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How does loss in reputation affect financial intermediaries? Cross-border evidence from European loan syndication markets

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Aalto University School of Business **Abstract**
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HOW DOES LOSS IN REPUTATION AFFECT FINANCIAL INTERMEDIARIES? CROSS-BORDER EVIDENCE FROM THE EUROPEAN LOAN SYNDICATION MARKETS

PURPOSE OF THE STUDY

The objective of this thesis is to study how does loss in reputation affect lead arrangers' subsequent syndication activity in the European loan syndication markets. Specifically, I study if the defaults and restructurings of borrowers cause reputational consequences for the lead arrangers. Furthermore, I study if the reputational effects are more pronounced in cross-border lending, where there are potentially more information asymmetries present. I also study how the lender-borrower distance affects syndication choice.

DATA AND METHODOLY

The dataset includes over 11 000 syndicated loan transactions in Europe from 1999 to 2011. I am also able to acquire information on 202 loan defaults and restructurings, which consists of 643 separate loans. To test the hypotheses, I estimate several panel regressions (OLS) where I also include fixed effect controls.

RESULTS

The empirical results of this thesis show that on European level lead arrangers retain lower share of the subsequent loans they syndicate in their balance sheet. I establish a connection between lead arranger's signalling propensity and shocks to reputation and show, that lead arranger retain larger share of the subsequent loans if the syndicate has high foreign participation.

I also find that lead arrangers signal better monitoring quality as the distance between lender and borrower increases. Further, I find that following borrower defaults, lead arrangers' ability to attract small participants is damaged. Instead, the lead arrangers seem to switch to larger participants in their future syndicates

KEYWORDS

Syndicated loans, information asymmetries, screening and monitoring, reputation, European syndicated loan markets

Aalto-yliopisto kauppakorkeakoulu **Tiivistelmä**
Pro gradu -tutkielma **28 lokakuuta 2012**
Veli-Pekka Toiviainen

KUINKA MAINEEN MENETYS VAIKUTTAA RAHOITUKSENVÄLITTÄJIIN? TODISTUSAINEISTOA EUROOPAN SYNDIKOITUJEN LAINOJEN MARKKINOILTA

TUTKIELMAN TAVOITTEET

Tutkielman tavoitteena on tutkia, kuinka rahoituksenvälittäjän maineen menetys vaikuttaa sen tuleviin lainasyndikointeihin. Erityisenä tavoitteenani on tutkia aiheuttavatko lainanottajien lainojen laiminlyönnit tai uudelleenjärjestelyt seurauksia syndikaatin pääjärjestäjille. Lisäksi tutkin, kuinka etäisyys lainaajan ja lainanottajan välillä vaikuttaa maineen menetyksen seurauksiin.

LÄHDEAINEISTO

Empiirinen aineisto käsittää yli 11 000 syndikoitua lainatransaktiota Euroopassa vuosina 1999 - 2011. Aineisto käsittää lisäksi 202 maksun laiminlyöntiä ja uudelleenjärjestelyä, jotka koostuvat yhteensä 643 erillisestä lainasta. Hypoteeseja tutkiessani estimoin useita kiinteiden vaikutusten paneeliregressioita (OLS).

TULOKSET

Empiirinen osioni osoittaa, että lainanottajien lainamaksujen laiminlyönnit tai uudelleenjärjestelyt vaikuttavat suuresti pääjärjestäjien tuleviin lainasyndikointeihin. Tutkimukseni mukaan pääjärjestäjät pitävät taseessaan pienemmän osuuden tulevaisuudessa syndikoimistaan lainoista. Tulos viittaa riskiaversiivisuuden kasvuun lainanottajien vaikeuksien myötä.

Tutkimukseni osoittaa lisäksi yhteyden ulkomaisten syndikaattiosallistujien ja pääjärjestäjän signalointihalukkuuden välillä. Ulkomaisten osallistujien osuuden kasvaessa, pääjärjestäjän halukkuus mitigoida maineen menetyksestä koituvia kustannuksia signaloimalla kasvaa. Pääjärjestäjät signaloivat parempaa monitorointia pitämällä suuremman osuuden syndikoimistaan lainoista taseissaan. Tutkimus osoittaa lisäksi, että pääjärjestäjän kyky hankkia pieniä osallistujia vaikeutuu maineen menetyksen myötä.

AVAINSANAT

Syndikoidut lainat, informaatioasymmetriat, monitorointi, rahoituksenvälittäjien maine, Euroopan syndikoitujen lainojen markkinat

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1. Introduction

1.1. Background and motivation

Screening and monitoring of borrowers is considered one of the core responsibilities of banks. In syndicated loan markets, the role of the arranging bank, or lead manager, is to monitor the firm on behalf of the other syndicate members. A large theoretical literature suggests that the bank has an incentive to conduct the monitoring well in order to mitigate existing agency conflicts. Poor screening and monitoring, and failure to mitigate the agency conflicts can lead to loss in reputation and future economic rents.

Many of the most famous cases of monitoring failures have revolved around the Enron bankruptcy, which lead to default of its syndicated loans. During the aftermath, Austrian bank Raiffeisen claimed that Enron's problems were being hid from it prior to joining the syndicate led by the Royal Bank of Scotland[1]. Although a London court ruled otherwise in 2010, it is likely that the perception of RBS' ability to conduct diligent monitoring suffered.

Although theoretically the role and importance of an intermediary's reputation is well established, the empirical work on how markets discipline monitoring failures is limited. Previous empirical research in the area include Gopalan, Nanda and Yerramilli (2011), who found that Chapter 11 filings by borrowers adversely affect the future syndication activity of lead arrangers.

However, the empirical work on the effectiveness of reputation-based disciplining methods has concentrated on the US loan market. The role of reputation remains untested in cross-border setting, an area where information asymmetries are of utmost importance. Pan-European lending activity has been growing since the adoption of the Euro, and foreign banks acts as the deal arranger in one third of the deals syndicated in the area (see e.g. Cabral, Dierick and Vesala (2002) or Haselmann and Wachtel (2011)).

Despite the growing importance of the area, the reputational considerations of the matter remain largely untouched by academics. In this study, I aim to fill the gap in the literature by examining the role of reputation in cross-border syndicated lending.

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[1] See "RBS Didn't Mislead Raiffeisen on Participation in Enron Loan, Judge Rules" in *Bloomberg*, June 11, 2010.

1.2. Research question and contribution

The loan syndication market provides an ideal platform to test how loss of reputation affects financial intermediaries and agency conflicts within syndicates. The syndicate includes a lead arranger responsible for originating the loan and participant lenders that fund parts of the loan. The screening and monitoring of a prospective borrower is delegated to the lead arranger. Agency conflicts are borne out of the fact that lead arranger only retains part of the loan, while conducting majority of the arrangement and monitoring tasks. Therefore, inadequate monitoring by the lead arranger can lead to losses for the whole syndicate. Previous literature suggests that inability to mitigate these agency conflicts will cause the lead arranger to suffer a loss of reputation.

My aim is to complement the work by Gopalan, Nanda and Yerramilli (2011) and investigate if failure in monitoring has reputation related adverse effects on the leading financial institutions in the syndicate. Specifically, I investigate if the evidence from European loan markets supports the findings in the U.S. market by Gopalan, Nanda and Yerramilli (2011). I use data on European syndicated loan market since the adoption of the common currency, from 1999 to 2011. According to my knowledge, there are no previous researches conducted with European data on the role of reputation.

Further, I also aim to shed new light on the role of reputation in syndicated lending by studying how the reputation-based disciplining methods work in cross-border setting. Although loan syndication is a global phenomenon, there is little prior research conducted on the role of reputation. Foreign banks usually have less local and market specific information, and they have to overcome cultural and bureaucratic barriers (Mian, 2006). These factors are likely to increase the importance of reputation as a diligent monitor.

My research question is thus two-fold:

(1) How does loss in reputation affect lead arrangers subsequent syndication activity in European loan syndication markets?
(2) Are the reputational effects more pronounced in cross-border lending?

1.3. Research objectives

Following Gopalan, Nanda and Yerramilli (2011) I study how *shocks* to the intermediaries' reputation affect their position within future syndicates. Specifically, I study how defaults

or distressed restructurings[2] affect the lead arranger's subsequent syndication activity. Since the purpose of screening and monitoring is to assess the creditworthiness of a borrower, a default or a distressed restructuring of a borrower's loan suggest that the monitoring has failed. I use these default events as a proxy for reputational shock, and study if they have reputation related consequences.

Secondly, partly due to the integration of the European loan markets, financial institutions are increasingly engaging in frequent cross-border lending across the European countries (Haselmann and Wachtel, 2011). Although the marketplace is becoming more integrated, the differences between national economies cause the differences in the operating environment in each country. Furthermore, financial institutions from Asia, Middle-East and Northern America are also present in the European loan markets, further pronouncing the international nature of the business.

To understand how these cross-border considerations and the international actors affect the role of reputation, I look at the importance of lender-borrower distance. The lender-borrower distance is important in understanding the functioning of the market. Due to the informational, cultural and regulatory barriers between different markets, there potentially exist higher agency conflicts when some of the syndicate members are foreign. As the potential information asymmetries become more pronounced, the role of reputation is likely to become increasingly important. Natural question therefore is if an increase in lender-borrower distance increases the reputational consequences.

I aim to investigate this by creating a novel measure of the lender-borrower distance designed to proxy the informational, cultural and regulatory barriers that exist between the lender and the borrower. As an additional proxy, I also utilise the geographical distance as between the lender and the borrower. Through these measures I study what is the role of distance between the actors and does an increase in distance increase the consequences of reputational shocks.

Further, I also compliment the findings by Lin et al. (2012) who found that lead arrangers with lower reputation have fewer foreign participants in their syndicates. In my study, I find out if shocks to lead arrangers' reputation cause them to have fewer foreign participants in their subsequent syndicates. Finally, I investigate if the lead arrangers have a greater

[2] The data provider divides default events to defaults and distressed restructurings. Credit rating agencies consider these both as *default events*. For simplicity, in the research I will use the term *default event* to refer both defaults and restructurings.

incentive to signal better monitoring quality if they have more foreign participants in their syndicate.

1.4. Scope and limitations of the thesis

This thesis and its results are mainly limited by the quality of dataset used. Due to the amount of different countries and bankruptcy codes, default data on European level is scarce. Default data on syndicated loans is obtained from the Leveraged Commentary & Data portal operated by Standard & Poor's. From the database I am able to acquire a total of 202 cases of loan default or restructurings from 2000 to 2011. I adjust the length of the study period by the default data available. Therefore, the data on European syndicated loans covers years between 1999 and 2011, and it is obtained from Thomson Reuters SDC Platinum.

The scope is also limited by the available data on lead allocation, the main dependent variable used in the thesis. I am only able to obtain the variable for 3385 arranging institutions, which is little over 10% of the total sample. The database also lacks information on loan pricing which is used in the reference study by Gopalan, Nanda and Yerramilli (2011). Despite the shortcomings of the data, my results are statistically significant and robust to alternative explanations.

1.5. Main findings

I find contradictory results compared to the earlier research by Gopalan, Nanda and Yerramilli (2011), who found that Chapter 11 filings by borrowers cause their lead arrangers to retain larger fraction on the subsequent loans they syndicate. Their findings suggest that lead arrangers are effectively indicating better monitoring quality by retaining larger share of the loan.

My findings suggest that on European level, shocks to lead arrangers' reputation by default events do not cause reputational consequences. Based on my findings, lead arrangers retain *lower* share of the subsequent loans after their borrowers experience default event. This suggests that arranging institutions have lower risk appetite after one of their borrower defaults. The effect is statistically significant at 1% and robust after controlling borrower, lender and year fixed effects and inclusion of several control variables.

I also investigate if the results hold for the various markets inside Europe. My findings suggest that banks domiciled in Nordic countries in fact signal better monitoring quality by increasing their lead allocation after experiencing default event. Effectively, this means that the domicile or market on which the lead arranger operates has an effect on the signalling propensity of the lead arrangers. The effect is statistically significant at 1% level.

Related to the previous finding, I am also able to distinguish a new channel that affects the signalling propensity. Based on my results, the signalling propensity by lead arrangers following borrower defaults depends on the share of foreign participants in a syndicate. As the level of foreign syndicate participants increases, lead arrangers retain higher share of the loans they syndicate.

This finding supports earlier literature that states that leads with lower reputation have fewer foreign participants in their syndicates. Therefore, as lead arrangers experience reputational shocks, they have higher incentives to mitigate them by retaining a higher share of loans with high foreign participation. The effect is statistically significant at 1% level. According to my knowledge, there are no previous studies that have identifies this effect.

I also find that the lead arrangers signal better monitoring quality by including additional co-lead arrangers after experiencing shocks to their reputation. The effect is confined only to lead arrangers who are not in a dominant market position. This finding supports earlier literature that did not found reputational consequences to apply for dominant lead arrangers.

Secondly, an increase in lender-borrower distance also causes lead arrangers to have additional co-leads in future syndicates. This suggests that as the information asymmetries grow in lender-borrower distance, banks have greater incentive to mitigate them by including additional lead arrangers in the syndicate.

Finally, I find that lead arrangers ability to attract small participants is damaged after reputational shocks. Instead, the lead arrangers seem to switch to larger participants in their future syndicates. This suggests that perceived reputation loss is greater with small participants that are not active in syndication markets.

1.6. Structure of the study

After introducing the study in Chapter 1, Chapter 2 provides the theoretical framework for the study, and outlines the main hypothesis. Chapter 3 discusses the data and methodology used in the research. Chapter 4 covers the empirical findings and Chapter 5 concludes.

2. Literary review

This section provides an introduction to the theoretical framework of syndicated loans, screening and monitoring and reputation of financial intermediaries. First, I lay out the concept of syndicated loans and the syndication process. I then discuss the recent development in the European loan market. Thirdly, I discuss the concept of screening and monitoring and how it relates to the agency conflicts found in syndicate structures. I also discuss the theoretical relationship between screening and monitoring, default events and intermediary reputation. Finally I formulate hypothesis for the empirical part of the study.

2.1. Syndicated loans

Syndicated loans are issued to a single borrower jointly by a group of lenders. They are hybrid instruments which combine features of traditional relationship lending and publicly traded debt. Syndicate lending allows risk sharing between the syndicate members, but does not require disclosure responsibilities as in bond issues (Gadanecz, 2004).

Members of the syndicate roughly fall in to two categories. At minimum, the syndicate consists of one or more lead arrangers that the borrower has mandated to arrange and promote the loan to potential participants. The lead arrangers are responsible for negotiating and structuring of the transaction, as well as inviting participant members in joining the syndicate (Gadanecz, 2004; Altunbaş, Kara and Marques-Ibanez, 2010). Participant member usually do not negotiate directly with the borrower and have more distant relationship with it (Sufi, 2005).

Potential syndicate members compete for the lead arranger's role as it earns a large share of the fees paid up front (Pichler and Wilhelm, 2001) Compared to bilateral lending, syndicated lending allows limiting the exposure to a single borrower while earning fees for arranging the transaction. While the participant members are usually paid only loan margin on their share, the structure allows them to gain exposure to certain geographical areas or industries without the need to have large lending department (Gadanecz, 2004). If there are several lead arrangers in a syndicate, they usually have competitive advantage in various duties, or they possess specific knowledge of a certain marketplace or industry (François and Missonier-Piera, 2007).

