Corporate Syndicated Loan Pricings in Germany: an Exploration of the Hidden Drivers

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A Thesis submitted to

The University of Gloucestershire (UK)



In accordance with the requirements of the degree of

Doctor of Philosophy

In the Faculty of Business, Education and Professional Studies

June - 2017

Abstract

Syndicated loans are a common debt financing format for large corporations in general. For those situated in Germany—with its bank-based financial system—such loans play a vital role. Given the multibillion volumes raised annually, the pricing of syndicated loans is economically significant, with its levels, structure, and determination having attracted the interest of researchers around the world.

A critical review of the existing worldwide literature of syndicated loan pricing revealed notable gaps, including an almost complete absence of studies on the German corporate market. The overall research aim was to address this gap by exploring and analysing the "hidden drivers" of banks' pricing of syndicated loans to German corporate borrowers, thereby developing an enriched understanding of the elements and determinants of pricing and its underlying processes and decisions.

Adopting a pragmatist research paradigm, I chose a sequential mixed-methods approach, with a limited quantitative analysis preceding an extensive qualitative study. The first stage of the research was designed to evaluate the availability of reliable quantitative pricing data in the public domain—this being the main data source for the clear majority of extant studies. I found the availability and quality of pricing data for the German corporate market to be extremely limited, particularly in comparison to that available relating to the U.S. market. There was clearly much that remained unexplained; hence, primary research was required to illuminate syndicated loan pricing and the decision processes that contribute to it.

The main element of the qualitative study was a series of semi-structured, in-depth interviews with a sample of bank lending professionals and key informants. The purpose of these interviews was to explore the complex realities of syndicated lending through the eyes and experiences of the people involved and to interpret the socially constructed phenomena surrounding the pricing of German corporate syndicated loans.

The study succeeded in revealing and substantiating important and to date hidden phenomena concerning numerous dimensions of syndicated lending in general and pricing in particular. An explanation was developed for the relative opacity of the German corporate syndicated loan market. The study enabled significant enhancements to the understanding of the concept of pricing and its complex and interwoven elements. More broadly, a new and richer perspective was developed of syndicated lending as a behavioural phenomenon, involving a complex interplay of relationships and strategies, and involving individuals and departments

within banks, between banks as members of the syndicate, and between lenders and borrowers. The insights gained informed the development of a comprehensive model of the pricing elements of syndicated lending and their determinants.

This research is the first to conduct and produce an in-depth study of the internal workings of syndicated corporate lending in the German market and a study that does not rely on secondary data that are at best incomplete. It has resulted in many rich and original insights and a conceptualisation of syndicated lending that differs radically from the classical understanding of lender-borrower relationships as founded on theories of asymmetric information. The research presented here, therefore, makes significant contributions to the literature, in helping to close notable gaps in the banking and financial intermediation literature.

Declaration

I declare that the work in this thesis was carried out in accordance with the regulations of the University of Gloucestershire and is original except where indicated by specific reference in the text. No part of the thesis has been submitted as part of any other academic award. The thesis has not been presented to any other education institution in the United Kingdom or overseas.

Any views expressed in the thesis are those of the author and in no way represent those of the University.

Signed:

Date: June 22nd 2017

Acknowledgement

I would like to express my special gratitude to my supervisor Professor Gerald Watts for his incredible support and patience. Throughout the research, he patiently provided tremendous advice and feedback, without which concluding this thesis would have been a great deal tougher and more time-consuming. I am particularly grateful to Professor Watts for introducing me to philosophical and methodological perspectives on research that significantly modified my approach towards the study and enabled me to make some valuable contributions to knowledge.

I am also thankful to Dr Sainey Faye, who constantly provided valuable feedback throughout the research project.

Further, I thank all the research participants who provided the many in-depth insights into German corporate syndicated lending that made this work possible. I greatly appreciate their enthusiasm in supporting me, especially whilst I was conducting the field-work but also afterwards, in readily providing additional background information as I needed it.

Finally, a grateful thank you goes to my family, my friends, and to my colleagues, for being always supportive and understanding throughout the inquiry.

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List of abbreviations

AISD	=	All-in Spread Drawn
AISU	=	All-in Spread Undrawn
BaFin	=	Bundesanstalt für Finanzdienstleistungsaufsicht ¹
BCBS	=	Basle Committee on Banking Supervision
BIS	=	Bank of International Settlement
Вр	=	Basis point
Cap. Ex.	=	Capital Expenditures
CAQDAS	=	Qualitative Data Analysis Software
CDO	=	Collateralised Debt Obligation
CDS	=	Credit Default Swap
CLO	=	Collateralised Loan Obligation
EaD	=	Exposure at Default
ECB	=	European Central Bank
EMTN	=	European Medium Term Note Programme
FATCA	=	Foreign Account Tax Compliance Act
FDIC	=	Federal Deposit Insurance Corporation
FED	=	Federal Reserve Bank
Gen. Corp.	=	General Corporate Purposes
IG	=	Investment Grade

¹ The German supervisory authority.

IPO	=	Initial Public Offering
LaD	=	Loss at Default
LCR	=	Liquidity Coverage Ratio
LgD	=	Loss given Default
LMA	=	Loan Market Association
LoG	=	Letter of Guarantee
LPC	=	Loan Pricing Corporation
MaRisk	=	Mindestanforderungen an das Risikomanagement ²
Non-IG	=	Non-Investment Grade
NPV	=	Net Present Value
NSFR	=	Net Stable Funding Ratio
OTC	=	Over-the-Counter
P&L	=	Profits & Losses
PD	=	Probability of Default
PDD	=	Probability of Drawdown
РО	=	Public Offering
RCF	=	Revolving Credit Facility
Refin.	=	Refinancings
RfP	=	Request for Proposal
RO	=	Research Objective

² Minimum requirements for risk management.

RQ	=	Research Question
RWA	=	Risk Weighted Assets
SEC	=	Securities and Exchange Commission
SPV	=	Special Purpose Vehicle
TCB	=	Total Cost of Borrowing
TL	=	Term Loan
Working Cap.	=	Working Capital
WpHG	=	Wertpapierhandelsgesetz ³
WpPG	=	Wertpapierprospektgesetz ⁴

³ The German Securities Trading Act.

⁴ The German Securities Sales Prospectus Act.

1 Introduction

Chapter 1 begins with background for the conceptual context of the research project syndicated lending⁵ as a form of corporate finance—and introduces the project's scope and the definitions of terms that are essential to the discussion. Section 1.2 discusses the origin and development of the research topic supported by an explanation of my personal interest in the field of syndicated lending both as a practitioner and as a researcher. Section 1.3 then presents the context for the research, namely, the German corporate syndicated lending market. Drawing on relevant literature, the section discusses the German setting and its distinctive features in the context of other comparable markets. Section 1.4, summarises in brief the limitations in the literature and introduces the research aim, the research questions and the research objectives. Lastly, the thesis structure is explained in 1.5.

1.1 The research context: syndicated lending

Syndicated lending, defined as a financial arrangement wherein pools of lenders jointly raise large amounts of capital for a borrower, is one of the world's prevalent financing tools, especially for large corporations. Lenders are predominantly banks that constantly interact with each other to create *syndicates* that provide loans under mutually agreed terms and conditions governed by the terms of a single contract (Denis & Mullineaux, 2000).

Primarily, syndicated loans are structured as *term loans* or as *revolving credit facilities*. The former is typically fully funded at closing and repaid in instalments or fully at the end of its term, whereas the latter provides more flexible funding that can continually be drawn, repaid, and re-drawn (Fight, 2004; Rhodes, Clark, & Campbell, 2004). Various pecuniary transfers from borrowers to lenders that compensate the latter for granting syndicated loans are commonly summarised and labelled *pricing*.

Following a sequential process, an arranging bank—in practice also referred to as the *bookrunner* or the *coordinator*, negotiates and structures the syndicated loan and then invites other institutions from its business orbit—so-called *participants*—to build a syndicate.

⁵ Note that I have on occasion used italics in the introduction of pivotal terms and locutions. These italics are intended to convey the meta-linguistic information (a) that this is an important term or locution in the thesis discourse and (b) this may be the first occurrence of the term or locution. In addition, as this is a lengthy and dense narration, I have discretionally marked further instances of the same word or locution with italics to reemphasise its importance. I request that readers not expect total consistency in the use of italics. My sense of the overall flow of the thesis has influenced my judgement as to whether readers might appreciate the assistance afforded by the appearance of the italics.

According to Godlewski (2010b), the duration of such a process is approximately eight weeks. The resulting consortia can be small, consisting of as few as two lenders, or large, with lender groups exceeding 50 banks.

Figure 1 displays the 2015 worldwide statistics for total syndicated loan volumes, with the columns representing loan volume by region (left scale) and the continuous line portraying deal numbers (right scale).



Source: Based on Dealogic Loanware secondary data. Figure 1. Overview worldwide syndicated loan volumes for 2015.

As shown in Figure 1, syndicated loans to U.S. borrowers accounted for almost half of the total issued volume, with the European market representing circa 30%.⁶ In terms of the number of newly issued facilities, the U.S. accounted for circa 33% and the European market for roughly 23%. Extant literature usually postulates that corporate syndicated loans account for roughly one-third of corporate finance activities worldwide. Other activities in the corporate context are *corporate bond* and *corporate equity* transactions (Gupta, Singh, &

⁶ These numbers are not restricted to corporate borrowers but include all possible types of syndicated loan borrowers like financial institutions or government entities. This explains the \notin 300 billion gap in the overall worldwide syndicated loan volume of \notin 4.3 trillion compared to the corporate one of \notin 4.0 trillion for 2015 (see Figure 2). Going forward, the focus will be on corporate syndicated loans.

Zebedee, 2008). Figure 2 plots the distribution of funds by type of financing vehicle for 2015. Here, even more noticeable proportions are detected with corporate syndicated lending volumes accounting for almost 60% of all corporate financing activities and for almost 45% of the total transactions.



Source: Based on Dealogic Loanware secondary data. Figure 2. Worldwide corporate financing volumes for 2015.

Given such numbers, Eichengreen and Mody (2000, p. 6) sensibly described syndicated loans as "one of the workhorses of international capital markets". In a similar vein, Dolvin, Pyles, and Woodside (2007, p. 83) reflected that this market is "acknowledged as the largest segment of the global capital market". Wood (2016, p. 19) added, "The syndicated credit agreement is one of the most prodigiously useful contracts ever drafted".

Related benefits like lender-portfolio risk diversification, a high degree of flexibility, large lending amounts, and lower borrowing costs in comparison to financing alternatives such as a series of bilateral loans or bond issuances are the main contributors to the attractiveness of syndicated lending (Altunbas & Kara, 2011; Denis & Mullineaux, 2000; Simons, 1993; Wilson, 1968). Given its pre-eminence as a source of corporate finance, there is a large body of scientific literature focusing on syndicated lending. The relatively widespread availability of public data concerning aspects of this market that can be collected for research support scholars' interest in syndicated lending. In that vein, Champagne and Kryzanowski (2007, p.

3,146) stated, "While most inter-bank relationships are not observable to outsiders, loan syndicates represent visible manifestations of bank interactions that can be studied".

In this thesis, I focus on syndicated loans to non-private equity owned German corporates (henceforth, *German corporate syndicated loans*), thus reducing the geographical and product-width scope in comparison to several other studies and enabling me to conduct a comprehensive, in-depth analysis of various pricing-related facets of German corporate syndicated lending. I decided to conduct a single-country study, as the cross-country integration of this market is found to be less pronounced compared to other financial products being grounded and exposed to local specialties (Barbosa & Ribeiro, 2007; Carey & Nini, 2007; Gaul & Uysal, 2013). Thus, this enabled me to rule out cross-country discrepancies, (e.g., in market characteristics and practice). Further, certain excursuses to other markets to compare them with respect to different market practices become more evident.

In this work, I focus on corporate syndicated lending by applying a specification of the research focus that differs from extant scholarship by exclusion of *leveraged buy-outs (LBOs)*. Although LBOs commonly facilitate corporate acquisitions with private equity investors,⁷ so-called *sponsors*, this distinction is pivotal, because the LBO market is of a different nature through its involvement of different parties with dissimilar motivations in comparison with the *bank-only, relationship-driven* corporate market (Conlan, 2011). According to Thomas and Wang (2004), highly leveraged loans are priced relative to fully *disintermediated* markets, in other words at *arm's length*, in which non-bank, mainly institutional investors play essential roles. In that vein, as Schenone (2010) pointed out, LBO-loans on average carry 70 basis points per annum (bp p.a.)⁸ higher pricings compared to average non-LBO loans. LBOs are less frequently used in the wider European market in general and in the German market in particular, compared, for example, to the U.S.

Further, *project finance* syndicated loans lie beyond the scope of this work. Like LBOs, project financings—where projects or assets are financed off-balance sheet via *special purpose vehicles* (*SPVs*)—employ different mechanisms from corporate lending (Mcmahon, 2011; Schniewind, 2012; von Moltke, 2013). German syndicated lending is predominantly

⁷ Private equity investors usually provide a minimum equity portion needed to acquire as much debt as possible to buy a certain company ("the target") with the debt in form of inter alia syndicated loans, high-yield bonds, or debt funds being secured by the assets of the target company (Pilger, 2012). LBO-investments are usually made by opportunistic equity and debt investors with the ultimate goal of maximising their returns (Bobrow, Tech, Redding, Spiro, & Ganz, 2007).

 $^{^{8}}$ bp = basis points; one basis point is one-hundredth of a percentage point.

used by *explicit* or *implicit investment grade*⁹ corporate borrowers with better credit qualities on average than corporate borrowers in the U.S.

A large percentage of the relevant literature studies quantitative, pricing-related phenomena. Loan pricings in general are important as they directly influence a company's cost of capital, its individual wealth, and are, more broadly, key ingredients of economic prosperity and welfare creation and development (Beck, Demirgüc-Kunt, & Maksimovic, 2005; Mattes, Steffen, & Wahrenburg, 2013). Predominantly based on secondary data that have been analysed with quantitative methods, most academic syndicated loan pricing studies have been grounded on U.S.-based samples. In comparison, studies on European loan pricing are fewer in number with none explicitly focusing on German corporate syndicated loans. This is surprising, given the prominent role of banks in the financing of corporate activity in Germany's *bank-based financial system* (Behr & Schmidt, 2015; Schmidt & Tyrell, 2004). Thus, to date, German corporate syndicated lending and its pricing represent relatively unexplored terrain.

1.2 Evolution of the research topic

The research presented here has its roots in my professional experience and in academic familiarity within syndicated lending. Five years of professional experience in German corporate syndicated lending, in parallel with two academic courses of which the latter concluded with a master's dissertation¹⁰ on syndicated lending, led to the development of this research. Due to the two perspectives, I was enabled to develop deep insights into the worlds of both practice and academia and into their ways of discussing and interpreting certain phenomena. In general, it became progressively clear that the domain of study presents complex issues and phenomena that are not satisfactorily addressed in extant research literature, especially as it relates to price structures and the way pricings are determined and established. Whilst constantly comparing daily practice with scholarly attempts to capture pricing-related syndicated loan phenomena, I observed a gap between theory and practice. During my professional work, it had become clear to me that publicly available pricing information has only limited relevance to the reality of price setting. Moreover, although there

⁹ Explicit investment grade loans are those granted to borrowers being externally rated "BBB" or higher by S&P and/or "Baa" or higher by Moody's (Everling & Kreutz, 2012; Ramanthan, 2012). Implicit investment grade loans are those for borrowers being not rated externally by S&P and/or Moody's, whose internal bank rating, however, is equivalent to an external investment grade rating.

¹⁰ Master thesis title: "Empirical analysis of syndicated loans and corporate bonds as a form of debt financing from 1998 to 2012 in Germany".

was a broad movement within the financial markets towards greater transparency and efficiency, such was clearly not the case for the German corporate syndicated loan market.

When I later enrolled in the University of Gloucestershire's doctoral programme in May 2014, I had the broad intention of exploring syndicated loan pricing issues in more depth. Whilst reviewing extant literature on the topic—which appeared to have solely been conducted by means of quantitative analytic methods—I was not convinced, given my experience in the field as a practitioner, by the current explanations of loan pricing reality. After instructional engagement with research philosophy and methodology, including an introduction to the world of qualitative research, I came to understand that these perspectives offered a promising methodological tool-box within which to explore loan-pricing phenomena. I was encouraged to further consider this direction by my academic advisers, one of whom was to become my supervisor. Through reading of related literature and numerous in-depth discussions, I became convinced that the world of qualitative research offered a path of considerable potential. The research that follows is therefore clearly grounded within the qualitative behavioural domain although it furthermore carries some quantitative elements.

1.3 The German syndicated lending market in context

The banking sector of the German economy is the largest in Europe (Howcroft, Kara, & Marques-Ibanez, 2014), one of the largest in the world (Grunert & Norden, 2012), and commonly considered prototypical of a classic, bank-based financial system (Stein, 2014). In such systems, banks play the key role of transforming, mobilising, and distributing capital from savers to borrowers, whereas in *market-based systems*—the U.S. or UK—equity markets play more pronounced roles in capital allocation processes (F. Allen & Gale, 2001; Behr & Schmidt, 2015).

Figure 3 plots the total corporate syndicated lending volumes and number of transactions of the 10 biggest European markets in 2015.



Source: Based on Dealogic Loanware secondary data. Figure 3. Top 10 European corporate syndicated loan markets for 2015.

With 294 newly issued facilities in 2015 amounting to roughly €140 billion, Germany maintains the second largest share of the European corporate syndicated lending market. The fact that UK corporations in 2015 and historically have been the biggest borrower group in Europe does not contradict the aforementioned comparison of the two countries with respect to size and role of banks in those economies. According to Fitzgerald (2011), syndicated loan usage in Germany is somewhat lower compared to the UK because corporations located in Germany also commonly fund themselves by means of *bilateral bank lending*, which is not as much the case in the UK. This is supported by respective numbers of overall outstanding bank loans to non-bank clients of roughly €4,000 versus €2,000 billion in Germany versus the UK (BMI, 2016). Overall, the reported numbers underpin the significance of syndicated loans as a major financing tool for large German corporations. Thus, the almost complete absence of academic research for the German market is noteworthy.

As summarised by Christodoulakis and Olupeka (2010), there exists besides pricing, a substantial, steadily growing body of worldwide finance research on various issues related to syndicated loans. Without claiming completeness, Table 1 provides an overview.

Strands of syndicated loan related scholarly literature							
1			Wilson (1968); Simons (1993); Bolton and Scharfstein (1996); Chowdhry and				
	Theory of loan syndication and		Nanda (1996); Winton (1997); Schure, Scoones, and Qinghua (2005);				
	determinants of loan syndication		Mullineaux (1994); Dennis and Mullineaux (2000); Lee and Mullineaux (2004);				
	decision	s	Godlewski and Weill (2008); Mullineaux (1994); Dennis and Mullineaux (2000				
		her	Lee and Mullineaux (2004); Godlewski and Weill (2008)				
2	Information asymmetries	ot	Banerjee and Cadot (1996); Sufi (2007); Pichler and Wilhelm (2001); Lee and				
	mior matron asymmetries		Mullineaux (2004)				
3	Effects of syndication	am	Lumber and McConnell (1989); Armitage (1995); Mosebach (1999); Gasbarro,				
	announcements on stock		Le, Schwebach, and Zumwalt (2004); Megginson, Poulsen, and Sinkey (1995)				
	performance		Preece and Mullineaux (1996); Aintablian and Roberts (2000)				
4	Emerging markets		Altunbas and Gadanecz (2004); Nini (2004); Godlewski and Weill (2008)				
Pricing, the focus of this study							

Source: Based on Christodoulakis and Olupeka (2010).

Table 1. Exemplary overview of worldwide syndicated loan literature strands.

I would make several points: Firstly, a broad base of literature exists regarding the underlying rationale and theory for loan syndication in comparison to bilateral lending affiliations. Because the size of loans to corporate giants has grown to be gargantuan, because even the largest banks have natural capital limitations, and further because the diversification of assets is an important measure of bank health, the diversification effect of syndicate of banks creating a loan larger than would be healthy for any single one of them (even if possible) addresses all three challenges (Chowdhry & Nanda, 1996; Simons, 1993; Wilson, 1968). From a borrower's perspective, loan size, rating, and the presence of collateral have been recognised as influencing syndication decisions positively (Denis & Mullineaux, 2000).

Secondly, information asymmetry issues have been studied both with respect to non-price related themes surrounding syndicated lending and with respect to pricing. Concerning the former, researchers have studied the structure of syndicates as temporary alliances of numerous lenders under the assumption that these are designed in a manner that addresses adverse selection and moral hazard issues (Pichler & Wilhelm, 2001), making the role of lead banks as *delegated monitors* in the sense of Diamond (1984) an investigated topic. In this regard, Sufi (2007) found the loan share retained by the respective lead arranger in a syndicated loan to be the main correcting variable to ameliorate the aforementioned asymmetric information problems.

My third point focuses on the influence of syndicated loan announcements on the borrowers' stock performance. In other words, the related authors test the hypothesis as to whether the issuance of syndicated credit produces positive signals to outside investors that lack access to private information. Overall, the findings in the literature tend to confirm this hypothesis

(Armitage, 1995; Mikkelson & Partch, 1986; Mosebach, 1999) with these findings said (Boot, 2000) to underpin the specialness and certification role of banks.

Fourthly, a few authors (e.g., Altunbas & Gadanecz, 2004; Godlewski & Weill, 2008) discuss syndicated lending to emerging markets borrowers. In particular, the presence of foreign banks in those markets that face severe informational frictions vis-a-vis local lenders, has been the focus of some work suggesting that the latter possess information advantages vis-à-vis the former and, hence, can provide larger and longer tenured loans than can foreign banks (Nini, 2004).

With regards to pricing—the focus of this work—the largest number of extant academic literature focus on the determination of pricing. Here, issues including borrower- and lender-related specifics, non-price-related contractual features, macroeconomic themes, syndicate structure, lender-borrower relationship and secondary market trading activity are studied as possible determinants.

Various commercial information providers such as *Dealogic Loanware* or *Thomson Reuters' Loan Pricing Connector (LPC)* collect accessible, syndicated loan data at the time of origination in the *primary market* and subsequently publicise them (Gadanecz, 2003; Sufi, 2007). The price-related studies are mostly conducted by means of quantitative analyses of U.S.-based secondary data samples sourced from those commercial providers. Studies on other borrower regions, such as Europe, appear less widespread with none comprehensively focusing on pricing in German corporate syndicated lending. This research disparity might well have its roots in the availability and quality of the public domain data of syndicated loans and the general information that is available about both borrowers and lenders. Such availability appears to vary significantly between comparative financial systems. For instance, the quality of information for U.S.-based borrowers is much better than for European borrowers in general or for German enterprises in particular. According to F. Allen and Gale (1995), the U.S. financial system is characterised by extensive disclosure requirements where, in contrast, such requirements in the German market are more limited.

With view to the secondary data providers as presented afore, even the German market at first view seems to be transparent with respect to public syndicated loan related information. However, especially in Germany, specific syndicated loan elements, above all regarding pricing, are often unpublished, leaving basic and hidden, private information unobservable to the public, such as researchers whose work relies on those data. From publicly available data, it is impossible to discern prices of syndicated loans granted to German companies. In other words, pricings of syndicated loans to German corporates are often opaque, leaving hidden or limited quantified information about determination and processes. Hence, there is much that is not yet understood concerning loan pricing, its various elements, its determinants, and the practical processes in the German corporate syndicated lending market. A central aim of this research is to identify and illuminate these "hidden drivers" of pricing.

1.4 Research aim, questions and objectives

1.4.1 Limitations of worldwide pricing literature

Quite apart from the absence of research on syndicated loans in the German corporate market, a critical review of existing worldwide literature reveals notable gaps. The shortcomings of these works that ultimately lead to the derivation of knowledge gaps and the formulation of research aim, questions and objectives will be discussed in depth throughout Chapter 2.

At this place, I attempt to provide a brief preview: I observe that the existing literature conflates different syndicated loan asset classes such as corporate, LBO, and project finance syndicated loans, each of which is inherently different with respect to the parties involved, market practices, pricing transparency, and general product-related features. Hence, the risk of presenting diluted results in these studies is most pronounced. Furthermore, the literature shows that sample sizes of European versus U.S.-based borrowers are disproportionally small, a fact that indicates structural drivers for the respective diverging degrees of availability to be at work, which question randomly selected loan samples as supposed by extant literature.

European data collections frequently completely disregard syndicated loans to German corporates (Godlewski & Weill, 2011) or represent them in a comparatively disproportionately small number. For instance, Carey and Nini's (2007) in its entirety contains only 41 German loan *tranches*¹¹ in a ten-year analysis horizon from 1992-2002. According to Dealogic Loanware, in the same period more than 1,000 tranches have been issued. It is most likely that almost 96% of the tranches have not been considered due to missing price information, which leaves unfilled the crucial inputs for quantitative regression analyses. With respect to price definitions and measures, I discovered major shortcomings due to mixed, unclear definitions and labelling across data providers. Nor, moreover, did these measures adequately address syndicated loan pricings' complexity and multidimensionality in the

¹¹ Syndicated loan contracts are regularly composed of a package of several facilities—so-called *tranches*—that often appear to be structured as different loan types with varying loan characteristics such as pricings, maturity-profiles, or other erratic features (Alexandre et al., 2014; Fight, 2004; Maskara). See also section 2.4.4 and 2.8.4.

differing illuminations of different loan types and various different elements of pricing. In sum, despite an extensive amount of scholarly effort attempting to elucidate syndicated loans' pricing determinants, existing worldwide evidence remains fragmented and sometimes contradictory. The result is that studies providing holistic and integrated overview of the numerous syndicated loan pricing determinants and their interaction is unavailable.

1.4.2 Research aim

By virtue of the lack of German syndicated loan studies in general and the shortcomings of extant worldwide literature, the aim of my work is to explore and analyse the "hidden drivers" of banks' pricing of syndicated loans to German corporate borrowers, thereby developing an enriched understanding of the elements and determinants of pricing and its underlying processes and decisions.

To the best of my knowledge—apart from significant enhancements of the understanding of the term "pricing"—its complex and interwoven elements given different syndicated loan types—this study is the first to undertake a comprehensive analysis and synthesis of the pricing determinants of the German corporate syndicated loan market based on an extensive qualitative fieldwork, comprising interviews with lending professionals. Furthermore, it is the first work dedicated to explaining the relative opacity of the German corporate syndicated loan market and revealing the underlying reasons for this. Overall, these discourses provide new insights into the nature of syndicated lending in general. Moreover, the work addresses several dimensions of syndicated loan related phenomena, such as bank stakeholders, bank best practices, and policy and regulation. Thus, the research makes contributes measurably to the literature and helps to close notable gaps in the banking and financial intermediation literature. In doing so, the research also opens additional opportunities for future research.

1.4.3 Research questions and objectives

Table 2 sets forth the research questions and objectives that fulfil the aim of this study.

1		What are the limitations of publicly available information concerning German corporate syndicated loan pricing?		To assess the limitations of publicly available information concerning German corporate syndicated loan pricing.	1(S)	4 & 5.2.2
2	"RQ")	Why are some aspects of corporate syndicated loan pricing for German borrowers made public and others not?	"RO")	To explore and explain why some aspects of corporate syndicated loan pricing for German borrowers are made public and others not.	& section	5.2
3	questions (How can the various German corporate syndicated loan pricing elements be classified and prioritised from a lending banks' perspective?	objectives (To explore the classification and prioritisation of the various German corporate syndicated loan pricing elements from a lending banks' perspective.	g chapter(s)	5.3
4	Research	How can the complexity and multidimensionality of German corporate syndicated loan pricings be summarised and explained?	Research	To explore and explain how the complexity and multidimensionality of German corporate syndicated loan pricings can be summarised and explained.	rresponding	5.4
5		What are the pricing determinants in the German market for corporate syndicated loans and how do they interact with each other?		To establish what the pricing determinants in the German market for corporate syndicated loans are and how they interact with each other.	Co	5.5 & 6

Table 2. Research questions and research objectives.

1.5 Thesis structure

The structure of the thesis follows the natural process of research that M. Saunders, Lewis, and Thornhill (2012, p. 166) stated to be "composed of a number of stages summarised as conceptualisation (including conceiving the research question, recognising the philosophical position, determining the approach and formulating the design), implementation (sampling, data collection and data analysis), interpretation and outcomes". Nuanced in this way, Figure 4 highlights the organisational conception of the thesis as a work of seven chapters.



Figure 4. Thesis structure.

2 Literature review

2.1 Introduction

The *critical literature review* serves as groundwork for the remainder of the thesis (Wallace & Wray, 2011). Its purpose is to provide the researcher with a knowledge base to progress with his or her research and to reveal knowledge gaps by means of a critical review of the most relevant and significant worldwide academic literature relevant to the topic: in this research, the understanding of German corporate syndicated loan pricing. In other words, such a review frames the conceptual universe in which a thesis acquires meaning and contributes to knowledge. Specifically, the review assists the scholar to derive and justify research questions and objectives and to discuss, compare, and place research findings within the wider body of knowledge (Creswell, 2007).

2.2 Structure and development of the literature review

2.2.1 Structure

Section 2.3 presents an introduction to theoretical financial intermediation assumptions and the *raison d`être* of banks, upon which various discussions herein are grounded—especially those on syndicate structure and the lender-borrower relationship.

Section 2.4 introduces and describes important general concepts of syndicated lending and product-related specifics. This introduction is based largely on academic literature (including textbooks) covering the domain reflected in the worldwide syndicated lending market. In line with the overall research aim, later discussions reveal certain specific and possibly contradictory thus-far-hidden real-world phenomena of the German market.

Sections 2.3 and 2.4 are significant in providing a broad context for the academic background relevant to my research area and are intended to assist readers in apprehending the theoretical and applied knowledge germane to the study. Establishing a setting for pricing-related discussions throughout the thesis, I discuss syndicated loan pricing definitions and respective measures applied within extant academic literature in 2.5 and I outline the critical debate on these topics.

The core goal of the literature review is to identify gaps in the web of knowledge that defines the field through critical review of existing strands of academic literature on syndicated loan pricing determinants. Sections 2.6 to 2.12 provide such critical reviews, predominantly drawing upon peer-reviewed articles published in reputable finance, business, and economics journals that treat such matter from both empirical and theoretical perspectives. As suggested by M. Saunders et al. (2012), I applied a thematic approach by organising the chapters essentially based on the relevant primary subjects and primary findings of the publications that I reviewed, as shown in Table 3.

Syn	dicated loan pricing determinants within extant literature	Section
1	Borrower-related specifics	2.6
2	Lender-related specifics	2.7
3	Syndicated loan contractual features	2.8
4	Macroeconomic environment	2.9
5	Syndicate structure	2.10
6	Lender-borrower relationship	2.11
7	Secondary market trading	2.12

Table 3. Syndicated loan pricing determinants within extant literature.

2.2.2 Key sources

Via individual *summary tables* for each of 30 academic papers that appeared both relevant and significant and that I identify forthwith as being *core papers*, I condensed the key elements and findings. Furthermore, within the related primary subject sections, I highlighted the first mention of the authors of these core papers via a bold typography for the convenience of the reader. I support specific discussions with an array of auxiliary bank-lending-related literature that is not necessarily based on syndicated credits. Most of the earlier financial intermediation research is either purely theoretical or constructed on standard bilateral bank loan samples (e.g., Boot, Thakor, & Udell, 1987; Boot & Thakor, 1994; Diamond, 1984; Melink & Plaut, 1986). Syndicated loans, according to Hale and Santos (2009) and Anagnostopoulou and Drakos (2016)—except for several distinctive features—might partly adhere to similar principles or patterns as applied in standard (bilateral) bank loans. It is reasonable, therefore, to incorporate this kind of literature cautiously, but at lower levels of relevance.

Modern syndicated loan literature specifically focuses on those pricing determinants that are complex and for which respective directional *a priori* predictions appear challenging. This is particularly pronounced in the broad field of information asymmetries and various related sub-themes, such as discussions on syndicate structure and relationship lending. Logically and with respect to the included core papers, these topics play important roles in my analysis.

Additionally—mainly by presenting *controlling* and *robustness tests*—most empirical articles provide important sub-thematic findings besides their core leitmotif. Robustness tests are common in quantitative analyses to rule-out different explanations in relation to an

established relationship between certain variables (Lu & White, 2014). Easterby-Smith, Thorpe, and Jackson (2012) defined robustness as the "extent to which a summary measure is sensitive to disturbances in data quality" (p. 345). In other words, papers seeking to achieve a core goal, such as studying syndicate structures in the light of information asymmetries, might also contain some sub-thematic findings, such as regarding borrower or lender characteristics. My intention is to share such sub-thematic findings systematically with the reader by means of *synthesis*.

2.2.3 Synthesis

Spanning the broad thematic view by incorporating both—the core literatures' primary and sub-thematic findings regarding the seven determinant classification criteria in Table 3—enabled me to accomplish a high degree of granularity with an overall extraction of 264 individual pricing determinant findings.¹² I synthesised these into corresponding summary views for each determinant group with the Table 4 displaying a respective example.¹³

Determinant	Pricing direction	Pricing definition	Borrower region under study	Time frame	Reference	Consensus within extant literature	Detailed discussion in table
Primary subject (e.g., borrower related specifics)							
		Sub-paramete	er of primary subject	(e.g., borro	ower size)		
	1	e.g., AISD	e.g., U.S.	e.g., 2000- 2010	e.g., Author 1 (2010)		e.g., 3
e.g., large	Î	e.g., Spread over reference rate	e.g., U.S.	e.g., 2000- 2011	e.g., Author 2 (2010)		e.g., 4
	Ļ	e.g., AISD	e.g., U.S.	e.g., 2000- 2012	e.g., Author 3 (2010)		e.g., 5
Legend							
Consensus within core literature (if more than half of the respective findings match)							
Impasse within core literature (if half of the respective findings match)							
Dissension within core literature (if less than half of the respective findings match)							
No further evidence provided within core lit	erature	:					

 Table 4. Core literature synthesis: example and legend.

Overall, the literature review led to the revelation of knowledge gaps and the subsequent derivation of research questions and objectives as will be established in 2.13.

¹² Based on the 30 defined core papers.

¹³ A full list of the literature synthesis is displayed in Appendix A.

2.3 Introduction to theories of banking and financial intermediation

In line with the scope of this thesis, I focus on corporate syndicated loans for large German enterprises. Excepting the LBO, for example, this industry segment tends to be a bank-only market (Conlan, 2011). Hence, bank specific and financial intermediation theoretical assumptions in general play pivotal roles during the study and for which I present a brief primer.

After having overcome early assumptions of perfect capital markets, where the design of contractual features for corporate attempts to raise funds are irrelevant (Modigliani & Miller, 1958), modern financial intermediation and corporate finance research draws its inspiration mainly from *asymmetric information* and *agency theory* (Fulghieri & Goldman, 2008). Grounded on early seminal works of scholars like Leland and Pyle (1977) and Diamond (1984), banking and financial intermediation research has its origins in extension of banks roles in gathering private information about debtors to be used subsequently to ameliorate financial contracting problems in relation to adverse selection and moral hazard. From a research philosophical point of view, related literature strands can be categorised within the classical economic *positivist paradigm* with an almost complete absence of interpretive stances.

Banks constitute outstanding pillars of financial markets and the allocation of capital by acting as *intermediaries*, for which the main underlying rationale is to ameliorate asymmetric information and moral hazard issues (Bhattacharya & Thakor, 1993; Diamond; Holmström & Tirole, 1998). This theoretical model rests on the idea that banks constantly collect information about borrowers that is at least partly unavailable to non-banks (Santos & Winton, 2008).

Repeated lending relationships to borrowers with access to private information—which can be seen as one of the fundamental roles and advantages of banks (Gonzales, 2014; Sufi, 2007)— enable them to mitigate asymmetric information issues (Altunbas, Gadanecz, & Kara, 2006a; Gadanecz, Kara, & Molyneux, 2012). This traditional and theoretical understanding of banking and financial intermediation suggests that banks are special (Gande & Saunders, 2012). The smaller, younger, riskier, and opaquer the borrowers are in general, the more important is the role of financial intermediation via private debt financing (Eichengreen & Mody, 2000; Kaya, 2011; Siegel, 2005). According to Mattes et al. (2013) and Panyagometh and Roberts (2010), in information-intense financing arrangements, relationship banks build information monopolies that provide a superior ability to predict the future developments in
borrowers' creditworthiness. From a more technical perspective, this debt intermediation business in its original role relies on collecting deposits from the public and providing loans to the public (Fulghieri & Goldman, 2008; Meller, 2013). In other words, deposit holders indirectly delegate investment decisions to the intermediary,¹⁴ who enjoys the advantage of being able to share risk, to transform assets, to provide liquidity, and to produce private information, especially through ongoing monitoring and screening of their clients (Gobbi & Lotti, 2004; D. P. Morgan & Samolyk, 2010). Appositely, Diamond (1984) defined banks as delegated monitors. *Delegated monitoring* in the syndicated loan context plays a prominent role in subsequent discussions as participant banks within lending syndicates are assumed to delegate monitoring to the lead arrangers of a syndicated loan (Sufi, 2007).

2.4 Introduction to syndicated lending's institutional characteristics

The upcoming sections provide brief introductions to syndicated lending's institutional characteristics as some basic understanding of specific product related phenomena will enhance the appreciation of the remainder of the thesis.

2.4.1 Syndicated lending

Syndicated loans are large-scale debt instruments where multiple lenders—typically groups of banks¹⁵—build syndicates to lend funds for numerous purposes (Altunbas, Gadanecz, & Kara, 2006b; Godlewski, Sanditov, & Burger-Helmchen, 2012). Although each lender maintains its own claims to the obligors,¹⁶ syndicated loans are built on single loan agreements with mutual terms and conditions, based on the principle of an equal legal treatment of all lenders (Altunbas et al.; Fight, 2004). These multilateral elements distinguish syndicated from typical bilateral, sole-lender transactions. Corporate syndicated loans are usually of highest seniority with lender groups having first repayment claims in default or bankruptcy scenarios (L. Allen & Gottesmann, 2006; Slaughter & May, 2013). Syndicated loans are negotiated, structured, and distributed by one or several "arranging" banks¹⁷ that may subsequently invite additional institutions, the participants, to join a syndicate (Ball, Bushman, & Vasvari, 2008; Fight, 2004; Rhodes et al., 2004). Ivashina and Scharfstein (2010) described this process as one element of modern forms of banking often referred to as the *originate-to-distribute-approach*.

¹⁴ Depository institution.

¹⁵ At least two institutions.

¹⁶ As well as a *pro-rata* share of possible losses.

¹⁷ Also referred to as *coordinator(s)*, *bookrunner(s)*, and *mandated lead arranger(s)*. I discuss the numerous syndicated lenders' title structures in section 2.4.6.

In that context, Mora (2015) pointed out that the arranging bank(s) on average retain one-third of the total amount of the loan after a successful syndication.

According to Gadanecz (2003, p. 26), "Syndicated credits lie somewhere in between relationship loans and public debt. While the lead bank(s) may have some form of relationship with the borrower, this is less likely to be the case for the banks participating in the syndicate at a more junior level". Altunbas et al. (2006b, p. 6) defined syndicated loans as "hybrids of relationship lending and publicly traded debt". In other words, syndicated lending "lies on the borderline between public and private finance" (Gadanecz, p. 12). According to Jones, Lang, and Nigro (2005), syndicated lending shrinks the differences between intermediated bank debt and disintermediated public debt such as corporate bonds.

2.4.2 Main contract parties in syndicated lending

2.4.2.1 Borrowers

The borrower types in Table 5 are the most common in general syndicated lending.

Common borrower types in syndicated lending						
Corporates	The focus of this study; see respective definitions below.					
not within the scope of this thesis:						
Deal sponsors; private equity funds	Mainly active in LBO- and project financings.					
Financial institutions	Here, banks or other financial institutions themselves borrow in the syndicated loan market.					
Sovereign countries/quasi-sovereign/-governmental entities	Mainly common in emerging- or developing markets.					
Special purpose vehicles (SPVs)	Mainly common in project- and asset financings.					

Table 5. Common borrower types in syndicated lending.

Focusing on German corporates, one observes that respective definitions and classifications especially with respect to size—appear vague and untrustworthy. The European Comission (2017) provides official quantitative company-clusters, as shown in Table 6.

		Ceilings				
Official information based on Eurostat	Category	Staff headcount	Turnover (in € mn)	or	Total balance sheet (in € mn)	
	Micro enterprises	< 10	<u><</u> 2		<u><</u> 2	
Small and medium-sized enterprises (SMEs)	Small enterprises	< 50	<u><</u> 10		<u><</u> 10	
	Medium-sized enterprises	< 250	<u><</u> 50		<u><</u> 43	
Tongo ontonnulana		> 250	> 50	1	> 12	
Large enterprises	> 250	> 50		>43		

Source: Adapted from European Comission (2009).

Table 6. Official company size clusters.

Here, *small- and medium-sized enterprises* (*SMEs*) are demarcated as either *micro-*, *small-* or medium-sized firms with staff headcounts of less than 250, yearly turnovers of less/equal than 50, and total balance sheets of less/equal than €43 million.

According to these characterisations, all German corporate syndicated loan borrowers adhere to the *large enterprise* cluster. Within this group, however, firm characteristics, such as size, differ extensively. A firm qualifies to be labelled a large enterprise when its turnover is upwards of \in 50 million, whereas firms with a couple of billion Euros, such as German DAX-firms, are labelled in the same way. Rightly, Fitzgerald (2011) pointed out that corporate borrowers might range from a relatively small regional manufacturing firm to a large multi-billion-euro-turnover international corporation.

Qualitative criteria related to owners and their leadership define the special term *Mittelstand*, which is not used outside of Germany (Goeke, 2008). According to Becker and Ulrich (2009), Mittelstand enterprises are characterised by one person or a family, which owns and operationally leads the business. This person or family is personally liable for borrowing obligations and, hence, bears the related entrepreneurial risks (Becker & Ulrich). Logically, Mittelstand enterprises might adhere to the SME-definition, but also to the definition for large enterprises, leaving the demarcation with regards to the activity of corporate borrowers in syndicated lending relatively unclear.

Because no official, more granular definitions appropriately clustering large enterprises exist, I provide an unofficial definition based on comments of corresponding product specialists who assisted me as informants and thankfully acted as anonymous referees. These numbers are rough indicators for the companies within the scope of this thesis, but with explicit notice that the definitional boundaries are not strict and that borderline cases are likely to differ in practice from the numbers presented in Table 7.

Unofficial ''market standards''	Ceiling	External rating						
	Turnover	Issuing volume	requirement					
Syndicated loan capability	c. > 250	c. > 25	no					
Schuldscheindarlehen capability	c. > 350	c. > 50	no					
Public bond capability	c. > 500	c. > 250	no, but preferred					
Commercial paper capability	c.>1,000	c.>20*	no, but preferred					
* Here this single minimum issuing volume is usually only a part of an overall commercial paper programme of several hundred million Furos								

Table 7. Unofficial company size clusters in light of capital markets accessability.

Large enterprises capable of issuing a syndicated loan are characterised by a minimum turnover of \notin 250 million with minimum issuing volumes regularly exceeding \notin 25 million. *Schuldscheindarlehen*¹⁸ are regularly issued by borrowers with at least 350 million Euros of turnover at a minimum issuing volume of \notin 50 million. Enterprises with turnovers of at least 0.5 to one billion Euros issue corporate bonds¹⁹ where issues tend to exceed \notin 250 million. Even larger clients with turnovers of at least one billion Euros commercial *paper programmes*.²⁰ Indirectly, commercial paper plays an important role in this thesis as large revolving credit facilities for clients with commercial paper programmes serve as *commercial paper back-up lines*.²¹

2.4.2.2 Lenders

From a lender or investor perspective, the main "players" in syndicated lending have always been and remain the banks. However, at the present time, *non-bank financial institutions*, such as insurance companies, pension funds, hedge funds, and investment-funds²² are playing increasingly important roles (Lim, Minton, & Weisbach, 2014). These participants, however, are primarily active in more risky asset classes, such as LBOs and complex and mainly assetbased non- or limited-recourse project finance transactions (Gupta et al., 2008; Massoud, Nandy, Saunders, & Song, 2011).

As my work thematises common corporate borrowing activities via syndicated loans, I focus solely on the bank's side of such transactions (i.e., so-called *bank-only facilities*). Although this research emphasises German corporate borrowers, it also concerns global features, given

¹⁸ "The term Schuldscheindarlehen (in the singular) is perhaps best translated as 'a loan evidenced by a certificate of indebtedness'. The product has been in existence for many years with predecessors dating back several centuries. In recent years, there has been a marked increase in overall volumes and increased interest in the product, both from a domestic German and an international perspective" (LMA, 2016a, p. 4).

[&]quot;The term Schuldscheindarlehen is not legally defined. It is a financial instrument with distinct legal characteristics. Under German law, Schuldscheindarlehen refers to an underlying loan agreement for which a separate borrower's note (Schuldschein) stating the loan receivable is usually, but not necessarily, issued. The borrower's note does not constitute a security within the meaning of German civil and commercial law or within the meaning of the German Securities Trading Act (Wertpapierhandelsgesetz, 'WpHG') or the Securities Prospectus Act (Wertpapierprospektgesetz, 'WpPG') and generally only serves as documentary evidence of a debt. This means that Schuldscheindarlehen are exempted from the obligation to publish a prospectus under European prospectus law. It is not possible to use a clearing system for such loans and they may not be listed or traded on any stock exchange" (LMA, 2016a, p. 5).

¹⁹ According to Thau (2011), corporate bonds are defined as debt security instruments that are issued by a corporation and subsequently sold to investors. Usual, corporate loans are senior unsecured debt instruments, meaning that the payment ability of the respective company backs the bond.

²⁰ According to Feldstein et al. (2012), commercial papers are money market products allowing inter alia large corporations to raise funds on a short-term basis regularly ranging from 1 day to 270 days. Commercial paper programmes provide clients a contract framework allowing them to tap the commercial paper market repeatedly up to a certain maximum amount.

²¹ See section 2.4.4.2.

²² For example, by investing in collateralised loan obligations (CLOs), collateralised debt obligations (CDOs).

the international banking universe that is active in this corporate borrower market (Clarke, Cull, Peria, & Sanchez, 2003; Haselmann & Wachtel, 2011).

Table 8 displays the *bookrunner league table* of the 25 most active banks for German corporate syndicated lending for the period 2000 to 2015. These banks represent more than 80% of the overall bookrunner volume.²³

Germany:											
Co	Corporate syndicated loan bookrunner league table 2000 to 2015										
	Bookrunner	ner Deal value (€ mn) No. %-share		Registered office	Business focus						
1	Deutsche Bank	71,869.37	314	12.00	Germany	Universalbanking					
2	Commerzbank	61,434.10	508	10.26	Germany	Universalbanking					
3	UniCredit	58,783.43	347	9.82	Italy	Universalbanking					
4	J.P. Morgan	37,319.76	85	6.23	U.S.	Universalbanking					
5	BNP Paribas	27,208.15	104	4.54	France	Universalbanking					
6	LBBW	24,813.25	179	4.14	Germany	Wholesalebanking					
7	Citi	22,965.89	58	3.84	U.S.	Universalbanking					
8	HSBC	19,261.53	109	3.22	UK	Universalbanking					
9	Bank of America Merrill Lynch	19,206.30	47	3.21	U.S.	Universalbanking					
10	Société Générale Corporate & Investment Banking	17,977.74	56	3.00	France	Universalbanking					
11	BayernLB	15,156.65	122	2.53	Germany	Wholesalebanking					
12	Royal Bank of Scotland	15,085.01	70	2.52	UK	Universalbanking					
13	Barclays	13,952.53	47	2.33	UK	Universalbanking					
14	Mizuho	9,386.37	24	1.57	Japan	Universalbanking					
15	ING	8,986.28	57	1.50	Netherlands	Universalbanking					
16	Morgan Stanley	8,949.42	26	1.49	U.S.	Investmentbanking					
17	Credit Agricole CIB	8,639.60	50	1.44	France	Universalbanking					
18	Mitsubishi UFJ Financial Group	8,466.49	31	1.41	Japan	Universalbanking					
19	Helaba	7,811.19	67	1.30	Germany	Wholesalebanking					
20	DZ Bank	7,502.69	71	1.25	Germany	Wholesalebanking					
21	Goldman Sachs	7,244.76	36	1.21	U.S.	Investmentbanking					
22	SEB	4,826.64	35	0.81	Sweden	Universalbanking					
23	Credit Suisse	4,718.12	25	0.79	Switzerland	Universalbanking					
24	Sumitomo Mitsui Financial Group	4,454.49	24	0.74	Japan	Universalbanking					
25	Santander	3,398.63	19	0.57	Spain	Universalbanking					

Source: Based on Dealogic Loanware secondary data.

Table 8. German corporate syndicated loan bookrunner league table 2000 to 2015.

²³ Detailed information on different bank titles like "Bookrunner" can be found in section 2.4.6. Regarding the allocated bookrunner volume for each bank (e.g., ϵ 61,434.10 million for Commerzbank in Table 8), the related functioning is as follows: If a ϵ 100 million transaction consisted of two bookrunners and two further non-bookrunners, the former would be allocated ϵ 50 million bookrunner league table volume (also often referred to as *league table credit*) each (Dealogic Loanware, 2016).

Generally, bank type discussions and respective classifications can be confusing, faddish, and

subject to ongoing changes in light of numerous pending country-specific regulatory themes like separation acts, etc. (Hockmann & Thießen, 2012; LMA, 2015). Many different terms are loosely used in practice. To provide an example, commonly labelled U.S. investment banks happen to be identified as broker dealers, and, as such, during the financial crisis around 2008/2009 converted into bank holding companies to gain access to the Federal Reserve (FED) Bank's emergency liquidity. Institutions like J.P. Morgan Chase and Citibank have, however, been bank holding companies since the Bank Holding Company Act of 1956 (Federal Deposit Insurance Corporation, 2016; Oliver Wyman, 2015; Schildbach, 2012). This does not necessarily mean, however, that respective business models likewise assimilated. Goldman Sachs, for example, remains to primarily conduct investment banking business. In the UK, legal entities that have the permission to conduct investment banking business are labelled investment firms and are subject to strict prudential regulation by the Bank of England (Balluck, 2016). However, these investment firms are commonly subsidiaries of large banks that conduct various other types of financial business.

In line with Hackethal (2004), the German banking system is special in the sense that besides privately held and municipality owned savings banks, restricted to serving only local clients, exist. Landesbanks act as central banks to these savings banks and are owned by the German Federal States. Next, cooperative banks also exist and these are owned by their members/clients with DZ- and WGZ-Bank acting as central banks to the local cooperative banks. Hence, the German bank market is commonly referred to as the three-pillar-system (Behr & Schmidt, 2015). Table 8 shows three Landesbanks (LBBW, BayernLB, and Helaba) and DZ-Bank as central banks for cooperative banks.

The exemplified complexity with respect to concrete regulatory and legally correct labelling further increases with respect to pan-European institutions, like large Asian banking conglomerates. Further, via subsidiaries, several foreign banks operate under different legal frameworks abroad by adhering to respective local regulatory requirements.

For the purposes of this study, it is more fruitful to consider the respective business foci across banks—in other words, how they generally interpret banking—than to debate in depth the intricate legal and regulatory definitions, which would become an investigation without end. In this vein, three different bank-clusters are important for the market under study:

- Universal banks. Universal banks offer full ranges of banking services, such as checking and savings/deposit accounts, loans, credit cards, insurance products and lines of credit to individuals (*retail and private banking*²⁴) and to businesses (*corporate banking*), which overall is commonly labelled *commercial banking*. Additionally, universal banks regularly provide investment banking services.
- 2. Wholesale banks. *Wholesale banks* mainly offer financial services to larger businesses, institutional investors, other banks and investment vehicles. These institutions commonly conduct large scale business. Commonly, wholesale banks do not conduct retail banking or retail-deposit taking activities. They focus on corporate and investment banking.
- 3. Investment banks. Investment banks are financial institutions that provide numerous services; amongst others are underwriting, facilitating transactions, assisting in mergers and acquisitions (M&A), and brokering and trading.²⁵ Investment banks' clients are mostly very large multinational corporations and institutional investors. Investment banks do not conduct retail banking or deposit business (Balluck, 2016; Hockmann & Thießen, 2012).

To conclude, universal banks usually conduct retail, corporate and investment banking business under one roof, whereas pure wholesale banks focus on a broad range of corporateand investment banking services without conducting retail business. Investment banks appear to have the narrowest focus by solely focusing on the business fields described afore. Under these definitions, only universal banks have access to retail deposits, which influences their individual funding conditions (Craig & Dinger, 2013). Herein, I focus on these three bank types, both national (German) and international.

Pursuant to Table 8, together with UniCredit—the Italian universal bank that acquired the German Bayerische Hypo und Vereinsbank AG in 2005—Deutsche Bank and Commerzbank have a market share of 32%. Five U.S. banks are present in this table, together accounting for an approximately 16% market share. Three banks are headquartered in the UK and France, with market shares of 8 and 9% respectively.

²⁴ Meaning: does business with or on behalf of individual, non-professional clients.

²⁵ Meaning: trades shares, bonds and other financial assets with further market participants (e.g., insurance companies, pension funds, or hedge funds) (Balluck, 2016).

2.4.3 Rationale of syndicating loans

Academic literature identifies various motivations for both lenders and borrowers to engage in syndicated lending.

2.4.3.1 Lender rationale

- Lenders joining loan syndications diversify their loan portfolios by avoiding excessive bulk risk positions and do so in a relatively cost-effective way (L. Allen & Gottesmann, 2006; Altunbas et al., 2006a; Godlewski & Weill, 2008; Simons, 1993). Thus, syndicated lending enables lenders to avoid major single-name exposures²⁶ that may be prohibited by local banking regulators (Denis & Mullineaux, 2000; Ivashina & Scharfstein, 2010). Nevertheless, a lending relationship with the borrower can be sustained (Godlewski & Weill).
- Lenders active in syndicated lending can diversify income sources (Godlewski, 2010b) since banks acting as lead banks in structuring and placing syndicated loans generate various kinds of fee income (Altunbas & Kara, 2011; Godlewski & Weill). Participant banks on the other side tend to choose syndicated loans as a means to boost margin incomes (Altunbas & Kara) and to strengthen credit portfolio performance and quality (Howcroft et al., 2014).
- Banks seeking to utilise available capital to grow their balance sheets might choose syndicated loans to access the debt of large, international firms (Howcroft et al.).
- Syndicating loans enables capital constraint banks to lift their capital adequacy ratios (Alexandre, Bouaiss, & Refait-Alexandre, 2014). Banks facing such constraints and need to reduce RWA-exposures might use syndicated lending as a technique to offload credit pieces without having to terminate the entire lending relationship (L. Allen & Gottesmann).
- Participating banks have the opportunity to decrease their monitoring as well as screening and administrative costs as elements of these functions are performed by a facility agent (Altunbas et al.; Mercedes Adamuz & Hernández Cortès, 2015).

²⁶ So-called *bulk-risk-exposures*.

- Participant banks that "passively" join syndicated loans are enabled to build exposure to clients that would otherwise perhaps not be realistic targets²⁷ (Altunbas & Kara, 2011; Godlewski & Weill, 2008; Howcroft et al., 2014).
- According to Howcroft et al., being active in the market for syndicated loans might be a tool to enhance marketing and advertising in the financial markets in general.

2.4.3.2 Borrower rationale

- The characteristics of syndicated loans enable borrowers to raise large amounts that would otherwise have required a series of bilateral facilities (Mercedes Adamuz & Hernández Cortès, 2015). Furthermore, borrowing from a syndicate might be less costly and easier to administer (Dolvin et al., 2007). These multilateral features also protect borrowers from the "misbehaviour" of single lenders (Altunbas et al., 2006a).
- In comparison to bonds, syndicated loans can be placed more quickly and discreetly (Godlewski, 2010b; Godlewski & Weill).
- Syndicated loans can be individually negotiated. For instance, it is common that syndicated loan facilities consist of several tranches,²⁸ for example, a term loan for capital expenditure, a revolving credit facility for flexible working capital funding tool, and a letter of guarantee tranche (Maskara, 2010).
- Syndicated loans tend to be easier to liquidate or to renegotiate, restructure²⁹ prepaid, or cancel in comparison with other debt instruments (Mora, 2015). The general reasons for this is bank syndicates are usually relatively small, concentrated, well organised, and include a client's relationship bank (L. Allen & Gottesmann, 2006; Altunbas et al.; Gasbarro et al., 2004). Gadanecz (2003, p. 119) described the relative ease in restructuring a syndicated loan as effectively an "option to renegotiate".

²⁷ For example, as they are too large or resident in a foreign country.

²⁸ See section 2.4.4 and 2.8.4.

²⁹ For example, in the case of covenant violations or other financial constraints leading to a deterioration of a borrowers creditworthiness.

• Syndicated lending allows borrowers to diversify its lender universe, thereby allowing them—especially those with lower credit quality³⁰—to depend less on single lenders that they would in large bilateral lending relationships (Nigro, Jones, & Aydogdu, 2010).

2.4.4 Loan types

Syndicated loan contracts are regularly composed of a package of several facilities—sotermed *tranches*—that often appear to be structured as different loan types with varying loan characteristics such as pricings, maturity-profiles, or other contractual features (Alexandre et al., 2014; Fight, 2004; Maskara). According to the literature, three types of syndicated loans are common in the field of commercial lending.

2.4.4.1 Term loan (TL) facility

Term loans (TLs) are usually fully drawn in a lump sum at or only after a relatively short period from loan closing in an agreed drawdown or availability period (Lim et al., 2014). Term loans may be repaid in instalments or, quite often, in larger *balloon payments* or even in a 100% *bullet repayment* at a contractual termination date (Gasbarro et al., 2004). Once repayments are made, funds cannot be re-borrowed (Angbazo et al., 1998). From a cash-flow-perspective, bullet repaying term loans are at best comparable to corporate bonds and can be said to be one of such instruments' main alternatives as a competing debt instrument, as pointed out by Godlewski (2010a).

A widely employed sub-format of term loans are *bridge loans*, a commonly used tool to finance acquisitions discretely within a small banking group (via *underwriting*³¹), until the acquisition closes and becomes public knowledge. Subsequently, the borrower usually refinances the bridge loan via capital markets instruments (so-called *take outs*) like corporate bond issuances and/or an equity offering. In this case, term loans and corporate bonds interact and complement rather than compete.

³⁰ Institutional investors such as insurance companies and funds tend to invest in rather lower-rated syndicated loans (e.g., LBOs) as they carry more attractive yields than do relationship-driven corporate investment grade loans (Angbazo, Mei, & Saunders, 1998).

³¹ See section 2.4.7.1.

Often, for non-bank financial institutions, *term loan* B^{32} (institutional) tranches are structured into facilities. As these are uncommon in corporate syndications, they are beyond the scope of this study.

2.4.4.2 **Revolving credit facility (RCF)**

Revolving credit facilities (RCFs) allow borrowers flexibility in drawing, repaying, and redrawing amounts—up to a specific maximum commitment—over the lifetime of the facility (Fight, 2004). A RCF can thus be defined as having contingent liquidity. A smaller strand of banking-theoretical literature (e.g., Shockley & Thakor, 1997) defines revolving loans as *credit risk derivatives* that represent put options on debt claims from a lender's perspective.³³

A common sub-format for revolving credit facilities is the *standby* or *backup credit facility*. Standby facilities usually serve as *commercial paper back up lines* that rating agencies expect from large corporations that frequently tap the commercial paper market to fund their working capital to maintain. In other words, such facilities can be described as a special source of liquidity insurance (Dolvin et al., 2007).

2.4.4.3 Letter of guarantee facility (LoC)

For *letter of guarantee facilities* (*LoCs*), banks do not provide liquidity, but rather certain guarantees,³⁴ which therewith enhance the borrower's credit risk in relation to third parties (Gadanecz, 2003). This thesis focuses on cash-related syndicated loan facilities. Hence, LoC-facilities are not a subject of interest.

³² Although these tranches are often legally "pari passu", meaning that they have the same seniority compared to the term loan A bank tranches, term loan Bs' in practice are structurally (e.g., cash-flow-wise) subordinated. They tend to carry bullet repayments and thus longer durations (Angbazo et al., 1998). According to Fulghieri and Goldman (2008), short-term debt, by virtue of the fact that it is repaid earlier, can be said to be senior to long-term debt. To compensate for this structural/indirect subordination, they carry higher pricings (Gupta et al., 2008; Lim et al., 2014). According to Maskara (2010), this tranching enables the borrower to create different credit risk structures within one loan to meet the different demands of different investor groups. Also subordinated and equity near mezzanine tranches are uncommon in corporate syndicated lending. According to Drucker and Puri (2005), in the area of highly leveraged borrowers, debt tends to take similar characteristics of equity.

 $^{^{33}}$ See section 2.5.3.

³⁴ For example, paying guarantees.

2.4.5 Uses of syndicated loan proceeds

Whereas bilateral bank loans of smaller amounts are ordinarily used for *working capital purposes* or for limited *capital expenditure financings*, syndicated loans tend to be the large-scale financing tool of choice for a diverse set of purposes. Table 9 displays numerous possible uses of proceeds that fall within the scope of this thesis.

Common uses of syndicated loan proceeds						
Refinancing	The generic term for renewals of already existing facilities.					
General corporate financings						
General corporate purposes	Commonly term- or revolving credit facilities. Unspecified generic term for various "general" financing needs a corporate has to manage in order to be able to operationally conduct its business. This might inter alia include working capital financing.					
Working capital financing	Commonly revolving credit facilities, specifically used by corporations in to complement their cash cycles and to finance a business's net investment in current assets.					
(Commercial paper) back-up	Commonly larger revolving credit facilities used by large corporations to support their issuance in the capital markets, commonly commercial paper programmes.					
Event related financings						
M&A	Commonly larger underwritten (bridge) term loans to support the financing of an acquisition.					
Investments/capital expenditure	Commonly term loans used for capital expenditure or for payments of a known amount which is expected to be outstanding for a certain period of time.					

Source: Based on Fight (2004) and Voisey (2016).

 Table 9. Common uses of syndicated loan proceeds.

As stressed in Chapter 1, other possible uses of proceeds such as LBO, project, and asset finance are beyond the scope of this work.

2.4.6 Bank titles and different roles

Existing academic literature suggests that syndicate members generally fall into two groups, namely, active *lead arrangers* and *passive participants* (Sufi, 2007). The literature predominantly employs "lead arranger" as the term of choice for any bank acting as the active structuring institution that inter alia conducts syndication efforts in the *origination phase*. The invited lenders are commonly labelled participants.

The different roles in syndicated lending have evolved over time. In practice, the lead arranger may be termed *bookrunner*, *mandated lead arranger*, and/or *coordinator*. Even pure participant banks might be awarded with prestigious titles, especially if they are asked to

commit to a relatively higher percentage of the funding. As these titles, especially "bookrunner", increase banks' *league table credits*,³⁵ they are an important incentive and play a marketing role even for participant banks albeit they do not necessarily directly relate to factual roles and duties (Ivashina, 2009; Standard & Poor's (S&P), 2011).

Besides their marketing purposes, title structures are supposed to indicate hierarchies in syndicates. According to Godlewski (2010b) the active arranger is the key figure in the structuring and placing of a syndicated loan, as it serves as the "privileged agent in the relationship with the borrower. The arranger is responsible for crucial characteristics of efficient and successful loan syndication: syndicate composition and organisation (p. 52)."

Administrative tasks within a syndicate are often delegated to other banks, which Francois and Missonier-Piera (2007) define as *co-agents*. These co-agents may act as *facility* and/or *collateral agents*.³⁶

2.4.7 Syndicated loan issuing process

Analysing a sample of syndicated loans from 59 countries in the period from 1992 to 2006, Godlewski found the mean duration of a syndication process to be approximately eight weeks. However, the process is variable in its demands and the length of an issuing process varies significantly in practice. Kopecky and Xiao (2013) defines syndication processes as sequential. According to Godlewski et al. (2012) and Esty (2001), a syndicated loan origination and placing process consists of three main phases.



Source: Based on Godlewski et al. (2012) and Esty (2001). Figure 5. Common stages of issuing a syndicated loan.

³⁵ See section 2.4.2.2.

³⁶ See section 2.4.7.3.

2.4.7.1 **Pre-mandate phase**

Once a borrower has asked one³⁷ or more³⁸ banks to originate a syndicated loan, the lead bank together with the borrower jointly agree on the terms and conditions of the syndication (Wu, Chang, Suardi, & Chang, 2013). This pre-mandate-phase ends with the signing of a *mandate letter* and a *term sheet*. With the mandate letter, the lead arranger and borrower officially agree on the syndication process. Further, the lead bank usually has already committed a certain amount of the loan via this document. The term sheet, usually one of the exhibits attached to the mandate letter, incorporates the primary economic elements³⁹ of the transaction based on which potential participant banks are invited to become members of the syndicate. The content of the term sheet is the basis for the *facility agreement*, which all members of the syndicate must eventually sign (Thomas & Wang, 2004).

The syndication process may be executed under three different procedures:

- 1. Underwriting. The lead bank bindingly commits the entire loan amount before inviting potential participants. Thus, the *underwriting commitment* is larger than the intended *final hold position* of the lead bank (Fight, 2004; LMA, 2013). If the syndication process does not meet the expectations of the lead bank and the syndication closes undersubscribed, the underwriting is said to be *stalled*. In this case, the lead bank must fully provide the face amount to the borrower. This form of syndication provides borrowers certainty of receiving expected funds. Because of this "guarantee" feature, underwritings are often used in large scale *acquisition financings* (Rhodes et al., 2004).
- 2. **Best efforts**. In a *best efforts syndication* process, the lead bank does not guarantee the entire loan amount. If an intended amount cannot be reached via syndication—when the funds committed by all the invited banks are insufficient to produce the required level of funding—the lead bank has no binding obligation to increase its initial commitment to produce the required level of funding. According to Rhodes et al., roughly one- third of invited institutes accept the invitation and subsequently join the syndicate. If a loan is oversubscribed, producing more funds that are required, then the loan amount can either be increased or respective commitment levels can be, and

³⁷ Sole mandate.

³⁸ Joint mandate.

³⁹ For example, covenants, pricing, collateral, amount, maturity.

usually are proportionally (i.e., *pro-rata*) scaled back to the initial launch amount (Sickel, 2010).

3. **Club deals**. According to Gadanecz (2003), *club deals* are syndicated loans consisting of a relatively small group of a client's existing relationship banks that usually all provide the same level of commitment. Thus, under such an arrangement, there is no true syndication process, as all participants are active and their interrelations are subject to pre-agreement (Gadanecz). In other words, all attending banks treat each other as lead banks.

2.4.7.2 Post-mandate phase

In this phase, the lead bank syndicates the loan through invitation to other banks to participate in the loan (Fight, 2004). The invitation commonly consists of an *invitation letter* and the term sheet. Sometimes, the lead bank drafts an *information memorandum* and either includes it in the invitation package and/or presents it at a *roadshow*. According to Champagne and Kryzanowski (2007), invited banks are usually offered various different amounts for which they can subscribe.

2.4.7.3 **Post-signing phase**

Once a syndicated loan has closed, the involvement of the *facility agent* begins. The facility agent is usually the lead arranger (or one of them), who liaises among borrower and lenders throughout the life of the facility (Thomas & Wang, 2004). The agent is responsible for loan servicing⁴⁰ and information sharing⁴¹ on the syndicate's behalf (Wasan, Vijayakumar, & Daniels, 2013).

⁴⁰ For example, handling draw-down requests.

⁴¹ For example, dissemination of financial documents.

2.5 Syndicated loan pricing and its measures within extant literature

Overall, I interpret syndicated loan pricing as all non-amortisation related pecuniary transfers from borrowers to lenders which are related to a specific facility. Thus, in this section, I provide an overview of common *syndicated loan pricing elements* and their treatment within the current state of academic knowledge.

In the course of the thesis, I will enhance and develop underlying phenomena by attempting to shed more light on pricing complexity and multidimensionality, ultimately leading to a new conceptualisation of pricing, which I present in 5.4.

2.5.1 Pricing elements covered within extant academic literature

Broadly, the literature on syndicated loan pricing distinguishes between *per annum* and *upfront elements*. The most frequently recognised per annum element is the *margin*, also often referred to as the *spread*, which borrowers pay in addition to a *floating rate benchmark*⁴² like EURIBOR⁴³ or LIBOR⁴⁴. In theory, these benchmarks represent banks' costs at the *interbank market*⁴⁵ to purchase the liquidity needed to provide the loan.

Margins are usually not fixed over a loans' lifetime; they vary, and changes are triggered via *margin grids*, often referred to as *performance-based pricings* (Asquith, Beatty, & Weber, 2005). Besides the margin, further per annum elements are common, especially in the area of revolving credit facilities, where, for example, *commitment fees* have to be paid on undrawn loan portions and *utilisation fees* might be added to the margin in relation to certain draw percentages (S&P, 2011). Besides these per annum elements, lenders usually charge *upfront fees*, inter alia *participation, arrangement* or *underwriting fees*.

⁴² Also often referred to as *reference rate*.

⁴³ The rate at which a prime bank is willing to lend funds in euros to another prime bank. The EURIBOR is calculated daily for interbank deposits with a maturity of one week and one to 12 months as the average of the daily offer rates of a representative panel of prime banks, rounded to three decimal places (European Central Bank, 2017).

⁴⁴ London interbank offered rate (LIBOR) is the basic rate of interest used in lending between banks on the London interbank market and also used as a reference for setting the interest rate on other loans (Fight, 2004).

⁴⁵ According to Deutsche Bundesbank (2016), "The interbank market is the market in which banks trade with each other. Important tradeables are central bank money (liquidity), foreign exchange, securities and derivatives. Money trading (i.e., the short-term issuance or take-up of short-dated loans in central bank money on the money market) is an important segment of the interbank market".

Pricing element	Туре	Explanation	Deeper discussion provided in section
Margin/spread	Per annum	Risk premium.	5.3.1.1.1
Commitment fee	Per annum, charged on the undrawn amount	Paid as long as all or parts of the facility is not used, to compensate a lender for tying up the capital corresponding to the commitment.	5.3.1.1.6
Facility fee	Per annum	Payable to banks in return for providing the facility, whether it is used or not.	5.3.1.1.7
Utilisation fee	Per annum, charged on the drawn amount	Paid on top of the margin in the case of drawdown.	5.3.1.1.8
Arrangement fee	Upfront	Received and retained by the lead arrangers in return for arranging and structuring the deal.	5.3.1.2.3
Underwriting fee	Upfront	Received and retained by the lead arrangers in the case of an underwritten deal in return for guaranteeing the whole loan amount.	5.3.2.2.1
Participation fee	Upfront	Received by participants for joining into a deal.	5.3.1.2.1
Agency fee	Per annum	Remuneration for the agent bank's services.	Appendix E

Table 10 specifies the commonly covered pricing elements within the literature.

Source: Based on Altunbas et al. (2006b) and Fight (2004).

Table 10. Common syndicated loan pricing elements based on extant literature.

Throughout 5.3 I will pick up all the pricing elements displayed in Table 10, as well as others that are so far neglected in the literature, to provide deeper insights into pricing elements based on my research. Thus, to avoid extensive duplication and to favour brevity, I will keep the pricing element descriptions short here and provide a respective reference to the related in-depth discussions in Table 10.

2.5.2 Initial margin and all-in-spread-drawn (AISD) as pricing measures

As mentioned, extant pricing literature tends to take the form of quantitative inquiries that often conduct regression analyses. The most frequently used pricing proxies as dependent variables are either the pure *initial margin* or the *all-in spread drawn (AISD)*, also referred to as *all-in-pricing* or *all-in-return*, calculated based on publicly available information at closing. As a side note, the fact that these price measures strive to replicate the price at closing is, at first view, a sensible approach, as they ought to reflect the creditworthiness of the respective borrower at the time of the credit decision. Further, the closing is practically the only point at which the commercial data providers gather respective price information. I explain in 5.4 that this *ex ante* perspective is subject to major misinterpretation risks and that, for the product at hand and given its bespoke characteristics, an *ex post* view would significantly enhance the understanding of price-related phenomena.

AISD incorporates various fee elements and, hence, claims to provide an accurate picture of the total cost of borrowing (Bharath, Dahiya, Saunders, & Srinivasan, 2011). My quantitative analyses in Chapter 4 are grounded in a Dealogic Loanware secondary data set with the respective AISD-definition being as shown in Table 11 (Dealogic Loanware, 2016).

De	Dealogic Loanware definition: All-in-spread-drawn ("AISD")/all-in-pricing/return					
	Initial margin in bp p.a.					
+	Utilisation fee (fully drawn) in bp p.a.					
+	Participation fee in bp / maturity in years					
+	+ Underwriting fee in bp / maturity in years					
=	= AISD in bp p.a.					
Ar	Arrangement fees are not included in this measure.					

Source: Based on Dealogic Loanware (2016).

Table 11. Dealogic Loanware definition: AISD/all-in-pricing/return.

Carey and Nini (2007), who used Dealogic Loanware as their data source, stated,"[The] primary measure of loan price is an all-in interest rate spread that includes the contract spread over LIBOR on the loan's outstanding balance plus any annual fee and any⁴⁶ upfront fee prorated over the life of the loan" (p. 2,976). With respect to AISD as reported by Thomson Reuters Loan Pricing Connector (LPC), related statements appear somewhat confusing and faddish. Whereas a couple of authors define AISD as the all-in-pricing/return that also incorporates upfront fees (e.g., Gottesmann & Roberts, 2004; Gaul & Uysal, 2013; Hale & Santos, 2009; A. Saunders & Steffen, 2011),⁴⁷ the official LPC-definition states that AISD consists of margin plus certain per annum fees⁴⁸ without any upfront fees (Loan Pricing Corporation, 2016).

