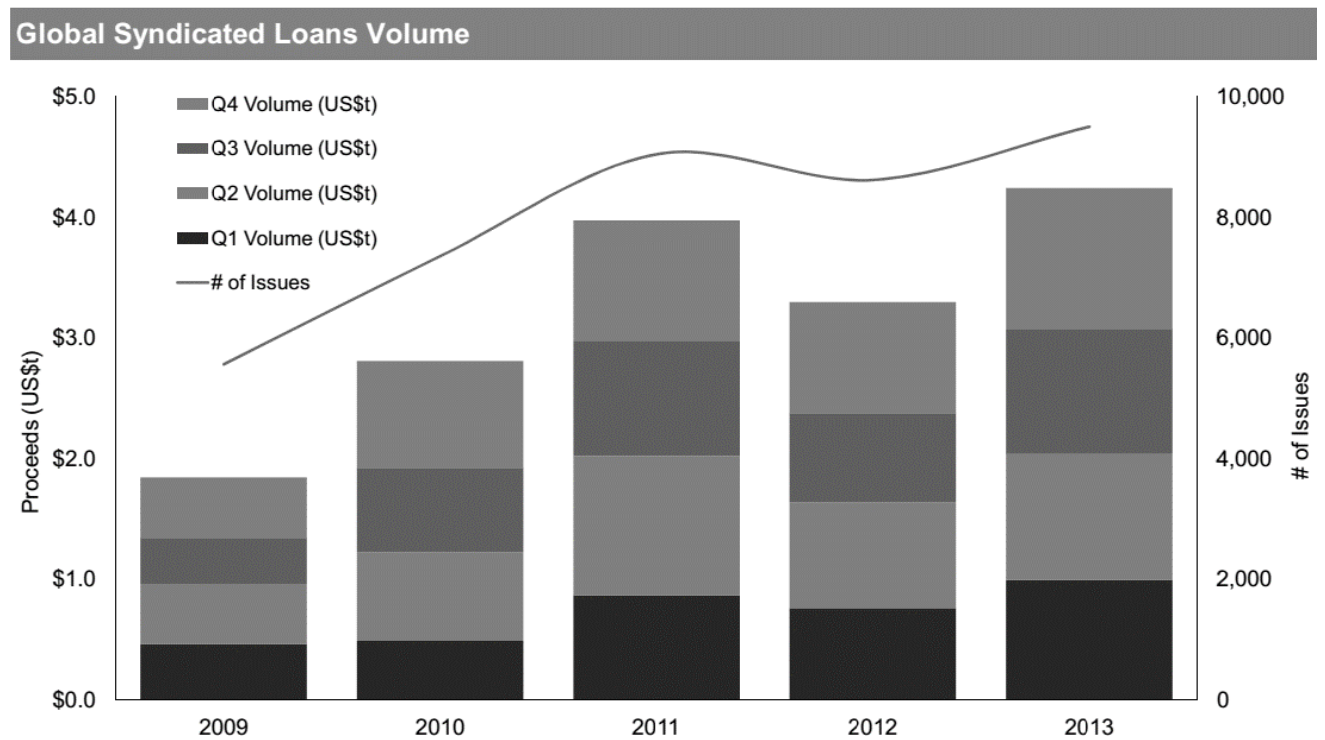
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Appendix I

Diagram I

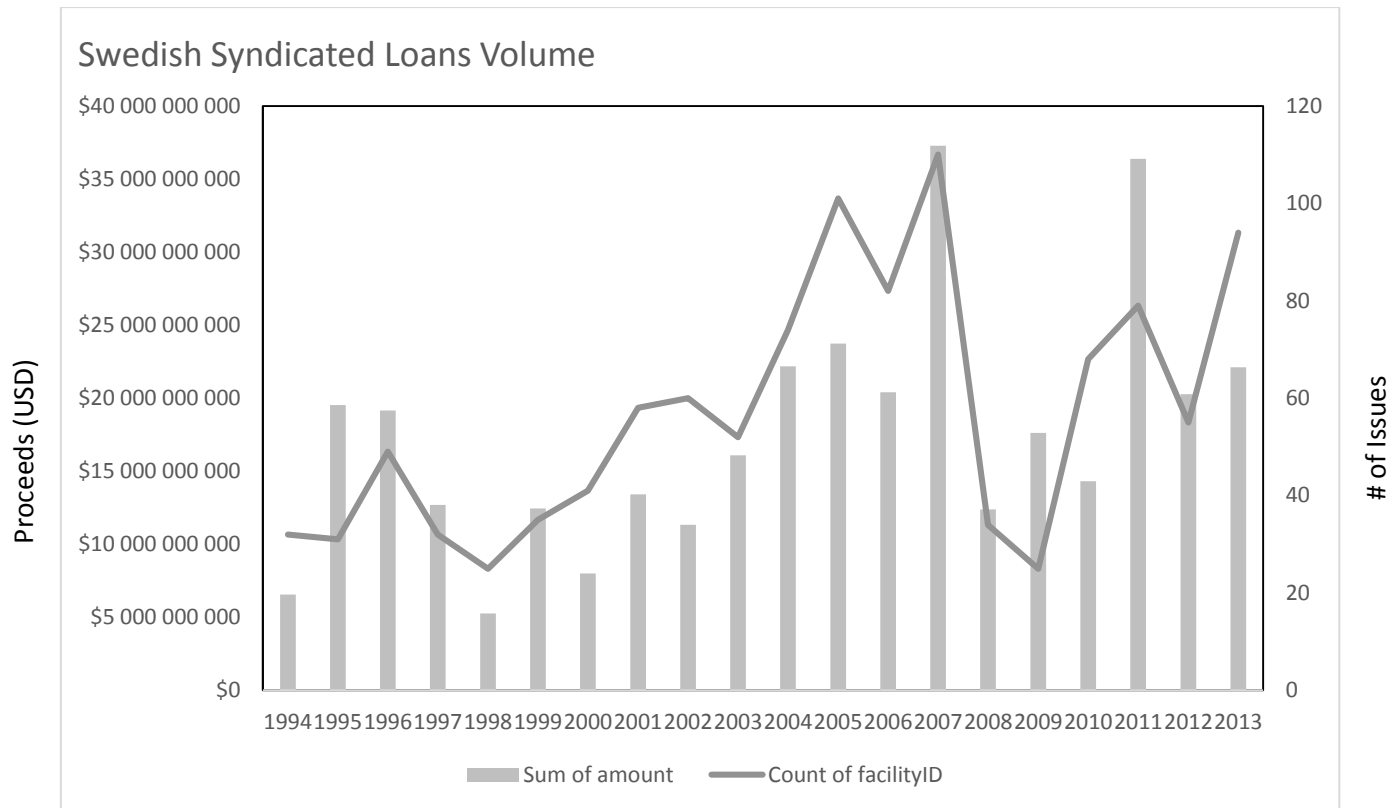
This diagram displays global syndicated loans volume and number of issues from 2009 to 2013.



