Essays on Global Corporate Banking

Mohammed Saharti

Doctor of Philosophy

Aston University

January 2023

Thesis Summary

Syndicated loans are an important source of external finance for a firm's financing. In 2019, global syndicated loans volume was about 41% of the total funds raised from capital markets, the second-highest source of external finance after bonds. Over the first nine months of 2021, $4 trillion was disbursed through syndicated lending.[1] Given importance of syndicated loans, we take a holistic approach and start this thesis with a citation-based comprehensive systematic literature review (SLR) of the syndicated loan market. Therefore, in this this we fill the knowledge gap by first surveying a comprehensive SLR. This helps us in highlighting some areas that need to be explored. Second we study the effect of bank mergers and acquisitions (M&As) on borrowers syndicate structure and the testing of bank–firm relationships. Finally, we explore the impact of environmental, social, and governance (ESG) factors on the cost of capital for firms and the structure of syndicate loans.

Chapter 2 aims to identify and recognize the knowledge-producing articles, journals, and authors in the syndicated loan market by conducting a citation-based comprehensive SLR. Using a comprehensive list of keywords searched in the Scopus database, we analyse the citations of 374 articles. Since the global financial crisis beginning in 2008, it has become increasingly important to conduct research using syndicated loan data. Research in this area is likely to have been sparked by the financial crisis. According to our analysis, the *Journal of Financial Economics* is the leading

[1] See "Global Syndicated Loans Review" by Refinitiv, available at: https://thesource.refinitiv.com/TheSource/getfile/download/23ad5404-4791-4482-b9fa-859d53ef176a

journal in terms of citations, while the *Journal of Banking and Finance* is the leading journal in terms of publication count.

Regarding the number of citations, Victoria Ivashina is the leading author, while Anthony Saunders is the leading author in terms of the number of publications. In addition, we analyze the content of the top 100 most-cited papers and identify data characteristics, major themes, estimation techniques, and empirical approaches. In our SLR, we provide a macro view of research on syndicated loans. This chapter presents a detailed analysis of the top 100 research articles and identifies themes and the methodological approaches used in the research. Additionally, the paper discusses information, country of origin, and the data used. Finally, for future research, we provide an overview of unexplored topics.

Chapter 3 presents an empirical study that examines the impact of banking M&As on on the structure of the loan syndicate in the presence of information asymmetry between lenders and borrowers. In recent years, banks have dramatically expanded their business by merging with and acquiring other banks. Due to scope economies, the increased bargaining power of merged banks may benefit corporations that borrow from banks. Despite this, these corporations may suffer adverse effects if the merger increases the information asymmetry of the merged banks. The purpose of this chapter is to contribute to the regulatory debate regarding the expansion of bank powers by illustrating the impact that bank mergers have had on syndicate structure. An empirical analysis is conducted based on the preferences of borrowers following the merger to determine whether M&As benefit firms.

In situations after M&As where intense investigation and monitoring of the borrowers are required, the lead arranger will increase its exposure to risk with the loan to ensure diligence in

investigation and monitoring. When borrowers are opaque, lead arrangers retain a greater portion of the loan and form a more concentrated syndicate.

Chapter 4 examines how ESG factors affect firms' cost of capital and syndicate structure. As a result of our regression analysis, we find that lenders provide preferential treatment to companies that score highly for ESG factors and charge significantly lower interest rates on these loans. We find that companies with prior relationships with lenders receive further premiums, such as reduced interest rates. In our analysis, we control for firm risk and other firm-level characteristics to demonstrate that the lower interest rates are due not to the good quality borrowers but to their ESG scores. Our results conclude that firms that are environmentally responsible, socially responsible, and adhere to good corporate governance practices are charged lower interest rates.

According to our study, the ESG scores of a borrower significantly affect its borrowing costs. If a borrower has a higher ESG score, lenders will lend to them at a more affordable rate since they value their stakeholder focus. Companies with a high ESG score are given preferential treatment and are charged significantly lower interest rates. If the borrower's environmental score is higher, the lender charges the borrower the lowest interest rate. By contrast, if the borrower's corporate governance score is higher, the lender charges the highest interest rate. The cost of capital is further reduced if the borrower has a prior relationship with the lender. A lender may charge even lower interest rates if the borrower has a high environmental score and a previous relationship with that lender. The same applies to borrowers whose corporate governance scores are higher. Despite this, when it comes to the social score, there is no further reduction in interest rates if the borrower already has a relationship with the lender. Based on these results, we can conclude that lenders charge lower interest rates not because borrowers are at a lower risk of

default. We obtain these results after controlling for firm-level characteristics. Our results demonstrate that lenders consider sustainability important and that this can motivate borrowers to contribute to the transition to net zero. Taking care of the environment, being socially responsible, and adhering to corporate governance rules pay off, and firms are charged lower interest rates.

Acknowledgments

Thank you, Allah, for everything you've given me and all the hidden blessings I could not thank you for. May Allah let this knowledge benefits people from it.

In 2020 when the pandemic of Covid-19 hit the world, everyone started to experience fear and loneliness; going through this in the first year of my Ph.D. journey and being far away from my family was challenging, but someone wise once said It is impossible to appreciate the light without knowing the darkness going through the stress and deadlines in the pandemic has made me stronger and appreciate the beauty of the light—going through the process of the Ph.D. journey during these challenging times has taught me a lot.

Dad, Thank you for supporting me in achieving my dreams; I don't think this would be possible without your unlimited support; you taught me always to do my best at whatever I do and never give up on my dreams. No matter how far I go, you will always be the man I will look up to. I hope I've made you proud.

Mom, I will never be able to thank you enough for your guidance and support. I'm grateful for everything you have done for me, and I can't thank you enough for everything you have done for me. You have taught me to follow and reach my dream and not give up. I hope I've made you proud.

To my wife, Thank you for coming into my life and supporting me through my Ph.D. journey. I feel lucky that I've you as my life partner.

My sincere gratitude to Dr. Sajid Chaudhry for all of your help throughout my academic journey. Your support and encouragement have been invaluable to me

Table of Contents

Index of Tables

Illustration Index

List of Appendices

Chapter1: Introduction

1.1 Background and Context

1.1.1 Syndicated Loans and How They Work

Syndication refers to the transfer of something for control or management by a group of individuals or organizations. A syndicated loan is a loan to a single borrower that is loaned by a group of financial institutions. Simons (1993) explains that financial institutions work together to provide funds to a single borrower; the bank that manages the syndicate is called the lead bank. She outlines how as managers of the syndicated loan, the lead bank is responsible for recruiting other banks, ensuring that documents are prepared, and managing all aspects of negotiation with the borrower. Multiple-bank lending is the most prevalent form of bank and credit relationships in nearly all countries (Kosenko and Michelson, 2022).

1.1.2 History of Syndicated Loans

Syndicated loans have been around for centuries, though they became particularly prominent in the 1990s. In 1996, syndicated loans were primarily used for general corporate purposes (49.5% of all syndicated loans) and for debt repayment, which made up 33.5% of all syndicated loans (Dennis & Milleneaux, 1999). This remained true up until the financial crisis of 2008 when the models of syndicated loan lending collapsed, and banks sharply curbed their supply of credit (Chui et al., 2010). Chui et al. indicate that syndicated lending decreased by 67% in the second half of 2008. Following 2008, many lending agencies changed their financing terms to

incentivize ethical borrowing, discussed in more detail below, and made their credit terms stricter to avoid repeating the conditions of lending pre-2008 (Kim et al., 2014). While syndicated loans have gained popularity due to globalization, the 2008 crisis led to significant restructuring of syndicated loan portfolios. Giannetti and Laeven (2012) outline the "flight home effect" in one of their papers; this refers to lenders rebalancing their loan portfolios in favor of domestic borrowers. They show that the collapse of the global market for syndicated loans during financial crises can be explained in part by the flight home effect. Their paper states that bias toward domestic lending has been seen to increase by approximately 20% if the bank's home country has experienced a banking or financial crisis. This highlights some of the ways syndicated loans have changed over the past few decades, particularly in countries that have had fluctuating financial circumstances.

1.1.3 Factors That Lead to Syndicating a Loan

Lenders have a choice as to whether or not they wish to collaborate with other banks to syndicate a loan. While this is one of the most prevalent forms of bank-credit relationships globally, there are a variety of factors that influence the choice to syndicate a loan (Kosenko and Michelson, 2022). Many loans are based on relationships between lenders and borrowers. However, this is less true for a syndicated loan (Dennis & Millenaeux, 1999). Chui et al. (2010) examine the competitive nature of syndicated loan markets. They find that this type of loan is highly competitive and is typically constrained by bank credit availability, as opposed to the relationships that characterize many other types of lending. In addition, they highlight that while the primary lender may have a relationship with the borrower, many other participating lenders supporting syndicated loans accept the loan risk to generate interest and profit.

Due to regulation, banks have certain limits to the amount of credit they can extend to a single borrower. A bank may choose to syndicate a loan to avoid "overlining" or extending past its regulated limit (Dennis and Milleneaux, 1999). Since this limit is in relation to a bank's total equity, it is an opportunity for smaller financial institutions to extend credit, which can help them create profit through these loans (Simons, 1993). Additionally, banks may choose to syndicate loans in an effort to diversify their loan portfolio (Simons, 1993). This diversity can help ensure that banks are more prepared to weather adverse economic conditions since all of their assets are not connected to the same lender or industry. Banks are also able to increase competition for loans through loan syndication; this is because syndicated loans come with an inherent level of transparency (Chui et al., 2010). Researchers suggest that, in general, banks have published detailed information on completed deals to continue to promote this transparency and competition.

1.1.4 M&As and syndicated loan market

There is a long and complex history of bank mergers and acquisitions. It has been shared for banks to merge with other banks in an effort to make more money. In the last few years, mergers and acquisitions (M&A) have become increasingly common as banks attempt to remain competitive. Large and small banks have been involved in countless transactions since then. Large banks are increasingly merging with each other, but smaller banks are also combining with each other. The banking industry has been battling to merge in order to become larger and more powerful.

Moreover, banks are looking for ways to increase their profitability, creating a flurry of activity in the banking industry. Some of the most prominent mergers and acquisitions have recently been completed as a result of this. However, some observers have expressed concern over

this trend since the resulting megabanks will become too big and too powerful to dictate business terms and exert excessive influence over consumers and businesses.

Foreign banks are major players in the syndicated loan market; relationships tend to play a smaller role in the development of syndicated loans, which can partially explain why foreign involvement is so high in these loan markets (Haselmann and Wachtel, 2011). Despite the flight home effect that was outlined by Giannetti and Laeven (2012) other research indicates that foreign banks can have a stabilizing effect in the syndicated loan market (Demirguc-Kunt et al., 2017). In developing countries, syndicated loans are rapidly expanding and becoming more prominent. The factors that can impact the syndication of a loan in an emerging market include the country's legal institutions, regulatory requirements, and general financial development tactics (Godlewski and Weill, 2008).

1.1.5 Lead arranger

Borrowing firms can hire multiple lead arrangers; each is assigned a different function. François and Missonier-Piera (2007) suggested that multiple lead arrangers result from competitive advantages in various duties. In the agency section of the loan agreement, conditions for the removal of the lead arranging bank are outlined. However, lead managers generally hold a greater share of information-problematic loans in their portfolios, while lead arrangers are usually protected from liability, except when gross negligence or willful misconduct has occurred. Borrowers default on loans when they miss a timely payment or violate financial or non-financial covenants. Due to the FRB's Shared National Credit (SNC) review, anecdotal evidence suggests that participating banks are concerned primarily about problematic loans. A review conducted by

SNC found that examiners can downgrade a loan below the bank's own rating and force the lender to either boost reserves or write off the loan (Davenport, 2003).

1.1.6 Loan Pricing

The loan sales market parallels the syndicated loan market with a few key distinctions, including the fact that the syndicated loan requires distinct contracting behavior. According to Gorton and Pennacchi (1995), the existing contract between the firm and the original lender remains unaltered after the loan's sale. The new contract of secondary participation provides cash flow to the loan buyer, and the original contract terms can be changed in the new loan agreement. The authors also found that moral hazard risks are less severe in a syndicated loan setting than in the loan sales market, as participating lenders are mutually tied to one contract, and the lead arranger holds part of the loan. From a theoretical perspective, Behr and Lee (2006) argue that banks may sell loans to both sophisticated investors and uninformed depositors. Consequently, banks will always be motivated to sell off some of their loans in equilibrium.

Dahiya, Puri, and Saunders (2003) demonstrated that the loan sales market has become focused on distressed debt, as more than half of the sample of firms that sold loans had filed for bankruptcy within three years of selling one of their loans. In contrast, the syndicated loan market focuses on financially stable firms. According to Ivashina (2005), loan prices are defined through a bargaining process between the lead bank and potential participants.

1.1.7 Environmental, Social, and Governance Performance

Since the economic crisis of 2008, banks have had to make changes to their corporate strategy to ensure that lending remains profitable with fewer risks. One way that they have managed these changes is through a focus on environmental, social, and governance performance. A broad range of stakeholders has buy-in to the success of our financial institutions, including policymakers, non-governmental organizations, and the media (Ferrero-Ferrero et al., 2015). This stakeholder engagement is relevant as financial markets have impacts across the board regardless of whether or not they are investors or borrowers. In the years following 2008, Kim et al. (2008) highlight the ways that financial institutions have begun to explore new forms of corporate financial responsibility in response to this clear stakeholder engagement. They illustrate that lender and borrower relationships are strengthened when they have aligned values. This extends beyond lender and borrower relationships; multiple empirical studies illustrate the positive effects of positive environmental and social impacts on economic performance (Ferrero-Ferrero et al., 2016).

Many businesses, including banks, are incorporating principles of ethics, sustainability, and protecting the environment into their business practices. Ethics has played a particular role in business as more and more companies have come to believe that it increases shareholder value. In the syndicated loan market, borrowers that have more ethical standards are more likely to avoid opportunistic behavior and are more likely to fully repay their loans (Kim et al., 2014). Syndicated loan data has provided evidence to illustrate that these congruent values between lender and borrower have positive effects on lender's performance (Kim et al., 2014). This emerging body of research connects to many tangible aspects of business ethics and is a highlighted topic in new research for environmental, social, and governance topics.

There is a long history between environmental, social, and governance endeavors and promising business for banks. For example, a bank may provide free financial advice for educational institutions or non-profits or bring employees together for a volunteer or service event on occasion. This philanthropy is because financial institutions want to be seen as positive economic contributors in their communities (Huang, 2019). Additionally, there has been a growing interest in environmental sustainability across all sectors of industry, including banking (Yadav and Pathak, 2014). This interest exists in developed and developing nations, highlighting the global importance of environmental strategy. Yadav and Pathak highlight that this initiative, also called "green banking," is beneficial for financial institutions in a variety of ways; along with the environmental benefits, the green banking companies have also exhibited increased operating profits, cost savings, and increased competitiveness in the market.

1.2 Statement of Purpose

The purpose of this study is to examine various syndicate structural arrangements regarding information asymmetry and loan pricing within the banking sector through the use of syndication loans. It is intended to determine whether or not information asymmetry affects the relationship between lenders and borrowers and the structure of syndicates.

1.3 Research Objectives

Chapter 3 identifies the areas that have been covered by syndication loan studies and those that remain largely unexplored. A systematic literature review is an essential component of academic research. To advance knowledge, it is fundamentally necessary to build on existing

knowledge. It is essential to know where the frontier of knowledge lies if we want to push it forward. We can gain a deeper understanding of existing work by reviewing relevant literature and identifying gaps that must be filled. We can test a hypothesis or develop new theories by summarizing, analyzing, and synthesizing related literature. After studying and analyzing the literature review, this study is designed to provide more insight into the impact of Bank M&As and explore the impact of environmental, social, and corporate governance (ESG) factors on firms' cost of capital on syndicate structure, information asymmetry, and the lender and borrower relationship.

1.4 Thesis Layout

A general overview of syndication loans studies, bank mergers and acquisition, and environmental, social, and governance performance are provided in this thesis. In our analysis of the syndicated loan market, we conduct a citation-based comprehensive systematic literature review (SLR); after studying and highlighting the topics and areas covered, we identified studies that need more investigation. This study aims to fill the knowledge gap related to loan syndication by studying two crucial aspects. First, a study in Chapter 3 examines the impact of banking mergers and acquisitions on syndicated loan borrowers, specifically the effects of information asymmetry between lenders and borrowers. Over the past few years, banks have dramatically expanded their business through mergers and acquisitions. As a result of scope economies, merged banks may be able to offer corporations greater bargaining power. An analysis of the effect of ESG (environment, social, and corporate governance) factors on firms' cost of capital is presented in Chapter 4. According to our regression analysis, lenders provide preferential treatment to companies with high scores for environmental, social, and corporate governance factors, and they charge

significantly lower interest rates. In addition, further discounts on interest rates are provided to firms with prior relationships with lenders.

Chapter 2: Syndicated Loans: Mapping the Trends, Sources, and Intellectual Evolution

2.1 Introduction

Syndicated loans are one of the most important sources of external finance for firms to raise capital from global capital markets. In 2019, global syndicated loans volume was about 41% of the total funds raised from capital markets, the second-highest source of external finance after bonds. In comparison with bonds and equity markets, the value of syndicated loans globally amounted to 3.8 trillion USD versus 4.7 trillion USD of bonds and only 691 billion USD of equity in 2019. This value has grown from a mere 85 billion USD to 3.8 trillion USD in 2019. This growth was briefly interrupted due to the global financial crisis of 2007-2009 when lending dropped by about 40% (Ivashina & Scharftein, 2010); however, it started growing again until today. Most of the syndicated loans are provided by the United States (US) banks with approximately 54% of the global volume for syndicate loan as of 2019 worth 2.4 trillion USD while Europe and the Middle East and Africa (EMEA) control nearly 23% of the worldwide volume worth nearly 1 trillion USD. Before the global financial crisis of 2007-2009, syndicated loans accounted for more than 50% of newly raised external funds for non-financial US firms exceeding debt and equity underwriting (Weidner, 2000). Notwithstanding, with the growth of the syndicated loans volume, the academic literature on syndicated loan only started to grow after the global financial crisis (GFC) in 2007-09. This might be because the GFC of 2007-09 was primarily a credit market crisis which ignited the interest of researchers to explore the syndicated loan market to identify causes of the global financial crisis. Despite the growing importance of syndicated loans for the US and global corporations and rapidly growing literature in this area of research, there is no study to date that reviews the literature on syndicated loans.

To bridge this research gap, we use a systematic literature review (SLR) of studies on the syndicated loan market. The SLR involves well-defined research questions, search process, data collection and data analysis (Kitchenham et al., 2009). On the other hand, in the traditional literature survey (TLR), researchers need to define, formulate, analyse, summarize, and explain ideas from the papers published by other researchers (Wakefield, 2014). As such, the TLS method generally follows a subjective approach without giving paper selection criteria and provides a review of limited number of studies. Therefore, SLR provides a more comprehensive literature survey and is preferred over the TLS. This paper also provides a content analysis of the top 100 most cited papers.

Our study contributes to the literature in the following ways. First, despite the growing importance of syndicated loans and as one of the top sources of funds for corporate firms, no earlier SLR has been done on this topic. To the best of our knowledge, this is the first SLR of studies on the syndicated loan market. Second, in this study, we include all the available articles that have used syndicated loans in their studies by using a comprehensive list of keyword searches. Third, we identify the leading journals and top authors who have published research using syndicated loan market data. Fourth, in addition to the citation analysis, we also provide a comprehensive content analysis of the top 100 papers (ranked based on average citations per year). Citation count is a useful indicator for comparing the impact and contribution of a research article, whereas the content analysis provides a comprehensive and detailed overview of the extant literature for future researchers and helps them identify the areas for future research. The future researcher can also seek guidance on important themes, estimation techniques, data period, dependent and independent variables, and empirical methodologies used in the syndicated loan market from this study. Finally, this paper may also be useful for industry professionals who can learn from

academic discussions to improve the procedures and processes in the syndicate loan market. The major findings of the paper can be summarized as follows.

Our citation analysis reveals that the *Journal of Financial Economics* is the leading journal in terms of the number of citations and the *Journal of Banking and Finance* is the leading journal in terms of the number of publications. Victoria Ivashina is identified as the most cited author based on the dominance factor and total citations. However, Anthony Saunders is the most productive author in terms of the number of publications. Saunders also leads with respect to the h-index whereas Ivashina leads in terms of the m-index. The most cited paper is "Bank Lending during the Financial Crisis of 2008" by Ivashina and Scharfstein (2010). Our citation analysis also reveals that the number of publications in this research area has grown substantially after the global financial crisis of 2007-2009. In the majority of these studies, the corresponding author's country is the United States. This may be due to the reason that the US is the biggest economy in the world and possesses the largest banking and financial sector. Furthermore, since the US was the epicentre of the GFC, it has naturally received the most attention from researchers conducting research on syndicate loans. This is also evident by the fact that most of the authors doing such research are US-based. From the word cloud and the conceptual structures, information asymmetry, loan pricing and syndicate structure emerge as the main keywords and conceptual structures in the syndicate loan studies. From the content analysis of the top 100 papers, we derive the six most essential themes on syndicated loans from the content. These themes are loan pricing, syndicate structure, determinants of covenant structure, credit availability and both loan pricing and syndicate structure together. We note that 97% of the studies are empirical, 2% are theoretical, and 1% are both empirical and theoretical.

The rest of the paper is organized as follows. Section 2 offers a detailed description of the methodology and data collection. Section 3 presents a detailed citation analysis. The content

analysis of the top 100 papers is presented in Section 4, and Section 5 concludes and discusses the results in terms of a broader research perspective.

2.2 Article Selection Process

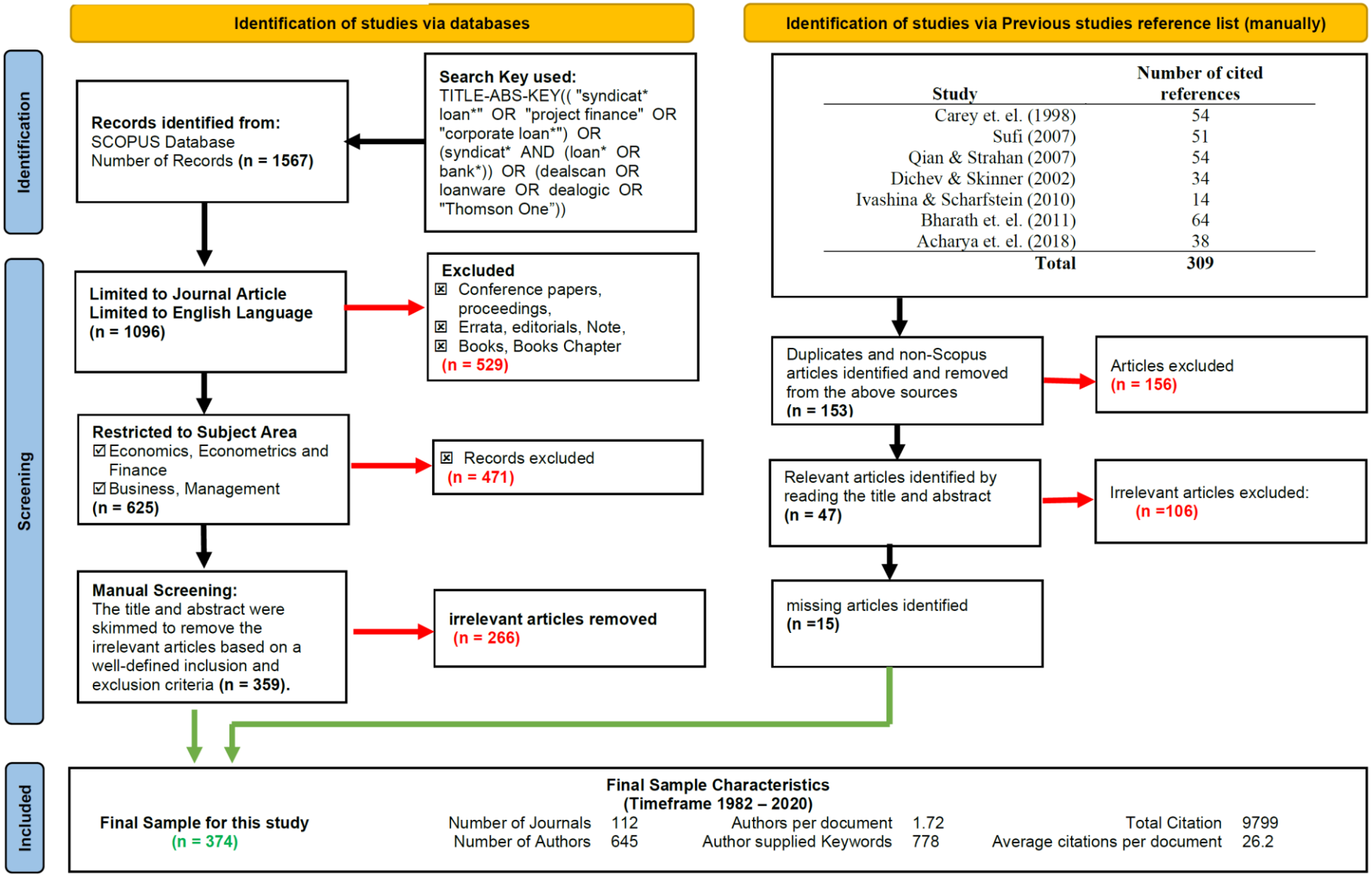
A very comprehensive article search has been carried out to find the published articles on syndicate loans. The Scopus database is used to identify the relevant articles. Important words and phrases are searched in the title, abstract and keywords of the database. The query started by searching "*syndicate loan,"* "*project finance"* and *"corporate loan"* in combination with *loan* OR *bank*. Moreover, the name of the syndicate loan data sources such as DEALSCAN, LOANWARE, DEALLOGIC is added in the search to find more articles that have not directly mentioned the keywords from our initial search. All the above-mentioned queries resulted in 1567 documents in the SCOPUS[2].

The documents at this stage were then restricted to journal articles for quality purposes. This excludes conference papers, proceedings, errata, editorials, notes, books, and book chapters. In the next step, the articles were restricted to two subject areas according to SCOPUS subject classification, i.e., 1. Business, Management, accounting and 2. Economics, Econometrics and Finance. Moreover, articles other than in the English language were removed. The end date of the searched articles was the end date for the search is 2020 corresponding to the time when this research was being conducted. After applying all these filters, the number of articles at this stage reduced to 625.

[2] Search key in SCOPUS database TITLE-ABS-KEY (("syndicat* loan*" OR "project finance" OR "corporate loan*") OR (syndicat* AND (loan* OR bank*)) OR (dealscan OR loanware OR dealogic OR "Thomson One")

The title and abstract of these journal articles were then manually checked that resulted in the removal of 266 irrelevant articles leaving 359 relevant articles. To make sure that no relevant article is missing from our sample, the reference list of the following articles, Carey et al. (1998), Dichev and Skinner (2002), Qian and Strahan (2007), Sufi (2007), Ivashina and Scharfstein (2010), Bharath et al. (2011) and Acharya et al. (2018)), was compared with 359 articles. In this process, an additional 15 articles were added in the sample. The final sample consists of 374 articles published in 112 different journals during the period from 1982 to 2020; 647 different authors published these articles with an average of 1.73 authors per document. For content analysis, the sample is further restricted to the top 100 articles, identified based on average citations per year.

Figure 1: Article Selection Flow Chart (PRISMA)



2.3 Citation Analysis

In this section, We present the citation analysis starting with publication and citation trends. It further presents the analysis of the most influential journals and authors. Finally, themes of studies have been identified using co-word and co-citations network analysis.

2.3.1 Publication and Citation Trends

Compared to the general banking literature that can be traced back as early as 1880 (Edgeworth, 1888)[3], the literature on syndicated lending is relatively new. We find that the first paper published on syndicated lending is almost a century later, in 1982. One reason for the late development of research on the syndicated loan market is that the syndicated loans are advanced to larger corporations and, perhaps, until the 1980s, there were not many large corporations that needed a large amount of loan that one bank could not offer. Furthermore, the regulations around diversification that one bank should not lend a large amount of money to one company came with Basel I in 1988. Although the first paper published on the syndicated loan market was in 1982, the syndicated loan literature has started showing a sizeable growth, particularly after the global financial crisis in 2007-09, as shown in Figure 2. Before the financial crisis, the average number of annually published papers was no more than three in contrast to 22 academic research papers after the global financial crisis. This might be because the global financial crisis of 2007-09 was primarily a credit market crisis which ignited the interest of researchers to explore the syndicated loan market to identify causes of the crisis. Another issue is the availability of data. Most of the

[3] Although the first paper on the mathematical theory of banking was published in 1888, the research on banking started picking from the 1970s. Another earlier paper on the theory of banking is by Klein (1971).

existing databases that collect syndicated loan market data go as far as 1987 but the reliable data only started to be available in the early 1990s. Since syndicated loan study requires years of data for statistical tests, it seems plausible that researchers hesitated to conduct any research until a couple of decades of data were available.