2.2. Syndication process and secondary market

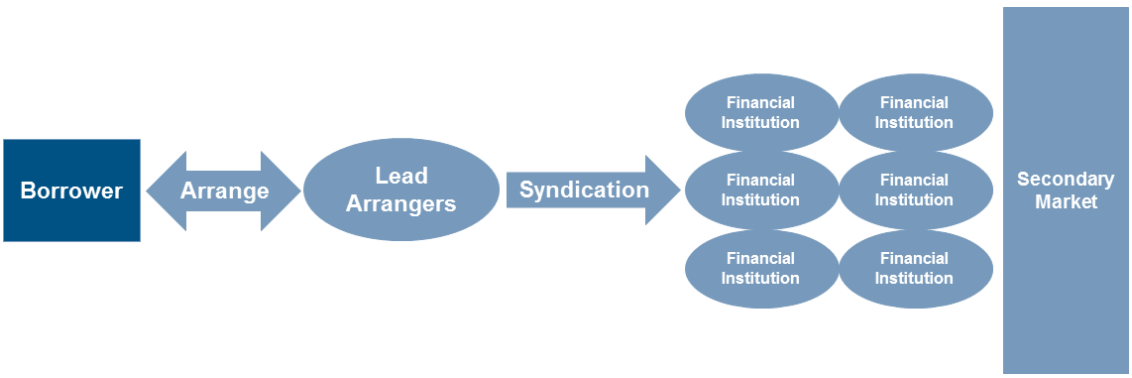
The syndication process starts when one financial institution is awarded the mandate to act as a lead arranger. The lead arranger drafts and signs a preliminary loan agreement that specifies loan amount, covenants, fees, collateral etc. The lead arranger then provides information on the transaction to potential participants and invites them to fund part of the loan. (Sufi, 2005)

There are three different types of syndications: best-efforts syndication, underwritten deal and a club deal. In an underwritten deal the lead arrangers guarantees the entire loan and syndicates the loan to participant members after closing (Dennis and Mullineaux, 2000). In best-efforts syndication, the arrangers do no fully guarantee the loan amount. If not enough additional subscribers are found, the borrower may have to accept a lower amount or the deal is cancelled. Finally, club deals are usually pre-marketed to a group of banks with a close relationship with the borrower. The arrangers are usually treated equally and they all receive same share of the fees (Standard & Poor's, 2012).

The lead arranger provides the participants with an information memorandum, which contains information on the borrower and projections for the future. The lead also negotiates the loan terms with potential participants and drafts the loan documentation. Once enough participants have agreed to finance the loan, all of the syndicate members sign the final loan documentation. After the loan contract is signed, a lending contract is established between each lender and the borrower. All participants are treated equally and they all have the same loan terms and conditions. (Dennis and Mullineaux, 2000)

The figure below illustrates the syndicate structure.

Figure I – Syndicate structure



2.2.1. History of syndicated lending

The syndicated lending market was born already in the 1970s when it was mainly a tool for small financial institutions to acquire exposure in emerging markets without having to establish a local presence. Since the 1990s the syndicated loan market has grown strongly and now accounts to a significant portion of the total financing acquired by companies. Increase in the sophistication of the lending practices has led to creation of a secondary market and attracted a wider range of participant members ranging from pension institutions to CLOs[3] (Altunbaş, Kara and Marques-Ibanez, 2010).

Syndicated loans are the main alternative to bond financing, since both markets can allow firms to tap large amounts of funds with varying maturities (Altunbaş, Kara and Marques-Ibanez, 2010). According to Dennis and Mullineaux (2000) syndicated loans are nowadays mainly used for general corporate purposes and debt repayment, whereas in the 1980s syndicated loans were mainly used to finance mergers and acquisitions and leveraged buyouts.

2.2.2. European syndicated loan market

Debt financing has been the most important source of external financing in Europe with syndicated loans and corporate bonds forming 94% of all the public funds raised in European markets according to Altunbaş, Kara and Marques-Ibanez (2010).

The syndicated loan market in Europe has seen tremendous growth from 1990s. According to Altunbaş, Kara and Marques-Ibanez (2010) this is explained mostly by creation of a regulated and standardised secondary market which has increased the liquidity. Further, an increasing amount of syndicated loans have been rated by independent credit agencies, leading to transparency and recognition.

The importance of cross-border perspective is highlighted by Haselmann and Wachtel (2011) who find that since 1995 over 70% of all syndicated loans done in Europe have involved foreign participation. According to Cabral, Dierick and Vesala (2002) and Tsai, Chang and Hsiao (2011) foreign banks use syndicated loans to establish market presence and banking relationships.

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[3] CLOs, or collateralized loan obligations, are structured finance vehicles that primarily invest in loans made to speculative-grade companies (Standard & Poor's, 2012).

European loan market is also characterised by differences in banking regulation, despite efforts to harmonise the regulation in the area (Fidrmuc and Hainz, 2012). They find that information asymmetries are magnified in the European loan markets due to differences in regulation across countries. However, their models shows that the differences in regulation can also induce cross-border lending if the regulation is unfavourable to domestic banks, and it does not involve foreign banks (Fidrmuc and Hainz, 2012).

2.3. Screening and monitoring

Information asymmetries and the role of monitoring are studied by Diamond (1984) who argues that monitoring of borrowers is most efficient when concentrated to a single party. According to his study, monitoring efforts by multiple creditors leads to increased costs and free-riding problems. At the same time, delegated monitoring can lead to moral hazard issues between the party conducting the monitoring and the other creditors.

The issues of moral hazard in delegated monitoring exist mainly because the activities of the monitor are unobservable. Holmstrom and Tirole (1997) showed that the uninformed investors are willing to invest only if the monitor has taken large enough financial interest in the borrower. Since the screening and monitoring efforts cannot be observed, the only way for the lead arranger to signal diligent monitoring is to retain a share of the loan.

The work by Holmstrom and Tirole (1997) has been complement in relation to syndicated lending by François and Missonier-Piera (2007) and Sufi (2007) who found that lead arrangers retain a larger share of the loan when the borrowers are opaque. Effectively, lead arrangers signal better monitoring quality by retaining share of the loan. Their study also found that in presence of greater information asymmetries, the syndicate structures are more concentrated and the lead arranger tends to choose participant with closer geographical proximity.

Banks' screening incentives have been questioned with respect to originate-to-distribute business model, where lead arrangers sell their exposure completely in the secondary market. It has been argued, that loan sales decrease banks' incentives to conduct diligent monitoring as the ability to sell opaque loans to secondary market reduces the rewards from screening. In their study, Bester, Gehrig and Stenbacka (2012) find evidence that the marginal benefit of identifying profitable loans by screening are greater than avoiding bad

ones by loan sales. This suggests that banks' screening incentives are intact even in originate-to-distribute business model.

The degree of signalling is also affected by the debt contracting value of the borrower's accounting information. Ball, Bushman and Vasvari (2008) find that as the ability of accounting figures to capture the changes in credit condition increases, the lead arranger holds smaller share of the loan on its balance sheet. According to their study, accounting information is an important channel in mitigating the information asymmetries within the syndicate. They argue that its relative influence is affected by possible credit rating, the reputation of the lead arranger or the previous relationship between the lead and the borrower.

The lead allocation is also related to the spread required by the participant members. Ivashina (2009) finds that increase in the share retained by the lead arranger decreases the spread required by participants on their exposure. Their findings provide direct evidence that increase in the lead arranger's share of the loan mitigates the inherent agency conflicts within the syndicate.

The role of multiple lead arrangers, or co-leads, in a syndicate has been studied by François and Missonier-Piera (2007). They find evidence of two different roles for co-leads which are not mutually exclusive. According to the study, co-leads can have administrative duties motivated by cost reduction goals. Secondly, they find evidence of *monitoring* hypothesis, whereby co-leads monitor the lead arranger on behalf of the participant members. This role therefore consists of mitigating potential agency conflicts within a syndicate.

2.3.1. Lead arranger reputation

My research is related to the existing literature concerning financial intermediary reputation. Fang (2005) finds that more reputable underwriters obtain lower yields and are able to charge higher fees in the bond underwriting market. She also identifies strong evidence of a certificate effect, or *quality stamp*, that reputable underwrites convey to investors. Ross (2010) finds that this certification effect is stronger with dominant lead arrangers. He finds that dominant banks have strong market share partly due to the self-reinforcing nature of a good reputation in monitoring.

Earlier studies have established a clear theoretical link between intermediaries' monitoring activities and reputation. Fang (2005) discusses the *reputation capital* which is vital for

financial intermediaries as they engage in repeated interaction between other market participants. Bad performance of an underwriter damages reputation and may cause loss of future income.

Despite the theoretical linkages between reputation and monitoring, there is little empirical evidence on how lead arrangers and other market participants react to loss in reputation. Gopalan, Nanda and Yerramilli, (2011) found evidence of reputational consequences caused by shocks to reputation in the U.S syndication markets. According to their study, bankruptcy filings by borrowers cause lead arranger convey more diligent monitoring quality in their subsequent syndications. They also found that loss in reputation damages lead arrangers' ability to attract participants in future syndicates.

Related literature on the reputational consequences of defaults include (Dahiya, Saunders and Srinivasan, 2003) who found that the leading lending bank in a syndicate experiences a negative announcement return if a major borrower experiences a default event.

2.4. Lender-borrower distance

The role of lender-borrower distance has traditionally been studied with respect to small business lending, or banking in developing markets (e.g, see (Buch, 2005; Degryse and Ongena, 2005; Petersen and Rajan 2002)). The geographical distance between lender and borrower can be viewed as a proxy for the informational costs that exist between the counterparties of a lending transaction. The geographical proximity allows banks to easily acquire private information about the firms they do business with. By having an easy access to information, the bank with a close proximity to its clients is able to acquire market power over its competitors. (Degryse and Ongena, 2005)

Related study by Buch (2005) studies the foreign assets and liabilities of commercial banks of five countries and finds that distance is an important determinant of foreign banking activities. Despite the improvements in information technology, the importance of distance on the foreign asset holdings has not changed and foreign banks still exhibit significant home bias in their portfolios.

Previous studies have used geographical distance as a proxy for informational asymmetries or familiarity. Coval and Moskowitz (1999) find that geographical distance is an important determinant of portfolio choice by U.S. money managers. Grinblatt and Keloharju (2001) find that familiarity measured by language, culture and distance is an important determinant

of stockholdings by Finnish investors. They also find that these effects are inversely related to the investor sophistication.

Related strand of literature examines the cultural differences between lender and borrower. The area with respect to syndicated loans has been studied by Giannetti and Yafeh (2012). They find that lenders offer more conservative loan terms to culturally distant borrowers and consider them riskier. This effect is persistent even after continuous interaction between the counterparties. They also find that cultural distance between participant bank and lead arranger worsens the participant's perception about the lead arranger's incentives to monitor.

Although there is relatively rich literature on the importance of lender-borrower distance with respect to small business lending, the role of distance in syndicated lending is has not been studied to detail. According to my knowledge, there are no studies that investigate the importance of informational asymmetries caused by lender-borrower distance with respect to shocks to reputation.

2.5. Defaults on syndicated loans

According to Emery and Cantor (2005) loan default can occur as a result of three types of events:

(a) A missed or delayed payment of interest and/or principal, including agreements to defer principal or interest payments;

(b) A bankruptcy filing or legal receivership; or

(c) A distressed exchange or distressed restructuring where (i) the issuer covers loan holders a new security or package of securities that amount to a diminished financial obligation (such as preferred or common stock, or debt with a lower coupon or par amount), or (ii) the exchange/restructuring had the apparent purpose of helping the borrower avoid default

These default events should be distinguished from *technical defaults,* such as covenant violations. Loan agreements usually included covenant which state the minimum levels for financial ratios. These are usually measured on a rolling, backward looking basis. Covenant violation represents a breach in loan contract. Depending on the loan contract, lender reaction may vary from simple waiver to renegotiation of the loan agreement or demanding immediate repayment of the loan. (Demiroglu and James, 2010)

In the event of default, syndicate members must reach collective decision on how to solve the issue. According to Sang and Mullineaux (2004) this typically involves majority decision with respect the technical defaults, covenant alterations or waiver requests. However, unanimous decision is usually required with respect to changes in loan maturities, amortization schedules or collaterals.

There are, however, several reasons why default events on syndicated loans might not cause significant impact on banks. Firstly, prudent banking regulation ensures that the losses from a single borrower are unlikely to be too costly for a bank. Also, bank loans are typically secured and senior compared to other liabilities the borrower might have. (Dahiya, Saunders and Srinivasan, 2003)

Although there are several reasons why distressed borrowers might not be problematic to banks, Dahiya, Saunders and Srinivasan (2003) found that distress announcements of borrowers cause negative share price reaction for the lead arrangers. According to their study, distressed borrowers signal poor management and initiation skills and expose the leading bank to increased regulatory oversight, causing burden.

Based on the study by Davydenko and Franks (2008), there are notable differences in credit protection across European countries. In their study of three countries, they find that banks significantly alter their lending practises to match the country's bankruptcy regime. They find that although recovery rates in bankruptcies vary, the recovery rates in workouts are fairly similar across countries.

2.6. Hypotheses

This chapter outlines the key hypotheses used in the thesis and links them to the previously discussed theory.

The delegation of responsibility creates potential agency problems in the syndicated loan market as the lead arranger responsible for the monitoring retains only a small share of the loan, while usually conducting a large share of the monitoring prior to the syndication.

Reputation is likely to play an important role in the role syndication market as the participants engage in frequent and repeated transactions with one another. The participant members in these transactions are subject to counterparty risk. If one party in the market

loses its reputation as being good monitor and screener, it is likely to face difficulties in its future syndications.

There are several different ways on how the loss of reputation can affect future syndication activity of an intermediary. The hypotheses below summarise these:

Reputational hypotheses

> **H1:** *If the reputation of the lead arranger suffers from defaults or distressed restructurings, the lead arranger will retain a larger portion of the loans after default events by lead arranger's borrowers*.

According to the hypothesis H1, the default by borrowers *can* damage the reputation of the lead arranger and cause reputation related consequences. Since the monitoring actions of the lead arranger are unobservable, the market participants are only able to assess the lead arranger's ability *ex post*. Default events are therefore likely to damage the lead arranger's reputation as a diligent monitor.

In order to compensate this potential loss in reputation, the lead arranger has a greater incentive to retain a larger fraction of the loan it arranges (Gopalan, Nanda and Yerramilli 2011). By taking on more credit risk in its balance sheet, the lead arranger will signal a stronger borrower quality. Further, it will compensate the decline in reputation-based incentives.

> **H2:** *If the reputation of the lead arranger suffers from defaults or distressed restructurings, the lead arranger will have fewer participants in its future syndicates and its ability to attract participants to its syndicates is worsened.*

The possible loss in reputation can also damage the lead arranger's ability to attract participants to the syndicate (Gopalan, Nanda and Yerramilli, 2011). If the lead arranger's reputation as a monitor is damaged, the market participant's may be unwilling to participate in syndicates as they perceive them as risky. This hypothesis is related to the previous one, as smaller number of participants can also lead to higher allocation to the syndicate members[4].