Source: Thomson Reuters

Diagram II

This diagram displays syndicated loans volume and number of deals for our sample, i.e. for non-financial Swedish firms from 1994 to 2013.



Appendix II

The complete version of all regressions described in Table V-XIII is presented in the following tables. The number of participants in the syndicate is the dependent variable if not indicated otherwise.

Table I – Assets as Proxy for Transparency

	Table V	Table VI	Table VII	Table VIII	Table IX	Table X	Table XI	Table XII	Table XIII	Table XIII ^x	Table XIII
Ln(amount)	1.31*** (10.58)	1.19*** (9.68)	1.18*** (9.96)	1.13*** (9.93)	1.30*** (10.48)	0.79*** (4.61)	1.00*** (8.76)	1.35*** (10.81)	1.33*** (10.72)	0.48*** (6.61)	1.20*** (10.09)
Ln(assets)	0.40*** (3.74)	0.13 (1.13)	0.09 (0.82)	0.09 (0.84)	0.13 (0.96)	0.62*** (4.08)	-0.10 (-0.95)	0.47*** (4.33)	0.41*** (3.88)	0.47*** (7.20)	0.11 (0.96)
lead-borrower relation		4.14*** (6.94)		3.17*** (6.21)							
lead-borrower relation x small		-2.03* (-2.44)									
board-ownership relation			5.02*** (6.27)	2.57*** (3.71)							5.03*** (6.33)
board-ownership relation x small			-6.06*** (-5.60)								-6.05*** (-5.60)
borrowing frequency					0.51* (2.02)						
borrowing frequency x small					-1.30*** (-4.46)						
secured						-1.93* (-2.28)					
number of Swedish lead arrangers							1.99*** (10.84)				
number of Swedish lead arrangers x small							-1.33*** (-6.36)				
club deal									-1.28* (-2.55)	1.96*** (3.92)	-1.34** (-2.92)
public								-0.82 (-1.87)			
year=1994	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)		0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)
year=1995	-22.54*** (-8.90)	-21.66*** (-8.55)	-22.44*** (-9.86)	-21.90*** (-9.19)	-22.32*** (-8.86)		-22.00*** (-8.74)	-22.79*** (-9.00)	-21.79*** (-7.03)	-1.01 (-1.64)	-21.92*** (-7.84)
year=1996	-14.09** (-3.26)	-13.91*** (-3.41)	-14.85*** (-3.81)	-14.46*** (-3.68)	-14.34*** (-3.34)		-13.35** (-3.27)	-14.40*** (-3.33)	-14.12** (-3.27)	-0.93 (-0.81)	-14.90*** (-3.83)
year=1997	-21.08*** (-13.30)	-21.26*** (-13.82)	-20.71*** (-12.64)	-21.17*** (-13.45)	-21.37*** (-13.32)	0.00 (.)	-20.77*** (-13.95)	-21.30*** (-13.35)	-21.06*** (-13.24)	-0.74 (-1.20)	-20.69*** (-12.59)
year=1998	-12.60*** (-3.78)	-13.04*** (-4.28)	-12.57*** (-3.55)	-13.11*** (-4.09)	-12.95*** (-3.99)	26.28*** (14.25)	-11.90*** (-3.34)	-12.83*** (-3.87)	-12.58*** (-3.79)	-1.31* (-2.34)	-12.56*** (-3.56)
year=1999	-18.12*** (-12.39)	-17.97*** (-11.44)	-18.00*** (-12.20)	-17.72*** (-11.42)	-18.90*** (-12.25)	3.39 (1.54)	-19.03*** (-13.17)	-18.13*** (-12.50)	-17.95*** (-12.43)	0.31 (0.33)	-17.84*** (-12.27)
year=2000	-16.86*** (-8.30)	-17.61*** (-9.66)	-16.94*** (-9.09)	-17.67*** (-9.84)	-17.26*** (-8.83)	6.12 (0.98)	-17.19*** (-9.19)	-17.22*** (-8.37)	-16.72*** (-8.21)	-2.28*** (-3.80)	-16.80*** (-8.99)
year=2001	-16.40*** (-10.23)	-16.65*** (-11.15)	-16.23*** (-10.46)	-16.97*** (-11.03)	-16.30*** (-10.25)	-3.25 (-1.28)	-16.93*** (-11.24)	-16.76*** (-10.52)	-16.30*** (-10.25)	-1.76*** (-3.84)	-16.13*** (-10.49)
year=2002	-16.84*** (-16.72)	-17.05*** (-17.54)	-16.84*** (-18.64)	-17.50*** (-18.89)	-17.08*** (-16.38)	0.53 (0.21)	-17.38*** (-18.58)	-17.35*** (-16.79)	-16.61*** (-16.46)	-1.04* (-2.45)	-16.61*** (-18.34)
year=2003	-16.15*** (-16.26)	-16.85*** (-17.57)	-16.03*** (-16.06)	-16.97*** (-17.22)	-16.63*** (-16.21)	4.62** (2.79)	-17.26*** (-16.87)	-16.64*** (-15.80)	-16.03*** (-16.10)	-0.66 (-1.36)	-15.92*** (-15.91)
year=2004	-17.23*** (-17.42)	-17.96*** (-16.94)	-17.37*** (-16.62)	-18.23*** (-16.86)	-17.61*** (-16.66)	4.94* (2.02)	-18.94*** (-19.39)	-17.75*** (-16.87)	-16.92*** (-17.58)	0.11 (0.23)	-17.06*** (-16.62)
year=2005	-16.44*** (-16.93)	-17.26*** (-17.84)	-16.52*** (-17.20)	-17.60*** (-18.07)	-16.80*** (-16.87)	2.18 (1.06)	-18.30*** (-19.30)	-17.01*** (-16.19)	-16.16*** (-16.59)	0.88 (1.52)	-16.23*** (-16.95)