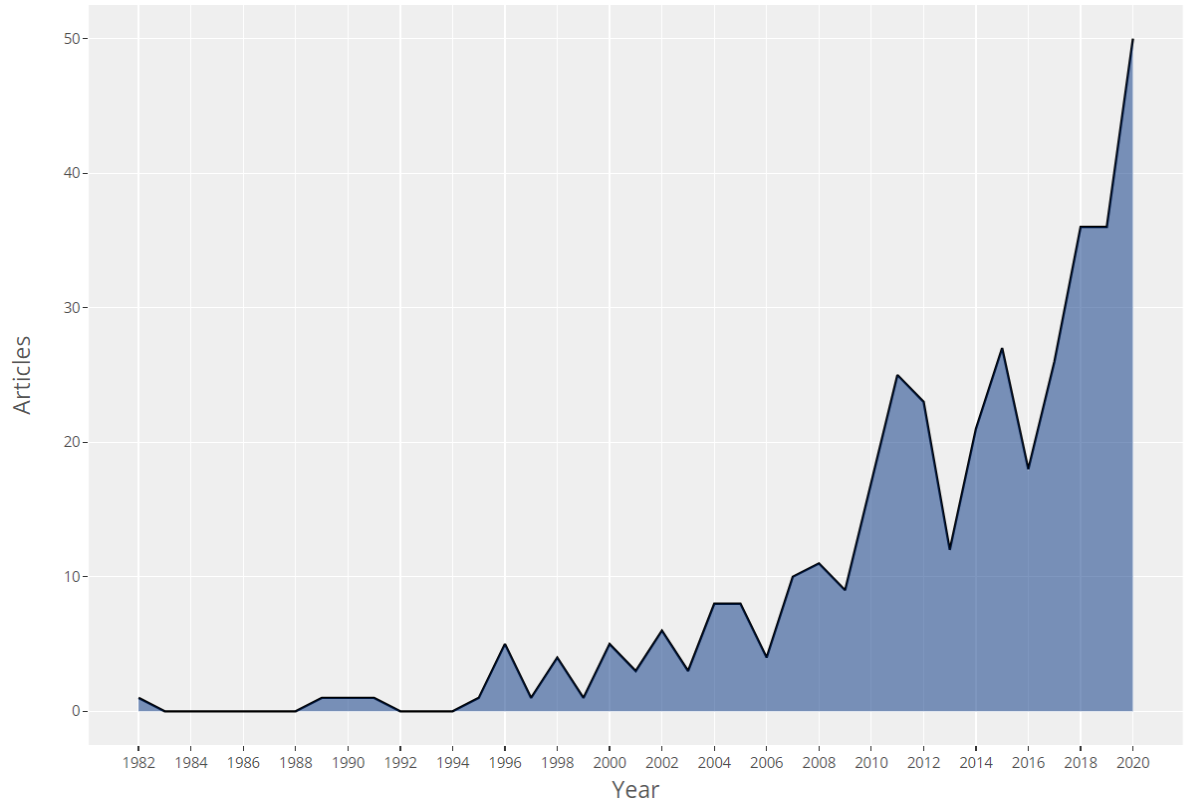


Figure 2. Yearly Scientific Production in the Syndicated Loan Market Field

Figure 3 shows the average article citations per year. The first paper on syndicated loans, entitled "Concentration Among International Banks: A Note," was published in 1982 in the *Journal of Banking and Finance* by Tschoegl. Using the data for the top Euro loan syndicators, the author presented evidence that international banking concentration decreased over the period 1969-1979 and suggested that it will continue to decline. One of the highest spikes in the graph is seen in 2002 and is attributed to the paper entitled "Large-sample Evidence: On the Debt Covenant

Hypothesis" published in the *Journal of Accounting Research* (Dichev & Skinner, 2002). This paper provided evidence on the debt covenant hypothesis. The authors also provided broad evidence on the economic role of debt covenants. They find that debt covenants are set approximately tight in private lending agreements and that debt covenant violations are common where around 30% of loans have at least one violation and that, for most firms, violations are not connected to financial distress (Dichev & Skinner, 2002). However, the highest peak in annual average article citations for syndication loan literature is observed in 2007. This can partly be attributed to a highly cited paper entitled "Information Asymmetry and Financing Arrangements: Evidence from Syndicated Loans," published in the *Journal of Finance* (Sufi, 2007). This article explained how information asymmetry between lenders and borrowers influences syndicate structure and why the lead bank always holds a larger share of the loan. This paper also explored why lead arrangers choose participant lenders closer to the borrower, both in terms of geographic proximity and previous lending relationships. The author finds evidence that information asymmetry affects the syndicate structure, and supports the idea that the institution assigned to the monitoring duties also holds a large portion of the loan when the borrower is informationally opaque. One of the reasons that this article received more citations could be that it empirically tests prominent models of agency and moral hazard developed by Holmstrom (1979) and Holmstrom and Tirole (1997) that were never tested before in this setting. This is because of the fact that a syndicated loan has a unique three-pronged information asymmetry between the lead lender, the participant and the borrower.

There has also been an exponential growth in the citation of a paper entitled "Bank Lending During the Financial Crisis of 2008" published in the *Journal of Financial Economics* in 2010. This paper shows that the new loans fell during the peak period of the financial crisis and after the

failure of Lehman Brothers in September 2008. It examines whether these two stresses on bank liquidity led them to cut lending, and the findings indicate that bank cut their lending less if they had better access to deposit financing (Ivashina & Scharfstein, 2010). One plausible reason for this paper getting a high number of citations could be that it explains how banks behave during a financial crisis and what type of banks cut their lending. This issue is quite important to understand how to bring the economy back to recovery.

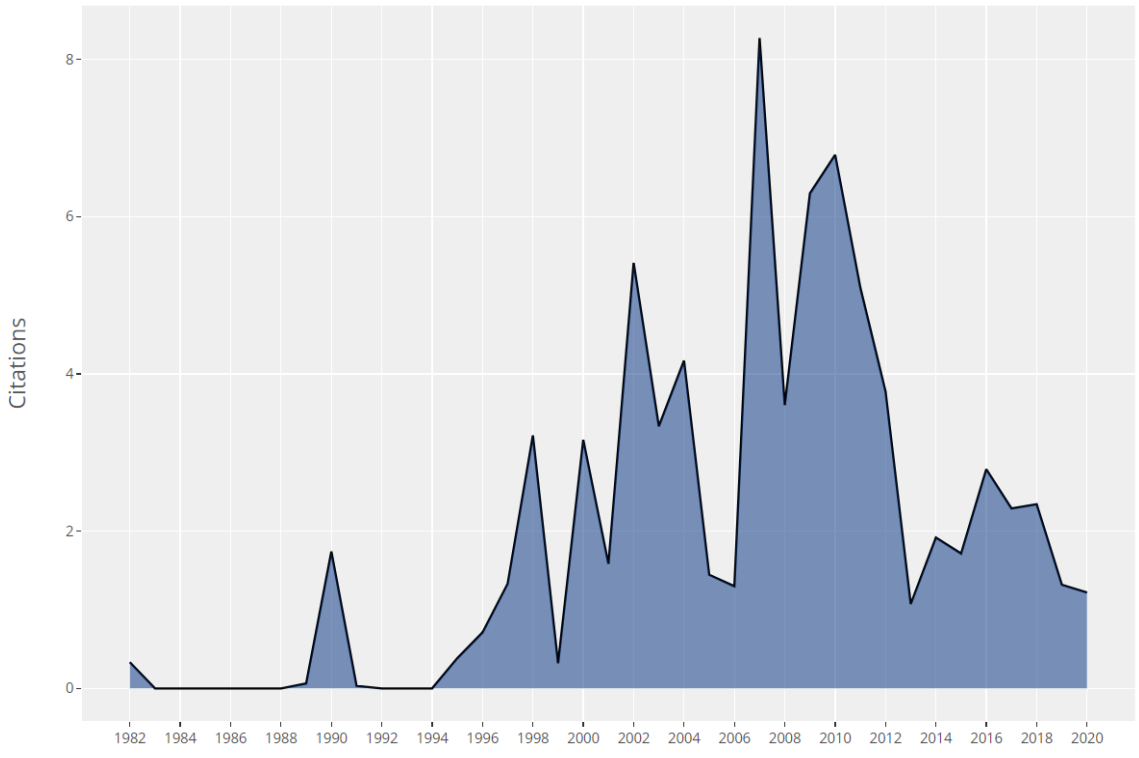


Figure 3. Annual Average Article Citations in the Syndication Loan

2.4 Most Influential Journals and Authors

Identifying these journals and authors provides insights into the key trends, debates, and advancements in this field. The top 20 journals are ranked based on three criteria: the number of publications on the field, the number of citations, and the h-index. The Journal of Banking and Finance has published the most articles on the topic, and the Journal of Financial Economics having the highest number of citations. The top five journals with the highest average citations per year are the Journal of Financial Economics, the Journal of Finance, the Review of Financial Studies, the Journal of Accounting Research, and the Journal of Financial Intermediation. The most productive authors are A. Saunders, C.J. Godlewski, I. Hasan, J. Santos, and V. Ivashina. V. Ivashina has the highest m-index, indicating that she obtained a high h-index in the shortest time compared to other authors. This section also provides information on the rankings of these journals and authors over time. We also look at the most influential journals that have published on syndicated loans. Table 1 presents the ranking of the top 20 journals based on the three criteria, i.e., number of publications on the topic, number of citations, and the h-index. In terms of the number of publications, the *Journal of Banking and Finance* has published the highest number of articles on the topic with 33 publications out of a total of 374 papers in our sample. The *Journal of Banking and Finance* is also identified as the journal that started publishing earliest on the topic of syndicated loans (i.e., 1982) For the highest citations on the topic in our sample, the *Journal of Financial Economics* ranks first with 2261citations. Based on the average citations per year (APY), the top five journals are the *Journal of Financial Economics*, *Journal of Finance*, *Review of Financial Studies*, *Journal of Accounting Research* and the *Journal of Financial Intermediation* with average citations per year of 9.1, 7.9, 6.2, 5.9, and 3.5, respectively. It can also be observed

that while the *Journal of Banking and Finance* is ranked as number 1 in terms of publication, it ranks 12th for APY.

Table 1. Top 20 Most Influential Journals in the Syndication Loan Field.

Journal Name	Publications		Citations		H-index		Publication start year
	#	Rank	Total	Rank	#	Rank	
Journal of Banking and Finance	39	1	656	5	15	2	1982
Journal of Financial Economics	22	2	2261	1	17	1	2004
Review of Financial Studies	19	3	1172	3	13	3	2007
Journal of Finance	12	4	1402	2	11	4	1996
Journal of Corporate Finance	12	5	83	17	5	10	2010
Journal of International Financial Markets, Institutions and Money	11	6	63	22	5	12	2001
Journal of Financial Intermediation	9	7	301	6	6	6	2000
Financial Management	9	8	204	10	6	7	2004
Journal of Financial Stability	9	9	90	16	6	8	2015
Journal of Accounting Research	8	10	713	4	7	5	2002
Journal of International Money and Finance	8	11	46	29	3	24	1989
Journal of Financial Services Research	7	14	60	23	6	9	2006
Journal of Business Finance and Accounting	7	13	69	20	5	11	2005
Journal of Financial and Quantitative Analysis	7	12	194	11	3	16	2003
Finance Research Letters	6	15	17	43	3	29	2005
Journal of Accounting and Economics	5	16	242	9	4	14	2008
Financial Review	5	17	68	21	3	20	2004
Review of Finance	5	18	59	24	3	21	2016
Review of Quantitative Finance and Accounting	5	19	27	37	3	27	2014

Bradford's law is used to divide literature on a specific topic into three zones. Table 2 presents the three zones based on Bradford's law. The first zone (Zone 1) represents the top journals frequently cited in the literature on a given topic, which is most likely to be of the highest interest to the researcher in that field. The second zone represents an average amount of citations, and the last zone includes the journals that are rarely cited and least important to the topic. As can be seen in Table 2, there are seven core journals in the first zone, and they have published 113 papers and received 59% of the total citations. The journals in zone one are the *Journal of Banking and Finance*, *Journal of Financial Economics*, *Review of Financial Studies*, *Journal of International Financial Markets*, *Journal of Finance*, *Journal of Corporate Finance*, and *Financial Management*.

Table 2. Core Journals According to Bradford's Law in the Syndication Loan Field

Zones	**Number of Journals**	**Number of Publications**	**Citation Share of each Zone**
Zone 1 (Core Zone)	7	124	60%
Zone 2	23	127	28%
Zone 3	82	123	12%
Grand Total	**112**	**374**	**100%**
List of Core Journals 1. Journal of Banking and Finance 2. Journal of Financial Economics 3. Review of Financial Studies 4. Journal of Finance 5. Journal of International Financial Markets, Institutions and Money 6. Journal of Corporate Finance 7. Financial Management			

Figure 4 shows the cumulative growth in the annual publication of syndicated loan papers in the top ten journals. The top five journals therein are the *Journal of Banking and Finance*, *Journal of Corporate Finance*, *Journal of Financial Stability*, *Review of Financial*

Studies and *Journal of Financial intermediation*. Since the beginning of research on syndicated loans, the *Journal of Banking and Finance* has been the top outlet for researchers to publish their research except from 2008 to 2012 when the *Journal of Financial Economics* took the lead. However, from mid-2012, there was a sharp fall in the growth of the *Journal of Financial Economics* and, at the end of 2020, it stands at 8th place. In our opinion, this drop is because one of the top authors published for the journal stopped publishing after 2012. Ivashina has published five papers related to the syndication loan and got considerable recognition in the field. There has been a continuous growth in publications on the syndication loan with the *Journal of Banking and Finance* being in the lead since 2012. When the syndicated loan market was at the development stage in the 1990s, the *Journal of Banking and Finance* and the *Journal of Finance* were the top journals publishing research on syndicated loans. Due to this reason, from 1998 until 2003, the *Journal of Finance* was the second-best journal in terms of publishing syndicated loan market papers.

The *Journal of Corporate Finance* is placed second, and they have published ten papers from 2010 until 2019. It started publishing papers on the syndicated loan in 2010 and has seen a steep growth since then. From 2013 until 2017 it ranked fourth, while it has come in 2nd place since 2017. The *Journal of Financial Stability* is placed third while it started publishing in the area of syndicated loans in 2015 and has published eight papers. The *Journal of Financial Stability* has also seen a steep rise in the number of publications on syndicated loans; however, not as steep as in the case of the *Journal of Corporate Finance*. It is also interesting to note that the *Review of Financial Studies* was second in terms of publications on syndicated loans from 2014 until 2018, but it dropped to sixth place in 2020.

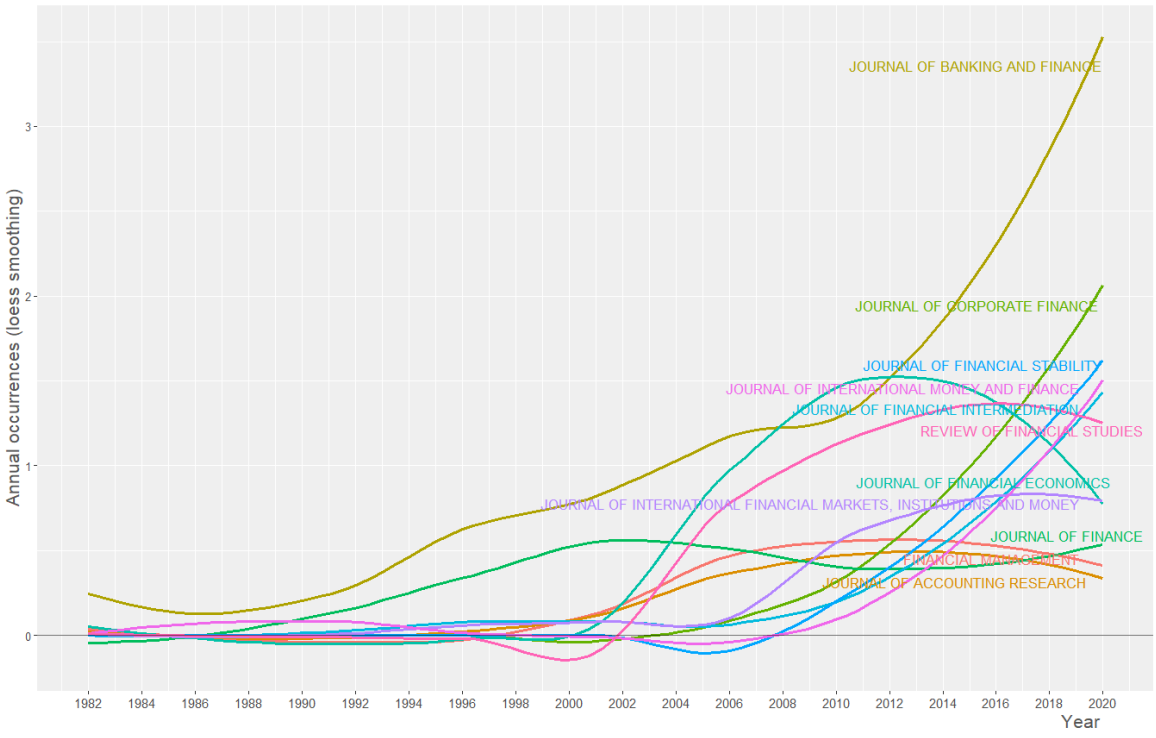


Figure 4. Cumulative Occurrence of Syndication Loan Publications in Major Journals

2.4.1 Most Influential Authors

Next, we look at the influential authors that have contributed to the literature related to the syndication loan market. Table 3 provides the 25 most influential researchers based on the number of their publications. Names of the top five most productive authors are A. Saunders, C.J. Godlewski, I. Hasan J. Santos and V. Ivashina. While comparing their overall h-index and their h-index in the syndicated loan market field, we see that both A. Saunders and I. Hasan have very high overall h-index of 74 and 71 and syndicated loan market h-index of 7 and 3, respectively. These two authors not only published in the syndicated loan market, but they are also prolific writers in other research areas. C.J. Godlewski and V. Ivashina have an overall h-index of 17 and 20 and syndicated loan market h-index of 4 and 7 show that they are not publishing greatly in other research areas. Table 3 also provides a number of citations for each author, and V. Ivashina is

ranked first in terms of total citations. The most productive author is A. Saunders in terms of the number of publications. Next we move to the m-index, which is the h-index divided by active years of a researcher's research. Among the top five authors, the m-index of V. Ivashina is the highest at 0.583 showing that she obtained a h-index of 7 in the shortest time compared to other authors. Her first publication on syndicated loans came out in 2009. J.A.C. Santos has the second-highest m-index of 0.385. Both of these are relatively new authors. However, overall top five authors with the highest m-index are M.D. Delis, S. Ongena, S. Steffen, V. Ivashina and Y. Li with an m-index of 0.75, 0.67, 0.60, 0.58 and 0.50 respectively. The m-index of M.D. Delis is 0.75 as he attained a h-index of 3 only in four years. Next to him is S. Ongena as his h-index is 4 as he attained this h-index only in six years since when he became active in the syndicated loan market.

Table 3. The Scientific Impact of the Top 25 Syndication Loan Authors.

Author	**Number of Publications**	**Total Citations**	**h-index**	**m-index**	**Active since**
SAUNDERS A	12	855	9	0.39	1998
SANTOS JAC	8	344	6	0.46	2008
HASAN I	8	70	3	0.33	2012
GODLEWSKI CJ	8	65	4	0.31	2008
IVASHINA V	7	1372	7	0.58	2009
MULLINEAUX DJ	7	443	6	0.24	1996
KLEIMEIER S	7	97	5	0.45	2010
KARA A	7	52	5	0.31	2005
WITTENBERG-MOERMAN R	6	299	5	0.38	2008
STEFFEN S	6	244	6	0.60	2011
VASVARI FP	6	191	4	0.31	2008
WEILL L	6	57	4	0.31	2008
ONGENA S	6	49	4	0.67	2015

YI HC	5	73	3	0.20	2006
GOTTESMAN AA	5	72	4	0.24	2004
DELIS MD	5	52	3	0.75	2017
CHAMPAGNE C	5	32	3	0.21	2007
LI Y	5	32	3	0.50	2015
BUSHMAN RM	4	263	4	0.31	2008
ROBERTS GS	4	92	4	0.19	2000
ALTUNBA Y	4	47	4	0.24	2004
MARQUES-IBANEZ D	4	38	4	0.36	2010
GADANECZ B	4	34	4	0.24	2004
ALLEN L	4	28	3	0.20	2006
DAHIYA S	3	510	2	0.14	2007
Note: The h-index represents the value of h such that the given author/journal has published h papers that have each been cited at least h times. The m-index is defined as h/n, where n is the number of years since the first published paper of the scientist.					

2.4.2 Corresponding Author's Country

Figure 5 presents the top twenty countries of affiliation of corresponding authors. The figure shows both the multiple country publications (MCP) and single country publications (SCP). As can be seen in Figure 5, the twenty major countries in terms of the authors' affiliation are the United States, United Kingdom, France, Canada, Germany, Australia, Italy, Netherlands, China, Finland, Georgia, Hong Kong, Korea, Sweden, Belgium, Spain, Switzerland, Austria and Greece. The highest number of studies is with the US affiliation. This might be due to the reason that the United States is the world's largest economy and possesses the largest banking and financial services sector in the world. Merely because of the size of the economy and the financial sector[4],

[4] 54% of the global market total volume of the syndication loan is from the US (Bloomberg, 2019).

the US borrowers and banks are more likely to engage in the syndicated loan market. Therefore, this ignites the interest of the US-based researchers to research the syndicated loan market. The UK ranks second, which is also intuitive because the UK is the next country that has the most developed financial markets after the US. This is also plausible as the researchers generally tend to pick context and country-specific research topics.

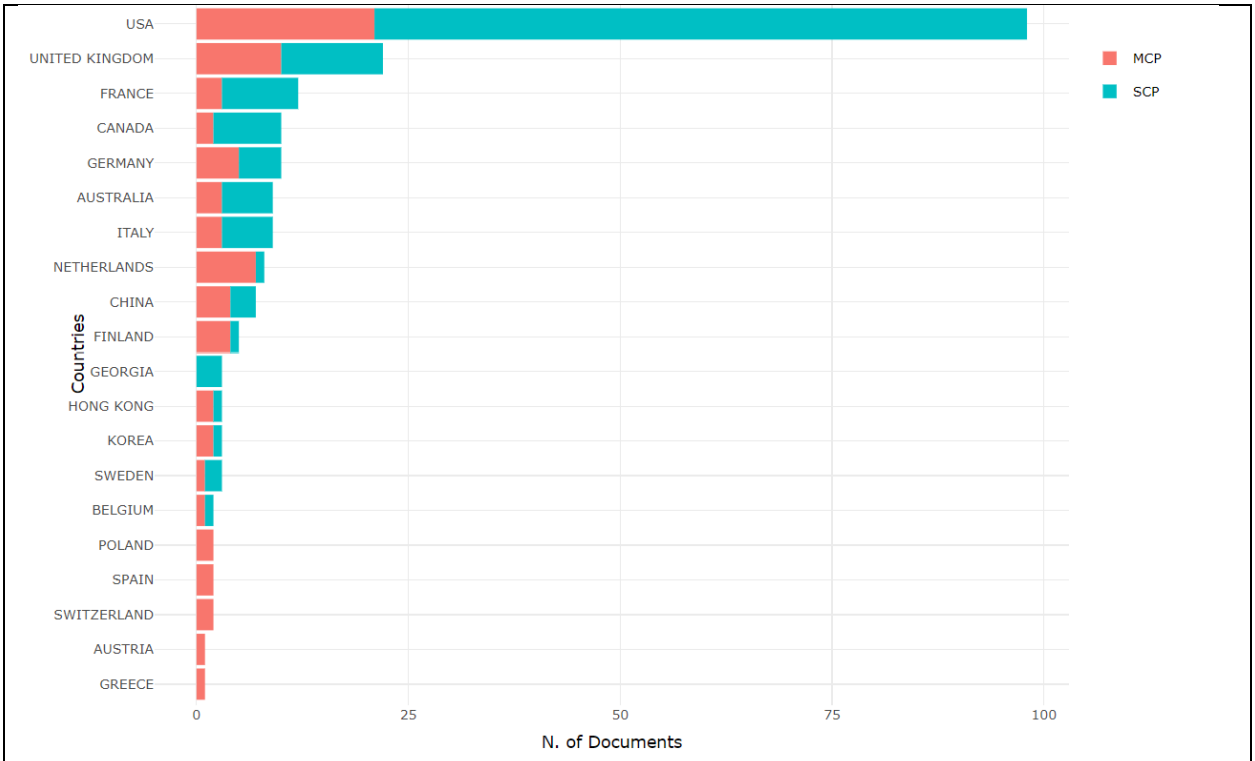


Figure 5. The Country of the Affiliation of the Corresponding Author

2.4.3 Word Cloud

Figure 6 shows the keywords that have been used in syndicated loan market studies. These keywords provide an idea as to what the researchers have conducted research on and give an

indication of their hypotheses in the syndicated loan market. The keyword that stands out is "information asymmetry." This indicates that information asymmetry has been used most commonly as a keyword in the papers on the syndicated loan market. Other important keywords are "project finance," "bank loans," "financial crisis" and "loan spread." Three out of the top six highly cited papers use "Information asymmetry" as one of the keywords. Another similar analysis that highlights important themes that have been commonly studied with each other is presented in Figure 6.

Figure 6. Word Cloud Based on Author-Supplied Keywords

2.4.4 Conceptual Structures

Here we present keywords that have been commonly used with other keywords. We can see that "syndicated loans" is the most highlighted theme, which is connected with the "syndicate

structure" and "loan pricing" theme. Another notable theme is "information asymmetry," which is also commonly used with "syndicate structure" and "loan pricing." Furthermore, the theme "project finance" is connected to "syndicated loans," "credit/loan spread" and "loan pricing." Figure 7 provides a good snapshot of the most important themes and their connection with sub-themes.

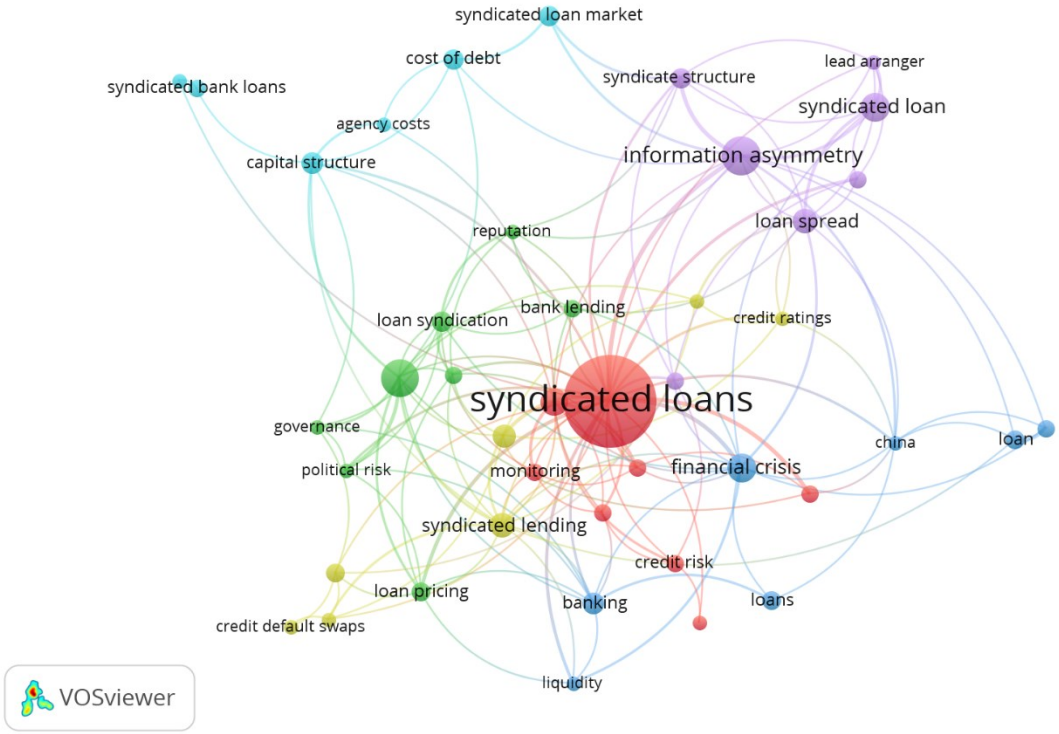


Figure 7. Conceptual Structure (Co-word Analysis)

In addition to the conceptual structure, we present intellectual structures in Figure 8. In this figure, we find the most important authors and their network. We can see that Sufi (2007) and Ivashina (2009) appear very prominent in the intellectual structures as Ivashina (2009) is the most cited paper studying the bank lending during the financial crisis of 2008 while Sufi (2007) studies

information asymmetry and financial arrangements. Since the syndicated loan market is a branch of banking literature, Diamond (1984) is part of an important intellectual structure, which studies financial intermediation and delegated monitoring as many papers discuss financial intermediation among lead arrangers, participants and borrowers. Similarly, lead arrangers are the ones to whom the monitoring of borrowers is delegated that is why Diamond (1984) comes up as important in intellectual structure.

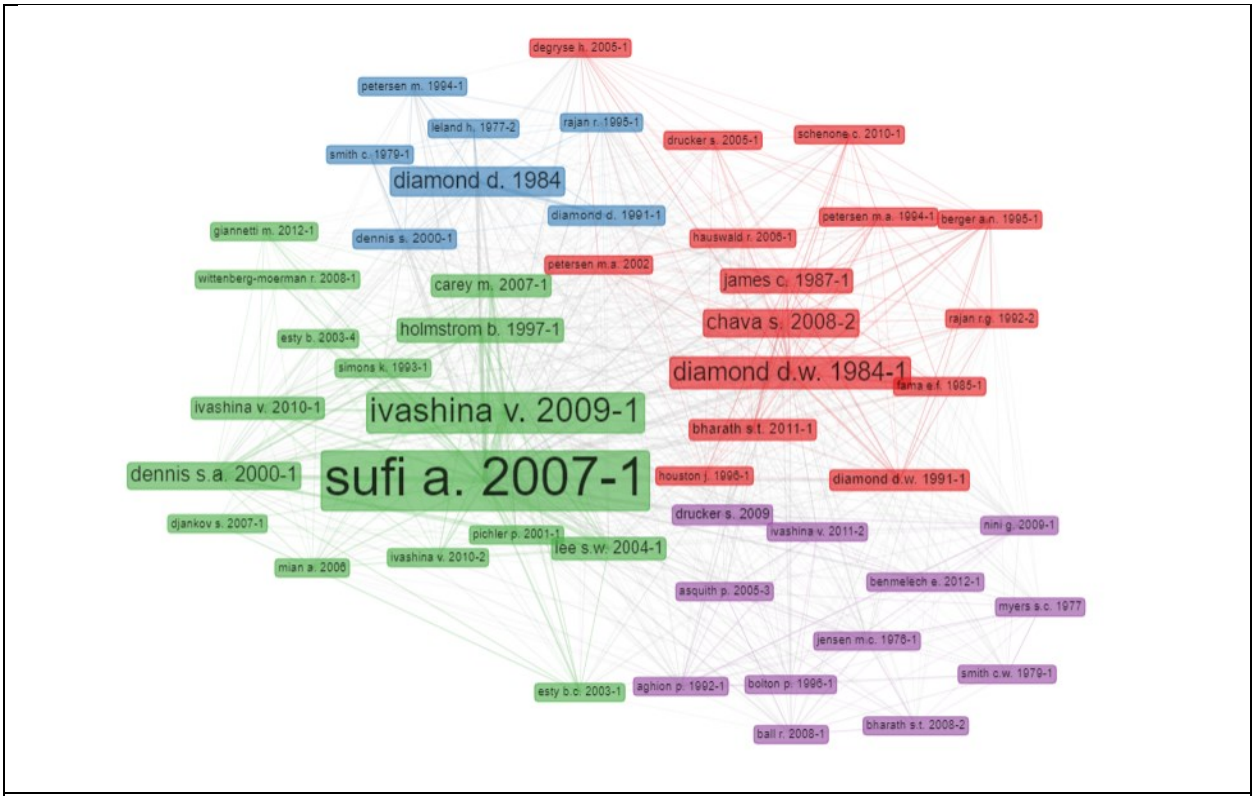


Figure 8. Intellectual Structures (Co-Citation Analysis)

2.4.5 Social Network or Structure

Figure 9 depicts social networks for authors who have worked together. The figure presents authors and their networks in the area of syndicated loans. We can see that Saunders has a significant network connection in the area and, based on the publications shown in Table 3, Saunders has published 12 papers in the area of syndicated loans with 855 total citations. The blue circle represents one of the author networks. It is interesting to note that three authors in the blue circle are from Germany while Saunders is from the United States. A closer look at their joint publications reveals that they have generally collaborated to compare the difference between the United States and European loan rates. For example, one of their joint papers entitled "Mind the Gap: The Difference between the U.S. and European Loan Rates" analyzes and discusses the pricing of syndicated loans between the United States and European loans. This paper finds that borrowers pay the higher spread and pay lower fees in the United States' credit lines, resulting in the exact cost in both markets (Bharath et al., 2011). Another authors' network is represented by the red circle. One of the important joint papers in the red circle is "Lending relationships and loan contract terms" by Bharath et al. (2011). This paper finds that borrowing again from the same lender will lower the loan spread due to the existing relationship. The authors use propensity score matching, instrumental variables, and treatment effects model. The green circle shows the authors' collaboration network from Canada and the United States. One of the papers belonging to that network entitled "Do hedge funds trade on private information? Evidence from syndicated lending and short-selling" is by Massoud et al. (2011). In that paper, the authors investigate conflict of interest when hedge funds make syndicated loans and take short positions in the equity of borrowing firms. They find evidence consistent with the short selling of the equity of the hedge fund borrowers prior to public announcements of both loan originations and loan amendments.