[4] The allocation between the syndicate members can vary.

H3: *If the reputation of the lead arranger suffers from defaults or distressed restructurings, the lead arranger will try to mitigate the loss of reputation by having additional lead arrangers in its subsequent syndicates.*

In their study, François and Missonier-Piera (2007) found that co-leads act as additional monitors when information asymmetries are severe. Their role can involve mitigating potential agency conflicts between informed lenders and participant members.

Through H3, I aim to investigate if lead arrangers invite additional lead arrangers or co-agents to syndicate after experiencing shock to reputation. According to my knowledge, there are no empirical studies that have investigated this.

H4: *Lead arrangers' propensity to signal better monitoring quality after shock to its reputation is related to the amount of foreign participants in the syndicate.*

According to Lin et al. (2012) lead arrangers with lower reputation have less foreign participants in their syndicates. Furthemore, the study by Giannetti and Yafeh (2012) illustrates how the participants' perception of lead arranger's incentive to monitor worsens with cultural distance.

With H4, I research if the signalling effect is after experiencing shock to reputation is dependent on the share of foreign participants. As the share of foreign participants increase, the incentive of the lead arranger to mitigate the reputational consequences by signalling increases.

H5: *Increase in the lender-borrower distance reinforces the reputational consequences of default events***.**

Differences in cultural, geographical and legal differences between financial intermediaries have been identified as a cause for informational asymmetries. Several studies have used different distance metrics to proxy these informational asymmetries.

In my study I utilise geographical distance between lender and borrower and domicile country proximity as proxies for informational asymmetries. I study how the interaction between lender-borrower distance and shocks to reputation affect the lead arrangers' subsequent syndicates.

Alternative hypothesis

> **H6:** *If default events erode the lead arranger's capital base or damage the internal reputation, it will retain a lower share of future syndications following default event.*

If the default event leads to erosion in the lead arranger's capital base, it could affect the subsequent syndication activity negatively. Besides losing valuable capital, the default event could also cause the lead arranger to lose existing lending relationship with the borrower. This in turn could cause the lead arranger to lose capital base, thus contracting future syndication activity. (Gopalan, Nanda and Yerramilli, 2011)

According to Gopalan, Nanda and Yerramilli (2011), default events can also lead to reassessment of the ability of the intermediary's lending department to monitor borrowers. Lower internal performance of the lending department can cause the intermediary to reassess whether it is profitable or safe to engage in future syndications, thus contracting future syndication activity.

3. Data and methodology

3.1. Data sources

I obtain data on individual loan contracts from Thomson Reuters SDC Platinum database. Among others, SDC provides information on European syndicated loans including borrowers, lead arrangers, maturities and allocations.

The titles given to syndicate members are numerous since many of the contract features are not standardised. Ivashina (2005) finds over 50 role titles given for the syndicate members in the U.S. loan market alone and none of them are mutually exclusive. According to her study, the leading bank can have many different titles, such as: book runner, lead arranger, lead bank, lead manager, agent and arranger. The Thomson Reuters SDC Platinum database recognises *lead arranger* for each loan transaction. For the purposes of my study, I consider them as the mandated lead arrangers in each loan transaction.

Default data on syndicated loans comes from the Leveraged Commentary & Data portal operated by Standard & Poor's. From the database I am able to acquire a total of 202 cases of loan default or restructurings from 2000 to 2011. Information on default events is derived from public news sources and filings, and it is unlikely to be completely exhaustive. Distressed borrowers have undergone either a default event, including missed payment, D rating by a credit rating agency or bankruptcy, or have undertaken the beginning of a formal restructuring (retained advisors, agreement with lenders etc).

I do not have information on what initially triggered the default event or how much the lenders were able to recover. According to Moody's (2008) the issuer weighted recovery rate for European senior secured loans from 1985 to 2007 was 61%. With unsecured and junior loans, the recovery rates decline further. Similar finding with respect to the U.S. syndicated loan market is found by Altman and Suggitt (2000). These findings support my empirical proposition that default events by borrowers are costly for the lender also financially. Although it is not a prerequisite for the reputational hypotheses to hold, the financial consequences of defaults are likely to support them.

Previous research conducted by Gopalan, Nanda and Yerramilli (2011) with the US data uses bankruptcy filing to proxy for an event that might potentially damage the intermediary's reputation. My rich data set on borrower defaults allows me to compare if

defaults, such as missed payments, have different reputational outcomes than official restructurings. This is interesting as the severity of the default event is different in both cases: restructurings are concrete actions to help distressed companies usually involving conversion or write-down of debt, whereas missed payments are not as severe for the lender.

Financial information on borrowers in my sample is also obtained from Bloomberg based on the SEDOL code provided by the SDC Platinum database. As SDC Platinum does not provide tickers for lead arrangers or participants, I manually match the names with Bloomberg tickers. The financial information for borrowers and lenders refers to the beginning of the financial year that the loan was originated.

Data on geographical distances is acquired from GeoDist database developed by Mayer and Zignago (2011). The database provides several different distance measures for 225 different countries. For the purposes of this study, I utilise the geographical distance between two nations' capitals. I also construct an alternative distance variable which examines the closeness of two countries in terms of shared border.

3.2. Key Independent Variable

The independent variable I utilise in the study is *Default event*, a dummy variable that identifies lead arrangers that have loans outstanding to borrower that have undergone a default or distressed restructuring. The variable is constructed as follows: for each firm that undergone a default or restructuring during the study period, I identify the loans outstanding for the borrower based on the maturities in the Thomson SDC Platinum database. This allows me to identify lenders that had loans outstanding to borrowers' when they experienced default or restructuring. I am able to identify 202 default events that consist of 643 separate loans. Each loan can have several lead arrangers, multiplying to amount of observations.

In the regression, the lagged value of *Default event* is used as the main independent variable. This variable encompasses both default and distressed restructurings. I further generate two additional variables, *Restructuring* and *Default*, which identify those lead arrangers that experienced either distressed restructuring or default, respectively.

3.3. Descriptive statistics

Table 1 provides summary of the loan and default data from 1999 to 2010. I have data on over 11 000 individual loan transactions. A single loan transaction can include several different tranches and a single borrower might have engaged in several loan transactions during the study period.

Table 1 – Summary statistics on loans and default events by year

This table provides annual summary of the loan and default event data over the period from 1999 to 2011 in my sample. Loan data is gathered from Thomson Reuters SDC Platinum. Default event data is obtained from Leveraged Commentary & Data portal by Standard & Poor's. Default rate represents the total number of loan defaults in a year per the number of syndicated loans originated.

Year	Syndicated loans originated	Defaults	Restructurings	Default events total	Default rate
1999	653	0	0	0	0 %
2000	870	2	0	2	0 %
2001	755	6	0	6	1 %
2002	842	9	6	15	2 %
2003	767	7	2	9	1 %
2004	826	4	5	9	1 %
2005	962	4	3	7	1 %
2006	1170	10	3	13	1 %
2007	1151	8	2	10	1 %
2008	781	14	7	21	3 %
2009	650	25	55	80	12 %
2010	758	2	14	16	2 %
2011	894	1	15	16	2 %
Total	11079	90	112	202	

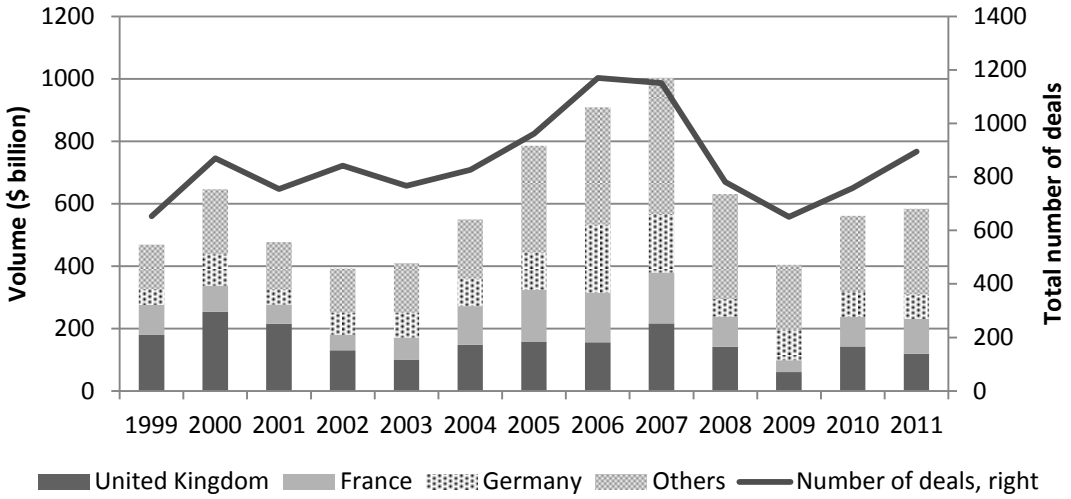
All of the loans described in the table are financed by a syndicate. However, some of the deals were fully underwritten by the lead arranger before closing of the deal. This effectively means that the lead arranger is underwriting the whole loan amount, with the intention to syndicate it to participants after closing.

The data on Table I clearly shows that although the amount of syndicated originated each year has remained relatively stable, the number of default events varies from year to year. The largest number of default events occurred in 2009, during the aftermath of the financial crisis. The default rate is very low in every year expect 2009, which also saw the least amount of deals originated. Since the recession year can have unwanted effects on the results, I include robustness to control for these possibilities in chapter 4.4.

Figure II illustrates the development of the syndicated loan volume in my sample during the study period.

Figure II – Total syndicated loan issuance by country

The figure describes the total syndicated loan issuance by borrower's domicile in my sample. The final sample from 1999 to 2011 consists of 11,079 deals. In total, the borrowers represent 38 different nationalities.



Based on Figure II, the majority of the borrowers are domiciled in the UK, France or Germany and those countries represent the majority of the issuance volume. These findings are similar to those of Cabral, Dierick and Vesala (2002). Based on the figure, the syndicated loan volume contracted during the recession years 2002 and 2009.

Table 2 presents the key summary statistics on the loan variables in the sample.

Table 2 – Summary statistics of the regression variable

This table reports summary statistics for the key loan variables in my sample for loans originated in 1999 to 2010. Each observation represents a loan. All variables are defined in the Appendix

			Percentile distribution			
	Mean	Std. Dev.	25th	Median	75th	*N*
Loan characteristics:						
Lead allocation (%)	16.6	16.3	6.7	11.3	20.0	3385
Loan amount (in $ million)	554.1	1302.6	63.7	177.3	500.0	15417
Defaulted loan amount (in $ million)	274.1	656.5	60.6	115.5	225.8	643
Years to maturity	5.2	3.5	3.0	5.0	7.0	14354
Number of participants	5.7	8.2	0.0	2.0	8.0	15417
Share of foreign participants	0.6	0.4	0.0	0.8	0.9	3385
Number of MLAs	5.0	3.6	3.0	5.0	7.0	14490
Acquisition financing -dummy	1.4	3.9	0.0	0.0	1.0	30718
Refinancing -dummy	1.3	3.9	0.0	0.0	1.0	30718
Working capital -dummy	1.4	3.9	0.0	0.0	1.0	30718
Borrower characteristics:						
Total assets (in $ billion) $_{t-1}$	36.6	95.7	2.3	9.6	33.5	30718
Market to book value $_{t-1}$	4.6	14.0	2.0	2.9	4.4	30718
Debt to assets $_{t-1}$	0.3	0.2	0.2	0.3	0.4	30718
ROA (%) $_{t-1}$	4.6	7.2	1.8	4.1	7.4	30718
Lead arranger characteristics						
Default event -dummy $_{t-1}$	0.3	0.5	0.0	0.0	1.0	30718
Restructuring -dummy $_{t-1}$	0.2	0.4	0.0	0.0	0.0	30718
Default -dummy $_{t-1}$	0.2	0.4	0.0	0.0	0.0	30718
Country default -dummy $_{t-1}$	0.1	0.3	0.0	0.0	0.0	30718
Non-dominant lead	0.6	0.5	0.0	1.0	1.0	30718
Dominant lead	0.4	0.5	0.0	0.0	1.0	30718
Total assets (in $ billion) $_{t-1}$	1203.7	809.5	569.3	1009.7	1687.4	30718
Tier 1 capital ratio (%) $_{t-1}$	9.1	2.3	7.5	8.4	10.2	30718
Capital adequacy ratio (%) $_{t-1}$	12.4	2.3	11.0	11.9	13.5	30718
ROA (%) $_{t-1}$	0.5	0.5	0.2	0.5	0.8	30718
Lender-Borrower distance						
Lender-Borrower distance (in 1000 km)	1.7	2.6	0.3	0.4	1.4	30718
Market distance	2.2	1.2	1.0	2.0	3.0	30718

4. Empirical results

In this chapter I present my empirical results. First, in chapter 4.1 I investigate how the lead allocation is affected if lead arranger experiences shocks to its reputation. In chapters 4.1.1 and 4.1.2, I study the impact of lead arranger's domicile and the share of foreign participant on the lead allocation.

Secondly, in chapter 4.2 I study how the composition of a syndicate changes after lead arranger's borrower defaults. I also study how the lead arranger's market power affects these effects. Chapter 4.3 provides examines the role of lender-borrower distance and its interaction with reputational consequences. Chapter 4.4 concludes the empirical section with robustness tests.

4.1. Lead arranger allocation

Firstly, I will examine how default events affect the *Lead allocation* for loans originated by the lead arranger in the year following the default event. The reputation hypothesis states that *Lead allocation* should increase following *Default event* as banks signal better monitoring quality. To test this prediction, I estimate panel regressions according to the following form:

$$Lead\ allocation = \beta_0 + \beta_1 \times Default\ event_{j,t-1} + \beta_2 \times X_i + \beta_3 \times X_l + \beta_4 \times X_j + \mu_i + \mu_t \quad (1)$$

Where subscript *l* denotes the loan, *i* denotes the borrower, *j* denotes the lead arranger and *t* refers to the year in which the loan was originated.

Since lead allocation can depend on unobservable borrower characteristics, I include both borrower fixed effects (μ_t) and time fixed (μ_t) effects in the regression. This regression setup is similar to the one used by Gopalan, Nanda and Yerramilli (2011), making my results comparable with the earlier findings.

The fixed effects regression controls all time-invariant coefficients of borrowers, so the coefficients will not be biased due to omitted variables such as relationship or preferences (Baltagi, 2005). The model ensures that the effects I discover are within-borrower changes

in lead allocation if a lead arranger experienced *Default event* compared to the lead arranger that did not. In all regressions the standard errors are robust and clustered at the individual borrower level. (Baltagi, 2005)

It can be argued that the lead allocation can also depend on unobservable lender characteristics. To control for this, I run the specification also with lender and year fixed effects. For robustness check, I use both borrower *and* lender fixed effects in addition to year fixed effects. The result for this is included in appendices.

Control variables for borrower includes *Log(Total assets)* for size, *EV to book value* for growth opportunities and *Debt to Assets* for risk. Bank specific control variables include *Tier 1 capital ratio* and *Capital adequacy ratio* for financial health, *Log(Total assets)* for size and *ROA* for profitability. To control for syndication activity, I include variable *Log(Lead size)* which is the logarithm of average annual amount syndicated by the lead arranger over the past 2 years.