year=2006	-19.56*** (-22.00)	-20.28*** (-22.61)	-19.60*** (-21.54)	-20.49*** (-22.38)	-19.98*** (-20.74)	1.95 (1.18)	-21.15*** (-24.84)	-20.09*** (-20.73)	-19.27*** (-21.62)	1.21* (2.39)	-19.32*** (-21.21)
year=2007	-20.93*** (-24.76)	-21.31*** (-25.32)	-20.90*** (-24.34)	-21.66*** (-25.60)	-21.31*** (-23.39)	-0.95 (-0.59)	-22.40*** (-27.38)	-21.55*** (-23.01)	-20.66*** (-24.25)	1.33* (2.58)	-20.64*** (-23.98)
year=2008	-19.92*** (-20.61)	-20.82*** (-21.41)	-20.36*** (-21.51)	-21.36*** (-22.55)	-19.76*** (-17.75)	1.77 (1.10)	-21.68*** (-25.15)	-20.54*** (-18.90)	-19.64*** (-20.52)	2.58*** (3.82)	-20.08*** (-21.36)
year=2009	-21.98*** (-25.99)	-23.16*** (-28.82)	-22.20*** (-26.50)	-23.23*** (-28.24)	-22.60*** (-24.91)	-2.28 (-1.34)	-24.48*** (-30.04)	-22.48*** (-24.65)	-21.68*** (-25.11)	1.59* (2.42)	-21.90*** (-25.42)
year=2010	-21.77*** (-14.90)	-22.02*** (-14.76)	-21.09*** (-17.63)	-22.62*** (-16.17)	-21.89*** (-14.54)	5.22 (1.28)	-23.64*** (-20.54)	-22.35*** (-15.15)	-21.47*** (-14.53)	2.05 (1.53)	-20.80*** (-17.24)
year=2011	-21.57*** (-27.23)	-22.47*** (-27.87)	-21.95*** (-28.00)	-22.85*** (-28.11)	-21.91*** (-25.61)	-0.68 (-0.40)	-24.40*** (-31.70)	-22.05*** (-25.71)	-21.10*** (-26.00)	1.25 (1.91)	-21.48*** (-26.99)
year=2012	-20.06*** (-25.10)	-20.34*** (-25.01)	-20.29*** (-24.65)	-20.81*** (-24.40)	-20.14*** (-22.98)	1.93 (1.19)	-23.07*** (-28.32)	-20.60*** (-23.38)	-19.47*** (-23.41)	2.73*** (4.28)	-19.68*** (-23.20)
year=2013	-19.97*** (-21.88)	-20.67*** (-23.30)	-20.52*** (-24.07)	-21.03*** (-24.03)	-20.39*** (-20.41)	2.31 (1.32)	-23.04*** (-26.77)	-20.50*** (-21.37)	-19.35*** (-20.19)	3.08*** (3.92)	-19.88*** (-22.59)
year=2014	-21.78*** (-29.60)	-23.14*** (-29.88)	-21.54*** (-29.87)	-22.96*** (-29.89)	-22.03*** (-28.22)	-0.82 (-0.52)	-23.66*** (-33.60)	-22.42*** (-26.08)	-21.31*** (-28.55)	1.08* (2.11)	-21.06*** (-28.99)
industry=2	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)
industry=3	-1.78 (-1.30)	-0.59 (-0.46)	-2.58 (-1.88)	-1.46 (-1.11)	-1.17 (-0.85)	1.08 (0.51)	1.11 (0.78)	-1.49 (-1.10)	-1.52 (-1.12)	-0.96 (-1.18)	-2.31 (-1.71)
industry=4	0.14 (0.16)	1.34 (1.64)	-1.34 (-1.49)	0.09 (0.10)	0.50 (0.58)	2.84 (1.54)	2.86*** (3.65)	0.40 (0.45)	0.44 (0.49)	-0.22 (-0.41)	-1.03 (-1.13)
industry=5	-1.53 (-1.63)	-0.19 (-0.22)	-2.54** (-2.70)	-1.04 (-1.19)	-1.15 (-1.27)	2.30 (1.28)	1.04 (1.24)	-1.29 (-1.36)	-1.22 (-1.29)	-0.02 (-0.04)	-2.22* (-2.35)