It would be beyond the scope of my work—as well as unfeasible as a practical matter—to reveal all possible misinterpretations given such definitional differences. It is possible that authors who state that they have incorporated certain pricing elements, have not. At one point in their work, Haselmann and Wachtel (2011), for instance, defined LPC's AISD as "the contract spread over LIBOR on the loan's outstanding balance plus any annual fee and any upfront fee prorated over the life of the loan" (p. 2,682). At another point, they remarked, "The loan rate (from Dealscan) is the all-in spread drawn down net of upfront fees" (p. 2,683).

⁴⁶ With regards to the official Dealogic Loanware definition, arrangement fees are however not included (see Table 11).

⁴⁷ A. Saunders and Steffen (2011, p. 4,119) define AISD as "the all-in-spread-drawn, which is the spread plus annualised upfront fees above LIBOR".

⁴⁸ Meant, for example, are commitment fees, facility fees, and/or utilisation fees.

It is reasonable to assume that—due to diverse interpretations and labelling across data providers—a general danger of non-comparability might well be an issue. To simplify whilst discussing extant literature, I use the term "AISD" irrespective of the data provider that has been engaged.

The functioning and interaction of the pricing elements presented and their incorporation into AISD can best be explicated by providing practical examples. Extant literature tends to distinguish between revolving credit facilities and term loans or it simply lumps both types together. It is common, therefore, that both forms are combined via tranching in a single deal (Maskara, 2010). For instance, a \in 1 billion syndicated loan facility may consist of a \notin 500 million revolving credit and a \notin 500 million term loan facility. Both tranches may among other things carry different pricing, repayment structures, and tenors.

2.5.2.1 The functioning of AISD in the context of revolving credit facilities

Revolving credit facilities are flexible contingent credit lines that can be drawn, repaid, and re-drawn at discretion of the borrower throughout the facility's lifetime (Rhodes et al., 2004; Sickel, 2010). Assume a borrower signed a five-year revolving credit facility with the pricing package shown in Table 12.

Prie	Pricing example: syndicated revolving credit facility (RCF)											
	Ŧ		Commitment fee	Drawn margin 1	Drawn margin 2	Drawn margin 3	Participation fee	Underwriting fee		Arrangement fee		
	Li 0	Margin*	(35% of margin	(utilisation fee	(utilisation fee	(utilisation fee	(50bp upfront,	(50bp upfront,	AISD*	(15bp upfront,		
	Pe	in bp p.a.	on undrawn	of 10 bp p.a. up	of 20 bp p.a. up	of 30 bp p.a. up	annualised over	annualised over	in bp p.a.	annualised over		
			amount)	to 1/3 drawing)	to 2/3 drawing)	to 3/3 drawing)	lifetime)	lifetime)		lifetime)		
p	t0	100	35	110	120	130	10	10	150	3		
.E	t1	100	35	110	120	130	10	10	150	3		
ain.	t2	120	42	130	140	150	10	10	170	3		
Mar	t3	110	38.5	120	130	140	10	10	160	3		
	t4	100	35	110	120	130	10	10	150	3		
* Co	mm	on pricing m	easures of extant lite	rature; AISD based	l on Dealogic Loanv	vare definition.						

Table 12. Pricing example: RCF.

I start the explanatory discussion with the per annum (p.a.) pricing elements. The margin of the facility at the time of origination (t0) is 100 basis points (bp) p.a. Logically—in the case a statistical analysis would be based on the initial margin as pricing proxy—respective authors would stop here. On undrawn portions of the loan, the borrower pays commitment fees of 35% of the applicable margin. Utilisation fees are staggered based on the drawing percentage of the loan as shown in the "Drawn margins 1, 2, and 3" in Table 12.

Let us now assume different rates of drawing:

- 0%: The borrower needs to pay a commitment fee of 35% translating into 35 bp p.a. in t0 (35% of 100 bp p.a.).
- **33%**: The borrower needs to pay a commitment fee of 35% translating into 35 bp p.a. in t0 (35% of 100 bp p.a.) for the undrawn 67% of the facility. Additionally, the borrower needs to pay a "drawn margin 1" of 110 bp p.a. (100 bp p.a. margin + 10 bp p.a. utilisation fee) on the drawn amount (33% of the facility).
- 66%: The borrower needs to pay a commitment fee of 35% translating into 35 bp p.a. in t0 (35% of 100 bp p.a.) for the undrawn 34% of the facility. Additionally, the borrower needs to pay 120 bp p.a. "drawn margin 2" (100 bp p.a. margin + 20 bp p.a. utilisation fee) on the drawn amount (66% of the facility).
- 100%: Here, the borrower pays no commitment fee, as the facility is fully drawn. P.a. paying in that scenario amounts to 130 bp p.a. (100 bp p.a. margin + 30 bp p.a. utilisation fee = drawn margin 3).

Regarding upfront fee payments, the borrower pays a 50 bp participation fee, a 50 bp underwriting fee,⁴⁹ and 15 bp arrangement fee.⁵⁰

Thus, on a p.a. basis, another 20 bp p.a. must be added to the other costs to calculate the AISD as defined by Dealogic Loanware in the case of a fully drawn loan. Thus, looking at t0, the difference between pure margin and AISD amounts to 50% of the initial margin. To be more precise in terms of cost calculations, one would also need to include the arrangement fee by further adding 3 bp p.a., which, however, is not captured by the Dealogic definition as shown in Table 11.

Another pricing element is the margin grid. Let us assume that the margin in our example is either tied to the borrower's leverage ratio⁵¹ or its external rating. If these measures improve or deteriorate over contractually defined periods, the margin drops or increases. Looking at t2, the fictive borrower would have faced deterioration in leverage and/or rating and would, thus, need to pay 20 bp p.a. higher margins compared to t0. In this case, the AISD would increase

⁴⁹ Note that underwritings are not common in usual general corporate financings, but are more frequently used in acquisition financings. I only included the underwriting fee here to explain the basic functioning and interrelation of the various pricing elements in light of the AISD.

⁵⁰ Also often referred to as bookrunner/coordination fee in practice.

⁵¹ In the corporate syndicated loan market mostly defined as Net Debt/EBITDA.

to 170 bp p.a. Logically, these details as well as respective rates of drawing and factual maturity cannot be readily available at signing.

2.5.2.2 The functioning of AISD in the context of term loans

Table 13 shows a hypothetical term loan pricing structure. Other than revolving credit facilities, term loans are usually fully funded amortising or bullet repayment loans. Once funds have been repaid, they cannot be redrawn (LMA, 2013).

Pricing example: syndicated term loan facility (TL)								
	Period	Margin* in bp p.a.	Participation fee (50bp upfront, annualised over lifetime)	cipation fee bp upfront, •d over lifetime)Underwriting fee (50bp upfront, annualised over lifetime)AISD* in bp p.a.		Arrangement fee (15bp upfront, annualised over lifetime)		
p	t0	130	10	10	150	3		
.ng	t1	130	10	10	150	3		
gin	t2	150	10	10	170	3		
Mar	t3	140	10	10	160	3		
	t4	130	10	10	150	3		
* Co	mmon	pricing mea	sures of extant literature; AISI	D based on Dealogic Loanwa	re definition.			

Table 13. Pricing example: TL.

With term loans, commitment and/or utilisation fee concepts are usually not involved as the loan is mostly or fully drawn in t0. The p.a. margin needs to be paid as displayed in column three. Upfront fees⁵² are annualised and added to the margin to calculate the AISD.

The two examples in Tables 12 and 13 introduce the standard pricing elements of corporate syndicated lending and introduce related measures that have been used by scholars extensively.

2.5.3 First attempts to improve the AISD

Berg, Saunders, and Steffen (2016)⁵³ in their core study have presented a first step in addressing a more accurate portrayal of pricing's complexity. To this point in the presentation, pricing proxies have either been the pure initial margin or the AISD. Arguing that these two measures ignore the complexity of pricing, Berg et al. analysed fee structures and their underlying rationale with a special view on revolving credit facilities. Their analysis resulted in new possible pricing proxy, the so-called *TCB* (*Total-Cost-of-Borrowing*).

⁵² Except for arrangement fees (see Table 11).

⁵³ Remember, that I highlight the first mention of the authors of the 30 core papers via a bold typography (see section 2.2.2).

Berg et al. (2016) based their study on a dataset of stock-listed syndicated loans to U.S. nonfinancial borrowers from 1986 to 2011. First, the authors argued that the pricing structures of term loans are hardly comparable to those of revolving credits. However, extant literature tends to lump the two loan types together without taking structural differences in pricing into account.

Based on the theoretical research of, among others, Boot et al. (1987), Smith, Jr. (1980), Thakor, Hai, and Greenbaum (1981), and Shockley and Thakor (1997), Berg et al. defined revolving credit facilities as *credit risk derivatives*, representing insurance against possible deteriorations of a borrower's creditworthiness through access to an embedded option to utilise the loan. The price for this option is the so-termed *all-in-spread-undrawn* (*AISU*), calculated as the sum of commitment and/or facility fee⁵⁴ plus annualised upfront fees. With respect to my RCF pricing example displayed in Table 12, the initial (t0) AISU would amount to 55 bp p.a.⁵⁵ The underlying theoretical assumption is that the client only exercises its option to draw if current borrowing costs in the *spot market*⁵⁶ would exceed the drawn loan costs. Berg et al. stated that term loans do not carry these option-like features as they tend to be fully drawn at signing.

Finally, Berg et al. presented two main findings. First, for revolving loans, in line with their theoretical thinking, upfront fees and commitment and/or facility fees⁵⁷ are the lender's compensation for the granted drawdown option. Logically, borrowers with a higher risk profile would need to pay a higher AISU. A second finding of Berg et al. is that revolving loan pricing structures can be an indicator of the borrower's drawing probability. Clients paying a relatively low AISU and a relatively high AISD are less likely to draw down their loan as compared to an opposite setting. Low AISUs might be reached by implementing utilisation fee concepts within the loan that would enable the borrower to reduce their undrawn costs (AISU) significantly, but the amount of the reduction in return would be added to the margin in a case of drawing and would, thus, increase the AISD.

 $^{^{54}}$ Facility fees happen to be a U.S. phenomenon and not common in German corporate syndicated lending (see section 5.3.1.1.7).

 $^{^{55}}$ Commitment fee (35 bp p.a.) + annualised participation fee (10 bp p.a.) + annualised underwriting fee (10 bp p.a.) = 55 bp p.a. = AISU.

⁵⁶ Meaning: inter alia the commercial paper market, which is commonly used by large listed firms to finance their working capital needs.

⁵⁷ In other words, the all-in-spread-undrawn (AISU).

As mentioned, the authors presented the new pricing proxy TCB, striving to cope with both AISU as well as AISD by accounting for the probability of draw down (PDD) and the expected loan maturity. TCB is based on the formula shown in Table 14.

Т	Total cost of borrowing measure ("TCB")						
	TCB = upfront fee in bp / expected loan maturity						
+	(1-PDD) x (facility fee in bp p.a. + commitment fee in bp p.a.)						
+	PDD x (facility fee in bp p.a. + initial margin in bp p.a.)						
+	PDD x prob (utilisation > utilisation threshold usage > 0) x utilisation fee in bp p.a.						
+	Prob (cancellation) x cancellation fee in bp						
=	TCB in bp p.a.						

Source: Adapted from Berg et al. (2016).

Table 14. Total cost of borrowing measure.

Note that except by Berg, Saunders, Steffen, and Streitz (2017),⁵⁸ this novel formula has not yet been applied by further research that relies on initial margin or AISD. Table 15 summarises the main elements of Berg et al. (2016).

Berg, T., Saunders, A., & Steffen, S. (2016). The total cost of corporate borrowing in the loan market: don't ignore the fees. Journal of									
Finance , 71, 1357-1392.									
Region/country	Borrower type	Time frame	Research philosophy	Methods applied	Pricing definition	Syndicated loan data provider	Sample size		
U.S.	Stock-listed non- financial companies	1986-2011	Realism, Positivism	> Regression Analyses	AIDS; AISU; TCB	Thomson Reuters LPC	32,343 tranches		
			1	Findings					
			Primary	subject findings					
> Fees are a comp	pensation for option	ons in loan con	tracts; fees are use	ed to screen borrow	ers as to their like	lihood of exercisi	ng certain options,		
and to alter ex-po	st incentives to ex	ercise these of	ptions.						
> There are option	n-like characterist	ics of credit li	nes: firms are mor	re likely to draw on	their lines of cred	it when their econo	omic situation		
deteriorates.									
> There are signif	icantly higher drav	wdowns from l	porrowers with the	lowest returns.					
> Upfront fees an	d the all in spread	undrawn (AISU	J = commitment f	ee plus facility fee)	are larger for high	h-volatility borrow	ers as measured by		
either equity vola	tility or the volatil	ity of borrowe	r profitability.						
> Lines of credit	with a spread incre	asing perform	ance pricing scheo	dule have lower upf	ront fees and a low	ver AISU, consister	nt with the view that		
the drawdown opt	ion contained in ci	redit lines is w	orth less if the loa	in spread increases,	as borrowers' cred	ditworthiness deter	riorates.		
> There is a borro	wer self selection	into contracts	s based on their pri	vate information ab	out the likelihood	of exercising the	drawdown option.		
Borrowers that pa	y lower AISU and	a higher All in	spread drawn (AIS	SD = spread + facili	ity fee) are less lik	ely to draw on the	ir line of credit.		
> A low AISU to AISD ratio and the utilisation fee are substitutes.									
> Authors suggest a new measure Total Cost of Borrowing (TCB) for future research.									
Table 15. Summary table for Borg et al. (2016)									

ladie 15. Summary table for Berg et al. (2016).

I share the argumentation of Berg et al. by outlining that syndicated loan pricing packages happen to be complex. Simply lumping together term loans and revolving loans and purely using initial margin or AISD as pricing measure disregards this complexity. In the course of the study, however, I develop reasons to further distinguish between working capital revolving loans, which are established with a clear ex ante assumption of being frequently

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⁵⁸ See section 2.6.2.

drawn, and repaid as well as redrawn to finance certain business activities operationally, on the one hand, and to those providing pure cash back-up, on the other hand. The latter might indeed provide insurance for such a case where commercial paper markets have "dried up" or become more expensive compared to drawing against the loan.

The presented definition inherently assumes that borrowers have access to the spot market or to wider capital markets. As already outlined earlier, syndicated loans are also commonly used by large companies that are, however, not necessarily large enough or sufficiently willing to tap the wider capital markets. Hence, such an options' *raison d'être* would be of no interest to these borrower types.

Berg et al.'s (2016) introduction of the new TCB pricing proxy is a move in the right direction. For the German market, however, it would be impossible to gather reliable historical data on draw-down percentages for working capital revolvers *ex ante*. Back-up lines historically remain to be undrawn in Germany. Berg et al. also asserted that term loans usually do not inhabit such multidimensional pricing packages. I agree with that statement with a view to general corporate term loan facilities as presented in Table 13.

To be discussed later,⁵⁹ in the area of underwritten acquisition term loans—often structured as bridge loans—margin and fee concepts are sophisticated to the extent that they usually carry even more complex underlying rationales that might likewise be interpreted by applying option-theoretical assumptions. Thus, having addressed the relevant literature's common understanding of the term "pricing" and the specific debates around it, I turn in the next section to the determinants of pricing.

2.6 Borrower-related specifics as pricing determinants

I now focus on the worldwide syndicated loan literatures' findings regarding certain borrower characteristics and their influence on pricing. According to Hainz and Wiegand (2013), the *creditworthiness* and safety of a borrower depend on a set of borrower characteristics that can be classified as either *hard* or *soft factors*.

Petersen (2004) described the character of hard factors or in other words hard information as those being quantifiable and easily comparable across bank-clients with no need to be collected in person. For soft information, Strahan (2008) noted, "The lender relies on

⁵⁹ See section 5.3.2.

knowledge about the business owner's integrity or local reputation for reliability. Such information is both difficult to compare across borrowers and hard to quantify and is therefore difficult or costly to verify by outsiders" (p. 112).

2.6.1 General borrower characteristics

Turning the attention first to some general borrower characteristics, **Christodoulakis and Olupeka's (2010)** core study confirmed the intuitive findings of the majority of authors by stating that firms with higher default risks are charged higher loan prices in comparison to firms with lower-risk profiles.

The furthermost common technique of default prediction is facilitated via *ratings*,⁶⁰ which, in practice, consist of two major elements. The most important is the examination of the credit rating report supported by mathematical models that analyse quantifiable financial data and produce hard information. A second part appraises non-quantifiable soft-information,⁶¹ whose contribution is evaluated by banks, but often not without controversy (Berger & Udell, 1995; Grunert et al., 2005; Houston & James, 1996) as its relative importance tends to be more prominent in the context of small clients. Other than large clients, which are the focus of this work, small clients (e.g., SMEs) do not have sophisticated financial reporting systems in place that are pivotal in conducting proper credit analyses. Hence, the assessment of creditworthiness for smaller clients is much more based on qualitative data compared to the corporate cluster that is the focus of this study (Ortiz-Molina & Penas, 2008).

As outlined in 2.4.2.2, many foreign banks engage in syndicated lending that are not able to utilise and facilitate borrower-related soft information to the same extent as do local lenders, according to Haselmann and Wachtel (2011), Berger, Dai, Ongena, and Smith (2003), and Houston, Itzkowitz, and Naranjo (2017). Therefore, soft information plays a diminished role in default prediction for large, corporate, syndicated loan borrowers.

Whilst determining default probabilities, banks rely on their own internal rating mechanisms and, if they are available, also consider external ratings. Based on individual methodologies, banks and rating agencies weigh and consolidate various borrower characteristics and ultimately assign a grade to borrowers overall credit risk profile. In other words, a credit

⁶⁰ For banks active in German corporate syndicated lending, commonly the *senior unsecured debt rating* is of interest. Specific *issue ratings* for the debt instrument in its own right are not common in German corporate syndicated lending.
⁶¹ Such as the quality of the management.

rating results from the appraisal of the creditworthiness of enterprises. Additional, ratings are invoked to determine regulatory capital adequacy (Grunert et al., 2005).

Table 16 displays the *rating scale* also often referred to as *notch levels* of the most commonly used external rating agencies—S&P, Moody's, and Fitch.

Rating scales of major rating agencies									
Credit quality steps	0	1	2	3	4	5	6		
S&P	AAA	AA	A	BBB	BB	В	CCC, CC, R, SD/D		
Moody's	Aaa	Aa	А	Baa	Ba	В	Caa, Ca, C		
Fitch	AAA	AA	А	BBB	BB	В	CCC, CC, C, RD, D		
Classification		Investment	-Grade (IG)		Non/Sub-IG		Highly speculative up to default status		

Source: Based on Griwers and Poschmann (2012) and Everling and Kreutz (2012). **Table 16. Rating scales of major rating agencies.**

Scholarly debates provide broad consensus that ratings produce valuable information about borrower's risk-profiles, with better ratings achieving lower pricings, as one might expect.

Determinant	Pricing direction	Pricing definition	Borrower region under study	Time frame	Reference	Consensus within extant literature	Detailed discussion in table
			Borrower related sp	pecifics			
			Rating				
Externally rated	Ļ	AISD	Worldwide	1990-2011	Anagnostopoulou and Drakos (2016)		47
	↓ Spread over reference rate Cross-o		Cross-country	2003-2007	Kim, Surroca, and Tribó (2014)		29
	1	AISD	Worldwide	1990-2011	Anagnostopoulou and Drakos (2016)		47
	1	AISD	U.S.	1998-2003	Schenone (2010)		61
	1	AISD	U.S.	1987-1999	Maskara (2010)		44
Fritamally law (malt) noted	1	Spread over reference rate	Euro-area	1999- October 2006	Barbosa and Ribeiro (2007)		38
Externally low (weak) rated	1	AISD	U.S.; Europe	1992-2002	Carey and Nini (2007)		23
	1	Spread over reference rate	U.S.; Canada; Europe	2003-2008	Alexandre, Bouaiss, and Refait- Alexandre (2014)		59
		AISD	UK	1989-2007	Saunders and Steffen (2011)		63
	1	Spread over reference rate	U.S.	1991-2002	Wasan, Vijayakumar, and Daniels (2013)		28

Table 17 synthesises the core literature's findings with respect to rating.

Table 17. Core literature synthesis for rating.

All findings presented in Table 17 confirm the presumed price-influential directions. The fact that the sheer availability of external ratings is associated with lower pricing is likely, since mainly large, less risky companies choose to be externally rated.

The main ingredients of ratings are financial information and the intuitive rationale that better financial situations of borrowers lead to more favourable loan pricings *ceteris paribus*. Balance sheet data be they either backward-looking, point-in-time measures or projections are the main source of quantitative risk assessments. Jorion, Shi, and Zhang (2009) pointed out

that financial statements are an important source of information for the assessment of clients' risk profiles and, thus, are major ingredients of ratings. Data beyond the balance sheet and general accounting information—leverage-ratios, interest coverage ratios, tangibility, sales, profitability indicators—are main determinants of a client's credit risk profile (Haselmann & Wachtel, 2011; Santos & Winton, 2008). For example, amongst others, Gaul and Uysal (2013), Schenone (2010), Dennis, Nandy, and Sharpe (2000), Wasan et al. (2013), and Focarelli, Pozzolo, and Casolaro (2008) confirmed that higher leverage leads to higher loan pricings. Similarly, Bharath et al. (2011) and A. Saunders and Steffen (2011) found that enterprises with higher profitability and higher current ratios obtain lower loan pricings. Further, for banks, as confirmed by Fang, Li, Xin, and Zhang (2016), it is important that these financial data and calculations be both reliable and comparable.

Table 18 synthesises the respective findings of the core literature on financial information.

Literature review

	cing	Pricing	Borrower region	Time	Defe	Consensus	Detailed
Determinant	Pric	definition	under study	frame	Reference	within extant literature	discussion in table
			Borrower related s	pecifics	·		
	1	Spread over	Financial inform	ation		_	_
High market-to-book-ratio	Ļ	reference rate	U.S.	1987-2002	Santos and Winton (2008)		57
Borrower beta coefficient	\rightarrow	Spread over reference rate	Europe	1990-2008	Christodoulakis and Olupeka (2010)		22
	↑ (Spread over reference rate	Cross-country	1990-2001	Focarelli, Pozzolo, and Casolaro (2008)		49
	1	AISD	U.S.; Europe	1990-2011	Gaul and Uysal (2013)		24
	1	AISD	Wordwide	1990-2011	Anagnostopoulou and Drakos (2016)		47
High stock-return volatility	1	AISU	U.S.	1986-2011	Berg, Saunders, and Steffen (2016)		15
	1	Spread over reference rate	U.S.	1987-2002	Santos and Winton (2008)		57
	1	AISD	U.S.; Canada	1996-2003	Harjoto, Mullineaux, and Yi (2006)		32
	1	AISD	U.S.	1992-2008	Fang, Li, Xin, and Zhang (2016)		27
High cash flow	Ļ	AISD	Europe	1995-2007	Haselmann and Wachtel (2011)		34
High current ratio	↓	AISD	U.S.	1986-2003	Bharath, Dahiya, Saunders, and Srinivasan (2011)		55
Low interest-coverage-ratio	1	Spread over reference rate	U.S.	1987-2002	Santos and Winton (2008)		57
High EBITDA	Ļ	Spread over reference rate	Cross-country	1990-2001	Focarelli, Pozzolo, and Casolaro (2008)		49
	Ļ	AISD	UK	1989-2007	Saunders and Steffen (2011)		63
High dagree of tangible assets	Ļ	AISD	Wordwide	1990-2011	Anagnostopoulou and Drakos (2016)		47
ingn uegt ee of tanginge assets	Ļ	Spread over reference rate	U.S.	1987-2002	Santos and Winton (2008)		57
	Ļ	AISD	Europe	1995-2007	Haselmann and Wachtel (2011)		34
	1	Spread over reference rate	Cross-country	1990-2001	Focarelli, Pozzolo, and Casolaro (2008)		49
	1	AISD	Wordwide	1990-2011	Anagnostopoulou and Drakos (2016)		47
	1	AISD	U.S.	1986-2003	Bharath, Dahiya, Saunders, and Srinivasan (2011)		55
	1	AISD	U.S.	1998-2003	Schenone (2010)		61
	1	AISD	Europe	1995-2007	Haselmann and Wachtel (2011)		34
High leverage-ratio	1	Spread over reference rate	Europe	1990-2008	Christodoulakis and Olupeka (2010)		22
	1	AISD	U.S.; Europe	1990-2011	Gaul and Uysal (2013)		24
	1	AISD	U.S.; Canada	1996-2003	Harjoto, Mullineaux, and Yi (2006)		32
	1	Spread over reference rate	U.S.	1987-2002	Santos and Winton (2008)		57
	1	AISD	U.S.	1992-2008	Fang, Li, Xin, and Zhang (2016)		27
	1	Spread over reference rate	U.S.	1991-2002	Wasan, Vijayakumar, and Daniels (2013)		28
	1	Spread over reference rate	Cross-country	2003-2007	Kim, Surroca, and Tribó (2014)		29
	Ļ	Spread over reference rate	U.S.	1987-2002	Santos and Winton (2008)		57
	↓	AISD	U.S.	1990-August 2010	Wu, Chang, Suardi, and Chang (2013)		53
	↓	AISD	U.S.	1986-2003	Bharath, Dahiya, Saunders, and Srinivasan (2011)		55
High profitability	↓	AISD	Wordwide	1990-2011	Anagnostopoulou and Drakos (2016)		47
	↓	AISD	U.S.; Canada	1996-2003	Harjoto, Mullineaux, and Yi (2006)		32
	↓	Spread over reference rate	Cross-country	2003-2007	Kim, Surroca, and Tribó (2014)		29
	↓	AISD	UK	1989-2007	Saunders and Steffen (2011)		63
High accrual quality	↓	Spread over reference rate	U.S.	1991-2002	Wasan, Vijayakumar, and Daniels (2013)		28
High degree of accounting/financial statement	Ļ	AISD	U.S.	1992-2008	Fang, Li, Xin, and Zhang (2016)		27

 Table 18. Core literature synthesis for borrower's financial information.

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Christodoulakis and Olupeka (2010), in accordance with other studies, found borrowers that are capable of raising funds via capital markets instruments such as public bonds to obtain loan pricing discounts. Accordingly, Rajan (1992) stated that a firm's option to issue public debt is a limiting factor for the monopoly power of relationship-banks. In other words, the access of a client to capital markets instruments alternative to loan syndications enhances the client's bargaining power vis-à-vis lenders (Hale & Santos, 2009; Santos & Winton, 2008; A. Saunders & Steffen, 2011). The existence of an external rating fosters this capital markets access.

Table 19 synthesises the related findings of the core literature in that respect.

Determinant	Pricing direction	Pricing definition	Borrower region under study	Time frame	Reference	Consensus within extant literature	Detailed discussion in table	
Borrower related specifics								
			Capital markets ad	cess				
	Ļ	Spread over reference rate	U.S.	1987-2002	Santos and Winton (2008)		57	
Capital markets access (to public bond market)	Ļ	AISD	UK	1989-2007	Saunders and Steffen (2011)		63	
	Ļ	AISD	U.S.	1987-2002	Hale and Santos (2009)		62	
Capital markets access (in general)	Ļ	Spread over reference rate	Europe	1990-2008	Christodoulakis and Olupeka (2010)		22	
Syndicated loan after equity IPO	Ļ	AISD	U.S.	1998-2003	Schenone (2010)		61	

 Table 19. Core literature synthesis for capital markets access.

Size (Table 20) and legal form (Table 21) in addition to the availability of external ratings can determine access to capital markets.

Determinant	Pricing direction	Pricing definition	Borrower region under study	Time frame	Reference	Consensus within extant literature	Detailed discussion in table
			Borrower related sp	pecifics			
			Size				
	Ļ	AISD	UK	1996-2005	Mattes, Steffen, and Wahrenburg (2013)		58
	Ļ	AISD	U.S.	1990-August 2010	Wu, Chang, Suardi, and Chang (2013)		53
	↓	AISD	U.S.	1988-1999	Gottesmann and Roberts (2004)		39
	Ļ	AISD	U.S.	1986-2003	Bharath, Dahiya, Saunders, and Srinivasan (2011)		55
Large	Ļ	AISD	Wordwide	1990-2011	Anagnostopoulou and Drakos (2016)		47
Lange	Ļ	AISD	U.S.; Canada	1996-2003	Harjoto, Mullineaux, and Yi (2006)		32
	Ļ	Spread over reference rate	U.S.	1987-2002	Santos and Winton (2008)		57
	Ļ	AISD	Europe	1995-2007	Haselmann and Wachtel (2011)		34
	Ļ	Spread over reference rate	Europe	1990-2008	Christodoulakis and Olupeka (2010)		22
	Ļ	Spread over reference rate	Cross-country	2003-2007	Kim, Surroca, and Tribó (2014)		29
Market capitalisation	\rightarrow	Spread over reference rate	Europe	1990-2008	Christodoulakis and Olupeka (2010)		22

Table 20. Core literature synthesis for borrower size.

As displayed in Table 20, the core literature broadly confirms that pricings, all else being held equal, are a declining function of borrower size. Larger borrowers are commonly associated with better creditworthiness and greater transparency. According to Graham, Li, and Qiu (2008), another argumentation within the literature are economies of scale as loan related fixed costs decline per each incremental Euro loaned.

Table 21 broadly confirms that public companies are charged lower pricings with the exception of Alexandre et al. (2014), who found no pricing impact. Stock-listed firms are said to be most informationally transparent (Schenone, 2010) and carry lower pricings (Harjoto et al., 2006; Haselmann & Wachtel, 2011).

Determinant	Pricing direction	Pricing definition	Borrower region under study	Time frame	Reference	Consensus within extant literature	Detailed discussion in table			
			Borrower related sp	ecifics						
	Legal form&ownership									
Opaque		AISD	U.S.	1992-2008	Fang, Li, Xin, and Zhang (2016)		27			
Орацие	↑	AISD	UK	1989-2007	Saunders and Steffen (2011)		63			
	Ļ	AISD	U.S.	1998-2003	Schenone (2010)		61			
	Ļ	AISD	Europe	1995-2007	Haselmann and Wachtel (2011)		34			
Public legal form	Ļ	AISD	U.S.; Canada	1996-2003	Harjoto, Mullineaux, and Yi (2006)		32			
	Ļ	AISD	UK	1989-2007	Saunders and Steffen (2011)		63			
	\rightarrow	Spread over reference rate	U.S.; Canada; Europe	2003-2008	Alexandre, Bouaiss, and Refait- Alexandre (2014)		59			
Public legal form (but listed on opaque segment)	1	AISD	UK	1989-2007	Saunders and Steffen (2011)		63			
Private legal form & public bond market access	Ļ	AISD	UK	1989-2007	Saunders and Steffen (2011)		63			
Ownership concentration (high degree)	1	Spread over reference rate	Cross-country	2003-2007	Kim, Surroca, and Tribó (2014)		29			
(ingli tegi te)	↑	AISD	UK	1989-2007	Saunders and Steffen (2011)		63			

Table 21. Core literature synthesis for legal form and ownership.

Table 22 summarises the main elements of the core paper of Christodoulakis and Olupeka (2010).

Christodoulakis, G	Christodoulakis, G. A., & Olupeka, T. (2010). Pricing and momentum of syndicated credit in Europe. Omega, 38, 325-332.									
Region/country	Borrower type	Time frame	Research philosophy	Methods applied	Pricing definition	Syndicated loan data provider	Sample size			
23 European countries	Rated borrowers (all types)	1990-2008	Realism, Positivism	> Hedonic regression analyses	Spread over reference rate	Thomson One Banker Deals	2,102 loans			
Findings										
	Primary subject findings									
> Overall, risk, lic	quidity, solvency a	nd sustainable	performance by b	oth borrower and its	domicile country	are key determinar	nts of syndicated			
loan prices.										
> Syndicated loan	is to leveraged bor	rowers are mo	re expensive than	non-leveraged syndic	cated loans, which	confirms that lend	ers would			
ordinarily price m	ore risky loans hi	gher.								
> The higher the e	estimated distance	to default (the	lower the risk), the	ne lower the price of	the loan.					
> Beta coefficien	t has no significan	t impact on pr	icing.							
> Borrowers who	can possibly raise	capital throug	h issuance of stoc	k at lower cost, secu	re syndicated loar	ns at relatively chea	aper prices.			
> Market value ha	s no significant ef	fect on pricing	g.							
> Loans for finan	cial services secto	r have cheaper	prices than other	sectors.						
> Loans for utiliti	ies are the cheapes	st.								
			Important sul	b-thematic findings						
> Longer tenured	syndicated loans a	ittract higher p	rices.							
> The larger the lo	ban size, the lower	the price.		· · · · · · · · · · · · · · · · · · ·						
> The number of I	lenders in a syndic	ated loan does	not have any sign	ificant effect on loan	i pricing.					
> Loans for acqui	sition finance purp	poses are price	ed nigher than othe	ers.						
> RCFs are the le	ast priced.	. 1 1 1	1							
> Higher real GD	P growth is associ	ated with lowe	r spreads.							
> External debt to	GDP does not sig	gnificantly affe	ect spreads.							
> The rotio of rec	ores not significant	anificant and a	ius. Nagativaly ralated t	o loon prices						
> Inflation has no	significant affect	on pricing	ieganivery related t	to toall prices.						
Country aggreg	ate rick is a positiv	on pricing.	of spreads							
 Country aggrega 	ale fisk is a positiv		or spreads.							

Table 22. Summary table for Christodoulakis and Olupeka (2010).

I criticise the work of Christodoulakis and Olupeka for various reasons. First, the authors like most other authors addressing syndicated loan related phenomena—lumped together various borrower groups, specifically, corporates, financial institutions, leveraged borrowers, and non-leveraged borrowers. As syndicated loans to these borrower groups carry high degrees of individuality with respect to market standards, mechanisms, and involved parties, they are hardly comparable. Syndicated loans are a financing asset class in general, but serve as a financing tool for various borrower groups each with its own market standards. Thus, syndicated lending clearly involves numerous sub-asset classes. Moreover, the authors focused on rated companies only and, thus, disregarded most borrowers.

The sample size of 2,102 loans in 23 European countries over a time horizon of 18 years appears to be small. Germany, for instance, is represented with only 237 loans accounting for roughly 13 loans per annum. As I will outline in Chapter 4, in my 15-year analysis horizon (2000 to 2015), according to Dealogic Loanware, 2,724 German syndicated loans have been issued overall, including 1,537 corporate loans. One possible explanation for this small

sample overall would be a lack of respective pricing information and the subsequent sample banish. Interestingly, with 461 deals, the share of UK-based borrowers that found their way into of Christodoulakis and Olupeka's (2010) sample is roughly twice as high as the figure for Germany, which cannot be related to equivalent lesser overall issued loans as depicted in Figure 3.

2.6.2 Borrower nationality ("the pricing puzzle")

Pricing differences between borrowers from dissimilar regions attracted the attention of numerous researchers. Especially, widely-observed pricing discounts for syndicated loans to European borrowers compared to U.S.-based borrowers have fascinated numerous scholars.

One could argue that differences in legal systems and institutional settings such as dissimilarities in bankruptcy regimes drive pricing differences. According to La Porta, Lopezde-Silanes, Shleifer, and Vishny (1997), countries shaped by high levels of shareholder protection like the U.S. or UK are said to provide firms broader access to capital markets or, in other words, (bank)-external financing than do countries where the legal system is more designed to protect creditors, as is the case in countries like Germany and France (Gaul & Uysal, 2013). The fact that credit spreads on loans appear lower in Europe compared to the U.S. supports this argument, whereas the observed fact that bond spreads in both markets are *ceteris paribus* identical contradicts this view, suggesting that institutional and legal theories do not provide sufficient explanation for price differences (De Fiore & Uhlig, 2011; Mahajan & Fraser, 1986).

Relatedly, after controlling for borrower characteristics, asymmetric information effects, and regulatory subjects, **Carey and Nini (2007)**—in their core paper—explicated that spreads of corporate syndicated loans in Europe tend to be significantly lower compared to equivalent spreads in the U.S. Although this pricing difference amounts an average of circa 20% (30bp p.a.), borrowers tend to stay in their respective home market, opting not to cross borders to obtain cheaper funds. Hence, Carey and Nini found lender portfolios to display *home bias*. Statistically, they were not able to locate robust explanations for the persistent pricing difference and, thus, have identified the reported differences as a puzzle that remains to be solved. Thus, related literature published after the contribution of Carey and Nini has broadly adapted the term "the pricing puzzle". Table 23 summarises the main elements of this paper.

Carey, M., & Nin	i, G. (2007). Is the	corporate loan	market globally i	ntegrated? A pricing	g puzzle. The Journ	nal of Finance , 62	, 2969-3007.
			Research		Pricing	Syndicated loan	

Region/country	Borrower type	Time frame	Research philosophy	Methods applied	Pricing definition	Syndicated loan data provider	Sample size		
Europe; U.S.	Rated non- financial borrowers	1992-2002	Realism, Positivism	> Regression analyses	AISD (only LIBOR-based USD-loans)	Dealogic Loanware	48,128 tranches		
				Findings		·			
Primary subject findings									
> Syndicated corp suggesting that a i > Levels of differ the US across the > Systematic diffi- > The pricing diff on this scale by th > Borrowers dom generally choose explains why so for abroad). > Lender exposur	 Syndicated corporate loan spreads are significantly smaller in Europe than in the US (about 30bp after controlling for risk and other factors), suggesting that a market location factor is correlated with economically important components of the intermediation process. Levels of difference are larger for riskier borrowers, but spreads in the European market are roughly 20 % less than for comparable loans in he US across the risk spectrum. Systematic differences across the two markets in loan and borrower characteristics do not appear to account for the pricing difference. The pricing differences can be described as a puzzle because its size and persistence is suggestive of an equilibrium - a pure failure of arbitrage on this scale by the large, sophisticated participants in the syndicated loan market is difficult to accept. Borrowers domiciled in a region that hosts a major syndicated loan market usually issue there. However, borrowers domiciled elsewhere generally choose to issue in Europe, where spreads are lower. This suggests that issuing out of the home market is costly, and potentially explains why so few US firms issue in Europe (borrowers stay home when they can and they tend to issue in Europe, when they need to issue abroad). 								
explain why pricit	ng discrepancies ai	re not eliminat	ted by competition	n (though their cause	es remain a puzzle).				
> Collateral leads	to higher pricing	,	Important s	sub-thematic findin	ngs				
> Appearance of s	guarantees leads to	,. higher pricin	gs.						
> High (good) ext	ternal ratings lead	to lower prici	ngs.						
> Loan size is neg	gatively related to	pricing.	-						
> Term loans are	more expensive th	an revolver lo	ans.						
> M&A loans are	associated with hi	gher pricings.							
> Purpose Comm	ercial Paper Back-	-up is associat	ed with lower pric	cing.					
> Larger lending a	syndicates are asso	ociated with hi	oher spreads						

Table 23. Summary table for Carey and Nini (2007).

One shortcoming of this work is the sample composition. Carey and Nini (2007) focused on LIBOR-based loans for rated borrowers including, for example, LBOs and project financings. Besides the fact that several asset classes are conflated causing the risk of diluted results, rated borrowers tend to be larger and less risky compared to unrated ones and, further, tend to issue larger facilities.⁶²

Looking at the sample of Carey and Nini as a whole, it contains only 41 German loan tranches in the given ten-year analysis horizon. In comparison 408 tranches are included for UK-based borrowers. It is thus at least questionable, that no structural underlying forces are at work being responsible for the given data situation and that Carey and Nini (p. 2,971) might be wrong when declaring that "price differences do not appear to be a data problem".

It is possible that the puzzle might at least partially be explained by data quality issues. In that context, De Fiore and Uhlig (2011) state that there is a relatively low degree of borrower-related credit-risk information disclosure in Europe as compared to the U.S.

⁶² See section 2.6.1.

Several studies following Carey and Nini (2007) picked up the topic to produce deeper insights. To be discussed further in 2.10.2, Champagne and Coggins (2012) presented one interpretation of the pricing puzzle. Whilst studying syndicate structural issues and their influence on syndicated loan pricing, the authors illuminated the puzzle by noting a lesser sensitivity to pricing and syndicate structure in Europe compared to the U.S.

Motivated by Carey and Nini, **Gaul and Uysal's (2013)** core paper explores whether equity volatility as a measure of firm volatility might explain the pricing differences between U.S. and European borrowers. After several robustness tests, the authors finally presented evidence that, after controlling for firm volatility with equity volatility, the pricing difference disappears. The following table summarises the main elements of their paper.

Gaul, L., & Uysal, P. (2013). Can equity volatility explain the global loan pricing puzzle? The Review of Financial Studies , 26, 3225-3265.								
Region/country	Borrower type	Time frame	Research philosophy	Methods applied	Pricing definition	Syndicated loan data provider	Sample size	
Europe; U.S.	Stock-listed corporate firms	1998-2011	Realism, Positivism	 > Regression analyses > Instrumental variable methods 	AISD	Thomson Reuters LPC	16,591 tranches	
				Findings				
			Primar	y subject findings				
> A comparison of	of (after controllin	g for) firm vol	atility and equity	volatility shows that	t there is no statis	tically significant o	lifference between	
U.S. and Europear	n loan spreads.							
> High equity vol	atility leads to high	her spreads.						
			Important s	ub-thematic findir	ıgs			
> Higher leverage	e is related to high	er loan spreads	s.					
> Older firms hav	e lower loan sprea	ds.						
. T								

> Larger loans carry lower spread.

Table 24. Summary table for Gaul and Uysal (2013).

The 16,591-tranche sample of Gaul and Uysal consisted of 14,820 U.S. loans and only 1,771 European ones. In other words, European borrowers account for roughly 10% of the sample. According to Dealogic Loanware, in 2015, for instance, overall, 3,544 U.S. syndicated loans compare with 2,422 European syndicated loans.⁶³ In other words, the U.S. counts for only circa 30% more facilities compared to Europe, whereas with Gaul and Uysal, this ratio purports to be circa 90%. This fact might partly be explained by the fact that the authors focused on stock-listed companies being more widely spread throughout the U.S. compared to Europe, an argument also postulated by Carey and Nini. Another, and likely, supplementary rationale might be more pricing information is missing for European loans compared to U.S.

⁶³ See Figure 1.

borrowers due to several bias issues within samples of at least some European countries, such as Germany.

Picking up on the findings of Carey and Nini (2007) and Gaul and Uysal (2013), core research conducted by **Berg et al. (2017)** offered an innovative perspective on "the pricing puzzle" by distinguishing term and revolving debt and by using the only recently presented new pricing proxy TCB⁶⁴ by Berg et al. (2016) instead of relying solely on AISD or initial margin. This approach enabled Berg et al. (2017) to investigate if differences in loan contract designs may explain the puzzle.

Looking at European and U.S.-based, S&P-rated non-financial borrowers in the period from 1992 to 2011, the authors presented a series of findings: For revolving credit facilities, the puzzle disappears by using the average draw rate adjusted TCB measure. This finding is driven by higher AISU levels of European versus U.S.-based borrowers that counterbalance the lower AISD levels in Europe found by Carey and Nini. Thus, for credit lines, the differences in pricing structures are said to explain "the pricing puzzle".

Secondly, after controlling for borrower risk-related elements such as post-loan-closing performance and the borrower's general creditworthiness and profitability, the pricing gap for term loans tends to disappear as well, indicating that European term loan borrowers on average exhibit higher credit quality compared to the U.S. One possible explanation of Berg et al. is a deeper corporate bond market in the U.S. as compared to Europe, which might substitute the syndicated, term-loan demand especially from high creditworthy borrowers.

Third, the authors stated that the overall spread difference for term loans without taking the abovementioned risk controls into account converged in the 2003 to 2007 timeframe. According to the authors, this finding is due to an increased term loan supply in the U.S. from institutional investors such as CLO's. Additionally, Berg et al. were unable to confirm the finding of Gaul and Uysal that controlling for equity volatility differences in Europe and in the U.S. fully closes the pricing gap. Table 25 summarises the main elements of Berg et al.

⁶⁴ See Table 14.

Region/country	Borrower type	Time frame	Research philosophy	Methods applied	Pricing definition	Syndicated loan data provider	Sample size
Europe; U.S.	S&P-rated stock- listed firms	1992-2011	Realism, Positivism	> Regression analyses	AISD; AISU; TCB	Thomson Reuters LPC	13,796 tranches
	1	1	1	Findings	1		1
			Prima	ary subject finding	s		
> Paper explicitly	distinguishes betw	veen term loans	s and lines of	credit and document	ts that, while Euro	opean borrowers pay l	ower spreads
(AISD) compared	to U.S. borrowers,	, they also pay	higher fees fo	r their credit lines (higher AISU). Th	is suggests that the pr	icing structure for
credit lines is diff	erent in the U.S. co	ompared to Eur	ope, with the	overall cost of borr	owing being very	similar across two ma	arkets.
> Equity volatility	as a measure of u	nobserved firm	asset volatilit	y cannot explain the	e pricing differen	ce between U.S. and E	European borrower
> Poorer creditwo	orthy U.S. firms are	e more likely to	o use term loa	ins compared to Eur	opean firms.		
> European term l	oan issuers on aver	rage have a sig	nificantly bett	er post-issue perfor	mance compared	to U.S. term loan issu	uers.
> Term loan issue	rs are not directly	comparable be	tween the two	markets (U.S. and I	Europe).		
> There is a substa	antially lower prici	ng gap betweer	n U.S. and Eur	opean term loans co	onditioning on the	e firms' post-performa	ince,
creditworthiness a	und profitability dif	fferences.					
> Compared to the	e 1992-2002 perio	d, in the period	l between 200	3 and 2007 term lo	an spreads betwe	en U.S. and Europe ha	ve converged.
> The increased su	upply of syndicated	l loans by insti	tutional invest	ors reduced the spr	eads of U.S. vis-a	-vis European loans, e	effectively removir
the pricing gap.							
			Importan	t sub-thematic find	lings		
> Secured loans a	re associated with	higher pricing.					
> Term loans are i	nore expensive that	an revolving loa	ans.				
> Bridge loans are	more expensive the	han term loans.					
> Higher facility a	mounts lead to lov	ver pricings.					

Table 25. Summary table for Berg et al. (2017).

Similar to Gaul and Uysal (2013), the sample consisted of only circa 8% of European loans. Hence, my critique regarding the work of Gaul and Uysal also holds for Berg et al. (2017). The fact that the authors did not distinguish between the various loan asset classes likewise leads to a general problem of diluted results.

By feeding the TCB equation, which takes average drawing rates into account, the authors supposed the European rate to be identical to that of the U.S., where respective data has been gathered from Capita IQ.⁶⁵ For the German market, however, there is no such database and the fact that Berg et al. focused on S&P-rated, stock-listed firms should result in a relatively high percentage of commercial paper back-up lines, which historically have a close to zero percentage draw-rate. Usual working capital lines of credit were likely to be excluded from the sample, as these borrowers tended not to fulfil the criteria of being S&P-rated, stock-listed and having public pricing information.

Table 26 displays the synthesised "pricing puzzle" evidence of the core literature.

⁶⁵ According to this database, a credit lines draw down rate for rated U.S. firms on average amounts to 25-35%.
Determinant	Pricing direction	Pricing definition	Borrower region under study	Time frame	Reference	Consensus within extant literature	Detailed discussion in table					
	The prizing puzzle											
Regional pricing differences												
Europe vs. U.S. (revolving credit facilities)	Ļ	AISD	U.S.; Europe	1992-2009	Berg, Saunders, Steffen, and Streitz (2017)		25					
	1	AISU	U.S.; Europe	1992-2009	Berg, Saunders, Steffen, and Streitz (2017)		25					
	\rightarrow	тсв	U.S.; Europe	1992-2009	Berg, Saunders, Steffen, and Streitz (2017)		25					
Europe vs. U.S. (term loan)	Ļ	AISD	U.S.; Europe	1992-2009	Berg, Saunders, Steffen, and Streitz (2017)		25					
	Ļ	Spread over reference rate	U.S.; Canada; Europe	2003-2008	Alexandre, Bouaiss, and Refait- Alexandre (2014)		59					
Europe ve IIS	Ļ	AISD	U.S.; Europe; Asia	1998-2009	Champagne and Coggins (2012)		51					
Europe vs. U.S.	Ļ	AISD	U.S.; Europe	1992-2002	Carey and Nini (2007)		23					
	\rightarrow	AISD	U.S.; Europe	1990-2011	Gaul and Uysal (2013)		24					

Table 26. Core literature synthesis for "the pricing puzzle".

It becomes evident, the extant literature widely recognised the price differences as initially localised by Carey and Nini (2007), with the respective reasoning remaining to appear somewhat contradictory and unsaturated.

2.6.3 Financial statement quality and comparability

In 2.6.1 I asserted that borrowers' financial information drives syndicated loan pricings, especially certain balance sheet ratios, like leverage. Generally, the more information⁶⁶ about a borrower that is available and the more reliable this information is, the more accurate are the credit-risk evaluations conducted the lenders and rating agencies (Godlewski & Weill, 2011; Gupta et al., 2008; Ortiz-Molina & Penas, 2008). The level of publicity is strongly interrelated to the size of the borrower and its legal form. Publicly listed, widely held companies, for instance, release more accounting information compared to smaller privately held firms (Hainz & Wiegand, 2013). The information availability level is further enhanced via external ratings, which are again more common for large, listed companies.

Extending these intuitive rationales, core research by **Fang et al. (2016)** explored U.S. stocklisted firms to determine if financial statement comparability leads to more favourable pricings in syndicated lending. Comparability is defined by similar financial statements of different firms after certain economic events (De Franco, Kothari, & Verdi, 2001). In line with the view that comparability in general improves information quality for lenders, the authors found that a high degree of comparability leads to lower AISD, longer maturities and less need to pledge collateral.

⁶⁶ For example, audited and certified financial statements.

Fang et al. (2016) confirmed an earlier work of Bharath, Sunder, and Sunder (2008), who found accounting quality to be inversely related to loan pricings. Table 27 summarises the main elements of this paper.

Fang, X., Li, Y., Xin, B., & Zhang, W. (2016). Financial statement comparability and debt contracting: evidence from the syndicated loan											
market. Accounting Horizons, 30, 277-303.											
Region/country	Borrower type	Time frame	Research philosophy	Methods applied	Pricing Definition	Syndicated loan data provider	Sample size				
U.S.	Non-financial stock-listed firms	1992-2008	Realism, Positivism	 > Regression analyses > Simultaneous equation model 	AISD	Thomson Reuters LPC	11,265 tranches				
Findings											
			Primary	subject findings							
> Comparability i	s negatively assoc	iated with loan	spread and with t	he likelihood of ple	dging collateral in	loan contracts, and	l positively				
associated with lo	an maturity. Thus,	accounting co	mparability impro	oves information qua	ality to lenders.						
> For a firm with	a more comparable	e financial stat	ement, it takes le	ss time to complete	a syndication pro-	cess, and a greater	number of				
participating lende	ers, including unin	formed lender	s, are attracted to	the loan.							
> Lead lenders ho	ld a smaller portic	on of the syndi	cated loan when f	inancial statements a	are comparable.						
> All in all Compa	arable financial sta	tements reduc	e information asy	mmetry between bo	rrowers and lende	rs.					
			Important su	b-thematic finding	s						
> Leverage and st	ock return volatili	y are positivel	y related to pricit	ng, implying that risl	cier firms borrow	at higher costs.					
> Opaque borrow	ers pay higher cost	s.									

Table 27. Summary table for Fang et al. (2016).

In a more specialised vein, **Wasan et al. (2013)**—in a core paper—studied the role of accrual quality as a possible pricing driver. According to Wasan et al. (p. 47), "Accounting accruals represent the non-cash portion of earnings that are adjusted to cash earnings to match expenses with revenues to determine the net reported income for a year". Generally, accruals are based on management estimations regarding uncertain future events and, thus, might be unintentional or even intentionally wrong. Consequently, the soft factor of management trustworthiness plays an important role in this context. Logically, the authors hypothesised that weak accrual quality should increase syndicated loan pricings with their respective results verifying the hypothesis. Table 28 summarises the main elements of the authors' paper.

Wasan, S., Vijaya	kumar, J., & Danie	ls, K. N. (2013). A	Accrual quality and	d borrowing costs in	n the syndicated lo	an market. Journa	ıl of Accounting			
and Finance, 13	(6), 45-63.		1	1	1	1	1			
Region/country	Borrower type	Time frame	Research philosophy	Methods applied	Pricing definition	Syndicated loan data provider	Sample size			
	Non-financial		Realism	Regression	Spread over	Dealogic				
U.S.	stock-listed	1991-2002	Degitiviem	opolycoc	rafaranaa rata	Loopuero	2,235 tranches			
	firms Positivism analyses reference rate Loan									
Findings										
Primary subject findings										
> The quality of a	ccruals influences	borrowing costs a	and syndicate stru	cture in the syndica	ted loan market.					
> Lower accrual of	quality for firms be	prrowing in the syn	ndicated loan mar	ket exacerbates info	ormation asymmet	ry and leads to higl	her costs.			
> Accrual quality	is lower for loans	with multiple arra	ngers.							
> Firms with poor	r accrual quality fa	ce higher spreads.								
> Single-arranger	loans have better	accrual quality that	n multiple-arrang	er.						
			Important sub	-thematic finding	s					
> Loans for borro	owers with greater	leverage carry larg	ger spreads.							
> Loans with long	ger maturities carry	y larger spreads.								
> Loans for borro	wers with lower r	atings carry larger	spreads							

Table 28. Summary table for Wasan et al. (2013).

The synthesis of the two papers' primary subject findings has already been presented in Table 18.

2.6.4 Ethical issues

Increasingly, companies integrate social, ethical, and environmental principles into their business behaviour. Observing this phenomenon, **Kim, Surroca, and Tribó (2014)**—in a core study—used the syndicated loan market as a laboratory to investigate possible effects of borrowers' ethical behaviour on loan pricing. As a second step, the authors addressed the effect of lenders' ethical standpoint and behaviour on the first mentioned effect. According to Trevino, Weaver, and Reynolds (2006), ethical behaviour in business is related to processes of decision making, codes of conduct, and efforts to imbue an enterprise's policies and major decisions with a wide-ranging set of values that foster honesty and integrity over opportunism.

Thus, Kim et al. tested whether borrowers are able—within their commitment to behave ethically—to signal their trust-worthiness and ultimately reduce information asymmetries and pricing. Using data gathered from the "sustainalytics global platform" to proxy ethical behaviour, the researchers established that syndicated loans to borrowers who behave ethically indeed carry lower pricings. This price benefit can be enhanced where the lead lender of the loan maintains a similar ethical position. Table 29 summarises the main elements of this paper.

Region/country	Borrower type	Time frame	Research philosophy	Methods applied	Pricing definition	Syndicated loan data provider	Sample size
Cross-country analysis (19 countries)	Non-financial and non- governmental firms	2003-2007	Realism, Positivism	> Regression analyses	Spread over reference rate	Thomson Reuters LPC	7,436 tranches
				Findings			
			Primar	y subject findings			
> Loan spreads de	ecrease with borro	wers' ethics, p	articularly so wh	en lenders are also e	thical organisatio	ons.	
> There is a 24.8	% reduction from	the mean loan	spread of 78.6 b	asis points when the	re is an increase o	of one standard devia	ation in the
borrowers' ethics	score from its me	an value.					
> Spreads are eve	n more favourable	for the borroy	wer when borrow	er and lender exhibit	ethical similarity	7. The initial reduction	on in the loan
spread of 24.8 %	is further enhance	d to 37.6 % of	the mean spread	l.			
			Important	sub-thematic findin	Igs		
> Borrowers char	acteristics that inc	crease lenders	risk (borrower b	eta, borrower leverag	ge, borrower grov	vth opportunities, bo	orrower ownership
concentration) ar	e associated with a	in increase in s	syndicated loan s	preads.			
> Factors decreas	sing lenders risk (e	existence of a	previous relation	ship with the borrows	er, borrowers rati	ng, borrowers size,	borrower age,
borrower reputati	on, borrower prof	itability) or the	ose factors that g	ive lenders larger lee	eway (lender size	and lender profitabi	lity) are associate
with a reduction i	n loan spreads.						
> Collateral requi	irements are consi	dered a signal	of bad-quality lo	ans, which has a posi	tive impact on sp	reads.	
> Maturity has a p	positive effect on l	oan rates, give	n the larger risks	s borne by lenders of	fering longer loa	n maturities.	
> The number of	lenders reduces th	e risks borne l	w each lender, w	hich lead to lower loa	an spreads.		

Table 29. Summary table for Kim et al. (2014).

lender

Determinant	Pricing direction	Pricing definition	Borrower region under study	Time frame	Reference	Consensus within extant literature	Detailed discussion in table
			Borrower related s	pecifics			
			Ethical behavio	our			
High degree of ethical behaviour	Ļ	Spread over reference rate	Cross-country	2003-2007	Kim, Surroca, and Tribó (2014)		29
High degree of ethical behaviour by borrower &		Spread over	Cross soundary	2002 2007	Kim Sumaa and Tribé (2014)		20

Cross-country

2003-2007

Kim, Surroca, and Tribó (2014)

Table 30 displays the related synthesised evidence of the core literature.

Table 30. Core literature synthesis for ethical behaviour.

eference rate

It becomes apparent that literature thematising ethical issues in syndicated lending is scarce thus far. As weak related confirming literature, the work of Giannetti and Yafeh (2012) can be referenced to finding greater cultural differences between borrowers and lenders to lead to a higher probability of guarantees needed in loan contracts.

2.7 Lender-related specifics as pricing determinants

This section is devoted to worldwide syndicated loan literatures findings about certain characteristics of lending institutions and their influence on pricing. As German corporate syndicated lending tends to be a bank-only market, I do not focus on non-bank-lenders, which appear mainly to be active supporters of project finance or loans for LBOs (Maskara, 2006), which lie beyond the scope of this study.

2.7.1**General lender characteristics**

Most earlier financial intermediation literature has provided evidence about general lender characteristics in line with intuitive a priori predictions, namely, well capitalised and liquid banks can provide cheaper loans (Bernanke & Gertler, 1995; Hubbard, Kuttner, & Palia, 2002). According to De Young, William, and Udell (2004) and Berger and Udell (1996), larger and, hence, more diversified banks tend to lend to large businesses and charge lower interest rates.

These findings are in line with the core literatures' findings regarding key financial information as displayed in the related synthesis in Table 31.

Determinant	Pricing direction	Pricing definition	Borrower region under study	Time frame	Reference	Consensus within extant literature	Detailed discussion in table				
Lender related specifics											
Financial information											
Large	Ļ	AISD	U.S.	1992-2002	Calomiris and Pornrojnangkool (2009)		60				
Well diversified credit portfolio	Ļ	AISD	U.S.	1993-2004	Ivashina (2009)		50				
Undercapitalised bank as lender for opaque borrower	→	AISD	UK	1996-2005	Mattes, Steffen, and Wahrenburg (2013)		58				
"Strong" bank as lender for opaque borrower (in recession)	\rightarrow	AISD	UK	1996-2005	Mattes, Steffen, and Wahrenburg (2013)		58				
Undercapitalised bank as lender for opaque borrower (in a recession)	1	AISD	UK	1996-2005	Mattes, Steffen, and Wahrenburg (2013)		58				

 Table 31. Core literature synthesis for lender's financial information.

Table 31 shows that the core literature has not put a huge focus on such general characteristics, maybe given a relatively saturated base of knowledge being provided by mainly non-syndicated lending related, earlier financial intermediation literature as stressed above.

Within the core literature, lender-related specifics and their influence on syndicated loan pricing have been studied primarily with a view to type, nationality and reputation, forming the focus of the following sections.

2.7.2 Lender type

In a core study, **Harjoto et al.** (2006) examined whether syndicated loans to U.S. and Canadian borrowers in the period of 1996 to 2003 were priced differently by either investment banks or by commercial banks. The researchers found that *ceteris paribus* investment banks charge circa 60 bp p.a. higher AISD than do commercial banks. This premium declines when investment and commercial banks jointly act as arrangers for syndicated loans. The researchers ascribed this finding to better funding conditions⁶⁷ of commercial vis-à-vis investment banks and to the former's superior ability to exploit relationships⁶⁸ in debt contracting. Table 32 summarises the main elements of Harjoto et al.'s findings.

⁶⁷ Given their access to retail deposits.

⁶⁸ See section 2.11.

5	9

Harjoto, M., Mullineaux, D. J., & Yi, H. (2006). A comparison of syndicated loan pricing at investment and commercial banks. Financial										
Management, 35	(4), 49-70.									
Region/country	Borrower type	Time frame	Research philosophy	Methods applied	Pricing definition	Syndicated loan data provider	Sample size			
U.S.; Canada	Non-financial firms	1996-2003	Realism, Positivism	> Regression analyses	AISD	Thomson Reuters LPC	1,361 tranches			
Findings										
			Primary	subject findings						
> Investment bank	s charge higher sp	reads than cor	nmercial banks, ce	eteris paribus, on bot	th term and revolvi	ng loans.				
> Investment bank	r premiums are hig	her on revolve	ers than on term lo	ans.						
> In a co-lead scenario, revolvers are still more expensive compared to a sole commercial bank lead scenario. However, term loan prices are not										
significantly diffe	rent. Since revolve	ers are often t	hought of as more	relationship-oriente	d than term loans,	this finding could	be considered as			
evidence that inve	stment banks suffe	er from a com	prehensive disadva	ntage in this area.						
> Investment bank	ts charge less when	n co-arranging	with commercial	banks.						
> Investment bank	as lend to less prof	itable and mor	re leveraged firms	than commercial bar	nks do.					
> Investment bank	s originate/partici	pate in longer	term loans and are	e less likely to provid	de loan-commitme	ent contracts.				
> Investment bank	are more focuse	d on transactio	on than on relation	ship lending.						
> The evidence th	at investment bank	s establish hig	gher spreads could	be related to the lac	k of the special fu	nding sources avail	lable to commercial			
banks, or to the pr	ospect that comm	ercial banks a	e able to exploit r	elationships in debt	contracting better.					
			Important su	ub-thematic finding	gs					
> Larger borrowe	rs and public comp	panies pay low	er rates on loans.							
> Secured loans h	ave significantly h	igher spreads	than unsecured on	es.						
> Relation betwee	en spreads and mat	urity is non-lin	near.							
> Term loans have	e higher rates than	revolvers.								
> Rates for LBO	loans are significa	ntly higher.								
> Credit spreads of	lecline with borroy	wer assets and	profitability, and i	ncrease with leverage	ge and equity volat	ility.				

Table 32. Summary table for Harjoto et al. (2006).

Harjoto et al.'s (2006) study provides several insights into lender type debates. Their 2006 results, however, might have only limited significance in the current banking environment. In the course and immediate aftermath of the financial crisis, which peaked in 2008, the U.S. banking system was shaped by a wave of consolidation with failed investment banks blending into large universal banks⁶⁹ (Schildbach, 2012). Further, the remaining investment banks—Goldman Sachs and Morgan Stanley—legally converted into bank-holding companies, allowing them to access the Federal Reserves (FED) emergency liquidity. In return, these former non-bank institutions became subject to the full scope of banking regulation (Oliver Wyman, 2015). Hence, the applied bank type differentiation of Harjoto et al. does not adequately reflect current circumstances.

Table 33 displays related bank type evidence based on the core literature.

⁶⁹ For example, Bear Stearns into J.P. Morgan Chase and Merrill Lynch into Bank of America.

Determinant	Pricing direction	Pricing definition	Borrower region under study	Time frame	Reference	Consensus within extant literature	Detailed discussion in table			
Lender related specifics										
	Туре									
Law strengthered	1	AISD	U.S.; Canada	1996-2003	Harjoto, Mullineaux, and Yi (2006)		32			
Investment bank	1	AISD	U.S.	1992-2002	Calomiris and Pornrojnangkool (2009)		60			
Investment bank as lender for borrower after equity underwriting	↓	AISD	U.S.	1992-2002	Calomiris and Pornrojnangkool (2009)		60			

Table 33. Core literature synthesis for lender type.

Within the core literature, it becomes apparent, that besides the works of Harjoto et al. (2006) and Calomiris and Pornrojnangkool (2009)—with the latter putting its primary focus on relationship lending—the bank type differentiation and its impact on pricing is quantitatively relatively scarcely studied. However, a general trend was being recognised that investment banks charge higher pricing vis-à-vis commercial banks or under my definition as presented in 2.4.2.2 universal and/or wholesale banks.

2.7.3 Lender nationality

Section 2.6.2 presented some discussion on possible pricing differences for different borrower nationalities. Similarly, researchers have also investigated different price policies relative to banks' nationalities. Two common arguments are that if banks decide to lend to foreign borrowers or, in other words, to cross borders, they either follow their domestic clients which internationalise themselves (Buch & Golder, 2001) or lend to large and transparent firms because of the lenders' lack of local market knowledge and difficulty in gaining and making use of soft information (Berger & Udell, 2002; Petersen & Rajan, 2002). A third argument is that foreign institutions might have technological advantages compared to local lenders in smaller, developing countries.

By using the European syndicated loan market as a workroom, **Haselmann and Wachtel** (2011)—in a core study—examined the motivations of banks to engage in cross-borderlending. The authors stated that since 1995 in roughly 70% of new issued loans, at least one foreign bank has joined the syndicate. Looking at 25 European countries, Haselmann and Wachtel distinguished between small and large countries and found respective motivations of banks to cross borders to be different in one category or the other.

After controlling for borrower and loan specifics, in large countries where a foreign bank acts as lead arranger, the researchers observed that pricings tend to be higher, indicating that those banks lend to more risky enterprises abroad. In other words, foreign banks are more aggressive in terms of their lending targets in such countries. In smaller countries, the opposite is found to be the case, a fact which Haselmann and Wachtel (2011) related to the rationale that foreign banks fill in for possible shortages in domestic loan supply and, thus, do not need to invest in riskier borrowers in contrast to the need of large countries where loan supply is supposed to be higher. Table 34 summarises the main elements of Haselmann and

Wachtel.

Haselmann, R., & Wachtel, P. (2011). Foreign banks in syndicated loan markets. Journal of Banking & Finance, 35, 2679-2689.										
Region/country	Borrower type	Time frame	Research philosophy	Methods applied	Pricing definition	Syndicated loan data provider	Sample size			
Europe (25 countries)	Non-financial & non-LBO firms	1995-2007	Realism, Positivism	> Regression analyses	AISD	Thomson Reuters LPC	2,819 tranches			
	·			Findings						
			Primar	y subject findings						
 > Finding of diffe especially risky b > In small financi: often publicly list in these markets a > In large financia > In large financia having controled f as compared to sn > Foreign bank les markets. 	Primary subject findings > Finding of different motivations for the large amount of cross-border lending in large developed markets, where foreign banks tend to lend to especially risky borrowers and projects. > In small financial markets, syndicated loans with foreign bank lead arrangers go to larger firms with more tangible assets, which are more often publicly listed than the loans with domestic bank lead arrangers. It appears that the foreign banks can exploit their technological advantage in these markets and lend to large borrowers that are able to provide hard information to their creditors. > In large financial systems, foreign banks lend to significantly more leveraged borrowers than domestic banks. > In large financial systems, foreign banks tend to take on especially risky projects and to diversify these by international syndication. After having controled for loan and borrower characteristics, foreign bank lead arrangers appear to charge higher spreads in large financial systems, as compared to small ones. > Foreign bank lead arrangers make longer maturity loans to more leveraged firms with fewer tangible assets in large markets than in small									
barriers faced by t	foreign lenders	's in large mar	kets is a more im	iportant determinant	of their activity th	ian the costs of ow	ercoming the			
			Important s	ub-thematic findin	igs					
> Spreads increas > Spreads are low	e with the borrowe er for public comp	ers' leverage ra panies and do 1	tio and decrease not vary with mate	with loan size, firm urity.	size, the tangibilit	y ratio and cash flo	ow.			

Table 34. Summary table for Haselmann and Wachtel (2011).

Positively, Haselmann and Wachtel represent a rare exception by excluding LBO loans from their sample. Further, with 2,819 tranches in a 12-year period, the sample size is bigger compared to for example, Christodoulakis and Olupeka (2010), whose sample is 2,102 loans in an 18-year period. Haselmann and Wachtel likely achieved the higher number by not solely focusing on rated companies.

In a more specific vein, the core study performed by **Houston et al. (2017)** examined whether foreign asset connections between lenders and borrowers lead to more favourable loan pricings. The authors hypothesised that if, for example, an American firm was also present in Japan, Japanese banks would likely be willing to provide more attractive terms and conditions as compared to an otherwise identical firm not having this presence. Houston et al. confirmed their hypothesis. Foreign lenders associated with foreign firm assets grant relatively cheaper loans as compared to firms lacking these assets. Additionally, the presence of a foreign lender accompanied with foreign assets increases loan supply and leads to overall cheaper pricings for such companies in general compared to pure national syndicates. In other words, firms having assets abroad benefit from international lenders having a local presence in related

foreign countries. The authors conclude that foreign lenders of this type confront lessened information barriers. Table 35 summarises the main elements of Houston et al. (2017).

Houston, J. F., Itzkowitz, J., & Naranjo, A. (2017). Borrowing beyond borders: foreign assets, lender choice, and loan pricing in the syndicated bank											
loan market. Jour	nal of Corporate	Finance , 42, 315-	-334.								
Region/country	Borrower type	Time frame	Research philosophy	Methods applied	Pricing definition	Syndicated loan data provider	Sample size				
Cross-country	Stock-listed firms	1998-November 2009	Realism, Positivism	> Regression analyses	AISD	Thomson Reuters LPC	19,269 tranches				
			Fi	ndings							
			Primary s	ubject findings							
> Firm-level fore	ign assets increase	the likelihood of	selecting a foreig	n lead lender and re	sult in better loan	pricing terms as a	consequence of the				
increased lender a	access.										

> The location of a firms' foreign assets strongly predicts the unique location of the lender, which we measure using both region and country.
> The use of foreign lender associated with the presence of foreign assets results in better loan pricing as a consequence of increased lender access.

> In general firms, that used foreign leads during the crisis paid higher spreads suggesting that lenders may be more inclined to protect domestic borrowers during crisis periods.

> However, firms with foreign leads paid lower spreads during the crisis of they had foreign assets in the lender's region.

 Table 35. Summary table for Houston et al. (2017).

One avenue of critique is the fact that the loan sample consisting of 19,269 tranches contains roughly 60% American borrowers, whereas the three major European syndicated loan markets⁷⁰ are represented with less than 6%. For the roughly 11-year investigation period, only 209 German loan tranches are included, an average of less than 20 tranches per year.

Table 36 synthesises the related bank nationality evidence presented in the core literature.

Determinant	Pricing direction	Pricing definition	Borrower region under study	Time frame	Reference	Consensus within extant literature	Detailed discussion in table				
			Lender related spe	cifics							
Nationality											
Lender and borrower of same nationality	\rightarrow	Spread over reference rate	France	1992-2006	Godlewski, Sanditov, and Burger- Helmchen (2012)		52				
	Ļ	Spread over reference rate	Euro-area	1999- October 2006	Barbosa and Ribeiro (2007)	-	38				
	Î	Spread over reference rate	Euro-area	1999- October 2006	Barbosa and Ribeiro (2007)		38				
Foreign	Î	AISD	Cross-country	1998- November	Houston, Itzkowitz, and Naranjo (2017)	_	35				
Foreign (borrower has assets in lender country)	Ļ	AISD	Cross-country	1998- November	Houston, Itzkowitz, and Naranjo (2017)		35				
Foreign (in large financial system)	Foreign (in large financial system)		Europe	1995-2007	Haselmann and Wachtel (2011)		34				
Foreign (in small financial system)	Ļ	AISD	Europe	1995-2007	Haselmann and Wachtel (2011)		34				

Table 36. Core literature synthesis for lender nationality.

The core literatures synthesis indicates that lender nationalities' directional influence on syndicated loan pricings remains relatively unclear.

⁷⁰ Germany, UK, and France.

2.7.4 Lender reputation

The reputation of a syndicated loan lender in general and of the lead lenders in particular, and their influence on pricing, has primarily been studied within the wide body of syndicate structure (2.10) and relationship lending (2.11) literature.

The core assumptions in that respect are related to information asymmetrical issues. On the one hand, a reputable lead lender might be able to set a pricing relatively low as the invited banks positively evaluate this reputation, and, hence, require a lower information asymmetry premium. On the other, a premium for the reputation might also be required. The former line of argumentation is in line with the one of amongst others Godlewski et al. (2012) as well as Ivashina (2009). In contrast several authors found an opposite relationship: According to Alexandre et al. (2014), McCahery and Schwienbacher (2010), and Cook, Schellhorn, and Spellmann (2003), given its relatively high reputation, a bookrunner might also be enabled to charge higher pricings as borrowers have to pay for this reputation.

The following table synthesises the related lender reputation evidence of the core literature.

Determinant	Pricing direction	Pricing definition	Borrower region under study	Time frame	Reference	Consensus within extant literature	Detailed discussion in table				
Lender related specifics											
Reputation											
High reputation in general (lead arrangers and participants)	Ļ	Spread over reference rate	France	1992-2006	Godlewski, Sanditov, and Burger- Helmchen (2012)		52				
Tech remetation of load opposed	Ļ	AISD	U.S.	1993-2004	Ivashina (2009)		50				
right reputation of read arranger	î	Spread over reference rate	U.S.; Canada; Europe	2003-2008	Alexandre, Bouaiss, and Refait- Alexandre (2014)		59				
Reputable lead arranger for transparent	Î	AISD	U.S.; Europe; Asia	1998-2009	Champagne and Coggins (2012)		51				
borrower	Ļ	AISD	Worldwide	1993-2006	Gadanecz, Kara, and Molyneux (2012)		56				
Demutable load environment for enserve between	\rightarrow	AISD	U.S.; Europe; Asia	1998-2009	Champagne and Coggins (2012)		51				
Reputatione read arranger for opaque borrower	\rightarrow	AISD	Worldwide	1993-2006	Gadanecz, Kara, and Molyneux (2012)		52				

Table 37. Core literature synthesis for lender reputation.