Loan specific controls include *Log(Loan size)* for loan amount and dummy variables for acquisition financing, refinancing and working capital financing. I also include dummy variable *Syndicate* to control for those loans that were syndicated before the signing. This variable has a large effect on the regression, as lead allocation is measured at closing. Detailed description of the variables can be found from appendix.

Table 3 presents the regression results.

Table 3 – Percentage of loan retained by the lead arranger

This table reports the results of the regression investigating whether borrower defaults or restructurings have impact on the percentage of loan retained by the lead arranger. In all columns, I estimate the regression of the form:

$$Lead\ allocation = \beta_0 + \beta_1 \times Defaul\ event_{j,t-1} + \beta_2 \times X_i + \beta_3 \times X_l + \beta_4 \times X_j + \mu_t + \mu_i$$

The dependent variable in column (1) is *Default event*, *Restructuring* in column (2) and *Default* in column (3). The regressions in columns (1) – (3) are controlled for borrower fixed effects and the regressions in column (4) – (6) for lender fixed effects. I control for year fixed effects in all specifications. Standard errors are robust in all specifications and clustered at the borrower or lead arranger level.

	Expected	*Lead allocation (%)*					
	effect	(1)	(2)	(3)	(4)	(5)	(6)
Default event $_{t-1}$	+	-0.91 ***			-2.20 **		
		(-3.00)			(-2.20)		
Restructuring $_{t-1}$	+		-0.79 ***			-3.95 ***	
			(-2.70)			(-4.29)	
Default $_{t-1}$	+			-0.73 **			-1.76
				(-2.17)			(-1.16)
Log(Loan amount)		-0.01	-0.02	-0.02	-2.59 ***	-2.61 ***	-2.59 ***
		(-0.03)	(-0.03)	(-0.03)	(-2.90)	(-2.93)	(-2.91)
Years to maturity		1.25 ***	1.25 ***	1.25 ***	0.23	0.22	0.24
		(3.61)	(3.56)	(3.59)	(1.33)	(1.26)	(1.34)
Number of MLAs		-0.32 **	-0.31 **	-0.32 **	-0.43 ***	-0.43 ***	-0.44 ***
		(-2.17)	(-2.17)	(-2.21)	(-9.45)	(-9.19)	(-9.32)
Number of participants		-0.35 ***	-0.35 ***	-0.35 ***	-0.31 ***	-0.31 ***	-0.31 ***
		(-3.25)	(-3.24)	(-3.25)	(-8.11)	(-8.17)	(-8.02)
Acquisition Financing -dummy		4.28	4.26	4.26	0.77	0.70	0.79
		(1.46)	(1.46)	(1.46)	(0.69)	(0.63)	(0.70)
Refinancing -dummy		-3.99 ***	-3.99 ***	-4.02 ***	-1.32 ***	-1.30 ***	-1.33 ***
		(-2.74)	(-2.74)	(-2.74)	(-2.62)	(-2.62)	(-2.65)
Working Capital -dummy		-5.59 ***	-5.55 ***	-5.59 ***	-1.15	-1.15	-1.15
		(-2.83)	(-2.82)	(-2.82)	(-1.39)	(-1.40)	(-1.39)
Syndicate	-	-72.13 ***	-72.33 ***	-72.10 ***	-68.73 ***	-68.69 ***	-68.54 ***
		(-12.09)	(-12.11)	(-12.01)	(-14.45)	(-14.31)	(-14.31)
Log(Total assets, borrower) $_{t-1}$		-0.99	-1.02	-0.94	0.41	0.41	0.41
		(-0.54)	(-0.55)	(-0.52)	(0.89)	(0.89)	(0.88)
EV to Book Value, borrower $_{t-1}$		0.29	0.29	0.29	0.14 **	0.14 **	0.14 **
		(1.45)	(1.43)	(1.46)	(3.32)	(2.26)	(2.31)
Debt to Assets, borrower $_{t-1}$		-20.45 **	-20.54 **	-20.34 **	-2.35	-2.15	-2.42
		(-1.95)	(-1.95)	(-1.94)	(1.17)	(1.05)	(1.19)
Log(Lead size) $_{t-1}$		0.47 ***	0.45 ***	0.45 ***	2.32 ***	2.32 ***	2.34 ***
		(3.38)	(3.34)	(3.33)	(3.84)	(3.84)	(3.80)
Tier 1 Capital Ratio, lead $_{t-1}$		-0.23	-0.23	-0.23	1.65 ***	1.53 ***	1.60 ***
		(-1.40)	(-1.36)	(-1.35)	(2.97)	(2.79)	(2.79)
Capital adequacy ratio, lead $_{t-1}$		0.29 ***	0.27 ***	0.25 ***	-0.69	-0.63	-0.71
		(3.38)	(2.91)	(2.78)	(-1.44)	(-1.25)	(-1.51)
ROA, lead $_{t-1}$		0.10	0.14	0.13	-2.21	-2.15	-2.17
		(0.35)	(0.49)	(0.47)	(-1.56)	(-1.51)	(-1.50)
Log(Total assets, lead) $_{t-1}$		-0.27	-0.26	-0.31 *	-4.61 ***	-4.87 ***	-4.56 ***
		(-1.59)	(-1.56)	(-1.75)	(-3.18)	(-3.72)	(-2.85)
Obs.		2480	2480	2480	2480	2480	2480
R^2		0.57	0.57	0.57	0.53	0.54	0.53
Specification		OLS	OLS	OLS	OLS	OLS	OLS
Borrower and Year Fixed Effects		Yes	Yes	Yes	No	No	No
Lender and Year Fixed Effects		No	No	No	Yes	Yes	Yes

Robust t-statistics in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Based on the results from column (1), lead arrangers retain 0.91 percentage points less of the loans they arrange after their borrower has experienced a default event the previous year. The result is economically significant, as it represents approximately 8% drop in the lead allocation compared to the median allocation of 11.29%. The coefficient for *Default event* in column (1) is statistically significant at 1% level.

The result contradicts the findings by Gopalan, Nanda and Yerramilli (2011), who found that large bankruptcies by borrowers cause lead arranger to increase lead allocation by 4.95 in the loans they arrange the subsequent year. My result does not find support for the hypothesis H1, which states that lead arrangers should retain a larger share of the loans they syndicate after a default event. Instead, the result supports the hypothesis H6. According to the alternative hypothesis the lead arranger retain a lower share of the loans they syndicate due to loss in capital base or due to internal reassessment of the ability of lending function to conduct monitoring.

My findings are similar even after dividing the variable *Default event* into restructurings and defaults in columns (2) and (3). According to result from column (2), restructurings also cause lead arrangers to retain a statistically significantly lower amount in future syndications. With coefficient value of -0.79, the effect of *Restructuring* on the lead allocation is slightly lower than with all default events combined. Based on the findings in column (3), defaults cause lead arrangers to retain 0.73 percentage points less in future syndication. The effects of *Restructuring* are significant at 1% level, while the effect of *Default* is significant at 5% level. The different significance level supports the idea that restructurings cause more severe financial consequences for the lender.

The fact that the coefficient for *Restructuring* is both economically and statistically significant provides additional support for the alternative hypothesis H6. The characteristic feature of restructurings is that the lenders agree to write-off some of their debt or to convert it to equity. This means that following a restructuring, the capital base of an intermediary is likely to decrease. The results in column (2) imply that this lower capital base in fact causes intermediaries to take lower stakes in future syndications.

As a robustness test, I run the same regressions using lender fixed effects in columns (4), (5) and (6). This allows controlling for unobservable lender characteristics. The results support earlier findings and imply that arrangers retain less of the loans they syndicate after experiencing *Default event* or *Restructuring.* The coefficient value of -3.95 for restructurings translates to approximately 35% in lead allocation compared to the median

value. The effect is largest and it is also significant at 1% level. As the nature of debt restructuring is more severe than just ordinary default, this finding is also intuitive.

4.1.1. Effect of lead arranger's domicile

My findings suggest that in European loan markets lack the signalling effect that Gopalan, Nanda and Yerramilli (2011) found to exist in in the United States. In order to gain a better understanding on the differences between the two markets, I investigate if the effect I discovered is dependent on the domicile of the lead arranger. It might be that the differences in market environment between European countries affect the signalling propensity of the financial intermediaries.

Table 4 – Effect of lead arranger's domicile

Table 4 presents the results from regressions where I study the interaction between the lead arranger's domicile and *Default event*. The dummy variable Nordic bank includes banks domiciled either in Denmark, Sweden, Finland or Norway. As an additional control variable I include the lead arranger's domicile (X (β_3)) to avoid biased results. All other control variables are same as in the Table 3, but they are suppressed for brevity. I control borrower fixed effects and year fixed effects in all regressions. Standard errors are robust in all specifications and clustered at the borrower level.

	Lead allocation (%)	Lead allocation (%)	Lead allocation (%)
	(1)	*(2)*	*(3)*
	X = American bank	X = Nordic bank	X = British Bank
Default event $_{t-1}$ (β_1)	-0.90 ***	-0.91 ***	-0.90 ***
	(-2.97)	(-3.02)	(-2.97)
Default event $_{t-1}$ x X (β_2)	0.43	1.65 ***	-0.04
	(0.61)	(4.29)	(-0.11)
X (β_3)	0.12	0.22	-0.12
	(0.29)	(0.79)	(-0.53)
Obs.	2480	2480	2480
R^2	0.57	0.57	0.57
Specification	OLS	OLS	OLS
Year Fixed Effects	Yes	Yes	Yes
Borrower Fixed Effects	Yes	Yes	Yes

Robust t-statistics in parentheses

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

The key finding from Table 4 is the positive and statistically significant interaction coefficient for Nordic banks in column (2). This suggests that default events cause the lead allocation Nordic banks to increase by 0.74 percentage following default events. This finding supports the reputation hypothesis H1, 7and suggests that banks operating in the Nordic region signal better monitoring quality by retaining larger share of the loans they syndicate.

Based on the findings from column (1), the interaction term between American banks and default events is statistically insignificant. The same conclusion applies for British banks in column (3). The finding suggests that country of domicile has some effect on the behaviour of lead arrangers after their borrowers have experienced defaults. Effectively, it seems that Nordic banks are more concerned about their reputation as diligent monitors, causing them to signal better quality. The differences might be caused by different operating environments.

In the next section, I study how the dependence on foreign participants affects the propensity to signal better monitoring quality. In their study, (Lin et al. 2012) found that lead arrangers that have low reputation have less foreign participants in their syndicates. It might be that lead arrangers operating in a small marketplace are dependent on foreign participants, and therefore are more concerned about their reputation.

4.1.2. Role of foreign participants

Previous studies have found the reputation of a lead arranger to have significant impact on the syndicate structure. According to Lin et al. (2012) lead arrangers with high reputation have lower syndicate concentration and a higher number of foreign participants in the syndicate they arrange. Furthermore, Giannetti and Yafeh (2012) find that an increase in cultural distance between participant and lead arranger damage the participant's expectation on the lead arranger's willingness and incentive to conduct monitoring. These findings suggest that shocks to lead arranger's reputation might have stronger consequences for foreign participants.

In this section I study if the lead arrangers are more likely to signal better monitoring quality after default event if they have higher share of foreign participants in their current syndicate. If a loss of reputation discourages foreign participants to join the subsequent syndicates, the lead arranger has a larger incentive to signal better monitoring by retaining larger share of the loan.

To study this proposition, I calculate the share of foreign participants in each deal separately for each lead arranger. I consider the participant to be foreign if it has different country of domicile from the lead arranger. In order to study the interaction of default events and the share of foreign participants, I construct an interaction variable *Share of foreign*

participants x Default event $_{t-1}$. I include the *Share of foreign participants* as an additional control variable to avoid biased results.

For robustness, I run the regression controlling both lender and borrower fixed effects separately. I also include year fixed effects in all regressions.

Table 5 – Role of foreign participants

Table 5 reports the results from the interaction between default events and the share of foreign participants. The dependent variable in both columns is *Lead allocation*. As independent variables I use *Default event*, *Share of foreign participants* and their interaction variable. I control for year fixed effects in all regressions. Additionally, I control borrower fixed effects in column (1) and lender fixed effects in column (2). Standard errors are robust in all specifications and clustered at the lead or borrower level.

	Lead allocation (%)	*Lead allocation (%)*
	(1)	(2)
Default event $_{t-1}$	-3.48 ***	-9.24 ***
	(-2.71)	(-3.96)
Share of foreign participants	-2.87 ***	-9.65 ***
	(-3.02)	(-7.03)
Share of foreign participants x Default event $_{t-1}$	3.17 **	9.38 ***
	(2.25)	(4.01)
Log(Loan amount)	0.01	-2.37 ***
	(0.01)	(-2.94)
Years to maturity	1.23 ***	0.23
	(3.56)	(1.34)
Number of MLAs	-0.30 **	-0.41 ***
	(2.12)	(-9.63)
Number of participants	-0.33 ***	-0.27 ***
	(-3.20)	(-8.06)
Acquisition Financing -dummy	3.98	0.82
	(1.51)	(0.74)
Refinancing -dummy	-3.63 ***	-1.09 **
	(-2.54)	(-2.33)
Working Capital -dummy	-5.58 ***	-0.74
	(-2.70)	(-0.99)
Syndicate	-71.64 ***	-62.81 ***
	(-11.58)	(-11.02)
Log(Total assets, borrower) $_{t-1}$	-1.11	0.51
	(-0.61)	(1.10)
EV to Book Value, borrower $_{t-1}$	0.30 *	0.12 **
	(1.69)	(2.23)
Debt to Assets, borrower $_{t-1}$	-22.07 ***	1.99
	(-2.57)	(0.97)
Log(Lead size) $_{t-1}$	0.44 ***	2.06 ***
	(3.10)	(3.41)
Tier 1 Capital Ratio, lead $_{t-1}$	-0.23	1.34 ***
	(-1.42)	(2.75)
Capital adequacy ratio, lead $_{t-1}$	-0.26 ***	-0.56
	(2.81)	(-1.28)
ROA, lead $_{t-1}$	0.11	-1.94
	(0.42)	(-1.39)
Log(Total assets, lead) $_{t-1}$	-0.17	-4.31 ***
	(-1.06)	(--2.61)
Obs.	2480	2480
R^2	0.58	0.56
Specification	OLS	OLS
Year Fixed effects	Yes	Yes
Borrower / Lender Fixed Effects	Borrower	Lender

Robust t-statistics in parentheses

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

The results from Table 5 imply that lead arrangers' propensity to signal better monitoring quality after its borrower experiences a default is affected by the share of foreign participants in a syndicate. The coefficient for the interaction variable *Share of foreign participants x Default event* $_{t-1}$ is positive and statistically significant in columns (1) and (2). In column (1) where I control for borrower fixed effects the effect is statistically significant at 5% level and in column (2) with lender fixed effects it is significant at 1% level.

These finding provide support for hypothesis H5, which suggests that the share of foreign participants in a syndicate reinforces the reputational consequences. My findings also complement the study by Giannetti and Yafeh (2012), who suggest that foreign participants' perception of the lead arrangers incentive to conduct monitoring is lower. The regression results suggest that lead arrangers are aware of this and are willing to signal better monitoring by retaining larger share of the loan.