industry=6	-2.56* (-2.45)	-1.21 (-1.26)	-4.02*** (-3.70)	-3.02** (-2.77)	-1.87 (-1.87)	-1.33 (-0.67)	0.52 (0.59)	-2.34* (-2.20)	-2.42* (-2.30)	-1.23* (-2.13)	-3.88*** (-3.55)
industry=7	-1.34 (-0.90)	0.69 (0.48)	-2.37 (-1.61)	-0.40 (-0.27)	-1.00 (-0.70)	-0.49 (-0.23)	0.06 (0.04)	-1.07 (-0.74)	-0.28 (-0.18)	-2.20** (-2.59)	-1.27 (-0.85)
industry=8	-2.95** (-2.97)	-1.32 (-1.39)	-3.60*** (-3.56)	-2.46* (-2.55)	-2.56** (-2.62)	-0.02 (-0.01)	-0.30 (-0.33)	-2.85** (-2.89)	-2.56* (-2.54)	-0.71 (-1.16)	-3.21** (-3.14)
industry=9	-2.45** (-2.73)	-1.46 (-1.74)	-3.39*** (-3.69)	-2.47** (-2.90)	-2.19* (-2.47)	0.13 (0.07)	0.81 (1.01)	-2.23* (-2.48)	-2.27* (-2.50)	-1.09* (-2.05)	-3.20*** (-3.45)
industry=99	-4.58*** (-4.73)	-3.72** (-3.26)	-5.07*** (-5.70)	-5.12*** (-4.32)	-3.79*** (-3.57)	-2.77 (-1.31)	0.24 (0.27)	-3.94*** (-3.79)	-3.86*** (-3.37)	-3.00*** (-3.91)	-4.32*** (-4.13)
purpose=1	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)
purpose=2	1.36* (2.32)	1.73** (3.00)	1.44* (2.56)	1.81** (3.14)	1.45* (2.48)	1.19 (1.77)	1.13* (2.06)	1.28* (2.18)	1.36* (2.33)	0.86** (2.83)	1.45* (2.57)
purpose=3	-5.03*** (-5.10)	-3.61*** (-3.92)	-3.23*** (-3.54)	-2.80** (-3.25)	-4.62*** (-4.44)		-8.24*** (-11.34)	-5.63*** (-5.16)	-4.35*** (-4.13)	-2.40** (-3.18)	-2.52** (-2.65)
purpose=4	0.97 (1.72)	0.74 (1.35)	0.89 (1.63)	0.70 (1.30)	1.32* (2.31)	-0.64 (-0.74)	0.21 (0.37)	0.95 (1.67)	0.88 (1.57)	0.36 (1.38)	0.81 (1.48)
purpose=5	-3.80** (-2.79)	-3.86*** (-3.42)	-5.16*** (-4.41)	-4.29*** (-4.17)	-3.62** (-2.59)	3.51 (1.55)	-5.41*** (-3.32)	-3.84** (-2.79)	-3.96** (-2.92)	-0.29 (-0.62)	-5.33*** (-4.58)
loan_type=1	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)
loan_type=2	0.73 (1.76)	0.44 (1.10)	0.44 (1.11)	0.16 (0.42)	0.68 (1.63)	1.29* (2.34)	-0.36 (-0.91)	0.90* (2.09)	0.85* (2.02)	0.51* (2.00)	0.56 (1.38)
loan_type=3	-0.96 (-1.85)	-0.90 (-1.85)	-0.91 (-1.86)	-0.97* (-2.02)	-0.90 (-1.74)	-0.68 (-1.23)	-0.85 (-1.80)	-0.91 (-1.75)	-0.95 (-1.83)	-0.42 (-1.46)	-0.90 (-1.83)
Constant	-0.84 (-0.32)	2.41 (0.92)	5.18* (1.99)	4.95* (1.98)	1.54 (0.58)	-15.50*** (-3.81)	7.03** (2.95)	-1.50 (-0.58)	-1.65 (-0.64)	-11.02*** (-6.30)	4.35 (1.67)
R-squared	0.36	0.40	0.41	0.42	0.37	0.48	0.44	0.36	0.36	0.38	0.41
N	864	864	864	864	864	319	864	864	862	862	862