The yellow circle shows yet another network of authors' collaboration. The most cited paper belonging to the yellow circle is "When Shareholders Are Creditors: Effects of the Simultaneous Holding of Equity and Debt by Noncommercial-Banking Institution" by Jiang, Li, and Shao (2010). That paper provides an analysis of the simultaneous holding of both equity and debt claims of the same company by non-commercial banking institutions. The paper concludes that the presence of dual holders mitigates the conflicts between shareholders and creditors, thus, lowering the cost of borrowing.

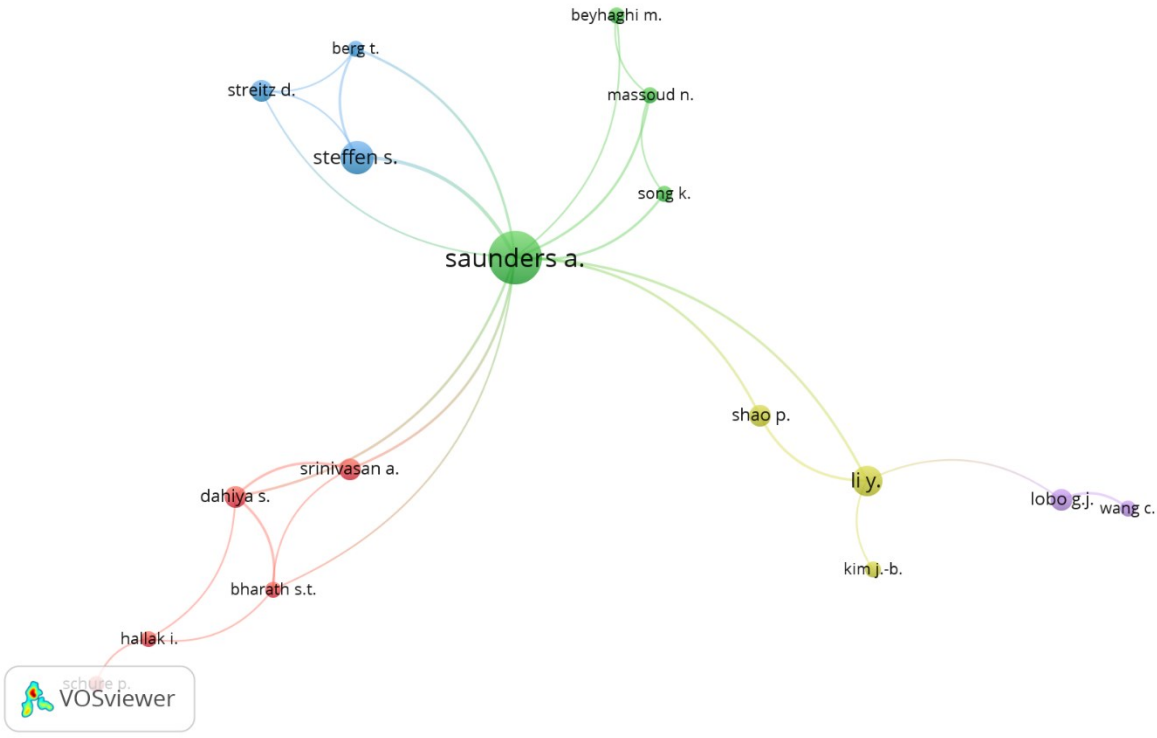


Figure 9. Social Network (Joint Publications)

2.5 Content Analysis of Top 100 Most Influential Papers

2.5.1 Data Characteristic

In this section, a content analysis of the 100 top-ranked papers has been conducted; these include 98 empirical papers and two theory papers. In terms of methodology and empirical approaches, 64% of the top 100 papers have employed the OLS model. OLS is more prevalent in banking because OLS regression first produces unbiased and efficient estimates under certain assumptions, such as the normality and homoscedasticity of errors. Many banking applications often meet these assumptions, making OLS regression a reliable choice; second, estimating the effect of one or more independent variables on a dependent variable is a common goal in banking research. Using OLS regression, researchers can identify the factors influencing important financial outcomes such as Interest prices, loan characteristics, and credit ratings. In terms of the time frame, 43% of the studies have used the data for the period of 5 to 10 years. One of the papers among the top 100 papers that uses the longest data period is by Botsch et al. (2019), which utilizes the data on syndication loans from 1981 to 2012. The authors study learning through repeated interactions with borrowers to understand the learning by lending, and they analyse how loan contract terms change as banks acquire new information. Whereas the paper that uses the shortest dataset is "Do hedge funds trade on private information? Evidence from syndicated lending and short-selling" by Massoud et al. (2011) published in the *Journal of Financial Economics*. Using two years of data from 2005 to 2007, the authors investigate the potential conflict of interest that arises when hedge funds make syndicated loans and take a short position of the borrowing firms. As the syndicated loan market took time to develop, the length of the data period is, therefore, quite crucial in generalizing the results of a paper. We, therefore, recommend that future studies

should use a longer data period to increase the validity of their results. Most of the lender and borrower data in the top 100 papers are from the United States, and we think this is due to the reason that the United States has the biggest syndicated loan market. One of the main points of this content analysis is to recognize previous research that has been carried out by authors and to provide future researchers with themes for papers and empirical strategies that have been used in the highly cited papers. For the sake of brevity, we provide a list of only the top 25 most cited paper in Table 4 below.

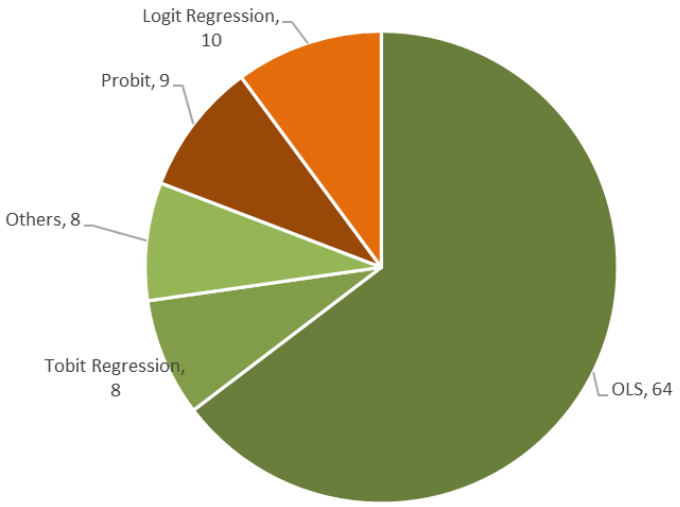


Figure 10: *Methodological approach*

Table 5. List of Top 25 Most Cited Papers

Rank	TC	APY	Title	Journal	year	Reference
1	719	71.9	BANK LENDING DURING THE FINANCIAL CRISIS OF 2008	JOURNAL OF FINANCIAL ECONOMICS	2010	(Ivashina & Scharfstein, 2010)
2	45	45.0	PRUDENTIAL POLICIES AND THEIR IMPACT ON CREDIT IN THE UNITED STATES	JOURNAL OF FINANCIAL INTERMEDIATION	2020	(Calem, Correa, & Lee, 2020)
3	273	30.3	LENDING RELATIONSHIPS AND LOAN CONTRACT TERMS	REVIEW OF FINANCIAL STUDIES	2011	(Bharath et al., 2011)
4	378	29.1	INFORMATION ASYMMETRY AND FINANCING ARRANGEMENTS: EVIDENCE FROM SYNDICATED LOANS	JOURNAL OF FINANCE	2007	(Sufi, 2007)
5	329	25.3	HOW LAWS AND INSTITUTIONS SHAPE FINANCIAL CONTRACTS: THE CASE OF BANK LOANS	JOURNAL OF FINANCE	2007	(Qian & Strahan, 2007)
6	379	21.1	LARGE-SAMPLE EVIDENCE ON THE DEBT COVENANT HYPOTHESIS	JOURNAL OF ACCOUNTING RESEARCH	2002	(Dichev & Skinner, 2002)
7	187	17.0	ASYMMETRIC INFORMATION EFFECTS ON LOAN SPREADS	JOURNAL OF FINANCIAL ECONOMICS	2009	(Ivashina, 2009)
8	126	15.8	THE FLIGHT HOME EFFECT: EVIDENCE FROM THE SYNDICATED LOAN MARKET DURING FINANCIAL CRISES	JOURNAL OF FINANCIAL ECONOMICS	2012	(Giannetti & Laeven, 2012)
9	86	14.3	ENVIRONMENTAL EXTERNALITIES AND COST OF CAPITAL	MANAGEMENT SCIENCE	2014	(Chava, 2014)
10	111	12.3	BANK CORPORATE LOAN PRICING FOLLOWING THE SUBPRIME CRISIS	REVIEW OF FINANCIAL STUDIES	2011	(Santos, 2011)
11	160	12.3	SO WHAT DO I GET? THE BANK'S VIEW OF LENDING RELATIONSHIPS	JOURNAL OF FINANCIAL ECONOMICS	2007	(Bharath et al., 2007)
12	144	12.0	THE ROLE OF INFORMATION ASYMMETRY AND FINANCIAL REPORTING QUALITY IN DEBT TRADING: EVIDENCE FROM THE SECONDARY LOAN MARKET	JOURNAL OF ACCOUNTING AND ECONOMICS	2008	(Wittenberg-Moerman, 2008)
13	95	11.9	DO CULTURAL DIFFERENCES BETWEEN CONTRACTING PARTIES MATTER? EVIDENCE FROM SYNDICATED BANK LOANS	MANAGEMENT SCIENCE	2012	(Giannetti & Yafeh, 2012)
14	59	11.8	THE STRUCTURE AND PRICING OF CORPORATE DEBT COVENANTS	QUARTERLY JOURNAL OF FINANCE	2015	(Bradley & Roberts, 2015)

15	46	11.5	FINANCIAL STATEMENT COMPARABILITY AND DEBT CONTRACTING: EVIDENCE FROM THE SYNDICATED LOAN MARKET	ACCOUNTING HORIZONS	2016	(Fang et al., 2016)
16	135	11.3	THE DEBT-CONTRACTING VALUE OF ACCOUNTING INFORMATION AND LOAN SYNDICATE STRUCTURE	JOURNAL OF ACCOUNTING RESEARCH	2008	(Ball, Bushman, & Vasvari, 2008)
17	180	11.3	THE EFFECT OF CAPITAL STRUCTURE WHEN EXPECTED AGENCY COSTS ARE EXTREME	JOURNAL OF FINANCIAL ECONOMICS	2004	(Harvey, Lins, & Roper, 2004)
18	94	10.4	EGALITARIANISM AND INTERNATIONAL INVESTMENT	JOURNAL OF FINANCIAL ECONOMICS	2011	(Siegel, Licht, & Schwartz, 2011)
19	108	9.8	THE REAL EFFECTS OF DEBT CERTIFICATION: EVIDENCE FROM THE INTRODUCTION OF BANK LOAN RATINGS	REVIEW OF FINANCIAL STUDIES	2009	(Sufi, 2009)
20	169	9.4	INERTIA AND EVALUATION MECHANISMS IN INTERORGANIZATIONAL PARTNER SELECTION: SYNDICATE FORMATION AMONG U.S. INVESTMENT BANKS	ACADEMY OF MANAGEMENT JOURNAL	2002	(Investment, Li, & Rowley, 2002)
21	158	9.3	CREDITOR RIGHTS, ENFORCEMENT, AND DEBT OWNERSHIP STRUCTURE: EVIDENCE FROM THE GLOBAL SYNDICATED LOAN MARKET	JOURNAL OF FINANCIAL AND QUANTITATIVE ANALYSIS	2003	(Esty & Megginson, 2003)
22	184	9.2	SYNDICATED LOANS	JOURNAL OF FINANCIAL INTERMEDIATION	2000	(Dennis & Mullineaux, 2000)
23	18	9.0	FINANCIAL REPRESSION IN THE EUROPEAN SOVEREIGN DEBT CRISIS	REVIEW OF FINANCE	2018	(Becker & Ivashina, 2018)
24	88	8.8	LENDING RELATIONSHIPS AND INFORMATION RENTS: DO BANKS EXPLOIT THEIR INFORMATION ADVANTAGES?	REVIEW OF FINANCIAL STUDIES	2010	(Schenone, 2010)
25	17	8.5	REAL EFFECTS OF THE SOVEREIGN DEBT CRISIS IN EUROPE: EVIDENCE FROM SYNDICATED LOANS	REVIEW OF FINANCIAL STUDIES	2018	(Acharya et al., 2018)

2.5.2 Major Themes

The themes of the top 100 papers are shown in Table 5. The most popular theme among the top 100 papers is loan pricing followed by syndicate structure. Other focus areas are covenant structure, credit availability, syndicate structure, and loan pricing. The aforementioned areas were used in 55 studies among our sample of 100 papers. The table also provides the focus research themes of the top 100 papers for each of the five-year periods during the past 25 years. After the financial crisis in 2011, the number of loan pricing publications has seen a significant increase from seven publications in 2006-2010 to 16 in the subsequent period of 2011-2016. The credit availability theme has the highest average citations per year (APY). As can be observed from the major themes, most of the papers are focusing on loan pricing and syndicate structure. Broadly speaking, most of the papers mainly focus on the determinants of loan pricing and syndicate structure in the syndicated loan market.

Table 6. Themes of the Top 100 Papers.

Main Themes	1996-2000	2001-2005	2006-2010	2011-2015	2016-2020	Grand Total	Average Citations per year
Loan pricing	2	1	7	16	4	**30**	5.8
Syndicate structure	1	3	3	4		**11**	10.8
Covenant structure		1		1	3	**5**	9.3
Credit availability			2	2	1	**5**	22.7
Syndicate structure and loan pricing			2		2	**4**	7.0
Grand Total	3	5	14	23	10	**55**	8.8

2.5.3 Dependent Variable

The dependent variable that is used the most in the top-ranked 100 papers is shown in Figure 9. The most common dependent variable is *spread*[5], followed by *syndicate structure* and *loan characteristics*. In the paper by Bharath et al. (2011), the authors use the spread to test the lending relationship and find that the repeated borrowing from the same lender could lower the cost by 10-17 bps of the loan spread cost. In Sufi (2007), the author uses syndicate structure as a dependent variable to explore how information asymmetry affects syndicate structure. In Wittenberg-Moerman (2008), the author uses loan characteristics to explore which firm and loan characteristics decrease or increase information asymmetry in the trading of private debt . The authors find evidence that timely loss recognition reduces the information advantage of informed traders and increases the secondary trading of debt securities.

[5] We consider all the dependent variables if a paper uses multiple dependent variables.

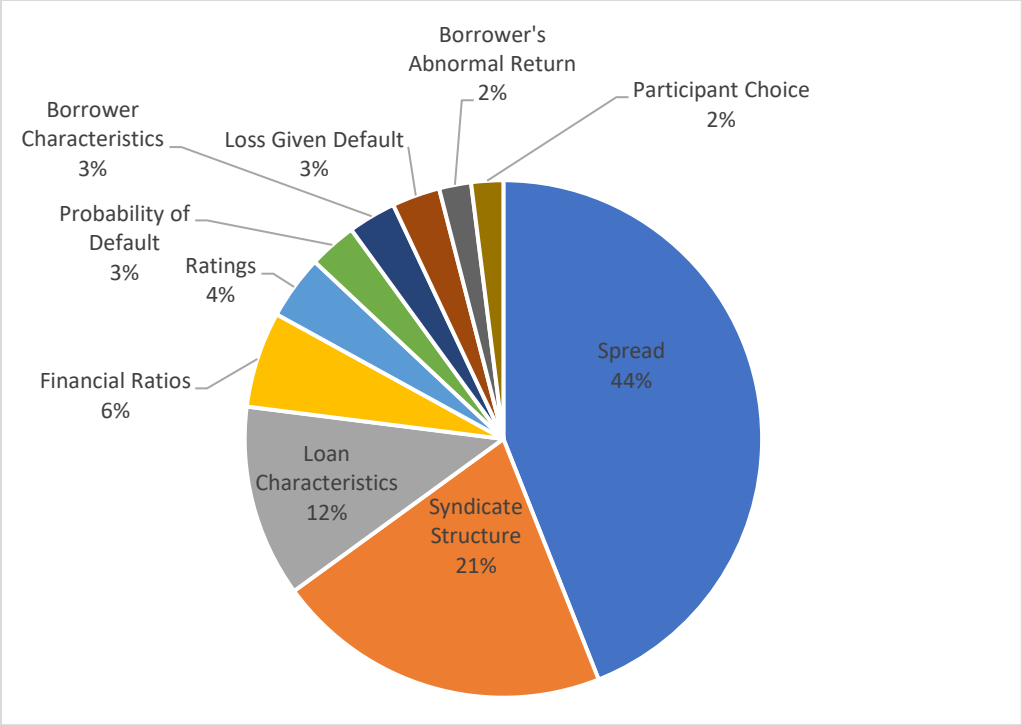


Figure 11: *Dependent Variables*

As for the explanatory variables[6], we find a wide range of variables that are used in explaining the major themes of loan pricing, syndicate structure, credit availability and other themes mentioned above. A vast majority of these explanatory variables are borrower or loan characteristics. Since we find 243 different explanatory variables that are used in top 100-ranked papers, Figure 10 shows the top 20 explanatory variables.

[6] We focus on the variables of interest.

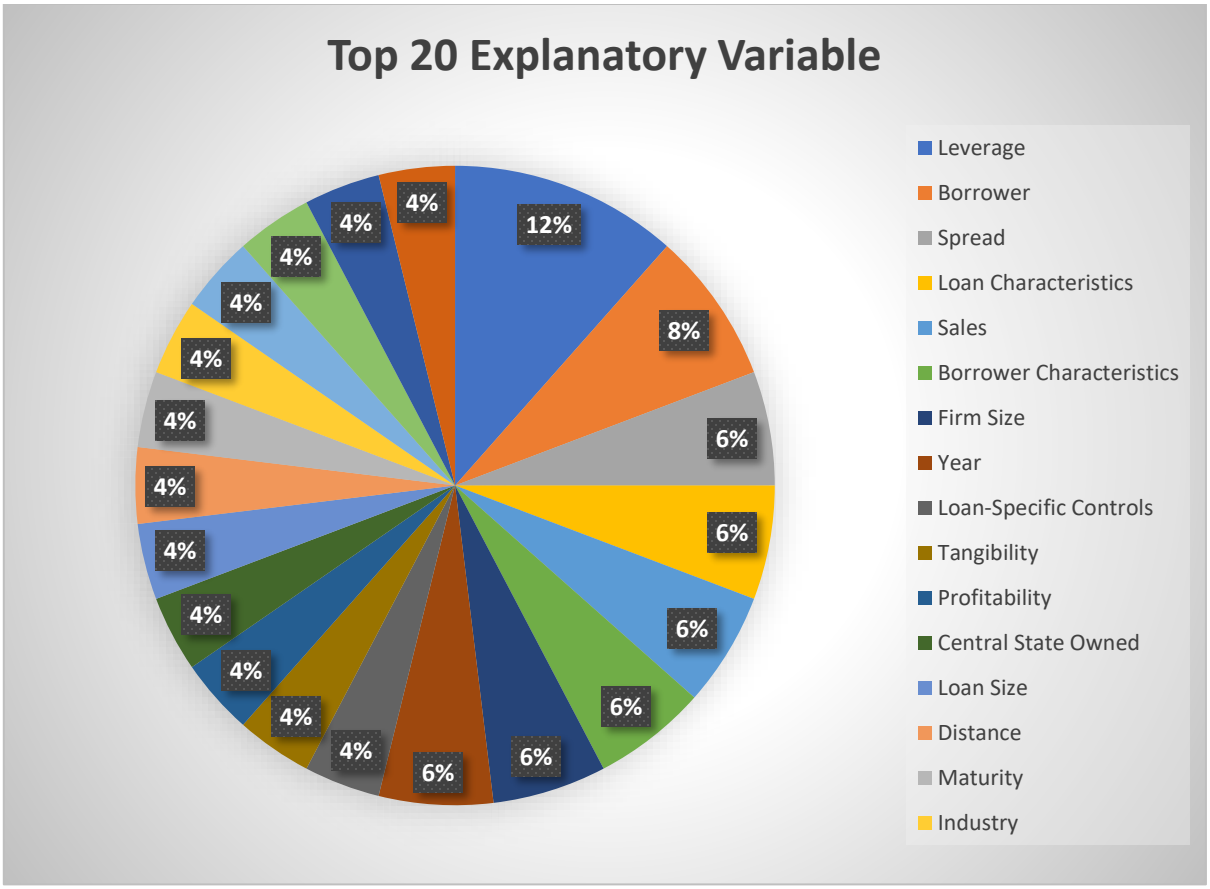


Figure 12: *Explanatory Variables*

2.6 Key findings from the systematic literature review to Chapter 3 and Chapter 4

Despite the widespread use of syndication loans in corporate finance, we noticed a significant gap in the literature during our systematic literature review. By studying the most influential research papers and authors in a field, we better understand how the field has evolved. We noticed that the number of publications and citations had been observed to increase during crises. This trend is particularly evident in the current situation, where there has been a surge of interest in measuring the relationship between crises and scholarly output—a systematic literate review help to build on existing knowledge and ideas in the field. We can see how others have approached similar problems and built on their work to develop new ideas and theories.

First, we run a Co-word analysis to identify the key themes and topics within a body of literature. By analyzing the co-occurrence of words and phrases, we gain insights into the conceptual structure of the literature and identify the underlying themes and ideas that are present. The key benefit of co-word analysis is that it allows us to explore the relationships between concepts and ideas. By identifying which words are frequently associated with one another, we gain a better understanding of the relationships between different themes and topics and unexplored areas, which we try to connect by exploring two different themes. For chapter 3, we used the Syndicate structure and information asymmetry; for the 4th chapter, loan pricing, and Cost of debt; by emerging these themes, we can identify new research areas. By identifying which concepts are frequently discussed together, we identify areas where further research may be needed or where existing research may be lacking, like Environmental factors with the Cost of debt and Merger and acquisition and syndicate structure. After choosing themes of the research that we find existing research may be lacking, we look at the most influential paper in the field.

Knowing the most important topics, we can focus our efforts on areas most likely to have an impact. In addition, by studying the themes of the top 100 papers, we can recognize the researchers who have made significant contributions to the field and how to approach it differently.

Chapter 3, "Information asymmetry," theme one of the top influential papers in the themes and the syndication loan field sufi paper, and from the literature review, we understand how this idea and the model have been developed and refined and how we can make new approaches to introduce regarding the impact of loan structures on borrower outcomes. While some studies tried to examine the effect of syndicate structure on loan pricing and credit risk, few have investigated the relationship between borrowers and lenders. For Chapter 4, we used the Cost of debt theme, one of the most influential papers in the field by Chava 2014, and the author tried to examine one of the environmental profiles on the Cost of equity. While some studies have tried to examine the environmental factor on debt of finance, the relationship between ESG Performance and Cost Capital has yet to be clarified or studied. Despite the increasing importance of environmental, social, and governance (ESG) factors in corporate finance, there needs to be more literature regarding incorporating ESG considerations into syndication loan agreements. In contrast, some banks and borrowers have begun to include ESG clauses in syndication loan agreements. Therefore, further research is needed to understand the motivations behind the inclusion of ESG and the Cost of capital in syndication loans. Knowing the dependent and explanatory variables benefits our third and fourth chapters. They enable us to make informed conclusions about the relationships between variables and identify the factors influencing the outcome being studied. In addition, understanding these variables for top

research helps us to ensure that the study is well-designed from a methodological perspective, the data collected is appropriate, and the analysis is accurate.

In conclusion, a systematic literature review is a valuable tool for identifying the key themes and topics within a body of literature, and by analyzing the relationships between different concepts and ideas, we can identify areas where further research may be needed or where existing research may be lacking. By focusing on the most influential authors and papers in the field, we can gain insights into how the field has evolved and identify new research areas. Understanding the dependent and explanatory variables is crucial for designing well-informed studies that provide accurate and reliable results. Ultimately, this systematic approach to literature review helps build on existing knowledge and ideas, contributing to the advancement of the field of syndication loans in corporate finance.

2.7 Conclusion

In this chapter, we provide a Systematic Literature Review (SLR) of the literature on the syndicated loan market. In doing so, we explore all sources of knowledge and select all the journals, authors and articles that have used syndicated loans data. After our article selection process provided in Section 2, we provide citation analysis of 374 published articles, which includes publication and citation trends, most influential articles, most influential authors, corresponding author's country and conceptual structure and social network. Furthermore, we also provide content analysis of the top 100 most cited papers by highlighting data characteristics their major themes, data features, methodology and empirical approaches. Despite increasing importance of syndicated loans and growing literature in this area, there is no SLR on this topic.

We fill this gap in the extant literature by providing a thorough SLR in the syndicated loan area. This review paper offers an overview of the evolution and development of research on the topic in one place. This will be helpful for upcoming researchers to identify avenues for future research.

Our main findings indicate that the literature on syndicated loans has grown substantially after the global financial crisis (GFC) of 2007-2009. Before the GFC, the average number of publications per year was three whereas the average number of publications after the GFC increased to 22. There was a small drop in 2012 and 2013 but, since 2013, there has been an exponential growth with the number of publications reaching up to 50 per year in 2020. Second, we find that the *Journal of Financial Economics* is the leading journal in terms of the number of citations and the *Journal of Banking and Finance* is the leading journal in terms of publications count. Victoria Ivashina is the most cited author based on the dominance factor and total citations whereas Anthony Saunders is the most prolific author in terms of the number of publications. The most cited paper is "Bank Lending during the Financial Crisis of 2008" by Ivashina and Scharfstein (2010). Moreover, we have identified the top six themes from the content analysis of the top 100 cited papers. These themes are loan pricing, syndicate structure, covenant structure, credit availability, loan pricing and syndicate structure. Finally, most of the studies are empirical, accounting for 97% of the studies, 2% are only theory studies, and 1% of studies are both empirical and theoretical.

Our study contributes to the literature in the following ways. First, this is the first SLR on the syndicated loan market. Despite the growing importance of syndicated loans and that they are one of the top sources of funds for corporate firms, no SLR has been done on this topic to date. Second, in this study, we include all the available articles that have used syndicated loans in their

studies by using a comprehensive list of keyword searches. Third, we identify the leading journals and leading authors publishing using syndicated loan market data. Finally, in addition to the citation analysis, we also provide a comprehensive content analysis of the top 100 papers. Overall, this paper provides a comprehensive literature review for future researchers by which they can easily identify the areas of future research.

Chapter 3: The effect of banking Mergers and Acquisitions on Borrowers

3.1 Introduction

Despite the accelerated growth of the M&As banking industry, there has been no conclusive evidence of the benefits of bank M&As. It is essential to explain M&As separately to understand the motivations and effects of each type of transaction. The goal of mergers is to increase income from services; however, while higher staff costs can offset the greater income, the return on equity rises as a result of a reduction in capital. An acquisition can help a bank restructure its loan portfolio, and improved lending policies result in higher profits. This chapter contributes to the literature by studying whether information asymmetry increases or decreases after mergers and acquisition of banks. We study this by looking at the syndicate structure[7] held by lead arrangers in a syndicate.

This chapter extends the literature on banking M&As and borrower-lender relationships. Previous studies address that borrowers of acquired banks are more likely to lose their lending relationships as a result of firm-level effects based on mergers between commercial banks (CB) (Sapienza, 2002; Degryse and Ongena, 2005; Karceski et al., 2005). As a result of mergers, loan prices are affected by the degree of overlap between markets and the size of the merging banks (Erel, 2011). However, the effects of cross-product banking mergers are unknown, as most research has highlighted the potential gains from diversification (Boyd and Graham 1988; Boyd

[7] We use a variable called Bankallocation as a proxy for syndicate structure in this chapter. In the Dealscan dataset, this term is used to indicate syndicate share of the lenders.

and Runkle 1993; Estrella 2001) or has examined the impact of mergers between commercial banks and insurance companies on the value of bank shareholders (Cybo-Ottone and Murgia, 2000; Carow, 2001 Manasakis, 2009). Previous work on banking M&As, Drucker (2005) tests M&As commercial–investment (CB-IB) banks and find that unrated firms with substantial informational economies of scope that issue public securities are more likely to switch from a commercial bank to a merged commercial–investment bank, suggesting that the benefits to borrowers exceed the costs of switching lenders. Lower borrowing costs are another direct benefit. Commercial–investment banks charge lower loan yield spreads of 24–29 basis points than commercial banks when borrowers issue public securities. The author investigated loan yield spread and found significantly large discounts for unrated borrowers starting a new lending relationship. Commercial and investment banks lend to less profitable yet more leveraged firms, price riskier classes of term loans more generously, and offer relatively longer-term credits, usually with term contracts rather than commitment contracts (Harjoto et al. 2006). The costs of financial intermediation may be lowered as a bank gathers and shares borrower-specific private information across divisions, producing economies of scope (Benston and Harland 1990; Kanatas and Qi, 2003). At the same time, Küçükkocaoğlu and Bozkurt (2018) conducts a study intending to determine how share transfers, mergers, and acquisitions affected the profitability of Turkish banks from 2001 to 2012 and supported the notion that M&As are suitable for scaling. The study found that a bank merger enables the business to expand swiftly by attracting many new clients. In addition, the acquisition increases the amount of cash available to the bank for lending and investing. Nevertheless, it also results in a larger operating area for the newly combined entity, but, as a result, company growth objectives are more quickly met.

This chapter contribute to the literature on the effect of syndicate structure and information asymmetry after bank M&As. We examine how banks react after M&As and do information asymmetry affect the borrower and lender relationship. Information asymmetry affects syndicate composition and structure in a manner consistent with moral hazard theories. We find that by increasing its share in the syndicate loan, the lead arranger ensures diligence in investigating and monitoring the borrowers. Syndicates are more concentrated when borrowers are opaque, and lead arrangers retain a larger portion of the loan. Borrower reputation after M&As has also been tested as a way to reduce the effects of information asymmetry on syndicate structure.