Furthermore, my results imply that lead arrangers are opportunistic and only use signalling when it is required to form a syndicate. The findings complement the work by Gopalan, Nanda and Yerramilli (2011) who found the signalling to take place automatically after a shock to reputation. According to my knowledge, there are no previous studies that have identified this effect.

4.1.3. Persistence of the effects of default events

So far I have studied how the syndication activity of a lead arranger changes the year following the default event. However, in order to gain a better understanding of the effects of default events, I study the persistence of the reputational effects.

In this section I study examine how many years it takes for the effect of default events on lead allocation to wear off. In table 6 I examine the effects of default events on lead allocation after 1, 2 and 3 years after they occurred. Since lead arrangers can potentially experience default events every year, I include interaction terms involving multiple lags of *Default events*. The regression form is identical to formula (1), except that I include multiple lags of the dummy variable *Default events*.

I also investigate if the default events have any effect on the syndication propensity. To do this, I utilise the variable *Syndicate*, which is a dummy variable identifying those deals which are syndicated prior to closing. Underwritten deals are potentially riskier for the lead

arranger as they have to reduce their share of the deal after signing. If unsuccessful, the lead arranger may retain a higher exposure of the loan.

As my previous findings suggest that the lead arranger reduces its relative exposure after *Default event*, intuitively the lead arranger should do less underwriting, i.e. the effect to *Syndicate* should be positive. Table 6 reports the result from the regression with multiple lagged values of *Default event.*

Table 6 – Persistence of effect of default events

Table 6 reports the results from the persistence of the effects caused by default events. The dependent variable in column (1) is *Lead allocation* and *Syndicate* in column (2). As independent variable I use lagged values of *Default event.* The control variables are same as in the Table 3, but they are suppressed for brevity. I control borrower fixed effects in column (1) and lender fixed effects in (2). I also control for year fixed effects in all regressions. Standard errors are robust in all specifications and clustered at the lead or borrower level.

	Lead allocation (%)	*Syndicate*
	(1)	(2)
Default event $_{t-1}$	-0.93 ***	-0.01
	(-3.01)	(-1.47)
Default event $_{t-2}$	-0.23	0.00
	(-0.37)	(0.94)
Default event $_{t-3}$	0.36	0.00
	(1.15)	(0.50)
Obs.	2480	2480
R^2	0.57	0.08
Specification	OLS	OLS
Year Fixed effects	Yes	Yes
Borrower / Lender Fixed Effects	Borrower	Lender
Robust t-statistics in parentheses		
*** p<0.01, ** p<0.05, * p<0.1		

The findings from column (1) in Table 6 suggest that the decrease of *Lead allocation* after *Default event* is confined to only one year. The first lagged value of *Default event* is statistically significant, while the others are not. This suggests that the effects of reputational shocks are only confined to one year.

Based on the findings in column (2) the shocks to lead arrangers' reputation do not affect the underwriting propensity. All of the lagged variables are statistically insignificant in column (2), suggesting that reputational shocks do not play a role in determining the syndication strategy.

4.2. Syndicate composition

In this chapter I investigate how the shocks to lead arranger reputation affect syndicate composition or the characteristics of borrowers. First, I study how the composite of the syndicate changes after lead arranger's borrower experienced *Default event.* I also generate a new dummy variable, *Country default*, which takes into account how the domicile of the defaulted borrower affects the subsequent deals in the same country. The dummy variable *Country default* takes a value of one, if the domicile of the defaulted borrower has the same domicile as the borrower in the current deal.

Secondly, I investigate how the lead arranger's market power affects the reputational effects that borrower defaults cause for lead arrangers. Thirdly, I study how the lead arranger's ability to attract participants is affected by the borrower defaults. Finally, I study how the borrower defaults affect subsequent borrower choice by lead arrangers and if they become more risk averse.

4.2.1. Effects of default events on syndicate composition

Syndication is effectively risk sharing. According to hypothesis H2, the lead arranger will have fewer non-arranging participants in a syndicate following a loss in reputation. If other financial intermediaries doubt the lead arranger's ability to monitor the borrower and find it risky, they are unwilling to participate in the syndicate.

Furthermore, after a loss in reputation the lead arranger has an incentive to signal more diligent monitoring in its subsequent syndications. It can achieve this by increasing the share it retains in its balance sheet, the lead allocation. Alternatively, the lead arranger signal better monitoring quality by syndicating the loan with co-lead arrangers. Previous studies suggest that arranging banks tend to have co-lead arrangers when arranging loans to opaque customers or industries. In this section, I aim to investigate if losses in reputation causes lead arrangers to signal better monitoring quality by including additional lead arrangers.

Finally, study by Lin et al. (2012) suggests that lead arrangers with lower reputation have fewer foreign participants in their syndicates. In columns (4) and (5), I study if default events damage the perceived reputation of the lead arranger and cause them to lose foreign participants in their subsequent syndicates.

Table 7 – Composition of the syndicate after default event

In Table 7 I study how the composition of a syndicate is affected if the lead arranger has experiences a default in $_{t-1}$. The main independent variables are *Default event* and *Country default*. The dependent variable in columns (1) and (2) is *Number of participants*, in column (3) and (4) *Number of MLAs* and share of foreign participants in columns (5) and (6). All variables are defined in the appendix. I control borrower fixed effects and year fixed effects in all regressions. Standard errors are robust in all specifications and clustered at the lead level.

	# of participants in a syndicate		*# of MLAs in a syndicate*		*Share of foreign participants (%)*	
	(1)	(2)	(3)	(4)	(5)	(6)
Default event $_{t-1}$	0.03 (0.15)		-0.03 (-0.17)		-0.11 (-0.14)	
Country default $_{t-1}$		-0.25 (-0.86)		-0.55 *** (-2.65)		-1.24 (-0.98)
Log(Loan amount)	1.20 *** (13.51)	1.20 *** (13.52)	1.63 *** (24.43)	1.63 *** (24.80)	0.88 ** (2.38)	0.89 ** (2.38)
Years to maturity	-0.05 ** (-2.36)	-0.05 ** (-2.39)	-0.02 (-1.47)	-0.02 (-1.62)	0.43 ** (3.43)	0.42 *** (3.39)
Number of MLAs	-0.07 *** (-4.96)	-0.07 *** (-5.01)			0.00 (0.05)	0.00 (0.02)
Number of participants			-0.03 *** (-5.43)	-0.03 *** (-5.51)	3.00 *** (20.39)	3.00 *** (20.42)
Acquisition Financing -dummy	0.54 ** (2.14)	0.53 ** (2.13)	0.21 * (1.76)	0.20 * (1.68)	-1.02 (-1.19)	-1.02 (-1.19)
Refinancing -dummy	0.14 (0.74)	0.15 (0.76)	-0.11 (-1.18)	-0.10 (-1.07)	-2.32 *** (-3.07)	-2.30 *** (-3.03)
Working Capital -dummy	-0.71 *** (-4.84)	-0.70 *** (-4.84)	-1.09 *** (-11.15)	-1.09 *** (-11.06)	-1.85 ** (-2.39)	-1.84 ** (-2.37)
Log(Total assets, borrower) $_{t-1}$	0.25 *** (5.23)	0.25 *** (5.26)	0.75 *** (20.59)	0.75 *** (20.23)	0.31 (1.09)	0.29 (1.05)
EV to Book Value, borrower $_{t-1}$	0.00 (0.15)	0.00 (0.15)	0.00 *** (-3.06)	0.00 *** (-3.06)	-0.04 (-1.39)	-0.04 (-1.39)
Debt to Assets, borrower $_{t-1}$	2.36 *** (5.03)	2.36 *** (5.03)	0.00 (-0.01)	0.00 (-0.03)	11.11 *** (6.54)	11.09 *** (6.51)
Log(Loans by lead $_{t-1}$)	-0.02 (-0.27)	-0.02 (-0.26)	-0.13 *** (-2.68)	-0.13 *** (-2.73)	0.26 (0.64)	0.25 (0.61)
Tier 1 Capital Ratio, lead $_{t-1}$	0.15 (1.57)	0.15 (1.59)	-0.05 (-0.72)	-0.04 (-0.61)	0.39 (0.68)	0.41 (0.70)
Capital adequacy ratio, lead $_{t-1}$	-0.06 (-0.72)	-0.06 (-0.70)	-0.02 (-0.33)	-0.02 (-0.36)	-0.20 (-0.53)	-0.21 (-0.54)
ROA, lead $_{t-1}$	-0.52 * (-1.78)	-0.55 * (-1.79)	0.34 ** (2.35)	0.33 ** (2.25)	-0.23 (-0.16)	-0.26 (-0.18)
Log(Total assets, lead) $_{t-1}$	0.05) (0.08)	0.19) (0.14)	-0.30 (-1.16)	-0.22 (-0.90)	-0.68 (-0.38)	-0.52 (-0.29)
Obs.	30719	30719	30719	30719	30719	30719
R^2	0.15	0.15	0.37	0.37	0.31	0.31
Specification	OLS	OLS	OLS	OLS	OLS	OLS
Year Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Lender Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Robust t-statistics in parentheses

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

First, in column (1) I study how default events in the previous year affect the number of participants in the syndicate. Based on the results, the variable *Default event* has no effect

on the number of participants as the coefficient is statistically insignificant. Further, the coefficient for *Country dummy* in column (2) is also statistically insignificant. These results do not provide support for the hypothesis H2, according to which default events should cause lead arranger's to have fewer participant members in their syndicates. In section 4.2.3, I will further investigate how the lead arranger's ability to attract a *specific* participant is affected by default events.

In columns (3) and (4) I investigate if lead arranger signal better monitoring quality after default events by acquiring additional lead arrangers in their syndicates. Based on the results from column (3), the variable *Default event* has no statistically significant effect on the number of mandated lead arrangers in a syndicate.

However, the results from column (4) indicate that the variable *Default event* has statistically significant and negative effect on the number of mandated lead arrangers if the default has occurred in the same country. The coefficient for C*ountry default* is -0.55, which suggests that lead arrangers have fewer co-leads in their syndicate following defaults in the same country. The result represents an 11% decrease in the number of MLAs and the result is significant at 1% level. This result is contradictory to the hypothesis H3, which states that lead arrangers will signal better monitoring quality by *increasing* the amount of co-load arrangers.

Instead, it seems that other market participants perceive the monitoring quality to have worsened and they are unwilling event to co-lead a syndicate. The finding provides evidence that other market participants consider defaults by borrowers more severe if they take place in the same country. The finding suggests that defaults by borrowers can have reputational consequences even if it does not result in signalling.

Another explanation is that the default causes the lead arranger to lend to smaller borrowers, which do not require as intense monitoring by co-leads. I will study this proposition further in the chapter 4.2.4, where I investigate how the default events affect the borrower and loan characteristics.

I investigate how the reputational shocks affect the share of foreign participant in a syndicate in columns (5) and (6). According to the results, variables *Default event* or *Country default* do not have statistically significant effect on the share of foreign participants in a deal. This finding complements the work by Lin et al. (2012), who found that lead arrangers with lower reputation have fewer foreign participants in their syndicates. My findings suggest that foreign participants do not consider the default events to cause

severe effects on the lead arranger's reputation. The finding is directly related to results in chapter 4.1.2, where I find that the signalling propensity is affected by the share of foreign participants. It seems that lead arrangers are able to mitigate the reputational concerns of foreign participants by retaining larger share of the loans with high foreign participation. As a consequence, the share of foreign participants is not affected by reputational shocks.

4.2.2. Role of lead arranger's market power

In their study Gopalan, Nanda and Yerramilli (2011) found that dominant lead arrangers did not retain a larger fraction of the lead allocation after experiencing bankruptcies. According to their study in the US market, the negative consequences of bankruptcies were only limited to lead arrangers who were not dominant in terms of syndication volume. They conclude that reputational disciplining methods are not effective for lead arrangers having dominant market position.

In order to investigate whether their findings hold in the European loan syndication market, I construct a variable measuring the relative dominance of lead arranger in a specific country. I consider dominant lead arrangers those whose number of loan syndicated is above a country's average in a specific year. Effectively, dominant lead arrangers have been the lead arranger more often than its competitors on average. Similarly, non-dominant lead arrangers are those whose participation rate is below the country's average at time *t*. I construct two dummy variables to study the effects of market power, *Dominant Lead* and *Non-dominant lead*.

In order to study if the consequences of default events vary based on lead arranger's dominance, I multiply the dummy variables with the earlier dummy *Default event*. The new interaction variables show how the effects of *Default event* change according to the market power.

In the regression analysis I use *Number of MLAs* and *Share of foreign participants* as dependent variables. To control for arranger, loan and borrower specific factors the same set of control variables is used than in previous regressions.

Table 8 – Effects of lead arranger's market power on syndicate composition

In table 8 I conduct subsample test to investigate if the effects of default vary according to the lead arranger's dominance in a specific country. In columns (1) and (2) the dependent variable is *Number of MLAs* and in column (3) and (4) the *Share of foreign participants*. As independent variables I use *Default event*, *Dominant lead*, *Non-dominant lead* and their interaction variables. I control for year and lender fixed effects in all regressions. Standard errors are robust in all specifications and clustered at the lead arranger level.