* p<0.05, ** p<0.01, *** p<0.001

Table II – Sales as Proxy for Transparency

	Table V	Table VI	Table VII	Table VIII	Table IX	Table X	Table XI	Table XII	Table XIII	Table XIII*	Table XIII
Ln(amount)	1.38*** (11.16)	1.24*** (10.09)	1.24*** (10.43)	1.16*** (10.16)	1.35*** (10.83)	0.86*** (5.09)	1.08*** (9.33)	1.42*** (11.42)	1.39*** (11.32)	0.53*** (7.04)	1.25*** (10.56)
Ln(sales)	0.33*** (3.51)	0.09 (0.83)	0.12 (1.13)	0.07 (0.76)	0.18 (1.39)	0.43*** (3.93)	-0.08 (-0.79)	0.39*** (4.12)	0.34*** (3.62)	0.38*** (6.29)	0.14 (1.33)
lead-borrower relation		4.06*** (6.97)		3.14*** (6.17)							
lead-borrower x small		-1.85* (-2.27)									
board-ownership relation			4.41*** (5.60)	2.57*** (3.77)							4.42*** (5.66)
board-ownership relation x small			-4.20*** (-3.44)								-4.20*** (-3.43)
borrowing frequency					0.35 (1.32)						
borrowing frequency x small					-0.75** (-2.65)						
secured						-2.05* (-2.43)					
number of Swedish lead arrangers							1.93*** (10.16)				
number of Swedish lead arrangers x small							-0.95*** (-4.24)				
club deal									-1.24* (-2.42)	2.04*** (3.97)	-1.33** (-2.75)
public								-0.78 (-1.75)			
year=1994	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)		0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)
year=1995	-22.09*** (-8.76)	-21.34*** (-8.46)	-22.07*** (-9.63)	-21.81*** (-9.19)	-21.86*** (-8.67)		-21.58*** (-8.63)	-22.25*** (-8.83)	-21.33*** (-6.91)	-0.43 (-0.74)	-21.51*** (-7.64)
year=1996	-13.73** (-3.17)	-13.68*** (-3.35)	-14.52*** (-3.66)	-14.43*** (-3.67)	-13.72** (-3.19)		-13.05** (-3.19)	-13.94** (-3.22)	-13.76** (-3.18)	-0.40 (-0.38)	-14.55*** (-3.68)
year=1997	-20.73*** (-12.87)	-20.88*** (-13.34)	-20.46*** (-12.43)	-21.14*** (-13.26)	-20.56*** (-12.51)	0.00 (.)	-20.44*** (-13.45)	-20.86*** (-12.86)	-20.70*** (-12.81)	-0.22 (-0.36)	-20.44*** (-12.37)
year=1998	-12.33*** (-3.69)	-12.99*** (-4.24)	-12.39*** (-3.53)	-13.11*** (-4.09)	-12.47*** (-3.79)	26.50*** (13.34)	-12.13*** (-3.37)	-12.49*** (-3.74)	-12.32*** (-3.69)	-0.90 (-1.57)	-12.37*** (-3.53)
year=1999	-17.84*** (-12.25)	-17.73*** (-11.24)	-17.81*** (-11.64)	-17.70*** (-11.16)	-18.09*** (-12.08)	3.26 (1.42)	-18.77*** (-13.09)	-17.79*** (-12.41)	-17.69*** (-12.27)	0.68 (0.71)	-17.63*** (-11.71)
year=2000	-15.47*** (-7.09)	-16.60*** (-8.40)	-15.65*** (-7.70)	-16.95*** (-8.73)	-15.78*** (-7.26)	6.52 (1.02)	-16.19*** (-7.85)	-15.69*** (-7.13)	-15.38*** (-7.02)	-1.31 (-1.92)	-15.55*** (-7.61)
year=2001	-15.22*** (-8.72)	-15.75*** (-9.71)	-15.30*** (-8.84)	-16.29*** (-9.81)	-15.19*** (-8.63)	-2.15 (-0.76)	-16.11*** (-9.72)	-15.47*** (-8.91)	-15.11*** (-8.74)	-0.95 (-1.77)	-15.18*** (-8.86)
year=2002	-16.14*** (-16.37)	-16.60*** (-17.43)	-16.51*** (-18.32)	-17.34*** (-18.77)	-16.02*** (-15.15)	1.44 (0.56)	-16.99*** (-18.22)	-16.50*** (-16.45)	-15.90*** (-16.14)	-0.20 (-0.43)	-16.27*** (-18.04)
year=2003	-15.65*** (-15.07)	-16.47*** (-16.34)	-15.71*** (-14.94)	-16.86*** (-16.29)	-15.70*** (-14.51)	4.51** (2.59)	-16.72*** (-15.47)	-16.02*** (-14.80)	-15.53*** (-14.95)	-0.07 (-0.13)	-15.58*** (-14.82)
year=2004	-16.84*** (-16.20)	-17.56*** (-16.16)	-17.10*** (-15.65)	-18.18*** (-16.10)	-16.82*** (-15.20)	4.91 (1.87)	-18.42*** (-17.21)	-17.23*** (-15.90)	-16.53*** (-16.35)	0.63 (1.24)	-16.77*** (-15.72)
year=2005	-16.09*** (-16.25)	-16.97*** (-16.93)	-16.50*** (-16.50)	-17.58*** (-17.43)	-16.08*** (-15.51)	1.83 (0.86)	-17.90*** (-18.13)	-16.55*** (-15.76)	-15.82*** (-16.00)	1.37* (2.28)	-16.20*** (-16.33)
year=2006	-19.13*** (-20.65)	-19.93*** (-21.31)	-19.35*** (-20.16)	-20.41*** (-21.24)	-19.15*** (-18.92)	1.82 (1.01)	-20.64*** (-23.00)	-19.55*** (-19.80)	-18.86*** (-20.38)	1.73** (3.20)	-19.06*** (-19.91)
year=2007	-20.23*** (-23.25)	-21.05*** (-24.03)	-20.61*** (-23.01)	-21.56*** (-24.27)	-20.40*** (-21.00)	-0.15 (-0.08)	-22.07*** (-25.98)	-20.69*** (-22.17)	-19.96*** (-22.87)	2.24*** (4.11)	-20.31*** (-22.68)
year=2008	-19.56***	-20.42***	-20.00***	-21.31***	-19.29***	1.56	-21.16***	-20.07***	-19.29***	3.04***	-19.71***