Table 37 establishes that within core literature, the role of reputation and its influence on pricing remains ambiguous with no clear directional influences being apparent from the reporting.

2.8 Syndicated loan contractual features as pricing determinants

According to Gottesmann and Roberts (2004) and in line with early financial intermediation theories, loan contract designs in general aim to overcome information asymmetries among the parties involved. Graham et al. (2008) stated that the package of contractual features reflect how lenders anticipate borrower performance.

In an early paper on the U.S. commercial lending market, Melink and Plaut (1986), stated that loan contracts in general possess a multidimensional character with various loan related variables. Under this view, loan contracts are packages consisting of several different price and non-price terms with maturity, amount, and collateralisation being widely considered as the main ingredients.

One strand in the literature assumes a sequential process, where decisions on non-price related terms precede the price setting. In other words, these non-price features and pricings are not jointly determined (Berger & Udell, 1990; Bharath et al., 2011; Dennis et al., 2000; Fang et al., 2016; S&P, 2011). Another strand assumes joint or simultaneous determinations. Under this assumption, a borrower is able to trade-off different loan contract features, one against the other (Brick & Palia, 2007; Melink & Plaut).

Some studies have focused predominantly on one of these non-price terms, whereas **Barbosa** and **Ribeiro's (2007)** core study covered multiple terms. Hence, I present the summary table of this work at the outset of this section and will back-reference the table in subsequent subsections.

Barbosa, L., & Ribeiro, N. (2007). Determinants of spreads in syndicated loans to euro area corporates. <i>Economic Bulletin; Banco de Portugal</i> , 65-74.										
Region/country	Borrower type	Time frame	Research philosophy	Methods applied	Pricing definition	Syndicated loan data provider	Sample size			
Euro-area	Non-financial firms	1999-October 2006	Realism, Positivism	> Regression analyses	Spread over reference rate	Dealogic Loanware	6,040 tranches			
	Findings									
			Primary	subject findings						
> The higher the l	oan size, the highe	er the pricing.								
> Longer maturity	y leads to higher sp	preads.								
> Loans for taked	ver purposes carry	higher pricing.								
> Term loans in g	eneral, and bridge	loans especially	, carry higher pri-	cings than RCFs do.						
> Loans with guar	antees carry lower	r spreads.								
> Loans with coll	ateral carry higher	spreads.								
			Important su	ıb-thematic finding	zs					
> Better Borrowe	r Ratings lead to l	ower pricing.								
> Total foreign bank syndicates are associated with higher pricings, being an indication for home bias issues and an incomplete integration of the										
syndicated loan market.										
> Fees compleme	ent interest income	e for banks rathe	r than substituting	g it.						

Table 38. Summary table for Barbosa and Ribeiro (2007).

2.8.1 Maturity

A key contractual feature is the loan maturity. Thus, relations between pricing and the respective maturity naturally merit study, especially considering two contradictory hypotheses, the named *trade-off hypothesis* and the *credit quality hypothesis*.

The former predicts that pricings will rise with increasing maturity whereas the latter forecasts the opposite. Advocates of the trade-off hypothesis, such as Coleman, Esho, and Sharpe (2002), argue that borrowers who intended to issue a short maturity loan would face the danger of an "early" and costly liquidation at maturity or, in other words, that the loan would not be prolonged by its lender(s). Thus, relatively risky borrowers seek long-term financing to moderate this risk. Lenders face higher risks in engaging in long-term loans for risky borrowers and are only willing to offer long-tenured loans to risky borrowers at a price premium.

The credit quality hypothesis suggests negative maturity-price relationships as lenders strive to limit their risk-exposures by forcing high-risk borrowers into short-term debt (Berger & Udell, 1990; Dennis et al., 2000; Strahan, 1999) and offer long term loans only to the highest quality borrowers. According to Flannery (1986), this direction accelerates further as these highest quality borrowers tend to seek short-term loans to signal their high creditworthiness as well as their low liquidation risk at maturity.

Building on these early, mostly theoretical and non-syndicated loan related works, the core study conducted by **Gottesmann and Roberts (2004)** investigated the price-maturity relationship founded on a syndicated loan sample of U.S.-based enterprises. Using a matched pair analysis, the authors attempted to isolate trade-off effects of the credit qualities' impact. A matched pair is syndicated loan consisting of multiple tranches. Each might carry a different AISD, a different maturity, etc., and might either be a term or a revolving loan. Thus, the borrower-quality is said to be the same for each tranche. With regard to this matched pair analysis and only for term loans, Gottesmann and Roberts found a positive relation between pricing and maturity supporting the trade-off theory. For Euro-area corporate borrowers, Barbosa and Ribeiro (2007) provided supporting evidence stating that pricings do monotonically increase with loan maturity.

By replacing the matching technique with pooled regression analyses Gottesmann and Roberts found support for the credit-quality hypothesis, meaning that longer maturity loans are associated with lower spreads. Gottesmann and Roberts (2004) logically argue that both phenomena co-exist. For a single firm, there might be a willingness of lenders to trade-off pricing and maturity as shown in the matched pair's analysis. With an overall bank portfolio view, however, banks strive to limit long-term risk exposure to riskier clients, in line with the credit quality theory, for which evidence was found via pooled regressions. Table 39 summarises the main elements of Gottesmann and Roberts.

Gottesmann, A. A., & Roberts, G. S. (2004). Maturity and corporate loan pricing. The Financial Review, 39, 55-77.										
Region/country	Borrower type	Time frame	Research philosophy	Methods applied	Pricing definition	Syndicated loan data provider	Sample size			
U.S.	Non-financial firms	1988-1999	Realism, Positivism	 > Regression analyses > Matched paired analyses 	AISD	Thomson Reuters LPC	3,944 tranches			
			Fiı	ndings						
			Primary su	bject findings						
> Longer term loa	ans carry higher Al	SD compared to s	shorter ones (mate	ched paired analysis)						
> Longer syndica	ted loans carry lov	ver AISD (pooled	regression).							
Important sub-thematic findings										
> Credit spreads decrease with borrower size.										
Cradit opraade i	increase with colle	tarolisation								

 Table 39. Summary table for Gottesmann and Roberts (2004).

One possible criticism regarding the work of Gottesmann and Roberts is the fact that the authors lumped together LBO-loans with non-LBO-loans. This is particularly problematic for this study as the matched pairs analysis strives at isolating the trade-off- from the credit quality hypothesis. It is likely that most of the matching pairs are LBOs as multiple tranches are most common in this market. In the speculative LBO-world, via tranching and the creation of *structural/indirect subordination*,⁷¹ different credit qualities are created by means of tranching (Maskara, 2010) to meet various interests of different investor types inter alia those of CLO-funds.⁷² In other words, isolating trade-off effects from the credit qualities' effects is not a reasonable assumption for LBOs. This motivation for tranching is less common, however, in the corporate syndicated loan world.⁷³

The following Table 40 displays the related evidence of the core literature.

⁷¹ See section 2.4.4.1.

⁷² See section 2.4.4.1.

⁷³ See section 2.8.4.

Determinant	Pricing direction	Pricing definition	Borrower region under study	Time frame	Reference	Consensus within extant literature	Detailed discussion in table
		Sync	licated loan contract	tual features			
			Maturity	1			
	Î	Spread over reference rate	Cross-country	1990-2001	Focarelli, Pozzolo, and Casolaro (2008)		49
	↑	Spread over reference rate	Euro-area	1999- October 2006	Barbosa and Ribeiro (2007)		38
	Î	Spread over reference rate	U.S.	1991-2002	Wasan, Vijayakumar, and Daniels (2013)		28
	Î	AISD	U.S.	1998-2003	Schenone (2010)		61
	Î	Spread over reference rate	Cross-country	2003-2007	Kim, Surroca, and Tribó (2014)		29
	1	Spread over reference rate	France	1992-2006	Godlewski, Sanditov, and Burger- Helmchen (2012)		52
	Î	Spread over reference rate	U.S.; Canada; Europe	2003-2008	Alexandre, Bouaiss, and Refait- Alexandre (2014)	_	59
Long	î	Spread over reference rate	Europe	1990-2008	Christodoulakis and Olupeka (2010)		22
	Î	AISD	UK	1989-2007	Saunders and Steffen (2011)		63
	Ļ	Spread over reference rate	U.S.	1987-2002	Santos and Winton (2008)		57
	Ļ	AISD	U.S.	1986-2003	Bharath, Dahiya, Saunders, and Srinivasan (2011)		55
	Ļ	AISD	U.S.	1990-August 2010	Wu, Chang, Suardi, and Chang (2013)		53
	Ļ	AISD	U.S.	1988-1999	Gottesmann and Roberts (2004)		39
	\rightarrow	AISD	Europe	1995-2007	Haselmann and Wachtel (2011)		34
	\rightarrow	Spread over reference rate	Cross-country (excl. e.g., U.S.; Germany)	1991-2006 (August)	Godlewski and Weill (2011)		42
Long (revolving credit facilities)	→	AISD	U.S.	1988-1999	Gottesmann and Roberts (2004)		39
Long (term loans)	1	AISD	U.S.	1988-1999	Gottesmann and Roberts (2004)		39

Table 40. Core literature synthesis for maturity.

The table shows that a positive relation of pricing and maturity has predominantly been located. However, also a couple of authors found either no or a negative relationship.

2.8.2 Loan size

As explicated in 2.6.1, Christodoulakis and Olupeka (2010) studied pricing determinants of syndicated loans issued by borrowers located in 23 European countries. With respect to loan characteristics and in line with Barbosa and Ribeiro (2007) for example, the authors found larger loans to carry lower spreads. The authors argued that this might be related to the fact that large loans are indicators for large borrower sizes, which the market in turn generally associates with lower risk. In other words, loan sizes are highly correlated with borrowers' size and their creditworthiness, in line with Carey and Nini (2007). Confirmatively, Mattes et al. (2013) stated that smaller firms tend to be more highly leveraged then larger ones, with leverage being one of the core proxies for borrower-risk.

As a second argument, as stressed by Barbosa and Ribeiro, these lower prices for a larger loan might also be driven by economies of scale. Per Graham et al. (2008) and Godlewski et al. (2012), there might be some kind of bank fixed costs being diluted via issuing large scale facilities.

Determinant	Pricing direction	Pricing definition	Borrower region under study	Time frame	Reference	Consensus within extant literature	Detailed discussion in table						
	Syndicated loan contractual features												
			Loan size		1								
	Ļ	AISD	Europe	1995-2007	Haselmann and Wachtel (2011)		34						
	Ļ	AISD	U.S.	1990-August 2010	Wu, Chang, Suardi, and Chang (2013)		53						
	↓↓	AISD	U.S.	1993-2004	Ivashina (2009)		50						
	Ļ	Spread over reference rate	Euro-area	1999- October 2006	Barbosa and Ribeiro (2007)		38						
	Ļ	AISD	U.S.; Europe	1992-2009	Berg, Saunders, Steffen, and Streitz (2017)		25						
	Ļ	Spread over reference rate	France	1992-2006	Godlewski, Sanditov, and Burger- Helmchen (2012)		52						
	Ļ	Spread over reference rate	Europe	1990-2008	Christodoulakis and Olupeka (2010)		22						
Lange	Ļ	AISD	U.S.; Europe	1992-2002	Carey and Nini (2007)		23						
Large	Ļ	Spread over reference rate	U.S.; Canada; Europe	2003-2008	Alexandre, Bouaiss, and Refait- Alexandre (2014)		59						
	Ļ	AISD	U.S.	1987-2002	Hale and Santos (2009)		62						
	Ļ	Spread over reference rate	U.S.	1987-2002	Santos and Winton (2008)		57						
	Ļ	Spread over reference rate	Cross-country	1990-2001	Focarelli, Pozzolo, and Casolaro (2008)		49						
	Ļ	AISD	U.S.; Europe	1990-2011	Gaul and Uysal (2013)		24						
	Ļ	AISD	UK	1989-2007	Saunders and Steffen (2011)		63						
	Î	Spread over reference rate	Cross-country (excl. e.g., U.S.; Germany)	1991-2006 (August)	Godlewski and Weill (2011)		42						
	1	AISD	U.S.	1992-2002	Calomiris and Pornrojnangkool (2009)		60						

Table 41 displays the related evidence of the core literature for loan size.

Table 41. Core literature synthesis for loan size.

Table 41 shows that the majority of core literature authors found a negative relation between loan size and pricing with only Godlewski and Weill (2011) and Calomiris and Pornrojnangkool (2009) presenting opposite directional influences.

2.8.3 Lender protection mechanisms

This subsection thematises the role of *collateralisation* as well as the appearance of *covenants* and *guarantees* and their directional influence on syndicated loan pricing. When a syndicated loan is secured, the debt or certain portions of it is backed—in other words, pledged—by specified assets.⁷⁴ In an *event of default*, banks are able to sell/use these assets to repay the loan or a part of it (Rhodes et al., 2004; Sickel, 2010).

Generally, the appearance of collateral reduces potential loan losses in an event of default compared to unsecured facilities. This leads to the assumption that collateral should lower a loan's risk premium *ceteris paribus*. Further, by providing collateral, an enterprise might signal its high-quality, thereby reducing *ex ante* information asymmetries, and, in return,

⁷⁴ Such as real estate, machinery, shares or revenues.

might be able to negotiate lower pricings (Besanko & Thakor, 1987; Bester, 1985). This theoretical view is commonly defined as the *adverse selection hypothesis*, for which, however, there exists little empirical evidence. One exception is the Degryse and Van Cayseele (2000) finding of a negative linkage of collateral and spreads.⁷⁵

Extant academic literature predominantly stresses a positive relationship between collateral and loan pricing and elucidates this with the *observed-risk hypothesis*, stating lenders to require collateral from riskier borrowers who are also being charged higher spreads (Berger & Udell, 1990; Dennis et al., 2000; Jiminez & Saurina, 2004).

Based on the above-presented underlying assumptions—in a cross-country analysis— **Godlewski and Weill (2011)** produced core research that sought to determine whether adverse selection and the observed-risk-hypothesis might coexist. In line with Barbosa and Ribeiro (2007) among others, the authors found a positive relationship between collateral and loan spread for their overall sample for each individual country. This is in line with a broad base of empirical literature propagating the observed-risk-hypothesis.

However, Godlewski and Weill, whilst controlling for different levels of information asymmetries between lenders vis-à-vis borrowers a higher (lower) degree of such frictions decreases (increases) the positive relationship. This is interpreted by the authors in a way that besides the obvious observed-risk also the adverse selection hypothesis might coexist. Table 42 summarises the main elements of Godlewski and Weill.

⁷⁵ The authors focused on Belgian loans for small businesses.

Godlewski, C. J., & Weill, L. (2011). Does collateral help mitigate adverse selection? A cross-country analysis. Journal of Financial Services									
Research, 40, 49-78.									
Region/country	Borrower type	Time frame	Research philosophy	Methods applied	Pricing definition	Syndicated loan data provider	Sample size		
31 Countries worldwide (excl., e.g., U.S., Germany	Non-financial sector and non- public sector firms	1991-August 2006	P1-August Realism, Positivism > Regression analyses Spread over reference rate Thomson Reuters LPC 4,940 trans Findings						
Findings									
			Primary s	ubject findings					
> Overall, the loan	spread increases wh	nen a loan is sec	ured. This does no	ot support the theore	tical argument, ac	cording to which co	ollateral helps to		
solve the problem of	of adverse selection	ι.							
> The finding corro	borates the observe	ed-risk hypothes	is, according to w	hich banks ask for m	nore collateral from	m riskier companie	es who are already		
charged with higher	r loan rates.								
> However, observe	ed-risk hypothesis a	and adverse sele	ction hypothesis c	oexist to a certain d	egree, as lower le	vels of information	asymmetries		
increase the positiv	e relationship betw	een collateralis	ation and spreads.						
> All else being eq	ual, the loan spread	increases by 50	bp when the loan l	nas collateral.					
			Important sub	-thematic findings					
> A greater number	of lenders is assoc	iated with lower	r spreads.						
> Maturity does no	t impact spreads.								
> Presence of cove	enants leads to highe	er spreads.							
> Term loans are charged with higher spreads.									
> The purpose debt	repayment is assoc	iated with lower	r spreads.						
> Larger loans are	charged with higher	spreads.							

Table 42. Summary table for Godlewski and Weill (2011).

It is important to note that major European countries such as France, UK, Spain and Switzerland are represented in the authors' sample, whereas Germany is not. I assume this to be related to data availability issues.

Next, I turn my attention to financial covenants, which are common elements of syndicated loan contracts (Nini, Smith, & Sufi, 2012). According to Roberts and Sufi (2009), covenants are an option for lenders to terminate or renegotiate a loan agreement in the event such a covenant is violated. In other words, covenant violations trigger events of default and serve as a kind of *ex ante* monitoring device to mitigate moral hazard issues (Ivashina, 2009).

Fight (2004) distinguishes between *non-financial* and *financial covenants*, with the latter most frequently being a maximum leverage ratio or minimum interest rate coverage ratio. Common examples for non-financial covenants are restrictions on capital spending, financial indebtedness, asset disposals, mergers, and acquisitions (Slaughter & May, 2013). Berlin and Mester (1992) pointed out that covenants play a major role in alleviating moral hazard issues by aligning the interests of borrowers and lenders over the lifetime of the loan. This should lead to a lowering of spreads. However, the introduced observed-risk hypothesis might trigger an opposite relationship.

Table 43 displays the related evidence of the core literature as it concerns covenants and collateral.

The table also includes the core literatures' findings with respect to the appearance of guarantees, which Fight (2004, p. 176) defines as "undertakings in writing by one person⁷⁶ given to another, usually a bank⁷⁷ to be answerable for the debt of a third person⁷⁸ to the creditor, upon default of the debtor".

Determinant	Pricing direction	Pricing definition	Borrower region under study	Time frame	Reference	Consensus within extant literature	Detailed discussion in table
		Sync	licated loan contract	tual features			
		1	Protection mecha	nisms			
	Î	AISD	U.S.; Europe	1992-2002	Carey and Nini (2007)		23
A magnesia of quarantee (c)	Î	Spread over reference rate	U.S.	1987-2002	Santos and Winton (2008)		57
Appearance of guarance(3)	1	AISD	U.S.	1990-August 2010	Wu, Chang, Suardi, and Chang (2013)		53
	Ļ	Spread over reference rate	Euro-area	1999- October 2006	Barbosa and Ribeiro (2007)		38
	1	AISD	U.S.	1993-2004	Ivashina (2009)		50
	î	AISD	U.S.	1986-2003	Bharath, Dahiya, Saunders, and Srinivasan (2011)		55
	î	AISD	UK	1996-2005	Mattes, Steffen, and Wahrenburg (2013)		58
Appearance of covenant(s)	1	Spread over reference rate	Cross-country (excl. e.g., U.S.; Germany)	1991-2006 (August)	Godlewski and Weill (2011)		42
	1	AISD	ик	1989-2007	Saunders and Steffen (2011)		63
	Ļ	AISD	U.S.	1990-August 2010	Wu, Chang, Suardi, and Chang (2013)		53
	Ļ	Spread over reference rate	U.S.; Canada; Europe	2003-2008	Alexandre, Bouaiss, and Refait- Alexandre (2014)		59
	Î	Spread over reference rate	Cross-country	2003-2007	Kim, Surroca, and Tribó (2014)		29
	1	Spread over reference rate	U.S.	1987-2002	Santos and Winton (2008)		57
	1	AISD	U.S.	1988-1999	Gottesmann and Roberts (2004)		39
	Î	Spread over reference rate	Euro-area	1999- October 2006	Barbosa and Ribeiro (2007)		38
	1	AISD	U.S.	1990-August 2010	Wu, Chang, Suardi, and Chang (2013)		53
	Î	AISD	U.S.; Europe	1992-2009	Berg, Saunders, Steffen, and Streitz (2017)		25
	î	AISD	U.S.	1986-2003	Bharath, Dahiya, Saunders, and Srinivasan (2011)		55
Appearance of collateral	1	AISD	U.S.	1992-2002	Calomiris and Pornrojnangkool (2009)		60
	1	AISD	U.S.; Europe	1992-2002	Carey and Nini (2007)		23
	1	AISD	U.S.	1987-2002	Hale and Santos (2009)		62
	1	AISD	ик	1996-2005	Mattes, Steffen, and Wahrenburg (2013)		58
	1	Spread over reference rate	Cross-country (excl. e.g., U.S.; Germany)	1991-2006 (August)	Godlewski and Weill (2011)		42
	1	AISD	U.S.	1993-2004	Ivashina (2009)		50
	1	AISD	U.S.; Canada	1996-2003	Harjoto, Mullineaux, and Yi (2006)		32
	1	Spread over reference rate	Cross-country	1990-2001	Focarelli, Pozzolo, and Casolaro (2008)		49

Table 43. Core literature synthesis for lender protection mechanisms.

In respect of collateral, Table 43 shows that the core literature strongly confirms the positive impact of collateral on pricing, whereas the appearance of covenants and guarantees is more subject to controversial discussion.

⁷⁶ The guarantor.

⁷⁷ The creditor.

⁷⁸ The debtor.

2.8.4 Tranching and loan type

Section 2.4.4 introduced the different loan types that are common in syndicated lending. Via tranching, different loan types inter alia term and revolving credit facilities can be incorporated into a single transaction. It is possible and not unusual in corporate lending that all creditors provide *pro rata* shares across tranches. However, also, different allocations are possible, where a commercial bank may act as lender under the revolving and, for example, a loan fund under the term loan tranche.⁷⁹

In that vein, **Maskara** (2010)—in a core study—assumed that lenders⁸⁰ carry different degrees of risk appetite as well as different funding opportunities and that dividing loans into multiple tranches might address these differences. In other words, via tranching, different credit risk structures can be integrated into one syndicated loan and, thus, meet different investor preferences.⁸¹

Based on a set of data on the U.S. syndicated loan market, the author found deals consisting of multiple tranches—for example, of revolving and term loans—to be priced below single tranche deals holding everything else equal. Maskara stated that tranching is a tool, which is predominantly used by more risky borrowers. Thus, multi-tranche-loans on average are circa 70 bp p.a. more expensive than single tranche loans, taking different levels of risk into account. Tranching is a valuable instrument for exchanging reduced borrowing costs for more speculative credit risk. Tranching is accomplished by lenders creating new assets with varying risk-return-profiles that create additional loan supply for different investor groups with interests in differing profiles. Table 44 summarises the main elements of the Maskara paper.

⁷⁹ This is common for LBO-financings.

⁸⁰ Bank- and non-bank lenders.

⁸¹ For example, via different seniority levels, different collateralisation levels, different maturities etc.

Maskara, P. K. (2010). Economic value in tranching of syndicated loans. Journal of Banking & Finance, 34, 946-955.										
Region/country	/country Borrower type Time frame Research philosophy Methods applied Pricing definition Syndicated loan data provider Sa		Sample size							
U.S.	J.S. Non-government, non-financial institution firms 1987-1999 Realism, Positivism Positives AISD Thomson Reuters LPC 23,721 tranches									
	Findings									
			Primary	subject findings						
> Riskier firms ar	e more likely to tal	ke loans with r	nultiple tranches.							
> The average cre	dit spread on a synd	licated loan wi	ith multiple tranch	es is higher than tha	at on non-tranched	loans.				
> After the risk cl	naracteristics of a tr	ranched loan h	as been accounted	l for, it is shown tha	t borrowers that a	re part of a tranche	d loan have lower			
spreads than in the	e case of non-tranch	ned loans.								
> Benefits of tran	> Benefits of tranching accrue primarily to riskier borrowers.									
	Important sub-thematic findings									
> Higher (better)	ratings lead to lowe	er pricing.								

Revolving loans carry lower spreads than do term loans.

Table 44. Summary table for Maskara (2010).

An interesting avenue for further research would be to conduct a similar study that separates corporate and LBO loans. The German corporate market is predominantly a *pro rata* bankonly market, where tranching is usually not being conducted to create different credit risk profile loans for bank and non-bank investors. Tranching is common, however, for LBOs and project financings, where institutional investor tranches, often term loan Bs,⁸² are structured into syndicated loans.

Table 45 displays the evidence from the core studies regarding different loan types in general.

⁸² See section 2.4.4.1.

Determinant	Pricing direction	Pricing definition	Borrower region under study	Time frame	Reference	Consensus within extant literature	Detailed discussion in table
		Sync	licated loan contract	ual features	i I		
			Tranching&loan t	vpes	1		
Tranched syndicated loan for average borrower	1	AISD	U.S.	1987-1999	Maskara (2010)		44
Tranched syndicated loan for risky borrower	Ļ	AISD	U.S.	1987-1999	Maskara (2010)		44
High number of tranches	1	AISD	U.S.	1993-2004	Ivashina (2009)		44
	Ļ	AISD	U.S.	1987-2002	Hale and Santos (2009)		62
	Ļ	AISD	U.S.	1987-1999	Maskara (2010)		44
Revolving credit facility	Ļ	Spread over reference rate	Euro-area	1999- October 2006	Barbosa and Ribeiro (2007)		38
	Ļ	AISD	U.S.	1998-2003	Schenone (2010)		61
	Ļ	Spread over reference rate	Europe	1990-2008	Christodoulakis and Olupeka (2010)		22
	1	AISD	U.S.; Europe	1992-2009	Berg, Saunders, Steffen, and Streitz (2017)		25
	1	AISD	UK	1996-2005	Mattes, Steffen, and Wahrenburg (2013)		58
Syndicated bridge term loan	1	Spread over reference rate	Euro-area	1999- October 2006	Barbosa and Ribeiro (2007)		38
	1	Spread over reference rate	U.S.	1987-2002	Santos and Winton (2008)		57
	1	AISD	U.S.	1987-2002	Hale and Santos (2009)		62
	1	AISD	U.S.	1998-2003	Schenone (2010)		61
	Ť	Spread over reference rate	Euro-area	1999- October 2006	Barbosa and Ribeiro (2007)		38
	Î	AISD	U.S.; Europe	1992-2009	Berg, Saunders, Steffen, and Streitz (2017)		25
Frankingtod town loop	1	AISD	U.S.; Europe	1992-2002	Carey and Nini (2007)		23
Synucaeu term Ioan	1	AISD	U.S.	1987-2002	Hale and Santos (2009)		62
	1	Spread over reference rate	Cross-country (excl. e.g., U.S.; Germany)	1991-2006 (August)	Godlewski and Weill (2011)		42
	1	AISD	U.S.; Canada	1996-2003	Harjoto, Mullineaux, and Yi (2006)		32
	↓	Spread over reference rate	U.S.	1987-2002	Santos and Winton (2008)		57

Table 45. Core literature synthesis for tranching and loan types.

As found by Barbosa and Ribeiro (2007) among others, RCFs are predominantly associated with lower spreads compared to term loans. Bridge loans as a sub-format of term loans are found to be most expensive, which is because these loans are usually used in takeover financings and serve as a kind of short-term interim financing that is issued with the intention of a refinancing (also often referred to as *take-out*) with a capital markets instrument such as a corporate bond. Bridge loans thus carry the inherent risk that anticipated refinancings may not materialise (Barbosa & Ribeiro).

2.8.5 Uses of proceeds

Acquisition financings in general are broadly found to be more expensive as compared to working capital financings.

Table 46 synthesises the core literatures findings regarding the different uses of proceeds for syndicated loans.

Determinant	Pricing direction	Pricing definition	Borrower region under study	Time frame	Reference	Consensus within extant literature	Detailed discussion in table
		Sync	licated loan contract	ual features	3		
			Uses of procee	ds			
Working capital	↓	AISD	U.S.	1987-2002	Hale and Santos (2009)		62
working capital	↓	AISD	U.S.	1998-2003	Schenone (2010)		61
Commercial paper back-up	Ļ	AISD	U.S.; Europe	1992-2002	Carey and Nini (2007)		23
Refinancing	Ļ	AISD	U.S.	1987-2002	Hale and Santos (2009)		62
	Ļ	Spread over reference rate	U.S.	1987-2002	Santos and Winton (2008)		57
Repayment	Ļ	Spread over reference rate	Cross-country (excl. e.g., U.S.; Germany)	1991-2006 (August)	Godlewski and Weill (2011)		42
	1	Spread over reference rate	U.S.; Canada; Europe	2003-2008	Alexandre, Bouaiss, and Refait- Alexandre (2014)		59
	1	Spread over reference rate	Euro-area	1999- October 2006	Barbosa and Ribeiro (2007)	_	38
	1	AISD	U.S.; Europe	1992-2002	Carey and Nini (2007)		23
Acquisitions	1	AISD	U.S.	1998-2003	Schenone (2010)		61
	1	AISD	UK	1989-2007	Saunders and Steffen (2011)		63
	¢	Spread over reference rate	Еигоре	1990-2008	Christodoulakis and Olupeka (2010)		22
	\rightarrow	Spread over reference rate	U.S.	1987-2002	Santos and Winton (2008)		57

 Table 46. Core literature synthesis for uses of proceeds.

Also, with regards to further possible uses of proceeds, extant literature tends to find similar patterns. The purposes "working capital", "commercial paper back-up", and "refinancing" are commonly associated with lower pricing.

2.9 Macroeconomic environment as pricing determinant

Syndicated lending has its roots in the 1960s and 70s, when it served as major tool for the financing of sovereign debt, mainly in emerging markets (Gadanecz, 2003). Hence, large strands of the early literature focused on macroeconomic factors influencing the functioning of the overall market. Today, the market for syndicated loans is mainly driven by corporate demand from industrialised countries, where such macroeconomic issues are likely to be less pronounced in comparison to emerging markets. However, a smaller segment of modern syndicated loan literature thematises macroeconomic issues. Such research prominently focuses on country-specific legal protection and on enforcement characteristics and it generally has concluded that the better these elements are from a lenders' point of view, the

lower loan pricings can be *ceteris paribus* (Bae & Goyal, 2009; Boubakri & Ghouma, 2010; Chava, Livdan, & Purnanamdam, 2009).

In a cross-country core inquiry, **Anagnostopoulou and Drakos (2016)** recently extended the perspective of the afore-cited studies by looking at macroeconomic factors of borrowers' home countries and how these possibly affect loan terms and conditions. In other words, country specific macroeconomic fundamentals like GDP-growth are examined additionally to the aforementioned institutional effects like legal protection and law enforcement. Anagnostopoulou and Drakos hypothesised that loan terms and conditions in general as well as pricings in particular differ with diverse macroeconomic conditions and they indeed found that macroeconomic performance does significantly drive syndicated loan terms and conditions. Borrowers located in countries with a relatively higher GDP-growth rate and/or lower unemployment rates are found to obtain lower loan pricings and more favourable non-price terms. Anagnostopoulou and Drakos thereby were able to confirm broadly the earlier findings of Christodoulakis and Olupeka (2010) covering the European Market. Table 47 summarises the main elements of Anagnostopoulou and Drakos's paper.

Anagnostopoulou, S. C., & Drakos, K. (2016). Bank loan terms and conditions: is there a macro effect? <i>Research in International Business and</i>										
Finance , 37, 269-282.										
Region/country	Borrower type	Time frame	Research philosophy	Methods applied	Pricing definition	Syndicated loan data provider	Sample size			
Worldwide	Non-financial firms	1990-2011	Realism, Positivism	> Regression analyses	AISD	Thomson Reuters LPC	69,920 tranches			
	Findings									
			Primar	y subject findings						
> Overall findings	indicate that (1) cr	oss-country va	riation is a signifi	cant determinant of lo	an T&C (2) tradit	ionally employed fi	rm-specific and			
loan-specific varial	bles significantly e	xplain loan Ta	&C and (3) year a	nd country variation in	macroeconomic	variables significant	ly explains the			
package of loan T&	S, an effect that is	distinct or inc	remental to any ir	nfluence that T&C rece	eive from firm-spe	ecific factors and me	ost importantly,			
country-specific in	stitutional factors,	with repercus	sions for creditor	protection and contra	ct enforcement.					
> Loan spreads are	lower for borrowe	ers from count	ries exhibiting a h	igher GDP growth rate	e.					
> Loan spreads are	lower for borrowe	ers from count	ries with lower un	employment rates.						
> Inflation in the b	orrowers home con	untry has no in	pact on spread.							
> Countries extern	al deficit and gove	rnment debt ha	we no impact on s	pread.						
			Important s	sub-thematic finding	s					
> Spreads are highe	er for firms with hi	gher debt.								
> Spreads are highe	er for firms with hi	gher risk, mea	sured by their dail	ly return standard devia	ation.					
> Spreads are highe	er for firms with m	ore intangible	capital.							
> Spreads are lowe	r for firms with me	ore tangible ca	pital.							
> Spreads are lowe	r for larger firms.									
> Spreads are lowe	> Spreads are lower for more profitable firms.									
> Rated firms have	lower spreads that	n unrated ones.								
> Among rated firm	ns, better rated firr	ns carry lower	spreads.							

Table 47. Summary table for Anagnostopoulou and Drakos (2016).

Determinant	Pricing direction	Pricing definition	Borrower region under study	Time frame	Reference	Consensus within extant literature	Detailed discussion in table					
Macroeconomic environment												
Economic cycle												
Dessession in homeown country	1	AISD	U.S.	1987-2002	Hale and Santos (2009)		62					
Recession in borrower country	Ť	Spread over reference rate	U.S.	1987-2002	Santos and Winton (2008)		57					
		Financ	ial information of bo	rrower cour	ntry							
Good solvency	Ļ	Spread over reference rate	Europe	1990-2008	Christodoulakis and Olupeka (2010)		22					
High degree of GDP growth	Ļ	AISD	Wordwide	1990-2011	Anagnostopoulou and Drakos (2016)		47					
	Ļ	Spread over reference rate	Europe	1990-2008	Christodoulakis and Olupeka (2010)		22					
		AISD	Wordwide	1990-2011	Anagnostopoulou and Drakos (2016)		47					
High debt to GDP ratio	\rightarrow	Spread over reference rate	Europe	1990-2008	Christodoulakis and Olupeka (2010)		22					
Trade balance	\rightarrow	Spread over reference rate	Europe	1990-2008	Christodoulakis and Olupeka (2010)		22					
High reserves to GDP ratio	Ļ	Spread over reference rate	Europe	1990-2008	Christodoulakis and Olupeka (2010)		22					
High aggregate risk	Î	Spread over reference rate	Europe	1990-2008	Christodoulakis and Olupeka (2010)		22					
Low unemployment rate	Ļ	AISD	Wordwide	1990-2011	Anagnostopoulou and Drakos (2016)		47					
Degues of inflation	\rightarrow	AISD	Wordwide	1990-2011	Anagnostopoulou and Drakos (2016)		47					
Degree of milation	\rightarrow	Spread over reference rate	Europe	1990-2008	Christodoulakis and Olupeka (2010)		22					

The following Table 48 displays the related evidence of the core literature.

Table 48. Core literature synthesis for macroeconomic environment.

Overall the findings in relation to macroeconomic environment are in line with common *a priori* beliefs. Related indicators of strength like good solvency and high GDP-growth rates are commonly associated with lower, whereas inter alia high aggregate risk is associated with higher pricing.

2.10 Syndicate structure as pricing determinant

2.10.1 General syndicate structural thoughts considering information asymmetries

Before focusing on syndicate structural elements and their influence on pricing, I provide some theoretical background information. As discussed earlier (2.4.3), numerous possible motivations and benefits exist to induce both lenders and borrowers to engage in syndicated loan transactions. Godlewski and Weill (2008, p. 207) however postulated the need for respective advantages to be "put into perspective with potential agency problems generated by syndicated loans". Sufi (2007) stated these agency problems to be ameliorated by the structure of the lending syndicates.

Agency costs result from the fact that various parties of lending syndicates must deal with different degrees of information quality and quantity (Godlewski, 2010a, 2010b; Mora, 2015). These costs addressed through possibly higher pricings might be harmful for the client's wealth (Godlewski et al., 2012). In bilateral lending relationships, informational frictions

solely occur between borrower and lender and, hence, can be mitigated more easily as compared to multilateral lending affiliations. In bilateral lending scenarios, banks originate and subsequently hold the entire loan on their balance sheet, exposing banks to the whole face value risk, but also incentivising the institution to conduct thorough *ex post* screening and monitoring (Ivashina & Scharfstein, 2010). In syndicated lending, however, agency problems are more prominent, as third parties, namely, additional participating lenders with varying degrees of seniority and information about the borrower⁸³—join the contract (Sufi, 2007). Informational frictions are even more severe with loans to smaller, opaque firms who do not have access to capital markets funding, where the role of financial intermediation in general becomes particularly important (Godlewski, 2010a; Kopecky & Xiao, 2013; Lee & Mullineaux, 2004; Mora, 2015).

As finance theory researchers in general did, various ones have thus focused on *hidden information via adverse selection* and *hidden action via moral hazard in effort* (Mora) in the syndicated loan market that Sufi (p. 630) labels a "promising empirical laboratory" for studying agency problems.

2.10.1.1 Adverse selection

Adverse selection issues arise *ex ante* because of information asymmetries between lead arranger(s) and participants (Chaudhry & Kleimeier, 2015; Lee & Mullineaux). According to Gadanecz et al. (2012), lead banks are likely to have proprietary information about borrowers, often because of a high degree of experience and/or a relationship bank status that produces proprietary information over time. In other words, long standing lending relationships with borrowers produce private information, which is pivotal when syndicates deal with opaque⁸⁴ borrowers. Hence, the lead bank might be motivated to use its "monopolistic" information advantage by syndicating larger portions of "bad" loans and "cherry-picking" larger portions of "good" loans as a benefit of its unique position (Bosch & Steffen, 2011; Chaudhry & Kleimeier; Godlewski & Weill, 2008; Ivashina, 2009). In other words, "lemons problems" might occur, situations when lead banks could behave opportunistically by deliberately exploiting participant banks (Gadanecz et al.).

⁸³ Therefore often referred to as being uninformed lenders.

⁸⁴ For example, small, unlisted, unrated clients.

2.10.1.2 Moral hazard

Besides general moral hazard issues in debt contracts between borrowers and lenders, where the latter might be incentivised to divert cash flows for private advantage or to engage in disproportionate risk taking (*borrower moral hazard*), in syndicated lending another form, the *syndicate moral hazard* is an issue (Bharath et al., 2011). As the participants delegate monitoring activities to the lead bank(s), moral hazard issues are conceivable (Bharath et al.; Mora, 2015).

The lead arranger or, theoretically, the delegated monitor—whose efforts are unobservable might be less motivated to monitor and screen the borrower properly, because, unlike in bilateral loan transactions, he only lends a fraction of the loan amount, a behaviour which can be defined as *shirking* (Godlewski, 2010a; Godlewski & Weill, 2008; Holmstrom & Tirole, 1997; Ivashina & Scharfstein, 2010). Dolvin et al. (2007) stated that a further syndicate moral hazard issue might be a so-termed *free-riding* behaviour of participant banks on the monitoring efforts of other syndicate members. According to Ivashina and Scharfstein the former phenomenon is related to possible wrongdoing in behaving opportunistically by the lead arranger(s), which could be anticipated by participant banks that in return claim higher loan pricings.

This type of behaviour would put a lead arranger's reputation at risk. Lead arrangers usually strive to keeping repeated, sustainable relationships with both borrowers and participant banks (Chaudhry & Kleimeier, 2015; Jones et al., 2005). Not surprisingly, lead-bank behaviour in the information asymmetry context raises empirical questions with a clear distinction between adverse selection and moral hazard being challenging as both effects might push pricing higher. Thus, Ivashina (2009) and others set moral hazard and adverse selection as similar whilst discussing information asymmetrical issues in the context of syndicate structure.

The majority of researchers find no evidence of opportunistic behaviour in general as syndicates tend to be structured in a manner that moderates informational frictions (Chaudhry & Kleimeier; Sufi, 2007). The composition of the lending syndicate—predominantly the retained share of the lead arranger—and its various aspects, repeated lending interactions, as well as the financial contract structures, are usually found being able to successfully address within-syndicate agency issues (Ball et al., 2008; Diamond, 1984; Francois & Missonier-Piera, 2007; Godlewski, 2010a, 2010b; Kopecky & Xiao, 2013; Sufi).

In that vein, if credit risk is high, Lee and Mullineaux (2004) and Sufi (2007) found that lead arrangers keep lending syndicates small to minimise adverse selection issues and to enhance their own monitoring incentives. Chaudhry and Kleimeier (2015) pointed out that syndicates for opaque and monitoring-intense borrowers tend to be more concentrated than others. This is consistent with the evidence found by Lee and Mullineaux to the effect that less risky borrowers on average have larger as well as more diffuse syndicates. These findings generally underline the certification role of banks (Boot, 2000; Casolaro, Focarelli, & Pozzolo, 2008; Focarelli et al., 2008).

Having discussed this necessary theoretical underpinning, I now focus on structural issues of syndicates and their influence on pricing.

2.10.2 Syndicate structure, information asymmetry, and pricing

In theory, the influence of the syndicate structure on loan pricing manifests either by a *diversification premium* required by a lead arranger for a relatively large retained loan share or by an *information asymmetry premium*, which participants require especially whilst lending to opaque borrowers (Champagne & Coggins, 2012). According to Ivashina (2009), in a market equilibrium, these effects should offset each other.

Based on that theoretical assumption, led by early asymmetric information literature such as the one of Leland and Pyle (1977), **Focarelli et al.**'s core study measured the influence of the lead bank share in syndicated loans on its pricing. In other words and based on the theory of delegated monitoring of Diamond (1984), the researchers tested the hypothesis that syndicated loan pricings are a decreasing function of the retained lead arranger share.

Based on a cross-country study for the period 1990 to 2001, Focarelli et al. confirmed this hypothesis. The negative relation between retained lead share and pricing is more pronounced for opaque borrowers. More theoretically, the researchers defined a *certification effect* by stating that lead arrangers, acting as delegated monitors, have the ability to mitigate information problems by contributing higher amounts to the overall funding. Table 49 summarises the findings of Focarelli et al.

Focarelli, D., Poz 335-349.	zzolo, A. F., & Cas	olaro, L. (2008). T	The pricing effect	of certification on s	yndicated loans. J	ournal of Monetar	ry Economics, 55,		
Region/country	Borrower type	Time frame	Research philosophy	Methods applied	Pricing definition	Syndicated loan data provider	Sample size		
Cross-country	All borrower types	1990-2001	Realism, Positivism	> Regression analyses	Spread over reference rate	Dealogic Loanware	2,951 loans		
			Fi	indings					
			Primary s	ubject findings					
> Banks have a ur	ique ability to mit	igate information	asymmetries by ve	erifying that syndicat	ted loans in which	a larger share of th	e facility is		
retained by the ar	ranger are judged a	s less risky by fin	ance providers, an	d therefore carry lo	wer interest rates.	-			
> The effect of co	ertification is grea	ter when the agence	y problems are m	ore severe, for exam	ple if the borrow	er is more opaque o	or the loan requires		
stricter monitorin	ng and due diligenc	e.							
			Important sub	o-thematic findings	•				
> Larger loans ca	rry lower rates.								
> Borrowers who	se financial condit	ion is more solid	(lower leverage ar	nd higher EBITDA) a	ind whose stock p	rice volatility is low	ver are less risky		
and are therefore charged lower spreads.									
> Spreads are an i	increasing function	n of duration.							
> Privately place	d facilities (club de	eals) have lower in	terest rates.						
> Facilities in which the subscribers are allowed to transfer part of the loan in the secondary market have relatively lower spreads.									

> The existence of an option to extend size or maturity, which favours the borrower and should therefore increase the cost of the loan, is instead found to lower the interest rate significantly, presumably because these options are made available to prime borrowers.

> Interest rates on unsecured loans carry lower spreads.

Table 49. Summary table for Focarelli et al. (2008).

Because of various missing loan information, the initial syndicated loan sample in Focarelli et al. (2008) consisted of 14,121 loans that, without a borrower-type distinction, needed to be reduced by almost 80% to 2,951 loans initially. To control for borrower characteristics, the researchers were forced to reduce the sample further by 1,879 to 1,072, for which financial statement data was available via the "Worldscope" database.

Confirmatively, Ivashina's (2009) core study found informational frictions within a lending syndicate to have an economic impact on pricing in the sense that higher lead bank lending amounts reduced the cost of borrowing on average by 4%. In other words, in line with theoretical predictions, uninformed participant banks require a premium for the potential wrongdoing of the lead bank. Table 50 summarises the main considerations of Ivashina's paper.

Ivashina, V. (2009). Asymmetric information effects on loan spreads. Journal of Banking & Finance, 92, 300-319.									
Region/country	Borrower type	Time frame	Research philosophy	ch Methods applied Pricing Syndicated loa Definition data provider		Syndicated loan data provider	Sample size		
U.S.	Non-regulated and non-financial firms	1993-2004	Realism, Positivism	> Regression analyses	AISD	Thomson Reuters LPC	23,087 loans		
				Findings					
			Prima	ary subject finding	S				
> An information	asymmetry problem	m within a syn	dicate has an i	important economic	impact on loan sp	oread.			
> A 9% increase in the share retained by the lead bank reduces the spread required by participants by approximately 29bp (4% of the total									
cost).									
			Important	t sub-thematic find	lings				
> Banks with larger and more diversified portfolios have a competitive advantage, as they can offer lower financing costs to the borrower.									
> An increase in t	he default probabili	ity of the borr	ower leads to	higher spreads.					
> The presence of performance-based pricings reduces spread.									
> Presence of collateral and financial covenants leads to higher spreads.									
> Repeated borrowers receive lower spreads.									
> High lead arrang	ger reputation leads	s to lower spre	ads.						
> High facility an	nount leads to lowe	r spreads.							
> Number of tranches positively affects pricings.									

Table 50. Summary table for Ivashina (2009).

Usually the syndicate structure is modelled using the size of the syndicate and the retained lead arranger share as proxies. For the U.S., the European, and the Asian syndicated loan market, the core study conducted by **Champagne and Coggins (2012)** first identified the main constituents of a syndicate's structural composition. They did so using a principal component analysis and subsequently measured the respective influence of these elements on AISD. In other words, the authors affirmed that studies solely relying on syndicate size and retained lead share overlook numerous further determinants. They identified six principal elements⁸⁵ as being directly or indirectly driving AISD:⁸⁶

- 1. Syndicate quality
- 2. Syndicate heterogeneity/lender-share concentration
- 3. Lead arranger quality
- 4. Syndicate geography
- 5. Relationship (lender-borrower; lender-lender)
- 6. Bank type

⁸⁵ Detailed definitions of these six elements can be found on page 1,140 in Champagne and Coggins (2012).

⁸⁶ Based on whole sample for U.S., Europe and Asia.

Champagne and Coggins (2012) found that higher-quality syndicates can diminish the information asymmetry premium and that less concentrated syndicates can be associated with lower loan-costs, consistent with the diversification premium theory. For transparent borrowers, reputable lead arrangers can earn a spread premium. Interestingly for the European market, Champagne and Coggins found a lesser sensitivity of pricing and syndicate structure. They took this as a possible explanation for "the pricing puzzle" discussed in 2.6.2. European syndicates tend to be more diffuse and consist of lower quality lead arrangers leading to lower concentration and subsequently to lower required information asymmetry premiums. Table 51 summarises the main elements of the Champagne and Coggins article.

Champagne, C., & Coggins, F. (2012). Common information asymmetry factors in syndicated loan structures. *Journal of Banking & Finance*, 36, 1437-1451.

Region/country	Borrower type	Time frame	Research philosophy	Methods applied	Pricing definition	Syndicated loan data provider	Sample size		
U.S.; Europe; Asia	unspecified	1998-2009	Realism, Positivism	 > Regression analyses > Principal component analyses 	AISD	Thomson Reuters LPC	20,336 loans		
Findings									
Primary subject findings									
> Identification o	f 6 principal comp	onents of synd	licate structure th	at account for more the	han 60 % of the va	riability in internat	tional syndicate		
structures.									
> All 6 componer	nts are significant of	determinants o	of loan spread, eith	her directly or indirec	tly through their is	mpact on other con	nponents.		
> Lead share rete	ntion, previous len	der-borrower	relationships and	syndicate quality are	shown to be bilate	rally related to loa	n spread.		
> Opaque or emer	rging countries bo	rrowers have l	ower quality synd	icates and leads, weak	er previous relation	onships with the lea	nders and more		
homogeneous or	concentrated synd	icates.							
> Higher quality s	syndicates with stre	onger cohesio	n can diminish the	e information asymme	etry premium.				
> Heterogeneous	or less concentrat	ed syndicates	are related to low	er spreads, which is c	onsistent with a re	duction of the dive	ersification		
premium.									
> Lead quality is a	a significant and po	ositive determ	inant of spread on	ly for transparent bor	rowers.				
> For opaque born	rowers the benefit	s of a higher-q	uality lead offset	the certification pren	nium.				
> Structure comp	onents differ regio	onally.							
> US borrowers a	re associated with	syndicates and	d leads of higher of	quality than European	or Asian borrower	rs.			
> Syndicates of European borrowers are based on weaker lender-borrower relationships and are the most heterogeneous and diffuse.									
> Loan spreads are less sensitive to syndicate structure on the European market than on the American market.									
> Pricing discour	t in Europe observ	ed in the liter	ature can be expla	ined by different synd	licate structures (1	nore diffuse, lowe	r quality syndicates		
and leads)> lov	ver concentration a	and certification	on premiums.						
			Important s	sub-thematic finding	gs				
> European borrowers are associated with lower pricings.									

Table 51. Summary table for Champagne and Coggins (2012).

The findings of Champagne and Coggins, especially with respect to the reported differences of European versus U.S. syndicates, becomes important in connection with the qualitative fieldwork to be described herein. However, likewise to my reported critique regarding other studies relying on disproportionally small European samples, I warn not to over-interpret respective findings, especially with regard to pricing, a comment that also holds for a core study conducted by **Godlewski et al. (2012)**. Applying network theoretical methods, Godlewski et al. studied the network structure of the French syndicated lending market and concluded this market to be a "small world" with large local density and short social distances between lenders allowing an efficient information flow amongst lenders. In other words,

information asymmetries are less severe in such a small world, a factor that benefits borrowers. Further, the authors found that lender experience and reputation reduces syndicated loan pricings in France. There is some controversy reported in the literature concerning the influence of reputation on borrower cost, with McCahery and Schwienbacher (2010) stating that opaque borrowers need to pay a reputation premium, which contradicts the finding of Champagne and Coggins (2012) that only transparent borrowers need to pay a premium for reputable lead arrangers.⁸⁷ Table 52 summarises the main elements of the Godlewski et al. (2012) article.

Godlewski, C. J., Sanditov, B., & Burger-Helmchen, T. (2012). Bank lending networks, experience, reputation, and borrowing costs: empirical evidence from the French syndicated loan market. <i>Journal of Business Finance & Accountine</i> , 39(1), 113-140.									
Region/country	Borrower type	type Time frame Rephi		Methods applied	Pricing definition	Syndicated loan data provider	Sample size		
France	Non-financial firms	1992-2006 Realism, Positivism		 > Social network analyses > Regression analyses 	Spread over reference rate	Thomson Reuters LPC	924 loans		
Findings									
			Primary s	ubject findings					
> A syndication ne	etwork becomes "s	mall-worldish" wi	th time.						
> A central syndic	ate reduces loan s	pread.							
> The presence of	local lenders or a	concentrated syn	dicate does not ha	ve any significant in	fluence on loan sp	read.			
> The presence of	league table lende	ers and local leagu	e table lenders has	s a significantly nega	ative effect on loa	n spread.			
> League table reputation is an important syndicate feature to reduce loan spread.									
Important sub-thematic findings									
> Loan size has a negative impact on spread.									
> Maturity has a positive impact on spread.									

Table 52. Summary table for Godlewski et al. (2012).

In line with the "small world" argumentation of Godlewski et al., **Wu et al.** (2013)—in another core study—established longer relational distances between lenders leading to higher AISD, but, on the other hand, to minimise the risk of syndication failure. The authors stated that in short relational distances between lenders, borrowers freely share information with each other and that, thus, lead banks might be less-strict in their price setting, leading to a tendency to under-price loans. This, however, is not satisfying all lenders' "price-needs", which can lead to increased risks of failed syndications.

If relational distances appear considerable, *cascade-effects* are triggered, characterised by imperfect communication between related parties. Here, banks might rely on actions of fellow syndicate banks without being fully informed about the borrower. In other words, if one bank agrees to participate in a syndicated loan, a second bank and a third bank are likely to follow, sometimes triggering a positive cascade. This positive cascade is only possible, however, if

⁸⁷ See section 2.7.4.

pricings are set relatively expensively and the likelihood of bank commitments is high. Otherwise, negative cascades might be triggered. Logically, if positive cascade effects are at work, pricings are higher, but syndication failures of a lower probability. Table 53 summarises the main elements of the article by Wu et al. (2013).

Wu, W., Chang, H., Suardi, S., & Chang, Y. (2013). The cascade effect on lending conditions: evidence from the syndicated loan market. Journal of										
Business Finance & Accounting, 40, 1247-1275.										
Region/country	gion/country Borrower type Time frame Research philosophy Methods applied Pridefi		Pricing definition	Syndicated loan data provider	Sample size					
U.S.	unspecified	1990-August 2010	Realism, Positivism	 > Social network analyses > Regression analyses 	AISD	Thomson Reuters LPC	65,390 tranches			
			Mai	n Findings						
			Primary	subject findings						
> Ex post observe	ed interest rate is l	higher and the prol	pability of syndic:	ation failure is lower,	when potential lea	nders can only obse	rve the decisions			
of their predecess	sors instead of bein	ng able to freely c	ommunicate with	each other.						
> Evidence that the	ere is a cascade ef	ffect in lending co	nditions.							
> Relational dista	nce is positively re	elated to loan spre	ad and the require	ements for collateral a	and guarantees, bu	t negatively related	to the probability			
of syndication fai	lure.									
> If potential lend	lers can freely sha	re the borrowers' i	nformation with e	each other, then the pr	obability of syndi	cation failure is alv	vays positive. This			
is because the loa	n spread, as propo	sed by the lead bar	nk, may not fully i	eflect the information	n held by all poter	tial lenders. The pr	obability that the			
lead bank underes	timates the loan sp	pread is always pos	sitive.							
			Important su	b-thematic findings						
> Loan spreads ar	e negatively relate	d to loan amount.								
> Loan spreads ar	e negatively relate	d to maturity.								
> Loan spreads for secured / guaranteed loans are significantly higher.										
> Loan spreads for	r loans with finance	cial covenants are	lower.							
> Larger syndicates lead to lower spreads.										
> Larger borrowe	rs pay lower sprea	ds.								
> More profitable	e borrowers pay lo	wer spreads.								

Table 53. Summary table for Wu et al. (2013).

As stressed in my earlier critiques of certain papers, a distinction of several syndicated loan asset classes would be needed to ensure non-diluted results. This is particularly important with respect to the work of Wu et al., who base their analyses on underlying assumptions of risk-neutral lead banks and rational borrowers, which might hold for LBOs or project financings, but are at least to be questioned in general syndicated corporate financing arrangements.

2.10.3 Synthesis: syndicate structure, information asymmetry and pricing

Table 54 displays the synthesised findings with respect to syndicate structural issues.

Determinant	Pricing direction	Pricing definition	Borrower region under study	Time frame	Reference	Consensus within extant literature	Detailed discussion in table				
			Syndicate struct	ture							
Syndication mode											
Club deal	Ļ	Spread over reference rate	Cross-country	1990-2001	Focarelli, Pozzolo, and Casolaro (2008)		49				
			Number of lend	lers							
	1	Spread over	Cross-country (excl.	1991-2006	Godlewski and Weill (2011)		42				
	-	reference rate	e.g., U.S.; Germany)	(August)	Calomiris and Pornroinangkool						
	↓	AISD	U.S.	1992-2002	(2009)		60				
	Ļ	AISD	U.S.	2010	(2013)		53				
High	Ļ	Spread over reference rate	Cross-country	2003-2007	Kim, Surroca, and Tribó (2014)		29				
ingii	1	Spread over reference rate	U.S.; Canada; Europe	2003-2008	Alexandre, Bouaiss, and Refait- Alexandre (2014)		59				
	1	AISD	U.S.; Europe	1992-2002	Carey and Nini (2007)		23				
	\rightarrow	Spread over reference rate	U.S.	1987-2002	Santos and Winton (2008)		57				
	\rightarrow	Spread over reference rate	Europe	1990-2008	Christodoulakis and Olupeka (2010)		22				
			Information asymm	netries			_				
Information asymmetries within in syndicate	t	AISD	U.S.	1993-2004	Ivashina (2009)		50				
Relational distance (low degree of information flow between lenders)	1	AISD	U.S.	1990-August 2010	Wu, Chang, Suardi, and Chang (2013)		53				
Participant lender facing information asymmetries to borrower	†	AISD	Worldwide	1993-2006	Gadanecz, Kara, and Molyneux (2012)		56				
			Retained lead s	hare	((-*-=)						
High for transparent borrower	Ļ	AISD	Worldwide	1993-2006	Gadanecz, Kara, and Molyneux (2012)		56				
	Ļ	Spread over reference rate	Cross-country	1990-2001	Focarelli, Pozzolo, and Casolaro (2008)		49				
High for opaque borrower	†	AISD	Worldwide	1993-2006	Gadanecz, Kara, and Molyneux (2012)		56				
	Ļ	Spread over reference rate	Cross-country	1990-2001	Focarelli, Pozzolo, and Casolaro (2008)		49				
High in general	Ļ	AISD	U.S.	1993-2004	Ivashina (2009)		50				
	1	Spread over	U.S.; Canada; Europe	2003-2008	Alexandre, Bouaiss, and Refait-		59				
			Position within ne	twork			-				
Central		Spread over	France	1992-2006	Godlewski, Sanditov, and Burger-		52				
	+	reference rate		1772 2000	Helmchen (2012)		52				
	1		Quality		1						
High	↓↓	AISD	U.S.; Europe; Asia	1998-2009	Champagne and Coggins (2012)		51				
			Concentratio	n	1						
High	1	AISD	U.S.; Europe; Asia	1998-2009	Champagne and Coggins (2012)		51				
	\rightarrow	Spread over reference rate	France	1992-2006	Godlewski, Sanditov, and Burger- Helmchen (2012)		52				
			Syndicated loan h	istory							
Existence of identical previous syndicate whilst lending during 2008 financial crisis	↓	Spread over reference rate	U.S.; Canada; Europe	2003-2008	Alexandre, Bouaiss, and Refait- Alexandre (2014)		59				

Table 54. Core literature synthesis for syndicate structure.

Table 54 indicates that syndicates are likely to be affected by information asymmetries that can be mitigated by the syndicate structure, especially by the retained lead share as well as by certain pricing premiums required by participants. Interestingly, in comparison to the U.S., the syndicate structural issues in light of asymetric information and its impact on pricing seem to be less severe in Europe as found by Champagne and Coggins (2012). Table 54 also underpins that syndicate structural discussions given their influence on pricing are controversial with partially contradicting and/or understudied phenomena. It is reasonable to assume that besides the information-asymmetrical theories, other forces might be at work that influence a syndicate's structure and its interrelation with pricing.

2.11 Lender-borrower relationship as pricing determinant

2.11.1 General relationship lending thoughts considering information asymmetries

Similar to syndicate structural discussions, relationship lending in general has been a widely studied topic that had led to mixed intellectual approaches and has produced diverse conclusions. Relationship lending theory and research is essentially grounded on assumptions regarding informational frictions in the sense that lending relationships might be beneficial for financiers due to their unique ability to mitigate those asymmetries.⁸⁸ Extant literature measures a lender-borrower-relationship-deepness by the history of previous interactions,⁸⁹ distance (proximity), exclusivity, and cross-product synergies. As early, information-based, financial intermediation theory suggests, banks produce private information via due diligence efforts to mitigate adverse selection prior to making loan decisions (Boot & Thakor, 2000). Further, financiers constantly monitor borrowers to be protected against borrower moral hazard (Diamond, 1984). Aided by repeated interactions with the borrower and the deepening of the lender-borrower relationship, a relationship lender constantly produces reusable, proprietary information leading to an *ex post* information monopoly, which *de novo* uninformed outside lenders not share. According to Diamond (1991), a bank's costs to conduct due diligence are a decreasing function of relationship length. This leads to an adverse selection issue for these non-lenders and might deter competition (Sharpe, 1990), as Figure 6 exemplifies.



Figure 6. Information-based relationship lending model.

⁸⁸ See sections 2.3 and 2.10.1.

⁸⁹ For example, via the number of previous loan transactions, length of relationship, total amounts loaned to a client over time.

Logically, as relationships deepen over time, information asymmetries shrink and the costs of information production drops (Hainz & Wiegand, 2013). In other words, relationship lending leads to scope economies or so-called *information rents* in mainly soft and private information production.

According to Udell (2008), relationship lending can be defined as a lending technique that predominantly depends on non-quantifiable soft information. In contrast, *transaction-based* techniques, such as *financial statement lending* or *asset-based lending*, mostly rely on hard and quantifiable information, such as financial data. Hence, relationship lending only creates value if severe information asymmetries exist.

Thus, a huge strand of literature builds on these theoretical ideas and wonders if the presented cost-savings are (partly) shared with borrowers and result in more favourable loan contract terms in general and lower pricings in particular. In other words, loan pricing can either be relatively high or low if relationships were deep.⁹⁰ This empirical question is of interest especially regarding bilateral lending relationships in the small business context, where (soft) information production is generally more costly and valuable (Berger & Udell, 1995; Grunert & Norden, 2012; Udell). It is also of interest for large syndicated loans, where participant banks⁹¹ expect a relationship lead lender to perform a superior *ex ante* due diligence and an *ex post* monitoring compared to a possible non-relationship lead lender. Hence, participants might subsequently accept lower pricings.

In that context, it important to recall the original definition of syndicated lending, according to which only lead arrangers maintain relationships with borrowers, whereas participant lenders are uninformed, arm's length investors. Under this theoretical constellation, the lead arranger monitors the borrower on behalf of these participants (Sufi, 2007). In that vein, Hale and Santos (2009) stated that syndicated loans in which only one bank acts as lead arranger carry similar financing patterns to bilateral lending agreements.

Extant literature provides competing evidence with some researchers reporting lending relationships to be beneficial (Boot & Thakor, 1994; Bris & Welch, 2005) for borrowers and others not. Findings favouring the latter are asserted to be so-called *lock-in-* or *hold-up-effects* leading to high *switching costs*. Here, relationship lenders do not pass on the benefits to the

⁹⁰ See Figure 6.

⁹¹ Uniformed outside lenders.

borrower—being informationally captured⁹²—and, thus, extract rents (Houston & James, 1996; Rajan, 1992; Sharpe, 1990). In other words, "If the borrower seeks to switch to a new funding source, it is pegged as a lemon regardless of its true financial condition" (Santos & Winton, 2008, p. 1,315). Logically, Mattes et al. (2013) stated that these switching costs are a sufficient condition for banks to extract rents. In that context, Kim, Kliger, and Vale (2003) interpreted switching as the related costs of asymmetric information. In summary, one can state, that the overall scholarly debate is about relationship benefits versus possible lock-in-effects under theoretical information asymmetry assumptions.

2.11.2 Relationship lending, information asymmetry, and pricing

Largely, relationship lending literature focuses on small- and medium-sized enterprises, which tend to be opaque by nature and tend to issue external funding by means of bilateral bank loans.⁹³ Here, banks need to rely overwhelmingly on soft information by evaluating borrowers creditworthiness as scale and scope of hard information are limited compared to large companies (Grunert & Norden, 2012; Ortiz-Molina & Penas, 2008).

2.11.2.1 Syndicated relationship lending and pricing in context of general theoretical thoughts

A smaller number of inquiries focused on syndicated lending—the heart of my study whereas others simply lumped bilateral and syndicated loans together, thus risking the dilution of results. One strand of this literature focused on the general discussion of relationship lending's benefits versus related costs from a borrower's perspective.

By screening large enterprises, **Bharath et al.'s (2011)** core research examined the effects of prior lending-relationships on pricing and other non-price-related terms based on a loan set to publicly listed U.S. non-financial firms. Following Boot and Thakor (1994), Bharath et al. (p. 1,195) found that relationship lending leads to lower AISD, thus confirming the hypothesis, "Economies in information production due to the repeated interaction between the same lender and borrower are at least partly reflected in the price of loans".

⁹² According to Rajan (1992), relationship banks know whether a firm is going to succeed or not, whereas outside *de novo* lenders only anticipate this, leading to a demand of higher spreads, resulting in switching costs. In other words, the relationship bank is fully informed and the non-relationship bank completely uniformed.

⁹³ Among others, Stein (2014), by examining firms of annual sales levels of \in 50 million to \in 150 million, found evidence for both hold-up and relationship benefit hypothesis. Borrowing costs tend to fall with relationship strength but tend to rise with its duration.
Further, the authors found that informationally opaque borrowers benefit more from relationships, disproving the lock-in hypothesis of, for example, Sharpe (1990) and Rajan (1992), under which opaque borrowers especially should either experience no benefit or, at least, less benefit from relationship lending. Next, in line with Boot and Thakor (2000), Bharath et al. (2011) found that very large borrowers⁹⁴ mark a point at which pricings of relationship and non-relationship facilities become indistinguishable. As these very large borrowers are likely to be the most informationally transparent, this finding underlines the assumption that relationship lending is valuable tool for mitigating information frictions like *ex ante* adverse selection and *ex post* moral hazard and loses its value creation potential in "full" transparency situations. Table 55 summarises the main elements of the Bharath et al. article.

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

Stuales , 24, 114	1-1203.						
Region/country	Borrower type	Time frame	Research philosophy	Methods applied	Pricing definition	Syndicated loan data provider	Sample size
U.S.	Non-financial publicly listed firms	1986-2003	Realism, Positivism	Regression analyses	AISD	Thomson Reuters LPC	21,632 tranches
]	Findings			
			Primary	subject findings			
> Relationship lo	ans are marked by	better spreads	and lower collate	ral, they also tend to	o be associated wi	th greater debt avai	lability.
> Repeated borro	wing from the sam	ne lender trans	lates into a 10 - 1'	7 bp p.a. lowering of	f loan spreads.		
> This provides e	vidence that hypoth	hesized econo	mies in information	on production due t	o repeated interac	tion between the sa	ame lender and
borrower, are at l	east partly reflecte	ed in the price	of loans.				
> When informat	ion opacity of a bo	rrower increa	ses, the observed i	reduction in the cos	t of borrowing due	e to a relationship l	becomes greater.
> Spreads charge	d for relationship l	oans and nonr	elationship loans l	become indistinguis	shable if the borrow	wer was in the top 3	30 when ranked by
asset size. Simila	r dissipation of rel	ationship bene	efits occurs if the	borrower has a rate	d public debt or is	part of the S&P 50	00 index.
> Past relationshi	ps can mitigate sy	ndicate moral	hazard issues by s	erving as a commit	ment to monitor.		
> Relationship lo	ans are less likely	to be secured.					
			Important s	ub-thematic findin	ıgs		
> Larger borrowe	ers pay lower sprea	ds.					
> Lower leverage	, higher profitabili	ty and higher of	current ratio are as	ssociated with lowe	r spreads.		
> Longer maturity	y loans carry lower	r spreads.					
> Secured loans of	arry higher spread	s.					
> Loans with cow	enants carry higher	r spreads.					

Table 55. Summary table for Bharath et al. (2011).

One might offer the critique that Bharath et al. only focused on stock-listed U.S. firms, for which a high degree of transparency can be expected across the size spectrum. Studying relationship lending phenomena given information asymmetrical assumptions is likely to be more valuable if privately held companies with the potential for severe opacity were included.

⁹⁴ The top 30% ranked by asset size.

Using indicators such as lending frequency and duration between borrowers, lead arrangers, and participant banks, **Gadanecz et al.'s (2012)** core study found that participant lenders—especially once borrower opacity becomes more pronounced—require a pricing premium. This is at first view contradictory to the results of Bharath et al. (2011), but is, however, likely to be explained by the fact that Bharath et al. studied large stock-listed firms whereas Gadanecz et al.—in line with my critical remark—did not restrict their sample to stock-listed companies. By counterbalancing these information asymmetries, the subsistence of an external rating makes the pricing premium disappear. Further, even for opaque⁹⁵ borrowers, the authors found that repeat lending-relationships of participant banks with the borrower make them graduate from uninformed to informed lenders willing to accept lower pricings given the diminished degree information asymmetries. These cost benefits resulting from repeated interactions between borrower and participants are not found to be significant for rated borrowers. Table 56 highlights the main elements of Gadanecz et al.

Gadanecz, B., Kara, A., & Molyneux, P. (2012). Asymmetric information among lending syndicate members and the value of repeat lending.
International Financial Markets, Institutions and Money , 22, 913-935.

miernanonai Fin	mernanonal Tinancial markets, institutions and money, 22, 915-955.											
Region/country	Borrower type	Time frame	Research philosophy	Methods applied	Pricing definition	Syndicated loan data provider	Sample size					
Worldwide	Non-financial firms	1993-2006	Realism, Positivism	> Regression analyses	AISD	Dealogic Loanware	5,867 loans					
			I	Findings								
			Primary	Subject Findings								
> If participant ba	> If participant banks have information inferiority in the syndicate, they demand a higher spread due to information asymmetries between them											
and the borrower.												

> Results demonstrate the bargaining power of participant banks on the pricing of syndicated loans; they have the ability to influence pricing depending on their own information set about the borrower.

> For less opaque borrowers, an experienced and well-known arranger has an impact on the pricing and lowers spread.

> Reputation effects on pricing are not significant for opaque borrowers.

> There is a negative relationship between share retained by the lead and the spread (only rated).

> For opaque borrowers, there is a positive relationship between retained lead share and the spread.

> Arrangers retain a higher share of risky loans, which is more likely for opaque borrowers.

> The certification effect of the credit rating together with the arrangers' reputation is strong enough to lower spreads, whereas the arrangers' reputation by itself does not guarantee lower spreads.

Table 56. Summary table for Gadanecz et al. (2012).

Gadanecz et al. other than Bharath et al. used direct measures of information asymmetries, namely, the number of previous relationships, and did not solely look at the lead arrangers' relationship with a borrower, but measured the influence of repeated interactions between participants and borrower. Furthermore, their sample is likely to be more eligible to deliver incremental inside into the debate, as Gadanecz et al. did not solely focus on listed companies. On the other hand, a possible drawback to the sample is that the authors used a worldwide and

⁹⁵ Meaning here: non-listed and non-rated.

rather small sample,⁹⁶ which might lead to diluted results, an issue that is only cursorily acknowledged in the robustness checks.

2.11.2.2 Syndicated relationship lending and pricing in context of economic cycles

Another body of literature focused on relationship lending and its impact on credit supply and its terms and conditions in times of financial crises, when banks are supposed to face higher degrees of information asymmetry. In other words, in times of crises, information matters even more that it does during "normal" cycles, and the role of relationship lending is hence likely to become more important in that context as well. Thus, this literature strand somewhat extends my discussion of 2.9, where general macroeconomic conditions and their impact on pricing were thematised.

As enterprises carry higher bankruptcy risks during times of recession and economic turmoil, banks enjoying information advantages might be enabled to then exploit clients even more by setting loan pricings higher than justified by the increased risk of failure alone. Based on survey data for 1,139 firms from the manufacturing sector, Hainz and Wiegand (2013) found that firms using relationship lending were less negatively influenced by the financial crisis around 2008/2009 in general, without finding, however, clear directions regarding the impact on loan pricing specifically.

In their core research, **Santos and Winton (2008)** compared bank loan pricings for enterprises with access to public debt markets with those that were dependent on banks, especially in a recession context. In line with the hold-up hypothesis, the authors found that raising loan pricings is more pronounced for bank-dependent borrowers than for bank-independent borrowers⁹⁷ during recessions. In other words, borrowing from a relationship lender is less attractive in recessions than in non-recessions if the firms in question happened to be relatively opaque. Table 57 summarises the main elements of the Santos and Winton article.

⁹⁶ The loan sample of Gadanecz et al. (2012) is composed as follows: U.S.: 3,762 loans; Asia/Pacific: 1,041 loans; Europe: 844 loans; Latin America/Caribbean: 132 loans; Africa/Middle East: 88 loans.

⁹⁷ That are firms with access to the public bond market.

Santos, J. A. C., &	winton, A. (2008	3). Bank loans, bor	nds, and informatio	on monopolies acros	s the business cyc	ele. The Journal of	Finance , 63, 1315
Region/country	Borrower type	Time frame	Research philosophy	Methods applied	Pricing definition	Syndicated loan data provider	Sample size
U.S.	Stock-listed non- financial firms	1987-2002	Realism, Positivism	> Regression analyses	Spread over reference rate	Thomson Reuters LPC	13,846 tranches
			Fi	ndings			-
			Primary s	ubject findings			
 > Spreads rise in it > Spreads in receive > Evidence suggere > Firms that have most recent bond 	recessions. ssions rise by a gre sts that informatio issued any bond, p was publicly issue	eater degree for ba nal hold-up effect ay 75bp less than ed, pay 102 bp less	ank-dependent firm s do exist. other firms; firms than other firms.	ns. that have issued pub	lic bonds, pay 90	bp less than other fi	irms; firms whose
> During recession	ons, spreads are on	average 20 bp hig	her than during exp	pansions. Firms that	have issued public	c bonds experience	only a 6 bp rise in
spreads during a r	ecession, unlike of	ther borrowers wh	o face an increase	of 31bp.			
			Important sub	-thematic findings			
 > Spreads are high > Older firms, lar > A greater merica 	her for bank-depen ger firms with more	ident firms than for re tangible assets j	r firms with access pay significantly lo	s to public bond mar ower spreads.	·kets.		
 > Most of the pro > Term loans have 	exies for default ris lower spreads that	as to lower spread sk, profit margin, i an RCFs.	nterest coverage, l	everage and Z score	have positive imp	pact on spreads.	
> Bridge loans ca	rry higher spreads	than normal term	loans.				
> Takeover purpo	se has no impact o	n spreads.					
> Guarantees and	collateral lead to l	higher spreads.					
> Longer maturiti	es lead to lower sp	preads.					
> Number of lend	lers in the syndicat	e have no impact of	on spread.				