	# of MLAs in a syndicate		*Share of foreign participants (%)*	
	(1)	(2)	(3)	(4)
Default event $_{t-1}$	0.20 (1.22)	-0.26 (-1.41)	-0.79 (-0.66)	1.27 (1.10)
Dominant lead $_{t-1}$	-1.01 *** (8.87)		-4.83 *** (-3.54)	
Dominant lead $_{t-1}$ x Default event $_{t-1}$	-0.41 *** (2.73)		1.71 (0.96)	
Non-Dominant lead $_{t-1}$		0.93 *** (7.75)		5.52 *** (4.32)
Non-Dominant lead $_{t-1}$ x Default event $_{t-1}$		0.52 *** (3.31)		-2.45 (-1.33)
Log(Loan amount)	1.57 *** (24.36)	1.60 *** (24.65)	4.08 *** (10.43)	4.05 *** (10.37)
Years to maturity	-0.03 ** (-2.03)	-0.03 ** (-1.96)	0.25 ** (1.95)	0.25 ** (1.97)
Number of MLAs			0.00 (-0.67)	0.00 (-0.63)
Number of participants	-0.03 *** (-5.53)	-0.03 *** (-5.60)	0.03 *** (20.66)	0.03 *** (20.64)
Acquisition Financing -dummy	0.17 (1.38)	0.17 (1.43)	0.44 (0.45)	0.42 (0.44)
Refinancing -dummy	-0.13 (-1.27)	-0.13 (-1.29)	-1.94 * (-1.91)	-1.96 * (-1.92)
Working Capital -dummy	-1.07 *** (-10.81)	-1.06 *** (-10.76)	-3.76 *** (-4.13)	-3.72 *** (-4.10)
Log(Total assets, borrower) $_{t-1}$	0.72 *** (19.95)	0.72 *** (20.01)	0.83 *** (2.62)	0.82 *** (2.62)
EV to Book Value, borrower $_{t-1}$	0.00 *** (-3.30)	0.00 *** (-3.31)	-0.03 (-1.52)	-0.04 (-1.51)
Debt to Assets, borrower $_{t-1}$	-0.14 (-0.36)	-0.13 (-0.34)	18.01 *** (8.59)	18.04 *** (8.61)
Log(Loans by lead $_{t-1}$)	-0.01 (-0.30)	-0.02 (-0.51)	0.74 (1.51)	0.80 (1.51)
Tier 1 Capital Ratio, lead $_{t-1}$	-0.06 (-0.82)	-0.06 (-0.84)	0.85 (1.47)	0.84 (1.45)
Capital adequacy ratio, lead $_{t-1}$	-0.02 (-0.31)	-0.02 (-0.30)	-0.39 (-0.98)	-0.38 (-0.97)
ROA, lead $_{t-1}$	0.37 *** (2.67)	0.39 *** (2.74)	-1.89 (-1.09)	-1.85 (-1.08)
Log(Total assets, lead) $_{t-1}$	-0.32 (-1.19)	-0.29 (-1.07)	-1.00 (-0.43)	-1.03 (-0.44)
Obs.	30719	30719	30719	30719
R^2	0.38	0.38	0.07	0.07
Specification	OLS	OLS	OLS	OLS
Year Fixed effects	Yes	Yes	Yes	Yes
Lender Fixed Effects	Yes	Yes	Yes	Yes

Robust t-statistics in parentheses. *** p<0.01, ** p<0.05, * p<0.1

The regression results from column (1) show that dominant lead arrangers have fewer co-lead arrangers in their syndicates following borrower defaults. The interaction variable *Dominant lead* $_{t-1}$ *x Default event* $_{t-1}$ is negative and statistically significant at 1% level. The finding supports my earlier observations on syndicate composition in chapter 4.2.1, where I found that *Country defaults* cause lead arrangers to have fewer co-leads in the subsequent syndicates. The finding suggests that other financial intermediaries are unwilling to participate in a syndicate following a default event. This finding is contradictory to the earlier studies suggesting that reputational disciplining methods are not effective for dominant lead arrangers.

According to hypothesis H3, lead arrangers will signal better monitoring quality by increasing the amount of co-lead arrangers in the syndicate. The results from column (2) provide partial support for the hypothesis. The interaction coefficient for non-dominant leads is positive and statistically significant at 1% level, suggesting that non-dominant lead signal better monitoring quality after a loss in reputation. The effect is also economically significant, as the 0.93 increase in the number of lead arrangers represents approximately 19% increase compared to the median amount of 5.

The results from column (1) and (2) provide support for the reputational hypothesis H3 only partially. Based on the findings, only non-dominant lead arrangers invite additional co-leads to their syndicates following borrower defaults. On the other hand, dominant lead arrangers have fewer co-leads in their syndicates following default events. The finding supports the earlier findings by Gopalan, Nanda and Yerramilli (2011) who found dominant lead arrangers do not suffer from reputational consequences.

However, the fact that dominant leads have lower amount of co-leads in subsequent syndicates is perplexing. It suggests that shocks to reputation are damaging, but dominant leads choose not to signal better monitoring. It could be that non-dominant leads could not participate in the syndicate markets without signalling. On the other hand, dominant leads are able to attend the syndication market without signalling.

Based on the findings from column (3) and (4), the lead arrangers' dominance has no statistically significant effect on the share of foreign participants in a syndicate. Both of the interaction variables are statistically insignificant. The findings support my earlier findings from chapter 4.2.1 where I found that default events have no impact on the share of foreign participants.

4.2.3. Lead arranger's ability to attract participants

According to the reputation hypotheses the lead arranger's ability to attract participants is damaged due to loss in reputation. Participant members rely on the lead arranger to monitor the borrower on their behalf. Bad performance in monitoring may cause participant lenders to avoid participating in syndicates arranged by the lead arranger, who suffered a loss to its reputation.

However, the participant members depend on lead arrangers for access to loan syndicates. Therefore, avoiding certain lead arrangers might impose costs on the participants as they lose access to the possible revenues associated with it. In this section, I examine how the characteristics of participant lenders affect their willingness to participate syndicates of lead arrangers that have experienced reputational shocks.

To do so, I construct a panel data with one observation for each lead arranger-participant-year combination. The data includes all pairs of lead arrangers and participants who syndicated a loan together during 1999-2011. Following (Gopalan, Nanda and Yerramilli, 2011) I estimate the following panel regression;

$$Log(1 + loans\ together)_{jkt} = \beta_0 + \beta_1 \times [Default\ event_{j,t-1} \times X_{k,t-1}] + \beta_2 \times [Default\ event_{j,t-1} \times [1 - X_{k,t-1}]] + \beta_3 \times X_j + \mu_{jk} + \mu_t \quad (2)$$

where $Loans\ together_{jkt}$ is the number of loans syndicated together by lead arranger *j* with participant lender *k* during year *t*. Since the variable *Loans together* is highly skewed, I use the $\text{Log}(1+\text{Loans together})_{jkt}$. Also, since the value for *Loans together* can be zero, I add one to avoid missing values. In order to avoid multiple zero observations in the dependent variable, I include lead arrangers until one year after it syndicates its last loan. Also, I include each participant lender until one year after it participates its last loan. The same configuration was used by Gopalan, Nanda and Yerramilli (2011).

Since the amount of syndication activity between any lead arranger-participant pair may be affected by unobserved variables, I include lead arranger-participant pair fixed effects (μ_{jk}). I additionally control for year fixed effects (μ_t).

Table 9 – Lead arranger's ability to attract participants

Table 9 reports the results of regressions designed to investigate how loss of reputation affects lead arrangers' ability to attract participants to its syndicates. I estimate panel OLS regressions of the following form:

$$Log(1 + loans\ together)_{jkt}$$

$$= \beta_0 + \beta_1 \times [default\ events_{j,t-1} \times X_{k,t-1}] + \beta_2 \times [default\ events_{j,t-1} \times [1 - X_{k,t-1}]] + \beta_3 \times X_j + \mu_{jk} + \mu_t$$

where *Loans together*$_{jkt}$ is the number of loans syndicated together by lead arranger j with participant lender k during year t. In column (1), X equals one. In column (2), X is *Large participant*, which is a dummy variable identifying those participants who are in the top quartile in terms of the number of loans participated during a year *t*. In column (3), X is Diversified participant, which identifies those lead arrangers who are in the top quartile in terms of the number of distinct lead arrangers with which they syndicated loans during year $_t$. I control for lead arranger–participant and year fixed effects in each case. Standard errors are robust in all specifications and clustered at the lead arranger-participant level.

	Log(1 + loans together)		
	(1)	(2)	(3)
	X = 1	X = Large participant	X = Diversified participant
Default event $_{t-1}$ x X_{t-1} (β_1)	0.04 *** (10.10)	0.38 *** (41.78)	0.15 *** (14.09)
Default event $_{t-1}$ x [1- X_{t-1} (β_2)]		-0.08 *** (-23.44)	0.01 *** (2.79)
Log(Loans by lead $_{t-1}$)	0.04 *** (65.90)	0.04 *** (66.15)	0.04 *** (66.13)
ROA, lead $_{t-1}$	0.03 *** (11.32)	0.03 *** (10.75)	0.03 *** (11.30)
Tier 1 Capital Ratio, lead $_{t-1}$	0.01 *** (3.59)	0.01 *** (3.78)	0.01 *** (3.58)
Capital adequacy ratio, lead $_{t-1}$	0.00 *** (-4.53)	0.00 *** (-4.91)	0.00 *** (-4.53)
Log(Total assets, lead) $_{t-1}$	0.05 *** (7.89)	0.05 *** (9.36)	0.05 *** (8.37)
Obs.	300,940	300,940	300,940
R^2	0.04	0.07	0.05
Specification	OLS	OLS	OLS
Year Fixed Effects	Yes	Yes	Yes
Pair Fixed Effects	Yes	Yes	Yes

Robust t-statistics in parentheses

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

The evidence from the Table 7 suggests that events of default generally increase lead arranger's ability to attract participants. The coefficient on *Default event* in column (1) indicates an increase in activity between lead arranger and a given participant. This does not support the hypothesis H1, according to which loss in reputation would damage the lead arranger's ability to attract participants.

The results from column (2) imply that the increase in activity is limited to participants which are in the top quartile in terms of loans they participated the previous year. Further, the evidence suggests that default events decrease lead arrangers with participants that are

not in the top quartile in terms of the amount of loans they participated in the previous year. Both results are statistically significant at 1% level.

This suggests that lead arrangers are unable to attract smaller participants after suffering a loss in reputation. In turn they rely on the larger, more experienced participants in their syndicates. Larger participants and lead arrangers might have an established relationship, and therefore events of default might not change their perception of lead arrangers' ability to provide diligent screening and monitoring. Small participants on the other hand might not have prior experience on the lead arranger and therefore their perception of the lead arranger's reputation as a diligent monitor might suffer more easily.

These findings are supported by the results from column (3), which suggests that lead arrangers increase their activity with diversified participants. Although the coefficient is positive for both diversified participants and non-diversified, the increase is significantly larger if the participant is considered diversified. Both results are significant at 1% level. The higher degree of diversification can suggest increased likelihood that the participant and lead arranger have had prior relationship.

The results differ from the ones observed by Gopalan, Nanda and Yerramilli (2011), who found that bankruptcy filings decrease the willingness of large and diversified participants to attend syndicates by lead arranger. My results suggest the exact opposite, and that large and diversified participants are in fact more likely to attend a syndicate after default event.

This can be caused by two different reasons. Firstly, this difference in findings could highlight a fundamental difference between European and Northern American loan syndication markets. My results suggest that participants operating in the European loan markets do not alter their perception of lead arrangers' monitoring ability based on events of default.

Secondly, it might be that a single *Default event* is not considered as harmful in European loan markets compared to that in the USA. My data on defaults considers a wider range of events of default compared to the study by Gopalan, Nanda and Yerramilli (2011) who solely concentrated on Chapter 11 filings. It might be that market actors do not consider missed payments as harmful for the lead arranger's reputation, and therefore are not discouraged to attend subsequent syndicates.

4.2.4. Borrower characteristics

In this section I examine how default events affect the types of borrowers the lead arranger lends to the subsequent year. My previous findings suggest that lead arrangers become more risk averse after experiencing *Default event*. I find that they retain a smaller share of the loans they syndicate, effectively reducing exposure to a single lender, all other things being equal. In order to gain a more insight on whether the defaults really increase risk aversion or not, I investigate if default events cause lead arrangers to lend to less riskier clients in the future.

Since large multinational banks may have separate lending functions in each country, I also investigate how country specific defaults affect the borrower characteristics. If lenders switch to less riskier borrowers after experiencing a default, it might only be restricted to the country where the default originally took place.

Table 10 – Borrower characteristics

This table reports the results of regressions investigating the impact on loss of reputation on the type of borrowers that the lead arranger lends to in the subsequent year. I estimate OLS regressions of the following form:

The dependent variable is *Log(Total assets)* in columns (1) and (2), *Debt to assets* in columns (3) and (4) and *EV to book value* in columns (4) and (5). I include lead arranger and year fixed effects in all regressions. Standard are robust and clustered at the individual lead arranger level.

	Log(Total assets)		*Debt to Assets*		*EV to book value*	
	(1)	(2)	(3)	(4)	(5)	(6)
Default event $_{t-1}$	0.03 (0.85)		0.01 (1.36)		-0.47 ** (-2.08)	
Country default $_{t-1}$		-0.35 *** (-5.53)		-0.01 ** (-2.18)		0.33 (1.38)
Log(Loan amount)	0.62 *** (27.53)	0.62 *** (28.64)	0.00 *** (-2.56)	0.00 *** (-2.57)	0.18 *** (2.84)	0.18 *** (2.83)
Years to maturity	0.04 *** (6.99)	0.04 *** (7.19)	0.00 *** (2.65)	0.00 *** (2.56)	0.00 (-0.14)	0.00 (-0.11)
Acquisition Financing -dummy	-0.17 *** (-3.59)	-0.17 *** (-3.67)	-0.02 *** (-5.46)	-0.02 *** (-5.39)	0.07 (0.37)	0.07 (0.40)
Refinancing -dummy	-0.04 (-1.51)	-0.03 (-1.19)	0.02 *** (4.82)	0.02 *** (4.94)	-0.44 ** (-2.43)	-0.45 ** (-2.45)
Working Capital -dummy	-0.07 * (-2.01)	-0.07 * (-1.92)	-0.01 *** (-3.30)	-0.01 *** (-3.29)	1.28 *** (4.54)	1.28 *** (4.55)
Log(Total assets, borrower) $_{t-1}$			0.01 *** (7.80)	0.01 *** (7.84)	-0.09 (-1.54)	-0.09 (-1.51)
EV to Book Value, borrower $_{t-1}$	0.00 (-1.40)	0.00 (-1.39)	0.00 *** (3.86)	0.00 *** (3.86)		
Debt to Assets, borrower $_{t-1}$	1.10 *** (7.33)	1.08 *** (7.37)			16.44 *** (17.94)	16.44 *** (17.96)
ROA, borrower $_{t-1}$	-0.01 ** (-2.44)	-0.01 *** (-2.61)	-0.01 *** (-16.16)	-0.01 *** (-16.17)	0.09 *** (4.52)	0.09 *** (4.57)
Log(Loans by lead $_{t-1}$)	0.00 (0.65)	0.00 (0.73)	0.00 *** (0.12)	0.00 *** (0.31)	0.00 (-1.31)	0.00 (-1.45)
Tier 1 Capital Ratio, lead $_{t-1}$	0.01 (0.63)	0.01 (0.79)	0.00 (0.65)	0.00 (0.62)	-0.05 (-0.40)	-0.04 (-0.30)
Capital adequacy ratio, lead $_{t-1}$	-0.01 (-0.55)	-0.01 (-0.52)	0.00 (-0.65)	0.00 (-0.56)	0.07 (0.77)	0.06 (0.58)
ROA, lead $_{t-1}$	0.05 (1.20)	0.04 (1.00)	0.00 (-0.15)	0.00 (-0.24)	-0.13 (-0.44)	-0.11 (-0.39)
Log(Total assets, lead) $_{t-1}$	0.07 (0.67)	0.12 (1.00)	0.01 (1.00)	0.01 (1.25)	0.71 (1.71)	0.62 (1.03)
Obs.	30,719	30,719	30,719	30,719	30,719	30,719
R^2	0.31	0.31	0.11	0.11	0.04	0.04
Specification	OLS	OLS	OLS	OLS	OLS	OLS
Year Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Lender Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Robust t-statistics in parentheses

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

Based on the results on Table 8, I find mixed support for the earlier findings on increased risk aversion. The regression results from columns (1) and (2) describe how default events affect the size of the borrower. Size is considered as a proxy for information asymmetry, and it is assumed that defaults lead to borrowers concentrating on larger borrower whose information is more readily available.

Based on the results from columns (1) and (2), the variable *Default event* has no statistically significant effect on the size of the borrower. However, the column (2) suggests that the variable *Country default* has statistically significant negative effect on the borrower size. This suggests that lead arrangers lend to smaller borrowers if they have experienced default event in the same country during the previous year. This is in accordance with the findings by Gopalan, Nanda and Yerramilli (2011), who found that bankruptcy filings cause lenders to lend to smaller customers.