3.2 Types of Mergers and Acquisitions

Mergers and acquisitions are common strategies for companies seeking to expand their market share, increase efficiency, and gain a competitive edge. Vertical mergers combine firms that operate at different levels of the supply chain, while horizontal mergers involve companies that offer similar products or services. Conglomerate mergers occur when companies with unrelated operations merge, and market extension mergers happen when two companies provide the same products but operate in different markets. In contrast, product extension mergers occur when two companies offer different products or services but operate in the same market. While mergers and acquisitions are similar, mergers involve the creation of a new, larger entity, while acquisitions usually involve one company acquiring part or all of another company. Mergers may be more common than acquisitions because they are less risky and complex. As a result, they can lead to more significant synergies, economies of scale, and increased innovation. By analyzing

the different types of mergers and acquisitions, we can identify the key motivations, benefits, and challenges associated with each type of transaction.

3.2.1 Vertical merger

Vertical mergers combine firms that produce or distribute products at different levels. For example, a vertical merger combines companies that produce inputs and compete in input markets with other companies that use those inputs to produce outputs and compete in output markets (Salop and Culley, 2016). By merging, the firms have combined their various supply chain functions into one organization to create a more unified process. Such a merger then allows the companies to compete better and deliver the best possible customer experience.

3.2.2 Horizontal merger

A horizontal industry merger occurs when two companies offering the same product or service or operating in the same space join forces. There is a greater probability of horizontal mergers in smaller industries, where competition is fierce and synergies and market share gains are greater (Abbas et al., 2014). More typical in industries with fewer competitors, mergers or acquisitions in this sector have a higher probability of financial success.

3.2.3 Conglomerate merger

A merger or acquisition between companies with unrelated business operations can also be considered a horizontal merger (Kumar, 2019). Such a match is considered unusual, but it can be beneficial, increasing market position, enhancing available services, improving the owners' stock portfolio, and creating the opportunity to offer related products. A famous occasion of a successful conglomerate merger is when Disney acquired Pixar (Brookey and Zhang, 2020). Eventually,

mergers such as this one can be about portfolio diversification. When one product or industry is performing poorly, another is sought to compensate for any losses.

3.2.4 Market Extension Merger

When two companies provide the same products but in separate markets, this is known as a market extension merger. Combining firms to gain access to a larger market ensures a wider client base, which, in turn, ensures that the merging companies achieve their main goals (Abbas et al., 2014). This merger can benefit both entities because they can share knowledge and resources and expand their reach into new markets. Market extension mergers are often more easily completed than other mergers because there is less overlap between the companies' assets and liabilities. The primary purpose of the market-extension merger is to obtain access to a larger market, which eventually leads to a more extensive client customer base.

3.2.5 Product Extension Merger

A product extension merger takes place between two organizations that operate in a common market but provide different products or services (Abbas et al., 2014). These mergers can be beneficial because they allow the companies to share resources and create synergies, leading to greater efficiency and profitability. The process of conducting a product extension merger is complex and requires careful planning, so businesses should pursue this type of merger only if they believe it will be advantageous. The rationale for this type of merger is that the companies can create synergies by combining their respective strengths and creating a new, more powerful company. To succeed in this type of merger, both organizations must have a clear vision of what they want to create and be able to act on it quickly.

3.2.6 Differences Between Mergers and Acquisitions

According to Mastracchio et al (2002), acquisitions are usually transactions in which a company acquires all or part of another company. Conversely, mergers involve a process of two or more companies coming together to create a new entity that is usually much larger than the original companies. There are several reasons why mergers might be more common than acquisitions.

Mergers have become more common as companies seek to gain a competitive edge. Acquisitions, on the other hand, are often seen as riskier and more complex. Mergers may be less expensive and require less time to complete, making them a preferable option for many companies. Mergers also tend to result in better synergy between the two companies, which can help increase profitability. In their study, Massaro et al. (2020) found that mergers are more common than acquisitions because they allow companies to combine their strengths and create a more vital organization. Additionally, the costs and risks associated with acquisitions can be avoided in mergers, which allow companies to combine their strengths and reach new markets more quickly than acquisitions. Finally, mergers can be more profitable than acquisitions because they often result in greater synergies and economies of scale.

Furthermore, mergers may be more common than acquisitions because they can create more significant and efficient companies. Mergers also allow companies to avoid antitrust issues that can arise from acquisitions. Finally, mergers can lead to innovation as companies combine their resources to create new products or services (Čirjevskis, 2019). Mergers often involve two companies that are already closely aligned and have complementary strengths, allowing these organizations to save costs by sharing resources and eliminating duplicate functions.

3.3 Overview of Theories for Mergers and Acquisitions

The resource dependency theory suggests that M&As respond to an organization's need to secure resources unavailable internally. The theory predicts that firms will seek to acquire other companies to access resources such as technology, knowledge, and expertise essential for survival and success. The theory is based on the premise that companies face uncertainty in their environment, and M&As can help them mitigate this uncertainty by securing resources from other firms. The resource dependency theory has important implications for understanding M&A activity because it suggests that mergers and acquisitions are often driven by external factors beyond the acquisition firm's control. The theory also provides insight into the strategic considerations that firms must consider when deciding whether to merge or acquire another company. By understanding the resource dependencies of their organization, firms can make informed decisions about whether to pursue M&A activity and how to structure these deals for maximum benefit. We introduce the theories for mergers and acquisitions to develop a deeper understanding of the underlying factors that drive these types of transactions. By examining the various theories that have been developed to explain mergers and acquisitions, we can identify the key drivers, motivations, and challenges associated with these transactions.

3.3.1 Efficiency Theory

In their study, Hellgren et al. (2011) found that the efficiency theory is a popular perspective on M&As that views mergers as planned and undertaken to achieve net gains through synergies. The efficiency theory states that companies merge to create larger businesses that compete more effectively in the marketplace. Mergers are typically seen as a way to gain an advantage over competitors and often result in increased profitability and job security for

employees. Since their emergence, M&As have become an increasingly popular way for businesses to grow, as they offer several benefits (Rebner and Yeganeh 2019). According to the theory, mergers are planned and undertaken to achieve net gains through synergies, which are the combined effects of two or more companies that work together better than either could work alone (Hellgren et al., 2011). While no single formula exists to identify synergies, researchers generally focus on factors such as shared customers, markets, products, and processes. The efficiency theory has been broadly accepted by practitioners and academics, leading to several successful M&A deals. Furthermore, the theory holds that companies merge to tap into new opportunities and create synergies, thereby leading to increased efficiency and profitability. The theory has been widely accepted by businesses and financial analysts and is often used to justify M&A activity.

3.3.2 Neoclassical Theory

The neoclassical theory assumes that markets are efficient and that managers act to maximize their shareholder wealth (Rahman, 2022). The efficiency of the market is a necessary condition for mergers to occur. Consequently, managers will not merge companies if doing so would reduce their profits. In this way, the neoclassical theory predicts that mergers will lead to increased efficiency and profitability for both companies involved in the transaction. Rahman (2022) stated that economists have used this model to explain why businesses merge and how prices for goods and services are determined. The neoclassical theory also predicts that firms will expand until they reach a point where the market can no longer support them, and then the market will collapse. The theory is based on the concept that buyers and sellers will find an equilibrium price for a good or service. If there is no market failure, then this will occur at the point where each buyer and seller is getting what they want in terms of quality and quantity. In other words, the

market will work to achieve equilibrium. However, if a market fails, prices may be distorted due to external factors such as monopolies or information asymmetry

3.3.3 Behavioral Theory

This theory posits that the primary drivers of acquisitions are behavioral (e.g., financial, strategic, and social) rather than substantive (e.g., technological or market-driven). The theory holds that firms base their decisions on various factors, including the perceived value of the target company's assets and liabilities, the opportunity cost of not acquiring the target company, and the threat posed by rivals (Asaoka, 2019). The behavioral theory is a framework that explains why some companies merge or acquire other companies; it states that people are motivated to behave in ways that are in their own best interests, and this is especially true when making decisions about allocating time and resources (Rahman, 2022). People are often attracted to opportunities that offer them the potential for greater wealth, power, or status, and they may be motivated as well by the desire to create a winning team or company. When these factors are combined, M&As can create powerful incentives for people to act in their own best interests. The behavioral theory of M&As can help identify possible strategies for negotiating better terms in deals and can help explain why some M&As succeed and others fail (Asaoka, 2019). For instance, if two companies are similar in terms of their products or services, the merger may be successful because the combined company will have a stronger market position. However, suppose one company is much better at producing a particular product than the other. In that case, the merger may not be successful because customers will switch to the better-performing company.

3.3.4 Resource Dependency Theory

According to Hellgren et al (2011) the resource dependence theory of M&A considers how the external resources of organizations can affect the behavior of the organization. It is based on the notion that organizations are influenced by their environment and that their available resources determine their behavior. The resource dependence theory provides an understanding of how various factors, such as the availability of inputs, affect an organization's decision-making process when it comes to merging or acquiring other businesses (Ullah and Abu, 2018). The theory states that a company's decision to merge or acquire another firm is based on how much the acquiring company depends on the resources of the target firm. This theory is commonly used to explain why companies merge or acquire other firms in industries with complementary assets.

3.4 Literature review

The financial industry has rapidly consolidated since the 1980s, primarily due to mergers and acquisitions (M&As). Technological advances, deregulation, and globalization have facilitated this movement, leading to more competitive markets and increasing the need for additional M&As. While some scholars believe that M&As can improve efficiency and reduce lending fees, others disagree, arguing that they can negatively affect growth and violate financial institutions' ethics and vision statement. Nonetheless, M&As remain one of the most significant corporate development and expansion methods, and firms choose the appropriate strategy based on their aim. This introduction provides an overview of the arguments and counterarguments on the efficiency of bank M&As, which scholars have examined for many years. By Exploring the literature on the effects of banking mergers on borrowers, we will gain an understanding of the field. Previous research has shown mixed results, with some studies suggesting that mergers and

acquisitions (M&As) negatively impact financial performance, while others indicate that such adverse effects may be short-term. In addition, some researchers discuss the importance of syndicate structure in the cost of capital and securities underwriting markets. Finally, the role of information asymmetry in loan syndication is also discussed, focusing on how it affects lenders and borrowers and influences the syndicate structure.

3.4.1 Bank Mergers and Acquisitions

The financial industry has been consolidating rapidly since the 1980s (Panetta et al., 2002). In 1994, community banks with less than $10 billion in assets made up 57% of deposits and 70% of all bank branches in the United States; by 2018, these numbers had decreased to 20% and 44%, respectively (Bord 2017). This shift is primarily due to M&As in the financial industry. However, it is important to note the difference between a merger and an acquisition: A merger refers to two companies joining together to create a new organization or company, and an acquisition is when one company takes over another organization's market shares and assets and integrates them into the existing company (Majaski, 2022). Carletti et al (2002) pose the hypothesis that the financial consolidation movement has been made possible by technological advances, deregulation, and general globalization. They suggest that these changes have led to more competitive markets, further increasing the need for additional M&As. Other research supports this idea as well. The consolidation of companies has been a reaction to growing competition in financial marketplaces and frequently is an effort to increase profits across the financial landscape (Panetta et al., 2002). When financial gains are realized through mergers, payouts can be made to shareholders, which is widely touted as a positive impact of bank mergers (Piloff and Santomero 1998).

The efficiency of bank M&As has been examined by scholars for many years. Several studies have explored this angle for different types of banks and have found a correlation between a bank's efficiency and the amount of money it can save its customers. Farida and Rodgers (2020) studied the influence of bank M&As on the lending behavior of commercial banks. For 12 years, the authors employed the dataset of 31 Kenyan commercial banks, using panel data models as well as a difference-in-differences approach. This enabled them to verify the influence of merging on banks' loan pricing. The evaluation document displays empirical evidence indicating that bank mergers sometimes result in reduced loan fees and make credit far more accessible to customers (Abdul and Ochenge 2020). The results of these analysts predict that, after a merger between two banks, other disciplines in the intermediation business will have the potential to gain due to reduced lending rates and growing credit availability.

Acquisitions enable banks to grow more effectively in their banking activities and efficiency ratio. Each bank has an established framework for compliance, risk assessment strategies, bookkeeping, administration, and information technology systems. Therefore, when two banks merge, they can more effectively integrate and manage these operational frameworks, as Tarigan et al. (2018) illustrate. Financially, these researchers also argue that a more extensive bank possesses minimized aggregated overall risk because it holds more complementary loans with similar threats, which reduces total institutional risk.

Despite such insightful illustrations, some studies disagree with the notion that bank mergers have increased efficiency. Accordingly, Coccorese and Ferri (2020) examined the rapid surge of M&As among Italian banks to determine whether they were able to improve their efficiency. Researchers discovered that just 5% of mergers, precisely the ones where a bank had partnered

with other banks at a minimum of three times consecutively, enhanced the cost efficiency of cooperative banks. Additionally, the study hypothesizes that repeated consolidations had caused some banks to grow exceptionally large, which could hurt marginal borrowers who tend to receive services from smaller banks but are ignored by larger ones. Therefore, bank mergers can significantly affect growth and violate the ethics and vision statement of the financial institutions in a country.

Moctar and Xiaofang (2014) concur with this information in their study examining how M&As affect the capital adequacy of the West African banking industry. The income reports of the selected sample were used to gather secondary data. Profit measures such as the return on investment, investment appraisal metrics, return on equity, and liquidity ratios demonstrated the insignificant impact of M&As on the company's financial performance in the banking industry.

M&As are among the most significant corporate development and expansion methods, and firms choose the appropriate strategy based on what they aim to achieve. Several corporate divisions have adopted M&A strategies to reduce competition and foster synergy. Meanwhile, analysts have consistently sought to determine whether the purchasing or recipient organizations earn profits from the transaction. For instance, Tarigan et al. (2018) indicate that M&As allow banks to resolve deficiencies in products or technology. Sujud and Hachem (2018) also support this notion, arguing that acquiring a regional bank that provides specific investment products or monetization strategies can sometimes be more straightforward than starting that service business from the ground up. Additionally, from a technological standpoint, a bank's purchase by a larger company can enable the organization to considerably update its technological foundation. All of these factors relate to higher efficiency, increased services, and client satisfaction, enhancing the organization's financial performance.

Küçükkocaoğlu and Bozkurt (2018) also support this notion, demonstrating that each bank gains from an acquisition or merger even when the transaction does not affect the balance sheet due to the improvement in talent available to management or leadership. This human factor must not be overlooked or minimized, because an acquisition offers the opportunity to improve the top management team or sales force. Thus, it puts banks in a better position to effectively engage in further transactions and relate these activities to financial performance.

However, Rai et al. (2021) highlight a dark side of bank M&As that is worth considering. According to their analysis of the impact of M&A news on a bank, some institutions might not benefit from an acquisition or merger because of execution risks. Hassen et al. (2018) echo that caution, further illustrating that investment bankers occasionally fail to invest sufficient time and money into integrating the two financial infrastructures. Sometimes, the consequent effect on their clients forces the newly combined bank to go out of business. Therefore, Hassen's study suggests that the managers or executives of newly merged banks should spend enough time and money to fully integrate the two firms to avoid making this error.

Furthermore, Rahman et al. (2018) expand on the assertion made by Rai et al. (2021), arguing that merging banks should thoroughly consider the best strategies to ensure a positive outcome. Therefore, intensive market and company scrutiny is critical to identify whether the organization will benefit from an M&A before it is pursued. At the same time, a study by Pandey and Kumari (2020) found that businesses can demonstrate a positive market share or earn excess returns if they follow appropriate procedures, drawing on the usual event study approach to evaluate the stock price response to M&A declaration news with a research sample of 14 purchasing bank organizations. Key to their results is that such information affects the share markets' reaction by causing some excess returns around the time of the release. Thus, although

the study found a similar outcome regarding the negative impacts of M&As on the stock market, some firms might also draw significant results.

3.4.2 Syndicate Structure

This chapter extends the growing literature on the effects of banking mergers on borrowers, a largely unexplored topic. M&As enable banks to improve their banking activities and efficiency ratio. Gupta and Banerjee (2017) offer some of the concern about in merging banks. They studied how M&As affected the financial results of companies in India, including banks. The study analyzes vulnerabilities by employing seven distinct M&As of businesses throughout India in 2006–2012. The researchers found that financial performance did not increase after the merger and that indicators of profitability and liquidity declined for the chosen companies.

However, Moctar and Xiaofang (2014) offered substantial hope despite the tremendous adverse outcomes of M&As in banking, demonstrating that the system might work in the long run regardless of the poor outcome during the initial stages of a merger or acquisition. This suggestion was reinforced in 2017 by Shah and Khan's study, which also highlighted the poor performance of financial institutions in their early stages of an acquisition or merger. However, they found changes over time as the firms regained momentum and effectively exploited their potential.

These loans fit into a broader scope of research that examines the importance of syndicate structure in venture capital and securities underwriting markets. Gande and Saunders (2005) found that borrowers, including distressed firms, experience a positive stock price reaction to loan sale announcements. Investors perceive loan trading as a positive source of information about borrowers. Preece and Mullineaux (1996) investigated the impact of syndicated loan

announcements on firms' market value, which followed research into the same topic by Megginson, Poulsen, and Sinkey (1995). According to Dorobantu (2019), syndicates are geographically dispersed when investments are exposed to high levels of political risk. In contrast, syndicates are geographically concentrated when they finance projects when systemic risk is elevated, and the authors identify systemic risk in lending markets as an impediment to creating debt-side governance. Esty and Megginson (2003) evaluated syndicate structure on project finance syndicated loans with firms in 61 countries and found that syndicates typically have more members in countries with weaker creditor protection to prevent strategic defaults by borrowers. To determine how legal and financial systems influence syndicated loans, Moutinho (2021) found that borrowers from different countries can negotiate different spreads on their loans. According to the authors, countries with bank-based financial systems pay less in interest rate spreads than those with market-based financial systems. Esty (2004) and Qian and Strahan (2007) studied syndicated loans with firms in different countries.

Researchers have also focused on the pricing of syndicated loans and default risk syndicated loans and found that these types of loans have lower yield spreads than other loan types (Angbazo, Mei, and Saunders, 1998; Altman and Suggitt, 2000; Thomas and Wang, 2004).

Aghion, Bolton, and Tirole (2004) derived a model to describe the incentives for general partners in venture capital syndicates. Lerner (1994) and Brander, Amit, and Antweiler (2002) empirically evaluated venture capital syndicates to explore how syndicate relationships are formed and how they persist in the syndicated loan market.

3.4.2.1 Information Asymmetry

Loan syndication has become more common due to the distinct characteristics of the loan syndication process and its outcomes. Simons (1993) examined the incentives to syndicate and found evidence that loan syndication results in diversification. Furthermore, lead arrangers syndicate a more significant portion of "quality" loans as a result of ex-post examiner ratings. Sufi (2007) found evidence that information asymmetry affects lenders and borrowers, thereby influencing the syndicate structure and consistent moral hazard in monitoring. When intense monitoring and due diligence are necessary, the lead bank retains a larger share of the loan, and a more concentrated syndicate is formed. Although some issues may be mitigated by the reputation of the lead bank and borrower, problems with the information imbalance between the two entities are not eliminated. Dennis and Mullineaux (2000) found that large loans are more easily syndicated when the lead arranger has a strong reputation and the borrowing firm is public. According to Chaudhry (2015), only the most reputable arrangers can mitigate the moral hazard problem, and participants and policymakers may experience adverse selection problems when low-reputation arrangers behave opportunistically. When building relationships with borrowers, reputable investment banks and commercial banks tend to manage loans together. An analysis of SEO syndicates by Narayanan, Rangan, and Rangan (2004) found that commercial banks typically co-manage loans with reputable investment banks.

Research by Gottesman and Roberts (2004) found that, as a result of limiting resales, larger, more diffuse syndicates are formed at the time of loan origination, which contradicts the tradeoff hypothesis. In situations where loan arrangers are more reputable, loans have longer maturities, and borrowers have more growth options, syndicates tend to be larger and more diffuse (Lee and Mullineaux 2004).

Jones, Lang, and Nigro (2005) found that the agent bank may retain a larger portion of the loan based on information asymmetry, the quality of the borrower's loan credit, capital constraints, and maturity. An analysis of information asymmetry in a syndicated loan was conducted by Ivashina (2007). Researcher found that increasing the share retained by the lead bank reduces spread requirements by approximately 29 basis points. An effect of multiple bank relationships on loan pricing was found by Houston and James (1996) as well as Detragiache, Garella, and Guiso (2000). Additionally, some research has suggested that the strength of a firm's relationships with lenders influences its lending decisions and its loan pricing. As a result, banks might charge higher interest rates when they have a strong lending relationship with borrowers (Sharpe, 1990; Rajan, 1992, Cole 1998). Stronger relationships could increase the probability of selection for the borrower as well as lower interest rates if information production is scaled and banks pass on these savings (Boot and Thakor 1994; Petersen and Rajan 1994). It has also been demonstrated that loan interest rates are influenced by a firm's geographic distance from the lending bank (Nakamura, 1991; Degryse and Ongena, 2005). Bharath et al. (2011) found that repeat borrowing from the same lender reduced loan spreads by 10–17 basis points and that relationships are of particular importance when borrower transparency is low.

In their study, Ivashina and Kovner (2011) explored how leveraged buyouts and banks' relationships affected syndicated loans. The purpose of their study was to empirically examine the relationship between banks' lending decisions and firms' environmental consciousness. Maturity also was found to play a role in the relationship (Li and Rowley 2002; Lee and Mullineaux 2004). Nandy and Lodh (2012) examined whether a firm's location has an influence on corporate debt, and evidence revealed that firms that were distant from urban areas required a higher cost of collecting information, which resulted in significant implications for various corporate debt

characteristics. A higher external debt of the public sector means greater borrowing costs for the corporate sector (Arena and Dewally, 2012). Neither domestic public debt nor corporate borrowing costs were significantly correlated (Ağca and Celasun, 2012).

3.4.2.2 Corporate relationship

Co-managers play a crucial role in producing information, and previous relationships among syndicate members have a strong influence on future ones, according to Corwin and Schultz (2005). Researchers have consistently demonstrated that firms favor past partners when forming new alliances due to their knowledge of potential partners' capabilities and reliability (Li and Rowley 2002).

Furthermore, European syndicated loans to corporate borrowers have significantly smaller interest rate spreads than American syndicated loans, with all other factors being equal (Carey and Nini 2007). By capturing a firm's accounting numbers, debt-contracting value can be used to determine credit quality deterioration in the shortest time possible. As a result of the hypothesis, the lead arranger holds a smaller share of the new loan when the borrower's accounting information has a higher debt-contracting value, which results in lower information asymmetry between the lead arranger and other syndicate participants (Ball, Bushman, and Vasvari, 2008). Using supervisory data to investigate risk-taking in the syndicated loan market in the United States when longer-term interest rates were exceptionally low, the authors examined loan ex-ante credit risk procured by lenders, such as banks and shadow banks (Aramonte, Lee, and Stebunovs, 2015). The scholars Keil and Müller (2020) investigated the Riegle–Neal Interstate Branching and Banking Efficiency Act of 1994 and its implementation. Because only out-of-state commercial banks were affected by the change in the legal framework, the authors found that bilateral lending

to corporations increased while branching deregulation decreased. Unlike the supply-driven substitution effect, this shift was reflected in interest rate spreads, suggesting that credit allocation across loan types is altered due to changes in banking regulations.

In their examination of information asymmetry in the syndicated loan market, Bradley and Roberts (2015) used Loan Pricing Corporation's DealScan and found that covenants are more likely included in loans to smaller firms, with higher growth opportunities and higher leverage opportunities. Pyles and Mullineax (2008) analyzed loan sales restrictions and found that smaller firms are more likely to have limits on loan sales because banks foster relationships with them.

The previous studies in this field have explored various aspects of the topic, ranging from the effects of M&A variables to the impact on the Lending relationship. (Drucker, 2005) examine the effects of CB-IB mergers on borrowers who issue public securities by switching from pure commercial banks to CB-IB lenders, and if they do, they will get a discounted lower spread. (Sufi, 2007) Examine that information asymmetry affects syndicate structure and why lead arrangers retain more of the loan when borrowers are opaque. Our research differs from the previous authors'; our model takes a fundamentally different approach to the problem. While our model focuses on M&As globally and not limiting the study to 10 banks in the United States also tests the lending relationship after M&As and how that affects the syndicate structure. The current study marks a significant advancement in the field, as it represents the first instance to test M&As globally lending relationships using syndication loans. This leads me to the following hypothesis.

H:1 Does the lead arranger's stake in the loan relate to the monitoring effort and borrower relationship?

H:2 What factors influence lenders to keep a higher percentage in opaque firms?

H:3 How does repeat access to the market affect the borrower-lender relationship and the percentage of loans held by lenders?

H:4 To what extent do borrowers' reactions to mergers and acquisitions in the banking industry depend on the lending-borrower relationship?

H:5 Does the investigation into borrower relationships and monitoring effort provide a deeper understanding of the lending-borrower relationship?

We test the borrower relationship and investigate the monitoring effort, why the lead arranger retains a more significant stake in the loan and forms a more concentrated syndicate. In addition, we examine the borrower and lender relationship and why lenders prefer to keep a higher percentage when the firm is opaque. Also, test here that As and does the borrower's relationship with repeatedly access the market, should they become familiar with potential participants, and lenders should hold less of a percentage of the loans as a result of trust. The findings of our research help to further our understanding of Borrowers' reactions after mergers and acquisitions in the banking industry. However, our research takes a unique approach by focusing on a previously unexplored angle. Our study aims to shed new light on this relationship and contribute to a deeper understanding of the lending-borrower relationship.

3.5 Methodology

This section describes the methods, procedures, and techniques used to conduct the study and clearly describes the research design and questions.

I examine whether the change in syndicate structure after the merger of the borrowing firm is affected by the information asymmetry hypothesis. I test the following model specifications:

$$Syndy_{it} = \alpha_1 + \beta_1 After_{it} + X_{it}\beta_{,2}{}' + \tau_t + \epsilon_{it}$$

The left-hand-side variable $Syndy$ is measures of the syndicate, such as the {bank allocation, HHI}. The key right-hand-side variable of interest is $After$, which is described above; the binary variable will take 1 if the deal happens after the merger and 0 otherwise. Therefore, the coefficient of interest is β1, or how increased "$After$" affects the syndicate structure that identifies the differential coefficient measuring the impact of an M&A on bankallocation. In other words, beta 1 evaluates whether the dependent variable Bankallocation increases or decreases after an M&A.

The control variables (X) include year and the natural log of firm sales, debt, net income, assets, spread, deals amount, and a variety of controls for loan characteristics and syndicate structure and a lag time for the control variable. Adding lag time variables for control variables helps capture the dynamic relationship between the variables in a model. Lag time variables are created by shifting the values of a variable backward in time, which allows us to examine how changes in a variable at a one-time point affect the outcome variable later. Including lag time variables in a model can be particularly useful when analyzing data, where variables may be influenced by their past values. Including lag time variables can also help control for unmeasured variables' potential confounding effects. By including a lagged variable as a control variable, we can reduce the likelihood that the estimated effect of the variable of interest is being confounded by unobserved variables correlated with both the predictor variable and the outcome variable. Adding lag time variables for control variables can improve accuracy and reliability.

3.6 Data

In this study, Loan Pricing Corporation's DealScan is the primary source of syndicated loan data. It contains detailed information on syndicated loan contracts, lead arrangers, and participant lenders. Data on mergers between banks were obtained from Securities Data Company Platinum's M&As database. U.S. Securities and Exchange Commission filings, loan originator reports, and the financial press are the primary sources of deal data for DealScan. The sample includes 39,868 syndicated loan deals from January 1982 to December 2020, which were pulled from the full DealScan database of 48,694 loan deals and confirmed syndicated loan deals to firms during these years. Syndicated loans were excluded if banks did not merge before, during, or after the syndicated loan process. This restriction resulted in a manageable data collection for the 20,299 syndication deals in 43 countries.

We have two main dependent variables. The first is Bankallocation, which is the percentage held by the lender and has values ranging from 0 to 100. The second is HHI, the Herfindahl–Hirschman Index, which measures the concentration of shares in a syndicate. The HHI is calculated based on each syndicate member's share in the loan; it is the sum of the squares of the individual shares, ranging from zero to 10,000, with 10,000 in the case of a lender holding 100%. The average loan has 13.2 lenders, 2.0 lead arrangers, and 11.2 participant lenders. Most loans are for general corporate purposes (36%), followed by debt repayment (16%), and working capital (11%). Most types of loans are credit lines (54%), followed by term loans (42%), and other loans (4%).

Table 1

Summary Statistics for Syndicated Loan Deals

This table presents summary statistics for the sample of 39868 syndicated loan deals from 1982 to 2020.

Summary Statistics (Panel A)

Variable	Observations	Mean	Standard deviation	25th Percentile	Median	75th Percentile
Firm						
Log (Debt)	20,299	2.857479	3.433418	0.393393	2.489977	5.398271
Log (Net Income)	20,299	2.490184	2.745007	0.640801	2.325813	4.560591
Log (Sales)	20,299	21.62336	2.001795	20.32388	21.80541	23.11666
Log (Assets)	20,299	3.714186	2.714505	2.022077	3.648799	5.475534
unrated	20,299	0.31208	0.463348	0	0	1
opaque	20,299	0.109913	0.312785	0	0	1
icticker	20,299	0.282031	0.449994	0	0	1

Summary Statistics (Panel B)

Bank						
After M&A	20, 299	0.292039	0.454706	0	0	1
Switch	20, 299	0.625088	0.484106	0	0	1
Relationship	20, 299	0.374912	0.484106	0	0	1
Infoasymm	20, 299	0.03943	0.194618	0	0	1
Leadshareint	20,299	19.95906	76.79852	0	0	1
Interaction	20, 299	0.216163	0.411632	0	0	1
Relinteraction	20, 299	0.075875	0.264802	0	0	1

Summary Statistics (Panel C)

Syndicate Structure						
AllInDrawn	20, 299	115.7646	103.3301	37.5	75	162.5
Log (Spread)	20, 299	4.383588	0.876366	3.624341	4.317488	5.090678
Log (deal amount)	20, 299	19.73394	1.724138	18.82615	19.8676	20.90559
Log(maturity)	20, 299	3.560889	0.752594	2.70805	3.871201	4.094345
Partic	20, 299	14.69256	14.34397	5	11	20
Lead	20, 299	1.517157	1.676717	0	1	2
HHI	20, 299	1042.779	2717.743	25	75.69	277.8889
Bankallocation	20, 299	18.66198	26.35388	5	8.7	16.67
Lead_share	20, 299	131.8967	210.0524	4	31	179
Mktshare	20, 299	14475.93	5431.016	9847	15503	19204
Preinteraction	20, 299	0.204525	0.403359	0	0	0
Prev	20, 299	0.783536	0.41184	0	0	0

Summary Statistics
(Panel D)

Loan Contract				0	0	0
Purpose: Acquis. line	20, 299	0.031303	0.174138	0	0	0
Purpose: CP backup	20, 299	0.13176	0.338234	0	0	0
Purpose: Corp. purposes	20, 299	0.346418	0.475834	0	0	0
Purpose: Debt Repay	20, 299	0.183004	0.386675	0	0	0
Purpose: LBO	20, 299	0.011864	0.108276	0	0	0
Purpose: Other	20, 299	0.056863	0.231583	0	0	0
Purpose: Takeover	20, 299	0.104219	0.305548	0	0	0
Purpose: Work. cap.	20, 299	0.134569	0.341267	0	0	0
Loan_type: Credit Line	20, 299	0.612496	0.487186	0	0	0
Loan_type: Other Loan	20, 299	0.005142	0.071524	0	0	0
Loan_type: term Loan	20, 299	0.382362	0.48597	0	0	0

Table 2 presents the correlation matrix for the variables included in our model. In the study, Prev, Preinteraction, and the number of shares, Leadshareint, are negatively correlated with the bank allocation. In contrast, After, Relationship, Opaque, and Infoasymm are positively correlated with the bank allocation for Opaque, Infoasymm demonstrates that lenders retain a greater share of their loan when borrowers are Opaque, and Infoasymm is similar to Sufi (2007). When borrowers are opaque, lenders retain more of their loan. Interestingly, the number of leads is negatively correlated to bank allocation. This indicates that more lead arrangers in the loan firms produce loans with a lower spread.