> Larger loans have lower spreads.

> Renewals have lower spreads.

> Firms with high leverage that are bank-dependent pay higher spreads than firms with high leverage that have market access.

> Stock market volatility leads to higher spreads.

Table 57. Summary table for Santos and Winton (2008).

Because macroeconomic shocks increase adverse selection and likewise the lock-in risk for opaque borrowers, **Mattes et al. (2013)**—in their core study—found that undercapitalised banks exploited their information advantage over "captured" opaque firms, which face high switching costs. This effect is only observed in times of economic recession. Well-capitalised banks in contrast are not-found to extract such rents. Table 58 summarises the principle elements of Mattes et al.

Mattes, J. A., Stef	fen, S., & Wahren	burg, M. (201	3). Do informatio	on rents in loan sprea	ds persist over th	e business cycles?	Journal of		
Financial Services Research , 43, 175-195.									
Region/country	Borrower type	Time frame	Research philosophy	Methods applied	Pricing definition	Syndicated loan data provider	Sample size		
UK	Non-financial firms	1996-2005	Realism, Positivism	> Regression analyses	AISD	Thomson Reuters LPC	988 tranches		
Findings									
			Primar	y subject findings					
> Capital-constrai	nt banks exploit th	eir informatio	on monopolies ov	er borrowers with hi	gh costs for swite	ching lenders by cha	arging higher loan		
spreads than their	well-capitalized p	eers (weak ba	nk effect) (only in	n recessions).					
> There are inform	nation monopolies	s that enable w	eak banks to char	rge higher spreads to	borrowers with h	igh switching costs			
> These are mainl	y driven by externa	al events, such	as a recession.						
> These shocks af	fect at least some	banks who inc	rease their bad de	ebt ratios: thus they d	charge higher spre	eads from borrower	s with high		
switching costs.									
> Strong banks ter	nd not to exploit be	orrowers durin	ng such times and	want to strengthen t	heir relationships	in expectation of h	igher future		
income.									
			Important s	sub-thematic findin	gs				
> The smallest bo	rrowers pay the la	rgest spreads.	-		-				
> Largest borrowe	ers pay lowest spre	eads.							
> Collateralised le	oans have higher s	preads.							
> Inclusion of cov	enants increases 1	oan spreads.							

> Term loans carry higher spreads.

Table 58. Summary table for Mattes et al. (2013).

Like several other studies, Mattes et al. (2013) revealed issues regarding public data availability. The authors started with a sample of 5,063 tranches and, after excluding those with missing information, they were left with only 988 tranches, i.e., roughly 20% of the overall sample.

Relatedly, the core study conducted by **Alexandre et al. (2014)** analysed whether past relationships and borrower experience in the market for syndicated loans are mitigating elements for deteriorating terms in times of economic turmoil.⁹⁸ The authors found that frequent syndicated loan borrowings *per se* did not mitigate term deteriorations in crises. Banks might perceive an overuse of loans as higher risk.⁹⁹ However, a previous relationship with the lead arranger in particular and with the other syndicate members in general leads to more favourable pricings in such an environment. This beneficial tendency is even stronger, when pre- and post-crisis syndicates are identical. Logically, during the financial crisis around 2008/2009, borrower-benefits resulting from relationship lending tend to outweigh possible lock-up effects, which is a finding that contradicts the argumentation of Santos and Winton (2008). Table 59 summarises the main elements of Alexandre et al.

⁹⁸ Here the 2008/2009 financial crisis.

⁹⁹ Due to the higher indebtedness; higher leverage.

Alexandre, H., Bo	uaiss, K., & Refait	-Alexandre, C	. (2014). Banking	relationships and sy	ndicated loans dur	ing the 2008 finan	cial crisis. Journal		
of Financial Serv	ices Research , 46	5,99-113.							
Region/country	Borrower type	Time frame	Research philosophy	Methods applied	Pricing Definition	Syndicated loan data provider	Sample size		
U.S.; Canada; Europe	No differentiation	2003-2008	Realism, Positivism	> Regression analyses	Spread over reference rate	Thomson Reuters LPC	4,044 tranches		
]	Findings					
			Primary	subject findings					
 > Firms with a prend to be a pr	 > Firms with a previously developed relationship with a lead bank obtained lower spread and a longer maturity during the financial crisis but did not benefit from longer maturities. > If the lead bank of a syndicate in 2008 was a Bookrunner for a previous syndicated loan to the firm, this helps to decrease the spread by 14bps. 								
> Moreover, if the	e syndicate is the s	ame as before	, the spread decre	ases by 57 bps and th	he maturity increas	ses by more than ha	alf a year.		
> Indebtedness in	the syndicated loa	n market has c	lrawbacks: each pa	ist deal increases the	e spread by 8bp and	d decreases the ma	turity by 1.8		
months.	t homorrod from 2	002 2007 has	a maaitiya affaat	on onnood					
	a borrowed from 2	2005-2007 has	a positive effect	on spreau.					
			Important su	b-thematical findi	ngs				
> A longer maturi	ty is linked to a hig	gher spread.			-				
> Higher amounts	are linked to lowe	er spreads.							
> Better Ratings l	ead to lower sprea	ds.							
> The fact that a fi	rm is listed enable	es it to borrow	higher amounts, b	out the spread and the	e maturity are unaf	ffected by the listin	ıg.		
> Inclusion of fina	ancial covenants re	educes spread,	makes maturities	longer but also lowe	ers amounts.				
> A high reputatio	n of Lead Arrange	rs leads to hig	her spreads.						
> M&A purpose le	eads to higher spre	eads.							
> Larger Syndicat	es lead to higher s	preads.							
> Higher Lead sha	res lead to higher	spreads.							
> North American	firms are charged	l higher spread	ls than European fi	irms and their matur	ities are shorter bu	ut their sizes are la	rger.		
> Past relationshi	ps between the syn	ndicate have a	negative impact or	n spread.					
> Temporal stabil	ity of the syndicate	e reduces the l	oan spread as doe	s past relationship w	ith the lead bank.				

Table 59. Summary table for Alexandre et al. (2014).

Like several studies that I have discussed in the course of the literature review, Alexandre et al. (2014) did not differentiate between the various syndicated loan asset classes and further faced similar issues with their sample¹⁰⁰ compared to other works that (partly) cover Europe.

2.11.2.3 Syndicated relationship lending and pricing in context of other financing products and sources

Conducting meta-analyses, Kysucky and Norden (2016) recently provided a comprehensive overview of outstanding relationship lending studies¹⁰¹ for the U.S., Europe, Asia, and Latin America for the period 1970 to 2010. The authors found that deep lender borrower relationships are generally beneficial for borrowers with "length", "exclusivity", and "cross-product synergies" as core drivers. The researchers found that relationships especially borrower-beneficial when bank competition is high and that benefits tend to be more pronounced in the U.S. as compared to Europe, where relationship lending does not necessarily make such benefits available.

¹⁰⁰ The sample of Alexandre et al. (2014) consists of 4,044 tranches of which 3,143 are related to U.S. and Canadian borrowers, whereas 901 were issued to European firms.

¹⁰¹ Without distinguishing between syndicated and bilateral lending relationships and hence not recognised as being a core study.

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In an earlier core contribution, **Calomiris and Pornrojnangkool** (2009) focused on crossproduct synergies and studied how bundling of financial services—or in other words the offering of concurrent financial services—in the U.S. affects loan pricings and the costs for the underwriting of debt and equity securities. The theoretical foundation of such bundlingbenefits is grounded on information economies of scale that allow lenders to pass on such cost savings to clients.

This empirical questions surrounding product bundling was emphasised with the repeal of the 1933 Glass-Stegall Act in 1999 via the Gramm-Leach-Bliley Act. Until this repeal, commercial banks had been prohibited from offering security underwritings (Oliver Wyman, 2015; Schildbach, 2012). Thus, from 1999 onwards, commercial banks began to engage in the underwriting business as well, and began to provide competition for the investment bank community. Due to better portfolio diversification effects, scale-related economies of scope in product delivery, lower operating costs, and relationship-related economies of scale in light of information reusability, one can assume bundling to be beneficial for clients and banks (Benston, 1990).

The counter-argument for possible borrower-benefits again are hold-up issues. The work of Calomiris and Pornrojnangkool was motivated by an earlier analysis conducted by Drucker and Puri (2005). This was an analysis of U.S. stock-listed firms from the industrial sector and with seasoned equity offerings being underwritten by a bank that concurrently acted as a lender within a time window of plus/minus six months. Drucker and Puri found that, in line with the supposition of efficiency gains due to informational economies of scope, concurrent deals for highly leveraged and non-investment grade enterprises inhabit substantial benefits from such concurrent deals. Calomiris and Pornrojnangkool critiqued the work of Drucker and Puri in several stances, foremost with a view to the small sample¹⁰² and the pure focus on seasoned equity offerings.

Calomiris and Pornrojnangkool found that, over a 10-year period, banks in general¹⁰³ tended to over-price loans preceding equity underwritings. Also, equity and debt underwriting costs

¹⁰² Drucker and Puri (2005) had only been able to construct a sample of 201 loans and equity-underwritings with such concurrent deal pairings in the period 1996 to end of May 2001.

¹⁰³ Across any bank type differentiation.

are associated with a premium when they come along with a loan financing within a certain period¹⁰⁴ irrespective of whether the loan precedes or follows the underwriting.

Confirming Harjoto et al. (2006), Calomiris and Pornrojnangkool (2009) found that investment banks usually price financial services higher than do commercial banks.¹⁰⁵ However, investment banks tend to grant loans with a certain rebate, once they follow an equity underwriting. Universal banks, they observed, do not follow this practice.

Overall, the evidence provided by Calomiris and Pornrojnangkool suggests that banks serving large listed U.S. clients are able to extract rents from their client relationships and price financial services strategically. Table 60 summarises the main elements of their article.

Calomiris, C. W.,	& Pornrojnangkoo	ol, T. (2009). Re	elationship banki	ng and the pricing of	financial services	. Journal of Finan	cial Services			
Research, 35, 189	9-224.									
Region/Country	Borrower Type	Time Frame	Research philosophy	Methods applied	Pricing Definition	Syndicated Loan Data Provider	Sample Size			
U.S.	Stock-listed non- financial, non- regulated, non- governmental companies	1992-2002	Realism, Positivism	> Regression analyses	AISD	Thomson Reuters LPC	17,577 tranches			
Findings										
			Primary	subject findings						
> Finding of evide	nce of strategic pr	icing: banks us	e relationships to	over-price loans that	at precede equity u	inderwritings (by 37	7 bp).			
> There are pricin	g premiums for bo	th debt and equ	ity underwritings	that are relationship	bundled with loar	is within the same f	inancing			
windows.										
> In general, inves	tment banks tend t	o price loans a	nd underwriting s	ervices higher than u	iniversal banks.					
> Investment bank	s compete with un	iversal banks in	the loan market	by providing loan pri	icing discounts as	"rebates" to borrow	ers who had			
employed them in	preceding equity u	underwriting tra	insactions.							
> Banks appear to	be able to extract	quasi rents fror	n their relationsh	ips. That does, howe	ver, not imply that	relationships are h	armful to bank			
customers. There	may be offsetting	gains to borrow	ers from relation	nships.						
> One borrower be	enefit is a reductio	n in Loan Dem	and associated w	ith relationship bund	ling (indicating an	implicit free credi	t line)> Real-			
option value in the	form of greater a	ccess to credit	as result of stron	ger banking relation	ships.					
			Important su	b-thematic finding	s					
> Larger and more	e diversified lender	s lead to lower	pricings.							
> Investment bank	s are associated wi	th higher price	s.							
> Secured loans le	ead to higher spread	ds.								
> Larger loans lea	d to higher pricing	s.								
> Larger syndicate	es lead to lower pri	cing.								

Table 60. Summary table for Calomiris and Pornrojnangkool (2009).

¹⁰⁴ Mainly a window of less than two years.

¹⁰⁵ Note that this debate needs to generally be critically evaluated in light of the bank type discussions of 2.4.2.2 and 2.7.2.

2.11.2.4 Syndicated relationship lending and pricing in context of public offerings

In another U.S.-based core study, **Schenone (2010)** likewise provided evidence for the existence of hold-up issues. According to the author, banks can exploit informational advantages and extract rents when firms are locked-in and switching costs tend to be high. An equity-IPO, however, which is a major information releasing event that leads to information spill-over effects to outside lenders, leads to lower switching costs thereby preventing relationship banks from extracting rents. In other words, such an information releasing event enables the detection of rents and increases a firm's credit competition position with the pre-IPO severely asymmetrically informed outside lenders. Thus, banks must adjust their loan pricings downwards after the IPO.

Schenone underpinned the classical relationship lending theory with lenders appearing to exploit information monopolies and extracting rents from locked-in clients even for large borrowers in the syndicated loan market. According to the author, bundling of financial services as presented in 2.11.2.3 do not drive pricings. Table 61 summarises the main elements of Schenone's work.

Schenone, C. (20 Studies, 23, 114	10). Lending relati 9-1199.	onships and i	information rents	: do banks exploit the	eir information ad	lvantages? The Revi	iew of Financial		
Region/country	Borrower type	Time frame	Research philosophy	Methods applied	Pricing definition	Syndicated loan data provider	Sample size		
U.S.	S&P-rated non- financial firms	1998-2003	Realism, Positivism	> Regression analyses	AISD	Thomson Reuters LPC	981 loans		
Findings									
Primary subject findings									
> Banks exploit t	heir information ac	lvantage and	extract rents whil	e the firm faces high	switching costs a	and is locked into th	e relationship.		
However, once sy	vitching costs drop	, then relatio	onship banks lowe	r the interest rate that	t they charge the	ir clients.			
> Pre-IPO-lender	s exploit their info	ormation-base	ed monopoly, ext	racting rents from th	eir locked-in clie	ent firm.			
> Mean interest r	ates drop after an I	PO.							
			Important	sub-thematic findir	ngs				
> Spreads increas	e with maturity.								
> RCFs are lower	-priced than terml	oans.							
> Loans used for	LBO/MBO are ass	ociated with	an interest premi	um of more than 70	bp and loans appl	ied to acquisitions i	nvolve a premium		
of 30 bp.						-	-		
> Working capita	l loans are associa	ted with lowe	er pricings.						
> Better-rated bo	rrowers pay lower	pricings							

> Firms with higher leverage ratios pay higher prices.

Table 61. Summary table for Schenone (2010).

A similar approach was applied by **Hale and Santos** (2009) in a core study that analysed whether bond IPOs of U.S. firms likewise serve as information revealing events that subsequently lead to lower loan rates. Indeed, the authors found that pricings decline after an initial bond issuance, especially for safer firms and for those firms for which the bond IPO comes along with an initial¹⁰⁶ credit rating.

These findings complement the findings of Santos and Winton (2008), who found that all else being held equal, bank-dependent firms pay higher loan spreads compared to bank-independent¹⁰⁷ enterprises, especially in time of recession. The findings are in line with the lock-in hypothesis, according to which banks price their information monopoly, confirming findings of Schenone (2010), Gadanecz et al. (2012), and Santos and Winton. Table 62 summarises the main elements of Hale and Santos.

Hale, G., & Santos, J. A. (2009). Do banks price their informational monopoly? Journal of Financial Economics , 93, 185-206.									
Region/country	Borrower type	Time frame	Research philosophy	Methods applied	Pricing definition	Syndicated loan data provider	Sample size		
U.S.	Stock-listed non- financial firms	1987-2002	Realism, Positivism	> Regression anaylses	AISD	Thomson Reuters LPC	367 loans		
]	Findings	1				
			Primary	y subject findings					
> Firms pay lowe	r spreads on their l	bank loans afte	er having undertak	en their bond IPO.					
> These interest r	ate savings are mo	re pronounced	l for firms that ha	ve been identified (v	via rating) to be me	ore creditworthy at	the time of the		
bond IPO.									
> Everything else	equal, firms that e	enter the public	e bond market wit	h a bond that is rated	d investment-grade	e, benefit from a re	duction of 35 to 50		
bp in the credit sp	breads they pay on	their loans, de	pending on specif	ication and the samp	ple.				
> In contrast, firm	ns that enter the bo	ond market wit	h a bond that is rat	ted below investmer	nt grade, benefit fr	om a reduction of	only 5 to 20 bp on		
their loan spreads									
> Among safe fir	ms, those that get t	heir first ratin	g at the time of th	e bond IPO, benefit	from a larger dec	line in loan interes	t rates than those		
that had already b	een rated when the	y entered the l	bond market.						
> The decline in l	oan spreads that w	e identified af	ter the firms' bond	d IPO, especially for	r those firms that o	enter the public box	nd market with a		
bond rated investi	ment-grade, provid	es strong supp	ort for our hypoth	hesis that the release	e of new informati	on about the firm's	s creditworthiness		
at the time of its	bond IPO reduces	the informatio	nal rents of incun	nbent banks.					
			Important s	ub-thematic findin	igs				
> Larger loans ha	ve lower spreads.								
> Corporate purp	ose loans and work	ting capital loa	ans as well as refin	nancing loans carry	lower spreads.				
> RCFs have lowe	er spreads then terr	m loans and th	ey have lower spre	eads than bridge loa	ns.				
> Dividend restrie	ctions, security, sp	onsors lead to	higher spreads.						
> Relationship lo	ans carry lower sp	reads							

Spreads in recessions are higher.

Table 62. Summary table for Hale and Santos (2009).

Like the study of Santos and Winton, I criticise this study because it is based on stock-listed companies. According to the findings of Schenone, equity IPOs already serve as major information releasing events. I argue that it is thus at least questionable whether an already

¹⁰⁶ The first credit rating can be interpreted as particularly informative regarding the creditworthiness of a firm.

¹⁰⁷ Measured via public bond market access.

stock-listed firm still enables banks to extract information rents and whether a subsequent bond IPO reveals further valuable information to outside lenders. This is especially questionable for U.S. clients, where the level of transparency for listed firms is said to be very good. It is likely that one IPO event in its own right is already likely to reduce costs of information production along with the bargaining power of relationship lenders and their ability to extract rents.

Inter alia the earlier-presented works of Schenone (2010), Hale and Santos (2009) and Santos and Winton (2008) set the ground for a later core study conducted by **A. Saunders and Steffen (2011)**, who screened UK-based public and private firms with the goal of carving out the channels through which public firms might have price advantages in syndicated lending vis-à-vis private enterprises.

The authors found that private firms pay on average 27bp p.a. higher AISD compared to public firms. A. Saunders and Steffen stated that public bond market access reduces spreads, especially for private firms and therewith extends the works of Santos and Winton and Hale and Santos, who only looked at already listed firms in that respect.

A. Saunders and Steffen interpreted this finding as evidence for the lock-up hypothesis regarding information-captured private firms. Here, the bond market access increases the bargaining power of the private borrower vis-à-vis its relationship lender, who is congruously not enabled to exploit information advantages any longer. In other words, these results suggest that relationship lending is costly for private firms without having tapped public funding markets yet. Next, the authors extended the work of Schenone by stating that being stock-listed only eliminates loan-pricing disadvantages in the case where such a listing is in a big major index.

Further, in line with the monitoring incentive linked to the share held in a syndicated loan,¹⁰⁸ A. Saunders and Steffen found that secondary market traded loans of private firms are associated with higher AISD. Table 63 summarises the main elements of Saunders and Steffen.

¹⁰⁸ See also section 2.12 for further explanation. Following the argumentation of A. Saunders and Steffen (2011), trading increases the scope of risk-shifting and subsequently decreases the monitoring incentive, especially of the lead arranger.

Saunders, A., & S	teffen, S. (2011).	The costs of being	private: evidence	from the loan marke	et. The Review of	Financial Studies ,	24, 4091-4122.			
Region/country	Borrower type	Time frame	Research philosophy	Methods applied	Pricing definition	Syndicated loan data provider	Sample size			
UK	Non-financial firms	1989-2007	Realism, Positivism	> Regression analyses	AISD	Thomson Reuters LPC	15,519 tranches			
		1	Fi	ndings	1					
			Primary s	ubject findings						
> Private firms pa	ay on average 27 bj	p. Higher loan spre	eads as compared v	with publicly traded	firms.					
> Access to publi	c bond markets is	particularly valuab	le for private firm	s because such acce	ss shifts bargainin	g power from the l	ender to the			
borrower.	porrower.									
> Private firms w	> Private firms with public bonds do not pay significantly higher spreads when compared to public firms.									
> Public firms that	at are listed on opa	que segments of t	he stock market do	o not pay significant	ly lower spreads c	ompared with priva	te firms.			
> IPO's resulting	in a relatively sma	ll secondary marke	et listing does not	reduce a firm's borr	owing costs.					
			Important sub	-thematic findings						
> There are signif	icantly higher loar	n spreads for firms	with more concer	ntrated ownership.						
> Loan deals with	private equity firm	n participation (pu	blic to private tran	saction, LBO, MBC	O, acquisitions and	recapitalisation) has	ave significantly			
nigher spreads. Lo	oan spread differer	nces are reduced a	nd even disappear	if deals by public fir	ms involve private	e equity.				
> In terms of futu	re investment opp	ortunities, there ar	e no significant di	fferences in spreads	s for private vs. pu	blic borrowers (Hy	pothesis was that			
loans to private fi opportunities).	rms have higher lo	an spreads, as pub	lic firms are less r	isky than private fir	ms or they differ i	n terms of their fut	ure investment			
> There are 45 bp	higher loan spread	ds for traded privat	te firm loans, in re	lation to not-traded	loans, which is co	nsistent with the m	onitoring effect.			
However, this eff	ect does not exten	d to public firms.	For such firms the	re are no statisticall	y significant loan	cost differences be	tween traded and			
non-traded loans.										
> More profitable > Unrated firms a	e firms - i.e. firms lso pay lower spre	with more tangible ads relative to nor	e assets - and inves investment grade-	stment-grade-rated f rated firms.	firms pay lower sp	reads.				

Smaller loans as well as loans with covenants and loans with longer maturities are associated with higher spreads.
 Loans that are originated for acquisition purposes exhibit significantly larger spreads.

Table 63. Summary table for A. Saunders and Steffen (2011).

The work of A. Saunders and Steffen (2011) again underpins the importance of including listed- as well as non-listed firms in an analysis.

2.11.3 Synthesis: relationship lending, information asymmetry, and pricing

Table 64 synthesises the findings of the core literature with respect to relationship lending.

Determinant	Pricing direction	Pricing definition	Borrower region under study	Time frame	Reference	Consensus within extant literature	Detailed discussion in table
		I	ender-borrower rel	ationship	·		
			Syndicated loan h	istory			
Borrower has past relationships with participants	Ļ	AISD	Worldwide	1993-2006	Gadanecz, Kara, and Molyneux (2012)		56
Borrower has past relationships with entire syndicate	Ļ	Spread over reference rate	U.S.; Canada; Europe	2003-2008	Alexandre, Bouaiss, and Refait- Alexandre (2014)		59
		Ар	pearance of relation	ship lender			
As lead bank (2008 financial crisis)	Ļ	Spread over reference rate	U.S.; Canada; Europe	2003-2008	Alexandre, Bouaiss, and Refait- Alexandre (2014)		59
For bank dependent borrower in recession (undercapitalised bank)	1	AISD	UK	1996-2005	Mattes, Steffen, and Wahrenburg (2013)		58
For bank dependent borrower in recession ("healthy" bank)		AISD	UK	1996-2005	Mattes, Steffen, and Wahrenburg (2013)		58
For bank dependent borrower in recession	1	Spread over reference rate	U.S.	1987-2002	Santos and Winton (2008)		57
For borrower after bond IPO	Ļ	AISD	U.S.	1987-2002	Hale and Santos (2009)		62
For borrower after equity IPO	Ļ	AISD	U.S.	1998-2003	Schenone (2010)		61
	1	AISD	UK	1989-2007	Saunders and Steffen (2011)		63
For opaque borrowers	1	AISD	U.S.	1998-2003	Schenone (2010)		61
	Ļ	AISD	U.S.	1986-2003	Bharath, Dahiya, Saunders, and Srinivasan (2011)		55
For very large borrowers	\rightarrow	AISD	U.S.	1986-2003	Bharath, Dahiya, Saunders, and Srinivasan (2011)		55
	↓	AISD	U.S.	1987-2002	Hale and Santos (2009)		62
In general	Ļ	AISD	U.S.	1986-2003	Bharath, Dahiya, Saunders, and Srinivasan (2011)		55
	Ļ	Spread over reference rate	Cross-country	2003-2007	Kim, Surroca, and Tribó (2014)		29
For borrower near equity or debt underwriting	1	AISD	U.S.	1992-2002	Calomiris and Pornrojnangkool (2009)		60

Table 64. Core literature synthesis for lender-borrower relationship.

Synthesising efforts regarding relationship lending reveal that discussions continue to be controversial, with studies finding both negative and positive influences of relationship lending on syndicated loan pricings. It is thus likely that other forces and underlying rationales in this context are at work to influence syndicated loan pricing. Alexandre et al. (2014, p. 100) stated, "The role of lending relationships in syndicated loans remains virtually unexplored". Strahan (2008) remarked that the role of relationship lending, especially outside the U.S., remains unclear.

2.12 Secondary market trading as pricing determinant

Although this thesis focuses on syndicated loan pricings in the primary market, I provide a brief introduction to secondary market trading, because some authors assume that anticipated *ex post* trading activity may possibly influence *ex ante* primary market pricing.

According to Ivashina (2009) and others, fractions of syndicated loans can be traded in the *secondary syndicated loan market*. This enables lenders to share loan risks with a wide group of banks and other investors as well as to rebalance portfolios by transferring risk (Burak

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Güner, 2008; Gande & Saunders, 2012; Gupta et al., 2008). From an historical point of view, the secondary market for syndicated loans began to evolve in the 1990s (Christodoulakis & Olupeka, 2010). Although this market grew immensely and relatively steadily over the last two decades, secondary trading volumes are small relative to the overall size of the market (Boehmer & Megginson, 1990; Sufi, 2007). Further, this market is much less developed compared to the secondary market for bonds and equities as trading activities are solely handled on an *over-the-counter* basis (L. Allen, Gottesmann, & Peng, 2012). Along with L. Allen and Gottesmann (2006), Gadanecz (2003), Bushman, Smith, and Wittenberg-Moerman (2010), and Sufi, I concur that secondary market activity is dominated by LBO and distressed debt trading activity by institutional investors, thus limiting their importance in this study. LBOs are not within the scope of this study. Further, especially within corporate investment grade lending, syndicated loans tend to be booked and held to maturity (Lee & Mullineaux, 2004; Thomas & Wang, 2004). This finding is in line with Gupta et al. and Carey and Nini (2007), namely, there is a rather low degree of trading activity in loans to high grade borrowers. Figure 7 supports these findings.



Figure 7. Western European trading volumes for corporate loans versus LBOs.

¹⁰⁹ Here, I used LPC data as information on secondary trading is not readily available from Dealogic Loanware, which serves as the main source of secondary data in this study.

A few authors have examined the impact of secondary market liquidity on syndicated loan pricings in the primary market. As briefly noted in 2.11.2.4 and consistent with an early contribution of Pennacchi (1988), A. Saunders and Steffen (2011) found that secondary market tradability of syndicated loans to UK private borrowers leads to higher loan spreads, most likely due to the shrinking of monitoring efforts accelerated via anticipated liquidity in the secondary market and by subsequent loan sales. Further, a loan sale might be interpreted as negative sign about a borrower's creditworthiness (Dahiya, Puri, & Saunders, 2003). However, a counter-argument would be that a liquid secondary market leads to liquidity-related cost advantages for banks, which could be (partly) passed on to the borrowers in the primary market. Thus, Gupta et al. (2008) examined whether expected secondary market liquidity affects syndicated loan pricings in the primary market. For the U.S. term loan market, the authors indeed found that the degree of expected liquidity has negative effects on primary market pricings. According to Gupta et al., this finding is mainly attributable to institutional loan tranches in the LBO asset class. Table 65 synthesises the findings of the core literature with respect to secondary trading.

Determinant	Pricing direction	Pricing definition	Borrower region under study	Time frame	Reference	Consensus within extant literature	Detailed discussion in table				
Secondary market trading											
Trading activity											
Secondary market trading for private legal	†	AISD	IIK	1989-2007	Saunders and Staffen (2011)		63				
form borrower		AISD	OK	1989-2007	Saunders and Stenen (2011)		05				
Secondary market trading for public legal form		AISD	IIK	1989-2007	Saunders and Staffen (2011)		63				
borrower	-	ABD	OK	1989-2007	Saunders and Stenen (2011)		05				
Secondary market trading contractually		Spread over	Cross country	1000 2001	Focarelli, Pozzolo, and Casolaro		40				
permitted	↓	reference rate	Closs-country	1990-2001	(2008)		49				

 Table 65. Core literature synthesis for secondary market trading.

As discussed, the literature synthesis provides a relatively unclear view on the topic. Further, the research are seems not to be studied in depth given the relatively low number of related findings.

2.13 Conclusion and derivation of research questions and objectives

2.13.1 Overview

Section 1.4.3 introduced research questions and objectives which have mainly been derived whilst critically reviewing related worldwide academic literature as presented throughout this chapter. This derivation was supported by my personal experience in syndicated lending as well as by taking into consideration the outcomes of some exploratory interviews with loan specialists held at the outset of the research project.

To the best of my knowledge no other study has focused on German corporate syndicated loan pricings. This appears surprising, given the important role of the German economy both worldwide, as well as within Europe. Furthermore, Germany is a classic example of a bankbased financial system with even larger companies predominantly relying on banks as external financing sources (De Fiore & Uhlig, 2011; Gorton & Schmid, 2000), a fact that underpins the significance of this research. Beyond the Germany-specific level, however, a large body of research on syndicated lending does exist and this has been carefully screened and critically reviewed in preparation for this study.

With the exception of a small number of studies such as that of Haselmann and Wachtel (2011), previous studies tend to lump together various different syndicated loan asset classes like corporate loans, LBOs, project financings etc. Hence, the risk of diluted results is a significant issue that has led me to focus only on corporate syndicated loans based on the respective somewhat tightened definition as presented in 1.1. LBOs, for instance, usually carry sponsor-driven high-risk financing structures based on individual market practices and different underlying motivations of the parties involved (S&P, 2011). Whereas the German corporate syndicated lending market is commonly understood to be a relationship-driven bank-only market, opportunistic LBO-investors are diverse, consisting of, besides banks, CLOs and other non-bank institutional investors (Pilger, 2012; Voisey, 2016).

Given these considerations it would appear inappropriate to simply transfer the findings of extant worldwide research to the German market. Sensibly, German corporate syndicated lending in general and its pricing in particular merit independent study.

2.13.2 Research methodologies and contexts

Concerning research methodology, the extant literature predominantly uses regression analyses grounded on secondary syndicated loan datasets mostly sourced from Dealogic Loanware or LPC. In the context of philosophical considerations, these studies are built on strong *positivist research paradigms*¹¹⁰ with the availability of reliable quantitative data being the crucial ingredient of a powerful inquiry (Patton, 2002; Remenyi, Williams, Money, & Swartz, 1998). Whilst reviewing the literature, I noted a complete absence of studies that would possibly exhibit more interpretive stances. A remarkable example underpinning this observation is the work of Kim et al. (2014)—presented in 2.6.4—who used a quantitative proxy for ethical behaviour of borrowers and lenders.¹¹¹

Geographically, most empirical studies have been conducted by using U.S. or worldwide data samples, whereas a much lesser number have focused on the European market. Throughout the literature review, I especially criticised European samples as disproportionately small in comparison to U.S. samples. Also, for Europe, I revealed differences in data availability across countries. One example is the work of Christodoulakis and Olupeka (2010). For a time horizon of 18 years, their sample overall contains 2,102 loans of borrowers located in 23 different European countries. German borrowers are represented with 237 loans accounting for roughly 13 per year. However, with 461 transactions, the share of UK-based borrowers finding their way into the sample appeared to be roughly twice as high. The work of Godlewski and Weill (2011) is another example. By conducting a study of 31 countries, major European nations, such as France, UK, Spain, and Switzerland are represented in the sample, whereas Germany not, assumed to be due to pricing-data availability issues.

Besides rare exceptions, the data quality of syndicated loan secondary data sets is not adequately taken into consideration by related authors. A couple of scholars mentioned the issue and viewed it as a problem, but, in the end, possibly induced through their research philosophical foundation—these authors exclusively relied on the imperfect datasets.

In a cross-country study, with an overall sample of 19,269 syndicated loan tranches, Houston et al. (2017, p. 318) remarked, "Deals to the top 3 European countries, the United Kingdom, Germany, and France account for just under 6% of deals," whereas American firms account

¹¹⁰ See section 3.2.4.1.

¹¹¹ Using data gathered from the so-called Sustainalytics Global Platform as proxy for ethical behaviour, Kim et al. (2014) established that syndicated loans to borrowers who behave ethically carry lower pricings.

for 58%. Carey and Nini (2007, p. 2,994) reported, "[Our] ability to test some of the explanations is limited by the limitations of available data," and Godlewski and Weill (2011, p. 56) in their analyses pointed out, "[We] do not consider borrower characteristics due to data limitations". However, Carey and Nini (p. 2,971) concluded. "Price differences do not appear to be a data problem".¹¹² Simply put, if there is no quantitative data readily available there is no study, and there is a study if at least some data is available.

2.13.3 RQ 1: What are the limitations of publicly available information concerning German corporate syndicated loan pricing?

My observations whilst reviewing the literature, in conjunction with several exploratory interviews with loan specialists held at the outset of the research project indicated that an analysis for the German market based on such publicly available data would present challenges. Logically, a first step would be to perform critical analyses as to whether public German pricing data would be suitable for an analysis in the manner of recent scholars. This consideration led to RQ 1 and its related objective.

The outcome of this analysis was crucial for the thesis' remainder. As studying RQ 1 revealed the data situation in the German market to be critical and public data was unsuited for quantitative analyses, the continuation strategy carried powerful research philosophical as well as methodological implications. Proceeding under a strong positivist paradigm, I would have needed to stop the inquiry after having concluded that the German corporate syndicated loan sample does not represent the population adequately, being affected by bias. A pragmatic research philosophical stance¹¹³ however allowed access to a broader methodological tool-box enabling me to continue the investigation based on an extensive piece of qualitative fieldwork.

2.13.4 RQ 2: Why are some aspects of corporate syndicated loan pricing for German borrowers made public and others not?

As it is likely that structural underlying forces are at work being responsible for the given data gaps especially in Germany vis-à-vis other relevant markets I attempted to shed light on the reasons for the reported shortcomings with respect to publicly available data in Germany. This attempt is addressed by the second research question and objective.

¹¹² Looking at Carey and Nini's (2007) sample as a whole, it contains only 41 German loan tranches in the given 10-year analysis horizon. In comparison, 408 tranches are included for UK-based borrowers.

¹¹³ See section 3.2.4.3.

2.13.5 RQ 3: How can the various German corporate syndicated loan pricing elements be classified and prioritised from a lending banks' perspective?

In 2.5, I presented the syndicated loan pricing measures and definitions that had predominantly been applied in existing studies. These happen to be mainly the initial margin or the AISD with the latter being subject to mixed interpretations and labelling across data providers, a fact that carries the general risk of non-comparability. As noted previously, some scholars advocated the use of AISD, which, besides per annum elements, should also incorporate upfront fees, whereas others opined that AISD should not to cover upfront elements. Even if Bharath et al. (2011, p. 1,158) stating that AISD is "the most comprehensive measure of the borrowing cost" was correct, an in-depth knowledge and prioritisation of the various pricing elements that feed the AISD equation remains an empirical goal. In other words, the *raison d'être* and the relative importance of the various pricing elements remain relatively unclear, a drawback I attempt to address via RQ 3 and its interrelated objective.

2.13.6 RQ 4: How can the complexity and multidimensionality of German corporate syndicated loan pricings be summarised and explained?

The investigations in relation to RQ 3 revealed that existing measures' equations are based on incomplete sets of pricing elements and largely neglect the question of why pricing structures are sometimes complex and multifaceted given different loan types. Extant pricing literature in general tends to distinguish between revolving credit facilities and term loans or simply lumps both types together, thereby failing to consider their pricing structural differences appropriately.

Berg et al. (2016) argued that pricing structures of term loans are hardly comparable to those of revolving credits. Hence, the authors presented the new pricing proxy "TCB", striving to cope with structural differences of revolving and term loans. Primarily, the discussion in relation to research RQ 3 reveals that the distinction between revolving and term loans needs to be even more granular. I advocate to distinguish between common (e.g., working capital) revolving loans, established with a clear *ex ante* motivation of being frequently drawn, repaid as well as redrawn, for example, to finance certain business activities operationally on the one hand, and pure back-up loans, on the other hand. Regarding term loans, a distinction between common term and acquisition term loans is needed because the latter reveals highly complex pricing structures that cannot adequately be addressed by existing definitions. Further, all pricing designations used within extant literature are based on information available at signing

or, in other words, *ex ante*. However, pricings of syndicated loans are subject to ongoing change throughout the lifetime¹¹⁴ of a loan, making it impossible to predict accurately the pay-off structures *ex ante*.

In other words, the established pricing definitions used within extant literature do not cover the various elements of syndicated loan pricing comprehensively and they as well neglect complex price-mechanisms that happen to vary extensively between the four common loan types RCF, back-up RCF, TL and acquisition TL.

It is hence reasonable to conclude that the existing pricing measures need to be revised and expanded to provide appropriate pricing profiles for different corporate syndicated loan structures for each of which different underlying rationales and forces are at work. Given the predominantly qualitative nature of the thesis, these novel definitions attempt to explain and enhance the understanding of those different pricing mechanisms. Nonetheless, I also present a quantitative alternative for flexible use by academics or bank practitioners based on the idiosyncratic sets of information that may be available.

2.13.7 RQ 5: What are the pricing determinants in the German market for corporate syndicated loans and how do they interact with each other?

Answering research questions one through four and meeting the interrelated objectives finally set the intellectual foundation for the exploration of German corporate syndicated loan pricing determinants from a banks' perspective.

Sections 2.6 to 2.12 presented seven determinant groups upon which extant worldwide literature placed emphasis. These seven determinant groups are "borrower-related specifics", "lender-related specifics", "syndicated loan contractual features", "macroeconomic environment", "syndicate structure", "lender-borrower relationship", and "secondary market trading".

Comprehensive listings of the core literature's findings from 30 selected scientific journal articles can be found in the tables throughout this chapter that either explicate the elements of these findings for each core paper individually or that synthesise these findings across the

¹¹⁴ Also the lifetime of a syndicated loan is relatively unpredictable, as refinancing or repayments commonly occur long before the final maturity date.

core papers.¹¹⁵ In conclusion of this critical review, I briefly summarise the most important discoveries.

A relatively broad consensus and largely saturated view within the worldwide literature has been detected with regards to general borrower characteristics such as the appearance of external ratings that drive pricing downwards (e.g., Anagnostopoulou & Drakos, 2016; Kim et al., 2014) as does a public legal form (e.g., Schenone, 2010; Haselmann & Wachtel, 2011) and with numerous sets of financial information that determine pricing in manner that intuition would suggest. For instance, large borrowers were commonly found to be able to obtain lower pricings (e.g., Mattes et al., 2013; Gottesmann & Roberts, 2004; Wu et al., 2013) whereas borrowers with a high leverage obtain higher pricings (e.g., Gaul & Uysal, 2013; Fang et al., 2016; Bharath et al., 2011).

With view to differences in loan pricings across markets, especially between Europe and the U.S., which are commonly labelled "the pricing puzzle" in the scientific community, extant research (e.g., Carey & Nini, 2007; Gaul & Uysal; Berg et al., 2017) does not fully reveal respective reasoning. I have therefore added commentaries throughout the discussion to shed light onto the issue.

With regards to lender-related specifics the literature does not demonstrate a clear influence of lender nationality on pricing. Inter alia, Barbosa and Ribeiro (2007) found a positive influence of foreign banks on syndicated loan pricing, whereas Houston et al. (2017) found a negative relationship if the respective borrower has assets in the foreign home country of the lender. A relative consensus was detected with respect to bank type discussions. Investment banks were found to charge higher pricings than do commercial banks (Calomiris & Pornrojnangkool, 2009). Harjoto et al. (2006) related this finding to better funding conditions of commercial-vis-à-vis investment banks as well as the former's superior ability to exploit relationships in debt contracting.

Debate on funding conditions, arguably a major lender characteristic in extant syndicated lending literature, appears scarce, likely induced by authors' underlying assumption of a frictionless interbank market with funding costs equalling the respective reference rate values such as EURIBOR. Next, the role of reputation and its influence on pricing remains ambiguous with no clear directional influences being reported. By investigating the French

¹¹⁵ Further, a full list of the core literature synthesis is displayed in Appendix A.

syndicated loan market, Godlewski et al. (2012) found a general negative price influence of high reputation by both lead and participant lenders. Ivashina (2009) confirmed this view for U.S.-based borrowers but only for lead banks, whereas Alexandre et al. (2014) found a respective positive relationship in a cross-country study that covers North America and Europe.

With respect to non-price related contractual features, a broad consensus postulating negative relationships between pricing and loan size was found with loan sizes being said to carry high correlation with both borrower size and creditworthiness (e.g., Carey & Nini, 2007; Barbosa & Ribeiro, 2007; Santos & Winton, 2008). Loan maturity and its influence on pricing was found to be relatively unclear with one strand reporting a positive influence (e.g., Focarelli et al. (2008); A. Saunders and Steffen (2011) and another, slightly smaller, strand a negative one (e.g., Wu et al., 2013; Santos & Winton, 2008) or a non-influential relationship (e.g., Haselmann & Wachtel, 2011; Godlewski & Weill, 2011).

Certain protection mechanisms like covenants and security were broadly found to be associated with higher pricing, a finding being mostly related to the widely accepted observed risk hypothesis (e.g., Hale & Santos, 2009; Ivashina). In terms of loan types, RCFs are commonly found to be the cheaper compared to term loans in general and bridge term loans in special which appear to be most expensive (e.g., Barbosa & Ribeiro; Mattes et al., 2013).

The macroeconomic environment of the borrowers' home country was found to influence pricing in an expected manner. According to Hale and Santos (2009) and other authors, recessions lead to higher pricing whereas solid solvency and high degrees of GDP growth are associated with lower pricing (e.g., Anagnostopoulou & Drakos, 2016; Christodoulakis & Olupeka, 2010).

Syndicate structural issues have predominantly been investigated based on the assumption that the syndicates represent constructs aiming at mitigating asymmetric information problems between lead and participant lenders (Sufi, 2007). The syndicate structure has mostly been measured by its concentration, the number of lenders and the retained lead bank share. A broad consensus has been detected in the sense that high degrees of information asymmetries within syndicates lead to higher pricing (e.g., Ivashina; Gadanecz et al., 2012), whereas the general influence of the number of lenders remains relatively unclear. Interestingly the influence of syndication mode on pricing, being either a best efforts, an underwritten or a club deal process, has largely been neglected, with the exception of Focarelli et al. (2008) reporting club deal loans to carry lower pricing.

Interestingly, Champagne and Coggins (2012) found a lesser sensitivity of pricing and syndicate structure for the European market in comparison to others such as the U.S. In summary, discussions on syndicate structure and its directional influence on pricing appear to remain relatively incomplete thus far, with the topic seeming to merit an enhanced in-depth understanding.

A similar picture emerged for the determinant theme of lender-borrower relationship, which has also been studied widely based on underlying assumptions grounded in information asymmetry theory. A large body of literature investigates whether cost savings regarding creditworthiness evaluations induced by repeated interactions and long-lasting relationships are (partly) shared with borrowers, resulting in lower pricings, or whether relationship lenders rather happen to exploit these information advantages by charging higher pricings. With a view to the core literature, the findings in relation to the influence of relationship lending on pricing are controversial, with some studies reporting negative influences (e.g., Hale & Santos, 2009; Bharath et al., 2011) and others positive influences of relationship on syndicated loan pricings (e.g., Schenone, 2010; A. Saunders & Steffen, 2011). Given the diverse findings and different intellectual approaches of extant scholarly attempts to study relationship lending related phenomena, it appears sensible to assume that much is not yet fully understood and that additional forces and underlying phenomena in this context might well be at work in influencing syndicated loan pricing. Sensibly, Alexandre et al. (2014, p. 100) stated that "the role of lending relationships in syndicated loans remains virtually unexplored". In a similar vein, Strahan (2008) remarked that the role of relationship lending remains unclear, especially outside the U.S.

Lastly, the influence of secondary market activity on pricing has been addressed by two core papers, reporting diverse findings. A. Saunders and Steffen found secondary market trading activity of loans for borrowers with a private legal form to carry higher pricing whereas Focarelli et al. found a generally opposite directional influence.

Besides numerous unanswered questions and unsaturated knowledge bases on a worldwide level with respect to single determinant groups, especially with regards to syndicate structure and lender-borrower relationship, studies providing a holistic and integrated overview of the various syndicated loan pricing determinants and their interaction do not exist.

Further, the extant literature draws predominantly on anecdotal banking theoretical assumptions whilst studying pricing determinants. It is reasonable to assume that over time other thus far undiscovered forces emerged, that play a role in determining pricing in one

direction or the other. In other words, a holistic, multi-factor picture addressing the German market and its idiosyncrasies with a view toward pricing determinants has not yet been developed, which led to RQ 5.

2.13.8 Summary

To summarise, the overall aim of the research is to explore and analyse the "hidden drivers" of banks' pricing of syndicated loans to German corporate borrowers, thereby developing an enriched understanding of the elements and determinants of pricing and its underlying processes and decisions.

In broad terms, there has been surprisingly little research into syndicated lending to German corporate borrowers, particularly given its important role in one of the world's largest economies. While there is a substantial body of research into syndicated lending to borrowers being located in other countries, it presents an incomplete picture, with much contrary evidence. This is even more true of the treatment of pricing and its determinants. Moreover, the vast majority of research has been based on the analysis of secondary data, which is at best incomplete and at worst may include bias.

There is clearly a strong case for more research into syndicated loan pricing, particularly within the German market. One reason for this is the important role of relationship lending, of which the influence on pricing is both complex and poorly understood in the literature. Another is the very limited availability of pricing data in the public domain.

These substantial gaps in knowledge will be addressed by the research questions and objectives with the related outcomes to be presented within this thesis.

3 Research philosophy and methodology

3.1 Introduction

Chapter 3 locates the research project and its phenomena under study into a wider research philosophical perspective (3.2) followed by extensive discussions on research methodology (3.3) and the related methods applied (3.4 and 3.5).

3.2 Research philosophy

Research is always driven by philosophical assumptions. Hence, the choice of adopting a certain research philosophical position significantly affects research strategy and the nature of respective findings and outcomes and must therefore be carefully thought through and reflected upon (Easterby-Smith et al., 2012). According to Scotland (2012), any researcher should be able to know how research philosophical conventions transmit into the scholar's chosen methodology and methods as well as how these assumptions connect to his or her findings.

However, discussing different research philosophical positions comes with challenges, as the literature does not provide clear and unequivocal definitions of pivotal terms and their interrelationships (Grix, 2002; Killam, 2013). This is not surprising as the "birth" of the philosophy of science dates at least back to the early 1600s and has steadily developed since then (Moses & Knutsen, 2012). Debates about the nature of reality and knowledge have constantly changed and still are ongoing subjects of controversial discussions (Patton, 2002; Scotland). According to Killam, this has led to different interpretations, meanings, and numerous philosophical subfields. It has also led to at times contradictory use of respective terms by different academics in different disciplines of science.

However, for this work, it is important to provide a kind of "working definition" and basic understanding regarding the interrelationship of the basic terms of research philosophy with *research philosophy* constituting the term embracing all related sub-themes. According to among others Miles and Huberman (1994) the key elements of research philosophy are the researchers' *ontological* and *epistemological* assumptions and *methodology*. In other words, researchers have personal beliefs about the nature of knowledge and ways of building it, which influence their views about how to conduct research. Easterby-Smith et al. (p. 18) provide the definitions as displayed in Table 66.

Key elements of research philosophy		
1	Ontology	"Philosophical assumptions about the nature of reality."
2	Epistemology	"A general set of assumptions about ways of inquiring into the nature of the world."
3	Methodology	"A combination of techniques used to inquire into a specific situation."
4	Methods and techniques	"Individual techniques for data collection, analysis, etc."

Source: Adapted from Easterby-Smith et al. (2012, p. 18).

 Table 66. Key elements of research philosophy.

Ontology can be defined as the starting point of all research, logically followed by epistemology and methodology. The reason for this is that researchers must first be clear about the nature of the phenomena that are the focus of his or her research and what constitutes reality (Crotty, 1998). Then, it is to be considered how knowledge can be created, acquired, and communicated (Guba & Lincoln, 1994). Different forms and the nature of knowledge are addressed by a researchers' epistemological assumptions (Cohen, Manion, & Morrison, 2007).

These issues must, therefore, be clarified before one can confidently proceed with formulating an appropriate research methodology which Crotty (p. 3) defines as "the strategy or plan of action which lies behind the choice of particular methods". In other words, methodology deals with the question "how can the inquirer go about finding out whatever they believe can be known" (Guba & Lincoln, p. 108).

As Figure 8 displays, *research paradigms* conjoin ontology, epistemology, and methodology by constituting the foundation of what researchers do or, in other words, a basic set of scholarly assumptions and beliefs that scientists share (Denzin & Lincoln, 2005; Kuhn, 1962).



Source: Based on Grix (2002) and Guba and Lincoln (1994).

Figure 8. Core research philosophical terms.

Methods are the specific tools, techniques, and procedures used to source and analyse data, with the latter being either quantitative or qualitative (Miles & Huberman, 1994; Patton, 2002; Tashakkori & Teddlie, 2010).

Although chosen methods and sources are generally said to be independent of a specific paradigm (Grix, 2002; Howell, 2013), researchers commonly use them to justify the way they conduct research in general and how methods and sources are selected and applied in particular (Corbin & Strauss, 1996). Hence, different ontological as well as epistemological standpoints commonly lead to different approaches towards the same phenomena (Grix, 2004).

One further element that is schematised in 3.5.7 is *axiology*, meaning the influence of values and *ethical issues* on the research project. The need for properly addressing these issues is especially pronounced in qualitative studies, where interactions of the researcher with other human beings are a key ingredient (M. Saunders et al., 2012).

The flow of the following sections will mirror these hierarchical elements of research philosophy. Before proceeding to this discussion, it is important to clarify the phenomena that are the focus of this research.

3.2.1 The phenomena under study

The phenomena under study are defined by the research questions (Patton, 2002). The first research question has a different focus from the others, in that it is a "what" question that focuses on published data that exist in the public domain, mostly in numeric form. As such, these data may be readily accessed as secondary data. Research questions two to four are inherently different, being "how" and "why" questions, which are not satisfactorily answerable by the literature review and, thus, would seem to require primary research to find answers. RQ 5 requires answers to these questions before an answer can be formulated.

These differences must be recognised in the following discussion of philosophical issues. The published numerical data that must be accessed to answer RQ 1 raise different philosophical issues and research challenges from those of RQ 2, RQ 3, RQ 4, and RQ 5, which address policy and behavioural issues within the banks that participate in German corporate syndicated lending.

3.2.2 Ontological perspectives

Ontology deals with the question of how reality can be defined or, in other words, what people think constitutes reality (Blaikie, 2000). The researchers' personal beliefs about reality are key determinants of what can be known at all (Scotland, 2012).

3.2.2.1 Realism

According to Phillips (1987, p. 205), *realism* is "the view that entities exist independently of being perceived, or independently of our theories about them". Realism is often referred to as the traditional ontological position of natural scientists, assuming the world to be concrete and external. Here, objects have an existence independent from the human mind and its interrogation (Moses & Knutsen, 2012). The reality or the static truth is separate from the behaviour of human beings and can be analysed by means of experimental methods primarily through the collection and understanding of objective, quantitative data (A. M. Clark, 1998; Killam, 2013). The static truth can be measured and generalised objectively. In relation to extant scholarly syndicated lending literature, the research has overwhelmingly been conducted based on realist ontology.

Besides the archetypal form of realism presented earlier, which is also often referred to as *direct realism*, a prominent sub-form is *critical realism* (Bhaskar, 1989). Critical realists agree with direct realists that reality exists independently of humanity. The difference is that critical realists state this independent reality not to be perfectly apprehended by people (Howell, 2013). In the light of these philosophical enhancements, direct realism is also often referred to as *naïve realism*.

3.2.2.2 Relativism

The extreme underlying ontological position that opposes realism is *relativism*. According to Guba and Lincoln (1994, p. 110), "Relativism is the view that reality is subjective and differs from person to person". In other words, objective and universal truths do not exist. Hence, in contrast to realists, relativists do not believe knowledge to be fully external, objective, and observable in a value-free manner. Reality or truth is always contextual, meaning that multiple truths and realities exist that depend on individual viewpoints. All processes are not only driven by complexity, but are also seen as unique (Easterby-Smith et al., 2012). Thus, realities are not objective, static, and measurable, as stated by the realist, but are instead subjective, dynamic, as well as context-driven (Bilgrami, 2002). Logically, under relativist ontological perspectives, research would be of a different nature and likely to rely on qualitative rather than quantitative data.

3.2.2.3 Social Constructionism

Social constructionism is strongly related to the ideas of relativism and, hence, often discussed as a relativist epistemology (Easterby-Smith et al., 2012). However, I place it under the ontology heading, because I interpret it as high-level theoretical perspective on the nature of reality.

Social constructionism holds that meaning is dependent on human cognition, which is individuals' interpretation of happenings that surround them. It emphasises the idea that society is actively and creatively produced by human beings. The world is made or invented, rather than merely given or taken for granted. Social worlds are interpretive nets woven by individuals and groups. The key question social constructionists ask is how the world is accomplished and, per Charmaz (2006, p. 189), "[They] study what people at a particular time and place take as real, how they construct their views and actions, when different constructions arise, whose constructions become taken as definite, and how that process ensues".

Practically, people construct reality by discussions, collaboration, or other forms of social interaction within a specific environment such as a company or some other form of community. Hence, the research is on how people interact. According to Haug (2004), the entire knowledge of reality is constructed. According to Pouliot (2007, p. 361), these core elements make constructionism "conceived as a metatheoretical commitment".

3.2.2.4 Towards an ontological perspective

There are several ontological implications to my research field that need to be addressed carefully with reference to the grounds and the nature of knowledge as well as to its limitations and its validity.

With view to the phenomena that are the focus of this work, a twofold picture can be painted. On the one hand, publicly available data appear to be real in the sense that it is made available in numerical- and by as correct expected means. This information is hard, quantifiable, and can be taken forward for quantitative research. However, the pool of data appears to be incomplete as it insufficiently reflects real pricings. In other words, based on published data, it is likely to be impossible to conclude what the real pricing of a German corporate syndicated loan was. Hence, even a direct realist could not process these data with a clear conscience.

Besides, the data of the studied phenomena are more complex than what even complete data would potentially reveal. By talking to key actors involved in the market, I recognised the importance of interaction between lenders and borrowers in addition to complex bank-internal sometimes countervailing forces being at work. More theoretically, the German syndicated lending market for corporates and its pricing is based on complex social interactions or collective processes that constitute market practice and standards that are subject to ongoing development and change.

The subject of my study can hence be said to be complex with an enhanced understanding of the phenomena being necessary. This is true for both existing knowledge as well as the intended contributions of this study. I am not striving to generate absolute or general physical judgements but am rather striving to enhance the understanding of these complex phenomena. It is reasonable to state that large parts of the phenomena under study are socially constructed. There is no such thing as an absolute component. Hence, I have applied a social constructionist ontological perspective.

3.2.3 Epistemological perspectives

As discussed above, epistemological considerations are related to the discussion of how we gain knowledge about the world (Patton, 2002).

3.2.3.1 Positivist epistemology

A *positivist* epistemology is linked to natural scientific approaches regarding the development of knowledge and, hence, is closely linked to the ontological position of realism. According to A. M. Clark (1998), phenomena are real, certain, and precise. According to Guba and Lincoln (1994), an ascertainable objective reality is assumed.

Positivists strive to discover absolute knowledge about an objective reality with researchers and the subjects of research being independent (Scotland, 2012). Knowledge is said to be free of values as well as absolute in nature. Thus, House (1991) pointed out that under positivist epistemological assumptions scientific propositions are to be built on quantitative data and facts.

3.2.3.2 Interpretivism

Interpretivist epistemology is linked to social scientific approaches regarding the development of knowledge being closely linked to the ontological position of relativism. Whilst positivism focuses on measuring certain phenomena, interpretivism intends to understand human behaviour grounded in individual perspectives (Easterby-Smith et al., 2012; Grix, 2004).

Interpretivism seeks to explore social phenomena to gain interpretative understandings (Crotty, 1998). Hence, interpretivists argue that the world is complex and research involving people is needed to make sense of that complexity. Reducing the world entirely to law-like generalisations—as positivist epistemology tends to proclaim—neglects the importance of understanding differences between individuals (M. Saunders et al., 2012). Cohen et al. (2007, p. 19) remarked, "The social world can only be understood from the standpoint of individuals who are participating in it".

3.2.3.3 Phenomenological enquiry

Phenomenological enquiry is a body of thought closely associated with social constructionism as well as interpretivism. According to Cohen and Manion (1987), it advocates the study of experience with human behaviour being determined by experienced phenomena rather than by external and objective reality as the positivist might argue.

Phenomenology concerns peoples' personal thoughts, feelings, and how they make sense of a world that they cannot directly access. The inner world of people is complex. There are many subsurface things going on that we can only access by means of in-depth discussions (Charmaz, 2006; Howell, 2013).

It is thus crucial to develop relationships with research participants such as interviewees as there is a lot to be discovered within their minds. In other words, researchers explore and try to understand their meanings, attitudes, and feelings. Phenomenology is often associated with relatively loosely structured interviews as one cannot simply ask someone, "What is in your mind?" Much interpretation is needed to be able to shed light on complex phenomena. Researchers have to conduct lengthy processes of interpretation and reflection to reveal what research participants have actually said and meant (Howell). A complex and typically inductive process of interpretation in developing findings is necessary.

3.2.3.4 Grounded theory

Grounded theory can be interpreted as a specific method or an entire epistemological perspective that constitutes a widely accepted means of conducting phenomenological enquiry. It was initially developed by Glaser and Strauss (1967). There are numerous different streams and developments of grounded theory (Charmaz; Corbin & Strauss, 1996; Glaser & Strauss), a full discussion of which is beyond the scope of this thesis. According to M. Saunders et al. (p. 185), "[Grounded theory] is used to develop theoretical explanations of

social interactions and processes in a wide range of contexts including business and management".

Grounded theory research is designed to explore fields of knowledge where there is only scarce prior research or none at all, with the aim of establishing a new body of theory solely grounded in and inductively developed from qualitative data (Goulding, 2002). With the research topic at hand, I am not attempting to build theory from "nothing", as large bodies of knowledge and established theoretical frameworks already exist. Further, to ensure complete impartiality, grounded theory commonly requires that no literature review should be conducted before the fieldwork (Cutcliffe, 2000).

My core aim is not to necessarily produce a new theory, but generally to enhance the understanding in my chosen research field. In this work, I therefore take a neutral stance towards existing and emerging theories in my topic field. However, certain carefully selected elements of grounded theory methods such as *constant comparison* or *theoretical saturation* have been applied in the research reported here.

3.2.3.5 Epistemological issues surrounding this research

Similar to the ontological issues as discussed in 3.2.2.4, there are many powerful epistemological implications in my research field that need to be addressed carefully and thoroughly. In the light of discussed considerations, I adopt a phenomenological perspective. This is because the phenomena that I want to research in the world of German corporate syndicated lending are essentially socially constructed, being the outcomes of social interactions between professionals within specific banks, between banks within syndicates, and between lenders and borrowers. Moreover, the lending policies and practices are reflections of corporate cultures and professional norms. As discussed above, the phenomena are rooted in the experiences, beliefs, values, and attitudes of individual lenders, which may only be accessed indirectly. As suggested by Miles and Huberman (1994), I adopt a form of phenomenological enquiry to access these phenomena and comprehend meaning based on the statements made by individual actors.

3.2.4 Paradigms

Paradigms constitute the integration of ontological, epistemological, and methodological perspectives. Paradigms are consensual patterns being derived from specific worldviews or belief systems regarding the nature of existence as well as knowledge (Crotty, 1998; Easterby-Smith et al., 2012). Paradigms are commonly shared by scientific communities by

guiding how inquiry is approached (Guba & Lincoln, 1994). Before presenting *pragmatism* as the underlying paradigm for this work, I proceed with a discussion of two common and classically opposing paradigms and my reasons for refraining from using them.

3.2.4.1 Positivist paradigm

The *positivist paradigm* is commonly associated with realist ontological and positivist epistemological perspectives that conducts quantitative research. Regarding the analysis of pricing of syndicated loans, researchers acting in a positivist manner would argue that the market for syndicated loans exists independently from social interactions. This view accentuates that the structural aspects of syndicated loan pricings are similar and measurable from the different perspectives of all involved parties.

As discussed whilst reviewing the literature—in such a positivist manner—recent studies were conducted by using "objective", quantitative data about the "observable" syndicated loan market, by searching for regularities and causal relationships in their secondary data sets. In other words, extant literature on syndicated lending draws from that positivist paradigm. As the data sources are secondary providers and not elated by the researchers themselves, the methodology can be said to be quasi-experimental, relying on certain statistical methods (Moses & Knutsen, 2012). Consequently, the researchers have to trust the secondary data set to be objective and "hard-fact".

A positivist scholar would state that only hard-fact data that can be analysed in a value- and context-free way is acceptable—from the outside—without the risk of a high degree of bias (Bilgrami, 2002). In other words, the "only" truth that can be analysed is independent from the respective research process and is not influenced through beliefs and interests of the scholar. The testing of certain hypotheses at the end will at best lead to law-like generalisations helping to develop theory further and to create new theoretical knowledge (M. Saunders et al., 2012). As Kornmeier (2007) reminds, this means of conducting research is called *deduction*.

I argue, however, that the positivist paradigm is at least partly inappropriate to cover the complex and multi-layered research topic in depth. It restricts the choice of methods in a way that makes it impossible to uncover various elements of hidden structures in syndicated lending, for example, because published pricing data of German corporate syndicated loans is likely to be not comprehensive and, thus, not represent the population appropriately, and because positivist approaches tend to reject studies of human behaviour in depth. In my view,

however, human behaviour affects reality or even multiple realities of syndicated lending (Scotland, 2012).

3.2.4.2 Interpretivist paradigm

The *interpretivist paradigm* in general is commonly understood as the foundation of qualitative research. This paradigm is based on an ontology of relativism or social constructionism and on an interpretive epistemology. Interpretivists strive at revealing hidden social structures and powers (Scotland).

Here, one usually starts with an appropriate means of observation in which the researcher is actively involved. Subsequently, the researcher tries to move forward to more generalised theories¹¹⁶ (Pouliot, 2007; M. Saunders et al., 2012). Other than the realist choosing deductive ways of understanding certain phenomena, the interpretivist usually goes the other way around, by inductively addressing certain phenomena. The researcher would state that starting with theorisation could destroy meaning from the beginning (Pouliot).

Hence, in view of the research topic—the analysis of syndicated loan pricing—an interpretivist would emphasise qualitative data (Scotland). For instance, by talking to a small number of consciously chosen individuals, a scholar acting under this paradigm would try to find meaning in their behaviour (Killam, 2013). According to Pouliot, interpretation and the search for meaning are the main methodological tasks with which an interpretivist must cope.

With regard to methodological questions, the interaction between and among the researcher and the participants is central (Kornmeier, 2007). The researcher aims to collect a deep and rich set of qualitative data that can be interpreted subsequently (Scotland). This set of subjective data can be interpreted to discover meaning in experiences, to build theory, and to describe phenomena (Killam; Pouliot). The previously articulated philosophical position and the research designs that follow from it are widely accepted as highly effective for the understanding of individual processes.

Generally, the interpretivist paradigm has increasingly been adopted by scholars of various disciplines to overcome certain shortcomings of positivism. However, in the field of banking and financial intermediation literature in general regarding syndicated loan-related research in special non-positivistic research is scarce. In a broader sense, accounting research can be

¹¹⁶ Induction: from the local to the general.

noted as an exception, where both positivist and interpretive approaches have more and more been adapted, most typically in the field of interpretive accounting research (Ahrens, 2008).

To be discussed in the methodology section as well as in my presentation of the findings of my qualitative fieldwork, major parts of my thesis might well adhere to the interpretivist paradigm. From my standpoint, however, this would be too narrowly defined as also would the pure positivist way of conducting research.

For instance, the clear detection of the unreliability of public data at all is only possible whilst testing a respective dataset in that vein. Further, quantitative data—even if unsuited for revealing certain real-world phenomena of German corporate syndicated loan pricings—might be important pieces of the puzzle that complement qualitative data and contribute to higher overall quality of the study. In other words, the data is available, it is of value, and it should, therefore, be used in some way to the applicable extent.

3.2.4.3 Pragmatist paradigm

The pragmatist research paradigm is commonly associated with *mixed-methods research* approaches that do not request a researcher to waive certain strengths of one vis-a-vis another approach based only on fundamental philosophical assumptions. According to Peirce (1975), pragmatism clears away the difficulties with which philosophers have extensively concerned themselves that happened to hinder inquiry to a certain extent. Based on this foundation, this research project was conducted within the pragmatist paradigm. Thus, I agree with Denzin (1978, p. 28), who pointed out, "No single method ever adequately solves the problem of rival causal factors".

A strong positivist research paradigm upon which extant literature is predominantly grounded hinders the consideration of qualitative analyses. In other words, if no quantitative data is available, there is basically no study, as is the case for pricing in the German corporate syndicated loan market.

The application of the pragmatist research philosophy, however, allows for flexible application methods driven in combination by data availability and suitability to gain insights into the phenomena under study. According to Bacon (2012, p. 1), pragmatists address philosophical questions "by drawing upon the resources offered by our practices".

Having discussed the direct realist as well as strong relativist positions, showing that they are not fully suitable for analysing the research topic with the best possible results, I situate my research paradigm within the domain of pragmatism.

Generally, there are many controversial discussions between followers of the pure/theoretical and applied science regarding the creation of knowledge. The two main general perceptions in this respect are (Kornmeier, 2007, p. 22):

- 1. "Science as an end itself"
- 2. "Science as means to an end"

As a follower of the second perception, the *applied science*, I see myself as a kind of an unprejudiced "outsider" who chooses the best suitable methodological approaches and methods to answer a research question (Patton, 2002; Schubert, 2010). For me it is of minor importance whether a certain approach has its roots either in "extreme" realism, "extreme" relativism, or in some approach that falls somewhere in between (D. L. Morgan, 2007; M. Saunders et al., 2012). In this vein, Patton (p. 71) pointed out, "Adherence to a methodological paradigm can lock researchers into unconscious patterns of perception and behaviour that disguise the biased, predetermined nature of their methods decisions".

According to D. L. Morgan, pragmatism can be defined as:

- 1. A general belief system with the view that a real world exists to a certain extent as well as reality being partially constructed
- 2. A specific justification for the combination of different methods

As reality seldom resembles theoretical ideals, pragmatists choose qualitative and/or quantitative methods and procedures as being likely to advance research independent of single philosophical stances (Kelemen & Rumens, 2008; Patton). My applied research design, discussed in the upcoming sections, is grounded in the pragmatic paradigm—interpreting inquiry as *semi-open-ended*—and enabled me to choose and combine methods freely that address the complex and multi-faceted sets of research problems that are reflected in the research questions and objectives.
3.3 Overall research design

Research designs constitute general plans on how to answer research questions and meet research objectives. Bryman and Bell (2015) observed that research designs are frameworks on the basis of which data collection methods and related analyses are applied. Methodologically, research might be structured as mono- or mixed-methods designs. The nature of those designs is either *exploratory*, *descriptive*, *explanatory*, or some mixture of these (Yin, 2014). Further, *inductive*, *deductive* or *triangulated* reasoning might be applied.

In the following sections, I consider alternative research designs in terms of their appropriateness for answering the research questions. Further, I discuss my chosen research design and the rationale for choosing it.

3.3.1 Quantitative design

Quantitative research designs are commonly associated with a positivist research paradigm, where, by means of structured data collection and analysis techniques, numerical data is deductively approached to test theory (Patton, 2002). Deductive reasoning starts with a general understanding about certain phenomena and subsequently transits to increasingly specific data. Hence, quantitative research rather tests certain hypotheses compared to exploring research questions. Experimental statistical methods are likely to serve as tools that facilitate certain measuring, probability sampling, and validation techniques to produce evidence that can be generalised (Moses & Knutsen, 2012). In other words, from a methodological point of view, quantitative research happens to be predominantly of an experimental nature and involve questionnaires or other measurable testing. Quantitative designs are commonly located in the explanatory area and use numbers usually in the form of counts or measurements by striving to provide exactness to sets of observations (Remenyi et al., 1998).

In this context, researchers take an outside, distanced, and objective perspective. To avoid bias, samples need to be large as well as randomly selected (A. M. Clark, 1998). In that vein, Killam (2013, p. 27) remarked, "A randomized control trial is the "gold standard" within quantitative research. It is used for proving cause and effect relationships among variables under study". One possible way of approaching the research aim for this study would be via a quantitative research design that adopted the approach of extant literature by solely relying on secondary syndicated loan data provided by respective providers such as Dealogic Loanware. Another possible route would be to gather primary data by means of a questionnaire. From this discussion, it is reasonable to state that quantitative studies are more valuable than

qualitative studies in verifying existing theories. The research aim at hand, however, is to provide richer understandings of complex and multidimensional phenomena that might lead to new theory that can subsequently be tested if suitable data were found to be available.

3.3.2 Qualitative design

Qualitative research designs are commonly grounded in interpretivist research paradigms. Here, scholars strive to make sense of subjective as well as socially constructed meanings regarding the phenomena under study. As opposed to attempting to produce objective, static, and general evidence, qualitative inquiry aims at accessing meaning and in-depth understanding. The researcher in that context interacts with the research participants by taking an emic or insider's perspective of the insider's experience.

Qualitative designs are commonly grounded in non-numerical data gathered from purposefully selected, small samples. Data is inductively analysed to enhance existing bodies of knowledge by providing richer theoretical perspectives. Inductive reasoning starts with indepth observations and proceeds to the consideration of generalised theory or hopefully new understandings of phenomena. According to Wakefield (1995), qualitative inquiry looks for, reconstructs, and interprets subjective meaning instead of searching an objective truth. Various possible ways of approaching the research at hand via qualitative designs are subjects of discussion in the following sections.

3.3.3 Case study design

Generally, *case studies* can be viewed as a research design or a methodology that constitutes a superordinate concept for various methods of data collection or as a method for collecting data in its own right (Howell, 2013). Here, I discuss it at the higher level, namely, as a research design unto itself. According to Creswell (2007, p. 73), in case studies, researchers, investigate "a bounded system (a case) or multiple bounded systems (cases) over time, through detailed, in-depth data collection involving multiple sources of information (e.g., observations, interviews, audio-visual material, and documents and reports), and reports a case description and case-based themes".

Eisenhardt and Graebner (2007) stressed that case studies constitute an appropriate design if the researcher strives to gain rich understandings of phenomena under study and their interrelated processes. Case Study designs might consist of quantitative and qualitative elements of data collection and analysis with most involving a mixed-methods approach (Easterby-Smith et al., 2012). Further, Yin (2014) pointed to privacy as well as confidentiality as being crucial to the successful conduct of case studies.

Regarding my research aim, one could indeed look at a single or multiple syndicated loan transactions and pricing-processes as case(s). I highlight this to be a possible avenue of future research in 7.5.

My work intends, however, to provide rich understanding of the related phenomena based on a broader sample by conducting interviews with representatives from various banks. Due to compliance and confidentiality issues, this would not be feasible. In other words, I would be limited to my own organisation.

3.3.4 Action research design

According to Remenyi et al. (1998, p. 280), "[Action research] usually involves a small-scale intervention on the part of the researcher in the phenomenon being studied". I did not pursue an action research design given that I do not intend to promote change. In other words, my research was non-interventionist and I was acting in the capacity of an independent researcher, even though I am a professional in the industry.

3.3.5 Mixed-methods design

Mixed-methods are designs where both qualitative and quantitative research is combined in various possible means and is commonly associated with the pragmatist paradigm. The idea of mixed-method designs is that multiple approaches to a specific research question might be more likely to lead to rich results than single-method approaches would (Guba & Lincoln, 1994). A mixed-methods design is likely to combine deductive and inductive reasoning. The ways of conducting mixed-methods research might vary from very complex fully integrated to less complex partially integrated approaches (Kuckartz, 2014). Also, in terms of data analysis and sequencing, hugely different approaches exist in practice. Mixed-method-research allows scholars to see research designs as not being mutually exclusive by individually combining different strategies in ways that enable the answering of research questions at a reasonable level of coherence (Creswell & Plano Clark, 2007; Teddlie & Tashakkori, 2009).

One way of approaching the research aim at hand via a mixed methods design would be to start with exploratory interviews followed by an explanatory survey that would be structured as guided by the outcomes of the preceding interview fieldwork. However, for various reasons, I decided on a different design, which I present in the next section.

3.3.6 Chosen research design

I chose a sequential, mostly exploratory, mixed-methods research design where an extensive piece of qualitative fieldwork would succeed a brief descriptive and explanatory quantitative analysis. In other words, I conducted a *two-stage, mixed-methods design* with an initial quantitative element followed by a series of qualitative in-depth interviews.