Furthermore, the results provide support for the argument that large banks are segmented according to different countries. According to hypothesis H6, events of default can have an adverse effect on the lending capacity of financial institutions due to loss of internal reputation or decrease in capital. The fact that only defaults in the same country have an adverse effect on lending capacity provides evidence of segmentation by countries.

Similar, albeit weaker, evidence lower risk appetite is seen from the results in columns (3) and (4), where the variable *Country default* has an adverse impact on the leverage of the borrowing firm. In other words, lead arrangers tend to arrange loans to firms with lower leverage after having experienced an event of default in the same country in the previous year. The effect is statistically significant at 5% level. Based on the findings in column (3), events of default do not cause change in the borrower's leverage.

In columns (5) and (6) I investigate if default events decrease lead arranges' willingness to provide financing to growth firms. I use ratio of enterprise value to book value as a proxy for growth opportunities. Firms with higher values are considered growth firms. As growth firms can be considered riskier, a decrease in risk appetite will decrease lending to these firms. The negative and significant coefficient in column (5) suggests that lead arrangers are less likely to growth firms following events of default. The effect is statistically significant at 5% level. This finding supports the earlier indications that lead arrangers become more risk averse after defaults. Based on the results, the variable *Country default* does not cause similar reduction.

Overall, the evidence from table 8 suggests that at a country level, lead arrangers are more likely to lend to less riskier borrowers following events of default. These findings support the findings from chapter 4.1 where I found lead arrangers to retain a smaller portion of the loans they syndicate following a default.

4.3. Lender-borrower distance and the role of reputation

In order to investigate if the reputational consequences of default events increase with lender-borrower distance, I construct new variable *Market distance*. The variable is designed to encompass the cultural, informational and regulatory barriers between the lenders and borrowers in European loan market. Geographical distance alone might not encompass the barriers effectively, since the distance between different countries in Europe vary significantly.

The variable *Market distance* gets the value of 1 if the lender and borrower have the same country of domicile, value of 2 if they are neighbouring countries, value of 3 if they are not neighbouring countries and value of 4 if the lender's domicile is outside Europe. The range thus ranges from 1 to 4, with higher score illustrating higher information asymmetries. Rather than relying on geographical distance for a proxy of informational asymmetries, my measure is based on regional proximity. According to Fidrmuc and Hainz (2012) European loan markets have integrated regionally, leading to lower informational and regulatory barriers. On the other hand, financial institutions located outside the Europe might have informational disadvantage relative to their European competitors.

To study if the consequences of default events increase in distance, I construct a new interaction variable *Market distance x Default event* $_{t-1}$ which gets values from 1 to 4 if the lead arranger has experienced defaults events in t-1, and 0 otherwise.

As an alternative measure of information asymmetries between lender and borrower, I use the geographical distance in kilometres between their respective domiciles' capitals. The measure has been widely used to proxy informational asymmetries (see e.g. (Coval and Moskowitz, 1999)). Although the measure is rather rough and does not take into account the regional integration, it is still widely used in many prominent studies. Due to the many non-European institution involved, the variable is fairly skewed. To control for this, I use the natural logarithm of the variable in the regressions.

In order to study the interaction between the geographical distance and defaults, I construct a new interaction variable *Log(Distance in km) x Default events* $_{t-1}$.

In table 11 I use *Lead allocation* and *Number of MLAs* as dependent variables and the two distance proxies as independent variables. Control variables are the same as in the previous regressions.

Table 11 – Effect of lender-borrower distance

Table 11 reports results on the interaction between lender-borrower distance and default events. As the independent variable I study the interaction between *Default events* and two different distance measures. As a dependent variable I use *Lead allocation* and *Number of MLAs*. I control for year fixed effects in all regressions. Additionally, I control borrower fixed effects in columns (1) and (2) and lender fixed effects in columns (3) and (4). Standard errors are robust in all specifications and clustered at the lead or borrower level.

	Lead allocation (%)		*# of MLAs in a syndicate*	
	(1)	(2)	(3)	(4)
Default event $_{t-1}$	-0.96 ***	-0.96 ***	-0.55 *	-1.61 **
	(-3.17)	(-3.16)	(-1.82)	(-2.43)
Market distance -dummy	-0.09		0.91 ***	
	(-0.74)		(11.03)	
Market distance x Default event $_{t-1}$	0.12		0.23 **	
	(0.95)		(2.28)	
Log(Distance in km)		-0.01		0.90 ***
		(-0.10)		(10.24)
Log(Distance in km) x Default event $_{t-1}$		0.02		0.24 ***
		(0.51)		(2.70)
Log(Loan amount)	-0.09	-0.07	1.62 ***	1.63 ***
	(-0.16)	(-0.13)	(24.45)	(25.05)
Years to maturity	1.19 ***	1.19 ***	-0.03 ***	-0.03 **
	(3.22)	(3.22)	(-2.48)	(-2.12)
Number of participants	-0.28 ***	-0.28 ***	-0.03 ***	-0.03 ***
	(-3.36)	(-3.36)	(-5.52)	(-5.55)
Acquisition Financing -dummy	4.01	4.02	0.20	0.22
	(1.41)	(1.41)	(1.51)	(1.71)
Refinancing –dummy	-3.44 **	-3.44 **	-0.05	-0.06
	(-2.27)	(-2.27)	(-0.55)	(-0.65)
Working Capital -dummy	-7.77 ***	-7.78 ***	-1.03 ***	-1.04 ***
	(-3.91)	(-3.91)	(-10.58)	(-10.41)
Syndicate	-74.20 ***	-74.24 ***		
	(-13.04)	(-13.09)		
Log(Total assets, borrower) $_{t-1}$	-2.02	-2.01	0.68 ***	0.69 ***
	(-1.04)	(-1.04)	(19.08)	(19.06)
EV to Book Value, borrower $_{t-1}$	0.30 *	0.30 *	0.00 **	0.00 **
	(1.72)	(1.72)	(-2.38)	(-2.03)
Debt to Assets, borrower $_{t-1}$	-22.42 ***	-22.30 ***	-0.22	-0.34
	(-2.71)	(-2.69)	(-0.57)	(-0.91)
Log(Loans by lead $_{t-1}$)	0.49 ***	0.50 ***	-0.13 ***	-0.13 ***
	(3.51)	(3.51)	(-2.78)	(-2.77)
Tier 1 Capital Ratio, lead $_{t-1}$	-0.23	-0.23	-0.01	-0.02
	(-1.37)	(-1.38)	(-0.19)	(-0.21)
Capital adequacy ratio, lead $_{t-1}$	0.31 ***	0.31 ***	-0.03	-0.03
	(3.21)	(3.22)	(-0.44)	(-0.44)
ROA, lead $_{t-1}$	0.11	0.12	0.27	0.29 **
	(0.39)	(0.43)	(1.90)	(2.13)
Log(Total assets, lead) $_{t-1}$	-0.21	-0.22	-0.51 *	-0.39
	(-1.22)	(-1.27)	(-1.87)	(-1.52)
Obs.	2480	2480	30719	30719
R^2	0.56	0.56	0.37	0.37
Specification	OLS	OLS	OLS	OLS
Year Fixed Effects	Yes	Yes	Yes	Yes
Borrower / Lender Fixed Effects	Borrower	Borrower	Lender	Lender

Robust t-statistics in parentheses. *** p<0.01, ** p<0.05, * p<0.1

The results from columns (1) and (2) show that the interaction terms between *Default event* and the distance dummies are statistically insignificant. This suggests that changes in lender-borrower distance do not have an effect on the *Lead allocation.*

According to the hypothesis H5, increase in lender-borrower distance reinforces the reputational consequence. However, based on my earlier findings, shock in reputation caused by *Default event* does not cause lead arrangers to signal better monitoring quality. Since defaults cause no *reputational* effects on *Lead allocation,* the increase in lender-borrower distance should not have an effect.

According to the results from columns (3) and (4), increase in the lender-borrower distance causes lead arrangers to have more co-leads if they experienced *Default event* the previous year. In column (3) the interaction variable is positive and statistically significant at 5% level. In column (4), the interaction variable is positive and statistically significant at 1% level.

The findings provide strong support for the H5, which states that increase in information asymmetries measured by distance proxies reinforces the reputational consequences. Statistically, the most significant measure of information asymmetries is the *Log(Distance in km*).

Overall, the results in Table 11 provide a clear picture on how the lender-borrower distance and default events interact. In the subsequent syndications, lead arrangers have more emphasis on monitoring and the effect is also increasing in distance. As the distance and information asymmetries grow, the lead arranger wants to mitigate them by having additional lead arrangers who will share part of the screening and monitoring.

4.4. Robustness tests

The underlying proposition in my research is that after including control variables for borrower, loan and lead arranger and after controlling borrower and year fixed effect, the effects of *Default event* is exogenous. This assumption allows me to interpret my findings to arise from the loss of reputation following the default events. However, in this section I consider few alternative explanations and tests to rule them out.

Does the Default event dummy selectively identify those lead arrangers that lend to risky firms?

If the variable *Default event* would identify those lead arrangers that consistently lend to risky firms, the lead arranger is likely to consistently retain a lower allocation of the loan it syndicates. In other words, my results are biased if the *Default event* recognises lead arrangers that always retain a lower share of the loans they syndicate.

In order to control for this possibility, I construct a new variable, *Pre-default event*, a dummy variable identifying lead arrangers the year *before* they experience a default event. If the variable *Default event* recognises lenders that always retain a lower share of the loans they syndicate, the coefficient for the variable *Pre-default event* should be negative and statistically significant.

Does the Default event dummy identify difficult credit market conditions, which force lead arrangers to lower their exposure?

Based on the summary statistics in Table 1, the vast majority of all default events occurred in the recession year 2009. This means the occurrences of the variable *Default event* identify the year 2009. If the recession year causes the lead arrangers to become more risk averse and lower their exposure to the loan markets, the interpretation of my results can be wrong.

In order to control for this possibility, I construct a new dummy variable, *Default in recession,* which identifies default events that occurred during the recession years 2001 and 2009. Additionally, I construct dummy variable, *Default in normal* which identifies defaults that occurred in normal credit market conditions.

Should my results be caused by the lower risk appetite following recession years, the variable for *Default in recession* should be statistically significant and negative, while the *Default in normal* should be insignificant.

Table 12 reports the results from these specifications.

Table 12 – Robustness tests

Table 12 reports the results from the robustness tests. The dependent variable is *Lead allocation* in all cases. The independent variable in column (1) is *Pre-default event*, a dummy variable identifying lead arrangers a year before they experience default events. In columns (2) and (3) I investigate how the credit market conditions affect the *Lead allocation.* The independent variable in column (2) is *Default in recession*¸ a dummy variable identifying defaults that occur during recession years 2001 and 2009. The dependent variable in column (3) is *Default in normal,* identifying defaults that occur during normal credit market conditions. The control variables are same as in the Table 3, but they are suppressed for brevity. I control borrower fixed effects and year fixed effects in all cases. Standard errors are robust in all specifications and clustered at the borrower level.

	Lead allocation (%)		
	(1)	*(2)*	*(3)*
Pre-default event	-0.30 (-1.24)		
Default in recession		0.22 (0.20)	
Default in normal			-1.05 *** (-3.04)
Obs.	2480	2480	2480
R^2	0.57	0.57	0.57
Specification	OLS	OLS	OLS
Year Fixed Effects	Yes	Yes	Yes
Borrower Fixed Effects	Yes	Yes	Yes

Robust t-statistics in parentheses

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

According to the results from column (1), the variable *Pre-default event* has no statistically significant effect on the *Lead allocation.* This suggests that the earlier effects of default event are not caused by selection bias. Instead, the result here provides further reinforcement to my findings suggesting that the lead arrangers become more risk-averse in their loan syndicates following a default event.

The finding from column (1) is in accordance with the results by Gopalan, Nanda and Yerramilli (2011), who also found that the signalling effect discovered in the US loan syndication market is not a product of selection bias. Instead, these finding supports the notion that financial intermediaries act differently in European markets than in the US markets.

The findings from columns (2) and (3) imply that the negative effect of the *Default events* is only caused by those defaults that do not occur during recession. The variable *Default in recession* in column (2) is statistically insignificant, while the coefficient in column (3) is negative and significant at 1% level. This suggests that while the majority of default events in my data occur during recession years, they do not have an impact on the *Lead allocation*.

This finding provides additional robustness to my findings as the increase in risk awareness is not caused by credit market conditions.

Besides specific robustness tests, in Table 3 I run the regression controlling both borrower and lender fixed effects separately, in addition to year fixed effects. Further, in appendix I include results from regression where I control for borrower *and* lender fixed effects. The results from all these regressions imply that default events have statistically significant and negative impact on lead allocation.

5. Discussion and conclusions

The empirical section of this thesis finds partially contradictory results compared to the earlier research. Earlier studies found that Chapter 11 filings cause lead arrangers signal better monitoring quality by retaining larger fraction on the subsequent loans they syndicate. My findings suggest that shocks to lead arrangers' reputation caused by borrower defaults do not cause reputational consequences in European loan markets. On the contrary, I find evidence that lead arrangers decrease their exposure to a single borrower by decreasing their future commitments after one of their borrower defaults. However, after investigating the effect regionally, I find that the reputational hypothesis holds for Nordic lead arrangers and they retain larger fraction of future loans after their borrower defaults.

I am also able to establish a connection between reputational consequences and the share of foreign participants. I find that lead arrangers' propensity to signal better borrowing quality is dependent partially on the share of foreign participants in future syndicates. My findings complement previous studies and suggest that the perception of foreign participants on lead arranger's monitoring ability is easily eroded. Lead arrangers acknowledge this and try to mitigate the loss of reputation by retaining larger share of the subsequent loans.

I also find that the non-dominant lead arrangers signal better monitoring quality by including additional co-lead arrangers after experiencing shocks to their reputation. Furthermore, lead arrangers also have additional lead arrangers in their syndicates as the lender-borrower distance increases. This suggests that as the information asymmetries grow in lender-borrower distances, banks have greater incentive to include additional lead arrangers in the syndicate.

Finally, I find that lead arrangers ability to attract small participants in terms of syndication volume after experiencing *Default event*. Instead, the lead arrangers seem to switch to larger participants in their future syndicates. This suggests that perceived reputation loss is greater with small participants that are not active in syndication markets.

Table 13 summarises the main findings of my thesis.

Table 13 – Summary of the results

This table summarises the hypotheses and main findings related to them.