Table 2

Correlation matrix

	After	Opaque	Infoasymm	Prev	Preinteraction	Lead_share	Leadshareint	Relationship	Relinteraction	Log (Spread)	Log (deal amount)	Log (Sales)	Log (Assets)	Log (Debt)
After M&A	1													
Opaque	0.05***	1												
Infoasymm	0.32***	0.58***	1											
Prev	-0.13***	-0.15***	-0.12***	1										
Preinteraction	0.79***	-0.01	0.17***	0.27***	1									
Lead_share	-0.19***	-0.10***	-0.09***	0.18***	-0.12***	1								
Leadshareint	0.40***	-0.02***	0.05***	0.05***	0.42***	0.23***	1							
Relationship	-0.15***	0.06***	0.02**	-0.06***	-0.17***	0.09***	-0.19***	1						
Relinteraction	0.45***	0.10***	0.26***	-0.15***	0.26***	-0.17***	-0.05***	0.37***	1					
Log (Spread)	0.04***	0.22***	0.12***	-0.16***	-0.03***	-0.07***	-0.12***	0.20***	0.17***	1				
Log (deal amount)	-0.12***	-0.31***	-0.21***	0.30***	0	0.20***	0.07***	-0.14***	-0.24***	-0.51***	1			
Log (Sales)	-0.08***	-0.36***	-0.21***	0.26***	0.02***	0.18***	0.08***	-0.15***	-0.20***	-0.55***	0.72***	1		
Log (Assets)	-0.01	0.02***	0.02***	0.05***	0.03***	0	0.01	-0.04***	-0.04***	-0.05***	0.09***	0.05***	1	
Log (Debt)	-0.02**	0	0	0.07***	0.02***	0.01*	0.02***	-0.04***	-0.04***	-0.08***	0.11***	0.07***	0.81***	1

Top M&A Lead Arrangers and Participant Banks, by Market

Table 3 lists the top 10 banks by market share who underwent an M&A and made a loan within the past five years; the banks are listed by the number of syndicated loan deals for each year from 2016 to 2020. Bank of America has the highest market share volume, followed by Citibank.

Table 3

This table lists the top ten market share (by total numbers of deals) from 2016 to 2020

(1) 2020		(2) 2019		(3) 2018		(4) 2017		(5) 2016	
	Mkt. share		Mkt. share		Mkt. share		Mkt. share		Mkt. share
Bank of America Merrill Lynch	0.35	Bank of America Merrill Lynch	0.59	Bank of America Merrill Lynch	0.64	Bank of America Merrill Lynch	0.49	Bank of America Merrill Lynch	0.47
Citibank	0.13	Citibank	0.10	Citibank	0.08	Citibank	0.10	Citibank	0.13
Deutsche Bank AG	0.08	Citibank NA	0.03	Bank of Nova Scotia	0.04	Bank of Nova Scotia	0.06	Bank of Nova Scotia	0.06
Citibank NA	0.07	HSBC	0.03	HSBC	0.02	HSBC	0.03	Citibank NA	0.04
KBC Bank NV	0.04	Bank of Nova Scotia	0.03	BB&T Capital Markets	0.02	Citibank NA	0.02	BB&T Corp	0.03
National Bank of Arizona	0.04	Santander Bank NA	0.03	Citibank NA	0.02	BB&T Capital Markets	0.02	HSBC	0.03
HSBC	0.04	BB&T Capital Markets	0.02	HSBC Bank Plc	0.01	Deutsche Bank AG	0.02	BB&T Capital Markets	0.03
Bank of Nova Scotia	0.03	Deutsche Bank AG	0.02	Landesbank Baden-Wurttemberg [LBBW]	0.01	BB&T Corp	0.02	Royal Bank of Scotland Plc [RBS]	0.02
Banco Santander SA	0.02	JP Morgan	0.01	Deutsche Bank AG	0.01	Royal Bank of Scotland Plc [RBS]	0.02	Banco Santander SA	0.01
Barclays Bank Plc	0.02	Banco Bilbao Vizcaya Argentaria SA [BBVA]	0.01	Lloyds Bank	0.01	BNP Paribas SA	0.01	Deutsche Bank AG	0.01

3.7 Results

3.7.1 Syndicate Structure

The results in Table 4, column (1), present the $After$ variable, which equals 1 if the borrower took a loan with a bank after a merger with another bank and equals 0 otherwise. There is a statistically significant positive impact that there are more leads arrangers' banks are making the syndicate after the merger and acquisition with another bank. Conversely, in column (2), the number of participants decreased by 0.17 in $After$, which refers to whether the borrower took a loan with a bank after it merged with another bank. In column (3), we find that the results of $After$ and Opaque have a statistically significant effect. The results indicate a positive sign for $After$, which means that after a bank M&A, they like to retain a higher percentage. A positive Opaque sign means that banks prefer to retain a higher percentage if the borrower is opaque for monitoring purposes. In column (4), the HHI is used to calculate the measure of concentration to capture the effects of whether M&A banks tend to hold a higher percentage. The HHI indicates the same results as bank allocation and proves that if the borrower is opaque, banks tend to retain a higher percentage. All of these coefficient estimates are statistically distinct from 0 at the 1% level. Table 4 is consistent with the theoretical framework of agency and moral hazard outlined above.

Table 4

Impact of bank mergers and acquisitions on syndicate structure

This table reports coefficient estimates from regressions relating to impact of bank mergers and acquisitions on syndicate structure. This empirical model

$$Syndy_{it} = \alpha_1 + \beta_1 After_{it} + X_{it}\beta_2{}' + \tau_t + \epsilon_{it}$$

$$Leadpart_{it} = \alpha_1 + \beta_1 After_{it} + X_{it}\beta_2{}' + \tau_t + \epsilon_{it}$$

where $Syndy_{it}$ represents the $\{bank\ allocation, HHI\}$ and $Leadpart_{it}$ represents $\{number\ of\ lead, number\ of\ participants\}$ in year t. $After$, which is described above as a binary variable, will take 1 if the deal happens after the merger and 0 otherwise. X control variables include year and industry indicator variables, the natural log of firm sales, debt, net income, assets, spread, deals amount, and a variety of controls for loan characteristics and syndicate structure, and $\varepsilon i,t$ is the random error. Variable definitions are in the Appendix.

VARIABLES	(1) #Lead	(2) #Parts	(3) Bankallocation	(4) Herfindahl
After M&A	0.05***	-0.17**	0.80***	131.83***
	(0.01)	(0.09)	(0.21)	(23.90)
Opaque	0.05***	0.60***	2.01***	254.81***
	(0.01)	(0.10)	(0.37)	(44.29)
Log (deal amount)	0.27***	5.62***	-11.67***	-1,108.18***
	(0.00)	(0.05)	(0.10)	(11.99)
Log (Sales)	0.06***	-0.11***	-0.08	14.15*
	(0.00)	(0.03)	(0.07)	(8.22)
Log (Assets)	-0.02***	0.15***	0.23***	24.94***
	(0.00)	(0.02)	(0.05)	(6.19)
Log (Debt)	0.00	-0.14***	0.10**	16.63***
	(0.00)	(0.02)	(0.04)	(5.10)
Log (Spread)	0.05***	0.63***	0.46***	94.35***
	(0.01)	(0.05)	(0.15)	(17.13)
Constant	-7.48***	-74.91***	256.47***	23,436.58***
	(0.13)	(1.01)	(2.31)	(271.35)
Control For				
Loan Purpose:	Y	Y	Y	Y
Loan Type	Y	Y	Y	Y
Observations	94,033	94,033	39,868	39,748
R-squared	0.41	0.42	0.59	0.51

Notes: All estimates are using fixed effects and each column contains a different regression. Standard errors are reported in parentheses where *** p<0.01, ** p<0.05, * p<0.1. The constant and time dummies are included in the specification but unreported for brevity.

3.7.2 Borrowing Firm

Table 5 presents evidence that, when the borrower requires more investigation, the lender, either a participant or a lead arranger, always prefers to retain a higher percentage. As borrowers repeatedly access the market, they should become familiar with potential participants, and lenders should hold fewer of the loans as a result. Table 5 proves that when a firm is opaque, the lenders prefer to keep a higher percentage, especially in cases where the borrower needs to be monitored or given more due diligence. This result, similar to the result in Sufi (2007), found that the lack of publicly available Securities and Exchange Commission filings prompts the bank to retain a higher percentage of monitoring.

Column (1) is statistically significant for the variable $After$ and opaque, indicating that lenders prefer to maintain a higher credit after banks' M&As; additionally, banks hold more of the percentage when the borrower is opaque. Column (2) adds the variable Infoasymm, which is an indicator variable that equals 1 if the borrower took a loan with a bank after a merger with another bank and 0 if the firm is unrated and does not have a record at the time of the loan. We examine the interaction of opacity after merge and note a statistically significant impact. The coefficient on the Infoasymm variable implies that the lender retains 3.74% more of the loan when the borrower is opaque and after bank mergers. Columns (3) and (4) use the HHI to find more concentrated results, and we find statistical significance for the variable $After$ in both columns. This means that banks' money lenders prefer to retain a higher percentage after M&As. In column (4), Infoasymm, the interaction of opacity after a merge and a statistically significant impact reveal that banks hold more of the loan if the borrower is opaque and after a bank merger.

Table 5

Impact of bank mergers and acquisitions on syndicate structure with private and unrated firms

This table reports coefficient estimates from regressions relating to impact of bank mergers and acquisitions on syndicate structure. This empirical model

$$Syndy_{it} = \alpha_1 + \beta_1 After_{it} + \beta_2 After * Opaque + X_{it}\beta_3{}' + \tau_t + \epsilon_{it}$$

Where Syndy,i,t represents the {bank allocation, HHI} in year t. $After$, which is described above as a binary variable, will take 1 if the deal happens after the merger and 0 otherwise. In $\beta_2$we run the interaction of After and Opaque firms, including private and unrated firms, which is "Infoasymm." X control variables include year and indicator variables, the natural log of firm sales, debt, net income, assets, spread, deals amount, and a variety of controls for loan characteristics and syndicate structure, and $\varepsilon i,t$ is the random error. Variable definitions are in the Appendix.

VARIABLES	(1) Bankallocation	(2) Bankallocation	(3) Herfindahl	(4) Herfindahl
after	1.14***	0.69**	178.55***	113.32***
	(0.29)	(0.29)	(32.87)	(33.14)
opaque	1.61***	0.29	198.19***	8.28
	(0.51)	(0.60)	(62.05)	(71.80)
infoasymm		3.74***		537.98***
		(1.01)		(124.28)
Lag (deal amount)	0.84***	0.86***	87.28***	89.85***
	(0.15)	(0.15)	(18.24)	(18.27)
Lag (Sales)	-0.30**	-0.30**	-40.59***	-41.16***
	(0.12)	(0.12)	(14.16)	(14.14)
Lag (Assets)	-0.17*	-0.17*	-11.53	-11.14
	(0.09)	(0.09)	(10.80)	(10.79)
Lag (Debt)	0.12*	0.13*	13.11	13.48
	(0.07)	(0.07)	(8.52)	(8.51)
Lag (Spread)	0.03	0.03	-14.63	-13.71
	(0.22)	(0.22)	(25.45)	(25.51)
Log (deal amount)	-12.03***	-12.02***	-1,151.35***	-1,150.91***
	(0.17)	(0.17)	(19.97)	(20.01)
Log (Sales)	-0.23*	-0.23*	2.35	2.35
	(0.12)	(0.12)	(14.33)	(14.30)
Log (Assets)	0.20**	0.19**	23.34**	22.02**
	(0.09)	(0.09)	(10.71)	(10.69)
Log (Debt)	0.14*	0.14*	17.46**	17.72**
	(0.07)	(0.07)	(8.63)	(8.61)
Log (Spread)	0.43	0.44	85.33***	87.84***
	(0.27)	(0.27)	(30.43)	(30.52)
Constant	256.34***	256.15***	23,755.66***	23,727.09***
	(3.48)	(3.49)	(409.15)	(410.73)
Control For				
Loan Purpose:	Y	Y	Y	Y
Lead Type	Y	Y	Y	Y
Observations	20,299	20,299	20,299	20,299
R-squared	0.61	0.61	0.52	0.53

Notes: All estimates are using fixed effects, and each column contains a different regression. Standard errors are reported in parentheses where *** p<0.01, ** p<0.05, * p<0.1. The constant and time dummies are included in the specification but unreported for brevity.

In column (1) the coefficients of the control variables after and Infoasymm are all positive in sign and are significant even after adding the variable Prev, which is an indicator variable that equals 1 if the firm took a previous syndicated loan and 0 otherwise. Prev is a relationship indicator to reveal whether the borrower accessed the syndicated market more than once; it reveals a statistically significant impact that the lender holds less of the credit (by 2.82%) when the borrower has more previous syndicated loans and accessed the market previously. In column (2), the control variables $After$, and Infoasymm remain positive and significant. Additionally, the variable Prev remains statistically significant even after adding the variable Interaction, which is an interaction of previous syndicated loans after the merge. The interaction of $After$ and Prev the result does show an impact that is having the previous relationship After the banks, M&A is withholding bank allocation and lower by (1.48%). Columns (3) and (4) use the HHI to examine the results and the coefficients of the control variables After, and Infoasymm are all positive in sign and significant. The findings indicate that the variable Prev is statistically significant and confirm that if the borrower is more active in accessing the syndicated market, the lenders retain a lesser percentage. The results reveal that the control variables significantly affect except for interaction; additionally, they do indicate the impact of having a previous relationship after the bank M&A on the percentage of the loan retained.

Table 6

Impact of bank mergers and acquisitions on syndicate structure of borrowers with previous relationship

This table reports coefficient estimates from regressions relating to impact of bank mergers and acquisitions on syndicate structure. This empirical model

$$Syndy_{it} = \alpha_1 + \beta_1 After_{it} + \beta_2 After * Prev + X_{it}\beta_3{}' + \tau_t + \epsilon_{it}$$

Where $Syndy, i, t$ represents the $\{bank\ allocation, HHI\}$ in year t. $After$, which is described above as a binary variable, will take 1 if the deal happens after the merger and 0 otherwise. In $\beta_2$we run the interaction of $after$, and $Prev$ is an indicator variable that equals 1 if the firm took a previous loan; the interaction variable is "Preinteraction." X control variables include year and indicator variables, the natural log of firm sales, debt, net income, assets, spread, deals amount, and a variety of controls for loan characteristics and syndicate structure, and $\varepsilon i,t$ is the random error. Variable definitions are in the Appendix.

VARIABLES	(1) Bankallocation	(2) Bankallocation	(3) Herfindahl	(4) Herfindahl
after	0.81***	1.90***	125.22***	245.52***
	(0.29)	(0.64)	(32.98)	(75.00)
opaque	0.28	0.36	7.30	16.54
	(0.59)	(0.60)	(71.55)	(71.69)
infoasymm	3.73***	3.49***	536.43***	509.41***
	(1.00)	(1.01)	(123.69)	(123.54)
Prev	-2.82***	-2.30***	-279.25***	-222.23***
	(0.38)	(0.44)	(44.44)	(51.77)
preinteraction		-1.48**		-162.17**
		(0.69)		(81.36)
Lag (deal amount)	0.87***	0.87***	91.22***	90.92***
	(0.15)	(0.15)	(18.23)	(18.22)
Lag (Sales)	-0.31**	-0.31**	-41.93***	-42.09***
	(0.12)	(0.12)	(14.12)	(14.12)
Lag (Assets)	-0.16*	-0.16*	-10.95	-10.42
	(0.09)	(0.09)	(10.78)	(10.78)
Lag (Debt)	0.14*	0.14*	14.85*	14.55*
	(0.07)	(0.07)	(8.50)	(8.50)
Lag (Spread)	0.07	0.06	-9.90	-10.55
	(0.22)	(0.22)	(25.54)	(25.52)
Log (deal amount)	-11.84***	-11.84***	-1,132.59***	-1,132.73***
	(0.17)	(0.17)	(20.27)	(20.26)
Log (Sales)	-0.20	-0.19	5.96	6.23
	(0.12)	(0.12)	(14.29)	(14.30)
Log (Assets)	0.18**	0.19**	21.05**	21.51**
	(0.09)	(0.09)	(10.67)	(10.67)
Log (Debt)	0.16**	0.15**	19.64**	19.33**
	(0.07)	(0.07)	(8.58)	(8.58)
Log (Spread)	0.55**	0.55**	98.98***	98.67***
	(0.27)	(0.27)	(30.62)	(30.61)
Constant	250.52***	249.82***	23,168.25***	23,090.04***
	(3.62)	(3.67)	(426.00)	(432.52)
Control For				
Loan Purpose:	Y	Y	Y	Y
Lead Type	Y	Y	Y	Y
Observations	20,299	20,299	20,299	20,299

R-squared	0.61	0.61	0.53	0.53

Notes: All estimates are using fixed effects, and each column contains a different regression. Standard errors are reported in parentheses where *** p<0.01, ** p<0.05, * p<0.1. The constant and time dummies are included in the specification but unreported for brevity.

Table 7 measures the lender's reputation using the lead arranger's market share, by amount, in the year prior to the loan. Column (1) indicates that the primary independent variable and control variables $After$, Opaque, Infoasymm, and Prev are all significant. A new control variable (Lead_share) is added to investigate the market share, or the number of times the bank led the market prior to the year. The results indicate that the lead share prior to the year has a statistically significant impact on bank allocation. In Column (2), a new interaction variable, Leadshareint, is added to the effect of Lead_share the lender with the variable "after" if the borrower took a loan with a bank after the merger with another bank. The interaction between $After$ and lead share, which is Leadshareint, has significant impact on bank allocation. Finally, columns (3) and (4) examine the model using the HHI and the primary independent variable After are still statistically significant and also the interaction Leadshareint which shows the affects the percentage of the loan.

Table 7

Impact of bank mergers and acquisitions on syndicate structure of borrowers with number of leads

This table reports coefficient estimates from regressions relating to impact of bank mergers and acquisitions on syndicate structure. This empirical model

$$Syndy_{it} = \alpha_1 + \beta_1 After_{it} + \beta_2 After * lead\ share + X_{it}\beta_3{}' + \tau_t + \epsilon_{it}$$

Where $Syndy, i, t$ represents the $\{bank\ allocation, HHI\}$ in year t. $After$, which is described above as a binary variable, will take 1 if the deal happens after the merger and 0 otherwise. In $\beta_2$we run the interaction of $after$, and $lead\ share$ is the number of how many times the bank leads the interaction variable "leadshareint." X control

variables include year and indicator variables, the natural log of firm sales, debt, net income, assets, spread, deals amount, and a variety of controls for loan characteristics and syndicate structure, and $\varepsilon i,t$ is the random error. Variable definitions are in the Appendix.

VARIABLES	(1) Bankallocation	(2) Bankallocation	(3) Herfindahl	(4) Herfindahl
after	1.88***	7.37***	248.10***	269.81***
	(0.64)	(0.56)	(75.02)	(76.31)
opaque	0.36	10.91***	16.57	21.70
	(0.60)	(0.46)	(71.69)	(71.73)
infoasymm	3.52***	1.30*	506.14***	491.70***
	(1.01)	(0.78)	(123.55)	(123.99)
Prev	-2.36***	-13.37***	-216.51***	-225.19***
	(0.44)	(0.38)	(51.83)	(51.88)
preinteraction	-1.41**	-2.61***	-168.59**	-148.12*
	(0.69)	(0.64)	(81.37)	(82.02)
leadshareint		-0.03***		-0.47***
		(0.00)		(0.18)
Lag (deal amount)	0.89***	-4.63***	89.36***	89.28***
	(0.15)	(0.11)	(18.22)	(18.21)
Lag (Sales)	-0.31**	-0.08	-41.73***	-41.81***
	(0.12)	(0.10)	(14.13)	(14.12)
Lag (Assets)	-0.17*	0.12	-9.69	-9.99
	(0.09)	(0.08)	(10.78)	(10.78)
Lag (Debt)	0.14*	0.05	14.19*	14.37*
	(0.07)	(0.06)	(8.49)	(8.50)
Lag (Spread)	0.06	0.58***	-10.37	-9.89
	(0.22)	(0.17)	(25.54)	(25.54)
Log (deal amount)	-11.84***		-1,132.73***	-1,132.05***
	(0.17)		(20.24)	(20.23)
Log (Sales)	-0.21*		7.46	7.75
	(0.12)		(14.31)	(14.31)
Log (Assets)	0.19**		21.75**	21.77**
	(0.09)		(10.67)	(10.67)
Log (Debt)	0.16**		19.09**	19.05**
	(0.07)		(8.58)	(8.58)
Log (Spread)	0.59**		94.87***	92.85***
	(0.27)		(30.67)	(30.68)
Constant	249.69***	118.61***	23,103.81***	23,079.95***
	(3.67)	(2.46)	(432.36)	(432.18)
Control For				
Loan Purpose:	Y	Y	Y	Y
Lead Type	Y	Y	Y	Y
Lead Share	Y	Y	Y	Y
Observations	20,299	20,299	20,299	20,299
R-squared	0.61	0.21	0.53	0.53

Notes: All estimates are using fixed effects and each column contains a different regression. Standard errors are reported in parentheses where *** p<0.01, ** p<0.05, * p<0.1. The constant and time dummies are included in the specification but unreported for brevity.

In column (1) of Table 8, the model still indicates a significant impact for the leading independent variable and $After$, Infoasymm, even after adding more control variables. We attempted to examine the lender–borrower relationship by adding a control variable relationship: An indicator variable equals 1 if the borrower took a loan with a bank before it merged with another bank and then took another loan from a different bank. The variable's results examine whether the relationship was maintained or lost after the merger or acquisition and whether a higher or lower percentage of the loan was retained. The results are statistically significant that, after M&As, lenders tend to keep a higher percentage if the borrower switches and takes a loan from a different bank. In column (2), we added an interaction variable, Relinteraction, which is an interaction between the variables Switch and After, to examine the relationship between lenders and borrowers. The variable Relinteraction reveals a statistically significant impact on bank allocation. The results in columns (3) and (4) examine the model with the HHI and find similar results.

Table 8

Impact of bank mergers and acquisitions on syndicate structure of borrowers with previous relationship before merger

This table reports coefficient estimates from regressions relating to impact of bank mergers and acquisitions on syndicate structure. This empirical model

$$Syndy_{it} = \alpha_1 + \beta_1 After_{it} + \beta_2 After * Relationship + X_{it}\beta_3{}' + \tau_t + \epsilon_{it}$$

Where $Syndy, i, t$ represents the $\{bank\ allocation, HHI\}$ in year t. $After$, which is described above as a binary variable, will take 1 if the deal happens after the merger and 0 otherwise. In $\beta_2$we run the interaction of $After$ and $Relationship$, which is a binary variable if the borrowers have a previous relationship with the lender and the interaction variable is Relinteraction if the borrowers have a previous relationship with the lender. They take loans after the M&A. X control variables include year and industry indicator variables, the natural log of firm sales, debt, net income, assets, spread, deals amount, and a variety of controls for loan characteristics and syndicate structure, and $\varepsilon i,t$ is the random error. Variable definitions are in the Appendix.

VARIABLES	(1) Bankallocation	(2) Bankallocation	(3) Herfindahl	(4) Herfindahl
after	2.01***	-0.20	276.09***	-41.21
	(0.65)	(0.67)	(76.28)	(78.40)
opaque	0.32	0.67	9.43	60.45
	(0.60)	(0.60)	(71.86)	(72.08)
infoasymm	3.47***	2.66***	493.79***	374.81***
	(1.01)	(1.02)	(124.07)	(124.81)
Prev	-2.30***	-2.57***	-207.36***	-245.93***
	(0.44)	(0.44)	(51.83)	(51.79)
preinteraction	-1.32*	-0.73	-149.89*	-66.66
	(0.69)	(0.70)	(81.90)	(81.95)
relationship	1.24***	-0.42	216.46***	-22.72
	(0.30)	(0.33)	(35.21)	(37.31)
relinteraction		6.22***		898.02***
		(0.73)		(85.71)
Lag (deal amount)	0.87***	0.87***	86.98***	87.40***
	(0.15)	(0.15)	(18.22)	(18.13)
Lag (Sales)	-0.31**	-0.28**	-40.75***	-36.67***
	(0.12)	(0.12)	(14.08)	(14.00)
Lag (Assets)	-0.17*	-0.17*	-9.86	-10.68
	(0.09)	(0.09)	(10.79)	(10.73)
Lag (Debt)	0.14*	0.15**	14.43*	14.78*
	(0.07)	(0.07)	(8.51)	(8.47)
Lag (Spread)	0.06	0.08	-11.00	-7.22
	(0.22)	(0.22)	(25.52)	(25.34)
Log (Spread)	0.55**	0.52*	88.86***	84.59***
	(0.27)	(0.27)	(30.61)	(30.40)
Log (deal amount)	-11.79***	-11.74***	-1,123.26***	-1,116.61***
	(0.17)	(0.17)	(20.20)	(20.17)
Log (Sales)	-0.18	-0.16	12.10	14.37
	(0.12)	(0.12)	(14.34)	(14.27)
Log (Assets)	0.19**	0.20**	22.25**	23.19**
	(0.09)	(0.09)	(10.68)	(10.65)
Log (Debt)	0.16**	0.16**	18.82**	19.12**
	247.92***	246.81***	22,787.21***	22,613.07***
Constant				
	(3.69)	(3.69)	(433.23)	(433.10)
Control For				
Loan Purpose:	Y	Y	Y	Y
Loan Type	Y	Y	Y	Y
Lead Share	Y	Y	Y	Y
Observations	20,299	20,299	20,299	20,299
R-squared	0.61	0.62	0.53	0.53

Notes: All estimates are using fixed effects and each column contains a different regression. Standard errors are reported in parentheses where *** p<0.01, ** p<0.05, * p<0.1. The constant and time dummies are included in the specification but unreported for brevity.

3.8 Conclusion

Bank M&As have become increasingly prevalent around the world, and these transactions have frequently been influenced by plans to reform the banking sector in many emerging nations to enhance financial system stability. This is true regardless of the evidence that M&As may improve banks' performance. Syndicated lending is a vital source of corporate finance. Privately held investment banks with high yields use syndicated lending products, with almost $1 trillion in new syndicated loans signed yearly. This chapter has explored how bank mergers and information asymmetry between borrowers and lenders influence financing arrangements in the syndicated loan market. Evidence has revealed that information asymmetry affects syndicate structure and composition consistent with moral hazard theories. When intense investigation and monitoring of the borrowers is necessary, the lead arranger seeks to guarantee diligence in investigation and monitoring by increasing its exposure to risk with the loan. Lead arrangers retain a significant portion of the loan and form a more concentrated syndicate when borrowers are opaque. The degree to which borrower reputation can reduce the effects of information asymmetry on syndicate structure has also been examined: Lenders syndicate a larger loan share when the borrowers repeatedly access the syndicated loan market. When viewed only in the syndicated loan market context, the results help researchers understand this vital source of corporate finance. These results can be viewed more broadly to shed light on the importance of bank M&As in the economy. Results provide empirical evidence to support the notion that an institution that is assigned due diligence and monitoring duties must hold a portion of the loan when the borrower is informationally opaque.

3.9 Appendix

Firm	
Log (Debt)	The logarithm of total debt during the year after the loan year.
Log (Net Income)	The logarithm of Net Income during the year after the loan year.
Log (Sales)	The logarithm of sales during the year after the loan year.
Log (Assets)	The logarithm of total assets during the year after the loan year.
Unrated firm	a dummy variable that equals one if the firm does not have a record at the time of the loan
opaque	a dummy variable that equals one if the firm does not have a record rating at the time of the loan
icticker	a dummy variable that equals one if the firm have a ticker at the time of the loan
Bank	
before	An indicator variable that equals one if the borrower took a loan with a bank before the merged with another bank.
after	An indicator variable that equals one if the borrower took a loan with a bank after the merged with another bank
switch	An indicator variable at equals one if the borrower took a loan with a bank before the merged with another bank and then take another a loan from a different bank.
infoasymm	that equals one if the borrower took a loan with a bank after the merged with another bank and if the firm does not have a record at the time of the loan
leadshareint	the interaction of Lead share of the lender with "after" if the borrower took a loan with a bank after the merged with another bank
infoasym	An indicator variable that equals one if the borrower took a loan with a bank after the merged with another bank and if the firm does not have a record at the time of the loan

relinterac~n	the interaction if the borrower took a loan with a bank before the M&A with the same firm take another a loan after the M&A.
syndicate structure	
Parts	Number of participants in the loan
lead	Number of Lead arranger in the loan
Herfindahl	Herfindahl index measure of concentration to capture any effects of "joint" monitoring
Bankallocationn	The percentage of the amount Held of the lender
Log (spread)	The logarithm of the amount the borrower pays in basis points over LIBOR for each dollar drawn down.
Log (deals amount)	The logarithm of deal amount of the loan
AllInDrawn	the amount the borrower pays in basis points over LIBOR for each dollar drawn down.
lead_share	The number of how many times the bank lead
Prev	An indicator variable that equals one if the firm took a previous syndicated loan
preinteracn	the interaction if the borrower took a loan with a bank after the merged with another bank with previous syndicated loans
Loan Contract	
purpose1	Acquis. line
purpose2	CP backup
purpose3	Corp. purposes
purpose4	Debt Repay.
purpose5	LBO
purpose6	Other
purpose7	Takeover
purpose8	Work. cap.

Loan_type1	Credit line
Loan_type2	Other line
Loan_type3	Term loan

Chapter 4: Environmental, Social, and Corporate Governance (ESG) Performance and the Cost of Capital

4.1 Introduction

Over the past few decades, research on finance has focused on "shareholders' supremacy," ignoring other important aspects that can potentially impact other stakeholders such as employees, customers, suppliers, and communities. These aspects are environmental, social, and corporate governance, which together are commonly referred to as ESG. In August 2019, the US chief executives met at the Business Roundtable and recognized that these important aspects of ESG have been overlooked. Considering financial institutions in particular, the University of Cambridge Institute for Sustainability Leadership's (CISL) Banking Environment Initiative (BEI), in the Bank 2030 report, argues that financial institutions should internalize sustainability in their systems and processes.[8] Given that bank loans are an important source of external finance for firms worldwide, and considering the importance of ESG, a natural question arises as to how banks treat the ESG performance of firms in providing access to capital. In other words, one must consider the impact of firms' ESG performance on their cost of capital. Furthermore, it is necessary to consider if banks provide a premium to firms that score highly in their ESG scores. For this study, we used global syndicated loan data from the Thomson Reuters DealScan database and ESG score data from Thomson Reuters Assets 4 database to assess if firms are able

[8] https://www.cisl.cam.ac.uk/resources/sustainable-finance-publications/bank-2030-accelerating-the-transition-to-a-low-carbon-economy

to raise cheaper loans when their ESG score is higher. This is the first chapter addressing ESG performance's impact on firms' cost of capital.