My first task was to test the level of transparency in published data about German corporate syndicated loans. Because of the general obtainability of quantitative data through secondary data providers, it was appropriate to source a secondary set which had subsequently been analysed by means of suitable statistical methods. This quantitative component was mostly descriptive by nature as explanatory elements that would have naturally followed description were found to be inappropriate given the impossibility of constructing powerful dependent variables (Bulmer, 1979; Freedman, Pisani, & Purves, 2009). Hence, the explanatory part of the analysis rather dealt with a derivation on why the data set at hand was likely to be affected by bias.

Given that, I chose a qualitative approach the most appropriate design to answer the second and subsequent research questions. The explorative and mostly deductive qualitative fieldwork constituted the prevailing role in this study, whereas the quantitative took on a more supporting role. Two sets of reasons led me to the conclusion that the distinctive characteristics of qualitative methods adequately addressed the research aim at hand:

- Research questions two to five required complex answers to "why" and "how" questions, or general issues, concerning the behaviour of lending decision-makers. More broadly, the research subject is highly complex and multifaceted in nature with underlying phenomena being hard to apprehend by means of quantitative data in general.
- My practical experience in the field, some exploratory research as well as the conducted pilot interviews, had confirmed that phenomena around complex pricing elements and its determinants were often privately held and unobservable to outsiders. In other words, "hidden drivers" existed which were only quantifiable to a limited degree.

Besides inductive reasoning based on the qualitative data analyses, my chosen design furthermore exhibited some features of what Creswell and Plano Clark (2007) defined as an *embedded design*. This is because selective quantitative findings supported the presentation

and discussion of qualitative findings. The use of a mixed-methods approach grounded in the pragmatist research paradigm allowed meanings and findings to be elaborated, enhanced, clarified, confirmed, illustrated, and linked (Creswell & Plano Clark, 2007). Another beauty of the chosen design was a much greater diversity of views that enrich the overall understanding of the work.

In 2.3, I stressed that financial intermediation and corporate finance research intellectually mainly draws its inspiration from asymmetric information and agency theory. Given the overwhelmingly inductive nature of my qualitative fieldwork with the aim of gaining an indepth understanding of context and the views of the interviewees, I refrained from formulating a predetermined theoretical basis for my research.

According to Denzin and Lincoln (2005), the discussion on the overall research design naturally leads to the choice of an appropriate research strategy—meaning the sources and methods to approach the data—that links the chosen philosophy (paradigm) and its subsequently defined methodological concept (research design). I address these considerations in the next section.

3.4 Quantitative research

This section provides methodological background information and the introduction of the data sample for which I present a quantitative analysis in Chapter 4. The quantitative analyses serve to answer RQ 1 and to provide supporting insights into the debate throughout the qualitative discussion that follows. Further, some background information on bias-issues will be presented.

3.4.1 Quantitative syndicated loan pricing analyses

In an ideal and information frictionless environment, one could use a secondary data set, containing a complete or at least a completely randomly selected history of German corporate syndicated loan pricing elements as the foundation of an extensive quantitative inquiry (Calomiris & Pornrojnangkool, 2009). Further, complete information about inter alia borrower-specific, lender-specific, and macroeconomic characteristics—serving as explanatory variables in regression analyses—would be available in a comprehensive or at least unbiased form. According to Remenyi et al. (1998, p. 280), bias is defined as a "net systematic error that creeps into the research process usually due to the coconscious views of the researcher".

In such a "perfect" laboratory, one could conduct a quantitative study under realistic conditions. Certain statistical analyses like univariate and multivariate regressions, followed by appropriate robustness tests, would at the end be likely to produce sufficient explanatory power to lead to precise as well as practical and useful evidence (Bleymüller, Gehlert, & Gülicher, 2008).

Being grounded in a positivist philosophical research paradigm, existing worldwide empirical syndicated loan pricing literature tends to follow the abovementioned assumptions and tends to employ, explicitly or implicitly, the exemplified research strategy, outlined in Table 67.

		Download comprehensive or unbiased data sample regarding relevant syndicated loan market					
	1	from data provider.					
	2	Download comprehensive or unbiased data sample regarding relevant borrower information (e.g., financial data).					
Sample purchase	3	Download comprehensive or unbiased data sample regarding relevant lender information (e.g., financial data).					
	4	Download comprehensive or unbiased data sample regarding relevant macroeconomic information of borrower country (e.g., GDP data, legal environment).					
	5	5 Download comprehensive or unbiased data sample regarding relevant macroeconomic information of lender co (e.g., GDP data, legal environment).					
Sample	6	Match/align and arrange data samples appropriately.					
arrangement	7	Create dummy variables e.g., to capture qualitative information.					
Descriptive statistics	8	Provide descriptive statistical overview regarding whole sample (e.g., certain averages (mean and median) and standard deviations of relevant variables).					
	_						
Regression	9	Conduct univariate regression analyses (depended variable(s): AISD as well as all single pricing elements separatel explanatory variables: comprehensive set of available variables (e.g., borrower characteristics, lender characteristic macroeconomic characteristics, etc.))					
analyses	10	Conduct multivariate analyses.					
	_						
Robustness checks	ess 11 Perform robustness checks (e.g., to address heteroscedasticity).						
Evidence	12	Formulate final evidence.					
	_						
Interpretation	13	Interpret&discuss (new) evidence.					

Table 67. Common quantitative analysis procedure.

Each step builds on the other. Thus, I have to evaluate data quality and availability regarding the stage "sample purchase" first to decide if quantitative analyses regarding pricing of the German corporate syndicated loan market were valuable exercises.

If it proved to be impossible to source a sufficiently comprehensive or unbiased data sample regarding relevant market from a data provider (Stage 1 in Table 67), then all subsequent

phases of the analysis would become impractical since the main dependent pricing variables of interest—the margin and various fee elements—would not be available in a randomly selected manner. In other words, in this case, due to substantial bias issues, generalising from the sample to the population would not be appropriate, since the predictive power of possible regression analyses would be limited (Heckman, 1979; Philippe, 1980; Remenyi, Money, & Twite, 1991). In this vein, Remenyi et al. (1998, p. 79) stated, "It is necessary to ensure that the sample has been randomly selected from the whole population or from satisfied subsamples of the population".

To summarise, the focus of my quantitative analyses was predominantly on testing the suitability of publicly available German corporate syndicated loan data for a serious explanatory study. Moreover, an array of non-price related descriptive statistics will be provided to describe and compare certain variables like deal volumes, uses of proceeds, etc.

3.4.2 Constructing the secondary data sample

In constructing the secondary data sample, I downloaded all available data on the German syndicated lending market between 2000 and 2015 from the Dealogic Loanware database. Dealogic strives to cover common syndicated loan elements such as volume, tenor, pricing, and rating at the time of origination. Dealogic is the most frequently used data source by practitioners in the market for German corporate syndicated loans. I am not the first researcher to utilise Dealogic Loanware,¹¹⁷ and, in fact, most extant syndicated loan studies have used Thomson Reuters LPC as the main source of data due to the fact that these studies have often focused on Anglo-Saxon markets, which is said to be the main focus of this provider (Carey & Nini, 2007).

Spanning a 15-year analysis horizon is longer than the horizon of most of the outstanding studies. Further, I interpret the year 2000 as an ideal starting point for the analysis, as European capital markets have significantly changed since the advent¹¹⁸ and full integration of the Euro at that time. According to R. Clark (2001, p. 21), the Euro has "important consequences for business strategies and structure of European banking", and I suspect this to be the case for German corporate syndicated lending as well. If the data happened to be adequate, spanning a time horizon incorporating the available data since the operationally

¹¹⁷ For example, Carey and Nini (2007) and Focarelli et al. (2008) also used Dealogic Loanware.

¹¹⁸ January 1999.

established Euro-system was, hence, likely to provide an appropriate frame from a time-series perspective. Further, this period incorporated several economic cycles, like the burst of the dot.com bubble around 2000, the credit boom of 2005 to 2008, the sharp decline during and immediately after the financial crisis, and the subsequent European debt crises and subsequent recovery in a historically low interest rate environment (Haas, 2016).

Technically, I excluded loans provided to non-corporate borrowers such as financial institutions, LBOs, project financings, and non-cash-related guarantee facilities, as these were not within the scope of this work. The focus of this study is German corporate syndicated loans, which are predominantly used for various general corporate and/or acquisition purposes. My final German corporate syndicated loan data sample was sourced from Dealogic Loanware and became the sample that I analysed and for which I present results in Chapter 4.

3.4.3 Background thoughts on bias

Because I am especially interested in locating possible bias issues within my sample, I provide some background information on bias hereunder. This is essential to apprehend the related discussions throughout Chapter 4.

In general, the influence of missing data on a quantitative analysis depends on the nature of the data and the reasons for its absence (Remenyi et al., 1991). In an ideal and information frictionless world, no data would be lacking at all or data would be missing on a completely random basis. Whether certain data were available would then be the result of a "coin toss" (Freedman et al., 2009). Here, the effects of missing data would be an increased variance, meaning that the model coefficients would remain identical but that the coefficient estimates would "only" be less precise. In line with Heckman (1979), any deviation from this is likely to weaken and distort the explanatory power and hence, the practical usefulness of any statistical analysis.

3.4.3.1 Missing completely randomly

Figure 9 plots 100 normally distributed data points.



Figure 9. Complete random bias illustration.

For the blue line, all data points have been used for a linear model. For the red line, one-third of all points have been randomly selected and marked missing. While the exact regression results vary—as it is the nature of randomness—the two graphs generally provide very similar results by being close to the "truth" (black line). In other words, the population (all data points) would be adequately represented by the sample (non-missing data points).

3.4.3.2 Missing according to x-values

If the probability of a certain data point not to be available depends on the explanatory variables ("x-values") such as deal size or maturity, for example, extrapolating from available data to the base population becomes more critical, with Figure 10 providing a theoretical example.



Figure 10. X-value bias illustration 1.

The black line again displays a linear model, estimated only based on the available data. The data points in this case are not completely randomly missing but available if $x \le 0.5$ and absent if x > 0.5. Here, magnified deviations in the coefficient estimates constitute a bias potential. The grey band plots a confidence interval for the parameter estimates. However, a more serious danger is grounded in model misspecification.

In the following plot (Figure 11), the same extrapolation infinitely undershoots the "true" values (blue line). The reason is that here the true model is exponential and not linear. Thus, the estimate cannot correctly capture the nature of the data. One must note that a linear estimate on the full set of data would have provided a more reasonable estimate of the overall growth and would—at first glance—not have appeared to be wrong. It is what would result if data were missing completely at random despite a wrongly specified model.



Figure 11. X-value bias illustration 2.

In the x-range from 0 to 0.5, the data points from the linear and exponential models are well mixed. Only as "x" increases, the two generating functions (black and blue lines) deviate from each other. Further, note that it can be difficult, if not impossible, to discern linear and exponential models if only a small window of data is available, illustrated by Figure 12.



Figure 12. X-Value bias illustration 3.

3.4.3.3 Missing through bias

In the previous cases, data was either missing completely randomly, or due to the absence of explanatory variables. Hence, there was no inherent bias. In a worse situation, data is missing based on the value of response, for example, the loan margin or the AISD. In the previous settings, missing data introduced new uncertainty and the danger of errors, but this danger was not systematic. There was "only" a danger of concluding that the coefficients of interest were higher/lower than in reality. If values are missing driven by the variable of interest (e.g., margin, AISD), then there is a *systematic or inherent bias* in the results. If it is not possible to estimate the bias accurately, then any quantitative results based on such data is wrong by nature. In the previous settings, it was possible to reach reliable results if an infinite number of data points were available (consistency). With a systematic bias, such consistency cannot be reached and is unlikely to be recoverable as exemplified by Figure 13.



Figure 13. Inherent bias illustration.

All data is assumed to be missing if it does not reach a y-threshold of one. As can be seen, the real influence of "x" on "y" (the slope of the black line) is far away from the estimate (blue line) and even far outside the confidence interval around the estimate (blue ribbon).

To summarise, regressions based on inherent biased data samples fail in providing realistic and practical useful results as a fact of which a thorough screening of a quantitative data sample in this regards, is pivotal.

3.5 Qualitative research

Hereunder, I discuss the applied data gathering procedures and the chosen analysis methods and techniques. I establish that secondary data in form of the Dealogic dataset is unsuited to answer RQ 2 to RQ 5 because this data is affected by bias in the manner of 3.4.3.3. I hence need to collect qualitative primary data with specific possible and chosen gathering techniques being presented hereunder.

Generally, other than in quantitative analyses, qualitative data is commonly defined as *natural language data* being used to discover views, perceptions, and opinions of individuals (Patton, 2002). Within my interview-driven fieldwork, these individuals are the research participants

as introduced in the section on sampling. Before that, however, I briefly present some alternative data collection approaches and discuss their appropriateness for this study.

3.5.1 Alternative approaches to data collection

3.5.1.1 Observation

Observation research can be conducted by various means depending on whether the inquirer is an active participant in the specific setting or a non-participant observer (O'Brian, 2001). In observation research, scholars commonly record or take field notes on behaviours and activities of specific individuals at the site of the research. These records are then being taken forward for analysis by similar means to be discussed further in this presentation. Given the research questions, which required an exploration of subjective personal experiences and opinions, observation as a possible data gathering technique was not appropriate for the study at hand.

3.5.1.2 Focus groups

Focus groups are dynamic discussions of groups from which researchers extract data to provide in-depth, thick sets of information. Creswell (2009) states, that six to eight participants for each group is ideal. According to Remenyi et al. (1998, p. 53), focus group research defines an approach "for collecting a highly specialised group of individuals. It is usually considered necessary to have a group of more than four individuals to constitute a focus group that will debate an issue of interest to the researcher."

A commonly discussed disadvantage of focus groups is that certain group dynamics might hinder individuals in sharing freely and honestly their personal views, which are a key ingredient for qualitative research to be successful (Easterby-Smith et al., 2012). Given the confidentiality issues, focus groups did not appear an appropriate data gathering tool for this study.

3.5.1.3 Interviews

Interviews are discussions (commonly one-on-one) between a researcher and an individual *interviewee* (*research participant*) from which the researcher draws information on a given topic field (Denzin & Lincoln, 2005). Interviews in general are the most commonly applied method of data gathering in qualitative studies and are generally considered an effective means of collecting rich data (Charmaz, 2006; Remenyi et al.). Through the interaction of researcher and research participant, interviews can produce rich data because they are based on the interviewees' personal experiences expressed in the interviewee's own words (Patton,

2002). By means of specific analysis procedures, such as *coding*, sets of raw data can be interpreted to produce knowledge (Saldana, 2013). Interview types vary in relation to the imposed level of structure and can hence be conducted in a highly structured, a completely unstructured, or in a semi-structured way (Wengraf, 2001).

3.5.2 Chosen data collection approach: semi-structured in depth interviews

To combine the strengths of highly structured and completely unstructured interview techniques and to simultaneously mitigate their individual shortcomings, I conducted a series of face-to-face, *semi-structured in-depth interviews* that enabled me to obtain rich information to be taken forward to analytic procedures that would allow me to achieve the research aim. Other than multilateral data gathering techniques, such as focus groups, the bilateral nature of interviewing in general is likely to enhance the willingness of the research participants to share what they know honestly and completely.

According to Wengraf, semi-structured interviewing is characterised by flexibility in the sense that the interviewer prepares a set of questions in advance but does not strictly adhere to them. Given this freedom, the interviewer can sequence and modify questions based on the idiosyncratic route taken by the conversation. The interviewer can adjust the sequencing to address and go back over certain themes that emerge as being of interest or can ignore certain questions altogether depending on individual circumstances (Easterby-Smith et al., 2012; M. Saunders et al., 2012). Further, new questions can be created to follow emerging themes that might not have been considered beforehand (Patton, 2002).

For these reasons, I judged semi-structured, in-depth interviews to be well suited to producing rich data that would enable me to "understand the constructs that the respondent uses as a basis for his or her opinions and beliefs about a particular matter or situation" (Easterby-Smith et al., p. 132).

3.5.3 Sampling strategy

To reiterate, the aim of my research is to explore and analyse the "hidden drivers" of banks' pricing of syndicated loans to German corporate borrowers, thereby developing an enriched understanding of the elements and determinants of pricing and its underlying processes and decisions. I therefore needed to select a purposeful sample by locating and recruiting interviewees who would most likely be able to contribute deep insights. This sampling strategy is called *purposeful* or *judgemental sampling* which has a different logic from the random sampling that is commonly applied in quantitative studies (Patton).

Explaining this, Miles and Huberman (1994, p. 27) stated, "Qualitative researchers usually work with small samples of people, nested in their context and studied in-depth—unlike quantitative researchers, who aim for larger numbers of context-stripped cases and seek statistical significance".

Following this rationale, I approached experienced syndicated lending professionals being employed by the most active and reputable banks in the German corporate syndicated loan market. In other words, I defined the sample population and selected the interviewees based on the anticipated degree of their experience regarding the phenomena under investigation.

3.5.3.1 Definition of sample population

Practically, I defined the first 25 banks in a Dealogic Loanware league table covering the corporate syndicated loan bookrunner activity-levels in Germany as my target group.

According to Gupta et al. (2008), Godlewski (2010b) and Focarelli et al. (2008) league tables provide promising indications of arranger quality and reputation, with my sampling strategy informed by this assumption. Higher league table positions indicate a better reputation and higher experience of the respective bank (Gadanecz, 2003). The logic of this approach was that interviewing representatives of banks with the highest reputation in the business would contribute to the richness and quality of data.

Table 68 plots the lender population active in the German corporate syndicated loan market.

Germany:								
Corporate syndicated loan bookrunner league table 2000 to 2015								
	Bookrunner	Deal value	No	%-	Registered	Business focus		
		(€ mn)	110.	share	office	Dustriess locus		
1	Deutsche Bank	71,869.37	314	12.00	Germany	Universalbanking		
2	Commerzbank	61,434.10	508	10.26	Germany	Universalbanking		
3	UniCredit	58,783.43	347	9.82	Italy	Universalbanking		
4	J.P. Morgan	37,319.76	85	6.23	U.S.	Universalbanking		
5	BNP Paribas	27,208.15	104	4.54	France	Universalbanking		
6	LBBW	24,813.25	179	4.14	Germany	Wholesalebanking		
7	Citi	22,965.89	58	3.84	U.S.	Universalbanking		
8	HSBC	19,261.53	109	3.22	UK	Universalbanking		
9	Bank of America Merrill Lynch	19,206.30	47	3.21	U.S.	Universalbanking		
10	Société Générale Corporate & Investment Banking	17,977.74	56	3.00	France	Universalbanking		
11	BayernLB	15,156.65	122	2.53	Germany	Wholesalebanking		
12	Royal Bank of Scotland	15,085.01	70	2.52	UK	Universalbanking		
13	Barclays	13,952.53	47	2.33	UK	Universalbanking		
14	Mizuho	9,386.37	24	1.57	Japan	Universalbanking		
15	ING	8,986.28	57	1.50	Netherlands	Universalbanking		
16	Morgan Stanley	8,949.42	26	1.49	U.S.	Investmentbanking		
17	Credit Agricole CIB	8,639.60	50	1.44	France	Universalbanking		
18	Mitsubishi UFJ Financial Group	8,466.49	31	1.41	Japan	Universalbanking		
19	Helaba	7,811.19	67	1.30	Germany	Wholesalebanking		
20	DZ Bank	7,502.69	71	1.25	Germany	Wholesalebanking		
21	Goldman Sachs	7,244.76	36	1.21	U.S.	Investmentbanking		
22	SEB	4,826.64	35	0.81	Sweden	Universalbanking		
23	Credit Suisse	4,718.12	25	0.79	Switzerland	Universalbanking		
24	Sumitomo Mitsui Financial Group	4,454.49	24	0.74	Japan	Universalbanking		
25	Santander	3,398.63	19	0.57	Spain	Universalbanking		

Source: Based on Dealogic Loanware secondary data.

Table 68. German corporate syndicated loan bookrunner league table 2000 to 2015.

The, 25 banks displayed in Table 68 represent more than 80% of the bookrunner volume of newly issued syndicated loans in the given period, indicating a sufficient coverage of the population.¹¹⁹

3.5.3.2 Sample selection and recruitment

The interviewees were selected and recruited either directly, by drawing from my network of respective syndicated loan professionals, or by the helpful support of the head of the global syndicated loan department of my own employer. A key selection criterion was that potential research participants needed to have extensive experience in the German corporate syndicated lending market. To ensure this, approaches were made to the respective department heads of the 25 banks shown in Table 68. This achieved a satisfactory outcome, whereby 10 of the

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¹¹⁹ See section 2.4.2.2.

department heads agreed to act as research participants themselves, while nine delegated the task to an experienced member of the department.

3.5.3.3 Sample profile

As an outcome of the sample recruitment, I was able to conduct 19 interviews with lending professionals who belonged to the defined population. The sample was shaped by a high level of diversity with several national banks with different ownership structures and business foci¹²⁰ as well as a broad base of international institutions with likewise varying business models and lending strategies. Furthermore, the ways in which syndicated loan departments were incorporated into the operational bank set up could vary from one institution to another.

As derived from Figure 14,¹²¹ the mean experience in syndicated lending of the interviewees within the sample was 12.7 years.



Figure 14. Years of experience of syndicated loan professionals.

¹²⁰ See sections 2.4.2.2.

¹²¹ Please note that this figure shows 21 interviewees because besides 19 bank professionals, 2 additional key informant interviews were conducted as discussed in 3.5.3.4.

Overall, the 19 research participants came from 17 different organisations of which 5 were German, 3 U.S., 2 British, 2 French, 2 Japanese, and 3 other European banks. To ensure confidentiality with respect to the latter, I refrained from disclosing the respective registered office countries as these was only present once in the sample population. In terms of the banks' overall business focus, 13 were classified as universal, 3 as wholesale, and 1 as investment banking. Overall, the 17 different organisations had acted as bookrunner in 2,097 transactions (from 2000 to 2015), representing a bookrunner-related deal value of circa \in 425 billion.

3.5.3.4 Key informant interviews

In addition to the sample of lending professionals, I held two key informant interviews with representatives from the syndicated loan secondary data providers—Dealogic Loanware and Thomson Reuters LPC. As these are the two most commonly used data providers within extant academic works, these interviews enabled me to better understand the underlying data gathering processes, being important for the study. Further, these two interviewees happened to be also experienced lending professionals in general who were therefore readily available to answer the entire set of questions. To ensure their anonymity, I did not separately label them in the data analysis.

3.5.4 Planning and managing the data collection

3.5.4.1 Interview challenges

Conducting interviews is challenging. Among other issues, the interviewers' skill-set as well as the interviewees' willingness to share knowledge and in-depth insights are crucial for highquality outcomes (Creswell, 2007). Given the discreet nature of banking, the latter issue appears particularly pronounced within this study with the subject matter being commercially sensitive (Easterby-Smith et al., 2012). However, to ensure the generation of truthful in-depth insights, respective ethical considerations and interlinked mitigation strategies have been carefully addressed.¹²² Further, it is important to ask the right questions, which are likely to make interviewees revealing useful insights needed to meet the research aim (Gläser & Laudel, 2010).

¹²² See section 3.5.7.

With regards to the required skills of interviewers and as supposed by Easterby-Smith et al., Maxwell (2005), and M. Saunders et al. (2012), I have conducted the following strategies to ensure successful processes:

- 1. Consultation of relevant literature on interview techniques
- 2. Conducting explorative interviews prior to the research
- 3. Conducting pilot interviews
- 4. Avoiding power-asymmetries
- 5. Obtaining trust
- 6. Using probes and prompts whilst interviewing
- 7. Using of self-reflections throughout the fieldwork
- 8. Asking each interviewee for feedback

3.5.4.2 Interview guide

During the interviews, I used an *interview guide* that is displayed in Table 69. Throughout the phases of reviewing the literature, of holding some explorative interviews as well as conducting two pilot interviews, I constantly developed this guide. It is likely that this sequential process led to the need for relatively few changes whilst conducting the "official" fieldwork. Considering the applied *constant comparison technique*,¹²³ only the red-framed questions were subsequently included or, in the case of number six, were slightly rephrased. The nature of such an interview guide aligns well to the chosen data gathering technique of semi-structured, in-depth interviews. It serves as a broad topic guide that simultaneously provides flexibility within the interview situations to follow spontaneously possible emerging ideas or themes from the interviewees (Wengraf, 2001).

¹²³ See section 3.5.5.5.

Interview guide Ph.D.: Corporate Syndicated Loan Pricings in Germany: an Exploration of the Hidden Drivers				
Questions to syndicated loan professionals Notes				
	1	How do you describe quantity and quality of publicly available data for the German corporate syndicated loan market?		
publicity	2	How and why did quantity and quality of public data availability change over time (especially with view to the 2000-2015 period)?		
Pricing]	3	How do quantity and quality of publicly available data for the German corporate syndicated loan market affect the work of respective loan originators?		
	4	What would be the advantages and disadvantages of a (full) transparent market?		
	5	What are the pricing elements of a "common" corporate syndicated loan to a German borrower? For what specifically does each of these compensate the lender?		
lements	6	What are ALL the pricing elements of a "common" corporate syndicated loan to a German borrower? For what specifically does each of these compensate the lender?		
ricing e	7	How do you prioritise these pricing elements form your banks' point of view?		
	8	Considering all related costs (pricing elements) for a borrower: How do you estimate the share of each of the different pricing elements in light of the whole pricing package over the lifetime of the loan?		
cing ninants	9	What are the determinants of the various pricing elements from a lenders' point of view? In other words, what is responsible for a particular pricing element to be high or low?		
Pric detern	10	How do you prioritise the various determinants of pricing from your banks' point of view?		
Specif	ic qu	estions to representatives of data providers		
ures	11	How do you describe the process of gathering syndicated loan data which then flows into your database?		
proced	12	How is pricing data availability different between various different markets and countries?		
ta base -	13	Who is driving the decision on making certain loan parameters public or not?		
Dat	14	How do you calculate and publish the AISD and what are its components?		

Table 69. Interview guide.

3.5.4.3 Interview process

Via email, I officially invited the 27 potential interviewees¹²⁴ and attached information as displayed in Appendix B referred to as *interview invitation material*. This material consists of a quite extensive *interview invitation letter* that provides some background on the research topic and the related interview processes and an *informed consent form*, as suggested by Creswell (2007).

¹²⁴ Twenty-five banks according to the respective league table as displayed via Table 68 in addition to the two representatives of the secondary data providers acting as key informants.

As previously confirmed, 21 of the approached target groups agreed to an interview. Due to legal and compliance-related issues, two targeted individuals refrained from providing an interview, whereas three did not reply to the invitation email.

The interviews were all conducted face-to-face and one-to-one within the period of May 2016 to December 2016. All were conducted in a quiet and convenient location chosen by the interviewee, which in each case was their own office. Fourteen interviews were conducted in Germany and seven in London. All 21 interviews were conducted in the English language, audio-recorded, and fully transcribed directly thereafter by myself. Prior to each interview, each respondent was asked for personal consent via the consent form to record the interview. The interviews lasted between 45 minutes and two hours with an average duration of approximately one hour. The transcribed interviews were sent to the respective interviewee for a review and final sign-off.

3.5.5 Data analysis

As there is no single, rigid and fully standardised tool that defines how to conduct and process qualitative data analyses, I will outline below in depth the complex, individual procedures that I applied in this study. This ambiguity is inherently related to the character of qualitative data in general. As opposed to numbers, words are fatter and usually have multiple meanings that—by means of a series of interactive processes—somehow need to be disentangled and revealed (Miles & Huberman, 1994).

Many qualitative approaches appear to be relatively rigidly structured, such as grounded theory method or *template analysis*, where exact procedures need to be followed. In line with my chosen research paradigm and as supported by Dey (1993), Creswell (2007), and Robson (2011), I facilitated a more universal and pragmatic approach to analyse my interview material, an approach that enabled me to draw flexibly from a series of more specific approaches. For example, certain elements of grounded theory-related techniques like *constant comparison* and *theoretical saturation* have carefully been applied, whereas others, especially *coding* and *categorising* procedures were built on rather more flexible procedures.

Relying on intuition and interpretation by "attaching data from disparate sources to appropriate categories or codes to integrate these data" supported me in locating major concepts and their interrelationships (M. Saunders et al., 2012, p. 557). Corbin and Strauss (2015) also promoted this flexibility by stating that research methods should rather be applied

flexibly as well as creatively rather than dogmatically. In that vein, Miles and Huberman (1994, p. 7) stated "The researcher is essentially the main measurement device in the study".

Overall, I happened to conduct a mostly inductive approach with a mid-level of structure by relying on both certain common elements of data analysis as well as on interpretation and intuition.



Source: Adapted from M. Saunders et al. (2012, p. 556).

Figure 15. Approaches to qualitative data analyses.

To be discussed hereunder, my data analysis techniques incorporated the natural key ingredients of qualitative studies, namely, *data reduction*, *data display*, *conclusion drawing*, and *verification*.

3.5.5.1 Coding and the development of concepts

Each interview transcript was analysed subsequent to each and prior to each succeeding interview allowing constant comparison as well as theoretical saturation.

One paramount element of qualitative data analysis is coding. In that context, Miles and Huberman (p. 56) stated, "Codes are tags or labels for assigning units of meaning to the descriptive or inferential information compiled during a study". For the particular pieces of the interview transcripts, I drew from both *concept driven*, and *data driven codes*, to disaggregate the material. This mostly exploratory coding approach enabled me to gain richer perspectives on the data with respect to the complex phenomena under investigation (Saldana, 2013).

This flexibility and analytical openness is particularly important for the research topic at hand as a couple of related sub-fields have extensively been addressed and saturated by extant worldwide literature, whereas others have not or have been based on dissimilar underlying assumptions. Hence, codes derived from existing literature¹²⁵ as well as from data¹²⁶ supported the piecewise establishment of structured analytical frameworks.

Technically, by means of line-by-line coding, supported by the qualitative data analysis software¹²⁷ "f4 analysis", the transcriptions were segmented and categorised followed by a respective labelling of the emerged segments (Charmaz, 2006). Via various cycles of coding and the constantly growing quantity of material, I incrementally defined *higher- and lower-level concepts* based on the definition of Corbin and Strauss (1996), stating that concepts vary in respect of their degree of abstraction. In that context, lower-level concepts are said to point to and provide the detail for the corresponding higher-level ones.

The ongoing coding activities and related attachment of interview-segments to the codes also led to reduction and rearrangement of the data, a process which M. Saunders et al. (2012, p. 558) defined as "unitising data". This process was managed with the aid of CAQDAS.

As intuition suggests, these processes are iterative in nature and subject to ongoing change and development (Dey, 1993). Through the various coding-cycles accompanied by the fact that data analysis was constantly conducted alongside further data collection assisted by various further analytical tools, these concepts constantly developed from essentially descriptive to more analytical concepts that explained relationships between concepts and data and led to an enhanced understanding of the phenomena under study. In other words, key themes, patterns, hierarchies, relationships, and understandings were established that ultimately led to saturated answers to the research questions.

As suggested by M. Saunders et al., respective findings were reported by presenting my own contextualised discussions, which are routinely accompanied with selected supporting quotations from the research participants. Appendix C presents an example of a full transcribed interview and, in Appendix D, coding examples are provided.

¹²⁵ Concept-driven.

¹²⁶ Derived from data or "in vivo" codes. According to Saldana (2013, p. 91) in vivo codes refer "to a word or short phrase from the actual language found in the qualitative data record".

¹²⁷ Also often referred to as CAQDAS meaning qualitative data analysis software (M. Saunders et al., 2012).

3.5.5.2 Memoing

According to Corbin and Strauss (1990) the use of *memos* enhances qualitative analysis procedures and, thus, the overall quality of the research. In that context, Charmaz (2006, p. 72) pointed out, "Writing successive memos throughout the research process keeps you involved in the analysis and helps you to increase the level of abstraction of your ideas. Certain codes stand out and take form as theoretical categories as you write successive memos."

Following this recommendation, I wrote memos throughout the research enabling me to develop and deepen new ideas and concepts. Constantly writing memos provided an important means to step back from concrete data coding procedures to make deeper and more conceptually coherent sense of the phenomena under study (Charmaz). Further, via the persistent use of memos I was enabled to "test" certain emerging thoughts in following interviews.

These supporting devices were particularly useful with respect to very complex themes like information asymmetrical issues and their interconnection with relationship lending and syndicate structure, where well-established theories appeared to deviate extensively from my research findings.

3.5.5.3 Diagramming

To display and contextualise data as well as to conduct analysis, I constantly used *diagramming*, which supported me in interpreting and finding meaning within the data.

Charmaz (p. 117) pointed out, "Diagrams can offer concrete images of our ideas. The advantage of diagrams is that they provide a visual representation of categories and their relationships." As suggested by Corbin and Strauss (1996), these visual images of emerging ideas and the relationship of concepts was a key technique in my data analysis and in the establishment of the integrated framework. This was particularly true for more complex issues and interrelationships where an "analytic device for thinking about macro and micro relationships that might shape the situations the researcher studies" was needed (Charmaz, p. 118).

3.5.5.4 Quantifying and counting

Numerous elements and emerging concepts of my study needed to be prioritised. Many pricing determinants needed to be linked and prioritised to distinguish between respective influential magnitudes. As suggested by Easterby-Smith et al. (2012), I used *counting* or, in other words, *quantifying* specific statements as a supplement to the data's core analysis. In other words, counting enabled me to establish a first indication especially with respect to prioritisation issues. Further, as qualitative research is to a large extent driven by subjective judgement, counting is an important tool to protect a researcher against extensive bias (Miles & Huberman, 1994).

3.5.5.5 Constant comparison

Throughout the qualitative fieldwork, I used the *constant comparative method*, which Charmaz (2006) and Glaser and Strauss (1967) defined as a process of constantly comparing sets of data with other sets of data and concepts and categories with other concepts and categories. This analytic tool enhances the inductive creation of concepts and categories and further mitigates bias (Charmaz). The technique again underpins the importance of collecting and analysing data simultaneously (Coffey & Atkinson, 1996). Further, it enabled me to facilitate the *abductive reasoning* technique that Charmaz (p. 186) defined as "a type of reasoning that begins by examining data and after scrutiny of these data, entertains all possible explanations for the observed data, and then forms hypotheses to confirm or disconfirm until the researcher arrives at the most plausible interpretation of the observed data".

3.5.5.6 Theoretical saturation

I did not apply any *theoretical sampling* in the sense that I was *ex ante* open to the question of how many interviews I intended to conduct. This means that, from the beginning, I targeted the 27 possible interviewees and would have conducted 27 interviews if no one had refused to participate. However, theoretical saturation was applied in a way that whilst the fieldwork carried on, I put different foci on specific topics which appeared to demand more time and deeper discussion.

Charmaz (p. 189) defined theoretical saturation as "the point at which gathering more data about a category reveals no new properties nor yields any further theoretical insights".

I refrained from leaving out complete themes which had already been saturated and instead focused on putting more emphasis on the less saturated ones in later interviews. As quantifying and counting was one supporting strategy whilst presenting findings in general and by prioritising efforts of certain phenomena in particular, it was important to thematise all core research themes in each setting.

3.5.5.7 Triangulation

Triangulation can be defined as a method used to confirm findings (Howell, 2013). The key underlying rationale of triangulation is to "replicate the finding in a place where, if valid, it should be reoccur" (Miles & Huberman, 1994, p. 267).

According to Denzin (1978) triangulation can be conducted by:

- 1. Data source and type
- 2. Method
- 3. Researcher
- 4. Theory

I facilitated triangulation by various means. First, the descriptive statistics that resulted from my quantitative analyses served, where appropriate, as useful bases for comparison with the statements of the research participants, as well as providing valuable context. Triangulation was also applied within the qualitative fieldwork. If an interview for instance generated an unexpected finding, I attempted to explore this in more depth by using a different form of words with the same respondent, and also followed up such emerging concepts with other research participants.

Overall, triangulation provided an essential means of enhancing trustworthiness and rigour whilst collecting my data, as well as during the analysis. Especially, it was very helpful in ensuring that I did not allow my perspectives on the phenomena under study to narrow, and rigorously followed up new insights when they arose.

3.5.5.8 Respondent validation

Besides constant comparison and abductive reasoning during the fieldwork, which can also be interpreted as some means of triangulation, the interviewees were readily available after having taken part in an interview. Hence, I could share emerging ideas as well as spontaneously occurring questions with a wide group of specialists, which helped to increase the overall quality of the work. This technique, which is also often referred to as *member checking* is commonly classified as a source of phenomenological validity (Bronfenbrenner, 1976).

3.5.5.9 Reflective and creative thinking

I had been actively involved in the research. According to Gould (1988, p. 22), "The most creative theories are often imaginative visions imposed upon facts". In other words, "Intuitive notions about phenomena often form part of the practice of researchers" (Remenyi et al., 1998, p. 105).

Other than in quantitative analytic methods, which are said to be well established and can hence be relatively routinely applied, this does not hold for qualitative research, where great degrees of creativity are needed. My pragmatic approach in structuring the overall research design gave me the flexibility to makes use of my intuitive notions albeit ensuring sufficient scientific rigour.

3.5.6 Researcher values and reflexivity

Qualitative research by nature is value laden. According to Mason (2002), an inextricable linkage between the researcher and the research participants is prevalent. Other than in quantitative studies, maintaining distance from data is usually not possible. One can state that the researcher is the research instrument and the researcher's values and behaviour influence the data gathered. In other words, it is impossible that two different researchers conducting interviews with same questions and same respondents would obtain exactly the same data. The whole research is, hence, driven by the researcher's assumptions, personal and professional background, and by the researcher's interlinked research motivations.

3.5.7 Ethical considerations

According to Remenyi et al. (p. 282), ethics can be defined as "a sense of understanding of what is right and wrong". As the interaction with human beings is key in any kind of qualitative research, ethical issues have to be taken into consideration carefully (Easterby-Smith et al., 2012; M. Saunders et al., 2012). Killam (2013, p. 3), for instance, stated, "The purpose of the inquiry needs to be balanced with what the researcher values as well as other ethical considerations in the conduct of research".

It is critical for a successful outcome of the inquiry that the researcher be able to encourage human beings to tell their comprehensive and "true" views on the respective topic. Even if they want to do this, conflicts of interests¹²⁸ are likely to influence the research participant in

¹²⁸ For example, with the employer.

the way the participant tells the "story" (M. Saunders et al., 2012). In accordance with *The University of Gloucestershire Handbook of Research Ethics*, I anticipated specific ethical issues in my research, as shown in Table 70.

Ethical issues in qualitative studies			
1	The ensuring of anonymity as well as confidentiality.		
2	The ensuring of informed consent.		
3	The risk of invasion of privacy.		
4	Affiliation and conflicts of interest.		
5	Destruction of data and safe storage.		

Source: Based on University of Gloucestershire (2008) and Easterby-Smith et al. (2012).

Table 70. Ethical issues in qualitative studies.

For each of the above, an appropriate mitigating approach was adopted as discussed below.

3.5.7.1 Ensuring of anonymity and confidentiality

To mitigate point one, aliases were assigned to the respective interviewees and their real names are not being published. Further, as already stated, this aspect was of utmost importance for the research participants. Therefore anonymity was even more secured by refraining from characterising the aliases with certain lender-specific elements.

3.5.7.2 Ensuring of informed consent

Point two was mitigated by providing the respective interviewees with comprehensive information before the interviews were conducted.¹²⁹ This information included an invitation email, an interview agenda, an interview protocol structure, and an informed consent form to be signed by each interviewee. With respect to the latter, every interviewee was assured of having the right to decline to answer specific questions or to withdraw completely from the interview at any time.

3.5.7.3 Invasion of privacy

Upon the explicit request of six interviewees, I refrained from explicitly assigning¹³⁰ certain key variables like business focus, nationality and lending philosophy to the respective interviewees and their employers. This request rests on the fact that experienced German syndicated loan market professionals might easily identify the respective respondents. Further, given the average 12.7-year experience of the research participants, it is reasonable to

¹²⁹ See Appendix B.

¹³⁰ Besides year of experience.

assume that a high degree of interconnection via joint-transactions and repeated personal meetings might cause reluctance with respect to openness, honesty, and richness of data if the highest degree of anonymity was not assured. On the one hand, this might be interpreted as a drawback as I am somewhat limited in explicitly discussing the diversity of answers being based on individual characteristics. However, the assurance given to these interviewees facilitated deeper and more open discussion, a fact that at least counterbalanced this drawback. This was particularly the case for certain highly sensitive topics like discussions with respect to competition law or ethical issues. In order not to undo the research participants' anonymity, I needed to select respective quotations carefully whilst reporting the findings.

3.5.7.4 Conflicts of interest

Conflicts of interest or concerns about possible such conflicts were successfully moderated by the fact that the thesis and research project is completely self-funded and neither influenced by my employer nor by any other organisation or individual. I clarified this to the research participants both via the interview invitation material as well as by orally introducing the research topic and its backgrounds before each interview.

3.5.7.5 Data security

During the fieldwork and the drafting of the thesis, I took care to store the interview data in a secure and confidential manner. For instance, when dealing with sensitive interview material, I only used one computer, which was equipped with adequate firewall and antivirus software. Once the thesis was finally approved, the data will be destroyed to ensure respondent privacy beyond the research project (the fifth issue in Table 70).

3.6 Summary

In Chapter 3, I located the research in a wider philosophical context and established that I would conduct the research within a pragmatist paradigm grounded in social constructionist ontology, a phenomenological epistemology, and a mixed-methodological approach with a strong focus on a qualitative fieldwork.

In terms of methods used I have provided detailed discussions on sampling, data gathering, and analysis for both the quantitative and qualitative elements of the study. Furthermore, throughout the chapter, I have discussed and evaluated alternatives to the chosen approach.

4 **Research findings and discussion: quantitative analysis**

4.1 Introduction

Chapter 4 presents the findings of my quantitative analyses relative to RQ 1 and to achieving its related research objective. The findings are based on the data gathered as discussed in 3.4.2.

4.2 General descriptive statistics

As an initial overview of the sample and its main characteristics, I offer an array of descriptive statistics and then focus on the pricing variables of interest in this study. Further, I subsequently pick up several of these discussions throughout my qualitative fieldwork to highlight certain phenomena. In other words, besides the concrete answer for RQ 1, I use the content of Chapter 4 to provide some contextual background and to understand better and underpin subsequent research (M. Saunders et al., 2012). I begin by plotting in Figure 16 the total deal volumes of syndicated loans¹³¹ in Germany from 2000 to 2015.



Source: Based on Dealogic Loanware secondary data. Figure 16. Total German syndicated loan volumes.

¹³¹ Full sample, without any restrictions.

Syndicated lending has witnessed rapid growth with the introduction of the Euro in 1999/2000. However, this growth was temporarily interrupted by various macroeconomic events like "9/11¹³²" and the burst of the dot.com bubble. Driven by a high degree of activity in inter alia M&A-related financings, an all-time peak of \in 254.9 billion was reached in 2006 (Haas, 2016). During the financial crisis in 2008 and 2009, a strong market deceleration led to a decrease to \in 104.9 billion of newly issued syndicated loans in 2008. Since the financial crisis, volumes have not recovered to the 2006 and 2007 heights, but they have, however, significantly recovered, especially in the period 2013 to 2015 (Ellemann, 2011). Figure 17 displays these developments in terms of the number of deals.



Source: Based on Dealogic Loanware secondary data.

Figure 17. Total German syndicated loan number of deals.

Especially worthy of note is that number of deals—other than volume levels—not only recovered in the aftermath of the crisis-period but currently even exceeds the deal numbers of the record volume years. Hence, the average deal volume has declined from roughly €966 million in 2006 to €470 million in 2015. This is mainly caused by a growing penetration of

¹³² Reference to 11 September 2001.

the market for more "medium-sized¹³³" corporates, which—in earlier years—generally raised their bank financing through bilateral bank loans (Barbosa & Ribeiro, 2007; Carey & Nini, 2007).

Figure 18 segregates the total deal values in the period 2000 to 2015 of syndicated loans to German corporate borrowers ("included") vis-à-vis the excluded¹³⁴ observations.



Source: Based on Dealogic Loanware secondary data. Figure 18. Included versus excluded transactions.

Overall, the most of the syndicated loan issuing volume has been included in the final sample, indicating that main volume drivers have been corporate lending during the 15-year period. Excluded facilities such as LBOs, loans to financial institutions, or project financings historically tended to play rather subordinated roles in Germany. Thus, Voisey and Slocombe (2011) have pointed out that the backbone of the European syndicated loan market has always been corporate investment grade lending.

¹³³ Not in relation to the official definition provided in section 2.4.2.1. Meant are rather smaller- and medium sized corporates within the official large-corporate-cluster.

¹³⁴ In line with the scope of the thesis, for example, LBO-loans or loans to non-corporate borrowers and guarantee facilities as discussed in section 3.4.2.

In some years, a relatively high share of excluded transactions was predominantly driven by a few "jumbo" transactions. In 2008 and 2009, for instance, facilities granted to "Hypo Real Estate" of \notin 52 billion each, guaranteed by the German government, almost single-handedly drove the high excluded volumes in those years.

As syndicated loans usually consist of multiple tranches that might differ in loan volume, type, maturity, pricing, etc., going forward, I conduct most of the analyses—especially with respect to pricing information availability—on the tranche level. In other words, in these cases, I treat each tranche as a separate observation, being aligned thereby with most academic studies on syndicated lending, for example, Anagnostopoulou and Drakos (2016), Gaul and Uysal (2013), A. Saunders and Steffen (2011), and Schenone (2010).

For the investigation period, 1,537 deals are included into the restricted final sample, consisting of 2,578 tranches and amounting to an overall volume of \notin 1,431 billion. The following analyses are based on this final restricted sample. Table 71 displays distribution statistics on some main loan characteristics.

	М	SD	Min	Mdn	Max
Total deal value € mn per deal	931.21	2,530.84	5.00	243.50	37,100.00
Tranche value € mn	529.33	1461.92	0.50	100.00	24,733.33
Maturity (years) per tranche	4.39	2.29	1.00	5.00	25.00
Number of lenders per deal	9.45	8.61	2.00	6.00	52.00
Number of bookrunners per deal	2.40	3.05	0.00	2.00	30.00
Number of tranches per deal	1.68	1.01	1.00	1.00	8.00

Source: Based on Dealogic Loanware secondary data.

Table 71. Distribution statistics for resticted sample.

The average number of tranches per syndicated loan transaction is 1.68 (mean). The average total deal value is \notin 931.21 million, but volumes show significant deviations ranging from \notin 5 to \notin 37.1 billion. Correspondingly, the standard deviation of approximately \notin 2.5 billion is large. The mean tranche value amounts to \notin 529.33 million also reveals a large standard deviation. The average lifetime of a syndicated loan is 4.39 years and average syndicates consist of 9.45 lenders of which 2.4 act as bookrunner.

Figure 19 plots the weighted average number of lenders or, in other words, the syndicate size weighted by deal size. By using deal sizes as weights, this effectively shows the average number of lenders per Euro loaned—albeit on a different scale.



Source: Based on Dealogic Loanware secondary data. Figure 19. Deal size weighted average number of lenders.

With a weighted average of 10.45 lenders, 2015 marks the all-time-low within the period under investigation. Looking at different deal size groups (Figure 20), it appears that this declining trend is especially driven by smaller lending groups for deals exceeding \notin 1 billion. In other words, banks' loan commitments tend to have increased towards the end of the investigation period.



Figure 20. Average number of lenders (grouped by deal size).

Next, Figure 21 illustrates the loan type distribution. As guarantee facilities are not within the scope of the thesis, I focus on revolving credit as well as term loan facilities. Term loan facilities also include bridge loans, which are almost exclusively found in underwritten acquisition financings.


Source: Based on Dealogic Loanware secondary data.

Figure 21. Loan types: term loans versus RCFs.

The appearance of revolving credits and term loans is relatively balanced. The overall share of revolving credit facilities of the total number of tranches is roughly 51%. This share varies somewhat over time with a lower number of RCFs, especially in crisis years such as 2001 and 2009, but predominantly remains to value at a range of 50 plus or minus 10%.

This is different in the case of the unrestricted sample, including LBOs, project financings, guarantee facilities, etc. Here, the average share of RCFs amounts to 33.5%¹³⁵ and is, thus, significantly lower, related to the fact that project financings and LBOs especially usually consist of fully drawn term debt.

¹³⁵ For the sake of brevity, I omit these statistics.

With respect to syndicated loan uses of proceeds Figures 22 and 23 provide the corresponding proportionalities.



Source: Based on Dealogic Loanware secondary data. Figure 22. Syndicated loan uses of proceeds (2000-2015).

Most syndicated loans are granted for acquisitions, refinancing, or general corporate purposes, accounting for about 90%¹³⁶ of the entire volume level on average.

¹³⁶ With only 2012 falling below 80% at 77%.



Source: Based on Dealogic Loanware secondary data. Figure 23. Syndicated loan uses of proceeds per year.

Concerning "event-driven", M&A financings in light of economic cycles and sentiment, Figure 23 reveals some temporary lulls in activity between 2001 and 2003/2004 and after the financial crisis years from 2010 to 2015.

Figures 24 and 25 plot the senior unsecured S&P and Moody's rating distribution of the respective borrowers. In 249 (199) deals, the borrowers are rated by S&P (Moody's), representing a roughly 16% (13%) share of the deal number of included transactions. Roughly 63% (91%) are rated investment grade with S&P (Moody's). In 164 deals (10.7%), the respective borrowers are rated by both S&P and Moody's.



Source: Based on Dealogic Loanware secondary data.

Figure 24. Syndicated loans for S&P-rated borrowers (2000-2015).



Source: Based on Dealogic Loanware secondary data. Figure 25. Syndicated loans for Moody's-rated borrowers (2000-2015).

For loans to S&P's and Moody's rated borrowers, the average tranche number is 1.55 and 1.37 respectively, both lower than the average of 1.68 for the entire data set. The tranche instrument type is in 59% and 68% of tranches an RCF, indicating that the rated deals are more often one-tranche back-up lines for large, rated, and, most likely, listed multinational companies. As indicated by extant literature, a strong correlation between borrower size, safeness, and appearance of an external rating exists (Focarelli et al., 2008).

4.3 **Pricing element availability**

Now that a general overview on the data sample has been provided, I present an analysis of the degree of pricing-element availability within the sample. I do this by outlining the respective shares of missing data of the various pricing elements in comparison to the entire sample.

4.3.1 Per annum elements

Figure 26 outlines the respective share of missing tranche margin¹³⁷ information.



Source: Based on Dealogic Loanware secondary data. Figure 26. Tranche margin: missing development.

¹³⁷ Tranche margin = initial margin of the respective tranche.

In 2000, 29.2% of the included tranches had no public margin information. In other words, in 70.8% tranche margin information was available at the time of origination. In 2015, 89.4% of tranches lacked publicly available margin information. From a low in 2004 at approximately one fourth of tranches without information this number increased steadily¹³⁸ to more than 80% in 2011. Since then the trend has somewhat slowed down, but with almost 90% of missing margin information in 2014 and 2015, public availability nowadays appears to be a rare exception rather than a rule.

The lack of available information on commitment fees¹³⁹ varied between 31% in 2002 and 60% in 2006 in the years before the financial crisis. There was a significant rise of circa 15 percentage points already in 2006 with a further 20 percentage point rise in 2007.



Source: Based on Dealogic Loanware secondary data. Figure 27. Commitment fee: missing development.

¹³⁸ Only 2007 shows no increase of missing information compared to the year before.

¹³⁹ As commitment fees are predominantly applicable for RCFs, I present the respective share of missing data based on the population of RCFs. I apply the same methodology for utilisation fees (Figure 29).

Since 2010, the missing-share has always valued above 95% and a 99.5% share of missing values in 2015 underlines that commitment fees are basically no longer publicly available at all.



Next, Figure 28 illustrates the missing tranche information on facility fees.

Source: Based on Dealogic Loanware secondary data. Figure 28. Facility fee: missing development.

Facility fees are not common in the German corporate syndicated loan market and are mainly found in the U.S. Thus, the almost total lack of public availability is for obvious reasons based on which I will not further include facility fees in the subsequent figures.

For utilisation fees, most of what has been established for commitment fees holds with even less information available (Figure 29).



Source: Based on Dealogic Loanware secondary data. Figure 29. Utilisation fee: missing development.

In 2015, for instance, no single utilisation fee was publicised.

4.3.2 Upfront elements

In some cases, participation fees were only available from 2000 to 2009 as shown in Figure 30.



Source: Based on Dealogic Loanware secondary data.

Figure 30. Participation fee: missing development.

From 2010 onwards, a nearly total lack of participation fees in the public domain can be reported.



The underwriting fee¹⁴⁰ is almost never publicly available, as displayed in Figure 31.

Source: Based on Dealogic Loanware secondary data. Figure 31. Underwriting fee: missing development.

¹⁴⁰ As underwriting fees are predominantly applicable for acquisition financings, I present the respective share of missing data based on the population of acquisition financings within the restricted sample.

4.3.3 AISD

The figure below tends to present a mirror image of Figure 26¹⁴¹ and displays the missing data patterns of AISD in the period under investigation.



Source: Based on Dealogic Loanware secondary data. Figure 32. AISD: missing development.

The mirror image occurs, as AISD is an automatically calculated field that in theory incorporates margin plus annualised fees as presented in section 2.5.2. Interestingly, once the tranche margin is available, an AISD gets automatically reported, irrespective of whether all or any other parts of the equation¹⁴² are available.

With Dealogic Loanware, the automated field AISD takes the respective value based on the pricing element availability criteria expressed in Table 72.

¹⁴¹ Plot of the tranche margin missing pattern.

¹⁴² See Table 11.

Value of AISD	dependent on	data	availability
---------------	--------------	------	--------------

AISD in bp p.a. takes the value of ...

... the respective tranche margin when no fees are disclosed.

... the respective tranche margin + utilisation fees (if applicable) when no further fees are disclosed.

... the respective tranche margin + utilisation fees (if applicable) + participation fee divided by the maturity in years when no further fees are disclosed.

... the respective tranche margin + utilisation fees (if applicable) + participation fee divided by the maturity in years + underwriting fee divided by the maturity in years (if applicable) when no further fees are disclosed.

Source: Adapted from Dealogic Loanware (2016).

Table 72. Value of AISD dependent on data availability.

In other words, under different data availability settings, AISD can take different values for the same deal. As in most cases, only tranche margin is available and no further pricing elements are published, AISD tends to equal to the respective tranche margin, a fact that results in the aforementioned mirror image.

The following discussion refers to Table 12, which outlined a pricing structure example of a common RCF. In the case that the only tranche margin was published, AISD would take the value of 100. In the case that utilisation fees were also public, AISD would be 140. In the case that underwriting fees were published, the AISD would be 150. Arrangement fees are never included as defined by Dealogic Loanware and as discussed in 2.5.2. In other words, the public AISD value fluctuates between 100 and 150 bp p.a. based on the respective degree of data availability. Thus, an AISD of one is not comparable to another loan when information availability differs and each AISD-calculation is based on different available equation elements. Hence, the susceptibility to error and misinterpretation is severe. To achieve "transparency",¹⁴³ one would have to look at the respective tranche margin and fee information availability was aligned.¹⁴⁴

In the case at hand, however, the sample size would decline to close to zero. In line with Hallak and Schure (2011), on the other hand, taking only the tranche margins into account would neglect a major percentage of the total cost of borrowing. The fact that arrangement fees are not covered at all may also lead to misinterpretation.

¹⁴³ Based on the availability of pricing data.

¹⁴⁴ With the rare exception of for example, Hallak and Schure (2011) this effort has not been made by most researchers who took AISD as published with the provider.

Based on the pricing elements in syndicated lending considered to this point, for an *ex ante* pricing view—based on possibly published pricing data at signing—in an "ideal world", the following formula would cover AISD more appropriately:

Suggestion for more accurate AISD-definition	
	Initial margin in bp p.a.
+	Utilisation fee (fully drawn) in bp p.a.
+	All upfront fees in bp / maturity in years
= AISD in bp p.a.	

 Table 73. Suggestion for more accurate AISD-definition.

During the qualitative fieldwork, this more accurate AISD-definition will be enhanced incrementally by considering additional pricing elements and various pricing structural considerations thus far neglected. This incremental strategy will lead to the formulation of novel pricing definitions and measures that are presented in section 5.4.

4.4 Preliminary conclusion: pricing element data availability

Figure 33 plots the share of missing pricing information regarding all covered pricing elements over time. It is obvious that the share of missing AISD mirrors the share of missing tranche margins, in line with the reasoning provided earlier.



Source: Based on Dealogic Loanware secondary data.

Figure 33. Comparison of missing-shares over time.

The share of missing tranche information in general has increased significantly over the years. With respect to all pricing elements of interest, a significant difference between pre-and post-financial crisis years is observed. Whereas before the financial crisis around 2008/2009, information on margins, commitment, utilisation, and participation fees had been available in roughly 50% of cases, this average fell almost to zero in the later years.

Even though the share of deals where the tranche margin is available drops from almost 75% in 2004 to less than 11% in 2015, by 2015 the share of deals with AISD where the AISD is based exclusively on the tranche margin increases. This is because the availability of the other ingredients of AISD declined even more significantly compared to tranche margin.

Because of these discrepancies, any analysis would not only face an oversampling bias towards the time before the crisis due to higher data availability, but there would also be a downward bias within AISD over the years, as more AISD values are identical to the respective tranche margin. Econometrically, the first issue might possibly be compensated for by assigning higher weights to later data points. However, the calibration of those weights might itself include new bias potential and could further increase the estimate volatility.

4.5 Screening for inherent bias in the syndicated loan sample

As discussed whilst debating some issues of bias in 3.4.3, samples might be inappropriate for conducting serious inductive statistical analyses if structural reasons appear to be responsible for certain data points being either available or missing (Remenyi et al., 1991). In other words, the sample would basically be "useless" if missing data would share systematic elements, inter alia via borrowers being affected by a disproportionally high degree of missing data leading to significant differences in central explanatory variables such as size and rating. Thus, I subsequently screen the data for such possible structural drivers.

Figure 34 demonstrates that pricing data is more likely to be available for companies having obtained an external rating by S&P, Moody's, or both.



Source: Based on Dealogic Loanware secondary data.

Figure 34. Pricing data availability: rated versus non-rated borrowers.

As larger companies are also more likely to be externally rated, these data availability discrepancies between rated and unrated borrowers is related to the following plot (Figure 35), which outlines the differences in average total deal values between deals where the respective pricing information is available for any of the tranches and those where it is not.

In that context, Focarelli et al. (2008) stated that larger facilities are likely to be issued by large and transparent borrowers. Broad bases of supporting evidence has been provided by, amongst others, Anagnostopoulou and Drakos (2016), who have stated that externally rated enterprises in general and those with better ratings in particular carry lower loan pricings. Likewise, in their early contribution, Melink and Plaut (1986) found positive relationships between loan size, credit rating, and firm size.



Source: Based on Dealogic Loanware secondary data.

Figure 35. Missing analysis based on average deal values.

It is apparent that deals with available information are on average significantly larger. In 2007, for instance, the average volume of deals with available margin amounted to almost \notin 4 billion, whereas volumes on missing information averaged approximately \notin 750 million. The following descriptive scatter-plot displays more favourable terms of larger deals.



Source: Based on Dealogic Loanware secondary data. Figure 36. Scatter plot: tranche margin versus tranche volume.

It is thus reasonable to assume a related downside bias for the average costs of a deal whilst analysing publicly available data.

The following graphs (Figures 37 and 38) display the development of respective ratios over time. A ratio of one would mean that a deal with available pricing information is exactly as large as one without (shown as a blue line). If the size of the deal was not a selection condition for the availability of pricing information, it was to be expected that the ratio would fluctuate by random chance around the value of one.



Source: Based on Dealogic Loanware secondary data.

Figure 37. Ratio: deal values of missing versus available pricing data.

However, the ratio persistently presents values greater than one and, for most variables, on average over three, as can be seen in Table 74. This and the strong fluctuations between the years provide evidence that the size of the deal plays a pivotal role with respect to the publication of deal pricings.

Particularly, the tranche margin—the most commonly available information—displays a large spike during the financial crisis. In 2008, the average deal with an available tranche margin was circa nine times as high as compared to transactions, where the margin was unavailable. But, even in "normal" years, fluctuations from a factor of 4.8 in 2012 to 2.7 in 2013 are observable. As the size of deals is related to the terms, such fluctuations are likely to hide real developments and relationships the noise of varying deal sizes. Table 74 displays the respective mean ratios for the period under investigation.

Mean ratio: deal values of missing versus available pricing data	
Margin	4.9
Commitment fee (RCF)	3.3
Utilisation fee (RCF)	3.8
Participation fee	2.4
Underwriting fee	2.4
AISD	4.1

Source: Based on Dealogic Loanware secondary data.

Table 74. Mean ratio: deal values of missing versus available pricing data.

The following plot (Figure 38) shows the same proportionalities by using tranche instead of deal values.



Source: Based on Dealogic Loanware secondary data.

Figure 38. Ratio: tranche values of missing versus available pricing data.

The relationship of average tranche sizes for deals with available information to the rest mirrors the conclusions from deal sizes. Large fluctuations particularly during crisis years are likely to introduce a selection bias in any analysis as data is obviously not missing at random.

Mean ratio: tranche values of missing versus available pricing data.		
Margin	3.9	
Commitment fee (RCF)	3.3	
Utilisation fee (RCF)	5.2	
Participation fee	2.4	
Underwriting fee	2.2	
AISD	3.9	

Source: Based on Dealogic Loanware secondary data.

Table 75. Mean ratio: tranche values of missing versus available pricing data.

The preceding analyses powerfully indicate that the data sample is affected by severe bias issues and that the lack of published pricing data is due to structural reasons rather than being randomly induced. The question is now whether one can reshape the sample in such a way that it becomes "useful" again.

4.6 **Reconstructing a valid sample from biased data**

Various statistical methods attempt to reconstruct valid results based on incomplete data. One of the most famous is the so-called *Heckman correction*, also often referred to as "Heckit". It is commonly used for self-selecting samples in economics¹⁴⁵ (Heckman, 1974, 1976, 1979). The Heckman method uses a separate selection equation that models the probability of an observation being available. The estimate from this equation is then used in the main regression to correct for the selection bias, in this case, the higher probability of certain deals having publicly available pricing information.

In econometrical terms, the main disadvantage of the Heckman correction is the tendency to produce borderline singular design matrices if the selection equation does not draw significant information from variables that are not in the pricing equation. In practical terms, this means that the Heckman correction tries to draw conclusions about an unobserved population from the observed data. This can only work if all the necessary information about the unobserved population can be deduced from the observed population and the information that is available about which members of the base population is part of the unobserved population.

¹⁴⁵ For example, wage equations in regions where a significant part of the population of interest is not working and, therefore, has no reported wages.

For the Heckman correction to work in practice, the underlying structure must be regular as even the best-case scenario is roughly equivalent to an x-value cut-off because of the nature of the data set at hand.¹⁴⁶ This is compounded by the additional estimation volatility from the extrapolation and the numerical instability from a likely singular model.

In summary, the Heckman correction should be employed if there are reliable selection variables—variables that predict whether data is observed but are not related to variables relevant to deal pricing—and the fraction of unobserved data is small and interleaved with the observed data. Neither applies to the sample at hand. Most of the relevant pricing information is missing, as discussed in the previous sections. Further, the main drivers for missing data that can be identified in the dataset are variables like year of signing, company size, and company rating, all of which are major pricing determinants.

4.7 Excursus: a look at the U.S., UK and Eurozone markets

As discussed whilst reviewing the literature, most studies on syndicated loan pricings are based on U.S. secondary data samples, whereas less research has been conducted based on the UK or other European markets, including the Eurozone.

Having concluded that quantitative price analyses based on officially published information on the German corporate syndicated lending market would be problematic, it remains unclear whether public domain data in other markets is censored to a lesser extent and whether existing studies provide practical useful evidence. It would be beyond the scope of this research to attempt to answer this question in a comprehensive way. Instead, I cursorily examine these markets from 2010 to 2015 to highlight, if possible, some obvious structural differences.

According to Figure 39, the U.S. market is shaped by significantly fewer missing tranche margin observations. For any given deal in the last six years, it is likely that the tranche margin is available if the deal was issued in the U.S. and that it is unavailable if it was a German deal. In 2015, 89.4% of missing tranche information for German deals compares with only 14.8% missing information for U.S. deals.

¹⁴⁶ The missing data is not homogenous among the explanatory variables.



Source: Based on Dealogic Loanware secondary data.

Figure 39. Missing pricing information: Germany versus UK, Eurozone, U.S.

Quantitatively, the Eurozone (excluding Germany)¹⁴⁷ and UK data availability appears to be slightly better compared to Germany; however, it appears significantly worse compared to the U.S. Other than in the U.S., in all the other markets, the share of missing margin information increased in the 2010 to 2015 period.

In the U.S., the average deal size of those with published tranche margins is only slightly larger compared to those without (see Figure 40). This also holds true for the UK market from 2012 on. With respect to the Eurozone (excluding Germany), the ratio between average total deal value of non-missing and missing data appeared to be equally low in the period of 2011 to 2014, but to have increased significantly to three in 2015.

¹⁴⁷ With the exception of Barbosa and Ribeiro (2007), existing studies on Europe tended to look at Europe as a whole. In using a sample of only EURO-Zone countries, I assume a more aligned sample with view to the economic and financial development of its constituents.



← EUR Zone (excl. Germany) ← Germany ← UK ← U.S.

Source: Based on Dealogic Loanware secondary data.

Figure 40. Ratio: deal values of missing versus available pricing data (Germany versus UK, Eurozone, U.S.).

In Germany, at its peak in 2008, the average deal with available tranche margin was roughly nine times as large compared to deals without available data. It is plausible to adjust results for the offset of the average deal size in the U.S., where available and missing data appear to be off by a maximum ratio of 1.5 in 2010.

Thus, for the U.S. market, deal size provides no reason to conclude that the available pricing data does not represent the market, while in Germany this is obviously not the case. For the UK and Eurozone (excluding Germany) the data situation—based on this straightforward analysis—appears to be almost similarly critical with a view to quantity, but with a tendency of more randomly selected missing data points. Thus, analyses based on European data samples need in general to be interpreted with caution.

The importance of borrower size for loan pricing is one of the major advantages of U.S. and—with some drawbacks—also for Euro Zone- (excluding Germany) and UK-based secondary data samples.

4.8 Conclusion and impact on further course of the study

In summary, the German corporate syndicated loan data sample appears to be censored due to a high degree of non-randomly missing pricing data. Even the most elementary pricing component—the tranche margin—is not available for more than three quarters of all tranches in post-crisis years and for almost 90% in the last two years.

For other elements such as the commitment fee, the missing proportion reaches as high as 99% in 2015. The significant upward movement of the proportion of missing data points—in case of the tranche margin from 30% in 2000 to 89% in 2015—is a strong indicator that data is not missing randomly.

These above-mentioned phenomena cause serious issues for the use of the information for quantitative analysis in general and for those of smaller deals in particular.¹⁴⁸ Remember that the average value of tranches with available margin amounts to over €1 billion, which is almost four times larger than those of the tranches in general, a fact making reconstructive methods like the Heckman correction to appear impractical.

While it is never possible to conclude with certainty that the data is not missing at random, both the timing of the deal origination and its size are obviously major drivers for the pricing of a German corporate syndicated loan. Therefore, it is not sensible to assume that the data is missing at random. The predictive power of possible regression analyses would, therefore, be limited.

The Heckman correction can never substitute for an almost total lack of information (Heckman, 1974, 1976, 1979). Such methods allow researchers to correct for systematically missing data in the margins of the observed range. In this case, the range of interest is almost entirely missing. Even sophisticated statistical methods can only extract the maximum information being available in a set of data. For example, were no data on smaller companies available, but were data available only on large multinational corporations, then no model would be able to provide information on smaller companies beyond the information from corporations that might apply to smaller companies or extrapolations of such. This issue appears particularly important in light of the wide differences in size of German corporate syndicated loan borrowers as presented in 2.4.2.1.

¹⁴⁸ Most likely thus, for smaller firms.

To summarise, the discussion provided in this chapter highlights major weaknesses of publicly available pricing data for the German corporate syndicated lending market. Due to a non-random sample selection, a statistical analysis, using publicly available pricing information as dependent variables to produce practical useful evidence on pricing determinants, is not appropriate.

A qualitative study is thus necessary to shed light on these issues. Furthermore, the question as to why the German pricing data situation is shaped by such a high degree of opacity remains to be answered.

5 Research findings and discussion: qualitative fieldwork

5.1 Introduction

Chapter 5 is devoted to the discussion of RQ 2, RQ 3, RQ 4, and RQ 5 and to meet their corresponding objectives. Further, I provide some supplementary insight and broad confirmation of the hitherto established findings regarding RQ 1 as established in Chapter 4.

The related interview processes and analysis procedures have been extensively discussed within the respective sections of Chapter 3. For the sake of clarity, I underpin the findings and discussion with sample citations of the research participants in un-numbered tabular formats. Throughout the chapter, I critically compare these findings with extant literature and with the findings of the preceding quantitative study. This enables me either to confirm, extend, or contradict existing evidence and, thereby, identify key findings that will eventually form the basis of contributions to knowledge.

5.2 Pricing opacity—the underlying rationales

As concluded in Chapter 4, publicly available data, especially with respect to pricing, is structurally censored. Over time, data transparency has deteriorated and is—other than in the market for U.S.-based borrowers—characterised by a high degree of missing pricing information. Hence, constructing meaningful quantitative pricing measures for German corporate syndicated loans appears impossible. To shed light on pricing-related phenomena in general and with respect to their determinants in particular, a qualitative study was necessary that—addressed via RQ 2—begins by exploring the underlying phenomena and rationales of the pricing opacities.

First, I briefly present findings of the qualitative fieldwork regarding the publicly available data quantity and quality to confirm findings of the statistical analyses. Hence, sections 5.2.1 and 5.2.2 summarise the opinions of the respondents concerning the quality and quantity of available data, before I discuss the reasons for the lack of transparency in the German market.

5.2.1 General syndicated loan information

Regarding some basic German corporate syndicated loan related information, such as borrower name, deal amount as well as the initial lender group, all interviewees reported solid degrees of transparency.

<u>Finding:</u> Regarding syndicated loan announcements in general and certain basic-level deal elements such as loan amount, the market transparency appears sufficient.

The following interviewee statements exemplify this:

I 1	You see most transactions being reported to league table providers. You have borrower names, you have volumes, and so on.
I 6	Quantity is ok. You still get information on most of the loans that are relevant to us. I would guess that circa 80% of the loans we do are in the public sphere. They are publicised via Dealogic Loanware or LPC, for instance.
I8	There are data providers that collect data for the German corporate syndicated loan market. The best one is Dealogic Loanware in my view. It is quite complete when it comes to deals of certain sizes. From \notin 50 million onwards, most of the loans are mentioned in the database, as the banks want to get league table credit. You will, for example, find information on who the borrower is, what the volume is, and who the lending banks are.
I 12	The accuracy in terms of deal volumes is very good.

Hence, the German market at first view seems to be transparent with respect to public syndicated loan related information.

5.2.2 Pricing related information

By means of extensive quantitative analyses throughout Chapter 4, I presented major shortcomings regarding public availability of pricing information for German corporate syndicated loans. With respect to quantity and quality of publicly available pricing information, all interviewees confirmed this by reporting major inadequacies. In line with the findings presented, pricing information is rare, and, if any, only initial margin information tends to be in the public domain. However, initial margins are said to constitute only one element of multidimensional pricing packages, making it impossible to conclude what the total loan-related costs are. In other words, these costs are hidden to outsiders, such as financial researchers.

<u>Finding:</u> Regarding syndicated loan pricing elements in general, the market is characterised by a high degree of opacity.

I 1	In terms of pricing, you hardly find any public information.
I 2	In some cases, you may find that the initial margin is disclosed or mentioned somewhere. However, usually other key elements of an all-in-pricing, like upfront fees are not in the public domain. These other elements, however, are often key constituencies of the total pricing by representing a relatively high percentage of the overall pricing.
I 6	We basically have no more deals, where margin or general pricing information is published. You only know that there is a deal and maybe who the lending banks are and maybe what the tenor is.
I 8	You will usually not find information about the margin and other pricing elements or any covenant of the loan.
I 9	There is nearly nothing available in terms of pricing data.
I 17	We have no proper publicly available historic database on margins and other pricing elements in the German corporate market.

The following interviewee statements illustrate this finding:

The conclusions drawn in Chapter 4 established that publicly available pricing information in the German market is very limited. This was confirmed by the interviewee statements.

In 2015, for instance, only in roughly 10% of the reported transactions were initial margins disclosed with this percentage being reduced further with respect to various other pricing elements such as utilisation or certain upfront fees. In 2015, no single utilisation and participation fee was published. Moreover, even within this 10% group, a clear bias was reported towards larger deals and, thus, larger borrowers, as well as towards transactions issued by externally investment-grade-rated companies. According to the data, back in 2008, for instance, deals with publicly available margin were on average almost nine times as large compared to transactions lacking such public information.

This is consistent with the view of 18 interviewees who argued that initial margin information was only publicly available for very large and usually stock-listed multinational companies and here mostly for their back-up facilities. For smaller borrowers with private legal forms, one hardly finds any public pricing information.

<u>Finding:</u> Regarding pricing transparency, one needs to distinguish between certain borrower characteristics, such as size and legal form. Smaller, private companies are less likely to publish pricing information compared to larger and/or listed ones.

The following statements of interviewees substantiate these findings:

I 4	Whenever you have a private company, you often do not find any information at all.
Ι5	For larger, rated high-grade borrowers, the information gets more available and it is more public, because the attention to the deal is bigger when you have a multibillion facility for instance. However, these facilities are mostly back-ups with very low margins. If these clients go for acquisition financing, pricings would most likely also remain private.
19	I can only get data, let us say, from the very large companies, from the DAX companies, for example, or from LBOs, in which it is usual to disclose pricing information.
I 17	Only high-grade companies might still be willing to provide such pricing levels to the outside world.