	Hypotheses	Empirical evidence
H1	*If the reputation of the lead arranger suffers from defaults or distressed restructurings, the lead arranger will retain a larger portion of the loans after default events by lead arranger's borrowers.*	**Medium support.** Default events cause lead arrangers to retain a smaller portion of subsequent loans they syndicate. The effect is significant at 1% level. However, the signalling propensity by lead arranger is affected by the share of foreign participants in the syndicate. As the share of foreign participants increase, the lead arrangers will retain larger portion of the loan. The effect is statistically significant at 1% level.
H2	*If the reputation of the lead arranger suffers from defaults or distressed restructurings, the lead arranger will have fewer participants in its future syndicates and its ability to attract participants to its syndicates is worsened.*	**Medium support.** Default events have no statistically significant effect on the number of participants in a syndicate. However, I find that lead arrangers ability to attract small participants is damaged after experiencing shock to reputation. Instead, the lead arrangers seem to switch to larger participants in their future syndicates. The effect is statistically significant at 1% level.
H3	*If the reputation of the lead arranger suffers from defaults or distressed restructurings, the lead arranger will try to mitigate the loss of reputation by having additional lead arrangers in its subsequent syndicates.*	**Medium support.** According to my results, non-dominant lead arrangers will have more co-leads following a default event. I also find that as the lender-borrower distance increases, lead arrangers signal better monitoring quality by including additional co-lead arrangers after experiencing shocks to their reputation. The effect is statistically significant at 1% level.
H4	*Lead arrangers' propensity to signal better monitoring quality after shock to its reputation is related to the amount of foreign participants in the syndicate.*	**Strong support.** My results suggest that as the share of foreign participants in a syndicate increases, the lead arranger will signal better monitoring quality by retaining a larger share of the loan. The effect is statistically significant at 1% level.
H5	*Increase in the lender-borrower distance reinforces the reputational consequences of default events.*	**Medium support.** The number of additional co-leads in a syndicate following default event is affected by the lender-borrower distance. The number of additional co-lead arrangers is increasing in distance. The effect is statistically significant at 1% level.
H6	*If default events erode the lead arranger's capital base or damage the internal reputation, it will retain a lower share of future syndications following default event.*	**Strong support.** My results imply that lead arrangers will retain less of the loans they syndicate after their borrower experiences a default event. This suggests that default events damage the lead arrangers' capital base or internal reputation. Alternatively the result can imply increase in risk aversion.

5.1. Suggestions for further research

This master's thesis fills an important gap in the literature by investigating the role of reputation in the European loan syndication markets. My findings are both economically and statistically significant, and they help to understand how reputational consequences work in cross-border lending.

Despite the contribution of the thesis, there remain avenues for further research. The most interesting topic for future research would include further investigate how the lead arranger's propensity to signal varies according to different circumstances. Based on my

findings, lead arrangers are opportunistic and use the signalling option only when it is needed. Furthermore, although default events clearly represent an important determinant of lead arrangers' reputation, there are other aspects that should be considered. An interesting venue for further research would be to investigate how other factors affect lead arrangers' reputation.

6. Bibliography

Altman, E.I. & Suggitt, H.J. 2000, "Default rates in the syndicated bank loan market: A mortality analysis", *Journal of Banking & Finance,* vol. 24, no. 1–2, pp. 229-253.

Altunbaş, Y., Kara, A. & Marques-Ibanez, D. 2010, "Large debt financing: syndicated loans versus corporate bonds", *European Journal of Finance,* vol. 16, no. 5, pp. 437-458.

Ball, R., Bushman, R.M. & Vasvari, F.P. 2008, "The Debt-Contracting Value of Accounting Information and Loan Syndicate Structure", *Journal of Accounting Research,* vol. 46, no. 2, pp. 247-287.

Baltagi, B.H. cop. 2005, *Econometric analysis of panel data,* 3rd ed. edn, Wiley, Chichester.

Bester, H., Gehrig, T.P. & Stenbacka, R. 2012, *Loan Sales and Screening Incentives*, C.E.P.R. Discussion Papers.

Buch, C.M. 2005, "Distance and International Banking", *Review of International Economics,* vol. 13, no. 4, pp. 787-804.

Cabral, I., Dierick, F. & Vesala, J. 2002, *Banking integration in the euro area*, European Central Bank.

Coval, J.D. & Moskowitz, T.J. 1999, "Home Bias at Home: Local Equity Preference in Domestic Portfolios", *The Journal of Finance,* vol. 54, no. 6, pp. 2045-2073.

Dahiya, S., Saunders, A. & Srinivasan, A. 2003, "Financial Distress and Bank Lending Relationships", *The Journal of Finance,* vol. 58, no. 1, pp. 375-399.

Davydenko, S.A. & Franks, J.R. 2008, "Do Bankruptcy Codes Matter? A Study of Defaults in France, Germany, and the U.K.", *The Journal of Finance,* vol. 63, no. 2, pp. 565-608.

Degryse, H. & Ongena, S. 2005, "Distance, Lending Relationships, and Competition", *The Journal of Finance,* vol. 60, no. 1, pp. 231-266.

Demiroglu, C. & James, C.M. 2010, "The Information Content of Bank Loan Covenants", *Review of Financial Studies,* vol. 23, no. 10, pp. 3700-3737.

Dennis, S.A. & Mullineaux, D.J. 2000, "Syndicated Loans", *Journal of Financial Intermediation,* vol. 9, no. 4, pp. 404-426.

Diamond, D.W. 1984, "Financial Intermediation and Delegated Monitoring", *The Review of Economic Studies,* vol. 51, no. 3, pp. 393-414.

Emery, K.M. & Cantor, R. 2005, "Relative default rates on corporate loans and bonds", *Journal of Banking & Finance,* vol. 29, no. 6, pp. 1575-1584.

Fang, L.H. 2005, "Investment Bank Reputation and the Price and Quality of Underwriting Services", *The Journal of Finance,* vol. 60, no. 6, pp. 2729-2761.

Fidrmuc, J. & Hainz, C. 2012, "The effect of banking regulation on cross-border lending", *Journal of Banking & Finance*.

François, P. & Missonier-Piera, F. 2007, "The Agency Structure of Loan Syndicates", *Financial Review,* vol. 42, no. 2, pp. 227-245.

Gadanecz, B. 2004, "The Syndicated Loan Market: Structure, Development and Implications", *BIS Quarterly Review*

Giannetti, M. & Yafeh, Y. 2012, "Do Cultural Differences Between Contracting Parties Matter? Evidence from Syndicated Bank Loans", *Management Science,* vol. 58, no. 2, pp. 365-383.

Gopalan, R., Nanda, V. & Yerramilli, V. 2011, "Does Poor Performance Damage the Reputation of Financial Intermediaries? Evidence from the Loan Syndication Market", *The Journal of Finance,* vol. 66, no. 6, pp. 2083-2120.

Grinblatt, M. & Keloharju, M. 2001, "How Distance, Language, and Culture Influence Stockholdings and Trades", *The Journal of Finance,* vol. 56, no. 3, pp. 1053-1073.

Haselmann, R. & Wachtel, P. 2011, "Foreign banks in syndicated loan markets", *Journal of Banking & Finance,* vol. 35, no. 10, pp. 2679-2689.

Holmstrom, B. & Tirole, J. 1997, "Financial Intermediation, Loanable Funds, and The Real Sector", *The Quarterly Journal of Economics,* vol. 112, no. 3, pp. 663-691.

Ivashina, V. 2005, *Structure and Pricing of Syndicated Loans*, The New York City Area Conference On Financial Intermediation.

Ivashina, V. 2009, "Asymmetric information effects on loan spreads", *Journal of Financial Economics,* vol. 92, no. 2, pp. 300-319.

Lin, C., Ma, Y., Malatesta, P. & Xuan, Y. 2012, "Corporate ownership structure and bank loan syndicate structure", *Journal of Financial Economics,* vol. 104, no. 1, pp. 1-22.

Mayer, T. & Zignago, S. 2011, "Notes on CEPII's distances measures: The GeoDist database".

Moody's Global Credit Research. 2008. "European Corporate Default and Recovery Rates. 1985-2007".

Mian, A. 2006, "Distance Constraints: The Limits of Foreign Lending in Poor Economies", *The Journal of Finance,* vol. 61, no. 3, pp. 1465-1505.

Petersen, M.A. & Rajan, R.G. 2002, "Does Distance Still Matter? The Information Revolution in Small Business Lending", *The Journal of Finance,* vol. 57, no. 6, pp. 2533-2570.

Pichler, P. & Wilhelm, W. 2001, "A Theory of the Syndicate: Form Follows Function", *Journal of Finance,* vol. 56, no. 6, pp. 2237-2264.

Ross, D.G. 2010, "The "Dominant Bank Effect:" How High Lender Reputation Affects the Information Content and Terms of Bank Loans", *Review of Financial Studies,* vol. 23, no. 7, pp. 2730-2756.

Sang, W.L. & Mullineaux, D.J. 2004, "Monitoring, Financial Distress, and the Structure of Commercial Lending Syndicates", *Financial Management (Blackwell Publishing Limited),* vol. 33, no. 3, pp. 107-130.

Standard & Poor's. 2012, *A Guide To The European Loan Market.* The McGraw-Hill Companies, Inc., New York, NY.

Sufi, A. 2005, "Agency and renegotiation in corporate finance: Evidence from syndicate loans, Job market paper".

Sufi, A. 2007, "Information Asymmetry and Financing Arrangements: Evidence from Syndicated Loans", *The Journal of Finance,* vol. 62, no. 2, pp. 629-668.

Tsai, H., Chang, Y. & Hsiao, P. 2011, "What drives foreign expansion of the top 100 multinational banks? The role of the credit reporting system", *Journal of Banking and Finance,* vol. 35, no. 3, pp. 588-605.

7. Appendices

Appendix 1 – Variable definitions

Lead arranger characteristics:

Tier 1 Capital Ratio	The financial institution's core equity capital divided by its total risk-weighted assets.
Capital adequacy ratio	Capital adequacy ratio is a measure of the amount of a bank's core capital expressed as a percentage of its risk-weighted asset.
Log(Total assets)	The natural logarithm of the book value of assets.
ROA	The ratio of earnings before interest, depreciation, and taxes (EBITDA) to total assets.
Default event	Dummy variable that identifies lead arranger who has lent to a borrower that has experienced payment default, bankruptcy or distressed restructuring. Default data has been obtained from Leveraged Commentary & Data portal by Standard & Poor's.
Restructuring	Dummy variable that identifies lead arranger who has lent to a borrower that has experienced a distressed restructuring or filed for bankruptcy.
Default	Dummy variable that identifies lead arranger who has lent to a borrower that has a missed payment of interest and/or principal.
Country default	Dummy variable that identifies lead arranger who has lent to a borrower that has experienced a *Default event*. The dummy variable takes the value one if the borrower experiencing the default has the same domicile as the new borrower.
Market distance	Variable measuring the lender-borrower distance. The variable takes value one if the lender and borrower have the same domicile, value two if they are domiciled in neighbouring countries, value three if they are domiciled in Europe but not neighbours and four if the lender is domiciled outside Europe.

Log(Distance in kms)	Logarithm of the geographical distance between the capitals of lender's and borrower's respective domiciles.
Dominant lead	Dummy variable identifying those lead arrangers whose number of loan syndicated is above country's average in a specific year.
Non-dominant lead	Dummy variable identifying those lead arrangers whose number of loan syndicated is below country's average in a specific year.
Log(Lead size)	Logarithm of the average annual amount syndicated by the lead arranger over the past 2 years.
Log(Loans by lead)	Logarithm of the number of deals syndicated by lead arranger the previous year.

Loan characteristics:

Lead allocation:	The percentage of the loan financed by the lead arranger.
Number of participants	The number of participants in a syndicate.
Number of MLAs	The number of mandated lead arrangers in a syndicate.
Log(Loan size)	The natural logarithm of the total size of the loan in $ million.
Acquisition financing - dummy	Dummy variable that identify if the main purpose of the loan is to finance a takeover, LBO or a merger.
Refinancing –dummy	Dummy variable that identify if the main purpose of the loan is to refinancing.
Working capital -dummy	Dummy variable that identify if the main purpose of the loan is to finance working capital.

Borrower characteristics:

Log(Total assets)	The natural logarithm of the book value of assets.
EV to book value	The ratio of enterprise value to book value.
Debt to assets	The ratio of interest bearing debt to total assets.
ROA	The ratio of earnings before interest, depreciation, and taxes (EBITDA) to total assets.

Appendix 2 – Percentage of the loan retained by lead arranger

This table reports the results of the regression investigating whether default events have impact on the percentage of loan retained by the lead arranger. In all columns, I estimate the regression of the form:

$$Lead\ allocation = \beta_0 + \beta_1 \times Defaul\ event_{\ j,t-1} + \beta_2 \times X_i + \beta_3 \times X_l + \beta_4 \times X_j + \mu_t + \mu_i + \mu_j$$

The dependent variable in column (1) is *Default event, Restructuring* in column (2) and *Default* in column (3). The regressions in columns (1) – (3) are controlled for borrower fixed effects and the regressions in column (4) – (6) for lender fixed effects. I control for year fixed effects in all specifications. Standard errors are robust in all specifications and clustered at the borrower or lead arranger level.

	Lead allocation (%)		
	(1)	(2)	(3)
Default event $_{t-1}$	-1.02 **		
	(-2.19)		
Restructuring $_{t-1}$		-1.32 ***	
		(-2.56)	
Default $_{t-1}$			-0.79 *
			(-1.76)
Log(Loan amount)	-0.01	-0.02	0.021
	(-0.03)	(-0.04)	(0.02)
Years to maturity	1.03 ***	1.01 ***	1.03 ***
	(2.71)	(2.68)	(2.71)
Number of MLAs	-0.42 ***	-0.42 ***	-0.43 ***
	(-2.73)	(-2.71)	(-2.71)
Number of participants	-0.44 ***	-0.43 ***	-0.43 ***
	(-3.74)	(-3.74)	(-3.73)
Acquisition Financing -dummy	1.32	1.24	1.25
	(0.52)	(0.50)	(0.49)
Refinancing -dummy	-4.06 ***	-4.04 ***	-4.09 ***
	(-2.57)	(-2.57)	(-2.57)
Working Capital -dummy	-3.99 **	-3.94 **	-3.98 **
	(-2.07)	(-2.07)	(-2.05)
Syndicate	-72.26 ***	-72.55 ***	-72.19 ***
	(-14.47)	(-14.68)	(-14.18)
Log(Total assets, borrower) $_{t-1}$	-1.79	-1.80	-1.79
	(-0.73)	(-0.74)	(-0.73)
EV to Book Value, borrower $_{t-1}$	0.39 *	0.38 *	0.39 *
	(1.90)	(1.89)	(1.90)
Debt to Assets, borrower $_{t-1}$	-28.07 ***	-28.13 ***	-28.01 ***
	(-2.47)	(-2.50)	(-2.46)
Log(Lead size) $_{t-1}$	0.23	0.21	0.24
	(1.18)	(1.10)	(1.27)
Tier 1 Capital Ratio, lead $_{t-1}$	0.01	-0.05	-0.01
	(0.06)	(-0.21)	(0.05)
Capital adequacy ratio, lead $_{t-1}$	0.06	0.07	0.02
	(0.32)	(0.38)	(0.10)
ROA, lead $_{t-1}$	0.28	0.34	0.28
	(0.29)	(0.36)	(0.29)
Log(Total assets, lead) $_{t-1}$	-3.34 *	-3.55 *	-3.29 *
	(-1.80)	(-1.86)	(-1.75)
Obs.	2480	2480	2480
R^2	0.65	0.65	0.65
Specification	OLS	OLS	OLS
Borrower, Lender and Year Fixed Effects	Yes	Yes	Yes

Robust t-statistics in parentheses. *** p<0.01, ** p<0.05, * p<0.1