Environmental, social, and governance factors are the three pillars of corporate sustainability (Dahiya & Singh, 2020; Barkemeyer et al., 2014). Firms are ranked in different league tables based on their ESG score; this score shows their commitment to the ESG agenda (Wong et al., 2020). Therefore, ESG challenges are becoming ever more important to stakeholders; consequently, stakeholders require action from firms to meet the demands of corporate sustainability. To address this, firms have begun to implement policies that incorporate ESG concerns, including environmental externalities, employee well-being, social diversity, and inclusion. Hence, companies are providing disclosure of ESG-related activities in their financial statements (Buallay et al., 2020). In the 1960s, investors who took social responsibility seriously began to exclude non-financial performance factors from their portfolios (Camilleri, 2020). Governance in ESG focuses on a firm's management, audits, executive compensation, efficacy of internal controls, and protection of shareholder interests. These factors can influence strategic goals, operational execution, and the disclosure of sustainable business practices to key stakeholders.

Consequently, ESG factors are receiving increased recognition as being indicators of the robustness and sustainability of a company. Furthermore, pressure is mounting on financial intermediaries and institutional investors to adjust their roles in distributing capital for sustainable economic expansion. As noted by Nițescu & Cristea (2020), banks play an essential role in the shift to a low-carbon, sustainable economy by financing and supporting ecologically and socially responsible initiatives. Banks' susceptibility to risks such as commercial fraud, conflicts of interest, and immoral activities that affect stakeholders has incentivized them to react to ESG factors.

Although banks are not directly involved in emitting carbon emissions and are seen as contributing small benefits toward climate change (Esteban-Sanchez et al., 2017; Matute-Vallejo et al., 2011), the presence of CSR is more important for banks because of the nature of their business; banks belong to the service sector and can motivate borrowers to include CSR activities in their businesses through lending channels (Scholtens, 2009; Weber, 2012).

Furthermore, banks' business mainly relies on trust, and the trust in banks has been tarnished post-global financial crisis (Nandy and Lodh, 2012; Marie Lauesen, 2013; Hurley et al., 2014). Therefore, banks need to regain trust, which they can achieve by moving their focus from shareholder supremacy (Zingales, 2000; Henriksson et al., 2018) to stakeholder supremacy, including employees, suppliers, and customers in their long-term objectives. For this reason, the leading US chief executives highlighted the need to include stakeholders while defining a corporation's purpose (Gartenberg and Seraeim, 2019).

Our results indicate that a borrower's ESG scores significantly impact their borrowing costs. Specifically, a borrower with a higher ESG score can borrow cheaply from lenders as lenders value their stakeholder focus. Moreover, firm lenders provide preferential treatment and charge significantly lower interest rates to firms with high ESG scores. Among the three factors of environmental, social, and corporate governance, lenders charge the lowest interest rates if borrowers' environmental scores are higher, while lenders charge comparatively higher interest rates if only borrowers' corporate governance scores are higher. Furthermore, a prior relationship with the lender further reduces borrowers' cost of capital. For example, if a borrower has a high environmental score and a prior relationship with the lender, then that lender charges an even lower

interest rate. The same is true if the borrower has a higher corporate governance score. However, for the social score, there is no further reduction in interest rates if the borrower has a prior relationship with the lender. We found these results after controlling for firm-level characteristics; results demonstrated that lenders do not charge lower interest rates based on borrowers' experiencing low levels of default risk. Overall, our results provide empirical evidence that sustainability matters for lenders and can motivate borrowers to contribute toward a transition to net zero. Sustainability is profitable; firms are charged lower interest rates if they take care of the environment, are socially responsible, and abide by corporate governance rules.

4.2 Literature review

Incorporating ESG principles into a company's framework is crucial because doing so provides businesses with the authority and means to take effective climate action and create a more sustainable, resilient future. Given the increased emphasis on sustainable finance in recent years and the severity of environmental concerns, governments and companies have adopted investment steps to improve their ESG performance. Banks, in particular, are becoming critical sites for enhancing ESG performance as monitoring activities requires significant expenditure, which must be financed. Recently, social responsibility has been regarded as a need rather than an option for any successful organization. As a result, environmental social governance data comprises a direct component that is now more financially significant for businesses.

4.2.1 ESG and Financial Performance

ESG is a vital concern in contemporary global business: one which is directly linked to company culture. Culture is one issue that is frequently overlooked while building an ESG strategy. If a company claims to care about ESG, it must show it by serving customers consistently through internal policies, practices, and culture. Amel (2017) states that, in the eyes of investors, ESG metrics are more helpful for assessing risk and less useful when gauging performance relative to the competition. As a result, he states that many businesses have taken the initiative to develop distinctive strategies that embed environmental and social concerns into their brands and operations. In a similar study, Friede et al. (2015) gathered evidence from approximately 2,200 empirical studies conducted between 1970 and the end of 2014. They discovered a positive business case for investing in ESG and thus concluded that about 90% of academic papers, or approximately 2,100 studies, show a positive link between ESG and financial performance. As a result, high-rated ESG companies were shown to outperform low-rated ESG stocks; however, this comparison was based on the impact of a one-time adjustment.

Furthermore, ESG is a superior financial indicator that encourages businesses to contribute to environmental stewardship while enhancing employee engagement and productivity. Individuals who have a sense of inclusion and community feel valued for their contributions to the overall goals of their firm. Giese et al. (2019) studied the effects of ESG factors on stock prices, risk, and performance. They found that companies with higher ESG and MSCI scores had lower capital costs, less variable profitability, and lower market risk than companies with lower ESG and MSCI scores. In addition, Fama and French (2007) studied a simple framework for determining how investors' preferences for green enterprises impact projected profits. They agree that when measures for at least some investors contain factors other than future spending, prices diverge from

traditional risk and return models' usual expectations. Significantly, ESG supports businesses in implementing sustainability into their operations to attract top talent, which is part of corporate culture before investors anticipate the company's efforts.

Tarmuji et al. (2016) studied the impact of ESG practices on economic performance in Singapore and Malaysia. The study demonstrated that ESG ensures that employees can openly share their sustainability issues and ideas, outline what their suggestions mean to their company, and participate in achieving goals. Similarly, Amundi (2017) investigated the mechanisms and consequences of firms' credible commitments to reducing ESG stakeholder concerns through loan contracts between 2014 and 2017. Based on his findings, he argues that the portfolio with the highest ESG score outperformed competing assets in effective asset management. As a result, firms that excel at ESG are more likely to attract new investors. For example, good ESG ratings increase the likelihood that socially responsible investors and green investment funds will back a company.

While there have been several global financial crises and related mitigating regulatory measures over the past few decades, the financial crisis experienced in 2008 and 2009 was regarded as the most severe in terms of negative societal implications (Stiglitz, 2010). It led to the demise of one of the biggest, oldest, and most successful investment banking firms. Following the global financial crisis of 2008 and 2009, a broad range of stakeholders began to question the role of financial markets in terms of global sustainability, notably regarding social and environmental concerns. As a result, financial stakeholders began to research the impacts of ESG on the cost of capital, ultimately finding that companies with better ESG ratings have access to cheaper sources of debt and credit and a lower cost of equity capital.

For instance, Chava (2011) analyzed 5,879 credit facilities extended to 1,341 businesses in the United States and found that those with various environmental issues are subject to substantially higher interest rates. Conversely, firms with better ecological management receive lower loan interest rates. Schneider (2011) agrees that subpar environmental performance represents a substantial threat to future compliance and cleaning expenses. If these costs are too high, polluting businesses may be unable to continue making regular debt payments.

4.2.2 ESG Lending

Kim (2022) argues that ESG-linked loans are a credible way for borrowers to demonstrate their commitment to ESG-related issues to external stakeholders. Ilhan et al. (2022) also argue that the ESG lending market may have reached a state of equilibrium; as a performance-based pricing market, the ESG lending market allows firms to borrow from lenders who know how to effectively manage ESG performance-based pricing agreements and monitor the borrowers' ESG activities. In this arrangement, investors are prepared to lend to borrowers that can reliably uphold stringent ESG requirements. This is because there is a growing need to disclose companies' ESG activities among investors and other stakeholders. In another study, Baker (2022) defines "greenwashing" as a practice in which companies and banks engage in ESG-linked loans to mislead stakeholders about their commitment to ESG by publicizing vacuous ESG-dependent contract provisions. Ethical banks may also pressure borrowers needing finance to comply with stricter ESG guidelines and monitoring in exchange for looser credit terms.

Banks actively contribute to countries' economic progress by selecting what is financed, who receives money, how risks are managed, and what projects are sponsored; banking institutions

substantially impact society by performing these functions (Beck, Demirgüç-Kunt, & Levinem, 2010). As a consequence, the banking industry's players promote the adoption of good ESG rules. Chollet and Sandwidi (2018) argue that there is a direct correlation between a bank's commitment to good governance and environmental policies and the strength of its social governance performance. However, Nizam et al. (2019) state that developing an ESG framework, conducting due diligence, and conforming to current disclosure regulations requires significant financial resources. In contrast, Buallay (2019) states that despite the high costs associated with maintaining high ESG performance, banks are more than compensated for these costs by steady revenue, decreased corporate risk, positive performance benefits, and significant added value.

Brammer, Brooks, and Pavelin (2006) state that financial institutions with greater levels of ESG participation had lower levels of shareholder value. Investors increasingly included significant ESG risks and opportunities in their investment choices, demonstrating a focus on the future. Shakil et al. (2019) argue that enhancing ESG reporting might increase investor interest in a firm, and companies with weak ESG reporting face the danger of not being adequately evaluated and considered for investment due to their inadequate transparency, which would eventually result in fewer investments. Contrastingly, Hillman and Keim (2001) note that stakeholder management boosts corporate value, whereas ESG initiatives lower corporate value. Harjoto and Jo (2015) investigated the distinctions between overall, legal, and normative ESG effects on business value and found that requiring ESG initiatives negatively influenced the studied company's value. However, Galema, Plantinga, and Scholtens (2008) argue that, when using market-to-book ratios, corporations with high ESG have greater valuations than other corporations. Servaes and Tamayo (2013) agree that companies with high levels of consumer awareness experience even higher benefits from addressing ESG concerns. . In a similar piece of research, Deng, Kang, and Low

(2013) agree that acquirers participating in ESG had greater merger announcement returns and improved post-merger operational performance.

In addition, Niţescu and Cristea (2020) state that establishing ESG policy is a process that involves expenses for developing the ESG framework, completing due diligence, and adhering to existing disclosure rules. While there are costs involved in achieving a high ESG performance, these costs are mitigated by steady revenue, decreased company risk, favorable performance benefits and significant added value (Buallay, 2019). Fayad et al. (2017) found a direct correlation between their results and the stakeholder theory, particularly when voluntary activities to improve banks' social obligations are performed for social, economic, and environmental protection. Shakil et al. (2019) state that in developing economies there is a positive association between the banks' financial success and environmental performance. Buallay et al. (2020) also note that certain emerging nations are prepared to contribute significantly to global sustainability and that a bank that operates ethically and sustainably would earn above-average profits.

There is a mutual benefit between the bank and its stakeholders because of the sustainability reporting system's emphasis on ESG disclosure. Eccles et al. (2014) state that sustainability reporting is increasingly seen as a means to improve external and internal decision-making, increase openness, reinforce financial stability, and improve social sustainability. Singh and Gaur (2009) argue that ESG disclosure has become an essential issue for managers and stakeholders worldwide due to the rising interconnection of international economies and the growth of huge enterprises. They also emphasize that the transparency of governance affects stakeholders' decision-making, which is a reaction to the existing institutional context. In their investigation into the implications of ESG for company performance, Popli et al. (2017) found that

financial institutions that could withstand an erosion of their profits were in sync with the shifting external environment. Therefore, environmental disclosure is crucial for financial success.

4.2.3 Sustainable Lending

Sustainable growth relies heavily on the banking industry, a cornerstone of the financial system. Since sustainability has become a major movement in the financial sector, it is incumbent upon investors to make responsible and sustainable investments by considering governance and environmental concerns. Nizam et al. (2019) argue that studies into the banking industry should also honed in on social responsibility concerns, primarily examining the link between banks' financial performance and the incorporation of social responsibility concepts into their management processes and systems. Simpsons and Kohers (2002) agree that banks' bottom lines improved significantly after adopting socially responsible procedures. However, Esteban-Sánchez et al. (2017) researched a sample of 154 banks from 22 countries between 2005 and 2010 that adopted social responsibility principles and found contradictory results, rejecting the positive relationship between adoption of these principles and the financial performance of banks. Nonetheless, Simpsons and Kohers (2002) state that ESG investments are made because the management of a bank believes that doing business sustainably and responsibly leads to above-average earnings.

Lastly, a nation's ESG governance structure may enhance the quality of a country's profits by increasing the level of company monitoring and reducing the amount of earnings management (Zehri & Zgarni, 2020). Forcadell and Aracil (2017) assert that social responsibility is a strategy that can assist financial institutions in repairing the damage done to their reputations due to the financial crisis of 2008. In place of one-way communication and other conventional methods of

legitimization, banks must provide sufficient information on the positive interactions they have had with various stakeholders. Esteban-Sanchez et al. (2017) agree that there is a correlation between a corporation's level of financial performance and the quality of its governance.

Scholars have recently explored the potential effects of sustainable lending on stockholder wealth in the lending sector. Companies are under increasing pressure from stakeholders to be cautious in their approach to ESG issues. In response to rising customer demand, businesses have incorporated environmental externalities, employee well-being, and social diversity and inclusion into their company policies. According to Cai and He (2014), investors would be disappointed if the financial stability of firms funded by banks worsened due to a lack of ESG integration within bank operations and financing. Because banks' lending operations contribute considerably to environmental degradation, it is critical to understand how ESG concerns influence bank lending, particularly during times of crisis. In finance, there is a modest but growing corpus of research exploring how capital providers and financial contracts affect organizations' ESG practices. While much has been written about stock and bond financing, little is known about the role banks and loan contracts play in the ever-changing ESG finance landscape.

First, the expansion of ESG financing has allowed for the development of green project finance lending, which supplements the market for green bonds, and general-purpose loans related to the borrower's ESG performance defined by a broad range of indicators. Among borrowers in the United States and Western Europe, ESG-linked loans have become more popular in recent years as the market for ESG loans has expanded to include a wider range of sectors. Berlin et al. (2020) analyzed a large sample of loan agreements. Their research showed that relationship lenders are more likely to have rolling credit facilities than term loans, which allows for more flexible contracting around obligations with easily traceable and enforceable clauses.

Second, according to a survey by Brodback et al. (2018), investors who believe they can have a positive social or environmental impact are more likely to value social responsibility. Third, Berlin et al. (2020) argue that borrowers who have loans with divided control rights are nonetheless subject to the restrictions of financial covenants. Finally, Kim et al. (2022) agree that ESG lending is driven partly by increased demand from creditors; ESG loan borrowers can potentially raise financing while maintaining lower spreads because good ESG profiles can protect firms against downside risks. This protection thus translates into lower spreads at issuance. In addition, these agreements provide revolving credit lenders with the exclusive authority to renegotiate with the borrower, including waiving or changing the financial covenants, without first engaging the term lenders. ESG-linked loans are particularly common in nations with civil law origins because economic outcomes are frequently based on rules and regulations which define stakeholder-oriented interventions rather than market discretion.

Additionally, Danisman and Tarazi (2022) claim that the long-term viability of the businesses sponsored by banks may be negatively impacted if banks do not include ESG concerns in their operations and funding. The researchers discovered that certain members of the environmental lobby and banks' critics harbor skepticism regarding banks' true motivations. Jung et al. (2018) also state that there is mounting evidence that financial institutions consider carbon risk when making lending decisions, notably through credit risk evaluation criteria and financing costs. Herbohn et al. (2019) agree that there are options for funding programs that are socially and environmentally responsible through savings accounts.

In addition, Friede et al. (2015) analyzed more than 2,000 empirical studies on ESG disclosures and business performance, indicating that more than 90% of the studies show a positive association between ESG and performance. Cai and He (2014) conducted analogous research using

data from 1992 to 2011 and argued that there was a positive relationship between corporate environmental responsibility and long-run stock returns. Scholtens (2009) also argue that if a corporation is open about its ESG procedures, investors are more confident in the corporation's ability to outperform competitors in a mature market. Li et al. (2018) agree that a corporation is more likely to increase its ESG disclosures to meet investor demands. Similarly, Cheng et al. (2014) concur that ESG has been shown to provide firms with superior returns by lowering their cost of equity and cost of capital, improving valuation, and providing more forgiving borrowing terms.

Eliwa et al. (2019) examined a sample of companies from 15 EU member states. They found that businesses that record their activities related to ESG are offered discounts by banks. Crifo et al. (2017) argue that countries with well-developed ESG reporting systems have lower average borrowing costs and yield spreads. Mohammad and Wasiuzzaman (2021) state that companies with narrower yield spreads have an advantage in comparison with their competitors as they experience fewer issuance risks and lower financing costs. Sherwood and Pollard (2018) also agree that financial institutions that adopt an ESG stance might see higher returns while simultaneously reducing risk.

Cai and He (2014) discovered that ESG disclosures boost trust and improve firms' potential to outperform their competitors in a highly competitive developed market, prompting enterprises to proactively participate in more ESG disclosures to meet market expectations. However, Baldini et al. (2016) argue that country-specific factors such as governance, labor, and economy significantly affect firms' ESG disclosures. Therefore, stock markets react positively to public announcements of ESG-linked loan issuance only when KPI disclosure quality is high.

Kim et al. (2022) examined the period between January 2016 and September 2021 using data from Refinitiv DealScan. According to their research, ESG lending activity has skyrocketed in recent years, from $6 billion in 2016 to an expected $322 billion in 2021, accounting for a significant portion of the global loan market and outnumbering the global green bond and sustainability-linked bond markets in terms of size. The authors discovered that ESG loans would potentially account for more than 12% of global bank lending in 2021. The total ESG financing activity was $289 billion from January to September 2021, with ESG-linked loans accounting for 90% of the total. Therefore, because of the expansion of these general-purpose loans, the reach of ESG financing has widened to include other enterprises beyond utilities which continue to receive the majority of green loan and bond funding.

The relationship between environmental, social, and governance (ESG) factors and borrowing costs has gained increasing importance for lenders and borrowers. Using debt financing is a standard method used by businesses to raise funds. It involves borrowing money from a lender with an agreement to repay the amount borrowed, plus interest, over a specified period. Debt financing can provide access to capital that may not otherwise be available, but it also comes with the obligation to make regular payments and the potential risks of default. Previous studies have focused more on the bonds side (Jang, 2020) and (Peixin, 2020); both authors study the effect of ESG scores on bond pricing.We examine how ESG scores affect a borrower's borrowing costs. In addition, we test whether lenders provide preferential treatment to companies with high ESG scores. We explore the prior relationships with borrowers' lenders and if that impacts spread cost. Regarding the different aspects of ESG, a borrower's environmental score significantly impacts interest rates more than its social or governance scores. We test whether borrowers with a lower ESG score get better treatment and lower interest rates charged. To the best of our knowledge, this

is the first study that explores the impact of ESG performance on firms' cost of capital. One paper by Chava (2014) presents the impact of environmental concerns on firms' cost of capital. Our study differs from this paper and contributes to the literature in the following ways. First, Chava's (2014) work only investigates the environmental factor of ESG. In contrast, we study all three factors of ESG, in addition to the composite index of ESG. Second, we use the prior relationship of the lender and the borrower as a proxy for reducing information asymmetry and investigate if prior relationships of firms provide additional premiums in terms of cheap access to capital. Third, we address the impact of reducing information asymmetry on ESG factors and the ESG index. This leads me to the following hypothesis.

H:1 How do ESG scores affect the borrowing costs?

H:2 Do lenders provide preferential treatment to companies with high ESG scores?

H:3 Does the prior relationship with borrowers' lenders impact spread cost?

H:4 Which aspect of ESG scores (environmental, social, or governance) significantly impacts interest rates the most?

H:5 What is the impact of ESG performance on firms' cost of capital, and how does it compare to the impact of other factors?

4.3 Data and Methodology

In this study, we collected syndicated loan data from DealScan, a portal that delivers up-to-date information about the international commercial loan business. It provides access to the Loan Pricing Corporation's database, which contains information on loans, high-yield bonds, private placements, and hybrid financing arrangements. In addition, the database houses information regarding the borrower, the lender, the purpose of the loan, principal and interest payments, any fees linked with the loan, any covenants attached to the loan, and the borrower's financial situation. Academics rely extensively on DealScan as a critical data source when obtaining environmental and social governance data. We extracted ESG scores from ASSET4 Refinitiv, which includes environmental, economic, social, and corporate scores, which all measure the quality of the businesses and their business practice.

Many studies rely on the DealScan database from Thomson Reuters Loan Pricing Corporation, widely considered to house the most comprehensive information on the syndicated loan market (Xu & La, 2017). In a study by Fang, Liu, and Zhang (2022), the DealScan database was vital for attaining data on environmental and social governance in the financial sector. For example, by using the Thomson Reuters LPC DealScan database, which includes detailed global loan tranche records, they were able to discover an alarming and pervasive decline in aggregate loan issuances. Similarly, Shin (2021) retrieved loan information from the LPC DealScan database between 2009 and 2018. He found that most loans included in the DealScan database are syndicated and that the database contains information on loan features such as yield spreads, maturity, facility amount, purpose, kind, and other contract parameters.

The sample for this study included 145,830[9] syndicated loan deals from January 1982 to December 2021. Our primary dependent variable was spread, which is the amount, in basis points, that the borrower pays. Most types of loans were term loans (55%), secondary credit lines (38%), and other loans only (7%). The most prevalent reasons for loans were loans for general purposes (38%) and second refinance (21%).

We examined how variation in the environment score affects syndicate structure and whether the effect is consistent with the information asymmetry hypotheses outlined above.

$$Spread_{it} = \alpha_1 + \beta_1 environment\ score_{it} + X_{it}\beta_{,2}{}' + \tau_t + \epsilon_{it}$$

The left-hand-side variable is measures of the spread. The key right-hand-side variable of interest is $envirement\ score$. The critical coefficient of interest is β1, or how increased "$environment\ score$" affects spread, which measures the differential coefficient and therefore measures the impact of loan pricing**.** In other words, β1evaluates if the increase in the environmental score has an effect on the loan pricing.

The control variables (X) include year, industry indicator variables, the natural log of firm sales, debt, net income, assets, maturity, deals amount, and a variety of controls for loan characteristics and syndicate structure.

[9] The sample size here is more significant than in chapter 3 due to the number of loans that were eliminated after the M&As data.

Table 1: Summary Statistics

The following table presents summary statistics for the sample and includes 145,830 syndicated loan deals from January 1982 to December 2021.

Summary Statistics

(Panel A)

	1	2	3	4	5	6
Variable	Observations	Mean	Std	25th Percentile	Median	75th Percentile
ESG						
social_score	145,830	0.785012	0.203589	0.714963	0.862407	0.928222
corpgov_score	145,830	0.541745	0.283613	0.273558	0.588447	0.803905
envrn_score	63,627	0.74585	0.226585	0.647281	0.857234	0.906447
econ_score	145,830	0.597722	0.286879	0.345817	0.666812	0.859295
overall_score	145,830	0.751425	0.22155	0.68683	0.823681	0.906773
overall_rel	145,830	0.284768	0.390952	0	0	0.738589
soci_rel	145,830	0.296953	0.403147	0	0	0.805131
corp_rel	145,830	0.205355	0.318888	0	0	0.34264
econ_rel	145,830	0.225141	0.340892	0	0	0.459396
env_rel	63,627	0.287931	0.395715	0	0	0.776191
Bank						
Relationship	145,830	0.374011	0.483868	0	0	0
opaque	145,830	3667078	.4819074	0	0	0
NumLead	145,830	35.89961	48.90166	6	18	44
HHI	57,148	318.994	1530.611	16.32604	52.6338	156.25
lendershare	57,148	8.609308	10.9212	3.26	5.6522	10

Summary Statistics

(Panel B)

	1	2	3	4	5	6
Variable	Observations	Mean	Std	25th Percentile	Median	75th Percentile
Loan contract						
Log (Spread)	145,830	4.502407	0.918128	3.806663	4.501475	5.247024
Log (Maturity)	145,830	3.809301	0.692834	3.583519	4.094345	4.094345
Log (Assets)	145,830	11.135	2.706828	9.275556	10.78864	12.34643
Log (debt)	145,830	8.079019	3.194011	6.117877	7.700295	9.754756
Log (Sale)	145,830	10.50529	2.732778	8.601534	9.998725	12.03905
Log (Deals amoutn)	145,830	7.19006	1.69831	6.109248	7.130899	8.160519
Purpose: Acquisition	145,830	0.04569	0.208813	0	0	0
Purpose: Capital expenditure	145,830	0.035055	0.183918	0	0	0
Purpose: General Purpose	145,830	0.337407	0.472827	0	0	0
Purpose: Refinance	145,830	0.265597	0.441652	0	0	0
Purpose: Leveraged Buyout	145,830	0.036995	0.188751	0	0	0
Purpose: Other	145,830	0.093554	0.291208	0	0	0
Purpose: Project Finance	145,830	0.036899	0.188515	0	0	0
Purpose: Takeover	145,830	0.101701	0.302255	0	0	0
Purpose: Trade finance	145,830	0.008215	0.090264	0	0	0
Purpose: Working capital	145,830	0.038888	0.193328	0	0	0
Loan_type: Credit Line	145,830	0.392622	0.488335	0	0	0
Loan_type: Other Loan	145,830	0.05623	0.230366	0	0	0
Loan_type: Term Loan	145,830	0.551149	0.497379	0	0	0

Table 2

Correlation Matri

	Ln_spread	envrn_score	social_score	corpgov_score	overall_score	econ_score	Relationship	opaque	Ln_Maturity	Ln_dealamount	Ln_sale	Ln_debt	Ln_asset	lendershare	H
_spread	1														
vrn_score	-0.22***	1													
ial_score	-0.17***	0.72***	1												
pgov_score	0.08***	0.23***	0.24***	1											
erall_score	-0.08***	0.76***	0.81***	0.55***	1										
on_score	0.03***	0.27***	0.42***	0.01*	0.63***	1									
lationship	-0.12***	0.12***	0.05***	0	0.02***	-0.08***	1								
aque	0.12***	-0.18***	-0.15***	-0.21***	-0.24***	-0.09***	-0.21***	1							
_Maturity	0.15***	-0.06***	-0.09***	-0.02***	-0.09***	-0.09***	-0.06***	0.14***	1						
_dealamount	-0.18***	0.05***	0.04***	-0.08***	0.03***	0.04***	0.16***	-0.24***	-0.03***	1					
_sale	-0.25***	0.24***	0.12***	-0.46***	-0.05***	0	0.12***	-0.03***	-0.09***	0.10***	1				
_debt	-0.24***	0.19***	0.04***	-0.47***	-0.14***	-0.10***	0.14***	-0.06***	-0.07***	0.12***	0.93***	1			
_asset	-0.23***	0.19***	0.07***	-0.45***	-0.09***	-0.04***	0.12***	-0.06***	-0.08***	0.15***	0.97***	0.96***	1		
dershare	0.13***	-0.07***	-0.05***	-0.04***	-0.05***	0.01	-0.01	0.14***	0	-0.20***	-0.03***	-0.05***	-0.05***	1	
II	0.09***	-0.05***	-0.03***	0	-0.03***	0	0.01	0.05***	0	-0.06***	-0.04***	-0.05***	-0.04***	0.78***	

4.4 Results

In Table 3 Column 1, using spread as the dependent variable revealed a statistically significant impact on the environment and opaque scores. The results demonstrate that the higher the ESG rating the better the incentives borrowers receive. These incentives include a longer maturity of 0.19% and a lower loan spread of 0.75%. In Column 2, we added credit line, term loan, and other loan, which are credit and term loans and other loans and purposes; the results still show a significant impact. Finally, in Columns 3-4, to enhance the model's validity and limit the influence of the extraneous variables, we added more control variables: industry, years, and the number of lead arrangers were added as explanatory variables. We found that the coefficients for the environment score and the natural log of maturity were significantly positive and negative. These findings imply that the higher the environment score the better the deal borrowers receive and the lower the spread borrowers are charged. Additionally, the higher the score the longer the duration borrowers are given, which translates to borrowers receiving a better deal.

Table 3: Impact of Spread on Environment Score of Borrowers

The following table reports coefficient estimates from regressions relating to the impact of spread on environment score. This empirical model can be expressed as

$$Spread_{it} = \alpha_1 + \beta_1 environment\ score_{it} + X_{it}\beta_2{}' + \tau_t + \epsilon_{it}$$

where $Spread$ represents the natural log of spread in year *t*. Spread describes the amount the borrower pays in LIBOR plus basis points for the drawdown of each dollar. It adds the loan spread with any annual (or facility) fee paid to the bank group. The $environment\ score$, which is described above, otherwise. X control variables include year and industry indicator variables, the natural log of firm sales, debt, net income, assets, maturity, delas amount, and a variety of controls for loan characteristics and syndicate structure. εi, represents the random error. Standard errors are adjusted for clustering at the firm level. *, **, and *** denote significance levels of 10%, 5%, and 1%, respectively. Variable definitions can be found under Appendix.

	(1) *Spread*	(2) *Spread*	(3) *Spread*	(4) *Spread*
Envrn score	-0.75***	-0.70***	-0.51***	-0.53***
	(0.15)	(0.14)	(0.13)	(0.13)
opaque	0.21***	0.15**	0.16***	0.17***
	(0.07)	(0.06)	(0.05)	(0.05)
Maturity (Log)	0.19***	0.16***	0.18***	0.18***
	(0.04)	(0.04)	(0.03)	(0.03)
Dealsamount (Log)	-0.05**	-0.05**	-0.10***	-0.11***
	(0.02)	(0.02)	(0.02)	(0.02)
Sale (Log)	-0.00	-0.01	-0.02	-0.02
	(0.04)	(0.04)	(0.04)	(0.04)
Debt (Log)	-0.05	-0.04	-0.04	-0.03
	(0.03)	(0.03)	(0.02)	(0.02)
Asset (Log)	0.01	0.00	0.02	0.02
	(0.06)	(0.06)	(0.05)	(0.05)
#Lead				0.13**
				(0.06)
Constant	4.98***	5.43***	5.36***	5.36***
	(0.34)	(0.36)	(0.39)	(0.38)
Control For:				
Loan type	*No*	*Y*	*Y*	*Y*
Loan Purpose	*No*	*Y*	*Y*	*Y*
Industry	*No*	*No*	*Y*	*Y*
Year	*No*	*No*	*Y*	*Y*
Observations	63,627	63,627	63,347	63,347
R-squared	0.16	0.23	0.44	0.45

In Table 4, we examined the environment score, which includes resource reduction, emission reduction, product innovation, and the variable relationship, which measures the relationship between borrower and lender; we used an indicator variable that equals one if the borrowing is repeated from the same lender. Column 1 shows that if the borrower has a relationship with the lender, the loan spread collateral lowers by 0.11% and the environment score lowers the loan spread by 50 BPS.