Next, all research participants confirmed the findings of Chapter 4 by suggesting that the degree of pricing publicity significantly deteriorated towards the end of the investigation period 2000 to 2015. Especially during and after the financial crisis around 2008/2009, publicity levels plummeted and, remarkably, have not recovered since then.

<u>Finding:</u> Between 2000 and 2015, the financial crisis period marks a divergence with respect to publicly available pricing data.

The following interviewee statements underpin this phenomenon:

I 2	Pricing publicity has gone away since the crisis and it-interestingly-has not returned.
I 4	It changed a lot after the financial crisis. The announcement of loan details, the willingness to announce pricings has shrunk dramatically.
I 5	It has changed dramatically from 2008 and 2009 onwards.
I 14	Market publicity is almost completely gone since the crisis.

Without any contradiction, the findings mirror the quantitative analyses of Chapter 4.

As a side note, these broad confirmations provide strong support for the assumption of a highquality interviewee sample that provides credible and rich insights to the phenomena under study. Here, quantitative and qualitative data were used to provide a means of triangulation. The consensus in this respect provides a measure of confidence in the validity and reliability of the forthcoming discussions, where quantitative data is commonly not readily available to provide this triangulation.

5.2.3 Reasons for German corporate syndicated loans pricing opacity

Next, I focus on the underlying reasons for pricing opacity. Based on the answers of the industry experts, I am able to identify certain primary patterns and explanations for the pricing opacity within the German corporate syndicated loan market.

5.2.3.1 Borrowers' discretionary power

By law, German corporates have the power of discretion as to whether to publish their syndicated loans at all, and if so, to what degree of depth with respect to certain transactional parameters such as pricing. In line with Voisey (2016), other than public bond or equity markets, the German corporate syndicated loan market is private and discreet in nature.

Thus, for the market under investigation, I challenge the earlier cited general remark of Champagne and Kryzanowski (2007, p. 3,146): "While most inter-bank relationships are not observable to outsiders, loan syndicates represent visible manifestations of bank interactions that can be studied".

The following interviewee statements exemplify this:

participating in it. In addition, even in the facility agreement you would not find all elements of pricing. Only what is paid to everybody is disclosed in the facility agreement (e.g., margin of utilisation or commitment fees). Certain upfront fees like coordination or documentation fees are for the arrangers only. These fees are usually agreed upon in the mandate documents or even in separate fee or side letters. At the end, you would never have the full picture.

I 3 This is mainly due to the very private, discrete nature of the syndicated loan market.

This privacy right and the power of discretion regarding a possible publication of information is commonly addressed by special loan documentation clauses, as mentioned by 15 interviewees, confirmed by Slaughter & May (2013) and exemplified by the following statements:

I 2	You have confidentiality agreements in the legal documentation and in the mandate documents, which makes it up to the borrower to decide whether he wants to disclose anything. Banks without permission of the borrower cannot disclose anything.
I 4	Whenever it comes to publicity, there is a standard wording in the mandate documents, which outlines if the borrower is fine to announce the loan after it has been signed. It is fully at the borrower's discretion. This is a German speciality. First, we have the so-called "Bankgeheimnis" in Germany, which is something of very high value for our clients.
I 12	Usually at the signing of a loan agreement, there is a section regarding publicity on what can be disclosed and based on that information will be released or not.

5.2.3.2 Borrowers tactically exercise its discretionary power

Nineteen interviewees expressed the view that some borrowers choose to publicise their syndicated loan and its pricing—mostly, however, only the initial margin—as a consequence of being proud to having obtained especially attractive terms. Hence, the pricing announcement can be interpreted as a signal of borrower strength to other market participants.

<u>Finding</u>: Borrowers tactically exercise their discretionary power whilst making certain pricing elements public or not. Signalling and striving for confidentiality are the main related drivers.

These facts enhance the understanding of the pricing downside bias within public loan samples presented in 4.5. Signalling motivations appeared to be more pronounced in the years prior to the financial crisis around 2008/2009. As pricing levels tended to increase during and in the immediate aftermath of this crisis, publicity levels plummeted. Although pricing levels dropped again, the degree of publicity not only remained low, but even deteriorated further— a phenomenon that remains to be understood.

Overall, the foregoing discussion confirms the findings presented in the quantitative analysis in Chapter 4 and provides an enriched understanding, as exemplified by the following statements:

I 1	There might be very few exceptions, such as where corporates and their treasury teams are keen to show to the market that they have made a success.
I 2	There are only a small number of exceptions with view to some highly rated, mostly listed blue chip companies. For marketing purposes, some of them disclose their initial margin, which then becomes a statement of their financial strength when they got away with an optically very low pricing.
I 4	Each corporate, before the financial crisis, proudly presented its very small, tiny, little margin, that was negotiated with its bank-group to demonstrate the market, what a perfect and strong credit it was. But during the crisis, pricings went up and nobody or hardly anybody had the interest to present these increased pricings to the public. Therefore, since then we have seen a lack of public pricings and this remains stable until now.
I 10	There was a bit of a competition between treasurers and CFOs to get the best deal. In addition, you could see that every CFO, every treasurer, was keen on getting broadcasting and press releases out. First, because he did a deal at all, and second, because it was very cheap. Moreover, the next one came saving, I did a deal too and it was even cheaper.

Besides the general downside bias, the statement of interviewee three introduces additional bias potential which I describe as the *single transaction pricing downside bias*, grounded on tactical borrower considerations.

I 3 Especially large back-up revolving facilities are usually structured with utilisation fee concepts which reduce the initial undrawn margin. After the crisis, borrowers only published this very low margin without mentioning utilisation fees. Thus, it looked at a first few very cheap. However, that does not reflect what the borrower would really have to pay if he would actually draw down cash.

Many revolving credit facilities—especially those that are not intended to be frequently drawn —are equipped with utilisation-fee-concepts. Utilisation fee(s) are add-ons to the margin in the case of a drawdown.¹⁴⁹ Thus, only to publish the initial margin, which non-industryexperts might interpret as the "real" cost of borrowing, might lead to distorted assumptions about the market by underestimating current prices for certain risks.

In their regression analyses of the European syndicated lending market, Gaul and Uysal (2013) controlled for a similar assumed downside bias, however grounded on a different assumption. They hypothesised that, during the financial crisis, lenders increased only the upfront fees by holding margin levels constant. The higher upfront fees would then not have been published, leading to a possible market-misperception of pricing. The results of Gaul and Uysal after controlling for this possible bias did, however, hold, indicating, that this was not a regular pattern in Europe.

The thoughts of interviewees 2 and 12 confirm this.

I 2 This is no issue in the corporate syndicated loan world. It is however sometimes seen in syndicated loans for financial institutions in emerging markets. These loans usually have a tenor of only 364 days and everyone thus looks at the all-in-yield. In that area, after the crisis one somewhat played with margin and fee levels to look strong for the outside world.

I 12 From my experience, this happens in the Asian market where fees are discussed on an all-in-basis. Some state-owned enterprises for example may prefer to pay a higher fee and lower margins. This will vary depending different variables. Regarding Europe, I'm sure that this could happen but how significant is this occurrence? I haven't heard that this is common practice here.

Some interviewees explained that, in practice, certain pricing elements like upfront fees and margin elements do not substitute for each other. A borrower who, based on various pricing determinants, is required to pay a relatively high margin, also faces relatively high upfront fees. This is in line with Berg et al. (2016), who suggested that fees depend on the respective

¹⁴⁹ See sections 2.5 and 5.3.1.1.8.

borrower risk and are not idiosyncratic in nature. Supporting evidence is provided by Barbosa and Ribeiro (2007), who found margins and fees to be complements rather than substitutes.

The following interviewee statements exemplify this:

- I 16 There are so many different stakeholders and often competing interests in syndicated lending and with respect to pricing. All must be satisfied. Playing around with these elements by simply putting one element down and the other high, would not work in an environment, where such a broad consensus is needed.
- I 21 Substitutability of pricing elements in syndicated lending is basically not possible due to the high number and diversity of involved parties. This may be possible in bilateral loans, where you can make such bespoke deals with a borrower. In syndicated lending, when a borrower must pay a high margin, he also needs to pay an accordingly high participation fee for instance.

With respect to my German loan sample, in 2009, arguably a year of crisis and financial turmoil, in 29.5% of the loan tranches, the initial margin was published, compared with 0% of published utilisation fees. Thus, the earlier statement of interviewee three, highlighting the "single transaction pricing downside bias" based on tactically hidden utilisation fees, appears reasonable. This issue relates also to the functioning of AISD as presented in 4.3.3. Remember, AISD is an automatically calculated field that, in theory, incorporates margin plus annualised fees. However, once the tranche margin is available, an AISD gets automatically reported by the data provider, irrespective of whether all or any other parts of the equation are available.

Besides signalling and other tactical considerations, a key motivation of borrowers to hide pricing information purposely is their *striving for confidentiality*. This might be driven either by relatively high pricing levels, which enterprises intentionally hide, or by general preferences for privacy. This preference is said to be especially pronounced in private legal form firms across the size spectrum, constituting a major share of German corporations. Beside this softer factor, which is arguably closely linked to a general German mentality, more hard-headed competitive tactics, like intentionally hiding pricing information from direct competitors, probably play a role.

All interviewees agree with these outlined reasons, exemplified by the following statements:

I 2	One of the reasons certainly is that people do not want to disclose what their actual costs of borrowings are.
I 4	Talking about financials and personal earnings is not common and not liked, whereas in the U.S. for instance, people are proud on declaring what value they have contributed. Therefore, this is something, which is very special in Germany.
I 5	They do not want to give other competitors maybe of the same industry the knowledge about their funding situation or the prices they are paying for debt. Further, the German mentality is also adding to that. You want to stay more in a private terrain also to avoid benchmarking by competitors.
I 9	Firms are generally reluctant to publish any information where competitors or other parts in the public can look deeper into their company, because it also gives a sign how a bank judges the respective risk.
I 13	We notice as well that an increasing number of clients do not want publicity.

Beside these legally-induced and rather borrower-led reasons for opacity, some interviewees reported lender-induced drivers of opacity that I discuss next.

5.2.3.3 Banks' implicit compliance and regulatory obedience

According to nine interviewees, in the early 2000s and until the financial crisis around 2008/2009, it was standard market practice that banks included some pricing information into their *league table submission sheets*.¹⁵⁰ Borrowers often appeared to sign off on these without further questioning or attempts by banks to persuade them to do so. However, pricing information is not compulsory by league table and market data providers like Dealogic Loanware or LPC to obtain league table credits.

<u>Finding:</u> Nowadays, banks no longer push clients to announce pricing information and tend to focus solely on league table relevant information.

¹⁵⁰ After a syndicated loan is closed the bookrunner provides the respective data provider with a sheet ("league table submission sheet") that contains the deal information being intended to be published. If certain criteria are met, the deal will be published and the bookrunners were allocated with the related bookrunner volume. Does a \in 100 million transaction inter alia consist of two bookrunners and two further non-bookrunners, the two bookrunners were allocated \notin 50 million league table volume each. Pricing information are not compulsory in that respect. Given the reported discretionary power above, clients need to agree on any sort of publication and hence need to sign-off these submission sheets (Dealogic Loanware, 2016).

The following interviewee statements exemplify these findings:

I 1	Banks are not striving for a disclosure of the margin. Maybe that was the case before the crisis. Banks maybe tried to convince the client to disclose the margin and they said yes. Today, banks, when they send the league table submission to the client for sign-off, they often do not try to include the margin
	or other pricing elements, because they already know what the answer will be.
I8	Banks do not really push for it anymore. The banks try to get the volume published in the system to get the league table credits. The bookrunner league table is very important. Publishing the margin is not an important thing as it is not a condition to get league table credits. That is the reason why they are not pushing the borrowers. In the early 2000s, it was just a market standard. After a deal, banks filled a deal form, which included the margin and that was then signed off by the borrower and then sent to

I 11 Banks do like to get the league table submissions in. So, if it was required that a certain amount of information was included in the league table submission sheet then they would try to do what they can to get permission to disclose that. But if they do not have to disclose it, they won't.

companies then simply said "no" and did not sign-off the data provider submission sheet.

the league table provider. This kind of market standard then changed. After 2008 and 2009, the

This finding directly leads to the question why banks are no longer pushing for borrowers' consent to publish pricing-related information. Analysis of the interview statements allows two major conclusions to be drawn concerning the drivers of the lenders' behaviour in this respect. The first is an *implicit compliance and regulatory obedience* and the second is the *banks' intention to protect private market intelligence*.

After periods of deregulation in the general banking system, the aftermath of the financial crisis saw increasingly strict regulatory and compliance environments (LMA, 2015). Many banks were convicted and had to pay major penalties for non-compliant behaviour and some still face pending lawsuits.

<u>Finding:</u> Without concrete legal and regulatory requirements, banks, with regulatory compliance pre-eminent, are cautious about publishing price-sensitive data.

Eight interviewees argued that these issues are the main reasons for banks not to push any longer for public pricings.

I 11 In addition, there were some regulatory changes on that front as well. There was some guidance provided by some regulators to disclose less and to make sure that no confidential information is disclosed. But what exactly is confidential? It is not written in law that a margin is confidential.

I 12 What happened was that the increasing compliance topics made it that banks could not send all the details they wanted to and borrowers did not want to get the details out.

I 13 Generally, the market is getting more opaque which has to do with regulation and things like LIBOR manipulation and so on. There is not much information exchange between the banks any more.

<sup>I assume that the decline in public data was a function of bigger discussions around LIBOR initially. I think that probably started it. The LIBOR discussion whether there was price fixing and anti-competitive behaviour. That made people much more worry about anti-monopoly and cartel issues and this then coupled with the fact that the English authorities changed the rules on anti-competitive behaviour. That made people very much aware that discussing and disclosing pricing could potentially be seen as anti-competitive behaviour.
I 11 In addition, there were some regulatory changes on that front as well. There was some guidance</sup>
As it has always been mandatory for clients to provide consent for submissions to data providers, this reluctance appears to be illogical at first glance, as emphasised by the following statement of interviewee eight.

18 Publishing pricing has always been subject to client approval. When we were using league table submissions, also before 2008, we did always ask the client for approval and its sign-off. Therefore, from a compliance and regulatory point of view, this is and has always been fine.

I interpret these superficially contradictory statements as follows: Regarding the related behaviour of banks, a difference between "legally permitted" and the "perception of permission" seems to be apparent. The influence of legal and compliance issues on the work of loan professionals appears to be overwhelmingly present today. The fear of misbehaving which nowadays ultimately tends to be accompanied by individual consequences, as well as major financial penalties, appears to make bank-employees to behave in an "over-compliant" way. I will now focus on the second bank-led element, the protection of market intelligence.

5.2.3.4 Banks' intention to protect private market intelligence

All interviewees felt that currently the German syndicated loan market is shaped by fierce competition, where huge levels of loan supply face only modest levels of demand.¹⁵¹

As one key discipline in syndicated lending is the calibration of "right" or, in other words, "at current market" pricing packages, a high degree of pricing publicity would lead to a sharing of market intelligence of established big lenders with less established and smaller market players.

<u>Finding:</u> Especially in competitive market surroundings, some banks strive to build up private market intelligence.

Nine interviewees shared this view, exemplified by the following statements:

I 4	Whenever you declare pricings, it is market intelligence, which you as a bank share with your competitors. Banks often have an own interest to keep pricings unrevealed.
I 12	Then even the banks often do not want the market to get certain information on the loan, as the private kind of knowledge is a valuable thing.
I 17	On the other hand, it is also related to the banks and particularly to the leading banks, because it is obvious, that it is not necessarily in the interest of a few leading banks to provide all other market participants, which must have access to public information, your private and sensitive pricing information, because this is obviously very much valuable to those lead banks.

5.2.4 Prioritisation of reasons for pricing opacity

Within the previous paragraphs, I first confirmed the findings of the quantitative analysis. Publicly available data on German corporate syndicated loans is affected by bias, with both quality and quantity having significantly declined in recent years. Thereafter, I established the main factors contributing to this situation. Next, the question of which groups of factors are the main drivers and which might play only minor roles remains open.

A prioritisation of the reasons for the low quality of public pricing data appears reasonable, although tentative, as illustrated in Figure 41, where the three clusters of drivers are shown in rank order in descending order of influence.



Figure 41. Reasons for pricing opacity (prioritisation).

The general nature of the market, or more specifically the fact that borrowers by law carry the discretionary power to publish any deal information at all, and to what degree, is a sufficient condition for the manifestation of opacity and hence the strongest contributor.

Then, I classify borrower-related reasons, especially the striving for confidentiality, as the second important one. I ground this classification on the frequency and lack of diversity of related interviewee statements. All the research participants argued that confidentiality is a key concern for German corporates. Furthermore, 12 interviewees would opt for more or even full transparency if they were enabled to change the market, as illustrated by the following quotations:

I 7	If I could, I would opt for more or even complete transparency and the key reason for this is: Let us
	take a small side step: We probably need to differentiate between relationship-driven best efforts deals
	and underwritings. If you go for an underwriting, you are in a very significant risk with respect to
	syndicating this successfully in the market and getting down to your approved hold amount. To do so,
	you certainly welcome any detail you can get hold of, with respect to how other transactions went and
	were they were priced. For that reason, from my point of view, complete transparency would be the
	ideal environment.

I 11	If it were my decision I would go for full transparency I think it makes the market more competitive.
I 12	The dream of any economic model is perfect competition, which basically means perfect transparency.
	But it is clear that you have a lot of information asymmetry overall. Having complete disclosure would
	be something tremendous for the market.

The interview data, combined with a significantly lower frequency of mentions of bankrelated reasons overall, led me to rank them as the lowest importance as drivers of opacity.

5.2.5 Excursus 1: the U.S. market

Section 4.7 provided an overview of the U.S. market and highlighted strong indications that U.S. data quality appears to be significantly more representative compared to German data. I challenged this throughout the qualitative fieldwork and 13 interviewees confirmed greater transparency in the U.S. Once a U.S. borrowers' loan consortium contains at least one non-bank-lender, the enterprise has issued public bonds, and/or is a publicly traded company, it is by law obliged to publish all deal-related information with the SEC. In that vein, Schenone (2010) stated the need of SEC-compliant behaviour to lead to more transparency. Further, via the secondary data provider "Compustat", balance sheet data are also readily available for SEC-eligible companies, a resource used by numerous authors of U.S. studies to match loan-specific financial data with borrower-specific financial data.

Interviewees offered views on major general differences in the way U.S. capital markets function. It was said to be more open and investor driven. This is in line with, Bartram, Brown, and Stulz (2012) holding U.S. capital markets to be more developed and innovative compared to the bank-oriented markets in Europe, such as the German. In other words, compared with Germany, the U.S. financial system is more capital market-orientated.

<u>Finding:</u> The market for corporate syndicated loans in the U.S.—especially with view to publicly available pricing information—is more transparent as compared to the German one.

The following interviewee statements exemplify this:

- I 3 The major difference that you see is with the U.S. market, where listed companies by law are obliged to file their whole documentation package with the SEC. You even see mandate documents or fee agreements being published. That is where you can find out what the complete pricing details under each transaction are.
- 17 The U.S. market it is working very differently anyway. In a way, that the corporate market in the U.S. is largely driven by sub-investment grade rated clients. In the first instance, we have a clear majority of all those borrowers having an external rating, which is not the case in Germany. That already brings a certain level of publicity. These clients are used to share information firstly with the rating agency and then in the rating report who finds its way into the public. Whereas especially in Germany but generally in Europe–as only relatively view companies are rated–it is a very different picture. It is also a problem when comparing pricings of transaction "x" with pricing of transaction "y" because you do not have a common rating view.
- I 11 The U.S., for example, has a much greater depth of information because of the SEC, which requires that any loan that is sold to an investor, or any security that is sold to investors, must provide a prospectus approved by the SEC to the public. So, all the loans that are sold to an investor in the U.S. do receive an SEC-filing and, therefore, these have the margin and a lot of the fees and you have the full bank list and things like that. Therefore, you have a lot more information in there.

These statements underline the fact that it is worthwhile to conduct studies on a singlecountry-level. As mentioned whilst reviewing the literature, most studies have been conducted by means of using U.S.-based loan samples. Given the major structural differences, this is likely a worthwhile approach for the U.S. market especially, but probably unsuitable for drawing comprehensive conclusions about the German market. Further, syndicated loan markets worldwide are fragmented and not fully integrated, with borrowers overwhelmingly issuing loans in their respective home market. In other words, they tend not to cross borders and lender portfolios display significant home biases (Barbosa & Ribeiro, 2007; Carey & Nini, 2007; Gaul & Uysal, 2013). I later establish that foreign banks that are active in the German corporate syndicated loan market need to adapt to certain local requirements to conduct business successfully, a further indication that there is not full integration.

These differences might least partly explain "the pricing puzzle" whereby pricings in Europe are lower compared to the U.S., all else being equal. I discuss this issue in more depth in section 5.5.13.2.

5.2.6 Excursus 2: the wider European market

With a view to the wider European corporate syndicated lending market, interviewee statements appear to be somewhat diverse. Some interviewees state the publicity situation to be quite similar in all major European countries, whilst others report differences.

<u>Finding:</u> Besides some regional differences, the public pricing data situation in major European countries is said to be similarly weak to that of Germany. I plot some sample statements about this below:

I 1	From my observation, I would not say that this is only a German issue. It is definitely also pronounced within Europe
I 2	European markets are in my view not very different, because the way funds are being raised in the European loan market for corporates is the same all over the place. Therefore, I would not say that French or Spanish borrowers tend to be more open about their costs of funds then Germans.
I 12	In Europe, the market is still regional. If you look at the UK market, the French market, the German market you will see German banks lending into Germany, and so on. You have the international investment banks doing more of the M&A-deals. With general corporate financings, it is domestic and there you can see the relationship nature of the market in Europe, which still prevails. In terms of

publicity I observe the German situation to be particularly problematic.

These statements are broadly in line with the reported degree of pricing publicity in the Euro Zone (excl. Germany) as well as in the UK, where the proportion of missing data appear to be only slightly lower than in Germany. However, according to the ratio of total deal value of non-missing to total deal value of missing pricing information,¹⁵² samples of these markets are likely to be less severely affected by bias.

5.2.7 Excursus 3: further financing products and syndicated loan asset classes

With a view to other sub-asset classes of syndicated loans and other financing products, 14 interviewees expressed a higher degree of transparency compared to corporate syndicated loans.

<u>Finding:</u> Within the German market for syndicated loans, LBO-financings are found to be more transparent compared to general corporate financings. This holds also true for the corporate bond market.

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¹⁵² See Figure 40.

The following statements exemplify this finding:

- I 3 The LBO market in Germany is as transparent as you would expect it to be in any other markets of the world. The structure of that market is essentially different in the sense that it is investor driven. It is from that perspective similar to the bond market. The investors in an opportunistically way will require certain pricings and will accommodate to the structure, will have to accept the structure, (e.g., the advantage and other key elements). They are fine with the pricing to be publicly known. That is different in the corporate loan market which is mainly relationship driven.
- I 8 The corporate bond and the LBO-market are much more transparent. These markets are of a different nature compared to the corporate bond.
- I 12 The bond market is a public market, where you usually have a prospectus. It is a lot more visible. You have to get investors to buy your paper and no one will buy a black box. They want to know what is inside. Therefore, you must give the market participants as much details as possible and there is a need for disclosure. The investor needs to know where they are putting the money. The loan market is very somewhat clubby, when we are looking at the corporate market. The relationship bank community in Europe is also local. You will not have a Spanish loan without a Spanish lead bank on it normally. In addition, it will be a small group of banks. Thus, there is no incentive to get every detail out.

This finding further supports the decision to exclude other syndicated loan asset classes in conducting the study of corporate syndicated loans.

5.2.8 Conclusion: German corporate syndicated loans' pricing opacity

In general, financial markets tend to have become more transparent and innovative over time (Berg et al., 2017). Bharath, Dahiya, Saunders, and Srinivasan (2007) and Santos and Winton (2008) stated that database coverage regarding syndicated lending has followed the same pattern, constantly improving in recent years. At least with respect to pricing of German corporate syndicated loans, this trend, however, follows a reverse direction, with the respective reasons for this increased pricing opacity having been extensively discussed and established above. Based on the previous discussion in conjunction with the findings of Chapter 4, it is reasonable to summarise and conclude:

<u>Finding:</u> Publicly available pricing data on the German corporate syndicated loan market is biased and does not adequately represent the population. Moreover, the multidimensionality of pricing and its related phenomena cannot be studied based on officially published information.

The following statement finally underpins this:

I 12 *I* do not think from a pure corporate German perspective, public pricing data would be representing the population adequately. If we look at how much disclosure we have compared to the volume it is pretty much none. In the past, it was easier to get pricing data. It was relevant to have pricing but right now you have pricing on some deals you can have a direction on it but it is not statistically right. Looking at the German market there are nearly no data publicly available. Based on the quantitative analysis and the supporting evidence from the qualitative research, RQ 1 can be said to have been thoroughly explored and answered, with a high degree of consensus among the interviewees.

Regarding research RQ 2 and the interrelated objective, I have clarified and prioritised the underlying causes of the opacity. During the interviews, I could explore the ways in which borrowers' discretionary power with respect to pricing announcements enables them to exercise discretion tactically, as well as to address their general striving for confidentiality. Further, bank-related reasons for opting for non-disclosure have been shown to support the trend towards opacity and its current scale.

Hence, it is reasonable to summarise and conclude as follows:

<u>Finding:</u> The pricing opacity of the German corporate syndicated loan market has multidimensional roots in general market-, borrower-, and lender-related drivers.

The answering of the first two research questions carries powerful implications with respect to the further course of the study. Further extensive qualitative fieldwork is thus needed to study German corporate syndicated loans' pricing determinants as relevant publicly available quantitative data is not readily available, thereby preventing quantitative analyses. Further, given the overall opacity, much remains unknown in relation to the various pricing elements in general, their respective *raison d`être*, and their interaction. It is important to remember that pricing information in the public domain appears to be even rarer with regards to elements other than the initial margin. In other words, it so far remains unclear what the term "pricing" constitutes in German corporate syndicated lending. I address these shortcomings in 5.3 and 5.4. by providing answers to RQ 3 and RQ 4 respectively.

5.3 Classification and prioritisation of syndicated loans' pricing elements

In line with RQ 3, the core goal of this section is to explore the classification and prioritisation of the various German corporate syndicated loan pricing elements from a lending banks' perspective. For the market under study, this remains an empirical goal, due to the low degree of pricing publicity and the fact that extant literature tends to lump pricing elements together into one single measure. In other words, the relative importance of one pricing element versus another remains unclear to date.

It is important to note that publicly available data, both in Germany and worldwide, mainly covers the basic pricing elements like initial margin or, in even rarer cases, other elements such as a participation or commitment fee. Secondly, extant academic literature, which is mostly based on publicly available pricing data, also predominantly focuses on these basic elements, making it challenging to capture the complexity and interconnection of syndicated loan pricing structures adequately.

During the first interviews, the list of pricing elements brought up by the research participants became increasingly extensive, and elements were mentioned that were not yet covered by any extant academic literature. Due to the problem of data availability and the methodological approaches of existing studies, numerous pricing elements and their underlying rationales remain so far unobserved and undiscussed in the literature. Therefore, I first provide a straightforward and comprehensive listing of pricing elements, their functions, and underlying rationales, before focusing on their prioritisation from a lender's standpoint.

Accordingly, from interview three onwards, I explicitly asked what ("all") the various pricing elements of German corporate syndicated lending are, for what each of them compensates the lender or other involved parties, and how they function and interact in practice. Based on the findings that were generated, I present a comprehensive summary of pricing elements and some new practical insights. Later in the thesis, I propose two novel pricing measure/definition frameworks—one qualitative and one quantitative—with the aim of portraying the overall pattern of "pricing" more completely than the frequently used proxies introduced in 2.5.

Table 76 depicts the pricing elements, arranged by two initial ordering dimensions, which is in line with the syndicated lending literature in general (Altunbas et al., 2006b; Fight, 2004; Rhodes et al., 2004).

	Per annum-/recurring elements	Upfront-/non-recurring elements
	Margin	Participation fee
its	Margin grid	Old/new money fee
men	Foreign currency premium	Increase fee
eleı		Extension fee
ng	Reference rate	Waiver fee
nici	Interest rate period	Amendment fee
al p		
insr		Breakage fee
ı/uc	Commitment fee	
JMC		Arrangement/bookrunner/coordination fee
Con	Facility fee	Documentation agency fee
•		Fee skim/pool
	Utilisation fee	Invited/"passive" arr./bookr./coord. fee
	Ticking fee	Underwriting fee
res		
atu atr		Duration fee
l fe: mer		
ele		Advisory/structuring fee (bank related)
Spe		
		Early bird fee
	Servicing- and 3rd party eleme	nts are out of scope
	Facility agency fee	Transfer fee
sing		
eme	Security agency fee	
Se el		
		Advisory fee (non-bank related)
urty nts		
l pa eme		Legal fee
3rc ele		
		Syndication platform fee

 Table 76. Corporate syndicated loan pricing elements.

Table 76 distinguishes the various pricing elements by their payment frequency, as shown by the column headings. In line with the literature, and as stressed in 2.5, recurring elements, of which the majority are paid on a per annum basis, are common in corporate syndicated lending. Secondly, and in line with Hale and Santos (2009), non-recurring elements also occur—most of which become due once a syndicated loan has been signed—to compensate lead banks/lenders for various tasks. Hence, these payments are often referred to as upfront fees. In addition to these payment types, various fees payable in specific instances during the lifetime of a syndicated loan also commonly occur.

The elements are also arranged with respect to their overall connectivity to syndicated lending. The first grouping displays the common/usual pricing elements being incorporated within the majority of facilities, especially in general corporate financings. The second grouping shows elements grouped under the heading "special features", being typical in special purpose and more complex financings, such as underwritten acquisition financings. The third grouping includes several servicing elements commonly paid annually or semi-annually for administration of the loan during its lifetime.

The fourth group comprises "3rd party elements". These are non-bank parties such as external lawyers, who are involved in syndicated lending with their work having to be compensated accordingly (Altunbas et al., 2006b). As I am conducting my study from the bank/lender perspective, servicing and 3rd party elements are beyond its scope, but a discussion of these is provided in Appendix E.

I continue by explaining the respective *raison d`être* and operative functioning of each element. Where appropriate, I support my discussion with citations of extant academic works, "textbook" literature, and related publications of the *Loan Market Association (LMA*¹⁵³), along with sample quotations from the research participants.

5.3.1 Common/usual pricing elements

5.3.1.1 Per annum-/recurring elements

5.3.1.1.1 Margin

The *margin* is also commonly called *risk premium* or *spread*, and is expressed in basis points or in percent per annum (Rhodes et al., 2004). Regarding margin, I located no controversies within the literature, as it can be said to be the standard element of each credit pricing, compensating a lender for the default risk taken (Antczak, Fabozzi, & Lee, 2012; Ghattas, 1987; Watson & Head, 2001). Even in corporate syndicated lending, margin levels can range from only very few basis points—for example, in the case of commercial paper back-up

¹⁵³ The Loan Market Association (LMA) is the trade body for the EMEA syndicated loan market and was founded in December 1996 by banks operating in that market. Its aim is to encourage liquidity in both the primary and secondary loan markets by promoting efficiency and transparency, as well as by developing standards of documentation and codes of market practice, which are widely used and adopted. Membership of the LMA currently stands at over 600 and consists of banks, non-bank lenders, law firms, rating agencies and service providers. The LMA has gained substantial recognition in the market and has expanded its activities to include all aspects of the primary and secondary syndicated loan markets. It sees its overall mission as acting as the authoritative voice of the EMEA loan market vis-à-vis lenders, borrowers, regulators and other interested parties (LMA, 2016a).

revolving credit facilities for high-rated multinational stock-listed firms—to a few percentages for sub-investment-grade firms.

The following interviewee statements exemplify this:

I 2	The basic element is always the margin. The margin should usually reflect the risk of the respective
	counterpart.
I 5	The margin is an element to be paid for the risk involved.

5.3.1.1.2 Margin grid

Syndicated loans are usually equipped with *margin grids*—also referred to as *ratchets*, or more theoretically, *performance-based pricings* (Asquith et al., 2005). Over the loans' lifetime, the margin is linked to such a grid, which itself is tied mostly to an external rating, if available, or to specific balance sheet ratios like leverage or interest rate coverage. If, for instance, the leverage ratio rises or the external rating deteriorates during the lifetime of the loan, the borrower must pay higher margins to ensure the increased risk being reflected. In other words, initial margins, which are the only or the main ingredient of extant pricing proxies, might change quickly after signing. Hence, concrete margin-related payments in syndicated lending can only be known *ex post*.

The following interviewee statements exemplify this:

I 2	We commonly see rating or leverage grids, where the margins are dependent on leverage or rating changes.
I 8	Margins are usually dependent on certain balance sheet ratios of the client via margin grids. There is an initial margin and a margin development over time. The margin grid adjusts the margin based on financial ratios over the lifetime of the loan.

In the German corporate syndicated loan market, in contrast, for example, to the U.S. market,¹⁵⁴ such grid structures are almost never publicly available. If there are any, the initial margin is in the public domain as discussed in Chapter 4.

5.3.1.1.3 Foreign currency premium

Foreign currency premiums represent add-ons to the margin. Numerous syndicated loans mainly RCFs—are equipped with so-called *multi-currency-options*. A €100 million RCF may also be fully, or in pre-agreed portions, drawn, for example, in USD, GBP, or CHF (Slaughter

¹⁵⁴ Via respective SEC-filings, whole facility agreements are commonly made public as commented upon in section 5.2.5.

& May, 2013). The specific funding costs for these foreign currencies by, for example, German banks might be higher compared to Euro-related costs as a bank having its natural funding base in Euros needs to purchase USD itself and must pay the respective price of the related cross-currency swap.¹⁵⁵

Thus, lenders may require this premium, exemplified by the following interviewee statement:

I 17 This is a premium, which is relevant under specific circumstances to provide investors, which might have problems to get the respective currencies funded at the same pricing levels as those banks, which are dealing in their home markets. For instance, USD are easily available for U.S. banks, but not necessarily for those banks which are acting out of Europe and which would need to fund USD via the New York market.

5.3.1.1.4 Reference rate

Common syndicated loan facilities are *floating rate instruments* (Altunbas et al., 2006b). Borrowers pay the price of a *base/reference rate*¹⁵⁶ such as EURIBOR for Euro-denominated loans or LIBOR for USD-denominated ones. The margin and perhaps further margin elements are added to the value of the reference rate. This summation, from a borrower's point of view, can subsequently be interpreted as the *interest rate* or the *coupon* (Fight, 2004; Slaughter & May, 2013).

In principle, the base rate component of this coupon should compensate banks for their costs of funding (Voisey & Slocombe, 2011). Under this assumption, the reference rate represents the price at the interbank market which institutions need to pay whilst borrowing money themselves (Hallak & Schure, 2011). Following this assumption, banks would face no *duration risk* via syndicated lending (Gupta et al., 2008). Further in this thesis, I will why this is only a theoretical assumption and why banks' costs of funds tend to be higher in practice, compared to the respective EURIBOR-values.

The following statements exemplify the respective interviewee thoughts:

I 1 The reference rate should compensate the banks for their costs of funds, at least in theory. In today's markets, we see that this is not necessarily the case.

I 16 If the reference rate changes over a time, like EURIBOR or LIBOR does frequently, then of course the pricing for the facility over time changes, unless he hedges the interest rate change risk. Today we have a further issue–negative interest rates, which may even reduce the margin and the all-in-pricing. We usually work with certain floor languages here to protect the bank.

¹⁵⁵ See section 5.5.3.4.

¹⁵⁶ Also regularly referred to as risk-free rate, prime rate or benchmark.

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Today, the reference rate turns out to be negative for various maturities (*interest rate periods*), a fact that does not necessarily lead to negative funding costs for banks. The phenomenon of negative reference rate values raises the question as to how this issue is handled in practice. How it gets addressed is established in the facility agreement.¹⁵⁷

5.3.1.1.5 Interest rate period

Interest rate periods are closely linked to the reference rate, with an interest rate period representing the duration of the particular reference rate value. If a borrower decides to pay an interest rate based on a three-month period, it must compensate lenders with the three-month reference rate value at the time of funding plus the margin, and maybe further per annum elements too, such as a foreign currency premium and/or utilisation fees. Common in the German corporate syndicated lending market are periods of one, two, three, and six months (LMA, 2013). After three months, the borrower may decide to prolong or roll-over for another three-month interest rate period, or to switch to another agreed option. At the end of each interest rate period, a borrower is allowed to repay the loan amount without having to pay so-called *breakage fees*,¹⁵⁸ a fact that distinguishes the floating rate from a *fixed rate* debt-instrument. This again is related to the underlying assumption of the reference rate being the price to which a bank funds itself via the interbank market. Thus, after the three-month interest period, this interbank credit to the respective lender is also due, and no financial damage for the bank should occur to repay and cancel the facility.

The following interviewee statement on interest rate periods exemplifies this:

I 17 Interest periods are relevant because most, if not all, syndicated loans are provided on a variable/floating basis, and therefore interest rate periods will be agreed between banks and the borrower. The most common ones are three and six months, and under certain circumstances, there are one- or twelve-month periods available. The duration of the reference rate is defined as the interest period.

¹⁵⁷ There are three common options:

a. The lowest value that the reference rate may take is zero. Thus, a negative value of the reference rate has no implication on the margin itself. Assume a borrower agreed to pay 100 bp p.a. margin over Euribor, which (for the respective interest rate period) values at -10 bp p.a. Then, the borrower would still have to pay 100 bp p.a. margin to the lenders. The respective clause is called "Zero Floor".

b. A negative reference rate reduces the margin as long as it turns to be zero. It can, however, never fall below zero. In other words, the margin plus reference rate cannot fall below the value of zero. With view to the aforementioned straightforward example, the margin would be reduced by 10 to 90 bp p.a. In a thoretical case in which the reference rate would fall further to -110 bp p.a., the margin erosion would stop at zero and not fall to -10 bp p.a. The respective clause is called "Zero Coupon".

c. There is no such limitation mentioned in the facility agreement, and the margin may fall below zero.

¹⁵⁸ See section 5.3.1.2.2.

5.3.1.1.6 Commitment fee

Commitment fees must be paid by the borrower for the undrawn portion of a revolving credit facility on a per annum basis, and are usually calculated as a percentage (commonly 35- or 40%) of the applicable margin. From a bank's perspective, an undrawn loan commitment can be defined as *contingent assets* or *claims*. However, the banks must allocate a certain portion of liquidity and common equity¹⁵⁹ to this claim. With respect to the liquidity coverage ratio (LCR)—one element of Basle III¹⁶⁰—regulators recommend the assumption of drawdown rates of 10% for back-up revolvers and 30% for RCFs with draw-intention (LMA, 2015). In line with Altunbas et al. (2006b), commitment fees should compensate for this.

The following interviewee statements exemplify this:

I 1	The commitment fees simply compensate the lender for providing a commitment. Even though we do
	not lend the money effectively-meaning we do not give the money cash away-we do have costs as a
	bank. These costs are costs for liquidity or funding as well as RWA that have to be allocated.

I 8 The commitment fee is a percentage of the margin and it covers for the credit commitment that you provide, because you have to book the risk into your internal system and you have to allocate equity and liquidity to it. It basically covers your regulatory and risk costs for the undrawn amounts.

5.3.1.1.7 Facility fee

Facility fees carry similar underlying rationales compared to the commitment fee. However, the concept works differently, as here fees are to be paid on the whole loan amount, irrespective of whether this commitment is drawn or undrawn (S&P, 2011). According to interviewee 21, facility fees are not common in the German and wider European syndicated loan market, and rather tend to be a U.S. market standard.

I 21 Facility fees are common in the U.S., and applicable for revolving credit facilities. The concept is comparable with the commitment fee concept in Europe, but the difference is that the facility fee must be paid on the whole loan amount irrespective of whether it is drawn or not.

5.3.1.1.8 Utilisation fee

Utilisation fees are add-ons to the respective margin in case a revolving credit facility is drawn. It is usually staggered, based on different drawing percentages (Rhodes et al., 2004). As outlined in the literature review and during the quantitative analysis, a fully drawn margin

¹⁵⁹ In form of risk-weighted assets (RWA).

¹⁶⁰ See section 5.5.11.3.

may be significantly higher than the initial margin. The rationale behind this concept is twofold: First, higher drawings may represent higher indebtedness and, thus, higher risk, and second, higher funding and equity allocation costs need to be reflected.

Since most revolving credit facilities that carry utilisation fee concepts are used for back-up purposes, and are not intended to be ever drawn, the question then occurs: why does one simply not set the margin as it would be in a hypothetical case of (full) draw-down? The underlying rationale is linked to the commitment fee, which is what the borrower must pay per annum over the lifetime of the undrawn loan. Since it is expressed as a percentage of the margin, it would be much higher if the margin was directly set as being fully drawn. In other words, 35% of 100bp, is less than 35% of 150bp.¹⁶¹ To conclude, one key underlying rationale is to reduce commitment fee related payments for borrowers as well as to protect the bank for possible increased cost-bases in a draw-scenario. Under certain circumstances, this might also be important to mitigate possible funding cost mismatches¹⁶² of banks vis-à-vis borrowers. A further underlying rationale in relation to the *raison d'être* of utilisation fees has already been mentioned in 5.2.3.2. To recap, several clients tactically decide to publish only the initial margin without mentioning the utilisation fees, leading to apparently very cheap pricing for outsiders relying on publicly available data.

The following interviewee statements exemplify this:

I 2 In an RCF, the utilisation fee is a further component of the margin. It usually works this way: If the facility is drawn up to 1/3, the borrower must pay a certain amount of utilisation fee on top of the margin (e.g., 15bp p.a.). If it is drawn up to 2/3, you pay a higher utilisation fee which is a compensation of the higher capital costs banks have then (e.g., 30bp). If it is fully drawn (e.g., 50bp), the utilisation fee, in addition to the margin, should be a proper reflection of the capital costs that the banks have, as well as providing a proper risk premium.

I 5 In addition, the margin is accompanied with utilisation fees that are added to the margin for revolvers, mainly for standby facilities, which are supposed to remain undrawn. The utilisation fees help banks to cover their liquidity costs. Further, it enables clients to reduce the commitment fee.

The discussion on utilisation fees revealed several complex underlying rationales that, given the almost complete lack of related public data, would have been impossible to reveal, based on officially published information.

¹⁶¹ Margin plus fully drawn utilisation fee in light of Table 12.

¹⁶² See section 5.5.3.4.

5.3.1.2 Upfront-/non-recurring elements

5.3.1.2.1 Participation fee

Participation fees are usually one-time paid fees, being awarded after signing. Participation fees are usually expressed in basis points based on the committed loan amount of the respective lender. In theory, participation fees should only be rewarded to the participants in a syndicated loan, who have on behalf of the borrower been invited by the active structurer(s)¹⁶³ to join a facility. While the per annum elements are equal for each lender, participation fees are usually staggered in the sense of a rising function of the commitment size. This fact already indicates that the overall remuneration or overall yield of a syndicated loan financing varies in a sense that those banks who provide a larger commitment receive higher upfront fees in general (Carey & Nini, 2007; Hallak & Schure, 2011).

The following table displays an example:

Example: participation fee staggering		
Title	Participation amount	Participation fee (upfront)
Mandated Lead Arranger	€ 30,000,000	75 bp
Lead Arranger	€ 20,000,000	60 bp
Arranger	€ 10,000,000	45 bp

Table 77. Example: participation fee staggering.

Participation fees can thus be interpreted as an incentive for participating banks to commit to a relatively higher commitment rather than a lower one, improving the likelihood of successful syndication. Further, the fee can be defined as compensation for the upfront work¹⁶⁴ that an invited bank must facilitate before committing to join into a loan. In practice, however, it is standard for an active bookrunner, for example, to receive participation fees as well. I explicate the underlying rationale for this phenomenon in a later section of this chapter. The discussion thus far has already indicated that the concrete labelling of the various pricing elements is not necessarily logically linked to the respective use in practice, which might lead to misinterpretation by inexperienced observers.

From an accounting perspective within banks, participation fees and the upcoming participation fee sub-forms are treated as per annum elements by being amortised over the

¹⁶³ For example, bookrunner(s)/mandated lead arranger(s)/coordinator(s); see section 2.4.6.

¹⁶⁴ For example, preparing loan application, going through approval committees, etc.

lifetime of the loan¹⁶⁵ and preserved as interest surplus. This issue will be returned to later in this chapter.¹⁶⁶

The following interviewee statements exemplify this:

I 1	In addition, the participation fee is to compensate for providing the commitment upfront, and it is a market standard of which the client not only pays a p.a. component, but also an upfront/one-time component at the beginning.
I 5	Another element is the participation fee. It is an upfront fee which is paid in the beginning of the transaction. Banks need to annualise it over the lifetime of the facility. Thus, in a certain way, it adds to the margin as well.
I 8	The participation fee covers the upfront work that you have in your credit decision for kind of doing the credit analysis, getting the internal rating, and the approval.
I 15	Participation fees have more or less evolved to a margin element over time; it has evolved to a delta, which helps you to get to the overall return.

These discussions provide some first and basic thoughts on the underlying rationale for usual participation fee payments. There are a few further fee types which I have classified as sub-forms of participation fees. I do this because these fees are also payable based on the committed amount, and carry major characteristics of the general participation fee rationale in the context of a common syndicated loan. These are discussed in the following sub-sections.

5.3.1.2.1.1 Old/new money fee

There might be a situation during the lifetime of a syndicated loan in which the borrower intends to increase the initial loan amount. This intention to increase occurs "spontaneously" or, in other words, has not been pre-agreed in the loan agreement via, for example, an *increase option*. Thus, these fee elements cannot be measured and incorporated at loan signing (*ex ante*). Existing lenders, in such a material change of the loan terms, can decide whether to "stay in" with their existing amount or to increase their current lending commitment. To incentivise existing, or perhaps, new lenders, borrowers are sometimes inclined to offer *old/new money fees*. In the case an existing bank decides to just stay in the facility with the same commitment, it would be rewarded an old money fee, or in other words, a new participation fee. For new or old banks who decided to increase their existing loan

¹⁶⁵ Such an amortisation may look as follows: Assume a €100 million syndicated loan with a five-year maturity pays 50 bp participation fees to the lenders. These €500 thousand from an accounting point of view are allocated to the respective receiver within the bank on a daily basis. Five years equals 1,825 days with a resulting in €274 participation fee allocation each day. In the case the client decides to refinance or pay-back the loan after three years (1,095 days), the remaining €200 thousand (730 days at €274) are being released and allocated in one lump.

¹⁶⁶ See section 5.3.3.

amount, a new money fee would be applicable on the newly committed amount. Logically, old/new money fees cannot be incorporated in an *ex ante* pricing measure such as the AISD.

The following interviewee statement exemplifies this:

I 21 Old money fee is a kind of pricing component which is applicable under circumstances where you intend to increase the amount of an existing loan. You aim at least to maintain all the existing relationships and existing commitments, and to increase the amount by either letting in new banks or letting existing ones increase their commitment (new money fee). It is a tool to incentivise old and new loaned money in such a scenario. With the old money fee, existing lenders should at least be inclined to maintain the existing commitments and new money needs to be sufficiently incentivised as well via the new money fee.

5.3.1.2.1.2 Increase fee

Like old or new money fees, *increase fees* are elements serving as an additional kind of participation fee in the case the facility amount is increased by the borrower. The distinction between old or new money fee elements is that usually an increase option and the respective increase fee levels are pre-agreed whilst negotiating the initial contract. Usually, the increase amount is fully funded by existing banks and no new banks typically need to join to fill the new demand. As it is *ex ante* impossible to anticipate, if and when the increase option is exercised, the fee type cannot be reflected in a pricing measure created at signing.

The following statement from interviewee 17 exemplifies this:

I 17 Increase fees are fees which are applicable under deals, where increase options have been pre-agreed, that can be exercised during the lifetime of a loan. Normally, those of increase fees are payable at the relevant date when the company opts for such an increase, and will be payable to those banks on the value of their increased amount.

5.3.1.2.1.3 Extension fee

If the borrower intends to extend the maturity—either without prior formulation in the facility agreement or via pre-agreed *extension options*—lenders usually receive a new participation fee, named *extension fee*, in case they agree to extend the loan to a longer maturity. Again, it is *ex ante* impossible to anticipate if an extension option will be exercised.

The following interviewee statement exemplifies this:

I 8 Extension fees are agreed under deals with extension options. In these days, you usually see 5+1+1year facilities. In other words, this is a five-year loan with the option to extend it by one or two years. The extension fee is often pre-agreed in the loan agreement at signing as a pricing component, which is payable at the date of the relevant extension for those banks which are willing to extend their commitment. Further, it is possible to negotiate this fee only at the time of the respective extension request based on the current borrower and market situation.

5.3.1.2.1.4 Waiver fee/amendment fee

In the case where a certain contractual element of a facility agreement, like a financial covenant, is violated, the client may ask its lenders "simply" to waive this through once or for a specific period (*waiver*) or to change the facility agreement constantly in that respect (*amendment*). The need for a waiver or an amendment might have loan contract technical reasons with such contractual adjustments being common in the case of a deterioration of the borrower's credit quality. Further, also the borrower might actively request a waiver or an amendment to improve certain elements of the contract (e.g., margin, maturity, financial covenants).

Thus, the waiver and amendment fee negotiation might be based on a new credit risk assessment during the loan's lifetime. As it is *ex ante* impossible to anticipate whether such fees might occur, they cannot be captured via pricing measures created at signing.

The following interviewee statement exemplifies this:

I 18 Waiver fees and/or amendment fees are related to transactions where the client is asking for either a waiver or an amendment during the lifetime of a loan. Clients are then asking the banks for giving their consent to this particular request. A waiver can be an easy one, saying interest periods of one, three, and six months are agreed via the facility agreement and the client is now asking for a two-month interest period. That would be quite easy for the banks. However, if you are asking for a waiver of a leverage covenant, (e.g., not to be tested for one testing period), this could be a waiver that is more risk relevant. In general, a waiver just allows the borrower to be "non-compliant" with a contractual feature once. Thereafter, the facility agreement—as negotiated before signing—is valid again. An amendment could be: the respective borrower has two financial covenants and would like to ask the banks for the rest of the period for the existing facility to have only one covenant in place any more. That will be quite a substantial and risk-related amendment where banks would probably ask the client to pay some kind of fee to agree on a more aggressive documentation.

5.3.1.2.2 Breakage fee

Syndicated loans are floating rate instruments which could thus be cancelled/repaid without penalty at the end or after each interest period (Slaughter & May, 2013). In case a client intends to repay whole or parts of a loan within a running interest period, banks might charge a *breakage fee*—a kind of penalty—to be compensated for their *breakage costs*.¹⁶⁷ Again, it is *ex ante* impossible to anticipate whether such fees might occur.

¹⁶⁷ The respective calculation is based on the difference between reference rate (e.g., EURIBOR) from the early repayments' settlement date to the next due date of the agreed interest rate period.

I 14 In the case, a client is asking for a cancellation of the whole or a part of a drawn facility, banks might ask for a breakage fee to receive some compensation for their related costs. It is only applicable for cancellations within a running interest period, because the syndicated loan is usually a floating rate instrument that can be cancelled after an interest period at any point in time, at the discretion of the borrower.

5.3.1.2.3 Arrangement/bookrunner/coordination fee

In 5.3.1.2.1, I provided insights into the various participation fee-type pricing elements and their underlying rationales. In relation to this, I also stressed that the theoretical and first intention rationales are often hidden and driven by special interests and market practice. This also holds and appears to be even more prominent and bespoke true for arrangement/bookrunner/coordination fees and their various sub-formats. The labelling of this fee which anecdotally simply was an "arrangement fee" evolved in parallel to the various syndicated loan titles introduced in 2.4.6. Hence, the concrete fee labelling depends on the agreed title structure of a loan that might individually differ, though its raison d'être is identical.¹⁶⁸ Theoretically, this fee is a compensation for the numerous works that active "arrangers", "bookrunners" or "coordinators" must execute "upfront" to successfully place a facility in the market. These tasks include preparing several documents, such as mandate letter, term sheet, invitation letter, and sometimes an *information memorandum*,¹⁶⁹ negotiating the facility agreement, inviting banks, organising the bookrunning, and so forth. Other than the participation fee elements, arrangement fees, from an accounting perspective, are not amortised over the loan lifetime. They are usually fully "booked" as commission surplus and allocated at signing.

¹⁶⁸ Hence, going forward, by possibly using only one term—"arrangement fee", "bookrunner fee" or "coordination fee" the respective meaning is identical. This is also important in light of the diverse interviewee statements in this context.

¹⁶⁹ According to LMA (2013, p. 10), such a memorandum "is typically prepared by both the arranger and the borrower and is circulated by the arranger to potential syndicate members. It will typically contain an executive summary, a commercial description of the borrower's business, management and accounts, and a financial model, as well as the details of the proposed loan facilities being given, and typically includes a sample term sheet. In addition, the information memorandum will usually include a statement from the arranger limiting, as far as possible, its liability for the content of the information contained in the document".

I 1	The upfront fees are a compensation for the work of the arranging bank–like inviting other banks, preparing the documentation, etc.
Ι2	The arrangement or structuring fee is usually an element paid to the one, two, or three arranging banks in a loan for the work of structuring the transaction, running the syndication, engaging with the syndicate of banks, answering questions of invited banks, and so on. These banks might be labelled bookrunner or coordinator nowadays, whereas it simply used to be the mandate lead arranger in the past that received an arrangement fee. The title structures and related fee labelling is not necessarily rational.
Ι5	In addition, there are various elements of fees that you can imagine. It also depends on the structure of the financing, and you usually have arrangement fees that are for the bookrunner and for the arranging banks that sign the mandate letter with the client, and that usually get paid an arrangement or bookrunner fee for the work they have put upfront into the deal.
I 14	Other than participation fees, arrangement fees, or whatever their concrete labels might be, must not to be amortised. So, this is a real upfront fee from our point of view.

5.3.1.2.3.1 Documentation agency fee

The *documentation agency* fee is a special sub-format of the arrangement/bookrunner/ coordination fee, being the compensation for the arranger, bookrunner or coordinator, who— among other tasks—carries the special role of the documentation agent who needs to draft mandate letters and term sheets and to serve as the main contact of the external law firm that drafts the facility agreement. Especially when it comes to more complex transactions, the arrangement and structuring process is said to be smoother when there is a documentation agent who organises the time-consuming and demanding documentation and negotiation processes. This fee element is often completely hidden not only to the wider market, but also to the other bookrunner(s) and participants, and is facilitated via so-termed *fee side letters*.¹⁷⁰

The following interviewee statements exemplify this:

Ι2	A documentation fee, for instance, is a fee paid when a bank is particularly good in structuring and negotiating documentations based on broad market knowledge. It may make sense for a borrower to engage a particular bank to set up the documents to ensure that the final documentation is on in line with its competitors.
I 3	Then you have specific work fees that you may see for documentation work at certain times. These fees are individually bespoke. It is not in every transaction where you would see that.
I 16	From my point of view the most time-consuming work by setting up a syndicated loan is related to its documentation. Having a good documentation agent is valuable in that case. This agent also needs to be compensated.

¹⁷⁰ According to LMA (2013, p. 11), "details of these fees are usually contained in separate side letters to ensure confidentiality".

5.3.1.2.3.2 Fee skim/pool

The *fee skim*, also referred to as *fee pool*, represents an "extra compensation" for the arranger(s), bookrunner(s) or coordinator(s) which is created through an "intelligent" invitation processes. Technically, it is the difference between the agreed upfront fee wallet for the whole facility and the fees actually paid out to the participants. If the bookrunners are able to place the facility with participants successfully without rewarding them with the full wallet, they may take this difference as extra compensation. Table 78 displays an example calculation for this fee. Here, an overall participation fee of 30 bp has been agreed between lead bank(s) and borrower. For the smallest ticket size (€20 million), lead banks however only award these participants 25 bp and thus increase their own revenues by circa €14,000 via the "pool fee". Hence, the difference increases the lead bank's fee income.

Example: Fee skim/pool						
Facility amount	€ 400 mn					
Participation fee	30 bp					
			Partici	ipation fee		
Investor	Initial commitment (€)	Final allocation (€)	%	€	Pool fee (€)	Total (€)
Bank a	55,000,000.00	47,500,000.00	0.30	142,500.00	14,166.67	156,666.67
Bank b	55,000,000.00	47,500,000.00	0.30	142,500.00	14,166.67	156,666.67
Bank c	55,000,000.00	47,500,000.00	0.30	142,500.00	14,166.67	156,666.67
Bank d	40,000,000.00	34,500,000.00	0.30	103,500.00		103,500.00
Bank e	40,000,000.00	34,500,000.00	0.30	103,500.00		103,500.00
Bank f	40,000,000.00	34,500,000.00	0.30	103,500.00		103,500.00
Bank g	40,000,000.00	34,500,000.00	0.30	103,500.00		103,500.00
Bank h	40,000,000.00	34,500,000.00	0.30	103,500.00		103,500.00
Bank i	20,000,000.00	17,000,000.00	0.25	42,500.00		42,500.00
Bank j	20,000,000.00	17,000,000.00	0.25	42,500.00		42,500.00
Bank k	20,000,000.00	17,000,000.00	0.25	42,500.00		42,500.00
Bank l	20,000,000.00	17,000,000.00	0.25	42,500.00		42,500.00
Bank m	20,000,000.00	17,000,000.00	0.25	42,500.00		42,500.00
	550,000,000.00	400,000,000.00		1,157,500.00	42,500.00	1,200,000.00

Table 78. Example: Fee skim/pool.

The following statement exemplifies this:

I 17 Fee skimming is somehow equal to the so-called fee pooling. In typical syndication scenario, a lead bank invites banks for different commitment levels, and it is normal market practice that those banks, which are providing higher commitments, will be paid a higher fee than those ones who provide smaller tickets. If you agree with a company, the upfront fee elements, for the overall facility amount and are thus able to allocate fees for the participating banks on your own, the skimming kicks in. When you receive commitments from banks on lower levels, you pay out smaller amounts of fees. The difference between the overall fee and the paid-out participation fees to the invited banks is called skim or pool. This normally is something that the lead bank(s) will earn additionally. In practice, in many cases these days, particularly with companies with an excellent credit rating, fee skimming is not going to take place, as borrowers would not agree on this.

5.3.1.2.4 Invited/"passive" arrangement/bookrunner/coordination fee

In practice, carrying the title "arranger", "bookrunner", or "coordinator" does not necessarily imply that such a bank is actively putting together the facility and "running the book". It may be the case that such banks were awarded the title because they committed to a relatively high amount. Without being provided with this title that enables them to be awarded important *league table credits*, the chance of a successful syndication would be smaller. In other words, these "bookrunners" are only named as such but perform none of the work of an active one. Thus, technically, they are only participants. Besides the participation fee, these *invited* or *passive bookrunners* also commonly receive a bookrunner fee. This, at first glance, appears counterintuitive—as does the fact that these banks are labelled "bookrunners" at all. One key driver of also getting allocated such a fee is the accounting standpoint, mentioned earlier. This component enables these passive banks to book some fees fully at the moment of signing as commission surplus. The endeavour for this is related to internal incentive structures within banks—a phenomenon that I comment upon later in depth.¹⁷¹

The following interviewee statement exemplifies this:

I 15 This issue has changed over time. For big deals, where we were invited for a pure participation, in the past we would have just been awarded a participation fee, let us say, 50bp. These days you probably must say participation fee is 35bp and arrangement fee 15bp, which is completely paid up-front and not to be annualised over the lifetime of the loan, which participation fees mostly are.

This phenomenon is another example of hidden market mechanisms carrying serious bias and misclassification potential for quantitative studies, in which all named bookrunners are likely to be treated as active ones. This is particularly important in the huge strand of information asymmetry literature that focuses on lead bank and participant bank interactions. Furthermore, these hidden compensation structures cannot be captured via public secondary data sets.

5.3.2 Special features elements

The various syndicated loan pricing elements discussed above are common in straightforward general corporate financings. Syndicated lending is, however, also a frequently used tool to finance special purposes such as acquisitions (Voisey, 2016). In such special financing arrangements, special and usually complex fee structures also occur.

¹⁷¹ See section 5.3.3.2.

In line with my earlier discussions, I arrange these special elements under per annum-/recurring and upfront-/non-recurring elements.

5.3.2.1 Per annum-/recurring elements

5.3.2.1.1 Ticking fee

The *ticking fee* is a common per annum element in acquisition financings. It functions like a commitment fee although is percentagewise regularly set lower. Frequently, acquisition financing facilities are signed before the precedent conditions are met. In other words, the draw-down is blocked until these conditions are satisfied. This might be the case in bidding processes for targets in which the results remain open. However, certainty of funds is required to submit a binding offer in the first place. It might also be the case that antitrust approvals are pending, as is the payment of the purchase price. In this period after signing and before the legal possibility to draw down the loan, ticking fees are paid, because lenders at this time already have to allocate liquidity and equity (RWA) to this commitment. Based on the practical pricing example for such a loan (Table 79), until the facility is unlocked and subsequently drawn down, the borrower must pay ticking fees.¹⁷²

Practically, today, ticking fees might be the only margin-like per annum income during the whole lifetime of an acquisition financing even if the M&A deal turns out to be successful. This is because many of companies only need the signed facility agreement to substantiate certainty of funds at the bidding stage. If the deal turns out to be successful and the need arises for cash funding, then often a bond or Schuldschein take-out is issued quickly and only parts of the acquisition loan, or none at all, are ever utilised. These facts and pricing issues are not captured by public data providers and are thus hidden. The actual related payments that occurred can only be known *ex post*.

¹⁷² 13bp p.a. in t0 (10% of 130bp p.a.), 26bp p.a. in t1 (20% of 130bp p.a.), and so on.

The following interviewee statements exemplify this:

- I 3 As an element on the interest side again, we have the ticking fee in acquisition financings, which is meant to compensate for the capital costs of participating banks for the period prior to the actual possibility of the client to draw down the loan. That is often priced lower than the traditional commitment fee and it only covers the reservation of capital for that participation of any bank during that period that the client can actually not draw. Nevertheless, the bank has already blocked the capital.
- I 8 You have a ticking fee element as well. This means that given that such a financing is tied to an acquisition and the client is not sure if he really gets the target, whether the acquisition will occur or not. Therefore, instead of paying a full commitment fee, the client has to pay a ticking fee until he is really in the position of drawing the funds.

5.3.2.2 Upfront-/non-recurring elements

5.3.2.2.1 Underwriting fee

In syndicated lending, two major syndication modes are common: "best efforts" and "underwriting".¹⁷³ In the latter case, the bookrunner(s), instead of just committing a part of the facility amount (best efforts) commits to fund the whole amount and faces the risk of not being able to place fully the residual between intended final take and initial underwriting commitment into the wider market (Rhodes et al., 2004). Facing this market risk is usually compensated by underwriting fees, to be paid upfront to the underwriter (Fight, 2004; Sickel, 2010). In practice, the underwriting fee and other upfront elements are not necessarily fully paid upfront, but might instead be staggered according to several milestones within an acquisition process. From an accounting standpoint, banks are allowed to book this upfront fee fully at the time of its payment. What payments actually occurred, however, can only be known ex post.

The following interviewee statements exemplify this:

- I 2 In an acquisition scenario, which is the most common one where you usually have the underwriting fees, these compensate the bank for the risk of pre-funding a group of banks. In acquisition financings, the reason for starting with a small group of underwriters, or even only with one single bank, is confidentiality. As a borrower, you usually need to have the funding in place before you actually place an official bid for a certain target. That is usually provided by a relatively small group of banks that support you with an underwriting.
- I 5 In acquisition finance, you add underwriting fees. It is a component to pay for the financing security provided to the borrower in a situation where he needs financing, secured financing at a certain point in time and you make that available to the borrower. In addition, you are paid for that because you take more as you would usually take into your books for a certain period. You afterwards invite other banks to join into the deal, which then are paid a participation fee.

5.3.2.2.2 Duration fee

Term loans in acquisition financings are commonly structured as bridge loans with a relatively short lifetime or lifetime staggering. The intention here is to "take out"/refinance this bridge with, for example, a public corporate bond, a Schuldschein and/or IPO/PO very quickly, once the M&A deal has closed and has become public knowledge (Barbosa & Ribeiro, 2007). In the case that this take-out does not occur, as the borrower has not been able to access successfully the capital market, the bridge loan maturity may need to be extended. In this instance, the *duration fee* would have to be paid to penalise the borrower for not having successfully tapped the capital markets on time. The following table displays the respective functioning.

Pricing example: syndicated acquisition term loan facility								
	Period	Margin* in bp p.a.	Ticking fee (t0=10% of margin; t1+t2=20% of margin; t3-t5=35% of margin)	Participation fee (75bp upfront, annualised over lifetime)	Underwriting fee (50bp upfront, annualised over lifetime)	Duration fee (t2=10 bp; t3=15 bp; t4=20 bp upfront)	AISD* in bp p.a.	Arrangement fee (25bp upfront, annualised over lifetime)
Margin grid	t0	130	13	15	10	0	155	5
	t1	130	26	15	10	0	155	5
	t2	150	30	15	10	10	185	5
	t3	140	49	15	10	15	180	5
	t4	130	45.5	15	10	20	175	5
* Co	* Common pricing measures of extant literature; AISD based on Dealogic Loanware definition.							

Table 79. Pricing example: acquisition term loan.

Duration fees might also be interpreted as a compensation for higher risk as it likely would have concrete borrower-related reasons to fail in tapping capital markets. It is also common that such incidences are addressed via grids, with the margin simultaneously rising as well. The actual payments that occurred can only be known *ex post*.

The following interviewee statements exemplify this:

- I 5 You can also have incidences when you want borrowers to go quickly into the bond market to replace an existing facility, which was only meant to facilitate an acquisition. Banks usually do not want to keep the whole loan on their books as it is in such scenarios often very large. Then, you might see things like duration fees, which are paid for a short time and bring up the pricing significantly, so that you are encouraged to refinance the facility quickly in other markets.
- I 19 A duration fee concept is applicable in underwritten acquisition financing scenarios, where the structures are usually very much targeted at bringing the initial loan exposure down at a certain point in time via take out instruments. If this would not happen, these duration fees would kick in and the company would be penalised because they were not able to reduce the loan exposure in an timely manner, because of which a duration fee would be payable. In that case, usually also the margin increases, which is addressed via respective margin grids.

5.3.2.2.3 Advisory/structuring fee (bank-related)

If banks—besides the role of negotiating and structuring a syndicated loan—provide further advisory, such as in case the loan is only one part of a larger financing package also often referred to as "multi-product solutions" (Malone, 2011, p. 116) or in restructuring cases, for instance, an *advisory/structuring fee* may be paid as a one-time payment, or occasionally after meeting certain milestones. Hence, related payments might also be only known *ex post*.

The following interviewee statement exemplifies this:

I 18 This could be either bank and/or non-bank-related. It is not a fee solely paid for putting the concrete facility in place. It is more for the process beforehand, for instance, if the client needs to have advice in his specific situation as to what kinds of products are best for him. This could be a syndicated loan, a bond, or a Schuldschein for instance. Then the client is asking either bank or some kind of financial advisor for this financial advice on how to structure the whole financing package.

5.3.2.2.4 Early bird fee

Early bird fees are common in large-scale best-efforts or underwriting syndications, where initial bookrunner(s) intend on locking in commitments quickly to reduce their often-large initial loan commitment to mitigate market risk exposure. This is particularly appropriate if underwriting amounts are extraordinarily high.¹⁷⁴ In other words, early bird fees incentivise invited banks to commit very quickly to joining the financing.

The following interviewee statement exemplifies this:

I 17 An early bird fee is a sub-form of the participation fee in mostly complex financing structures. It is a kind of additional income source for those banks, which are invited in a syndication process at the very beginning. It is in the interest of the lead banks to make sure that ideally some larger banks with larger commitments will join the transaction very quickly to achieve placement security. To incentivise these early commitments, you pay such a fee.

5.3.3 **Prioritisation of pricing elements**

In the previous sections, I have provided an overview of various syndicated loan-related pricing elements, as highlighted by the research participants. It is necessary to note that it is most likely that even this list is not fully comprehensive, and that new pricing features or respective labelling emerge constantly. Based on these discussions, I subsequently move forward to present a prioritisation of the respective core elements from a bank's perspective.

¹⁷⁴ For example, in a multi-billion acquisition with only one or only very few underwriters.

Intuitively, from an overall bank perspective, the relative importance of the various corporate syndicated loan pricing elements is a function of the overall share of the payments received that derive from these elements. The following interviewee statements provide thoughts of the research participants of respective pricing elements' shares within a syndicated loan pricing package.

- I 5 Margin should be about three-fourths of the whole. One-fourth should be the fee component. That is what I think for normal deals. In an underwriting scenario, the fee component in absolute terms gets higher, but the margin is also usually higher because there is an acquisition premium added to it. So, three-fourths to one-fourth should also hold here.
- I 6 I think we need to make a distinction between pure backup, e.g., usually undrawn and likely to remain undrawn. I would say it is for a normal five-year tenor back-up loan, about 60 to 65% commitment fee, 35% participation, and arrangement fee. That should roughly work. For drawn facilities, I would say it is more around 80 to 20%.
- 18 Let us say you have a five-year facility. As a proxy, I would say the upfront fee is half a one year margin. Therefore, if the margin were 50bp p.a. over years, then the upfront fee would be 25bp arrangement and participation fee. So, 10% of fees, roughly.
- I 10 It depends on two things: how much is drawn and what the tenor of the loan is. Therefore, I suspect, on a short-term acquisition finance deal, upfront fees pay a larger role than in a long-term investment grade loan. For us, I think, if you look at a drawn margin of 90bp p.a. over five years and upfront fees of-let's say-30bp., it would be roughly 10%. My feeling is that for a bank such as ours, the upfront fee is clearly not the main component.

Since the margin is generally found to account for the overwhelming part of the overall pricing proceeds, it can be seen as the most important elevating screw. However, from a holistic bank perspective, the question as to which kind of pricing element feeds the equation, and to what degree, should be irrelevant.

<u>Finding:</u> From an overall bank perspective, the relative importance of the various syndicated loan pricing elements is a rising function of their share of the total payments received.

This is in line with the explanations of the interviewees, and exemplified by the following statement:

I 16 There is no real prioritisation, in terms of p.a. pricing elements and other fee elements, from an overall bank standpoint.

In practice, several different bank units are involved in syndicated lending who differently prioritise the diverse set of syndicated loan pricing elements. I call these departments the *within-bank-stakeholders* of corporate syndicated lending.

5.3.3.1 Introducing the "within-bank-stakeholders"

Before I present the related findings, I briefly provide some background information on the following "within-bank-stakeholders":

- Loan product unit
- Asset owner/risk taker
 - "Opportunistic" credit portfolio management
 - o Relationship management
- Risk management
- Agency (out of scope)

5.3.3.1.1 Loan product unit

The *loan product unit* is responsible for structuring and placing a syndicated loan in the primary market, aiming at winning active bookrunner mandates by constantly pitching with possible borrowers in so-called *beauty contests* or *RFP-processes*.¹⁷⁵ The success of this unit is reflected in the bookrunner league table position. It might be sub-divided into further departments, like *origination, execution, sales and trading*. For simplification, I will proceed by using "loan product unit"—with a related *loan originator* being responsible for setting the pricing in the primary market—as the collective term. Furthermore, it is common for these entities to handle the process of pure, passive invitations to join a syndicated loan by examining related documents, by writing structure opinions, and by other tasks.

In practice, loan product units are differently integrated into the operational bank set up and happen to be organised as profit or cost centres, being either located in investment- or commercial banking units.

5.3.3.1.2 Asset owner/risk taker

The tasks of loan product units usually end with the closing of a facility, after which it "hands over" the loan to the department that over the lifetime of the loan "owns" and "risk-takes" it. These asset owners might appear to be organised in two different ways within a common banking structure: "opportunistic" credit portfolio management and relationship management.

¹⁷⁵ In RfP-processes or pitching phases (beauty contests), borrowers solicit competitive offers of possible syndicated loan lenders.

5.3.3.1.2.1 "Opportunistic" credit portfolio management

Opportunistic, mostly centralised loan portfolio management entities act as a risk-neutral investor, evaluating loans at a risk-neutral, "fair," or "arm's length" market price. The loan product unit transfers the asset after signing to the opportunistically acting credit portfolio management department at a current, risk-neutral market price, which might be valuing above par, producing a so-called *longfall* to be distributed by a certain key within the bank, or it might yield below par. In the latter case, a so-called *shortfall* must be refunded to the portfolio management entity by those units that, in the opposite case, would have received the longfall proceeds. In other words, economically, the portfolio manager invests at all times at par in a way that the recurring pricing elements present a fair risk-premium. This very sophisticated approach is rather common within investment banks or in investment banking divisions of universal- or wholesale banks, being responsible for a certain group of predominantly large clients.

5.3.3.1.2.2 Relationship management

It is also common in commercial lending for the *relationship manager* of a certain borrower to act as asset and risk taker, meaning that the relationship management unit has to manage the loan portfolio of its client base, mostly in a decentralised manner. The relationship manager usually does not act purely opportunistically, having a strong interest in granting the loan to his client.

5.3.3.1.3 Risk management

Risk managers who are usually responsible for a pre-defined borrower group¹⁷⁶ typically constitute the ultimate bank-decision-makers for granting loans. Risk managers also continuously monitor clients over a loan's lifetime. These duties include among others internal rating renewals and performance monitoring.

¹⁷⁶ For example, in terms of size as well as industry sector.