	(-19.57)	(-20.29)	(-20.03)	(-21.51)	(-16.17)	(0.89)	(-23.33)	(-18.28)	(-19.51)	(4.23)	(-19.92)
year=2009	-21.51***	-22.95***	-22.02***	-23.23***	-21.85***	-1.93	-24.31***	-21.86***	-21.21***	2.30***	-21.69***
	(-23.93)	(-26.81)	(-24.40)	(-26.22)	(-21.75)	(-1.03)	(-28.12)	(-23.25)	(-23.24)	(3.32)	(-23.43)
year=2010	-21.60***	-22.05***	-21.67***	-22.73***	-21.48***	5.27	-23.92***	-22.08***	-21.32***	2.48	-21.37***
	(-15.05)	(-14.70)	(-14.98)	(-16.37)	(-13.97)	(1.32)	(-18.79)	(-15.29)	(-14.73)	(1.87)	(-14.55)
year=2011	-21.14***	-22.20***	-21.73***	-22.82***	-21.22***	-0.48	-24.00***	-21.51***	-20.69***	1.84**	-21.25***
	(-26.04)	(-26.80)	(-26.52)	(-26.84)	(-23.85)	(-0.26)	(-29.94)	(-24.90)	(-25.12)	(2.77)	(-25.69)
year=2012	-19.66***	-20.14***	-20.30***	-20.78***	-19.58***	1.95	-22.84***	-20.08***	-19.08***	3.28***	-19.68***
	(-23.12)	(-23.20)	(-22.72)	(-22.91)	(-20.68)	(1.10)	(-26.13)	(-22.05)	(-21.83)	(4.88)	(-21.43)
year=2013	-19.48***	-20.36***	-20.17***	-20.98***	-19.59***	2.70	-22.64***	-19.88***	-18.87***	3.74***	-19.51***
	(-20.62)	(-21.96)	(-22.28)	(-22.72)	(-18.54)	(1.42)	(-24.96)	(-20.41)	(-19.25)	(4.67)	(-20.98)
year=2014	-21.22***	-22.71***	-21.16***	-22.89***	-21.19***	-0.24	-23.16***	-21.71***	-20.76***	1.85***	-20.70***
	(-26.66)	(-27.26)	(-26.74)	(-27.17)	(-24.59)	(-0.14)	(-29.65)	(-24.45)	(-26.05)	(3.42)	(-26.25)
industry=2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
industry=3	-1.67	-0.75	-2.46	-1.43	-1.37	0.05	0.77	-1.37	-1.42	-0.86	-2.18
	(-1.24)	(-0.60)	(-1.81)	(-1.10)	(-1.00)	(0.02)	(0.54)	(-1.02)	(-1.06)	(-1.08)	(-1.63)
industry=4	0.26	1.11	-1.31	0.07	0.29	2.27	2.53**	0.54	0.55	-0.06	-0.98
	(0.30)	(1.40)	(-1.43)	(0.08)	(0.34)	(1.34)	(3.22)	(0.61)	(0.62)	(-0.11)	(-1.06)
industry=5	-0.68	0.10	-1.75	-0.64	-0.83	2.58	1.32	-0.35	-0.37	0.61	-1.43
	(-0.72)	(0.11)	(-1.83)	(-0.71)	(-0.89)	(1.54)	(1.55)	(-0.37)	(-0.39)	(1.04)	(-1.50)
industry=6	-2.35*	-1.36	-3.82***	-3.04**	-2.03*	-1.60	0.31	-2.07	-2.20*	-0.92	-3.65**
	(-2.23)	(-1.44)	(-3.44)	(-2.76)	(-2.00)	(-0.88)	(0.34)	(-1.94)	(-2.09)	(-1.62)	(-3.28)
industry=7	-0.72	0.60	-2.09	-0.35	-0.82	-0.55	1.10	-0.31	0.34	-1.46	-0.93
	(-0.48)	(0.43)	(-1.40)	(-0.24)	(-0.56)	(-0.27)	(0.74)	(-0.21)	(0.22)	(-1.62)	(-0.61)
industry=8	-2.26*	-1.15	-3.27**	-2.41*	-2.03*	0.47	-0.18	-2.01*	-1.87	0.19	-2.84**
	(-2.19)	(-1.17)	(-3.05)	(-2.35)	(-1.97)	(0.25)	(-0.19)	(-1.97)	(-1.80)	(0.31)	(-2.63)
industry=9	-2.25*	-1.67*	-3.43***	-2.47**	-2.26**	-0.17	0.43	-1.98*	-2.06*	-0.81	-3.21***
	(-2.53)	(-2.09)	(-3.69)	(-2.88)	(-2.59)	(-0.10)	(0.54)	(-2.22)	(-2.30)	(-1.57)	(-3.42)
industry=99	-4.62***	-3.93***	-4.84***	-5.11***	-4.12***	-3.69	-0.35	-4.00***	-3.93***	-3.12***	-4.09***
	(-4.86)	(-3.39)	(-5.35)	(-4.29)	(-4.14)	(-1.88)	(-0.38)	(-3.93)	(-3.50)	(-4.09)	(-3.81)
purpose=1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
purpose=2	1.24*	1.70**	1.48*	1.79**	1.28*	1.06	1.05	1.15	1.24*	0.71*	1.49*
	(2.07)	(2.88)	(2.52)	(3.03)	(2.13)	(1.51)	(1.85)	(1.91)	(2.08)	(2.30)	(2.54)
purpose=3	-5.41***	-3.65***	-3.25***	-2.88**	-4.86***		-7.86***	-6.07***	-4.76***	-2.89***	-2.57**
	(-5.26)	(-3.69)	(-3.39)	(-3.21)	(-4.24)		(-10.75)	(-5.31)	(-4.32)	(-3.55)	(-2.59)
purpose=4	0.80	0.56	0.88	0.63	0.89	-0.72	0.00	0.76	0.71	0.22	0.79
	(1.43)	(1.04)	(1.60)	(1.19)	(1.58)	(-0.82)	(0.01)	(1.35)	(1.28)	(0.82)	(1.44)
purpose=5	-4.22**	-4.10***	-4.79***	-4.54***	-4.12**	3.46	-5.42**	-4.30**	-4.38**	-0.54	-4.96***
	(-2.90)	(-3.44)	(-3.91)	(-4.21)	(-2.81)	(1.51)	(-3.29)	(-2.91)	(-3.02)	(-1.30)	(-4.07)
loan_type=1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
loan_type=2	0.72	0.47	0.31	0.15	0.75	1.34*	-0.42	0.88*	0.84*	0.52*	0.43
	(1.72)	(1.17)	(0.76)	(0.37)	(1.79)	(2.41)	(-1.02)	(2.03)	(1.99)	(2.03)	(1.05)
loan_type=3	-0.92	-0.88	-0.95	-0.95	-0.85	-0.75	-0.83	-0.87	-0.91	-0.38	-0.94
	(-1.75)	(-1.80)	(-1.90)	(-1.95)	(-1.62)	(-1.34)	(-1.73)	(-1.66)	(-1.73)	(-1.31)	(-1.87)
Constant	-1.94	1.64	3.53	4.56	-0.37	-14.80***	5.16*	-2.75	-2.73	-12.10***	2.69
	(-0.72)	(0.61)	(1.31)	(1.74)	(-0.13)	(-3.66)	(2.11)	(-1.03)	(-1.02)	(-6.52)	(0.99)
R-squared	0.36	0.41	0.40	0.42	0.36	0.47	0.43	0.36	0.36	0.37	0.40
N	856	854	854	856	854	318	854	856	854	854	852