In Column 2, we added env_rel, the interaction between relationship and environment scores, showing significant results in which spread lowered by 0.43%. Finally, in Columns 3-4,

we added number of lead arrangers as explanatory variables to the model, and both columns show a statistically significant impact.

We found that the coefficients for the environment score and the natural log of maturity are significantly positive and negative. These results imply that the higher the environment score the better the deal borrowers receive and the lower the spread borrowers are charged. Additionally, the higher the score the longer the duration borrowers are given, which translates to borrowers receiving a better deal.

Table 4: Impact of Spread on the Environment Score of Borrowers with Relationship

The following table reports coefficient estimates from regressions relating to the impact of spread on environment score with relationship. This empirical model can be expressed as

$$Spread_{it} = \alpha_1 + \beta_1 environment\ score_{it} + \beta_2 Relationship + X_{it}\beta_3{}' + \tau_t + \epsilon_{it}$$

$$Spread_{it} = \alpha_1 + \beta_1 environment\ score_{it} + \beta_2 Relationship * environment\ score + X_{it}\beta_3{}' + \tau_t + \epsilon_{it}$$

where $Spread$ represents the natural log of spread in year *t*. Spread describes the amount the borrower pays in LIBOR plus basis points for the drawdown of each dollar. It adds the spread of the loan with any annual (or facility) fee paid to the bank group. $envirement\ score$ which described above. In the first model, for Columns 1 and 2, β_2, we ran an indicator variable that equals one if the borrowing repeated from the same lender and second model we run interaction between relationship and environment score. X control variables include year and industry indicator variables, the natural log of firm sales, debt, net income, assets, maturity, delas amount, and a variety of controls for loan characteristics and syndicate structure. $\varepsilon i,t$ represents the random error. Standard errors are adjusted for clustering at the firm level. *, **, and *** denote significance levels of 10%, 5%, and 1%, respectively. Variable definitions can be found under Appendix.

	(1) *Spread*	(2) *Spread*	(3) *Spread*	(4) *Spread*
envrn_score	-0.50***	-0.36***	-0.52***	-0.38***
	(0.13)	(0.12)	(0.13)	(0.12)
Relationship	-0.11***	0.21**	-0.11***	0.23**
	(0.03)	(0.11)	(0.03)	(0.11)
env_rel		-0.43***		-0.44***
		(0.14)		(0.14)
opaque	0.15***	0.15***	0.16***	0.16***
	(0.05)	(0.05)	(0.05)	(0.05)
Maturity (Log)	0.17***	0.17***	0.17***	0.17***
	(0.03)	(0.03)	(0.03)	(0.03)
Dealsamount (Log)	-0.10***	-0.10***	-0.10***	-0.10***
	(0.02)	(0.02)	(0.02)	(0.02)
Sale (Log)	-0.02	-0.01	-0.01	-0.01
	(0.04)	(0.04)	(0.04)	(0.04)
Debt (Log)	-0.04	-0.04	-0.03	-0.03
	(0.02)	(0.02)	(0.02)	(0.02)
Asset (Log)	0.02	0.02	0.02	0.01
	(0.05)	(0.05)	(0.05)	(0.05)
#Lead			0.12**	0.12**
			(0.06)	(0.06)
Constant	5.33***	5.20***	5.33***	5.20***
	(0.38)	(0.37)	(0.38)	(0.37)
Control For:				
Loan type	*Y*	*Y*	*Y*	*Y*
Loan Purpose	*Y*	*Y*	*Y*	*Y*
Industry	*Y*	*Y*	*Y*	*Y*
Year	*Y*	*Y*	*Y*	*Y*
Lag Time	*Y*	*Y*	*Y*	*Y*
Observations	63,347	63,347	63,347	63,347
R-squared	0.44	0.45	0.45	0.45

In Table 5, we examined each score individually, excluding the environment score, to understand which score presented an advantage over the other scores. The environment score was tested in Table 3, and we found that the environment score lowered spread by 0.53%. Table 5 Column 1 contains the variable of "social score", which includes employment quality, health and safety, training and development, diversity, human rights, community, and product responsibility.

The results for this score demonstrated a statistically significant impact, lowering collateral spread by 0.29%. In Column 2, we examined the variable "corporate governance scores", which included board structure, compensation policy, board functions, shareholders rights, vision, and strategy. The results for this score demonstrated a lowering of loan spread by 0.20%. In Column 3, we tested the variable "economic score", which included client loyalty, performance, and shareholder loyalty. This score also demonstrated a significant impact, lowering spread by 0.18%. Finally, Column 4, "overall score", contains all four scores: environmental, economic, social, and corporate governance. This overall score lowered loan spread by 0.40%. After examining all scores, we conclude that the environmental score demonstrates a more significant effect on spread and lowers loan collateral spread more than social, economic and corporate governance. This conclusion implies that a better environment score may more significantly assist borrowers in receiving better deals, compared to the other scores. These results are consistent with our hypothesis that banks offer favorable lending conditions when borrowers conduct ESG greenwashing practices.

Table 5: Impact of Spread on ESG Scores of Borrowers

The following table reports coefficient estimates from regressions relating to impact of spread on ESG scores. This empirical model can be expressed as

$$Spread_{it} = \alpha_1 + \beta_1 Scores_{it} + X_{it}\beta_{,2}{}' + \tau_t + \epsilon_{it}$$

where $Spread$ represents the natural log of spread in year *t*. Spread describes the amount the borrower pays in LIBOR plus basis points for the drawdown of each dollar. It adds the loan spread with any annual (or facility) fee paid to the bank group. $Scores$ represents the bank social score, corporate governance score, economic score, and overall score. Additionally, X control variables include year and industry indicator variables, the natural log of firm sales, debt, net income, assets, maturity delas amount, a variety of controls for loans, and syndicate structure. $\varepsilon i,t$ represents the random error. Standard errors are adjusted for clustering at the firm level. *, **, and *** denote significance levels of 10%, 5%, and 1%, respectively. Variable definitions can be found under Appendix.

	(1) *Spread*	(2) *Spread*	(3) *Spread*	(4) *Spread*
social_score	-0.29***			
	(0.09)			
corpgov_score		-0.20**		
		(0.08)		
econ_score			-0.18**	
			(0.08)	
overall_score				-0.40***
				(0.09)
opaque	0.18***	0.18***	0.19***	0.17***
	(0.04)	(0.04)	(0.04)	(0.04)
Maturity (Log)	0.14***	0.14***	0.14***	0.14***
	(0.02)	(0.02)	(0.02)	(0.02)
Dealsamount (Log)	-0.12***	-0.12***	-0.12***	-0.12***
	(0.01)	(0.01)	(0.01)	(0.01)
Sale (Log)	-0.01	-0.02	-0.01	-0.01
	(0.03)	(0.03)	(0.03)	(0.03)
Debt (Log)	-0.04**	-0.03**	-0.04**	-0.04**
	(0.02)	(0.02)	(0.02)	(0.02)
Asset (Log)	0.01	0.01	0.01	0.01
	(0.03)	(0.03)	(0.03)	(0.03)
#Lead	0.15***	0.15***	0.15***	0.14***
	(0.04)	(0.04)	(0.04)	(0.04)
Constant	4.77***	4.79***	4.70***	4.89***
	(0.29)	(0.28)	(0.28)	(0.28)
Control For:				
Loan type	*Y*	*Y*	*Y*	*Y*
Loan Purpose	*Y*	*Y*	*Y*	*Y*
Industry	*Y*	*Y*	*Y*	*Y*
Year	*Y*	*Y*	*Y*	*Y*
Lag Time	*Y*	*Y*	*Y*	*Y*
Observations	145,185	145,185	145,185	145,185
R-squared	0.41	0.41	0.41	0.42

In Table 6, we examined the variable "relationship", which measures the relationship between borrower and lender; we used an indicator variable that equals one if the borrowing is repeated from the same lender. Each score is presented individually, excluding the environmental score, which was tested in Table 2. The results show a statistically significant impact. In Column 1, the corporate governance score demonstrates significant results if there is an existing relationship. A higher score will lower loan spread by 0.22% and lengthen maturity by 0.13%. In

Column 2, the presence of a relationship does not appear to demonstrate a significant effect on the economic score; however, it does appear to lengthen maturity by 0.14%. In Column 3, the social score appears to be significantly impacted by the presence of a relationship. A higher score will lower loan spread by 0.20% and lengthen maturity by 0.13%. In Column 4, the presence of a relationship does not appear to have a significant effect on the overall score. The interaction between the environmental score and relationship has a greater impact on spread and lowers loan collateral spread more than the social, economic, and corporate governance scores. As a result, having a good environment score with previous borrower relationships may more significantly assist borrowers in receiving better deals than other scores.

Table 6: Impact of Spread on ESG Scores of Borrowers with Relationship

The following table reports coefficient estimates from regressions relating to impact of spread on ESG scores with relationship. This empirical model can be expressed as the following

$$Spread_{it} = \alpha_1 + \beta_1 Scores_{it} + \beta_2 Relationship + X_{it}\beta_3{}' + \tau_t + \epsilon_{it}$$

where $Spread$ represents the natural log of spread in year *t*. Spread describes the amount the borrower pays in LIBOR plus basis points for the drawdown of each dollar. It adds the spread of the loan with any annual (or facility) fee paid to the bank group. $Scores$ represents the bank social score, corporate governance score, economic score, and overall score}, In $\beta_2$we ran an indicator variable that equals one if the borrowing is repeated from the same lender; otherwise, X control variables include year and industry indicator variables, the natural log of firm sales, debt, net income, assets, maturity, delas amount, a variety of controls for loans, and syndicate structure. $\varepsilon i,t$ represents the random error. Standard errors are adjusted for clustering at the firm level. *, **, and *** denote significance levels of 10%, 5%, and 1%, respectively. Variable definitions can be found under Appendix.

	(1) *Spread*	(2) *Spread*	(3) *Spread*	(4) *Spread*
Relationship	-0.17***	-0.08*	0.05	-0.01
	(0.05)	(0.04)	(0.07)	(0.06)
corp_rel	0.11			
	(0.09)			
corpgov_score	-0.22***			
	(0.07)			
econ_rel		-0.06		
		(0.07)		
econ_score		-0.17**		
		(0.07)		

soci_rel			-0.20**	
			(0.09)	
social_score			-0.20***	
			(0.08)	
overall_rel				-0.14
				(0.09)
overall_score				-0.33***
				(0.08)
opaque	0.17***	0.18***	0.17***	0.16***
	(0.04)	(0.04)	(0.04)	(0.04)
Maturity (Log)	0.13***	0.14***	0.13***	0.13***
	(0.02)	(0.02)	(0.02)	(0.02)
Dealsamount (Log)	-0.11***	-0.10***	-0.11***	-0.10***
	(0.01)	(0.02)	(0.01)	(0.01)
Sale (Log)	-0.02	-0.01	-0.01	-0.00
	(0.03)	(0.03)	(0.03)	(0.03)
Debt (Log)	-0.03**	-0.04**	-0.03**	-0.04**
	(0.02)	(0.02)	(0.02)	(0.02)
Asset (Log)	0.00	0.01	0.01	0.00
	(0.03)	(0.03)	(0.03)	(0.03)
Constant	4.77***	4.70***	4.73***	4.85***
	(0.28)	(0.28)	(0.28)	(0.28)
Control For:				
Loan type	*Y*	*Y*	*Y*	*Y*
Loan Purpose	*Y*	*Y*	*Y*	*Y*
Industry	*Y*	*Y*	*Y*	*Y*
Year	*Y*	*Y*	*Y*	*Y*
Lag Time	*Y*	*Y*	*Y*	*Y*
Observations	145,185	145,185	145,185	145,185
R-squared	0.41	0.41	0.41	0.42

In Table 7, we examined bank allocation. The Herfindahl index was used to measure the concentration of the bank allocation as an indication of competitive intensity in a market. When lending is more concentrated than average, trust in the borrower's ability to pay back a loan is affected. We examined the effects of independent variables on ESG scores and relationships to test if any of the scores could affect the percentage of the borrower holder. We used two main dependent variables. The first was bank allocation, which is the percentage held by the lender and has values ranging from 0 to 100. The second was the Herfindahl–Hirschman index (HHI), which

measures the concentration of shares in a syndicate. The HHI is calculated based on each syndicate member's share in the loan; it is the sum of the squares of the individual shares, ranging from zero to 10,000, with 10,000 representing a lender holding 100% of the shares. We found that in some sectors, the higher the score a borrower achieves the lower the bank allocation, which means borrower trust increases on paying back the loan. In Panel B Columns 1 and 2, we found a statistically significant result with a negative coefficient: the higher the score for social and corporate governance the more borrower trust increases. In Columns 2 and 4, the HHI confirms the results of bank allocation. In Panel B, only the overall score, which includes all of the scores, has significant results in bank allocation and HHI. Finally, in the environment sector, we found only HHI, and not bank allocation, represented significant results; for the economic sector, no significant results were found for either bank allocation or HHI.

Table 7: Impact of Bank Allocation and HHI on ESG Scores of Borrowers

The following table reports coefficient estimates from regressions relating to the impact of bank allocation and HHI on ESG scores with relationship. This empirical model can be expressed as

$$Syndy_{it} = \alpha_1 + \beta_1 Scores2_{it} + X_{it}\beta_{,2}{}' + \tau_t + \epsilon_{it}$$

where $Syndy_{it}$represents the $bank\ allocation\ and HHI$ in year *t*. $Scores2$ represents the environmental score, bank social score, corporate governance score, economic score and overall score. X control variables include year and industry indicator variables, the natural log of firm sales, debt, net income, assets, maturity, delas amount, a variety of controls for loans, and syndicate structure. $\varepsilon i,t$ represents the random error. Standard errors are adjusted for clustering at the firm level. *, **, and *** denote significance levels of 10%, 5%, and 1%, respectively. Variable definitions can be found under Appendix.

(Panel A)

	Social Score		corporate govern	
	1	2	3	4
	Bank allocation	HHI	Bank allocation	HHI
Social score	-2.40**	-328.99**		
	-1.09	-145.06		
Corpgov score			-2.27***	-197.20**
			-0.82	-94.34
opaque	2.13***	163.72***	2.08***	165.89***
	-0.43	-57.57	-0.42	-57.44
Maturity (Log)	-1.38***	-140.83***	-1.38***	-141.35***
	-0.24	-32.81	-0.24	-32.64
Relationship	0.31	-38.75	0.35	-36.25
	-0.25	-40.45	-0.24	-40.5
#Lead	-0.07***	-4.50***	-0.07***	-4.52***
	-0.01	-0.7	-0.01	-0.71
Dealsamount (Log)	-1.37***	-104.34***	-1.41***	-107.69***
	-0.12	-15.12	-0.12	-15.51
Sale (Log)	0.63**	53.46	0.51*	38.92
	-0.31	-47.53	-0.3	-46.83
Debt (Log)	-0.99***	-125.11***	-1.00***	-124.79***
	-0.23	-35.25	-0.23	-35.17
Asset (Log)	0.3	34.08	0.33	38.94
	-0.41	-62.62	-0.41	-62.62
Constant	21.35***	1,860.61***	22.16***	1,876.95***
	-5.25	-561.51	-5.2	-557.91
Control For:				
Loan type	*Y*	*Y*	*Y*	*Y*
Loan Purpose	*Y*	*Y*	*Y*	*Y*
Industry	*Y*	*Y*	*Y*	*Y*
Year	*Y*	*Y*	*Y*	*Y*
Lag Time	*Y*	*Y*	*Y*	*Y*
Observations	74,430	74,430	74,430	74,430
R-squared	0.13	0.04	0.13	0.04

(Panel B)

	Environment Score		Economic Score		Overall Score	
	1	2	3	4	5	6
	Bank allocation	HHI	Bank allocation	HHI	Bank allocation	HHI
Envrn score	-2.19	-443.04**				
	-1.56	-207.76				
Econ score			0.32	116.08		
			-0.8	-113.77		
Overall score					-2.47**	-245.67*
					-1.02	-133
opaque	3.07***	231.17**	2.26***	183.96***	2.08***	163.60***
	-0.64	-99.14	-0.43	-57.64	-0.43	-59.09
Maturity (Log)	-1.67***	-189.75***	-1.38***	-140.54***	-1.38***	-140.80***
	-0.37	-55.05	-0.24	-32.79	-0.24	-32.78
Relationship	1.35***	71.99	0.3	-39.68	0.32	-38.54
	-0.37	-68.41	-0.25	-40.3	-0.24	-40.2
#Lead	-0.07***	-4.71***	-0.07***	-4.67***	-0.07***	-4.53***
	-0.01	-1.17	-0.01	-0.7	-0.01	-0.69
Dealsamount (Log)	-1.08***	-75.33***	-1.37***	-106.37***	-1.36***	-103.66***
	-0.16	-20.91	-0.12	-15.67	-0.12	-15.05
Sale (Log)	0.26	6.8	0.52*	34.51	0.65**	52.33
	-0.4	-74.7	-0.31	-45.07	-0.31	-46.31
Debt (Log)	-1.43***	-161.89***	-0.96***	-117.08***	-1.03***	-128.73***
	-0.3	-45.86	-0.23	-35.51	-0.23	-35.29
Asset (Log)	0.97*	101.91	0.35	41.99	0.3	36.29
	-0.53	-95.19	-0.41	-62.53	-0.41	-62.16
Constant	24.36***	2,326.41***	20.17***	1,672.80***	21.80***	1,865.25***
	-4.93	-539.05	-5.17	-547.6	-5.23	-560.77
Control For:						
Loan type	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*
Loan Purpose	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*
Industry	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*
Year	*Y*	*Y*	*Y*	*Y*	*Y*	*Y*
Observations	35,622	35,622	74,430	74,430	74,430	74,430
R-squared	0.13	0.05	0.13	0.04	0.13	0.04

This research has yielded several key insights into the Environmental, Social, and Corporate Governance (ESG) Performance and the Cost of Capital. The first results demonstrate that the higher the ESG rating, the better the pricing borrowers receive., These findings imply that the higher the environment score, the better the deal borrowers receive and the lower the spread borrowers are charged. Additionally, the higher the score, the longer the duration borrowers are given, which translates to borrowers receiving a better deal. The second is the relationship between borrower and lender; we used an indicator variable that equals one if the borrowing is repeated from the same lender, which shows that having a previous relationship could lower the spread. Finally, the third insight is that we test all ESG scores, environmental and social scores, corporate governance scores, economic scores, and overall scores; the results show environmental score has the highest impact among the other scores on the spread. Finally, the implications of these findings could lead to a better understanding of the ESG scores on Syndication loans. Our results align with previous literature on debt financing; high ESG scores could help lower the cost. (Jang, 2020) states that bond issuers of relative firms may be able to lower the cost of funding with ESG scores, and ESG scores complement credit ratings in assessing credit quality. Furthermore, ESG scores provide bond investors with additional downward protection by reducing the credit risks associated with small firms. On the other hand, a study by Chava (2014) test the second source of debt financing using loans and found similar results.

4.5 Conclusion

It is increasingly important for firms to embrace sustainability in their systems and operations; these sustainability issues have received increased attention from researchers. However, despite the importance of the corporate loan market as an important source of external finance, not much research has been performed on sustainability in this area. In this chapter, we studied the impact of firms' ESG performance on their cost of capital. We provided evidence that lenders charge significantly lower interest rates to firms that score highly in ESG scores.

The ESG lending, banking, and DealScan business have expanded significantly, fueled by the emergence of ESG-linked loans and quickly becoming one of the most important green finance areas. Consistent with the general purpose nature of ESG-linked loans, these loans are more widespread across various industries than use-of-proceeds-based green loans; ESG reporting is becoming more popular with multiple stakeholders, including regulators such as stock exchanges, investors, analysts, and the general public. For investors, a company's financial performance is only one consideration when deciding whether or not to invest. ESG data may provide additional information that aids in assessing a company's environmental, social, and governance performance. However, based on our analysis of secondary sources, we observed that various people have differing ideas about how ESG reporting affects a company's bottom line.

Several internal and external factors influence the market value of banks. This literature review examined the impact of environmental, social, and governance performance on bank market value, which is essential for investors, managers, regulators, and other stakeholders. If rules are passed to increase awareness of and access to ESG investments, the beneficial effect of ESG on bank value has the potential to increase further. Promoting ESG investments in marketing is

one example of such a policy as customers who are concerned about the environment and society are more inclined to choose institutions which prioritize ESG concerns when acquiring services or investing in stocks. It is recommended that people in positions of authority in government and regulatory bodies provide additional aid in raising awareness among all stakeholders and encouraging businesses to work on environmental, social, and managerial challenges. The empirical statistics show that actions aimed towards improving sustainability can increase a bank's worth.

Furthermore, it is widely acknowledged that actions centered on sustainability are critical for the survival of businesses and the preservation of ecosystems and contribute to the advancement of social justice and the sustainable economic growth of nations. As a result, governments are strongly advised to enact legislation that supports firms to perform their operations more sustainably. Incorporating ESG considerations into banking management decisions may improve low-risk investment methods' efficiency while enhancing risk-adjusted earnings.

Our research suggests a strong indication that the higher the ESG rating the better the deal borrowers can receive, such as a longer maturity and a lower loan spread. In addition, we tested how borrowing being repeated from the same lender impacts loan spread; it was found that the presence of an existing relationship in conjunction with a strong environment score can lower loan spread by 0.50%. Conclusively, several studies addressing the influence of ESG performance on banks' value in terms of ESG lending have shown a linear relationship between ESG and syndication loans. According to our literature review, the studies provide a better understanding of the influence of ESG performance on banks' market value for investors, management, regulators, and other interested parties. The favorable impact of ESG on the value of bank loans may be reinforced by enacting policies that increase the volume and focus of ESG investments. It

is recommended that people in positions of authority in government and regulatory bodies provide additional aid in raising awareness among all stakeholders and encouraging businesses to work on environmental, social, and managerial challenges. The empirical statistics show that actions which increase firms' sustainability can lead to borrowers receiving better deals and longer maturities for loans. Furthermore, it is widely acknowledged that efforts centered on sustainability are critical for the survival of businesses and the preservation of ecosystems and contribute to the advancement of social justice and the sustainable economic growth of nations.

4.6 Appendix

Variables

Loan Contract	
Log (spread)	The logarithm of the amount the borrower pays in basis points over LIBOR for each dollar drawn down.
Log (Maturity)	The tenor in months between tranche active date and tranche maturity date.
Log (Debt)	The logarithm of total debt during the year after the loan year.
Log (Net Income)	The logarithm of Net Income during the year after the loan year.
Log (Sales)	The logarithm of sales during the year after the loan year.
Log (Assets)	The logarithm of total assets during the year after the loan year.
Log (deals amount)	The logarithm of deal amount of the loan
Purpose 1	Acquisition
Purpose 2	Capital expenditure
Purpose 3	General Purpose
Purpose 4	Refinance
Purpose 5	Leveraged Buyout
Purpose 6	Other
Purpose 7	Project Finance
Purpose 8	Takeover
Purpose 9	Trade finance
Purpose 10	Working capital
Loan type 1	Credit Line
Loan type 2	Other Loan
Loan type 3	Term Loan

Bank

opaque	a dummy variable that equals one if the firm does not have a record rating at the time of the loan
Herfindahl	Herfindahl index measure of concentration to capture any effects of "joint" monitoring
BankAlloca~n	The percentage of the amount Held of the lender
Relationship	an indicator variable that equals one if the borrowing repeated from the same lender
Numlead	Number of Lead arranger in the loan

ESG

Economic Score	the economic score, including client loyalty and performance and shareholder loyalty
Social score	the social score includes Employment Quality, Health & Safety, Training & Develop, Diversity, Human Rights, Community, and Product Responsibility
Corporate Governance	the Corporate Governance Performance score include Board Structure, Compensation Policy, Board Functions, Shareholders Rights, Vision and Strategy
Environmental Score	Environmental Performance score include Resource Reduction - Emission Reduction - Product Innovation
Over all Score	overall score contains all four scores Environmental, economic, social, and corporate with governance
overall_rel	the interaction of overall score with Relationship
soci_rel	the interaction of Social score with Relationship
corp_rel	the interaction of Corporate Governance score with Relationship
econ_rel	the interaction of Economic score with Relationship
env_rel	the interaction of Environmental score with Relationship

Chapter 5: Conclusion and future research

This thesis discusses the topic of global corporate banking. Specifically, in syndication loan, we study three aspects: (i) We conduct a comprehensive systematic literature review (SLR) of the syndicated loan market based on citation analysis and identify and recognize knowledge-producing top articles, journals, and authors, (ii) We study the effects of M&As on the structure of borrowers' syndicates, and tests of banks' relationship with firms, (iii) We study ESG factors that affect firms' capital costs and syndicate lending structures.

Chapter 2 conducts a citation-based comprehensive systematic literature review (SLR) of the syndicated loan market by identifying and recognizing the sources of knowledge-producing leading articles, journals and authors in this area. In total, we present a citation analysis of 374 articles from the Scopus database using a comprehensive list of keywords search. We find that the importance of research using syndicated loan data has increased after the global financial crisis (GFC). It is perhaps due to the reason that the GFC was mainly a credit crisis that sparked the interest of research in this area. We identify the *Journal of Financial Economics* as the leading journal in terms of citation and the *Journal of Banking and Finance* in terms of publication count. Victoria Ivashina comes out as the leading author in terms of the citation count and Anthony Saunders in terms of publication count. We also perform a content analysis of the top 100 most cited papers and identify data characteristics, major themes, estimation techniques and empirical approaches. Our SLR provides a macro picture of research on syndicated loans studies.

Chapter 3 presents an empirical exploration of the impact of banking mergers and acquisitions (M&As) on borrowers who use the syndicated loan market, specifically, the information asymmetry between lenders and borrowers and its influence on the syndicate structure. By merging with or acquiring other banks, banks have dramatically expanded their business. The growth of the bargaining power of merged banks may benefit corporations that borrow from banks due to scope economies. However, these corporations may be adversely affected if the merger increases the bargaining power of the merged banks. The purpose of this paper is to contribute to the regulatory debate on the expansion of bank powers, providing evidence for how bank mergers have affected the syndicate structure. To determine whether firms benefit after mergers or acquisitions, preferences are revealed based on empirical analysis.

In chapter 4 we explore the impact of environmental, social, and corporate governance (ESG) factors on firms' cost of capital. Our regression estimation reveals that lenders provide preferential treatment and charge significantly lower interest rates to firms with high ESG scores. Additionally, firms with high ESG scores receive further premiums in the form of reduced interest rates if they have a prior relationship with the lender. Our analysis controlled for firm risk and other firm-level characteristics and demonstrated that the decision to charge reduced interest rates is not based on borrowers' quality but rather on their ESG scores. Overall, our results show that sustainability is profitable and firms are charged lower interest rates if they take care of the environment, are socially responsible, and abide by corporate governance rules.

This dissertation provides avenues of research for future research in the following ways. First, we show the growth of syndicated loan market over last three decades with exponential

growth since the global financial crisis of 2007-08. Future research can explore the reasons of this exponential growth and whether this growth has lowered the cost of capital and has provided more liquidity to borrowers. Second, another area where not much theoretical and empirical research has been done is with the use of a comprehensive total cost of borrowing (TCB) instead of All in Drawn Spread (AISD) to explain why certain fees and options exist and their value transfer (Berg and Saunders, 2016). Third, there is a lack on study on tranches of syndicated loans. Current studies consider each tranche in isolation although there could be potential links across tranches, which could be linked to ownership structure, corporate governance and the institutional determinants. Fourth, the information asymmetry, whether hard information is a substitute for soft information and financial contracting in syndicated loans during a crisis period could be another avenue for future research. Fifth, how information asymmetry of borrowers interplay if there have been mergers and acquisitions of banks as well as of borrowers, this area of research has been overlooked as well. Finally, there are only a few studies looking at the role of syndicated loans in green and sustainable finance. Given the importance of climate change, there is a need of more research in this area.

References

Abbas, H. et al. 2014. Merger failures & corporate strategy: Change management to solve the query. International Journal of Sciences: Basic and Applied Research 13(1), pp. 90–102.

Abdul, F. and Ochenge, R. 2020. Do mergers and acquisitions impact bank lending behavior in Kenya? KBA Centre for Research on Financial Markets and Policy.

Abou Fayad, A. et al. 2017. Causal relationship between CSR and FB in banks. Arab Economic and Business Journal 12(2), pp. 93–98.

Acharya, V. V., Eisert, T., Eufinger, C., & Hirsch, C. (2018). Real effects of the sovereign debt crisis in Europe: Evidence from syndicated loans. The Review of Financial Studies, 31(8), 2855–2896.

Ağca, Ş. and Celasun, O. 2012. Sovereign debt and corporate borrowing costs in emerging markets. Journal of International Economics 88(1), pp. 198–208.

Aghion, P. et al. 2004. Exit options in corporate finance: Liquidity versus incentives. Review of finance 8(3), pp. 327–353.

Altman, E.I. and Suggitt, H.J. 2000. Default rates in the syndicated bank loan market: A mortality analysis. Journal of Banking & Finance 24(1–2), pp. 229–253.

Amel-Zadeh, A. and Serafeim, G. 2018. Why and how investors use ESG information: Evidence from a global survey. Financial Analysts Journal 74(3), pp. 87–103.

Angbazo, L.A. et al. 1998. Credit spreads in the market for highly leveraged transaction loans. Journal of Banking & Finance 22(10–11), pp. 1249–1282.

Aramonte, S. et al. 2015. Risk taking and low longer-term interest rates: Evidence from the US syndicated loan market.

Arena, M.P. and Dewally, M. 2012. Firm location and corporate debt. Journal of Banking & Finance 36(4), pp. 1079–1092.

Asaoka, D. 2019. Behavioral analysis of mergers and acquisitions decisions. Corporate Board: Role, Duties and Composition 15(3), pp. 8–16.

Baker, C. 2022. Derivatives and ESG. forthcoming, American Business Law Journal 59(4)

Baldini, M. et al. 2018. Role of Country- and Firm-Level Determinants in Environmental, Social, and Governance Disclosure. Journal of Business Ethics 150(1), pp. 79–98. Available at: https://doi.org/10.1007/s10551-016-3139-1.

Ball, R. et al. 2008. The debt-contracting value of accounting information and loan syndicate structure. Journal of accounting research 46(2), pp. 247–287.

Ball, R., Bushman, R. M., & Vasvari, F. P. (2008). The debt-contracting value of accounting information and loan syndicate structure. Journal of Accounting Research, 46(2),.247–287.