5.3.3.1.4 Facility agency

The loan agency carries the responsibility to act as servicer for the whole syndicate during the lifetime of a loan. It handles the respective payments, distributes documents, and may administer security if available¹⁷⁷ (Jones et al., 2005; Laubrecht & Heller, 2012).

The agency's functions are usually structured as pure cost centre service entities, supporting other parts of the bank to be able to conduct syndicated loan business. Thus, besides agency-related fees, these agents have no stake in any pricing element decision, and are consequently pricing indifferent. As stated above, I will not focus further on the facility agency's function in this study.

5.3.3.2 Pricing-related interests of the "within-bank-stakeholders"

Overall, 14 interviewees shared the view that the various syndicated loan pricing elements were partly designed to meet the different expectations and interests of the various internal stakeholders. Borrowers, on the other hand, were said to be interested mainly in managing their total cost of borrowing. The way this total cost amount is being split is of minor interest for the borrower. The fact that several lenders with potentially different internal organisation and incentive structures team up in a syndicate further increases the multi-dimensionality and complexity of pricing elements.

<u>Finding</u>: Syndicated loan pricing multi-dimensionality provides mechanisms to address various bank internal incentive structures.

I 3 The income resulting from a syndicated loan must be shared or split up. However, that depends on internal bank organisation and incentive structures.
I 10 At the end, it is driven by various functions in a bank, and the need to divide revenues among these functions, like portfolio management, front office, or what have you.
I 15 The countless different pricing elements are a kind of distribution mechanism for income within the banks. They just make the bankers happy.

The following interviewee statements exemplify this:

Significant questions remain as to what are the interests and incentive structures of these various entities and how they are addressed by different pricing structures. Loan product units

¹⁷⁷ Also view my explanations regarding the various servicing fees in the Appendix E.

tend to be organised as *profit centres*, by often being remunerated via arrangement fees¹⁷⁸ and maybe parts of, or seldom, the whole participation fee. The reception of these proceeds may technically be executed via *income shadowing*, *hard-cash payments*, or a mix of both. Usually, the loan product unit does not receive any of the per annum payments and thus, from a pure economic standpoint, primarily focuses on maximising upfront fee income. Even if this unit is being allocated with participation fees or a part of them, arrangement fee elements are prioritised higher as these do not have to be amortised.

The following interviewee statements exemplify this:

Ι5	The loan originators look more on the upfront fees and what they can earn from underwritings and what they can earn from arrangement fees. They are more interested in upfront fees because they put long hours of work into structuring such a deal, and they want to be compensated for work and effort they have put into such a deal.
Ιб	Loan origination entities usually get the arranger fee or coordination fee. Possibly also the whole, or parts of the participation fee. Thus, all other things being equal, my key concern would be to maximise the arrangement fee as it puts most money into my pocket. What we do traditionally is try to maximise the arrangement fee and then prioritise the participation fee second, and then thirdly, the margin.
I 8	In our department, we get the arrangement fee. On the origination side, we are incentivised to arrange the transactions. So, the upfront fee is important.
I 13	The syndication people generally look more at the fees. It may depend on your internal accounting model—whether you are a cost centre, whether you are shadowing the fees, and then how you shadow them. That determines what you are focusing on, but in the end, regardless of what your focus is, if you can shadow all the fees, the fee is the absolute number and most important to you.
I 14	For me as a loan originator, the focus is always primarily on the upfront fees.

As the loan product unit—via the respective loan originator—is said to be responsible for calibrating the entire pricing package of a syndicated loan, which has to be marketed successfully,¹⁷⁹ it is not possible simply to set margins down to increase the fees. For most of the other "within-bank-stakeholders", the margin and the other running income elements, such as commitment fees, are the most important and visible ones, and are also—from a quantitative standpoint—the biggest income-generating source out of a syndicated loan, as already mentioned earlier.

Thus, although the loan product unit does typically not receive any per annum income, loan originators must focus strongly on the margin as well when it comes to marketability and meeting the interests of the other stakeholders. Hence, margins are commonly defined as a pure comparability instrument, a so-called "comp" from an originator's perspective.

¹⁷⁸ Meaning: arrangement/bookrunner/coordination fee.

¹⁷⁹ Or the pricing package which is successful in an RfP-bidding phase.

In other words, besides their own incentive issues, loan originators need to establish a compromise pricing package, to be accepted by the various involved stakeholders. From the point of view of the product unit, an incentive/remuneration-based prioritisation needs to be balanced to ensure marketability (both internally and externally). Logically, calibrating the "right" per annum elements by the originator can be interpreted as the sufficient condition for being enabled to earn upfront fees.

<u>Finding:</u> Besides considerations of commercial incentives, syndicated loan originators need to focus on all pricing elements to ensure the successful marketability of a syndicated loan. The margin, as the most visible pricing element, is therefore used as a "comp"-tool.

The following interviewee statements exemplify this:

I 1	For the originators, we also look at all pricing elements certainly. The most visible ones are margin and upfront fees for us.
I 2	From an originator's point of view, the key element is always to find a pricing package that works for everybody.
I 13	The overall calculation should work for your bank, and then obviously for you as an originator. If there is any kind of distribution risk, then you need to be aware of what the requirements of other investors are.

The above discussion assumed that the loan product unit was organised as a profit centre, enjoying its own "monetary" benefits. For most of the sample, this holds true. Of course, there are differences in the way income is distributed and shared between profit centres as well, but the broad patterns outlined above hold in general.

In rare cases, loan product units are structured as cost centres with an aim to support other functions of the bank, like relationship management, to win and execute business. In that case, the above-mentioned, incentive-driven prioritisation patterns are less pronounced.

The following interviewee statements exemplify this:

I 6	Being a bank that is maybe not so sophisticated in the way that it allocates income, we tend to take a holistic approach. We tend to make sure that the overall pricing works for all parties-the client, and the whole bank, and the other involved syndicate banks.
I 10	I find that a very interesting development because it also drives the division between participation and arrangement fee. At the end, it is just one pot of money. It should not matter so much, but it does matter for many institutions. For us, it does not.

On the asset taker's side, the main interest will mostly be adequate running risk remuneration with respect to a certain syndicated loan. That holds true for both the above-mentioned structural options.

<u>Finding</u>: Asset takers within banks predominantly focus on per annum elements like the margin.

The following interviewee statements exemplify this:

Ι2	The most important one is the booking office—mostly the relationship side and the asset owner who takes the loan on the book. For them, the most important pricing element is usually the margin because the margin is really designed to compensate them for the costs and risks that occur, and for the fact that they provide the loan for a certain period. Other elements, such as the various upfront fees, are in a sense design elements, and it actually depends on what kind of transaction you have.
I 3	The most important element is obviously the margin. That is the precondition for any portfolio, be it managed on an automated basis or on a bespoke basis, to accept a credit asset on the book. Portfolio managers need to know what the p.aremuneration for that assets risk is.
I 14	The recurring income, which represents the revenue flow to those business units.
I 15	You are talking to a markets person, and I as a market person do not see the margin income. It goes to the relationship manager, who "owns" the deal.
T 17	First there is the partfolio manager who takes the general decision whether to invest into such an

I 17 First, there is the portfolio manager who takes the general decision whether to invest into such an asset or not. Obviously, he is very much keen to receive an adequate return from a p.a. perspective.

Risk managers focus on the overall structure of the loan, and whether the loan and its contractual features in general adequately address the risk profile of a borrower. Besides, for example, the security package, covenants, and maturity, pricing is only one element of these contractual features. As the risk manager focuses on the risk structure of a loan, and the margin or other per annum elements should reflect this risk, the focus lies on the margin or the running elements.

<u>Finding:</u> Risk managers within banks predominantly focus on per annum elements like the margin.

The following interviewee statement exemplifies this:

I 5 There is a difference that risk departments look at the margins and originators look at the fee. If the margin is compensating for the risk appropriately, the deal gets usually approved.

5.3.4 Conclusion: classification and prioritisation of syndicated loan pricing elements

Section 5.3 was devoted to the classification and prioritisation of various syndicated loan related pricing elements as addressed via RQ 3. I outlined that numerous pricing elements exist in practice that have not been captured by extant academic literature. Furthermore, I revealed the underlying rationales of these elements, with certain of them such as participation fees and arrangement fees being at least partly based on rationales that have been so far hidden.

In addition, pricing structures have been shown to differ extensively between various loan types. Here, even a differentiation between term and revolving credit facilities as advocated by Berg et al. (2016) seems not to be granular enough, as, for example, general corporate and acquisition financings carry different price mechanisms which need to be taken into consideration whilst debating the term "pricing".

Furthermore, it became apparent, that price-related payments and pricing decisions are not only made *ex ante* but often also *ex post*. Hence, the precise overall pricing outcomes in relation to a specific syndicated loan type can only precisely be measured *ex post*. I thematise this intellectual challenge in 5.4.

I then provided a prioritisation of these elements and emphasised that one key rationale of the complexity and multidimensionality of pricing is to account for the different and sometimes competing interests of a bank's diverse internal stakeholders.

Overall, I would argue that new pricing measures and definitions need to be established that attempt to address aforementioned issues more adequately than do existing ones such as the AISD.

5.4 A novel perspective towards the understanding of "pricing"

As established whilst reviewing the literature, determinants of syndicated loan pricing have extensively been studied by scholars, predominantly based on quantitative analyses of secondary data sets, comparable to the Dealogic Loanware one analysed in Chapter 4. As no study has comprehensively focused on the German corporate syndicated lending market, and as the publicly available data is unsuited for quantitative regression analyses, the findings presented here will enable a richer understanding of the pricing determinants and their interaction from a bank's perspective.

Based on the conclusions drawn from the discussions in sections 2.5 and 5.3, before focusing on the price determination, I however must provide deeper insights and perspectives in relation to the term "pricing" to enhance its understanding.

5.4.1 *Ex ante* and *ex post* reciprocity and further challenges surrounding "pricing"

In 2.5, I discussed syndicated loan pricing measures that have predominantly been used as dependent variables within extant quantitative pricing literature. These look at the relevant syndicated loan pricings at signing as attempted to be covered by the respective data providers and mostly rely purely on initial margins or AISD. In other words, these measures rely on publicly available pricing data at the time of the loans' origination in the primary market. To quantify and proxy the price of a syndicated loan, this *ex ante* perspective appears sensible at first glance given that it should reflect the point-in-time pricing shaped by its various determinants and the related information at hand.

Corporate syndicated loans, however, are in a means special that loan originators are already *ex ante* aware of and expect the factual price-related pay-offs to differ extensively from what the *ex ante* price tag would ordinarily suggest. Hence, the price-setting process in the primary market already incorporates and processes implicit *ex post* perspectives. In other words, whilst evaluating prices' determinants, loan originators, or more broadly, the lenders need to forecast what the factual pricing will be, both in absolute as well as in relative terms (p.a. yield). This exercise is likely predominantly driven by experience and tacit knowledge, being unobservable to outsiders.

This is underpinned by the following statement of interviewee three:

I 3 You cannot simply compare price setting of a corporate syndicated loan with, for example, the one of a bond or Schuldschein. There you usually have one fixed coupon that is being paid out every year and for example, the bond gets repaid bullet exactly at its defined maturity date. So, an investor is capable to exactly plan and count in the related cash-flows. For our product, this hardly ever the case. We need to bare this in mind when we set a pricing.

Besides this *ex ante* and *ex post* reciprocity, I further generally criticise existing definitions for not adequately capturing the complexity and multidimensionality of the diverging pricing structures. It is noteworthy that numerous price elements are not even covered by the respective AISD formula.

In that vein, Bharath et al. (2011, p. 1,158) defined AISD as "the most comprehensive measure of the borrowing cost". In line with the statement of interviewee 12, I challenge this view and propose a goal of presenting a pricing definition framework that encompasses all
pecuniary transfers from borrowers to lenders over the lifetime of a loan, excluding amortisation payments.

I 12 Even AISD won't cover the total cost of borrowing as it, for example, does not take into account arranging fees. As data is so limited, the margin in its own is basically the closest proxy to borrowing costs with all associated limitations.

For the remainder of this thesis, such a framework needs to be qualitative in nature, given the limited availability of public data. Under a rather unrealistic laboratory assumption of full data availability, I however also propose a quantitative *ex post* total cost of borrowing framework later in this section.

5.4.2 Required information in a laboratory setting

The relative importance and occurrence probability as well as the specific determinant sensitivity of individual pricing elements that are not comprehensively covered by Dealogic Loanware, LPC, and others, upon which extant scholars have solely relied, depend on the loan type for each of which pricing packages and mechanisms appear to inherently differ.

Thus, I first establish four different loan type categories, appearing to be most common¹⁸⁰ in the current German corporate syndicated lending market, where each differs from the others significantly with regard to its price-related, contractual design.

- RCF. RCFs are common revolving credit facilities, where the borrower's intent is to draw down, repay, and redraw frequently—for example, to finance general corporate purposes like working capital.¹⁸¹
- 2. **Backup-RCF**. These RCFs are back-up lines, predominantly for commercial paper programmes, being intended to remain undrawn over the lifetime of the loan and are thus, used and priced systematically differently compared to common RCFs.¹⁸²
- 3. **Term loan**. Traditional term loans might be used to finance a bigger capital expenditure or specific base amounts of debt.¹⁸³
- 4. Acquisition term loan. Mainly for very large clients, these are special and often underwritten as large term loans, commonly structured as bridge facilities with the

¹⁸⁰ Because these have repeatedly been mentioned by the research participants throughout the qualitative fieldwork.

¹⁸¹ See section 2.4.4.2.

¹⁸² See section 2.4.4.2.

¹⁸³ See section 2.4.4.1.

intent to finance an acquisition discretely and quickly at an early stage and subsequently to refinance swiftly via capital markets instruments (take-outs).¹⁸⁴

With respect to the needed information in a laboratory setting, Table 80 extends the initial pricing element that Table 76 introduced in 5.3.

¹⁸⁴ See section 2.4.4.1.

							Factual	" total cost	of borrowing +								
	Loon trme	PCE	Per annun	1-/recurrin	ig elemen	ts m Leen	Acq	uisition	Loop type		DCE	Upfro	nt-/non-re	currin	g elements	Acq	uisition
=	Eastual lifetime	KCF	, D	ackup-KC	r ie		Ter	m Loan	Eastual lifetime		KCF	Dack	lup-KCF	Ter	alement	Ter	m Loan
matio	Factual average	reievan	it.	reievant		reievant	n	eievant	Factual metime	1	elevant	re	eevant	I	eievant	R	levant
nforn	Lifetime	not releva	ant	not relevant	1	relevant	n	elevant	lifetime	no	t relevant	not	relevant	I	elevant	n	levant
post i	Margin changes (grid)	relevan	ıt	relevant	1	relevant	n	elevant	Margin changes (grid)	I	relevant	re	levant	I	elevant	n	levant
Ex1	Average draw percentage	relevan	ıt	(not) relevant	no	t relevant	n	elevant	Average draw percentage	no	t relevant	not	relevant	no	t relevant	n	levant
		Relev ("√",	ance for le '' √√ '' or	oan type ''✔✔✔'')		Determinar ("x" if at	nt sensi least '''	tivity • ''')		i C	Relevance : "√", "√√	for loan '' or ''✔	type ✔✔'')	:	Determinar (''x'' if at	it sensit least '' *	ivity ('')
	Margin	***	x 11.	,	x +++	x	***	x	Participation fee	***	x	***	x	***	×	111	x
	Margin grid	111	x +++		x 444	x	***	x	Old/new money fee	11	x	*	x	11	x	1	
ation	Foreign curr. premium	44 x	*•	x	1		1		Increase fee	11	x	*	x	11	x	1	
inform									Extension fee	11	x	++	x	11	x	*	x
ex post	Reference rate	111 x	**	x	***	x	***	x	Waiver fee	11	x	**	x	**	x	11	x
ante &	Interest rate period	111 x	11.	×	+++	x	111	x	Amendment fee	44	x	**	x	11	×	11	x
s / ex															_		
lements									Breakage fee	***	x	444 x		***	x	111 x	
ricing e	Commitment fee	111	x 44	1	x /		*	x	Arrangement/								
/usual p									bookrunner/ coordination fee	***	x	***	x	***	×	111	x
nommo	Facility fee	/	/		/		/		agency fee	11	x	44	x	11	×	111	×
C C									Fee skim/pool Invited/ "passive"	*	x	/		*	×	11	x
	Utilisation fee	**	x 44	x	/		/		arr./bookr./ coord. fee	**	x	***	x	**	×	***	x
_	Ticking fee	/	/		/		**	x	Underwriting fee	*	x	/		1	x	***	x
nents /									Duration fee	,		,		,		11	
res elen <i>ost</i> info									Duration lee	,		,		,			,
ll featu & ex p									Advisory-			,				11	
Specis ex ante									(bank related)								
									Early bird fee		x	1			x	111	x
						Servicing	and 3r	d party elec	ments are out of so	ope							
ments	Facility agency fee	111	x 44	x	+++	x	111	x x	Transfer fee	√√√	x	*** x		444	x	111 x	
ing ele	Security agency fee	×	x /		**	x	***	x									
Servic																	
nts									Advisory fee (non-	*	x	1		1	x	11	x
y elemei									Legal fee	111	x	111	x	111	x	111	x
3rd part									Syndication platform	1.1.1		111		11.1		111	
(4)									fee	***	x	*** x		444	x	*** 1	

Table 80. Loan type specific pricing elements with determinant sensitivity.

In a complete informational environment—to measure the factual costs or the accurate per annum yield of any syndicated loan—one would need large sets of information as shown in Table 80. First, a clear distinction between the four loan types would be essential, a requirement, being hard to accomplish by using publicly available German corporate syndicated loan data. According to interviewees 5 and 18, the identifiers within publicly available data sets are not accurate in this respect.

- I 5 You have available sometimes the amount of the loan, or the tranches. Then it starts already to get less accurate; sometimes you do not know the tenor of the loan and of its different tranches and tranche types. You just know the total amount and the borrower.
- I 18 Data is only more or less accurate when it comes to borrower name and overall deal volume. When we talk about concrete loan purpose and loan types, it gets already hard to really get useful and reliable information. Overall this situation is very unfortunate.

Additionally, all pricing elements of which a certain loan type consists as well as the factual (average) lifetime would need to be acknowledged—an impossible premise given the limited pricing element coverage and availability at all.

In practice, the factual (average) lifetime heavily deviates from the contractually set one, as back-up RCFs, for example, tend to be refinanced at least one year prior to their contractual maturity date. For term loans, on the other hand, the factual average lifetime would be needed to accurately incorporate possible amortisation schedules, besides the impact of a possible early refinancing. Logically, whilst screening the commonly used pricing measure in extant literature—the AISD—one would need to annualise upfront fees based on the factual lifetime for RCFs and on the factual average lifetime for TLs rather than on the contractually set ones. In other words, existing studies are likely to overestimate loan maturities systematically and, hence, underestimate upfront fees from a per annum yield perspective.

The following interviewee statement underpins this:

I 8 In a true calculation, it gets complicated because most of the deals do not survive five years. If you look at the average lifetime, which was probably three and one-half years, then the upfront fee elements would increase.

Next, the average percentage of drawings or, even more rigidly, the precise drawings for each day would need to be known to calibrate the interaction exactly of, for example, margin, commitment, and utilisation fees.

Rationally, information on factual (average) lifetime as well as factual draw percentages cannot readily be available at signing, when the credit decision is made and the pricing is being set. The same is true for numerous further price-elements, like, for example, waiver or

amendment fees being newly negotiated during the lifetime of a syndicated loan. Lastly, possibly triggered margin changes via grids during a loan's lifecycle would need to be incorporated by using an average or a diurnal margin, rather than solely relying on the initial margin.

Regarding average draw percentage for RCFs, one could *ex ante* work with predictions or historical averages that are available in the U.S,¹⁸⁵ however, not publicly available in Germany. Other than for back-up RCFs, where the draw rate is said to be historically (close to) zero, for general corporate purpose RCFs—for example, used by smaller privately held firms—the average draw percentage depends on various borrower-specific and unobservable drivers (at least for outsiders) that are to estimate. In that setting, Gupta et al. (2008, p. 351) pointed out, "It is impossible to predict the drawdown schedule of a borrower at origination".

This is accentuated by the following interviewee statement:

I 5 It depends on the situation the respective corporate is in at a particular point in time. Someone who is expanding clearly needs finance, someone who is doing many small acquisitions clearly needs finance, someone who has a very seasonal business needs finance, while someone who is retracting and shrinking and not doing much, maybe needs less funds. Therefore, my estimate would be 40 to 50% of drawing is usual for normal RCFs.

Overall, the discussion above established that pricing assessments and decisions are not necessarily only made *ex ante* based on the influence of various determinants, but also post-signing, during the loan-lifetime at specific points in time when the determinants are possibly re-evaluated and reassessed. Ongoing margin adjustments, accompanied with individual draw-down percentages and individually diverging factual maturities constitute further challenges. It is hence reasonable to state that, from a bank's perspective, the factual per annum yield of a German corporate syndicated loan can only be precisely measured *ex post* depending on all pricing elements, its real (average) lifetime, its draw-downs, possible ongoing margin adjustments, and incorporation of possible unplanned fee income during the lifetime. A circumstance which further complicates the related calculations is the fact that different lenders obtain different levels of upfront fees due to different lending amounts and different roles and hierarchies within the syndicate.

In summary, especially for external researchers, pay-off structures of corporate syndicated loans are almost completely unpredictable and differ across individual banks, underlining

¹⁸⁵ For example, via "CapitalIQ", as applied by Berg et al. (2016).

their private and bespoke character, shaped by numerous hidden characteristics and mechanisms. As already briefly stressed, these multidimensional facets distinguish tailormade corporate syndicated loans from more straightforward, rigid corporate bond financings, inter alia, where pay-off-schedules are commonly not subject to change and hence are reliably set *ex-ante*¹⁸⁶ (Focarelli et al., 2008). This is underpinned by the following statements of selected research participants:

I 4	As our product is more opaque given the lack of information and given the various structures, many deals are specially structured and tailor-made. It makes it really complicated.
I 16	All pricing packages are individually negotiated. You do not really find any standard pricings.
I 21	Several banks made the experiment of having one single debt department that takes care of corporate bonds, corporate loans and LBOs. From what I have observed this does not work in practice. These are almost completely different markets and products at the end. Although at first glance they might look similar

Because the majority of the elements in Table 80 displayed information that is neither publicly available at signing nor after maturity, it is necessary to establish a qualitatively-based framework that will enable an enhanced overall understanding of German corporate syndicated loan pricings.

5.4.3 Derivation of a qualitative *ex post* pricing definition framework

In Table 80, I labelled all pricing elements with an estimated occurrence probability in relation to the four different loan types.

The label " $\checkmark \checkmark \checkmark$ " means the respective pricing element is most likely be present within the specific loan type classification (e.g., margin and commitment fee in an RCF). The label " $\checkmark \checkmark$ " identifies elements that are common, but are not necessarily always present within a loan type (e.g., utilisation fees in an RCF), whereas a single check, " \checkmark ", marks elements that are uncommon, but are generally possible in practice (e.g., underwriting fee in an RCF). A "/" represents pricing features that are not to be expected under a certain loan type (e.g., ticking fee for a backup-RCF). Lastly, for the elements that are labelled with a weighted probability of being included in a pricing package (" \checkmark "," $\checkmark \checkmark$ ", or " $\checkmark \checkmark \checkmark$ "), I provide an indication of their pricing determinant sensitivity, whereas an "x" in the middle represents a moderate sensitivity and an "x" on the left side identifies a non-existent sensitivity. Reasonably, for

¹⁸⁶ With the exception of, for example, more complex bond structures with inter alia call options, etc.

non-applicable pricing elements ("/"), no sensitivity indication is provided. Inter alia the margin for an RCF (as well as for all other loan types) is most sensitive to pricing determinants. The same holds for participation and arrangement fees. Reference rates, for instance, are common within all loan types (" $\checkmark \checkmark \checkmark$ "), but are set irrespective of any individual determinant and plausibly non-determinant-sensitive.

Table 81 combines all elements of loan pricing for the respective loan types into one framework.

Qualitative <i>ex post</i> pricing definition framework					
Loon types		Revolving credit f	acilities ("RCFs")	Term loa	ns (''TLs'')
Loan types		RCF	Backup-RCF	TL	Acquisition-TL
Ex post		> Factual li > Average	fetime draw percentage	> Factual average lifetime > Average margin	> Factual average lifetime > Average draw percentage
mormation		> Average	^{margin} rring elements (<i>ex ante</i>	& ex post information	> Average margin
Margin		x	x	x	x
Margin grid		x	x	x	x
Foreign currency premium	x		x		
Reference rate	x		x	x	x
Interest rate period	x		x	x	x
Commitment fee		x	x		x
Utilisation fee		x	x		
Ticking fee					x
		Upfront-/non-recu	rring elements (ex ant	e & ex post informat	ion)
Participation fee		x	x	x	x
Old/new money fee		x	x	x	
Increase fee		x	x	x	
Extension fee		x	x	x	x
Waiver fee		x	x	x	x
Amendment fee		x	x	x	x
Breakage fee	x		x	x	x
Arrangement/ bookrunner/ coordination fee		x	x	x	x
Documentation agency fee		x	x	x	x
Fee skim/pool		x		x	x
Invited/"passive" arr./bookr./coord. fee		x	x	x	x
Underwriting fee		x		x	x
Duration fee					x
Advisory/structuring fee (bank related)		x		x	x
Early bird fee		x		x	x

 Table 81. Qualitative ex post pricing definition framework.

The rationale for interpretation of the framework might best be illustrated by an example which I provide based on an acquisition term loan, arguably the foremost pricing-complex loan type.

With respect to per annum elements, we first need the real average lifetime and draw percentage. It is likely that an acquisition term loan is structured as a bridge loan, which might never be (fully) drawn down at all in practice. Because, for example, a capital market take-out financing takes place before funding is due, ticking fees might be the only recurring income elements. The ticking fee carries the highest degree of determinant-sensitivity as well as do the other per annum elements except for the reference rate. With a view to the upfront elements, beside the factual average lifetime, the draw percentage is also essential here as upfront fee payments¹⁸⁷ might be staggered based on pre-defined usage periods, milestones, and/or factual draw-downs. This differentiates this loan type from the other three, where upfront fees are commonly fully paid at signing. The following interviewee statement exemplifies this:

I 5 Especially for borrowers with debt and equity capital markets access, we have recently observed that acquisition finance facilities have not been drawn at all, as the capital market take-out took place prior to the M&A-deal's closing. At the end, all these structures are pretty sophisticated and complex in theory or with view to contractual terms. For the borrower-group we are talking about here, these features however tend to rarely kick-in. At the end of the day, from an economic point of view, pricing related income of such a transaction is often far below what one would expect by simply looking at overall margin and upfront fee numbers. As a consequence, when pricing such a deal, we already need to take anticipated further income (e.g. resulting from the take-out financings into account).

Based on this example, whilst debating pricing determinants, one can only qualitatively define and explain "pricing" of an acquisition term loan, for example, as an expected *ex post complex interwoven and somehow determinant-weighted cocktail of its numerous pricing elements in the light of the factual average lifetime and average draw percentage.*

5.4.4 Excursus: derivation of a quantitative *ex post* pricing definition framework

Based on the above discussion and motivated by the ingenious contribution of Berg et al. (2016), who provided important steps towards capturing quantitative syndicated loan pricing measures' complexity more accurately,¹⁸⁸ I next present a novel quantitative *ex post* inclusive pricing framework. It might perhaps be applied by future academics with access to "complete" data with such an application not being not feasible at present. However, the

¹⁸⁷ Underwriting, arrangement/bookrunner/coordination fees.

¹⁸⁸ Section 2.5.3.

framework could be individually adjusted based on available information. Banks, however, have all information readily available and are therewith enabled to derive their individual true *ex post* yield on a certain syndicated loan facility by incorporating as much information as possible. This novel measure can be interpreted as the factual total per annum yield of a syndicated loan. According to the interviewees, it is reasonable to assume that this tends not to be rigidly conducted in practice.

I 8 We do not rigidly reassess our assumptions which we made when we initially calculated and booked the loan. The real payments received of such a loan remains relatively unclear.

I 20 Until now I worked for four banks, which are very active in corporate syndicated lending. Such a reassessment, which you have mentioned to be indeed an interesting task, is to my knowledge not comprehensively done by any of those.

Hence, the mentioned *ex ante* price setting-process in the primary market, which already incorporates and processes implicit *ex post* perspectives, is driven by experience and tacit knowledge and also within banks not grounded on thorough quantitative *ex post* analyses with the latter being however generally feasibly conductible.

Beside specific patterns—like average draw percentages of non-back-up-RCFs, or factual (average) lifetimes in light of inter alia different borrower characteristics—on the long run, this *ex post* view is likely to reveal further systematic arrays that could be facilitated in future *ex ante* loan negotiations, where loan originators nowadays need to work with rather unsystematic assumptions—based on experience and tacit knowledge—on what the true *ex post* yield of a certain transaction will be. These assumptions, which influence the *ex ante* chosen price structure and how determinants are processed *ex ante* would likely significantly gain accuracy by constantly applying the *ex post* view as presented below. Further, apprehending the factual yield of a syndicated loan *ex post* would allow banks to assess more correctly the relationship profitability, an important theme to be discussed in 5.5.13.1.

Respective time series analyses might not only lead to enhanced knowledge of loan originators and banks in general. Banking-authority approved adjustments in *ex ante* RWA-allocation frameworks could lead to more accuracy regarding the adequate mapping of risk in financiers' balance sheets and could ultimately enhance the stability of the banking system overall. Table 82 displays the new quantitative *ex post* total cost of borrowing (p.a. yield) framework.

	New ex post total cost of borrowing (p.a. yield) framework								
	RCF	Backup-RCF			Term loan		Acquisition term loan		
	(1- average draw percentage) * commitment fee in bp p.a.		(1- average draw percentage) * commitment fee in bp p.a.		Average margin in bp p.a.		(1- Average draw percentage) * ticking fee in bp p.a.		
+	Average draw percentage * average margin in bp p.a. + foreign currency premium in bp p.a. * average foreign currency applicable draw amount	+	Average draw percentage * average margin in bp p.a. + foreign currency premium in bp p.a. * average foreign currency applicable draw amount	+	Average reference rate in bp p.a. (e.g. EURIBOR; based on interest rate period)	+	(1- average draw percentage) * commitment fee in bp p.a.		
+	Average draw percentage * applicable utilisation fee in bp p.a.	+	Average draw percentage * applicable utilisation fee in bp p.a.	+	Participation fee in bp / factual lifetime	+	Average draw percentage * average margin in bp p.a.		
+	Average draw percentage * average reference rate in bp p.a. (e.g. EURIBOR; based on interest rate period)	+	Average draw percentage * average reference rate in bp p.a. (e.g. EURIBOR; based on interest rate period)	+	(Applicable loan amount in % of overall loan amount * old money fee in bp) / factual lifetime	+	Average draw percentage * average reference rate in bp p.a. (e.g. EURIBOR; based on interest rate period)		
+	Participation fee in bp / factual lifetime	+	Participation fee in bp / factual lifetime	+	(Applicable loan amount in % of overall loan amount * new money fee in bp) / factual lifetime	+	Participation fee in bp / factual lifetime		
+	(Applicable loan amount in % of overall loan amount * old money fee in bp) / factual lifetime	+	(Applicable loan amount in % of overall loan amount * old money fee in bp) / factual lifetime	+	(Applicable loan amount in % of overall loan amount * increase fee in bp) / factual lifetime	+	Extension fee in bp / factual lifetime		
+	(Applicable loan amount in % of overall loan amount * new money fee in bp) / factual lifetime	+	(Applicable loan amount in % of overall loan amount * new money fee in bp) / factual lifetime	+	Extension fee in bp / factual lifetime	+	Waiver fee in bp / factual lifetime		
+	(Applicable loan amount in % of overall loan amount * increase fee in bp) / factual lifetime	+	(Applicable loan amount in % of overall loan amount * increase fee in bp) / factual lifetime	+	Waiver fee in bp / factual lifetime	+	Amendment fee in bp / factual lifetime		
+	Extension fee in bp / factual lifetime	+	Extension fee in bp / factual lifetime	+	Amendment fee in bp / factual lifetime	+	Breakage fee in bp / factual lifetime		
+	Waiver fee in bp / factual lifetime	+	Waiver fee in bp / factual lifetime	+	Breakage fee in bp / factual lifetime	+	Arrangement fee in bp / factual lifetime		
+	Amendment fee in bp / factual lifetime	+	Amendment fee in bp / factual lifetime	+	Arrangement fee in bp / factual lifetime	+	Documentation agency fee in bp / factual lifetime		
+	Breakage fee in bp / factual lifetime	+	Breakage fee in bp / factual lifetime	+	Documentation agency fee in bp / factual lifetime	+	Passive arrangement fee in bp / factual lifetime		
+	Arrangement fee in bp / factual lifetime	+	Arrangement fee in bp / factual lifetime	+	Passive arrangement fee in bp / factual lifetime	+	Underwriting fee in bp / factual lifetime		
+	Documentation agency fee in bp / factual lifetime	+	Documentation agency fee in bp / factual lifetime	+	Underwriting fee in bp / factual lifetime	+	Duration Fee in bp / Real Average Lifetime		
+	Passive arrangement fee in bp / factual lifetime	+	Passive arrangement fee in bp / factual lifetime	+	Structuring fee in bp / factual lifetime	+	Structuring fee in bp / factual lifetime		
+	Underwriting fee in bp / factual lifetime	+	Underwriting fee in bp / factual lifetime	+	Early bird fee in bp / factual lifetime	+	Early bird fee in bp / factual lifetime		
+	Structuring fee in bp / factual lifetime								
+	Early bird fee in bp / factual lifetime								
+			Possible further no	t ye	t captured elements				
=	= Ex post total cost of borrowing in bp p.a.								

Table 82. New *ex post* total cost of borrowing (p.a. yield) framework.

This relatively straightforward framework provides approximations inter alia with a view to the per annum elements. Regarding margin,¹⁸⁹ utilisation fees,¹⁹⁰ commitment fees,¹⁹¹ and reference rate, one would need to capture each individual day¹⁹² of the loans' real lifetime to obtain rigid accuracy¹⁹³ and could further apply a bank-individual NPV-based discounting. Note that also with respect to the non-recurring upfront elements, which might be paid at an *ex ante* unspecified point during loans' lifetime (e.g., waiver or amendment fees), the specific date of payment would be needed to conduct the NPV-based calculation.

To provide respective examples in the case where all information is accessible, the following specifications might substitute the per-annum-related parts¹⁹⁴ of the equation depicted in Table 82.



The NPV view can be addressed by discounting future cash flows (Watson & Head, 2001). With a discount rate of x%, the discount factor could be calculated as presented above.

¹⁸⁹ In relation to margin-grid.

¹⁹⁰ Staggered based on specific draw-percentages.

¹⁹¹ Percentage of the respective applicable margin related to margin-grid.

¹⁹² For EURIBOR-based floating rate instruments based on act/360, the so-called *Euro-Interest-Rate-Method*.

¹⁹³ Even these formulas are likely to be subject to further individual adjustments, as certain pricing elements of syndicated lending have different paying frequencies. In other words, appropriate accrual views would then need to be incorporated for the discounting exercise.

¹⁹⁴ Highlighted in bold.

5.4.5 Conclusion and implications for the thesis' remainder

The foregoing discussion underpinned the complex and multifaceted nature of the overall term "pricing" given the various syndicated loan types. This complexity, especially with respect to the *ex ante* and *ex post* reciprocity creates an exceptional challenge not only for scholars in the field of syndicated lending but also for loan professionals who must set and negotiate respective pricings in the primary market.

On the one hand, it is clear that—besides specific non-recurrent elements such as waiver or amendment fees—overall price packages need to be set *ex ante* with related assumptions regarding, for example, factual (average) lifetime and factual drawings being made whilst evaluating certain determinants. On the other hand, according to the interviews, these assumptions are commonly very difficult to make. Hence, the quantitative *ex post* view would significantly enhance the understanding of pricing by bank professionals and scholars in the field, although—for the latter—the accuracy and complexity discussed earlier might never be practically applicable due to limitations of data availability. For this reason, I can only continue with the qualitative definition provided. Hence, while discussing the determinants of syndicated loan pricing in the primary market (*ex ante*), I interpret pricing as an *expected ex post complex, interwoven, and somehow determinant-weighted cocktail of its numerous pricing elements in the light of its factual (average) lifetime and average draw percentage.*

With all its related practical shortcomings, I claim to have provided a significantly enhanced understanding of the concept of pricing up to this point. Based on the qualitative "pricing" definition, I now advance my focus to the determinants of pricing.

5.5 Pricing determinants in German corporate syndicated lending

After having presented the new pricing definitions and measures for the four most common loan types in 5.4, I now focus on the determinants of pricing and thereby address RQ 5.

Whilst presenting the findings, I will constantly compare these with extant literature. The fieldwork, therefore, carries both confirmatory and exploratory elements with the aim to establish a comprehensive and integrated German corporate syndicated loan pricing determinant framework—an empirical goal of this study.

As suggested by Corbin and Strauss (1996), the coding of the interview material regarding the pricing determinants resulted in eight "higher-level concepts" (henceforth, *determinant categories*), each consisting of further "lower-level concepts" (henceforth, *determinants*).

In a way that is comparable to univariate analyses in quantitative academic works, I start by presenting the pricing directional findings in relation to these determinants in isolation under an implicit *ceteris paribus* assumption. I cross-reference, however, from one determinant to another if respective linkages happen to be central to the apprehension of a determinant within its "insulation". The *ceteris paribus* view is also important given the bias of the research participants towards the current syndicated loan market environment,¹⁹⁵ which might narrow the breadth of view and, therefore, needs to be carefully addressed. It is important to note that I treat *ceteris paribus* as "implicit" and from an interpretive point of view. In the context of this study, it is not to be viewed as a statistically correct term. From a positivist point of view "*ceteris paribus*" would be defined in the context of relationships between variables¹⁹⁶ rather than of concepts (Charmaz, 2006).

On the individual level of each determinant category, the corresponding sections conclude by providing a prioritisation of the inherent influential magnitude of the determinants towards their determinant category. It also appears that certain determinants carry higher levels of determinant sensitivity for one vis-à-vis another loan type. Hence, I also comment on such phenomena if appropriate.

In Chapter 6, I endeavour to synthesise and prioritise the various determinants categories into one comprehensive and integrated framework that seeks to address the idiosyncrasies of the various pricing determinants. The eight determinant categories that emerged are shown in Table 83.

Eig	Eight pricing determinant categoriesSections				
1	Borrower-specific credit risk profile and rating	5.5.1&5.5.2			
2	Lender characteristics	5.5.3&5.5.4			
3	Contractual features	5.5.5&5.5.6			
4	Credit story	5.5.7&5.5.8			
5	Syndicate structure and syndication mode	5.5.9&5.5.10			
6	General market environment	5.5.11&5.5.12			
7	Lender-borrower relationship	5.5.13&5.5.14			
8	Syndicated loan market environment	5.5.15&5.5.16			

Table 83. Eight determinant categories and correspondong sections.

¹⁹⁵ See section 5.5.15.

¹⁹⁶ Analysis of a context assuming that only the variable under consideration changes with simultaneous constancy of all other economic variables (Bleymüller et al., 2008).

5.5.1 Borrower-specific credit risk profile and rating

All interviewees expressed that the clients' credit risk profiles—determining their individual debt servicing capacity, or in other words their overall financial strength—constitute an important determinant of syndicated loan pricing. Intuitively, the better a client's credit risk profile, the lower the probability of failure, which, in turn, is reflected in loan pricing. A broad base of supporting evidence for this finding was provided in 2.6.1 by, among others, Christodoulakis and Olupeka (2010), Anagnostopoulou and Drakos (2016), and Alexandre et al. (2014), all of whom concluded that high default-risk borrowers are charged a higher pricing.

<u>Finding:</u> *Ceteris paribus*, corporate syndicated loan pricings in Germany are determined by a borrower's specific credit risk profile.

The following interviewee statements underpin this finding:

I 3	The credit risk of the client is the most important issue.
I 8	The higher the risk, the higher the margin and the other price elements get.
I 16	I think it goes without saying that the default risk of a client drives loan prices either up- or down.
I 20	The risk of a borrower to default during the loan lifetime is certainly important. The higher that risk, the higher the pricing of a loan needs to be

In line with extant literature, all interviewees shared the view that the borrower's credit rating, whether internal and/or external, was a manifestation of the client's risk profile. Internal ratings represent the *probability of default* (*PD*)¹⁹⁷ and are shaped by various borrower-related characteristics, which can be classified as either hard or soft factors (Hainz & Wiegand, 2013; Treacy & Carey, 2000).

¹⁹⁷ The internal rating is therefore often referred to as the *PD-Rating* (Everling & Kreutz, 2012).

The following interviewee statements underpin this finding:

I 1	First of all, borrower related elements like the rating of the client. Here, things like probability of default, loss given default etc. come into play.
I 4	If you have a customer that pays a low margin, then we talk about clients that usually have a very good rating.
Ι7	It is certainly a total difference whether or not you are talking to an " A "-rated borrower as opposed to a " B "-rated one.
I 9	All borrower characteristics at the end go into the rating, be it external, internal, or both.
I 13	Certainly, one of the key guidance is the rating of the company.
I 14	A major issue that influences the price is the rating, because the risk costs are very large factors in the overall calculation. These risk-related costs calculated based on the rating.
I 18	There are many elements that at the end lead to a credit rating that normally provides very good indications about the overall risk. Most importantly, it incorporates banks estimates regarding a possible failure and the related losses with such a possible failure.

Given the above discussion, I evaluate the two components "rating¹⁹⁸" and "borrower-specific credit risk profile" as alike. This is in line with, among others, Barbosa and Ribeiro (2007), Alexandre et al. (2014), and Treacy and Carey (2000), who take external ratings as direct measure for credit risk.

<u>Finding</u>: *Ceteris paribus*, corporate syndicated loan pricings in Germany are a declining function of the borrower's credit rating reflecting its overall credit risk profile based on numerous underlying borrower characteristics.

The interview analyses with respect to the determinant category *borrower-specific credit risk profile and rating* enabled me to establish the corresponding determinants that are displayed in Figure 42.

¹⁹⁸ Internal and/or external.



Figure 42. Borrower-specific credit risk profile and rating and its determinants.

Below I discuss these underlying borrower characteristics, constituting a borrower's overall credit risk profile, as revealed by the research participants. Note that borrower nationality is always expected to be German. Thus, "borrower nationality" has not been separately classified as determinant, as it would certainly be in a cross-country study. However, I touch upon this issue in section 5.5.11.1 by discussing general macroeconomic issues and by debating "the pricing puzzle" in 5.5.13.2.

5.5.1.1 Financial information

All research participants agreed that specific financial information like balance sheet, income statement, and credit record data—also often referred to as *key performance indicators*—are major ingredients of an enterprise's specific credit risk profile. In line with the literature, the leverage ratio has been mentioned to be an important measure of risk (e.g., Focarelli et al., 2008; Schenone, 2010; Gaul & Uysal, 2013; Harjoto et al., 2006).

Banks not only take backward-looking financial data into consideration, but also evaluate forward projections, especially in the field of larger scale event-related financings—such as acquisitions—that are likely to change a clients' balance sheet structure. Practitioners usually talk about *transformative acquisitions* in this respect. Overall, these findings broadly confirm the view of extant literature as presented, for example, Jorion et al. (2009), who identified financial statements and financial information in general to be the key source for lenders to assess a client's risk profile.

<u>Finding:</u> *Ceteris paribus*, financial information determines a borrowers' specific credit risk profile and its rating.

The following interviewee statements exemplify this:

I 2	The leverage ratio is usually the most important ratio banks and other investors look at. Then we look at the whole balance sheet and how it evolved and how it is expected to evolve in the future. This is, however, more important when significant changes are expected.
Ι3	General financial information is important. The client needs to deliver credible projections especially with regards to its leverage ratio. To really look at that you would have to have either in-house planning or projections or publicly available information that you can source (e.g., from research, rating agencies or the company provides it).
I 9	We are more cash flow based. We look at the cash flows and want to be paid back from operative cash flows.
I 17	Particularly the prospects are important for us. Banks also care very much on historic figures as well. Most important ratios are leverage, interest coverage, and gearing in my view.
I 21	One of the most important things a bank or an external rating agency looks at is balance sheet data. They look backwards to make their own predictions for the future. These own predictions are then compared to delivered predictions or forecasts by the client.

5.5.1.2 Size and geographical reach

Twelve interviewees held that the size of a borrower affects pricing, as larger clients tend to be able to obtain more favourable pricings than can smaller ones. This is in line with the extant literature (e.g., Mattes et al., 2013; Wu et al., 2013; Kim et al., 2014). In that vein, Focarelli et al. (2008, p. 341) stated, "Larger loans carry lower rates because they are granted to larger borrowers, which have lower default risk, greater bargaining power and more transparent conditions". Furthermore, large borrowers tend to be active in several international markets, enabling them to diversify their sales markets. This leads to a certain level of independence against possible home market volatility, as mentioned by six interviewees.

<u>Finding:</u> *Ceteris paribus*, firm size as well as breadth of geographical reach determine a borrower's specific credit risk profile and its rating.

The following interviewee statements exemplify this:

I 2	If you look at a company like Volkswagen for example or any other car dealer you have to take into account their size and their position in the world market.
I 8	The more international a client is the more streamlined its earnings are usually. We evaluate this as positive. Of course, this is strongly dependent the firm size.
I 12	If you are BMW or one of the very big companies, which can do the loan without an arranging bank, you will definitely pay very little. If you were a very small company, which is struggling to get credit, you would have to pay more for it.
I 15	If it is a global company, let us say it is a German corporate being everywhere in the world, being in Asia, Latin America and so on, it would get so much better prices.
I 20	Large clients are commonly less risky. Not always of course, but there is a strong relationship between a companies' size and its credit risk from what I have observed over the years.

5.5.1.3 Organisation form and information availability

Fifteen research participants held a borrowers' legal form, and the interlinked degree of information availability, to shape its risk profile. In line with Schenone (2010), public companies are by law required to disclose broadly and systematically large sets of information, which is less the case for other legal forms. In contrast, private firms with concentrated ownership structures are found to be charged higher pricings with related evidence inter alia provided by Fang et al. (2016) and A. Saunders and Steffen (2011).

<u>Finding:</u> *Ceteris paribus*, a borrower's legal form, being interrelated to the degree of transparency, determines its specific credit risk profile and its rating.

The following interviewee statements exemplify this:

I 1	For large and listed corporates, it is easy to conduct credit analyses. There is lots of information available that can be evaluated.
Ι3	The legal format of the borrower might play a role when we have a syndicated loan borrower who is rather small. In rare cases, there might be family-owned businesses which borrow in our market. Most companies which are big enough to tap the market are GmbHs or AGs, however. Here you sometimes must handle rather complex ownership structures of holding companies.
I 20	To make a proper credit analysis it is important to have as much high-quality information about the borrower at hand as possible. The quality of such information is best when we talk about large and public clients. However, nowadays financial information is of high quality also for smaller borrowers in this market. So, I would say it is a factor, but not a major one.

However, according to 5 of 15 interviewees, inter alia via audited financial statements and ongoing reporting, likewise smaller non-listed companies provide sufficient information to evaluate the borrower-specific credit risk profile and its rating. These statements hence, somewhat weaken the magnitude of this determinant.

I 5 Of course, large listed companies provide more public information, via research papers, external ratings huge annual report packages, and so on. What I observe, however, is that this information is mainly for equity and maybe bond-investors. We as a bank look at the financial data that we somehow evaluate via our systems. Therefore, also, the financial reporting of a smaller company is sufficient in my view.
 I 21 For the large client groups we are talking about financial information that is really good and reliable.

I 21 For the large client groups, we are talking about financial information that is really good and reliable across the size spectrum and across different company legal forms.

5.5.1.4 Wider capital markets access

Eighteen interviewees emphasised that borrowers having access to wider capital markets instruments are able to obtain lower syndicated loan pricings. This is in line with extant literature such as Christodoulakis and Olupeka (2010) or Santos and Winton (2008). In line with A. Saunders and Steffen (2011), firms with more public information are easier to

evaluate by arm's length capital markets investors and thus have easier access to the corporate bond or equity markets. This access puts downward pressure on pricings, as corporate bonds, for example, might directly compete with syndicated term loans. In other words, borrowers can use their capital markets capability as a bargaining tool. According to three interviewees, next, more accurate price benchmarking¹⁹⁹ is possible providing the bookrunner relative placement certainty, especially in underwritten transactions such as acquisition financings. Given the market opacity with respect to publicly available pricing data, this appears reasonable. Further, especially when take-out financings might need to be assessed before pricing an acquisition financing,²⁰⁰ the capital market access enhances a borrower's risk profile and reduces its pricing.

<u>Finding:</u> *Ceteris paribus*, wider capital markets access determines a borrower's specific credit risk profile and its rating, exerting a downward effect on pricing.

The following interviewee statements underpin this finding:

I 5	If there is a large borrower with all the capital markets instruments available, banks are using this information to benchmark the loan pricing.
Ι9	The ability to tap the capital markets is generally positive for the client because it means we as a bank can more quickly de-risk ourselves. This gets especially important in event-driven finance. When you have a large acquisition financing for a few billion Euros, for instance, then a company, which has access to capital markets can more quickly access capital markets and has more options than companies without that access. Others are more limited. Therefore, you can price these more aggressively in the loan.
I 16	Clients who can to tap the corporate bond market are usually able to negotiate lower loan pricings compared to clients who do not have this access. This has many reasons. First, these clients are often larger and more sophisticated and thus, have a better credit quality at all. Second, current secondary pricings for bonds or CDS provide a first price indication and clients usually expect banks to provide relationship discounts. Lastly, this access is important in M&A deals, where very large bridge loans can be refinanced in the capital market.
I 20	When the client can also fund itself via other instruments, it is a positive sign. When we talk about the largest sets of borrowers, then we mainly talk about revolvers or bridge loans here. The rest is basically financed via bonds etc.

5.5.1.5 Management quality

According to nine research participants, management quality is a credit risk profiles' determinant that needs to be assessed by banks. According to Grunert et al. (2005), managerial quality is the most important soft factor for banks whilst evaluating a credit risk profile of an enterprise. Some supporting evidence was provided by Wasan et al. (2013), who

¹⁹⁹ Possibly by looking at respective slopes of comparable bond yield curves.

²⁰⁰ Most likely an acquisition bridge term loan.

found that high accrual quality drives pricing down. As accounting accruals are based on management estimations, their respective quality can be defined as one ingredient of managerial quality overall. According to the interviewees, management quality evolves to a more prominent pricing determinant for complex and commonly underwritten acquisition (bridge) term loans.

<u>Finding:</u> *Ceteris paribus*, management quality determines a borrower's specific credit risk profile and its rating.

The following interviewee statements exemplify this:

which might cause losses under a loan in the worst case.

I 2	Management quality is one ingredient of a rating which should not be underestimated.
I 19	The management of a firm is a point we certainly look at to a certain extent in general. It gets really important, however, in acquisition financings. Here, you need to have a good management, at best with a certain track-record, to ensure a successful integration of the target firm. Issues like cultural differences of acquirer and target are one of the most frequent reasons for M&A-transactions to be seen as unsuccessful after a while.
I 20	We as a bank also look at the quality of the respective firm leaders. I think rating agencies also increasingly look at those soft factors. I mean management mistakes may bring firms in serious trouble

5.5.1.6 Reputation

In agreement with the argument of Godlewski and Weill (2011) that reputation is shaped by borrower honesty that ultimately creates trust, 11 interviewees agreed that a resilient firm reputation is an enhancing determinant of its credit risk profile. The reputation of a borrower can be evaluated by its general business practices, its track record of financial performance, its past behaviour in the capital markets, as well as other individual parameters (Sufi, 2007). The conclusions of Gaul and Uysal (2013) and Kysucky and Norden (2016), namely, older, established firms obtain lower loan pricing, might be interpreted as confirmation of this. If the client for instance has over time demonstrated financial probity, for example, regarding repayments of debt, this history is one determinant of a strong credit risk profile (Diamond, 1991; Ivashina, 2009; Mattes et al., 2013). Conversely, young firms that have not built such reputations tend to be evaluated as riskier (Santos & Winton, 2008).

<u>Finding:</u> *Ceteris paribus*, reputation determines a borrower's specific credit risk profile and its rating.

This finding is underlined by the following statements:

are good for a client's reputation in the community.

I 5	We as a bank of course track each borrower on an ongoing basis and match projections with actuals. To build up a good reputation, for instance, these projections need to be realistic and not too much off compared to the actuals.
I 13	But it is not only that it; is also the soft facts as well like the general standing and reputation of the company.
I 19	I mean usually you have repeated transactions in Germany. And thus, you have gone through a syndicated loan process for several times. You know if processes will be smooth with one or the other borrower. And you also know borrowers and where problems will occur. These do not necessarily

have to be related to possible defaults of covenant breaches. Positive and uncomplicated interactions

5.5.1.7 Business sector sentiment

Twelve research participants mentioned the borrowers' business sector as a determinant of its overall credit quality. The directional pricing impact is said to cyclically change and adjust constantly in tune with economic phases or political and regulatory themes. Following this argumentation, Christodoulakis and Olupeka (2010), found utility companies to be able to obtain especially low pricings, a 2010 fact that is likely not to hold any longer in 2016, especially with a view to the German government's energy policy²⁰¹ and its impact on utility firms' business models.

<u>Finding:</u> *Ceteris paribus*, business sector sentiment determines a borrower's specific credit risk profile and its rating.

²⁰¹ In light of the nuclear accident 2011 in Fukushima, the German government of Chancellor Angela Merkel decided to quit nuclear energy production sooner than planned, which negatively affected, and has ongoing effects on, major energy and utility companies' business model and profitability.

The following interviewee statements exemplify this:

- I 2 If you have a very stable business like, for example, food & beverage, you as a bank operate on much lower probabilities of default compared to sectors being highly dependent on economic cycles.
- 19 This issue always changes. When you have a borrower from fashion or retail sectors, I would say this leads to higher prices now because these sectors are under review from a number of banks. The same is true when you have credit facilities from sectors like oil and gas, for example, as this means also an increase in margins.
- I 14 There is some differentiation with regard to industrial sectors, often even within the same credit rating category. So, if you think about a company that is rated "BBB" and you compare to another company rated "BBB" and one of them is Glencore, the global commodity trading company, and one is ASML, the Dutch semiconductor manufacturer, these two very different clients but would they have the same pricing simply because they are both rated "BBB"? No actually, they would not. Glencore at the moment because of the commodity cycle and certain events in the history of the company and the fact that it became somewhat over-leveraged has a slightly weaker credit profile and would have to pay a little bit more whereas ASML, being an absolute market leader in one of the highest tech industries of the manufacturing spectrum, with an outstanding credit story, has a slight sharper pricing.
- I 15 Industry sector is important because if you did oil and gas three years ago, it was seen as the safest haven. Everybody said ok that is a great company. If you could lend to BP or something like that, they had fantastic fundamentals and you would have done it at very thin margins. Now, it is a different story. Everybody says, "Oil at the moment is at around 50 dollars a barrel and it was a lot lower; maybe it goes to \$20, who knows"? So, all of a sudden, that industry sector has come under huge pressure.

5.5.1.8 Social responsibility and ethical issues

For the employees of three research participants it is important to grant loans to borrowers behaving ethically by not engaging in equivocal businesses. Thus, a respective behaviour can be associated with lower spreads, in line with Kim et al. (2014).

<u>Finding:</u> *Ceteris paribus*, ethical and social responsibility issues determine a borrower's specific credit risk profile and its rating.

The following interviewee statements exemplify this:

I 14 Things getting more important are reputational risk considerations from a banks point of view. We try to only finance companies that have an ethical justifiable business model. We had one case a couple of years ago when we granted a loan to a defence company and had the internal obligation not to publish the transaction at all, which was a pity as we did not get any league table credits.

I 17 We have seen the advent of green bonds, now we will increasingly see green Schuldscheindarlehen and very likely green loans in the near future. It is going to be a part of the overall reputation of a bank to probably invest a fair share in socially responsible or sustainable investments.

5.5.2 Conclusion: borrower-specific credit risk profile and rating

The main factors contributing to the evaluation of the borrower's specific credit risk profile and its rating have been established throughout 5.5.1. The findings based on the statements of the research participants broadly confirm those presented in 2.6. As intuition suggests, creditworthiness is mainly shaped by hard factors such as firm size, large batteries of financial data but also by soft ones like managerial quality and a firm's reputation overall or ethical behaviour. Interestingly, there were no significant contradictory statements within the research participant sample, in line with the reported tendency of a broad consensus and level of saturation among the core literature.

The discussion remains to be enhanced by prioritising the determinants in light of their different influential magnitude towards their determinant category (Figure 43).



Figure 43. Borrower-specific credit risk profile and rating: determinant prioritisation.

It is apparent that financial information and size are major ingredients of a credit risk profile, underpinning the strong focus on hard and quantifiable information for the borrower groups at hand. Supporting evidence has been provided by Strahan (2008), who pointed out that large and mostly well-established borrowers can be credit assessed by predominantly hard information, such as audited financial statements. Cole et al. (2004) stressed that larger banks commonly base their lending decisions on systematic as well as verifiable information sets. The wider capital market access that has been established as a major driver of a borrower's specific credit risk profile and rating was said to be especially pronounced in acquisition financings, where usually large underwritten bridge term loans are intended to be refinanced quickly via capital markets instruments such as corporate bonds. Also, the soft factor management quality was mentioned as particularly important in event-related financings, such as M&A-processes, because the subsequent integration of a target company demands high levels of respective managerial experience.

5.5.3 Lender characteristics

Each interviewee stressed that the characteristics of lenders determine syndicated loan pricing. As German corporate syndicated loan syndicates usually consist of multiple banks that might differ, inter alia, by legal form, business focus, nationality, or lending philosophies, diverse sets of characteristics and interdependencies influence pricing.

The interview data analyses with respect to the determinant category *lender characteristics* enabled me to establish the corresponding determinants that are displayed in Figure 44.



Figure 44. Lender characteristics and its determinants.

5.5.3.1 Type

Fifteen interviewees stated the bank type is a determinant of syndicated loan pricings. In 2.4.2.2, and in line with Hockmann and Thießen (2012), I established that bank type categories from a strictly legal and regulatory point of view are confusing. Hence, by concentrating on their different business foci, I presented three different bank types, namely, universal, wholesale, and investment banks. To provide an example, from a legal and regulatory perspective, pure investment banks happen to be rare. Thus, by labelling a bank as an investment bank, the interviewees more correctly refer to banks that act predominantly in an investment banking manner. Following this logic, different bank types in light of their business focus have different lending suppositions, requirements and philosophies. In other words, corporate syndicated loan tariff policies differ across banks—a finding shared with extant literature. According to 11 interviewees, investment banks are generally evaluated as the bank type with the riskiest business focus. According to the research participants, banks with strong investment banking focus tend to not engage in general corporate lending and rather conduct event-related financing business such as M&A.

In that context, Harjoto et al. (2006) and Calomiris and Pornrojnangkool (2009) found investment banks to charge higher spreads than do banks with commercial banking activities. Furthermore, investment banks are said to invest in riskier borrower classes and engage more in loans that are tradable (Maskara, 2006).

<u>Finding:</u> *Ceteris paribus*, the bank type determines corporate syndicated loan pricings with the respective general direction being ambiguous. A strong investment banking-focus however tends to be associated with higher pricings.

The following interviewee statements exemplify this:

I 1	I would not say that a loan originated by Landesbanks is necessarily cheaper or more expensive than a loan originated by a commercial or by a pure investment bank. Therefore, these are normally market driven pricings. The issue is that investment banks commonly do not take part in common corporate loans. They want to do more complex M&A or LBO-business.
Ι7	Whether it is a commercial bank or a pure play investment bank also plays a role, because a pure play investment bank does not necessarily tend to keep a couple of hundred million Euros on its books for five years or so.
I 8	If you go with global investment banks, the pricing will be higher. They focus more on riskier asset classes and would originate the loan and then sell it to other investors.
I 11	Some banks are more determined towards servicing specific client bases. Like the savings banks or Spaarkassen in Germany, they work quite closely with the smaller borrowers in their region to ensure that the borrower stays with them.

5.5.3.2 Nationality

Nine interviewees highlighted that a lender's nationality and its impact on pricing is subject to cyclical changes. In Germany, this is, inter alia, characterised by the presence of foreign banks tending to price themselves aggressively into syndicates, especially in times of economic prosperity. However, those banks tend to retreat to their home markets in times of economic downturns. In light of the 2008/2009 financial crisis, supporting evidence for this *flight home effect* has been provided by Giannetti and Laeven (2012) and de Haas and van Horen (2013). Additionally, foreign banks might also demand higher pricings as return hurdles of German banks tend to be lower compared to peripheral European ones, for example.

Thus, the appearances of foreign banks in German corporate loan syndicates may lead to pricing discounts as well as pricing premiums. An indication for the latter is provided by Haselmann and Wachtel (2011), who stated that in larger European countries such as Germany, foreign lead arrangers price syndicated loans at a premium. In a different vein, Houston et al. (2017) found firms with foreign assets to benefit from foreign lenders located

in these countries. Based on the research participants' statements, I reach the following finding:

Finding: Ceteris paribus, the impact of a lenders' nationality on pricing is ambiguous.

The following interviewee statements exemplify this:

- I 8 In Germany, the more national the bank group is that the client uses, probably the more attractive the pricing, the client can get. Why? If you look at international banks, they look at various deals at the same time across Europe and maybe worldwide and the German market tends to be especially competitive in pricing especially compared to southern Europe. These kinds of banks tend to ask for higher pricing compared to pure local players that support the client.
- I 14 The domestic banks in each country have a key role in the whole game. In many countries, they will instinctively want to protect their relationship with their local companies by being quite aggressive on pricing. This effect is actually compounded because if you then have an incoming external competitor bank from another country, they must undercut it, and so it becomes a self-fulfilling prophecy actually that pricing just keeps pressurising down.
- I 19 There are certainly foreign banks who try to enter the German market and gain market share here, as credit risks seem to be pretty good in Germany. Often these banks offer clients with really cheap dumping pricings and try to pressure themselves into a facility. This is a cyclical issue. With view to the last 10 years, I saw foreign banks entering the market aggressively but also leaving it again in times of crisis.

5.5.3.3 Size and capitalisation

According to 17 interviewees, the better a bank is capitalised in relative terms, the more incremental lending supply it can create compared to more capital-constrained banks. Besides financial health, the amount of capital (common equity) in absolute terms can be interpreted as the main proxy of bank size, constituting a limiting factor of a bank's scarce lending capacity (Strahan, 2008). According to the research participants, the bank's size is crucial in large-scale financings, especially if these are underwritten. Here, larger banks have a competitive advantage vis-à-vis smaller (i.e., lower capitalised) peers. Furthermore, a high degree of relative and absolute capitalisation leads to a better credit quality of the bank itself and reduces its funding costs. In line with Mattes et al. (2013), Bernanke and Gertler (1995), and Hubbard et al. (2002), a well-capitalised bank is capable of granting cheaper loans, with nine interviewees agreeing on this.

<u>Finding:</u> *Ceteris paribus*, German corporate syndicated loan pricings are a declining function of bank size and capitalisation.

I 1	Of course, the size of a bank is an issue, especially for larger loans. You need a certain amount of capital to be able to provide big-ticket lending.
Ι5	If you would like to get higher into the league table positions and if you have lots of capital to put to work, and then in a competitive environment you might be willing to accept less pricing and less fees and structures that are more aggressive. However, if the bank is in a difficult capital situation and you have many lawsuits or other external factors that influence the way you can allocate your capital.
I 16	The banks size in terms of its equity and balance sheet is naturally linked. The bigger the bank, the more fire power it has in terms of loan volume. Nowadays, being able to provide what we call big-ticket lending is very important. Syndicates are becoming smaller, and so we need to provide larger amounts. Also, recently, larger acquisition financings were back on the map. Without being able to

provide large scale underwriting offers, you do not have any chance in that competitive market. So,

5.5.3.4 Funding costs

bank-size matters.

Twenty research participants expressed that banks' funding costs are a syndicated loan pricing determinant. Rather than as supposed by theoretical models and by the majority of extant syndicated loan pricing literature, banks' overall costs of capital procurement appear to individually differ, compared to the current reference rate values. Since the use of terms like "funding" and "liquidity costs" as well as the related concepts appear somewhat slippery, I will attempt to provide some simplified background here, with Figure 45 displaying the basic underlying phenomena. It is likely that terminological differences across banks occur. The core concept of Figure 45 should however hold for all banks active in German syndicated lending.



Figure 45. Funding and liqudity cost illustration.

If the theoretical model of a frictionless interbank market funding at the costs of, for example, EURIBOR or LIBOR would hold in practice, no differentiation between different levels of bank credit-worthiness would be incorporated (Hallak & Schure, 2011). In other words, a bank would purchase liquidity for the price of the current reference rate value for the client's chosen interest rate period (component 1 in Figure 45). In other words, the associated costs of capital procurement would only appear as an item in transit. According to the research participants, additional costs of liquidity differ extensively across banks, leading to the need of higher weighted overall funding cost components in loan pricing calculations, predominantly via so-called *funding spreads*,²⁰² also sometimes referred to as *liquidity premiums*. In practice, this appears to only be an issue since the financial crisis, before which bank specific liquidity premiums appeared to be negligible.

This trend or higher costs of capital procurement in comparison to current reference rate yields even gets accelerated as banks do not necessarily refinance large loans based on their actual underlying interest rate period but commonly for longer time horizons. Hence, the respective maturities swap price needs to be paid by the bank as well.²⁰³ In other words, although syndicated loans are floating rate instruments, in practice lenders face duration risks.²⁰⁴ The price for a cross-currency swap might also be added for foreign currency loans.²⁰⁵

Banks' individual funding spreads are determined by banks' own creditworthiness (Craig & Dinger, 2013). Based on hybrid costing, large universal banks, for instance, refinance their lending business through the acquisition of deposits, through central bank borrowing, repoborrowing, and the issuance of capital market securities (Bace, 2016). Yield levels of senior unsecured debt instruments provide rough indications for banks' funding spreads. In that vein,

I 10 After the crisis, we have been matching funding and loans much more. Before the crisis, this was not much of a topic.

I 17 The whole funding and liquidity cost discussion only came up in and after the financial crisis. Before that, banks were basically all treated equally, although they of course weren't equal. The bankruptcy of a bank was, however, no realistic scenario and we could fund ourselves broadly at current market terms like EURIBOR or LIBOR.

²⁰² Component 4 in Figure 45.

²⁰³ Component 2 in Figure 45.

²⁰⁴ As established in section 5.3.1.2.2, this duration risk can only be partly be priced via breakage fees that are only applicable for repayments within a running interest rate period.

²⁰⁵ Component 3 in figure 45.

Figure 46 plots historical yield developments of banks' CDS with a five-year maturity if found available at Bloomberg.²⁰⁶



Source: Based on Bloomberg²⁰⁷ secondary data. Figure 46. Five-year CDS spreads of selected banks.

Figure 46 displays wide yield-level deviations across banks, especially since the financial crisis around 2008/2009. Although these spreads have in general converged again, they have stayed wider as compared to pre-crisis periods, a trend that mirrors the research participants' statements. Thus, a conservatively operating, well capitalised universal bank with substantial retail deposit activities is likely to carry lower funding spreads compared to banks not sharing these characteristics, such as those with a strong wholesale or investment banking focus (Bace, 2016; Craig & Dinger, 2013).

²⁰⁶ Note that Figure 46 displays information on overall 13 banks. Since the figure and the lines would have become unreadable when plotting and highlighting all banks in the same manner, I randomly highlighted three banks and only displayed the remaining ones in the background. This appears reasonable as Figure 46 is only included to provide the reader a quick overview on how widely funding spreads across banks might differ.

²⁰⁷ Here, I used Bloomberg data as information on CDS-spreads is not readily available at Dealogic Loanware which serves as the main secondary data source in this study.

In practice, wide lender-borrower funding cost mismatches in favour of the former might cause challenges: Suppose that a bank faces higher costs of funding compared to current debt capital markets yields of the potential borrower. This theoretical constellation might happen to become reality especially for high investment grade borrowers, who, when it comes to bank loans, commonly benchmark themselves to their outstanding fully disintermediated capital markets instruments (Fitzgerald, 2011; Gaab, 2011). With regards to Figure 46, it becomes obvious that this was a pronounced issue during the financial crisis around 2008/2009.

I later explain that these large capital markets clients tend not to rely on term bank debt at all. However RCFs are commonly issued, even for the largest clients. These might either be backup RCFs securing a client against possible turmoil in the commercial paper market or a common RCF for seasonal working capital funding if, for example, no commercial paper programme was in place. Hence, on a cost base, fully drawn pricing levels might be higher compared to an outstanding bond of a borrower, for example. To a certain extent, utilisation fee²⁰⁸ concepts might adress this issue, especially for back-up RCFs. Remember that these are expected to remain undrawn. Thus, the bank only has to allocate a smaller amount of liquidity compared to an RCF being expected to be frequently drawn. On a per annum basis, the borrower in that constellation only needs to pay commitment fees calculated based on the margin net of utilisation fees. In other words, the client pays very little and the bank—via the utilisation fee concept—is somewhat protected against higher related costs of funding in the unusual case of a drawdown. For term debt, the discussed phenomenon might become an issue in the area of acquisition term loans.

²⁰⁸ See section 5.3.1.1.8.

- I 2 Funding costs of banks are becoming very important when we lend to the biggest multinational clients, which have very good external rating. Here, their own costs in the debt capital markets can be cheaper than funding costs of banks. I mean there are still a couple of "A"-rated corporates out there in Germany. Private banks, however, not so many. This leads to this issue within in this group of clients, which is in terms of number very small but in terms of possible syndicated loan volume very large. However, I need to put that into perspective a bit. Such a client would never tap the syndicated loan market for a term loan except in the case of an acquisition bridge. So, we basically talk about large undrawn back-up lines.
- I 10 Most banks work in certain spectrums. Therefore, you know, if you look at bank "X", for instance, a bank that specifically looks at non-IG crossover or even LBO-names, they are working at that kind of spectrum. They would not look at BASF because they do not have the products for BASF. BASF would also not look at them because mainly it does not fit. The banks such as we are, generally look at investment grade names.
- I 16 *Mismatches in funding costs might be handled by structures like utilisation fee concepts. However, the issue was more pronounced in the financial crisis, where we had to pay a couple or percentages for a five-year loan for instance.*

Finally, in extreme situations banks might not be able to compete any more for lending business for corporates as their funding costs are just too high. In that case, these banks need to focus on risky assest classes like LBOs. In line with Maskara (2010) and Craig and Dinger (2013), whilst funding costs increase, banks need to invest in riskier loans with higher pricings to be enabled to fully cover these costs.

I conclude:

<u>Finding:</u> *Ceteris paribus*, German corporate syndicated loan pricings are a rising function of banks' individual funding costs.

The following interviewee statements exemplify this:

I 1	Banks have different funding costs. Therefore, some banks can definitely accept a lower pricing than others. Particularly, banks having a very good rating have lower costs of funding and could theoretically accept lower pricings.
I 4	Because of funding costs, it makes a significant difference whether the customer goes for a short-term loan or a long-term financing.
I8	So, what reflects the refinancing costs? As a bank, we have an asset pool on the basis of which we refinance ourselves. There is the money coming from the retail customers and another part is on how we finance on the capital markets. If the overall economic outlook is negative, then our bond spreads tend to widen and our refinancing costs increase and then this also reflects in the syndicated loan pricing. We have 40 bp p.a. for five years for instance at the moment.
I 10	That depends a lot on the position of the bank. A bank such as ours has funding possibilities and a rating that maybe other banks do not necessarily have. Thus, our position in terms of actually making money from loans is a good one generally. Our funding costs are lower than the ones of a few of our competitors. That overall is a positive thing for our product.
I 16	Well funding costs might push banks into higher risk loans. I mean, it is clear that the higher the risk, the higher the margin and the less important the funding costs will be.

5.5.3.5 Credit pricing and return model

Sixteen interviewees expressed a view that banks' individual *pricing and return models* have an influence on syndicated loan pricings. Banks often run mathematical models to calibrate their individual credit pricing views. Although these models are said to differ with respect to specific intricacies, they tend broadly to follow two major methodological approaches, as argued by the research participants, namely, the *cost* and the *market opportunity cost-based approaches*.

5.5.3.5.1 Cost-based approach

Here, risk-neutral loan pricings are calculated bottom-up, based on the bank's cost elements, as exemplified by Figure 47.



Figure 47. Cost elements of syndicated loan pricing.

Following this methodology, credit pricings consist of the bank-specific funding cost component as discussed, as well as of certain administrative costs that are unrelated to a borrowers' specific credit risk profile.

To these fixed components, one must add a risk-adequate compensation for the *expected loss* (*EL*). For a specific loan, the lenders estimate the respective loss (*Loss Given Default: LGD*) and the outstanding loan amount in the case of failure (*Exposure at Default: EaD*).²⁰⁹ Based on these values, banks are then enabled to calculate their loan-specific EL by multiplying EAD, LGD and PD. Besides the costs for the expected loss, the pricing contains a premium for unexpected losses and the required return on equity. Broadly, the ratio of a bank's equity to its total *risk-weighted assets* (*RWA*) should on average amount to eight percent. Loan-specific RWA allocations appear to differ quite extensively in practice, based on various factors such as borrower-individual default probability, security, etc. Taking the possible variety of the equations' elements into account, one can imagine how widely pricing requirements may vary across banks, underpinned by the following statements:

I 2	Our bank calculates in theory the needed pricing based on a very complex algorithm that is fed by numerous sorts of quantitative data. The most important element is the internal rating. And from a fix-cost perspective our funding costs. These again are related to the maturity of the loan.
I 5	Although all models generally base on the same idea, they all have their specifics which at the end lead to different price views.
I8	If you look at our internal pricing mechanics for syndicated loans on a cost basis, we have the regulatory costs, we have the costs for the equity that we have to put insight, and we have the costs for the default risk. We take into account the loss given default. We take into account the funding costs. This is the cost side that we look at. This is kind of a minimum margin that we have to achieve.
I 16	Our banks pricing tool is a cost based one. We look at certain fix cost elements, we look at of course the clients risk profile and we look at our funding costs. At the end, the required return is also added. This leads to the mathematically derived loan pricing. If this is at the end the real price of a facility is a different story.