* p<0.05, ** p<0.01, *** p<0.001

Table III – Employees as Proxy for Transparency

	Table V	Table VI	Table VII	Table VIII	Table IX	Table X	Table XI	Table XII	Table XIII	Table XIII ^x	Table XIII
Ln(amount)	1.38*** (10.46)	1.23*** (9.17)	1.25*** (10.04)	1.14*** (9.26)	1.37*** (10.38)	1.01*** (5.11)	1.06*** (8.72)	1.43*** (10.85)	1.39*** (10.60)	0.64*** (7.42)	1.26*** (10.18)
Ln(employees)	0.31*** (3.46)	0.16 (1.82)	0.14 (1.44)	0.11 (1.22)	0.29** (2.84)	0.24 (1.85)	0.10 (1.05)	0.42*** (4.61)	0.32*** (3.60)	0.19*** (3.69)	0.15 (1.58)
lead borrower relation		3.59*** (5.79)		3.07*** (5.94)							
lead-borrower relation x small		-0.33 (-0.41)									
board-ownership relation			3.95*** (5.31)	2.52*** (3.75)							3.95*** (5.36)
board-ownership relation x small			-3.00* (-2.17)								-2.98* (-2.16)
borrowing frequency					-0.02 (-0.10)						
borrowing frequency x small					-0.16 (-0.60)						
secured						-2.45** (-2.69)					
number of Swedish lead arrangers x small							1.76*** (9.05)				
number of Swedish lead arrangers x small							-0.67** (-2.98)				
club_deal									-1.18* (-2.19)	2.04*** (3.70)	-1.25* (-2.50)
public								-1.19* (-2.50)			
year=1994	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)		0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)
year=1995	-21.30*** (-7.89)	-20.94*** (-7.71)	-21.84*** (-8.77)	-21.44*** (-8.38)	-21.26*** (-7.84)		-21.44*** (-7.85)	-21.33*** (-7.93)	-20.17*** (-6.01)	-0.07 (-0.11)	-21.01*** (-6.72)
year=1996	-17.03*** (-3.62)	-17.48*** (-4.28)	-18.23*** (-4.39)	-18.27*** (-4.76)	-16.95*** (-3.59)		-16.41*** (-3.75)	-17.19*** (-3.63)	-17.01*** (-3.62)	-0.02 (-0.01)	-18.23*** (-4.40)
year=1997	-19.82*** (-8.69)	-20.11*** (-8.94)	-19.92*** (-8.38)	-20.24*** (-8.77)	-19.73*** (-8.63)	0.00 (.)	-19.56*** (-9.02)	-20.00*** (-8.67)	-19.78*** (-8.65)	-0.43 (-0.56)	-19.89*** (-8.34)
year=1998	-11.71** (-2.73)	-12.35** (-3.05)	-11.54** (-2.64)	-12.18** (-2.95)	-11.63** (-2.71)	19.38*** (13.30)	-11.45* (-2.47)	-11.68** (-2.74)	-11.65** (-2.72)	-0.99 (-1.55)	-11.48** (-2.63)
year=1999	-17.70*** (-8.97)	-17.87*** (-8.30)	-17.98*** (-8.99)	-17.85*** (-8.62)	-17.76*** (-8.80)	-3.29 (-1.57)	-19.94*** (-12.31)	-17.34*** (-9.07)	-17.38*** (-9.05)	1.56 (1.14)	-17.65*** (-9.08)
year=2000	-15.37*** (-6.64)	-16.72*** (-7.78)	-16.09*** (-7.36)	-17.10*** (-8.18)	-15.31*** (-6.65)	-0.31 (-0.05)	-16.17*** (-7.26)	-15.48*** (-6.66)	-15.22*** (-6.55)	-1.26 (-1.80)	-15.96*** (-7.27)
year=2001	-15.64*** (-9.03)	-16.41*** (-10.16)	-16.40*** (-9.51)	-16.95*** (-10.32)	-15.59*** (-8.82)	-8.12** (-2.93)	-16.66*** (-10.26)	-15.70*** (-9.19)	-15.49*** (-9.01)	-0.88 (-1.41)	-16.24*** (-9.49)
year=2002	-15.55*** (-14.30)	-16.43*** (-15.37)	-16.60*** (-16.14)	-17.29*** (-16.60)	-15.42*** (-13.19)	-2.89 (-0.79)	-16.92*** (-16.28)	-15.74*** (-14.52)	-15.30*** (-14.06)	0.36 (0.63)	-16.36*** (-15.88)
year=2003	-15.29*** (-13.69)	-16.50*** (-15.14)	-15.91*** (-13.85)	-16.92*** (-15.11)	-15.22*** (-13.12)	-2.46* (-2.08)	-16.79*** (-14.47)	-15.58*** (-13.65)	-15.10*** (-13.52)	0.21 (0.36)	-15.73*** (-13.68)
year=2004	-17.12*** (-15.03)	-18.16*** (-15.23)	-18.01*** (-14.82)	-18.84*** (-15.45)	-17.03*** (-14.14)	-1.92 (-0.85)	-18.83*** (-16.09)	-17.42*** (-14.89)	-16.73*** (-15.01)	0.68 (1.10)	-17.61*** (-14.71)
year=2005	-15.85*** (-14.42)	-17.18*** (-15.49)	-16.90*** (-14.80)	-17.75*** (-15.69)	-15.80*** (-13.73)	-5.02** (-2.62)	-18.00*** (-16.51)	-16.26*** (-14.42)	-15.51*** (-14.10)	1.59* (2.30)	-16.56*** (-14.52)
year=2006	-18.97*** (-18.59)	-20.05*** (-19.48)	-19.76*** (-18.67)	-20.63*** (-19.58)	-18.89*** (-17.02)	-4.76*** (-3.99)	-20.67*** (-20.94)	-19.32*** (-18.26)	-18.63*** (-18.30)	1.90** (3.02)	-19.43*** (-18.38)
year=2007	-20.03*** (-20.84)	-21.14*** (-21.97)	-20.99*** (-21.21)	-21.77*** (-22.19)	-19.94*** (-18.95)	-6.87*** (-5.73)	-21.98*** (-23.41)	-20.42*** (-20.24)	-19.69*** (-20.48)	2.48*** (3.93)	-20.66*** (-20.84)
year=2008	-19.18***	-20.59***	-20.27***	-21.36***	-18.94***	-4.92***	-20.99***	-19.64***	-18.84***	3.32***	-19.93***