Barkemeyer, R. et al. 2014. What happened to the 'development'in sustainable development? Business guidelines two decades after Brundtland. Sustainable development 22(1), pp. 15–32.

Barnor, C. and Adu-Twumwaah, D. 2015. Bank performance, mergers, and acquisitions in Ghana: The Case of Ecobank Ghana-TTB Takeover and UT Financial Services-BPI Merger. International Journal of Sciences: Basic and Applied Research 24(6), pp. 77–91.

Becker, B., & Ivashina, V. (2018). Financial repression in the European sovereign debt crisis. Review of Finance, 22(1), 83–115.

Behr, P., & Lee, S. (2005). Credit risk transfer, delegated monitoring, real sector productivity, and financial deepening. Delegated Monitoring, Real Sector Productivity, and Financial Deepening (February 21, 2005).

Benston, G.J. and Harland, J. 1990. Separation of Commercial and Investment Banking. Springer.

Berlin, M. et al. 2020. Concentration of control rights in leveraged loan syndicates. Journal of Financial Economics 137(1), pp. 249–271.

Bharath, S. T., Dahiya, S., Saunders, A., & Srinivasan, A. (2011). Lending relationships and loan contract terms. Review of Financial Studies, 24(4), 1141–1203.

Bharath, S., Dahiya, S., Saunders, A., & Srinivasan, Al. (2007). So what do I get? The bank's view of lending relationships. Journal of Financial Economics, 85(2), 368–419.

Bharath, S.T. et al. 2011. Lending relationships and loan contract terms. The Review of Financial Studies 24(4), pp. 1141–1203.

Bloomberg (2019). Global capital markets.

Boot, A.W.A. and Thakor, A. V 1994. Moral hazard and secured lending in an infinitely repeated credit market game. International economic review , pp. 899–920.

Bord, V.M. 2017. Bank consolidation and financial inclusion: The adverse effects of bank mergers on depositors. Unpublished Manuscript, Harvard University

Botsch, M., & Vanasco, V. (2019). Learning by lending. Journal of Financial Intermediation, 37(C), 1–14.

Boyd, J., & Graham, S. (1988). The Profitability and Risk Effects of Allowing Bank Holding Companies to Merge with Other Financial Firms: A Simulation Study. Federal Reserve Bank of Minneapolis. Quarterly Review, Spring, 3-20.

Boyd, J., Graham, S., & Hewitt, R.S. (1993). Bank Holding Company Mergers with Nonbank Financial Firms: Effects on the Risk of Failure. Journal of Banking & Finance, 17, 43-63.

Boyd, J.H. and Graham, S.L. 1988. The profitability and risk effects of allowing bank holding. Federal Reserve Bank of Minneapolis. Quarterly Review-Federal Reserve Bank of Minneapolis 12(2), p. 3.

Boyd, J.H. and Runkle, D.E. 1993. Size and performance of banking firms: Testing the predictions of theory. Journal of monetary economics 31(1), pp. 47–67.

Bradley, M. and Roberts, M.R. 2015. The structure and pricing of corporate debt covenants. The Quarterly Journal of Finance 5(02), p. 1550001.

Bradley, M., & Roberts, M. R. (2015). The Structure and Pricing of Corporate Debt Covenants, Quarterly Journal of Finance, 5(2).

Brammer, S. et al. 2006. Corporate social performance and stock returns: UK evidence from disaggregate measures. Financial management 35(3), pp. 97–116.

Brander, J.A. et al. 2002. Venture-capital syndication: Improved venture selection vs. the value-added hypothesis. Journal of Economics & Management Strategy 11(3), pp. 423–452.

Brodback, D. et al. 2019. Altruism and egoism in investment decisions. Review of Financial Economics 37(1), pp. 118–148.

Brookey, R.A. and Zhang, N. 2020. The not-so Fantastic Four franchise: A critical history of the comic, the films, and the Disney/Fox merger. In: Comics and Videogames. Routledge, pp. 149–163.

Buallay, A. 2019. Sustainability reporting and firm's performance: comparative study between manufacturing and banking sectors. International Journal of Productivity and Performance Management

Buallay, A. et al. 2020. Sustainability reporting and performance of MENA banks: is there a trade-off? Measuring Business Excellence

Cai, L. and He, C. 2014. Corporate environmental responsibility and equity prices. Journal of Business Ethics 125(4), pp. 617–635.

Calem, P., Correa, R., & Lee, S. J. (2020). Prudential policies and their impact on credit in the United States. Journal of Financial Intermediation, 42, 100826.

Camilleri, M.A. 2020. The market for socially responsible investing: A review of the developments. Social Responsibility Journal 17(3), pp. 412–428.

Carey, M. and Nini, G. 2007. Is the corporate loan market globally integrated? A pricing puzzle. The Journal of Finance 62(6), pp. 2969–3007.

Carletti, E. et al. 2002. Bank mergers, competition and financial stability. In: Committee of the Global Financial System Conference.

Carow, K.A. 2001. Citicorp–Travelers Group merger: Challenging barriers between banking and insurance. Journal of Banking & Finance 25(8), pp. 1553–1571.

Casciaro, T. and Piskorski, M.J. 2005. Power imbalance, mutual dependence, and constraint absorption: A closer look at resource dependence theory. Administrative science quarterly 50(2), pp. 167–199.

Chaudhry, S.M. and Kleimeier, S. 2015. Lead arranger reputation and the structure of loan syndicates. Journal of International Financial Markets, Institutions and Money 38, pp. 116–126.

Chava, S. 2014. Environmental externalities and cost of capital. Management science 60(9), pp. 2223–2247.

Chavas, J.-P. 2011. Agricultural policy in an uncertain world. European Review of Agricultural Economics 38(3), pp. 383–407.

Chui, M., Domanski, D., Kugler, P., & Shek, J. (2010). The collapse of international bank finance during the crisis: Evidence from syndicated loan markets. BIS Quarterly Review, Sept.

Čirjevskis, A. 2019. The role of dynamic capabilities as drivers of business model innovation in mergers and acquisitions of technology-advanced firms. Journal of Open Innovation: Technology, Market, and Complexity 5(1), p. 12.

Coccorese, P. and Ferri, G. 2020. Are mergers among cooperative banks worth a dime? Evidence on efficiency effects of M&As in Italy. Economic Modelling 84, pp. 147–164.

Cole, R.A. 1998. The importance of relationships to the availability of credit. Journal of Banking & Finance 22(6–8), pp. 959–977.

Corwin, S.A. and Schultz, P. 2005. The role of IPO underwriting syndicates: Pricing, information production, and underwriter competition. The Journal of Finance 60(1), pp. 443–486.

Crifo, P. et al. 2017. The effect of countries' ESG ratings on their sovereign borrowing costs. The Quarterly Review of Economics and Finance 66, pp. 13–20. Available at: https://www.sciencedirect.com/science/article/pii/S1062976917301497.

Cybo-Ottone, A. and Murgia, M. 2000. Mergers and shareholder wealth in European banking. Journal of Banking & Finance 24(6), pp. 831–859.

Dahiya, M. and Singh, S. 2020. The linkage between CSR and cost of equity: an Indian perspective. Sustainability Accounting. Management and Policy Journal

Dahiya, S. et al. 2003. Bank borrowers and loan sales: New evidence on the uniqueness of bank loans. The Journal of business 76(4), pp. 563–582.

Dahiya, S. et al. 2003. Bank borrowers and loan sales: New evidence on the uniqueness of bank loans. The Journal of business 76(4), pp. 563–582.

Danisman, G.O. and Tarazi, A. 2022. ESG activity and bank lending during financial crises. Available at SSRN 4013766

Davenport, T. 2003. As SNC exam wraps up, no news is good news. The American Banker

Davenport, T. 2003. As SNC exam wraps up, no news is good news. The American Banker

Degryse, H. and Ongena, S. 2005. Distance, lending relationships, and competition. The Journal of Finance 60(1), pp. 231–266.

Degryse, H., & Ongena, S. (2005). Distance, Lending Relationships, and Competition. Journal of Finance. 60, 231-266.

Demirgüç-Kunt, A., Horváth, B. L., & Huizinga, H. (2017). Foreign banks and international transmission of monetary policy: evidence from the syndicated loan market.

Deng, X. et al. 2013. Corporate social responsibility and stakeholder value maximization: Evidence from mergers. Journal of financial Economics 110(1), pp. 87–109.

Dennis, S. A., & Mullineaux, D. J. (2000). Syndicated loans. Journal of Financial Intermediation, 9(4), 404–426.

Dennis, S.A. and Mullineaux, D.J. 2000. Syndicated loans. Journal of financial intermediation 9(4), pp. 404–426.

Detragiache, E. et al. 2000. Multiple versus single banking relationships: Theory and evidence. The Journal of finance 55(3), pp. 1133–1161.

DeYoung, R. et al. 2009. Mergers and acquisitions of financial institutions: A review of the post-2000 literature. Journal of Financial services research 36(2), pp. 87–110.

Dichev, I. D., & Skinner, D. J. (2002). Large–sample evidence on the debt covenant hypothesis. Journal of Accounting Research, 40(4), 1091-1123.

Dorobantu, S. and Müllner, J. 2019. Debt-side governance and the geography of project finance syndicates. Journal of Corporate Finance 57, pp. 161–179.

Drucker, S. 2005. Information asymmetries, cross-product banking mergers, and the effects on corporate borrowers. In: FDIC Center for Financial Research Paper, AFA 2006 Boston Meetings Paper.

Drucker, S., & Puri, M. (2005a). Banks and Capital Markets: A Survey. In B.E. Eckbo (ed.) Amsterdam: Empirical Corporate Finance. Elsevier/North-Holland Publishers.

Drucker, S., & Puri, M. (2005b). On the Benefits of Concurrent Lending and Underwriting. Journal of Finance.

Eccles, R.G. et al. 2014. The impact of corporate sustainability on organizational processes and performance. Management science 60(11), pp. 2835–2857.

Edgeworth, F. (1888). A Mathematical Theory of Banking. Journal of the Royal Statistical Society, 51(1), 113–127.

Eliwa, Y. et al. 2019. Accruals quality and the cost of debt: the European evidence. International Journal of Accounting & Information Management

Erel, I. (2005). The Effect of Bank Mergers on Loan Prices: Evidence from the US. MIT.

Erel, I. 2011. The effect of bank mergers on loan prices: Evidence from the United States. The Review of Financial Studies 24(4), pp. 1068–1101.

Esteban-Sanchez, P. et al. 2017. Corporate social performance and its relation with corporate financial performance: International evidence in the banking industry. Journal of cleaner production 162, pp. 1102–1110.

Estrella, A. 2001. Mixing and matching: Prospective financial sector mergers and market valuation. Journal of Banking & Finance 25(12), pp. 2367–2392.

Esty, B. 2004. When do foreign banks finance domestic projects? New evidence on the importance of legal and financial systems. New Evidence on the Importance of Legal and Financial Systems (September 22, 2004)

Esty, B. C., & Megginson, W. L. (2003). Creditor rights, enforcement, and debt ownership structure: Evidence from the global syndicated loan market. Journal of Financial and Quantitative Analysis, 38(1), 37–59.

Esty, B.C. and Megginson, W.L. 2003. Creditor rights, enforcement, and debt ownership structure: Evidence from the global syndicated loan market. Journal of financial and quantitative analysis 38(1), pp. 37–60.

Fama, E.F. and French, K.R. 2007. Disagreement, tastes, and asset prices. Journal of financial economics 83(3), pp. 667–689.

Fang, H., Liu, Y., & Zhang, Y. (2022). The China-US Trade War and Chinese Firms' Global Syndicated Loans. Asian Economics Letters, 35241.

Fang, X., Li, Y., Xin, B., & Zhang, W. (2016). Financial statement comparability and debt contracting: Evidence from the syndicated loan market, Accounting Horizons, 30(2), 277–303.

Focarelli, D. et al. 2002. Why do banks merge?. Journal of money, credit and banking , pp. 1047–1066.

Forcadell, F.J. and Aracil, E. 2017. European banks' reputation for corporate social responsibility. Corporate Social Responsibility and Environmental Management 24(1), pp. 1–14.

François, P. and Missonier-Piera, F. 2007. The agency structure of loan syndicates. Financial Review 42(2), pp. 227–245.

François, P. and Missonier-Piera, F. 2007. The agency structure of loan syndicates. Financial Review 42(2), pp. 227–245.

Friede, G. et al. 2015. ESG and financial performance: aggregated evidence from more than 2000 empirical studies. Journal of sustainable finance & investment 5(4), pp. 210–233.

Galema, R. et al. 2008. The stocks at stake: Return and risk in socially responsible investment. Journal of Banking & Finance 32(12), pp. 2646–2654.

Gande, A. et al. 2006. Bank debt versus bond debt: evidence from secondary market prices. Available at SSRN 639081

Gande, A., Puri, M., Saunders, A., & Walter, I. (1997). Bank Underwriting of Debt Securities: Modern Evidence. Review of Financial Studies, 10, 1175-1202.

Giannetti, M., & Laeven, L. (2012). The flight home effect: Evidence from the syndicated loan market during financial crises. Journal of Financial Economics, 104(1), 23–43.

Giannetti, M., & Yafeh, Y. (2012). Do cultural differences between contracting parties matter? Evidence from syndicated bank loans. Management Science, 58(2), 365–383.

Giese, G. et al. 2019. Foundations of ESG investing: How ESG affects equity valuation, risk, and performance. The Journal of Portfolio Management 45(5), pp. 69–83.

Godlewski, C. J., & Weill, L. (2008). Syndicated loans in emerging markets. Emerging Markets Review, 9(3), 206-219.

Gorton, G. B., & Pennacchi, G. G. (1995). Banks and loan sales marketing nonmarketable assets. Journal of monetary Economics, 35(3), 389-411.

Gorton, G.B. and Pennacchi, G.G. 1995. Banks and loan sales marketing nonmarketable assets. Journal of monetary Economics 35(3), pp. 389–411.

Gottesman, A.A. and Roberts, G.S. 2004. Maturity and corporate loan pricing. Financial Review 39(1), pp. 55–77.

Harjoto, M. et al. 2006. A comparison of syndicated loan pricing at investment and commercial banks. Financial Management 35(4), pp. 49–70.

Harjoto, M.A. and Jo, H. 2015. Legal vs. normative CSR: Differential impact on analyst dispersion, stock return volatility, cost of capital, and firm value. Journal of Business Ethics 128(1), pp. 1–20.

Harvey, C. R., Lins, K. V., & Roper, A. H. (2004). The effect of capital structure when expected agency costs are extreme. Journal of Financial Economics, 74(1), 3–30.

Haselmann, R., & Wachtel, P. (2011). Foreign banks in syndicated loan markets. Journal of Banking & Finance, 35(10), 2679-2689.

Hassen, T. et al. 2018. Dynamic effects of mergers and acquisitions on the performance of Commercial European Banks. Journal of the Knowledge Economy 9(3), pp. 1032–1048.

Hellgren, B. et al. 2011. The reproduction of efficiency theory: The construction of the AstraZeneca merger in the public discourse. International Journal of Business and Management 6(5), p. 16.

Herbohn, K. et al. 2019. Evidence on whether banks consider carbon risk in their lending decisions. Journal of Business Ethics 158(1), pp. 155–175.

Hillman, A.J. and Keim, G.D. 2001. Shareholder value, stakeholder management, and social issues: what's the bottom line? Strategic management journal 22(2), pp. 125–139.

Houston, J. and James, C. 1996. Bank information monopolies and the mix of private and public debt claims. The Journal of Finance 51(5), pp. 1863–1889.

Hurley, R. et al. 2014. Understanding the loss of trust in large banks. International Journal of Bank Marketing 32(5), pp. 348–366.

Ilhan, E. et al. 2021. Climate risk disclosure and institutional investors. Swiss Finance Institute Research Paper (19–66)

Ivashina, V. (2005, November). Structure and pricing of syndicated loans. In The New York City Area Conference on Financial Intermediation.

Ivashina, V. (2009). Asymmetric information effects on loan spreads. Journal of Financial Economics, 92(2), 300–319.

Ivashina, V. and Kovner, A. 2011. The private equity advantage: Leveraged buyout firms and relationship banking. The Review of Financial Studies 24(7), pp. 2462–2498.

Ivashina, V., & Scharfstein, D. (2010). Bank lending during the financial crisis of 2008. Journal of Financial Economics, 97(3), 319–338.

Jiang, W., Li, K., & Shao, P. (2010). When shareholders are creditors: Effects of the simultaneous holding of equity and debt by non-commercial banking institutions. Review of Financial Studies, 23(10), 3595–3637.

Jones, J. 2000. Recent trends in bank loan syndications: Evidence for 1995 to 1999. US Office of the Comptroller of the Currency, Economics Department.

Jones, J. et al. 2005. Recent trends in bank loan syndications: Evidence for 1996-2000. Journal of Financial Research 28, pp. 385–402.

Jung, J. et al. 2018. Carbon risk, carbon risk awareness and the cost of debt financing. Journal of Business Ethics 150(4), pp. 1151–1171.

Kanatas, G. and Qi, J. 2003. Integration of lending and underwriting: Implications of scope economies. The Journal of Finance 58(3), pp. 1167–1191.

Kanatas, G., & Qi, J. (2003). Integration of Lending and Underwriting: Implications of Scope Economies. Journal of Finance, 58, 1167-1191.

Karceski, J. et al. 2005. The impact of bank consolidation on commercial borrower welfare. The Journal of Finance 60(4), pp. 2043–2082.

Karceski, J., Ongena, S., & Smith, D.C. (2005). The Impact of Bank Consolidation on Commercial Borrower Welfare. Journal of Finance, 55, 2043-2082.

Keil, J. and Müller, K. 2020. Bank branching deregulation and the syndicated loan market. Journal of Financial and Quantitative Analysis 55(4), pp. 1269–1303.

Kim, S. et al. 2022. ESG lending. In: Proceedings of Paris December 2021 Finance Meeting EUROFIDAI-ESSEC.

Kitchenham, B., Brereton, O.P., Budgen, D., Turner, M., Bailey, J., & Linkman, S. (2009). Systematic literature reviews in software engineering–a systematic literature review. Information and Software Technology, 51, 7–15.

Kosenko, K., & Michelson, N. (2022). It takes more than two to tango: Multiple bank lending, asset commonality and risk. Journal of Financial Stability, 61, 101040.

Küçükkocaoğlu, G. and Bozkurt, M.A. 2018. Identifying the effects of mergers and acquisitions on Turkish banks performances. Asian Journal of Economic Modelling 6(3), pp. 235–244.

Kumar, B.R. 2019. Mergers and Acquisitions. In: Wealth Creation in the World's Largest Mergers and Acquisitions. Springer, pp. 1–15.

Lauesen, L.M. 2013. CSR in the aftermath of the financial crisis. Social Responsibility Journal

Lee, S.W. and Mullineaux, D.J. 2004. Monitoring, financial distress, and the structure of commercial lending syndicates. Financial management , pp. 107–130.

Lerner, J. 1994. The syndication of venture capital investments. Financial management , pp. 16–27.

Lerner, J. 2022. The syndication of venture capital investments. In: Venture Capital. Routledge, pp. 207–218.

Li, D. et al. 2017. Effects of corporate environmental responsibility on financial performance: The moderating role of government regulation and organizational slack. Journal of Cleaner Production 166, pp. 1323–1334.

Li, S. X., & Rowley, T. J. (2002). Inertia and Evaluation Mechanisms in Interorganizational Partner Selection: Syndicate Formation among U.S. Investment Banks. The Academy of Management Journal, 45(6).

Li, S.X. and Rowley, T.J. 2002. Inertia and evaluation mechanisms in interorganizational partner selection: Syndicate formation among US investment banks. Academy of Management journal 45(6), pp. 1104–1119.

Ljungqvist, A., Marston, F., & Wilhelm, W. (2005). Competing for Securities Underwriting Mandates: Banking Relationships and Analyst Recommendations. Journal of Finance, Forthcoming.

Manasakis, C. 2009. Shareholder wealth effects from mergers and acquisitions in the Greek banking industry. International Journal of Banking, Accounting and Finance 1(3), pp. 242–256.

Martínez-Ferrero, J., Garcia-Sanchez, I. M., & Cuadrado-Ballesteros, B. (2015). Effect of financial reporting quality on sustainability information disclosure. Corporate social responsibility and environmental management, 22(1), 45-64.

Massaro, M. et al. 2020. Crypto-economy and new sustainable business models: Reflections and projections using a case study analysis. Corporate Social Responsibility and Environmental Management 27(5), pp. 2150–2160.

Massoud, N., Nandy, D., Saunders, A., & Song, K. (2011). Do hedge funds trade on private information? Evidence from syndicated lending and short-selling. Journal of Financial Economics, 99(3), 477–499.

Mastracchio Jr, N.J. and Zunitch, V.M. 2002. Differences between mergers and acquisitions. Journal of Accountancy 194(5), p. 38.

Matute-Vallejo, J. et al. 2011. The influence of corporate social responsibility and price fairness on customer behaviour: Evidence from the financial sector. Corporate social responsibility and environmental management 18(6), pp. 317–331.

Megginson, W.L. et al. 1995. Syndicated loan announcements and the market value of the banking firm. Journal of Money, Credit and Banking 27(2), pp. 457–475.

Miller, S. (2018). A Syndicated Loan Primer. In A Guide to the Loan Market. Standard & Poor's Financial Services LLC, pp. 7-31.

Moctar, N.B. and Xiaofang, C. 2014. The Impact of Mergers and Acquisition on the financial performance of West African Banks: A case study of some selected commercial banks. International Journal of Education and Research 2(1), pp. 1–10.

Mohammad, W.M.W. and Wasiuzzaman, S. 2021. Environmental, Social and Governance (ESG) disclosure, competitive advantage and performance of firms in Malaysia. Cleaner Environmental Systems 2, p. 100015. Available at: https://www.sciencedirect.com/science/article/pii/S2666789421000076.

Moutinho, N. et al. 2021. The effect of borrower country financial system and corporate governance system types on the spread of syndicated loans. Corporate Governance: The International Journal of Business in Society

Nakamura, L.I. 1991. Commercial bank information: Implications for the structure of banking. Federal Reserve Bank of Philadelphia, Economic Research Department.

Nandy, M. and Lodh, S. 2012. Do banks value the eco-friendliness of firms in their corporate lending decision? Some empirical evidence. International Review of Financial Analysis 25, pp. 83–93.

Nandy, M. and Lodh, S. 2012. Do banks value the eco-friendliness of firms in their corporate lending decision? Some empirical evidence. International Review of Financial Analysis 25, pp. 83–93.

Narayanan, R., Rangan, K., & Rangan, N. (2004). The Role of Syndicate Structure in Bank Underwriting. Journal of Financial Economics, 72, 555-580.

Narayanan, R.P. et al. 2004. The role of syndicate structure in bank underwriting. Journal of financial Economics 72(3), pp. 555–580.

Niţescu, D.-C. and Cristea, M.-A. 2020. Environmental, Social and Governance Risks–New Challenges for the Banking Business Sustainability. Amfiteatru Economic 22(55), pp. 692–706.

Nizam, E. et al. 2019. The impact of social and environmental sustainability on financial performance: A global analysis of the banking sector. Journal of Multinational Financial Management 49, pp. 35–53.

Norden, L., & Wagner, W. (2008). Credit derivatives and loan pricing. Journal of Banking and Finance, 32(12), 2560–2569.

Pandey, D.K. and Kumari, V. 2020. Effects of merger and acquisition announcements on stock returns: an empirical study of banks listed on NSE & NYSE. The review of finance and banking 12(1)

Petersen, M.A. and Rajan, R.G. 1994. The benefits of lending relationships: Evidence from small business data. The journal of finance 49(1), pp. 3–37.

Piloff, S.J. and Santomero, A.M. 1998. The value effects of bank mergers and acquisitions. In: Bank Mergers & Acquisitions. Springer, pp. 59–78.

Popli, M. et al. 2017. Business group affiliation and post-acquisition performance: An extended resource-based view. Journal of Business Research 81, pp. 21–30.

Preece, D. and Mullineaux, D.J. 1996. Monitoring, loan renegotiability, and firm value: The role of lending syndicates. Journal of Banking & Finance 20(3), pp. 577–593.

Pyles, M.K. and Mullineax, D.J. 2008. Constraints on loan sales and the price of liquidity. Journal of Financial Services Research 33(1), pp. 21–36.

Qian, J. and Strahan, P.E. 2007. How laws and institutions shape financial contracts: The case of bank loans. The Journal of Finance 62(6), pp. 2803–2834.

Qian, J., & Strahan, P. E. (2007). How Laws and Institutions Shape Financial Contracts: The Case of Bank Loans. Journal of Finance,62(6), 2803-2834.

Rahman, M. 2022. A Critical Review of Neoclassical and Behavioural Theories of Merger Waves. A Critical Review of Neoclassical and Behavioural Theories of Merger Waves (June 3, 2022). Financial Studies 26(1), pp. 6–22.

Rahman, Z. et al. 2018. The effects of mergers and acquisitions on stock price behavior in banking sector of Pakistan. The Journal of Finance and Data Science 4(1), pp. 44–54.

Rai, A.K. et al. 2021. Impacts of bank mergers on shareholder's wealth: An event study on Indian public sector banks. International Journal of Accounting, Business and Finance 1(1), pp. 8–14.

Rajan, R.G. 1992. Insiders and outsiders: The choice between informed and arm's-length debt. The Journal of finance 47(4), pp. 1367–1400.

Rebner, S. and Yeganeh, B. 2019. Mindful mergers & acquisitions. OD Practitioner 51(1), pp. 11–16.

Roten, I., & Mullineaux, D. (2002). Debt Underwriting by Commercial Bank-Affiliated Firms and Investment Banks: More Evidence. Journal of Banking & Finance, 26, 689-718.

Salop, S.C. and Culley, D.P. 2016. Revising the US vertical merger guidelines: policy issues and an interim guide for practitioners. Journal of Antitrust Enforcement 4(1), pp. 1–41.

Santos, J. A. C. (2011). Bank corporate loan pricing following the subprime crisis. The Review of Financial Studies, 24(6), 1916–1943.

Sapienza, P. (2002). The Effects of Banking Mergers on Loan Contracts. Journal of Finance, 52, 329-367.

Sapienza, P. 2002. The effects of banking mergers on loan contracts. The Journal of finance 57(1), pp. 329–367.

Schenone, C. (2010). Lending relationships and information rents: Do banks exploit their information advantages?. Review of Financial Studies, 23(3), 1149–1199.

Schneider, T.E. 2011. Is environmental performance a determinant of bond pricing? Evidence from the US pulp and paper and chemical industries. Contemporary Accounting Research 28(5), pp. 1537–1561.

Scholtens, B. and Dam, L. 2007. Banking on the equator. Are banks that adopted the equator principles different from non-adopters? World Development 35(8), pp. 1307–1328.

Servaes, H. and Tamayo, A. 2013. The impact of corporate social responsibility on firm value: The role of customer awareness. Management science 59(5), pp. 1045–1061.

Shah, B.A. and Khan, N. 2017. Impacts of mergers and acquisitions on acquirer banks' performance. Australasian Accounting, Business and Finance Journal 11(3), pp. 30–54.

Shakil, M.H. et al. 2019. Do environmental, social and governance performance affect the financial performance of banks? A cross-country study of emerging market banks. Management of Environmental Quality: An International Journal

Sharpe, S.A. 1990. Asymmetric information, bank lending, and implicit contracts: A stylized model of customer relationships. The journal of finance 45(4), pp. 1069–1087.

Sherwood, M.W. and Pollard, J.L. 2018. The risk-adjusted return potential of integrating ESG strategies into emerging market equities. Journal of Sustainable Finance \& Investment 8(1), pp. 26–44. Available at: https://doi.org/10.1080/20430795.2017.1331118.

Shin, D. 2021. Corporate esg profiles, matching, and the cost of bank loans.

Siegel, J. I., Licht, A. N., & Schwartz, S. H. (2011). Egalitarianism and international investment. Journal of Financial Economics, 102(3), 621–642.

Simons, K. (1993). Why do banks syndicate loans?. New England Economic Review, Jan, 45–52.

Simons, K. 1993. Why do banks syndicate loans? New England Economic Review (Jan), pp. 45–52.

Simpson, W.G. and Kohers, T. 2002. The link between corporate social and financial performance: Evidence from the banking industry. Journal of business ethics 35(2), pp. 97–109.

Stiglitz, J.E. 2010. Lessons from the global financial crisis of 2008.

Sufi, A. (2007). Information Asymmetry and Financing Arrangements: Evidence from Syndicated Loans. Journal of Finance, 62(2), 629-668.

Sufi, A. (2009) The real effects of debt certification: Evidence from the introduction of bank loan ratings. Review of Financial Studies, 22(4), pp. 1659–1691.

Sufi, A. 2007. Information asymmetry and financing arrangements: Evidence from syndicated loans. The Journal of Finance 62(2), pp. 629–668.

Sujud, H. and Hachem, B. 2018. Effect of mergers and acquisitions on performance of Lebanese banks. International Research Journal of Finance and Economics 166(2), pp. 69–77.

Tarigan, J. et al. 2018. Analysis of merger & acquisition motives in Indonesian listed companies through financial performance perspective. KINERJA 22(1), pp. 95–112.

Tarmuji, I. et al. 2016. The impact of environmental, social and governance practices (ESG) on economic performance: Evidence from ESG score. International Journal of Trade, Economics and Finance 7(3), p. 67.

Thomas, H. and Wang, Z. 2004. The integration of bank syndicated loan and junk bond markets. Journal of Banking & Finance 28(2), pp. 299–329.

Ullah, N. and Abu Seman, J. 2018. Merger and Acquisition in Banking Sector: A Review of the Literature.

Wakefield, A. (2014). Searching and critiquing the research literature. Nursing Standard, 28(39), 49-57.

Weber, O. 2012. Environmental credit risk management in banks and financial service institutions. Business Strategy and the Environment 21(4), pp. 248–263.

Weidner, D. (2000). Syndicated lending closes out ’90s on a tear. The American Banker, Jan. 10.

Wittenberg-Moerman, R. (2008). The role of information asymmetry and financial reporting quality in debt trading: Evidence from the secondary loan market. Journal of Accounting and Economics, 46(2–3), 240–260.

Xu, Y. and La, H.A. 2017. Spillovers of the United States’ Unconventional Monetary Policy to Emerging Asia: The Bank Lending Channel. Emerging Markets Finance and Trade 53(12), pp. 2744–2769. Available at: https://doi.org/10.1080/1540496X.2017.1365287.

Yasuda, A. (2005). Do Bank Relationships Affect the Firm's Underwriter Choice in the Corporate-Bond Underwriting Market? Journal of Finance, 60, 1259-1292.

Zehri, F. and Zgarni, I. 2020. Internal and external corporate governance mechanisms and earnings management: an international perspective. Accounting and Management Information Systems 19(1), pp. 33–64.

Zingales, L. 2000. In search of new foundations. The journal of Finance 55(4), pp. 1623–1653. [Original source: https://studycrumb.com/alphabetizer]