	(-17.34)	(-18.41)	(-18.31)	(-19.44)	(-14.57)	(-4.04)	(-20.98)	(-16.70)	(-17.29)	(4.08)	(-18.20)
year=2009	-21.23***	-23.02***	-22.21***	-23.44***	-21.10***	-9.64***	-24.22***	-21.41***	-20.84***	2.46**	-21.81***
	(-20.32)	(-22.85)	(-21.20)	(-22.86)	(-18.31)	(-6.60)	(-24.10)	(-20.50)	(-19.57)	(3.01)	(-20.23)
year=2010	-21.34***	-22.40***	-22.11***	-22.90***	-21.27***	-2.34	-24.06***	-21.81***	-21.01***	2.79*	-21.78***
	(-14.42)	(-14.58)	(-14.90)	(-15.97)	(-13.79)	(-0.62)	(-18.01)	(-14.76)	(-14.09)	(2.14)	(-14.53)
year=2011	-20.71***	-22.07***	-21.89***	-22.86***	-20.58***	-6.97***	-23.65***	-20.95***	-20.20***	2.30**	-21.37***
	(-22.27)	(-23.30)	(-22.84)	(-23.29)	(-20.54)	(-6.06)	(-25.72)	(-21.82)	(-21.53)	(3.10)	(-22.14)
year=2012	-19.38***	-20.15***	-20.48***	-20.83***	-19.24***	-4.44***	-22.66***	-19.69***	-18.72***	3.75***	-19.80***
	(-19.58)	(-20.21)	(-19.56)	(-19.73)	(-17.79)	(-3.55)	(-22.99)	(-19.26)	(-18.42)	(4.65)	(-18.39)
year=2013	-19.15***	-20.33***	-20.31***	-21.06***	-19.02***	-3.92***	-22.47***	-19.44***	-18.49***	4.06***	-19.63***
	(-18.39)	(-19.83)	(-19.68)	(-20.48)	(-16.64)	(-3.55)	(-22.21)	(-18.64)	(-17.17)	(4.63)	(-18.49)
year=2014	-20.92***	-22.75***	-21.40***	-22.94***	-20.86***	-6.63***	-23.42***	-21.42***	-20.44***	2.18***	-20.91***
	(-23.61)	(-24.12)	(-23.64)	(-24.43)	(-21.62)	(-8.31)	(-26.67)	(-22.49)	(-23.11)	(3.57)	(-23.17)
industry=2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
industry=3	-2.11	-1.30	-2.46	-1.53	-2.30	-0.10	-1.33	-1.88	-1.89	-1.38	-2.23
	(-1.60)	(-1.02)	(-1.89)	(-1.22)	(-1.69)	(-0.05)	(-0.95)	(-1.44)	(-1.44)	(-1.59)	(-1.73)
industry=4	-0.37	0.52	-1.43	-0.19	-0.52	1.86	0.71	-0.12	-0.11	-0.58	-1.16
	(-0.42)	(0.62)	(-1.60)	(-0.23)	(-0.57)	(1.00)	(0.85)	(-0.14)	(-0.12)	(-1.07)	(-1.27)
industry=5	-1.27	-0.27	-1.81	-0.73	-1.40	3.11	-0.78	-0.97	-0.97	0.20	-1.49
	(-1.26)	(-0.28)	(-1.80)	(-0.78)	(-1.31)	(1.61)	(-0.80)	(-0.96)	(-0.95)	(0.31)	(-1.47)
industry=6	-2.77**	-1.76	-4.10***	-3.18**	-2.84**	-1.89	-1.44	-2.46*	-2.65*	-1.49*	-3.98***
	(-2.63)	(-1.78)	(-3.70)	(-2.90)	(-2.67)	(-0.94)	(-1.48)	(-2.30)	(-2.50)	(-2.45)	(-3.58)
industry=7	-0.76	0.92	-1.73	-0.37	-0.82	-1.05	0.10	-0.10	0.26	-1.86	-0.69
	(-0.47)	(0.54)	(-0.95)	(-0.24)	(-0.44)	(-0.47)	(0.06)	(-0.06)	(0.16)	(-1.87)	(-0.38)
industry=8	-2.89**	-1.99*	-3.84***	-2.82**	-3.02**	0.32	-2.21*	-2.55*	-2.48*	-0.22	-3.43**
	(-2.71)	(-1.97)	(-3.54)	(-2.75)	(-2.78)	(0.15)	(-2.26)	(-2.42)	(-2.30)	(-0.33)	(-3.13)
industry=9	-3.03***	-2.32**	-3.69***	-2.78**	-3.17***	-0.33	-1.69	-2.87**	-2.88**	-1.45**	-3.53***
	(-3.31)	(-2.63)	(-3.97)	(-3.25)	(-3.35)	(-0.18)	(-1.91)	(-3.16)	(-3.11)	(-2.58)	(-3.75)
industry=99	-5.19***	-5.23***	-5.16***	-5.30***	-5.34***	-4.12	-2.60**	-4.43***	-4.58***	-3.86***	-4.51***
	(-5.25)	(-4.15)	(-5.54)	(-4.55)	(-5.08)	(-1.83)	(-3.22)	(-4.15)	(-3.94)	(-4.67)	(-4.08)
purpose=1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
purpose=2	1.22*	1.78**	1.51*	1.91**	1.17*	1.05	1.10	1.05	1.22*	0.47	1.52*
	(2.07)	(3.00)	(2.56)	(3.24)	(1.96)	(1.34)	(1.94)	(1.77)	(2.08)	(1.47)	(2.56)
purpose=3	-4.35***	-3.34***	-3.03***	-2.58**	-4.47***		-4.83***	-5.05***	-3.72***	-2.33**	-2.37*
	(-4.29)	(-3.56)	(-3.34)	(-3.03)	(-4.20)		(-5.52)	(-4.43)	(-3.43)	(-2.87)	(-2.50)
purpose=4	0.97	0.74	1.11*	0.89	1.00	-0.68	0.31	0.88	0.88	0.20	1.02
	(1.76)	(1.41)	(2.06)	(1.73)	(1.79)	(-0.71)	(0.57)	(1.60)	(1.60)	(0.67)	(1.89)
purpose=5	-4.02**	-4.08**	-4.60***	-4.31***	-4.03*	2.04	-5.29**	-4.22**	-4.14**	-0.37	-4.73***
	(-2.59)	(-3.19)	(-3.61)	(-3.81)	(-2.58)	(0.53)	(-3.05)	(-2.65)	(-2.67)	(-0.83)	(-3.73)
loan_type=1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
loan_type=2	0.72	0.42	0.27	0.12	0.70	1.40*	-0.55	0.96*	0.85	0.56*	0.40
	(1.68)	(1.00)	(0.64)	(0.29)	(1.62)	(2.41)	(-1.28)	(2.16)	(1.95)	(2.07)	(0.93)
loan_type=3	-0.93	-0.92	-1.03*	-1.00*	-0.91	-0.80	-0.94	-0.84	-0.91	-0.36	-1.00
	(-1.73)	(-1.82)	(-1.96)	(-1.98)	(-1.68)	(-1.36)	(-1.91)	(-1.56)	(-1.67)	(-1.17)	(-1.90)
Constant	-1.10	2.00	3.89	5.12	-0.79	-8.38	5.98*	-2.36	-1.87	-11.85***	3.09
	(-0.40)	(0.69)	(1.43)	(1.93)	(-0.28)	(-1.85)	(2.30)	(-0.87)	(-0.68)	(-6.10)	(1.14)
R-squared	0.35	0.39	0.38	0.41	0.35	0.48	0.42	0.35	0.35	0.36	0.38
N	805	803	803	805	803	289	803	805	803	803	801

* p<0.05, ** p<0.01, *** p<0.001

*Dependent variable: Number of lead arrangers