5.5.3.5.2 Market opportunity cost-based approach

In 5.3.3.1.2.1, I introduced the "opportunistic credit portfolio management", acting as "riskneutral" investor by evaluating loans at a "fair" market price with the cost components presented in Figure 47 playing no role or only indirect roles. The pricing is set based on current market yields, outlined by the following example: Suppose a German DAX company intends to borrow via a bullet repayment term loan carrying a five-year maturity. Simultaneously, the client has a corporate bond outstanding with a remaining time to maturity of exactly five years which is currently yielding at 100 bp p.a. in the secondary market. Thus, the loan price, based on this opportunistic approach, would at least need to amount to 100bp p.a.

²⁰⁹ LgD and EaD can differ inter alia in the case a loan is backed with security which leads to lower LgD compared to EaD in a default scenario.

Usually the bank individual funding spread will be added as the only fixed cost component needed to purchase the liquidity needed. The opportunistic and risk-neutral portfolio manager would not efficiently allocate its capital if the pricing was valuing below the actual market price and would hence face opportunity costs. The basic underlying assumption concerning this approach is that disintermediated capital markets themselves are continuously producing "right" and "risk-neutral" pricing views, independent of any bank-specific cost and return models.

In practice, often mixed calculations are conducted, for example where the borrower has several outstanding benchmark instruments²¹⁰. In addition, benchmarking based on assetbaskets replicating specific borrower-risk clusters might be applied.²¹¹ Because the market opportunity cost-based approach relies on capital markets benchmarks, this is only realistically applicable for large clients that can access these capital markets.²¹² For smaller more opaque ones, it appears rather unrealistic. Consequently, this approach is mainly used by institutions with an investment banking focus or by specific investment banking-like acting entities of commercial or wholesale banks, by means of a differentiation between capital markets and smaller, non-capital-markets-orientated clients, as underpinned by the following statements:

I 3 We have an internal pricing view that is based on costs. Other banks often have different systems, especially for larger firms and use a market driven pricing model. They compare and look at CDS or bond spreads. If a client has, for example, a bond outstanding and these spreads would widen, those banks would also require higher loan pricings. So, there is a huge implication of where bonds are trading. As I said, some banks use the market pricing approach and others an internal cost approach. Some also do both dependent on the borrower size.

I 14 These approaches are completely different because one is the approach of a completely objective investor who has $\in 100$ million available to invest and he does not need to put that into a loan. He can also buy CDS, or bonds. Whatever gives him the highest yield is what he would go for. And if he is being pushed into something with a lower yield, then he says "Ok", I need to be compensated for that loss.

I 21 There are banks that run a pure portfolio management approach. They do not rigidly calculate their costs. They look at the pure market. If you have a drawn loan for company "x", then they simply look where their bond is currently trading. So, the loan must at least meet this current market price. Otherwise there will be a shortfall. That is a very different approach compared to looking on cost bases.

²¹⁰ For example, CDS, bonds.

²¹¹ Usually in the case this client has no sufficient or transparent instruments outstanding itself.

²¹² See also my related discussion in section 5.5.3.4 on possible funding cost mismatches.

To conclude, whether a bank uses one or the other approach, as well as differences of methodological specifics of one bank vis-a-vis another, leads to different pricing policies across lenders.

<u>Finding:</u> *Ceteris paribus*, banks credit pricing and return models determine corporate syndicated loan pricings with the directional influence being ambiguous.

5.5.3.6 Reputation and experience in syndicated lending

According to eight research participants, reputation and experience drive syndicated loan pricings, especially in large syndications, for example, for underwritten M&A deals. A reputable bookrunner, having led several major high quality transactions in the past, is able to set the loan pricing package relatievely tight and is nevertheless able to successfully place it in the market. This is in line with the arguments of Godlewski et al. (2012) and Ivashina (2009). In contrast, several authors have found an opposite relationship. According to Alexandre et al. (2014), McCahery and Schwienbacher (2010), and Cook et al. (2003), given its relatively high reputation, a bookrunner might also be enabled to charge higher pricings, as borrowers have to pay a premium for this reputation.

Reputation can be assessed by general market shares (Drucker & Puri, 2005) and with respect to a certain industry in which the lender is predominantly active. Due to a lower signalling power, less reputable and/or less experienced banks might need to set the pricing higher to ensure a successful syndication.

<u>Finding:</u> *Ceteris paribus*, syndicated loan pricings are a declining function of a (lead) banks' reputation.

The following interviewee statements exemplify this:

- I 15 The reputation of the bookrunner is important, as signalling plays a role. Banks do look at who is leading a deal and what is the standing of this Bookrunner and where are they positioned in league tables. If you have a big German, French, or U.S. bank, they are credible banks. If they lead a deal, that is a good signal into the market. You must differentiate again between underwriting and best efforts, but the big banks have a general standard, which they have to adhere to.
- I 18 Being well positioned in the bookrunner league table clearly enables us to price transactions more aggressively. This is particularly true in M&A-deals. In normal financings, which are club-like either way nowadays, it does not matter so much.
5.5.3.7 Lending philosophy

All research participants stressed the lending philosophy of banks to be a syndicated loan pricing driver. For instance, foreign universal banks with a strong global investment banking focus are likely to have different target clients as well as return considerations, compared to a German wholesale bank such as a Landesbank. The following list displays different lending philosophies that were identified through analysis of the interview data:

- Opportunistic asset takers
- Relationship lenders
- Credit growth/shrink strategy
- Geographical issues
- Social responsibility issues

5.5.3.7.1 Opportunistic asset takers

Above, I introduced the opportunistic pricing deviation approach that does not necessarily suggest that the whole bank acts opportunistically or, in other words, is risk-neutral. It might be simply a tool to manage portfolios and to benchmark pricings. It might however be the case that the whole bank's lending philosophy follows this approach by only conducting arm's length business. Today, this is only seldom the case, however, and is only applied by purely investment bank-like acting lenders. The German corporate syndicated loan market in fact is mainly driven by relationship aspects that are discussed in 5.5.13. Opportunistic asset takers might also be present in the form of institutional investors, such as insurance companies or other non-bank financial institutions. In practice, the corporate syndicated loan market in market in Germany is, however, a pure bank-driven market.

<u>Finding:</u> *Ceteris paribus*, opportunistic asset takers require higher German corporate syndicated loan pricings.

The following interviewee statement exemplifies this:

¹³ One key question is if you as a bank are doing the loan with view to certain return considerations, which is hardly ever the case these days, but it used to be a strong incentive in the 90s and early 2000s. It has gone away because of the low pricings most of these loans carry. At that time, we had many pure and opportunistic asset takers in the market. This is coming back at least at the demand side to a certain extent with new entrants in the loans market as investors. Insurance companies want to be asset takers. Again, for them the difficulty is, to identify assets that respond their needs of a certain return. In the relationship market, they hardly find loans, which are profitable enough to meet their requirements. It is nearly a 100% bank-driven market. So, you find these kinds of lenders mainly in the LBO or project finance market.

5.5.3.7.2 Relationship lenders

Relationship lenders value syndicated loans as entry keys into client relationships. The rationale behind this is that the bank avails the borrower balance sheet and establishes itself as a relationship lender. In return, the borrower avails the bank with *cross-selling* opportunities such as cash management, bond structuring etc. (Voisey, 2016). According to all interviewees, the corporate syndicated lending market in Germany especially obeys to this relationship rationale, with banks' lending philosophies usually adhering to related underlying practices rather than engaging in opportunistic lending. The relationship component as one driver of the syndicated loan pricing happens to be so pronounced that it has been devoted a whole determinant category.²¹³

<u>Finding:</u> *Ceteris paribus* relationship lenders accept lower pricings in the German corporate syndicated loan market.

5.5.3.7.3 Credit growth/shrink strategy

A bank's lending philosophy might be focused on expanding lending activities or on the opposite. The question as to whether a bank is willing and able to expand its credit portfolio is linked to the general capital and liquidity situation, as a lender characteristic discussed above. However, also soft factors, like the bank managements' view on the future economy, or the relative importance it avails the syndicated loan product are key. If a bank's management decides to strive to gain market shares in German corporate syndicated lending, pricings might well be more aggressive compared to banks pursuing other strategies. Earlier, I presented the internal pricing models which define the profitability of a transaction with a business decision being needed whether to grant a specific loan. In "expanding-mode", bank managers might consider substituting certain parts of the underlying equations to price more aggressively. Such a substitution can, inter alia, be a treasury discount regarding allocated funding spreads.

<u>Finding:</u> *Ceteris paribus*, the credit growth/shrink strategy of a bank determines syndicated loan pricings with the respective direction being ambiguous.

²¹³ See section 5.5.13, where an array of interviewee statements will be displayed underpinning related phenomena.

Ι6	We had a business committee meeting today for somebody who is doing a refinancing, which is a good example: It is a well rated German borrower, credit quality is beyond doubt, we are second row up to now, we have never led a deal for this client and they are fairly aggressive. My colleagues came in with a pricing proposal that was 60 bp p.a. and then we discussed it and I said, "Do we really have a chance to lead this time?" They said, "Yes." We think the relationship manager has a good view and is optimistic to lead the deal, because we have been on the side-lines for a long time and the client knows that we want to be in the first position here. Then I said, "Ok, go for 55 bp p.a." We push it slightly down so that we increase our chance to get a first-tier role.
	down so that we increase our chance to get a first-tier role.

- **19** In addition, it is a question of strategic importance of the client. Are you keen to have a leading or active role in the deal? Then you have to be aggressive, because your competitors will also be aggressive. Some banks have certain defined amount, which they can use for very aggressive pricings. For example, you have ϵ 300 million free amount per year where you can price below internal treasury costs.
- I 14 In my world, which is corporate syndicated lending, what primarily drives pricing is banks desire to expand their lending relationships.

5.5.3.7.4 Geographical issues

The geographical location of a borrower within Germany might play a role in syndicated loan price settings. In other words, a client located in "x" might be able to obtain better conditions compared to an in "y" located client. Six interviewees identified this apparently illogical practice. For example, banks in regions with less-developed client bases or with lower lending opportunities might show a willingness to grant syndicated loans with more favourable conditions, compared to borrowers located in "client-rich" regions.

<u>Finding:</u> *Ceteris paribus*, regional aspects determine syndicated loan pricings with the related direction being ambiguous.

The following interviewee statement exemplifies this:

19 There are regions in Germany where there are not that many corporates and potential borrowers located. In such areas, the heads of corporate banking are keen to be in a deal of this important company out of his region and then they are ready to accept nearly everything. These are areas where you then see prices, which are very low. In another area in Germany, the same deal would maybe more expensive. When you compare same ratings, you may find that this company pays 30 bp p.a. less margin, compared to the other company. In that sense, it is good for us that the market is so opaque. Otherwise, all companies would also push for the low pricing.

As explained by interviewee 9, it is pricing opacity that may facilitate this reported discrepancy that might be interpreted as an example of so-termed *investment distortion*. In the case of more pricing transparency, the situation of two otherwise identical clients located in different regions being charged different prices would appear unlikely.

5.5.4 Conclusion: lender characteristics

In this section, the main factors constituting lenders' individual characteristics have been established. Based on the analysis of the research participants' statements, I was able to confirm certain findings of extant literature, but also to provide important incremental insights into the influence of lender characteristics on syndicated loan pricings. Especially with respect to the funding costs of banks, their credit pricing and return models, and their general investment and lending philosophies, extant syndicated loan-related research is scarce. Moreover, where it does exist, it does not recognise the interplay of these numerous and diverse factors.

The discussion remains to be enhanced by prioritising the determinants in light of their different influential magnitudes towards their determinant category (Figure 48).



Figure 48. Lender charactersitics: determinant prioritisation.

It appears that the bank's lending philosophy and its individual funding costs constitute key price determinants. It is likely that outstanding syndicated loan-related literature has not extensively focused on the latter, given the fact that this only became an issue during and after the financial crisis,²¹⁴ and/or through simply relying on the assumptions of frictionless interbank-market funding. With respect to banks' credit pricing and return models, I have provided some novel insights by presenting the two common mechanisms in depth. Size and capitalisation were mentioned to be an especially important price determinant in large, event-

²¹⁴ Much of the syndicated loan literature was published before 2008.

related financings, as banks' ability to provide large scale underwritings is mainly determined by this factor.

5.5.5 Contractual features

In line with extant literature, all interviewees expressed certain German corporate syndicated loan non-price-related terms and conditions to determine pricings.

Analyses of the interview data with respect to the determinant category *contractual features* enabled me to establish the corresponding determinants displayed in Figure 49.



Figure 49. Contractual features and its determinants

5.5.5.1 Amount

Twenty interviewees mentioned that loan amounts can drive pricing. In line with the majority of authors in the core literature (e.g., Barbosa & Ribeiro, 2007; Carey & Nini, 2007; Christodoulakis & Olupeka, 2010), 15 research participants stated that especially large loans were commonly issued by relatively large borrowers with an unstained creditworthiness. Smaller loans in return are said to be predominantly issued by smaller and usually more risky borrowers. Besides the risk component, extant literature usually related the lower pricings to economies of scale. According to the interviewees, the largest loans in general corporate financings commonly are back-up RCFs for borrowers with the strongest credit risk profiles. These typically amount to several billion Euros.

The statements provide further support for the reported downside bias within the public data sample, as presented in 4.5. To recapitulate, syndicated loans with published pricing information are significantly larger compared to those without such public information. It further supports the "single-transaction downside bias" with respect to back-up lines where initial margins sometimes get published, but utilisation fees intendeldy do not.

I1	Very large loans are mostly borrowerd by very huge clients. These borrowers often have very good ratings and can negotiate very attractive pricings. Very large loans are in my view either back-up revolvers or bridge loans. And these back-up loans are at least from an initial margin perspective the cheapest loans of all.
I 5	I think the larger the loans, usually the thinner the pricing.
I 8	Historically very large loans are either back-up RCFs like e.g., the \notin 9 billion one for Daimler, or very large acquisition loans like the recently \notin 52 billion Bayer Monsanto deal. Speaking of the former, these loans are very cheap by only carrying a few basis points of margin and by paying very little upfront fees.
I 20	When you look at the very huge revolvers outstanding in Germany, these margins are just ridiculously small. However, in a hypothetical draw down scenario utilisation fees would need to be paid which need to be added if you would look at it from a full-cost base.

However, according to eight interviewees, opposite directional influences might also be found, especially in multibillion non-back-up RCFs in general, and for those related to event purposes such as acquisitions. There are critical loan sizes, especially for certain purposes inhabiting more complex structures, where loan pricing shifts to a rising function of loan amounts. Logically, the higher the amount, the more money has to be raised via syndication—an especially critical fact if loans are underwritten. Furthermore, individual banks' commitments tend to be significantly larger compared to relatively small financings.

In this vein, a minority of authors (e.g., Godlewski & Weill, 2011; Calomiris & Pornrojnangkool, 2009) found such a positive relationship, however, without relating this to an in-depth reasoning vis-à-vis the bulk of contradictory evidence.

The following interviewee statements exemplify this:

Ι3	Loan amounts in general are hard to judge with view to their influence on pricing. When we have very large loans, let us say a \in 5 billion acquisition financing, then it is clear that it needs to be priced higher compared to a \in 500 million one for the same client. There is simply a higher placement risk involved as these loans are usually underwritten. On the other hand, very large revolvers that can well amount to \in 10 billion are in my view the cheapest. There is a kind of ambiguity in that respect.
Ι7	It is relatively obvious that if you do a deal of ϵ 15 billion that you need to think about this differently than doing a deal of ϵ 3 million for instance.
I 16	I think the larger acquisition financings are the more expensive loans must be priced.
I 21	Jumbo deals of a certain size must be priced at a premium as there is of course a natural limitation in bank appetite in the market.

Overall, given the diversity of related discussions for German syndicated loans overall, I conclude:

<u>Finding:</u> *Ceteris paribus*, the influence of German corporate syndicated loan amounts on pricing is ambiguous.

5.5.5.2 Maturity

According to 15 research participants, longer tenors lead to higher loan pricings by relating this, among other factors, to greater risk associated with a longer term and to higher related bank funding costs as the latter rise as a function of maturity. The argument of greater risk associated with longer tenors can be linked to the earlier presented trade-off hypothesis, postulating that relatively risky borrowers tend to seek long-term financing to moderate early and costly liquidation risks. Banks, on the other hand, face higher risks in engaging in long term loans for risky borrowers and are only willing to offer long tenured loans to risky borrowers at a price premium (Coleman et al., 2002). The funding cost argument is, however, detached from borrowers' specific credit risk, with these costs being fixed components.

Grounded on the ideas of the trade-off hypothesis, a small majority of the authors of core papers found positive relationships between pricing and maturity (e.g., Focarelli et al., 2008; Barbosa & Ribeiro, 2007; Haselmann & Wachtel, 2011). Nine interviewees, however, remarked that loan maturity is not usually subject to extensive negotiation in non-eventrelated corporate syndicated lending.

In other words, for general corporate financings, tenors in certain rating clusters tend to be market standard. Favourably-rated investment-grade²¹⁵ firms usually obtain five-year maturity loans equipped with two one-year extension options, often referred to as 5+1+1 loans. Solid investment grade companies are said to predominantly close five-year loans, whereas crossover and sub-investment grade firms commonly achieve three years of tenor. This view would fit the credit quality hypothesis, which suggests negative maturity-price relations as lenders strive to limit their risk-exposures by forcing high-risk borrowers into short-term debt (Berger & Udell, 1990; Dennis et al., 2000; Strahan, 1999) and offer long-term loans only to the highest quality borrowers. With respect to the core literature, Santos and Winton (2008) and Bharath et al. (2011) confirmed this view.

Eight interviewees held maturity to become more subject to negotiation in acquisition financings, predominantly for large-scale underwritten bridge term loans. Here, banks strongly focus on a quick de-risking and incorporate special pricing features like duration fees to manage maturity profiles.

²¹⁵ Either external and/or internal rated.

The above-mentioned findings can be interpreted as confirmation of elements of both credit quality as well as the trade-off-hypothesis, depending inter alia on the loans' purpose and considering banks' funding costs. Overall, I conclude:

<u>Finding:</u> Ceteris paribus, syndicated loan pricings are a rising function of maturity.

The following interviewee statements exemplify this:

I 1	Longer maturities lead to higher related bank funding costs. That makes it naturally more expensive.
I 4	It makes a significant difference whether the customer goes for a short-term loan or a long-lasting revolver with all kind of flexibilities.
I 6	Most good borrowers have five-year tenor or $5+1+1$ if they adhere to that template.
I 9	You see pricing differences between three- and five-year loans.
I 10	The longer the term, the more expensive it gets.
I 16	The tenor of a loan is usually not a big discussion point with corporate borrowers. For good ones, it is five and, for not so good ones three years. Tenors become a topic in M&A deals or long-term project financings, but not in the general corporate world.
I 19	In the market, we are elaborating here it plays a role but I think maturities are a kind of market standard for certain risk categories. We are not talking about project financings with tenors of 20 years.
I 20	The most important issue with tenor is related to the funding costs of banks. Granting a three-year loan–even if these loans in theory are floating rate instruments–is much cheaper for us than providing a five year one for the same client. Risk classification is rather reflected in a way that certain rating categories are associated with certain maturity profiles. The best clients can go for $5+1+1$, solid ones for five, and a bit weaker ones, for three years.

5.5.5.3 Type

According to all interviewees, the loan's type, whether it is a backup-RCF, a common RCF, a term loan or an acquisition facility as sub-format of term loans, affects pricing. In line with Godlewski and Weill (2011), Harjoto et al. (2006), and Schenone (2010), seven interviewees generally agreed that term loans are commonly more expensive compared to RCFs. Amongst others, Santos and Winton (2008) and Hale and Santos (2009) further noted that bridge loans, being usually used to support acquisition financings, are on average the most expensive loan type, a finding, confirmed by 15 interviewees.

In contrast, four interviewees stated that full-drawn pricings often tend to be identical for term and revolving debt in general corporate lending. In many cases, where syndicated loans consist of several tranches,²¹⁶ the margin on the term loan equals the fully drawn one of the revolving line after having incorporated applicable utilisation fees.²¹⁷

Overall, these discussions underline the importance of loan-type individual pricing definitions.

<u>Finding:</u> *Ceteris paribus*, revolving credit facilities tend to be cheaper compared to term loans. Hidden utilisation fee concepts might however partly or even fully explain spread differences between revolvers and term loans.

<u>Finding:</u> *Ceteris paribus*, acquisition term loan facilities are the most expensive loan type within the German corporate market.

The following interviewee statements exemplify this:

I 2	This depends. On average revolvers are cheaper compared to term loans. However, you need to
	compare pricings of term loans with fully drawn pricings of revolvers. Then this pricing disparity
	narrows or in the case of investment grade borrowers goes away completely.
τ 10	PCEs and to be chosen on them denous forms loans. Town loans have bistorically how more ownersity

I 10 *RCFs tend to be cheaper than drawn term loans. Term loans have historically been more expensive than revolving credit facilities.*

I 16 In terms of loan types, acquisition financings, mainly bridge loans, are the most expensive. These loans are usually underwritten and carry higher uncertainty anyway.

5.5.5.4 Currency

According to six research participants, the overall currency or contractually embedded currency-options affect pricings. Although most German corporates tend to borrow in Euro, some have funding needs in other currencies that are commonly addressed via multi-currency options within RCFs. In a more particular vein, cross-border acquisitions are usually financed via foreign currency syndicated term loans, as the price for the foreign target commonly needs to be paid in the local currency or in USD. Especially for smaller German banks that lack competitive funding access abroad, funding costs tend to be higher compared to banks having that access or compared to foreign lenders joining the facility. Higher associated costs are often addressed via foreign currency premiums²¹⁸ in RCFs and via general premium for term debt.

²¹⁶ For example, of a term loan and of a revolving credit facility.

²¹⁷ See Table 12 for a related example.

²¹⁸ See section 5.3.1.1.3.

<u>Finding:</u> *Ceteris paribus*, loans denominated in a foreign currency tend to be more expensive compared to local currency ones.

The following interviewee statements exemplify this:

I 2	If it is not their original currency, it becomes more difficult for them, because they have then to somewhere source that money as well.
Ι3	I observed that currency discussions are often getting intense in cross-border acquisitions. If we as a German bank support a USD-denominated acquisition financing and commit a billion here, we first need to evaluate what the funding premium of USD in comparison to ϵ will be.
Ι8	Currency is often an issue. We as a German bank need to swap Euros into the respective foreign currency. This swap might be so expensive that the overall pricing is not competitive any more. Thus, currency issues need to be taken into consideration carefully. At best, you talk to your treasury department before pitching in other currencies than Euros.

5.5.5.5 Covenants and security

Conventional wisdom suggests that credit risk-mitigating elements like covenants and security should reduce syndicated loan pricings, especially as security commonly eases the LgD and might further lead to lower required RWA allocations for such loans. According to 12 interviewees, however, covenants and collateral carry only limited pricing influence in general corporate syndicated lending. Certain covenant and security sets are rather market standards for certain borrower-risk groups and a precondition for a loan to be issued at all, rather than a mitigating pricing factor.

Like maturity, collateral and covenants are sequentially determined before the loan pricing is set and can only be used within limits to pricing trade-offs. Further, my finding follows the broad core consensus in the core literature on the observed-risk hypothesis, indicating that borrowing costs for secured loans are higher due to borrowers being evaluated as more risky (e.g., Kim et al. 2014; Barbosa & Ribeiro, 2007; Carey & Nini, 2007; Ivashina, 2009). In other words, collateral or extensive covenant requirements can be associated with rather weak credit qualities.

According to eight research participants, covenants and collateral gain influential importance in event-related financings such as acquisitions, where usually shares of target companies, for example, are pledged to the lenders.

<u>Finding:</u> *Ceteris paribus*, loans with covenants and/or collateral carry higher pricing. However, covenant- and/or security packages—for certain borrower-risk profiles—tend to be a pre-condition to obtain a loan at all rather than a direct pricing driver in their own right.

I 5	I think banks are saying, if the loan has a weak structure, weak covenants, they are backing away from participation at all. Pricing is not even a point in that decision.
I6	Most of the loans we are talking about here are unsecured. Most are also without any covenants or might have one covenant.
I 8	Whether or not you have financial covenants is not so important in this competitive environment.
I 10	If you try to sell a credit as a decent investment grade credit and then suddenly you cannot say I like to have security and five covenants and then I take the margin down. The market would say: Structure does not match the credit story.
I 14	Do things like security, covenants etc. impact pricing? Not in a huge way. If you are looking at a low investment grade corporate, in most cases you would hope that there will be one financial covenant. If you look at a sub-investment grade company, you would hope to see two financial covenants of certain levels. And if you do not have those, then there is a problem to start with for the loan negotiation anyway. Those elements however do not really impact pricing in a particular way. It is kind of a separate bucket.
I 16	In short, pricing influence in general corporate financings is low, but in event-related ones, it is gaining importance.
I 21	Here you have to be a bit careful. When we talk about LBOs or asset financings such as aircraft finance etc., there is a trade-off between collateral, covenants, and other non-price terms. It is a more technical market. In the case, you can achieve RWA releases, for instance, via higher collateralisation and, thus, lower loan-to-values; pricing goes down, because of this fact. The corporate world in that case is structured differently. Collateral or certain covenant packages are common for certain rating categories and for others not. A direct link to pricing is if at all weak.

5.5.6 Conclusion: contractual features

In this section, I have discussed the main non-price-related syndicated loan terms and conditions, "contractual features", which affect German corporate syndicated loan pricing. It appeared that contractual features in syndicated lending often seem to be templates for certain borrower risk categories and are not subject to extensive negotiations, and, thus, are not instruments to be subject to trade-off against pricings. In event-related financings, however, this becomes a more intense debate.

The discussion remains to be enhanced by prioritising the determinants in light of their different influential magnitude towards their determinant category (Figure 50).



Figure 50. Contractual features: determinant prioritisation.

It became clear that the loan amount appears to be a significant pricing driver, with very large back-up RCFs often being priced relatively low, whereas very large, mostly underwritten, acquisition term loans usually command a price premium. Mainly in relation to banks' increased funding costs, longer maturities have been established to generally lead to higher pricing, albeit also commonly adhering to certain template structures. Likewise, loan type appeared to determine pricing significantly, whereas currency and certain protection mechanisms such as covenants are also determinants, although to a lesser degree. Furthermore I established that—the more complex the financing rationale appears—the more important contractual features become.

5.5.7 Credit story

All interviewees agreed the so-termed *credit story* (i.e., related themes, which I decided to locate in the category of credit story), to be a determinant of German corporate syndicated loan pricing. The term "credit story" is commonly used in the industry to refer to the "story" behind the application for credit. In other words, I interpret credit story as the overall underlying rationale for demanding a syndicated loan. This rationale may be straightforward and less sensitive to pricing, for example, with regards to commercial paper back-up facilities for high-grade borrowers or other straightforward loan renewals. On the other hand, credit stories can be complex, resulting in strong requirements to properly communicate and explain them to lenders' internal constituencies—in other words, to the earlier established "withinbank-stakeholders"—and to outside investors (e.g., in the case of event-related transactions, such as acquisitions).

The interview analyses with respect to the determinant category credit story enabled me to establish the corresponding determinants that are displayed in Figure 51.



Figure 51. Credit story and its determinants.

5.5.7.1 Transaction history

The need of proper credit story articulation and explanation to lenders' internal constituencies and to potential investors is of minor importance for general corporate financings, especially if the borrower-specific credit risk profile appears unstained. In line with Fitzgerald (2011), in German corporate syndicated lending, these are overwhelmingly transactions that already exist long term, having gone through numerous refinancing cycles. In other words, here the credit story usually builds on an existing transaction history.

Godlewski and Weill (2011) and Hale and Santos (2009) found refinancing and working capital loans to be cheaper relative to, for example, M&A purposes, as such loans tend not to increase the borrowers' indebtedness and, thus, carry lower degrees of future uncertainty. Some of these general corporate financings are commercial paper back-up lines which in practice are not supposed to be drawn at all. Thus, this straightforward and clear purpose of the loan, accompanied by the fact that these are mainly refinancing transactions within an existing group of lenders, reduces the credit stories' relative importance.

<u>Finding:</u> *Ceteris paribus*, in (explicit or implicit investment grade) general corporate lending (e.g., refinancing), the predominantly history-based credit story affects pricing only to a limited degree.

Fifteen interviewees agreed on this, as exemplified by the following statements:

I 2	The uses of proceeds of a loan, in the market spectrum at hand, are less relevant from my point of view.
I 13	On the corporate side, especially in investment grade, it is less relevant. I think it is a bigger factor on the LBO side definitely. There you need to have a rationale making sense.
I 21	The credit story when it comes to normal financings for borrowers with a solid risk profile is not a key pricing driver in my view. Usually these loans are refinancing within existing bank groups and basically no explanation of a deal rationale is needed unless the borrower faces some big issues. That

is however also usually not common in these days, as the German economy is going very well.

5.5.7.2 Borrower prospects

For those financings being special in the way they may be used and executed, e.g., to finance an extraordinary event like an acquisition, the credit story becomes a key price determinant. In line with extant M&A literature such as Bauer, Matzler, and Wolf (2016), relatively largescale acquisitions typically change a borrowers' specific credit risk profile²¹⁹ with balance sheet ratios deteriorating²²⁰ and with the integration of the target firm creating operational as well as cultural risks that might put future performance at risk. Such acquisitions are commonly defined as transformative (Bauer et al., 2016; Mohr & Bärtl, 2012).

In other words, in this situation, the borrowers' overall prospects in its multiple dimensions must be evaluated; these are complex exercises, being likely marked by bank-specific assumptions and marred by uncertainty.

Hence, what professionals label a *deleveraging story* after big capital expenditures is a crucial credit story ingredient that carries the need of being carefully addressed and made subject to due diligence. In practice, such due diligence is supported by roadshows and information memoranda that mainly include a series of financial forecasts and comprehensive discussions of the company's future following the acquisition. Given the lower credit stories' intensity, this appears not to be a pronounced exercise in straightforward general corporate (re-) financings.

A broad menu of supporting evidence is provided by Christodoulakis and Olupeka (2010), Schenone (2010), and Alexandre et al. (2014), who found loans granted for M&A purposes to

²¹⁹ For example, via rating downgrades.

²²⁰ For example, a rising leverage ratio.

be more expensive. Further, the fact that bridge loans are broadly considered the most important loan type underpins this.

<u>Finding:</u> *Ceteris paribus*, the credit story becomes a key determinant of syndicated loan pricing, once the financing is for special purposes such as an acquisition.

Seventeen interviewees agreed on this, as exemplified by the following statements:

- I 1 The risk associated with the loan is in an acquisition scenario higher as a lot of debt finances that. Your leverage will increase first. It is a different initial rating so to say and you are really giving money out and not only providing a line of credit, which can but does not have to be drawn.
- I 2 Acquisitions are sometimes company-transforming, and come along with a higher company risk overall. The leverage usually goes up. There is uncertainty on both the management's and employee's sides. Therefore, acquisition financings are even more individual and complex compared to the usual corporate financings.
- I 3 The deleveraging capacity that this client has over time is important. That is a forward-looking element. The client needs to deliver credible projections. So, to really look at that you would have to have either in-house planning or projections or publicly available information that you can derive, for example, from research, or the company provides it. This element relates mostly to acquisition finance or real investment loans, where balance sheet ratios change and the whole company strategy may change (e.g., a transformative acquisition). For medium to low risks, high-grade risks, banks usually do not look at that.
- 17 It is certainly important whether a potential acquisition is widely regarded as something which does make sense strategically and under other aspects. If there are relatively interesting or less favourable analyses publicised from brokers, there might be possibilities to address this by an increased pricing, but not to a full extent. However, the perception of the market, if the acquisition does make sense, and will the company be able to manage it successfully, will be key.
- I 8 If you have an acquisition financing, the client is usually levering up and the risk increases. Margins then tend to be higher as well. In addition, the credit story is important with respect to deleveraging.

In contrast to these views, and somewhat weakening the foregoing argument, two interviewees expressed the view that the impact of credit stories on pricing has weakened over time.

19 The differences between, for example, M&A and general corporate purposes unfortunately disappears to a very large extent. It is also a discussion we have internally. I personally see that M&A financing structures are more usually corporate refinancing structures as well as the pricing structures. There is still some differentiation but it is not as large as in the past. Even underwriting fees are relatively small compared to the past.

I 14 However, what we have recently observed is that there has been a strong conversion between acquisition financings and general corporate pricing. So, in other words, it is not that corporate pricing has gone up, it is the M&A pricing that has come down quite a lot. But I would say this is related to the current market environment. Historically event-related pricing used to command a premium.

The statements of interviewees 9 and 14 can be related to the current syndicated loan market environment, which is said to be marred by fierce competition and supply and demand mismatches in favour of the borrowers. *Syndicated loan market environment* as a determinant category in its own right is debated in 5.5.15.

5.5.7.1 Draw expectation

According to 18 research participants, given that a large part of general corporate financing volume is structured as revolving loans, respective draw-expectations are important credit story ingredients. Commercial paper back-up lines are basically never drawn, whereas working capital lines, predominantly for smaller companies, are frequently drawn, repaid and re-drawn, based on individual needs and in light of their cash-cycles. These facts influence both general pricing direction as well as pricing structure, as established in 5.3 through its corresponding sub-sections on common RCF pricing elements.

Further, the expectation of drawings is an important element of for acquisition term loans.²²¹

<u>Finding:</u> *Ceteris paribus*, the drawing expectation in revolving credit facilities and acquisition term loans affects pricing and pricing structure.

The following interviewee statements exemplify this:

I 2	It plays a role if a loan or more precisely an RCF is supposed to be drawn or to be undrawn. That makes a huge difference in the price setting. Also the pricing in the way it is structured overall is affected by that information.
Ι7	There are revolvers which are mainly used as a back-up facility, because the company needs to have a certain cushion which it can draw upon for specific purposes.
I 14	It might be the case that acquisition bridge loans are never or only partly drawn down. This is because the M&A transactions are not successful—like in a bidding phase—or a refinancing via capital markets instruments succeeds the draw-down need. These considerations play a big role in the price setting of such transactions clearly.

5.5.8 Conclusion: credit story

The discussion provided on credit story confirm the findings of extant literature with respect to the uses of proceeds and significantly enhances the debate by incorporating further complex phenomena that enrich the simplified discussions on uses of proceeds within the extant literature by the inclusion of the determinant category of "credit story". It became apparent that *ceteris paribus*, the relative pricing importance of the credit story is a rising function of the syndicated loan's underlying speciality and complexity.

²²¹ See section 5.4.4.

The discussion remains to be enhanced by prioritising the determinants in light of their different influential magnitudes towards their determinant category (Figure 52).



Figure 52. Credit story: determinant prioritisation.

As established above, the credit story becomes a key price determinant ingredient in evenrelated financings. Here the borrower prospects are the most important theme that must be evaluated by the lenders. Also within this area, the draw expectation was established to play a key role, as acquisition bridge loans are commonly not fully or even never drawn down, for the reasons explained in the discussion. In the field of general corporate financings facilitated via RCFs, the draw expectation needs to be evaluated, because such loans are either issued with a clear draw motivation, or not at all in the case of back-up RCFs.

5.5.9 Syndicate structure and syndication mode

A syndicate, also often referred to as a consortium, represents the bank group, teaming-up to lend money to a borrower at equal terms and conditions²²² (Fight, 2004; Rhodes et al., 2004). The next determinant category is devoted to the structure of such lending alliances as well as the underlying procedures regarding how the syndicate is assembled in the primary market. Overall, 15 interviewees agreed that syndicate-related issues drive German corporate syndicated loan pricings. Founded on the answers of the research participants, the syndicate structure's impact on pricing is essentially based on different underlying phenomena compared to the findings within the associated extant literatures, which are generally constructed on assumptions derived from theoretical considerations of information asymmetry

²²² Besides various upfront compensations that vary based on the respective lending amounts.

issues. The syndications' mode is typically not thematised at all in extant scholarly pricing literature.

Analyses of the interview data with respect to the determinant category *syndicate structure* & *syndication mode* enabled me to establish the corresponding determinants displayed in Figure 53.





5.5.9.1 General number of lenders

In line with the diversification hypothesis, five interviewees argued that, for a given loan size, larger lender groups lead to relatively lower final take levels by lenders and thus lower pricings. Godlewski and Weill (2011) and Kim et al. (2014), for example, also found loans with higher numbers of lenders to be lower-priced.

According to three research participants, on the other hand, a relatively larger number of banks might increase the need for pricing compromises, as each institution carries different characteristics that need to be aligned. These might put upward pressure on pricings and might counterbalance the diversification advantages of larger lender sets. This would be in line with the finding of Alexandre et al. (2014), stating that more lenders in a syndicate tend to lead to higher pricings. These contradictory interviewee statements do not provide clear guidance at this time.

<u>Finding:</u> Ceteris paribus, the impact of syndicate size on pricing is ambiguous.

- 17 It is an important influencing factor on the pricing, whether or not in relation to the size of the credit facility, that particular client has a smaller or larger group of banks. Because a larger group would mean, that each of the banks would need to take only smaller amounts and that certainly could influence pricing downwards.
- I 8 If the syndicate gets really big and you are relying on different banks with lots of different interests the pricing might be smaller neither because you have to have an overall compromise. Kind of an extended club deals with 5 to 10 banks in Germany get probably the best pricing.

5.5.9.2 Number of lenders and cross-selling potential

Twelve interviewees discussed syndicate size and its impact on pricing in the light of relationship lending considerations. German corporate syndicated lending is said to be a relationship driven financing product²²³ with banks tending to accept relatively low pricings and in return expect to be awarded cross-selling opportunities. According to the research participants this client-related cross-selling potential drives syndicate structures. If a client's cross-selling potential is large, more syndicate members can potentially be satisfied compared to borrowers with lower cross-selling potential. In other words, here the syndicate size does not directly influence pricing, but indirectly via relationship aspects.

<u>Finding:</u> *Ceteris paribus*, the size of a syndicate can be interpreted as a rising function of a borrowers' cross-selling potential leaving a general pricing direction ambiguous.

The following statements exemplify this:

- I 4 What we see in the market is that companies are reducing their bank groups because the treasurer always says, "I cannot serve 25 banks with cross-sell". Thus, many clients have a common interest to reduce the bank group to a minimum. The bank then needs to provide a higher credit proportion, but it is also awarded and profiting from higher amounts of cross-sell. In addition, with a higher probability of being awarded cross-sell, of course.
- 19 It is general phenomenon for all deals that syndicates tend to get smaller. The CFOs have a clear intention to having a relatively small bank group because they have limited cross-sell wallets and, therefore, do not want discuss business opportunities with 20 banks. Twenty banks are showing up twice a year minimum and present products to the client who knows all this already. You can always service four or five banks with significant business. The rest gets really nothing and, therefore, this is for the last four or five years a clear tendency that we even have smaller syndicates and that in most of the situations we have club style structures with only one or two levels of tickets. On the other hand, you also have to lend very big tickets.
- I 17 Ticket sizes of banks are ready to be high these days if cross-sell potential is promising.

²²³ See section 5.5.13.1.

5.5.9.3 "Modern" best efforts syndication process

According to 15 interviewees, the procedure under which syndications are practically executed and syndicate structures emerge has been subject to significant change over time. Whereas in the years before the financial crisis, "text-book-like", large syndication processes with only one or just a few "real" bookrunners were common, today's markets appear to be characterised by club deal or "club deal-like²²⁴" financings, even for very large loans.

Club deals are syndicated loans consisting of a relatively small group of a client's existing banks, usually providing the same or similar levels²²⁵ of commitments. Thus, no new syndication takes place, involving formal invitations to numerous possible participants. The banking group is instead pre-agreed (Gadanecz, 2003; LMA, 2013). In other words, all attending banks treat each other as lead bank (Fitzgerald, 2011).

According to Godlewski et al. (2012) and Ivashina (2009), among others, the arranger largely selects the initial set of potential participants to be invited and specifies certain ticket sizes and the titles awarded to the invited banks. Francois and Missonier-Piera (2007, p. 228) stated, "The arranger collects confidential bids from other banks regarding their contributions to the loan". For common German corporate syndicated loans, however, this tends not to hold any longer, as highlighted by the following interviewee statements:

In other words, borrowers in the German corporate syndicated loan market now tend to substitute bookrunners' original tasks by conducting hidden RfP processes²²⁶ and "pre-place" facilities themselves. The labelled bookrunners are instructed by the borrower whom to "invite" into the "syndication-process". The pricing of loans in general, and the upfront fee allocations²²⁷ particularly, is effectively set by the borrower, based on offers received via these RfP processes. In contradiction to what extant scholarly literature commonly postulates, the

I 5 We see more and more self-arranged deals in the form of club-deals or extended club deals with only one or two ticket sizes nowadays. I cannot remember any recent normal refinancing loan which was executed based on a real broad syndication. This is obviously different for M&A deals or other event deals. But even here it is getting more and more pre-discussed.

I 19 Real syndications have become rare in Germany. Mostly syndicates are pre-agreed groups of banks, with the borrower deciding whom to invite at what ticket size to what levels of fees.

²²⁴ Also often referred to as club-style- or extended club deal.

²²⁵ This would be the case in a club-style- or extended club deal transaction.

²²⁶ See section 5.3.3.1.1.

²²⁷ Hence, the earlier (5.3.1.2.3.2) presented technique of fee skimming or pooling appears to be an exception rather than a rule at present.

bookrunners' original role has changed towards a more administrative one, where the focus predominantly lies on handling loan documentation issues rather than the acquisition and "education" of new, uninformed investors. This is in line with O'Donovan (2011, p. 111), who stated that companies attempt to conduct more self-syndication and commonly appoint "a documentation bank or a co-ordinator rather than an MLA".

Given the pricing opacity discussed earlier, via these private RfP-processes, clients are enabled to create hidden price competition and thus put downward pressure on pricing if numerous banks are willing to bid.²²⁸ This situation is highlighted by the following statements:

I 8	Today, you have some clients doing really hard negotiations via RfP-processes and push the pricing
	down.
I 17	The RfP-phases are really tough. We somewhat poke around and do not know what is going on We

I 17 The RfP-phases are really tough. We somewhat poke around and do not know what is going on. We offer a price and have basically no idea what the others do and then receive a call from the client saying, "If you want to be in the deal you need to adjust the pricing downwards to 'x'". That has relatively little to do with what classical bookrunner or MLA roles would suggest.

Understanding of these phenomena might well be enhanced by considering theoretical auction considerations. According to McAfee and McMillan (1987, p. 701), "An auction is a market institution with an explicit set of rules determining resource allocation and prices on the basis of bids from the market participants". Given the "modern" best efforts syndication process, explicit rules are effectively substituted by market practice and experience and are subject to ongoing changes and developments. Certain elements of the so-termed *first-price sealed-bid auction* however serve as a promising analogy to enhance the understanding of the complex phenomena under study.

McAfee and McMillan (1987, p. 702) defined this auction type as a tool where, "Potential buyers submit sealed bids and the highest bidder is awarded the item for the price he bid. The basic difference between the first-price sealed-bid auction and the English auction²²⁹ is that, with the English auction, bidders are able to observe their rival's bids and accordingly, if they choose, revise their own bids; with the sealed-bid auctions each bidder can submit only one bid."

²²⁸ This is strongly related to supply and demand issues being discussed in section 5.5.15.2. Especially in a market with loan supply exceeding loan demand, clients are enabled to decide which and how many institutions join their syndicate. The level of price competition is shaped by the number of banks whose clients invite to pitch/compete for a respective loan.

²²⁹ In the English auction, the price is successively raised until only one bidder remains (Keskin, 2016; Shachat & Wei, 2012).

According to Shachat and Wei (2012), Keskin (2016), and others, many variations exist with respect to different auction types. In that vein, the established "modern" best efforts syndication process includes certain elements of the first-price sealed-bid auctions where bidders (banks) are not able to observe their competitors' bids. However, here, bidders (banks who bid) are commonly allowed by the seller (borrower who sells the investment opportunity) to revise their initial bids.

As corroborated by 10 interviewees, the opacity caused by an almost complete lack of publicly available pricing information is accelerated, given that the so-called *market sounding* is no longer conducted. Back in the early 2000s until the financial crisis, it appeared to be standard practice for loan professionals to streamline pricing offers in bidding and pre-syndication phases across banks by means of "informal polling" or "price-talks" (Wu et al., 2013). Fang et al. (2016) defined this market practice as solicitation of informal feedback from potential lenders in a transaction, especially regarding pricing. Reforms to the UK competition law²³⁰ that came into force by April 2014 have since spread across the whole of Europe and caused market sounding as common practice to come to an abrupt halt and to completely disappear.

Based on this, besides "official" and "external" pricing opacity with regards to public databases, a second "unofficial" and "internal" opacity has evolved, influencing the underlying processes by which syndications are organised and executed.

The following interviewee statements exemplify this:

- I 10 Certainly, what people do not do any more is market sounding. They used to do it a couple of years ago. Like ok, I just phone my friend at the other bank and try to find out what the pricing is. It is not happening any more.
- I 14 It would be getting hold of one of the sales colleagues and say, "Hey, go and have a chat around the market and see what other people think". You cannot do it anymore. You can no longer do this and that does mean that the market is more opaque today and less transparent and more difficult to read.

It is hence reasonable to conclude that price setting processes of German corporate syndicated loans as well as the way syndicates are structured have fundamentally changed in a way that

²³⁰ It is a criminal offence for each individual to fix prices, share markets or customers, fix or limit capacity, rig-bids and/or exchange non-public competitively sensitive information (LMA, 2014). According to Clifford Chance (2014), dishonesty no longer must be proven to secure a criminal conviction for individuals involved in a cartel. It might be punished with imprisonment for up to five years and/ or an unlimited fine. For the related banks, fines of up to 10% of its worldwide turnover are possible (LMA, 2014).

contradicts the remark of Bharath et al. (2011, p. 1,188), "The loan syndication process has become increasingly similar to the book-building process used to sell publicly and privately placed bonds".

The following statement of interviewee 16 underpins this:

I 16 The way syndicates are being set nowadays has changed in such a dramatic way that a couple of banks have significantly reduced their sales forces or even completely closed down the respective department. This is the case because primary syndications are nowadays run differently as compared to former times. We mostly talk about club deals or club-like deals. In that cases, the loan originator talks to the other banks either way, as all are involved, for example, in the documentation phase. Thus, there is basically no need for huge sales forces any longer.

Based on these new insights into syndication processes that have revealed major mismatches between theoretical assumptions and practice, it is reasonable to propose the following finding:

<u>Finding:</u> *Ceteris paribus*, "modern" best efforts syndication processes lead to lower German corporate syndicated loan pricings.

The interviewees' discussions around these developments in syndication processes, and the disappearance of market sounding having the effect of deepening pricing opacity, revealed further practical implications. Eleven interviewees reported significantly widened *pricing offer-spreads*, so that today pricing offers tend to differ more greatly in comparison with earlier, pre-crisis, years.

The following interviewee statements underpin this:

I 14	It is a very interesting thing and I think these offers are indeed widening and it comes with the regulatory obligation for confidentiality and not just confidentiality but also against anti-competitive behaviour.
I 15	As a borrower, if I would now send out an RfP to get financing offers from banks, I think the variation would be dramatic, because there is no publicly available market.
I 19	Market sounding disappeared completely and we cannot talk to other banks about pricings any more. In talks to clients, they often reveal that the pricings they got offered vary quite a lot from bank to bank. I guess that is the cause of not talking to each other anymore.

This observation might carry negative consequences for underwritten syndicated loans, which are discussed in the following section.

5.5.9.4 Underwriting

The foregoing discussion assumes that the syndication is run on a best-efforts basis. This holds true for the majority of issued loans in the primary market. In underwriting scenarios, different phenomena need to be taken into consideration. As outlined by 11 professionals, in such situations underwriters initially commit higher amounts than their intended final takes, so face market risks as a failed or stalled syndication may have serious negative consequences. Here, clients usually only approach a very small number of lenders before launching a syndication and hence are not enabled to create hidden competition to the extent that is common in "modern" best-efforts processes. Hence, pricings need to be "attractive" to ensure a successful syndication. However, the limitations in properly "reading the market", the opacity situation, and the increased pricing-offer spreads in bidding phases tend to further complicate price calibrations for underwritings and could increase the risk of stalled syndications.

<u>Finding:</u> *Ceteris paribus*, underwritten syndicated loan transactions tend to carry higher pricings than do best efforts ones.

The following interviewee statements exemplify this finding:

- I 5 Underwritings in the current market solely occur in acquisition financings. Here, you have to set a pricing that brings your initial underwritten commitment down quickly. So, I would say the fact that a deal is underwritten in its own should lead to higher loan pricings. The fact that those loans, as I said, are solely for M&A-deals might push that direction further.
- I 15 Obviously, if it is an underwritten deal, there is only one question: Where can you get the risk away at the best price? Where would you achieve a sell-down for that particular asset? For best efforts, it is a completely different approach. For this, it is just the client that wants the best possible price. The client here does not need certainty of funds.

5.5.10 Conclusion: syndicate structure and syndication mode

The foregoing discussion and the diversity in the interviewees' statements revealed the influence of syndicate structure on pricing to be ambiguous as well as multi-faceted, with no clear directional influence on pricing. In other words, several countervailing forces are at work, making the impact of syndicate structure on German corporate syndicated loan pricing confusing and ambiguous. However, especially with respect to the syndication mode, the discussion revealed that for non-underwritten loans, pricings in light of the "modern" best efforts syndication process tend to decline, *ceteris paribus*.

With respect to the large body of extant literature concerning syndicate structure, I ought to provide the following remarks: remember, outstanding scholarly literature tends to study

syndicate structures in the context of prospective informational frictions based on the assumption that lead banks, the delegated monitors, are fully informed and participant banks (completely) uninformed and thus dependent on information collected by the lead bank (Ivashina, 2009; Pichler & Wilhelm, 2001; Sufi, 2007).

However, Champagne and Coggins (2012) found that syndicate structures in light of information asymmetry issues are of minor pricing significance in Europe compared to other markets. In a similar vein, Godlewski et al. (2012) found the French syndicated loan market to have become a "small world" over time. According to the authors, a "small world" is characterised by high local density with short social distances allowing information asymmetries between lenders to diminish over time.

Based on the interviewee statements, I am enabled to confirm and extend these views with respect to the German corporate syndicated loan market. The syndicate structures' influence on pricing seems to be predominantly determined by so far neglected and interdependent factors, rather than information asymmetry. I can therefore challenge theoretical information asymmetry assumptions in terms of to their general actuality as well as their explanatory power with regards to pricing within the market at hand.

The idea of *ex post* moral hazard in effort, postulating that relationship lead arrangers to conduct monitoring duties in favour of participants in a sense of delegated monitoring, appears to be a less pronounced practical issue and is thus overestimated in its importance within the wide body of existing literature. According to theory, lead arrangers who, other than in bilateral lending affiliations, only hold fractions a loan, are less incentivised to properly monitor and screen borrowers. *Ex ante,* this unobservable less thorough monitoring effort—so-called shirking—is anticipated by participants who require a higher spread and/or a higher lead share as a compensatory or a mitigating/signalling factor (Bharath et al., 2011; Ivashina; Leland & Pyle, 1977; Sufi).

Following these assumptions, syndicates tend to become rather small and concentrated if severe information asymmetries exist. Periods of economic turmoil are said to be shaped by higher degrees of information asymmetry—a fact that should lead to smaller syndicates in such times compared to times of prosperity where syndicates are large (Godlewski, 2010a). Interestingly, as displayed in Figures 19 and 20 in my quantitative analysis, 2015 marked the all-time low in terms of average numbers of lenders within the investigated period 2000 to 2015, disproving the aforementioned information asymmetry-based argumentation. The year 2015 clearly was not a year of recession or financial turmoil in Germany.

In contradiction to Fang et al. (2016) and Ivashina (2009), for example, who argued that participants must rely on the monitoring of lead lenders, both in practice and legally induced via the so-called *MaRisk*,²³¹ each lender carries out its own monitoring activities, irrespective of any syndicate structure. In other words, neither implicitly nor explicitly does German corporate syndicated lending reduce the degree of monitoring necessity for any lender. I also warn against labelling as a means of delegated monitoring the work of facility agents who administer loans on behalf of the syndicate, with respect to payment activities and the distribution of certain documents, as is done by, among others, Francois and Missonier-Piera (2007). In that vein, the following extracts of a standard syndicated loan contract underpin this (LMA, 2016b, pp. 80, 82).

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(a) Each Agent's duties under the Finance Documents are solely mechanical and administrative in nature.

(b) Subject to paragraph (e) below, each Agent shall promptly forward to a Party the original or a copy of any document which is delivered to the Agent for that Party by any other Party.

- (c) An Agent shall advise every other Agent of all Utilisation Requests in respect of all Loans which are received by it from time to time immediately upon receipt of the same.
- No duty to monitor (p. 82)

None of the Agents shall be bound to enquire:

(a) whether or not any Default has occurred;

(b) as to the performance, default or any breach by any Party of its obligations under any Finance Document; or (c) whether any other event specified in any Finance Document has occurred.

Source: Adapted from LMA (2016b, pp. 80, 82).

Table 84. Contract example: duties of an agent.

From an overall standpoint, screening and monitoring gets duplicated in the manner of a rising function of the syndicate size. As syndicated lending relates to large clients usually well exceeding yearly turnovers of €250 million²³² and as client exposures are monitored on a single-name rather than at a portfolio level,²³³ monitoring can be said be close and intense, with credit officers²³⁴ covering only a couple of firms in each size spectrum. Each year internal ratings are reassessed and overall client credit exposures need to be prolonged accentuated by a respective credit-quality-assessment of the risk officers (Treacy & Carey, 2000). Beside these yearly reviews, clients are monitored throughout the year, among other means by assessing quarterly financial reports or profit warnings. Possible creditworthiness deteriorations would thus trigger immediate rating changes.

²³¹ "Mindestanforderung an das Risikomanagement"/"Minimum requirements for risk management.

²³² See Table 7.

²³³ For example, via standardised portfolio scoring techniques.

²³⁴ Usually risk officers for large clients cover a special group of clients from the same industry sector such as health care, automotive, etc.

Regulatory developments towards a greater emphasis on hard-information based risk models facilitated through technological improvements have fostered this environment (Hainz & Wiegand, 2013; Udell, 2008). According to Strahan (2008), larger and mostly well-established borrowers, which are the focus of this work, can be credit assessed by predominantly hard information such as audited financial statements.

Also with respect to *ex ante* adverse selection, each invited participant bank conducts own due diligence via extensive credit decision processes. Further, many clients have—beside a syndicated arrangement—additional bilateral loans outstanding, which need to be monitored accordingly. Another example of the duplicative nature of the administrative costs of banks in syndicated lending is related to the work of internal lawyers. Beside an external law firm which advises lender groups in negotiating the loan contract, each bank conducts its individual legal due diligence for each syndicated loan participation, be it acting as a lead bank or be it as acting as a participant with a very small lending commitment.

Another theme relevant to the German market is that it is relatively saturated, in the sense that there are now few *debut transactions*. Most general corporate loans are refinancings, mainly within an existing, or only slightly changing, group of lenders. In light of a credit story, lenders tend to be well informed about transaction histories underpinned by the following statements:

Ι1	For smaller clients, there is certainly less public information available. But usually all German clients have already long-term client relationships with many banks who then know the client very well. And the financial information, which syndicated loan borrowers have to provide us on a confidential basis, is also very good. I mean we do not speak about small businesses here. These are mostly large and professional clients.
I 10	You basically see no greenfield loans in corporate Germany.
I 12	The loan market is very kind of clubby, when we are looking at the corporate market.
I 18	You have the situation in Germany that you have very little new large firms entering the economy in general. Thus, syndicated loan borrowers are also not sprouting from the earth. Borrowers usually have been tapping the market for a long time. Debut transactions might only happen if a client grows-maybe due to an acquisition or another bigger capital expenditure-and subsequently shifts from bilateral loans to a syndicated loan. The incidence, where a completely unknown new client rings the door and asks for a syndicated loan does not happen in the German corporate market.

If syndicate structures change, then this is more in a sense that lending groups become smaller as displayed in Figures 19 and 20, with this fact not being related to increased information asymmetries as theory would suggest, but presumably to cross-selling distribution issues.

Thus, as lenders and borrowers tend to have interacted for long periods—irrespective of syndicate seniority and lending share—information asymmetrical problems represent less severe issues in the market for German corporate syndicated loans. In other words, borrowers

and lenders—be they arranging or pure participating parties—have been able to diminish possible informational frictions across several repayment cycles (Gadanecz et al., 2012) and tend to be relatively symmetrically informed concerning the borrowers' credit quality assessment and pricing. As Godlewski et al. (2012) have found for the French market, it is likely that the German corporate syndicated loan market has adopted elements of a "small world" in a network theoretical context.

This observation finds support by the following interviewee statement in relation to conversations across banks within syndication phases. Here, discussions on a borrower's creditworthiness appear rather uncommon.

These discussions are further supported by the statement of interviewee 16 who explains that in normal corporate financings, information memoranda and bank meetings being held to inform invited banks, have become rare exceptions.

I 16 In general, corporate financings, you usually do not have to provide an information memorandum to the invited banks. Also bank meetings are rather uncommon. This is in my view due to the fact that banks and clients are already in lending relationships for a relatively long period of time. Also the loans are often very straightforward without the need to tell a huge story around it. Exceptions are certainly event driven situations, where e.g., a large acquisition is being done and the balance sheet proportionalities get shattered. Then such a memorandum might be needed to explain a deleveraging story and to provide a post-acquisition consolidated balance sheet forecast.

Based on this discussion, it is reasonable to conclude that the opacity of the market with respect to price-setting needs to be studied separately from the general ability of banks to evaluate a borrowers' creditworthiness. Regarding the latter, ongoing monitoring and hierarchical elements of syndicates, informational frictions appear to only play minor roles across banks. In practice, it is unlikely that a bank gets invited to join a syndicated loan without having had any business contact beforehand or without having competed for bookrunner mandates in past beauty contests.

Finally, it is reasonable to assume that the German corporate syndicated lending market only carries relatively minor elements of delegated monitoring. With respect to a borrower's specific credit risk profile, information asymmetries of lenders vis-à-vis lenders is a less

I 20 In our bank, we have no primary sales desk for corporate syndicated loans any longer. Thus, I as an originator talk to the banks which we invite or of whom we are invited. Interestingly, the general creditworthiness is basically never an issue. We do not talk about certain balance sheet data or forecasts. Everyone has this information at hand and evaluates it individually. Discussions are predominantly technical and concerning documentation issues. For example one bank needs this specific clause on sanctions, the other one needs a different FATCA wording and so on. The rating view is basically no topic as each bank has its own sophisticated approach here.

pronounced issue, and free-riding, as suggested by Alexandre et al. (2014) on screening and monitoring is less apparent.

Some elements of *ex ante* adverse selection might be reality in underwriting situations, where an underwriter usually has conducted due diligence sequentially before an invited bank. In other words, invited banks must conduct their *ex ante* due diligence sequentially later, but mainly based on the same set of historic and new information.

From an overall economic and theoretical perspective, it is thus reasonable to conclude that the German corporate syndicated loan is not primarily a mechanism for reducing monitoring and due diligence costs and efforts across banks. Instead, the risk and capital diversification arguments appear to be more powerful in relation to the rationale of syndicating loans in general, as discussed in 2.4.2.2., among others, Simons (1993) emphasised that diversification is the main motivation for banks to engage in syndicated lending.

Other than in the field of bank-only corporate syndicated loans, where borrowers in general tend to be large and financially sound (Kim et al., 2014), information asymmetry issues, however, do play a role in interaction with non-bank lenders and within very large, diffuse syndicates, which are common, for example, in the LBO market (Angbazo et al., 1998; Voisey, 2016).

The following interviewee statements exemplify this:

I 3	That is true for alternative lenders. I think it is less the case for banks, because banks will usually not
	limit their cooperation and monitoring activity with a client after making a syndicated loan. It is just
	one aspect. The bank will usually have other bilateral lines in place. In addition, the regulatory
	requirements, for example, annual reviews that you have for every single client are very strict for
	banks. They are less so for shadow banks if you may call them that and the alternative investors such
	as insurance companies, that have openly told us, that they are outsourcing the client analysis work to
	the banks that have arranged the loan and to the facility agent and they will trust that it will be properly monitored by them
	property monitored by them.
1 20	From the second state of t

I 20 Even though the German market is very competitive and I would also say overbanked, all parties know each other for a long time. An invitation to an unknown bank by both client and bookrunner, completely out of the blue, is not realistic. You certainly have this in other asset classes like project finance and LBO but certainly not in corporate Germany.

This fact again underpins the need to carefully distinguish between different syndicated loan asset classes.

It appears that text-book-like syndication processes, where one or a few informed lenders invite further uninformed ones on an arm's length basis, have become an exception rather than the rule. How syndicate structures affect pricing depends on various factors. Also, the way syndication processes are executed impacts on pricing. Pricing opacity might be advantageous for borrowers that conduct a "modern" best efforts process; it might, however also carry disadvantages in underwriting situations, *ceteris paribus*.

The discussion remains to be enhanced by prioritising the determinants in light of their different influential magnitudes towards their determinant category (Figure 54).



Figure 54. Syndicate structure and syndication mode: determinant prioritisation.

It appears that the syndication mode, being either the established "modern" best efforts syndication process or underwriting, are the pivotal direct pricing determinants under this determinant category. The former is common for most transactions in the corporate market whereas the latter is almost solely used in acquisition financings. The syndicate structure in terms of its size tends to be only an indirect influence on pricing, via the anticipated cross-selling potential a client offers.

5.5.11 General market environment

All interviewees agreed that the overall market environment is a determinant of German corporate syndicated loan pricing. Analyses of the interview data with respect to the determinant category *general market environment* enabled me to establish the corresponding determinants displayed in Figure 55.



Figure 55. General market environment and its determinants.

5.5.11.1 Macroeconomic environment

According to 13 interviewees, the cycle/state of an economy drives pricing to a certain extent. As the German economy is generally said to be robust, highly developed, and grounded on solid legal frameworks, for example, with a view toward creditor-protection rights, law enforcement,²³⁵ or corporate governance standards (Gaul & Uysal, 2013; La Porta et al., 1997; Qian & Strahan, 2007), the general macroeconomic sentiment somewhat affects pricing, but to a lesser extent compared, for example, to developing countries. This is said to hold true for typical cycles. Given the highest seniority of the loans, it is likely that strong creditor rights protection in Germany enables lenders to become more "relaxed" about such typical cycles, where no widespread company failures are to be expected. However, in line with Schnabl (2012), in times of systemic economic turmoil such as the financial crisis that began in 2008, the macroeconomic situation however impacts pricing significantly.

²³⁵ This follows the assumption that in a situation where lenders are able to enforce repayment or gain access to collateral more easily, the willingness to grant loans as well as their conditions tends to be greater (Anagnostopoulou & Drakos, 2016).

According to four research participants, the dependence on the current state of the homemarket economy in general is less pronounced if a company is internationally active, enabling it to diversify its market outlets. These findings are in line with Carey and Nini (2007), among others, suggesting that although country risk issues might influence pricing in Europe and in the U.S., the effect is expected to be much smaller compared to emerging markets borrowers. Christodoulakis and Olupeka (2010) did not contradict this finding by reporting higher pricings for borrowers with weak economies in their home countries.

<u>Finding:</u> *Ceteris paribus*, the general macroeconomic situation within "normal" economic cycles influences syndicated loan pricing in Germany, however to a lesser magnitude as compared to within emerging markets and/or countries with low creditor protection rights.

The following interviewee statements exemplify this:

I 1	Germany itself is AAA rated, so there is no political uncertainty really. I think the macro elements are less important here. I think if the GDP growth is 2, 3 or 1 or even 0 %, that does not really drive the pricing of syndicated loans here. My expectation would be that in emerging markets, this is more
	important than in such a big industry than Germany. Further our loans are usually the most senior
	Jinancing of a targe company. Only we are going to tose money with a synarcated toan, a tot needs to
	happen first. Of course, when we talk about real situations of stress—like Lehman—it becomes a real
	pricing or credit availability issue.
••••••	

I 7 Whether or not we are in more recession or more growth driven economic environment will also have some sort of influence but in the end, I think that is something that is probably of minor influence as opposed to the other elements, especially in a strong economy like Germany's.

I 10 You have the relationship banks and many of the companies you deal with are not actually exposed only to one certain market. If you buy bunds you expose to the German economy or Spanish or whatever you like to be exposed to. If your relationship might be with Telefonica you expose yourself to many international markets and you know one strong market might actually be counterbalanced by another weaker market. While for example people who might not necessarily have a lot of confidence in Spain, might have lot of confidence in Telefonica. I think that drives pricing of many international companies. That means that the macroeconomic influence on that front, yes they are there, but they are rather long term. Unless you are looking at emerging market credits.

5.5.11.2 Banking and interest rate environment

Fifteen interviewees agreed that the general financial situation faced by a banking system affects pricing. In line with Anagnostopoulou and Drakos (2016), the general macroeconomic situation of a country influences the overall health of the banking system.

Twelve interviewees stated that this general banking sector condition is mainly shaped by the ease of funding as well as by the regulatory environment, with the former being significantly driven by the general interest rate environment. Currently, the financial sector in general is flushed with liquidity, given the low interest rate environment, as well as the quantitative

easing policy of the ECB. A high degree of liquidity—or in other terms availability of funds that need to be put to work—tends to pressure pricings downwards.

<u>Finding:</u> *Ceteris paribus*, syndicated loan pricings are a declining function of the overall liquidity in the banking system.

The following interviewee statements exemplify this:

You have to think about the liquidity situation in the banking system in general. The ECB is currently flushing the European banking system with lots of liquidity. It makes those funds very cheap to corporates.
Given the very high liquidity in the market, the flooding with liquidity by the central bank, the very low interest rates, and the high liquidity in the market from institutional investors and from savings banks prices are also very thin in the Schuldschein-market. These are game changers.
Investors currently face a lack of investment opportunities. Liquidity is certainly there also given the low interest rate environment, but especially the credit demand is not sufficient.

5.5.11.3 Bank regulation

Seventeen interviewees stressed the regulatory environment to become increasingly complicated, multifaceted and demanding. This is especially pronounced with regards to regulatory capital requirements, liquidity, and banks' leverage, putting upward pressure on pricing. The fact that regulatory innovations like Basle III²³⁶ have long-lasting negotiation and introduction phases leads to bank individual approaches regarding the timing of implementation. Furthermore, issues like sanctions and FATCA²³⁷ are causing loan contract negotiations to become increasingly legally intense—a fact which should, all else being equal, lead to higher pricings.

<u>Finding:</u> *Ceteris paribus*, syndicated loan pricings are a raising function of regulatory intensity and ephemerality.

²³⁶ According to LMA (2015, p. 4), "Basle III is a package of reforms which makes changes to the existing Basle II framework and was put together by the Basle Committee on Banking Supervision (BCBS). [...] These amendments strengthen existing capital requirements, but also introduce new prudential requirements, notably a new leverage ratio and two new liquidity ratios—the liquidity coverage ratio (LCR) and the net stable funding ratio (NSFR)".

²³⁷ According to LMA (2015, p. 59), "On March 18 2010, the United States enacted the Foreign Account Tax Compliance Act (FATCA) the aim of which was to increase transparency in the financial markets and, more specifically, to make it difficult for US taxpayers to hold unreported assets outside the United States".

I 4	In addition, the high regulation. Banks will struggle going forward to take huge and long-term credits and this will be more and more pricing relevant going forward.
I 5	Let's say regulation and sanctions, and it all comes to the point when you also want to implement or have to implement the regulation. Let's talk about Basle 3. You have the first elements now up and running, but usually you have to implement it in one and two years' time and there also is a timing difference: One bank applies it as if it was already legally binding by now. Other banks do it on a later stage, and so you have different time elements influencing pricing development.
Ι7	I think certainly regulation in a sense that everybody is making calculations with respect on how much capital do I need to keep for a certain credit commitment, be it a back-up commitment, or be it drawn and what the return on that is and what the RWA generated out of this are, and so on. So, all of the banks are running certain KPI calculations for a certain client relationship and that is certainly mostly driven by regulatory aspects (e.g., the amount of capital I need to allocate, the amount of revenue I need to generate to provide or be able to generate returns which satisfy my shareholders).
Ι9	Regulation is important for pricing because it depends on what specifically will change in 2019 and in the years thereafter. There are certain things being discussed currently. But it is not yet clear how they will be handled. The situation is that you are now booking assets for minimum of five years. Therefore, decisions you take today might affect your profitability in three or four years' time. That is a situation, which is not very easy to handle. My perception is that the most banks only look at the next two years ahead.

5.5.11.4 Non-syndicated loan benchmarks

If borrowers have additional outstanding debt capital markets instruments being traded on the secondary market, their current yield levels influence syndicated loan pricing. According to 15 research participants, these current yield levels provide first indications regarding how the wider debt capital market assesses a certain borrower.

If the borrower has no bonds or CDS (inter alia) outstanding, syndicated loan originators in practice nevertheless normally take a close look at certain bond and/or CDS baskets representing the borrower industry, to get a "feeling" where current debt yield levels might lie.

Further insight to this discussion was provided in 5.5.3.5, where banks' pricing and return models were presented. If a bank conducted its respective calculation based on a market-based approach, these non-syndicated loan benchmarks become the single biggest pricing determinant.

<u>Finding:</u> *Ceteris paribus*, current secondary market spreads in disintermediated debt capital markets influence syndicated loan pricing.

I 1	For the larger clients, you can certainly look at other capital markets products, I would also look at, for example, the bond pricing or the CDS pricing. From there, you derive a rough loan pricing at first hand.
Ι5	If you have a large borrower with other instruments available and then the environment of that capital market instrument also influences the pricing. If, for example, the bond market is totally high in margins or in spreads, everybody looks at it and says, "Why the loan is so cheap"? But, on the other hand, when the bond market is so aggressive, then bonds are more attractive than loans, so that it might for sure impact the pricing.

I 8 Secondary valuations of other debt instruments certainly are important.

5.5.11.5 **Product substitution**

Ten interviewees stressed other capital markets instruments to possibly directly compete with syndicated term loans. The degree of the respective availability of instruments such as corporate bonds or Schuldscheindarlehen is chiefly influenced by general market drivers as discussed throughout the section. If general market environments cause favourable terms for such instruments they downward pressure syndicated loan pricings, with the rationale that these are expected to be granted a certain discount vis-à-vis opportunistic instruments further accelerating this trend. It might lead to banks not being able to compete here at all. In extreme situations, this might be the case if not even the funding costs of the bank(s) were covered by the loan pricing.

Logically, this argumentation is said to be especially pronounced for clients being able to tap the corporate bond market. Over the last years, the Schuldscheindarlehen has however also evolved to a major instrument for term debt for smaller clients not being able to tap the corporate bond market.

The statements of the interviewees indicate that product substitution phenomena are highly cyclical and, therefore, best be situated as a determinant of the general market environment.

Six interviewees highlight that for bridge loans to be refinanced quickly via, for example a corporate bond, product competition evolves to an important complementation factor rather than a competing one. Here, a liquid substitutive market might lead to increased certainty when it comes to take-out financings for underwritten bridge loans and allows lower pricing.

<u>Finding:</u> *Ceteris paribus*, corporate syndicated loan pricings are a declining function of availability-degree and pricing attractiveness of competing/complementary financial products.

I 4	We see also the Schuldschein-instrument as a competitive product to the syndicated loan. The treasurer is not doing a beauty contest only with credit people from various banks, but also with other product people. We have recently seen that prices in the Schuldschein market can be even more attractive than in the Syndicated Loan market.
Ι5	Other instruments can be seen as competition but also as complementing each other. Bridge loans in acquisitions often carry such huge amounts that we as bank want to de-risk ourselves very quickly not only by syndication of the loan into the wider bank market but also by being refinanced with a bond or a Schuldschein.
I 14	Bonds and Schuldscheine compete with syndicated loans or more precisely term loans.
I 19	If a client has other funding opportunities compared to the loan, which nearly every client in our market has, the current market environment in relation to these products affects pricing as well.

5.5.12 Conclusion: general market environment

The discussion remains to be enhanced by prioritising the determinants in light of their different influential magnitudes towards their determinant category (Figure 56).



Figure 56. General market environment: determinant prioritisation.

Based on the statements of the interviewees it became apparent that the general macroeconomic environment within normal economic cycles influences pricing to a rather limited degree whereas bank regulation, the general banking and interest environment more strongly influence pricing. In addition, non-syndicated loan benchmarks were found to strongly influence pricing, becoming the core determinant of pricing if a bank conducts its price deviation based on the market approach. Product substitution potential in general puts downward pressure on pricing either as it competes or complements syndicated term debt.
5.5.13 Lender-borrower relationship

All research participants emphasised that relationship aspects of lenders and borrowers constitute determinants of German corporate syndicated loan pricing. In comparison to the related findings of the extant scholarly literature with the interview data, there appears to be a stark contrast in the underlying rationales of relationship lending, suggesting disconnections between theory and the world of practice. This perhaps exemplifies the view of Alexandre et al. (2014, p. 100), who stated, "The role of lending relationships in syndicated loans remains virtually unexplored". The inconclusive state of the debate concerning syndicated relationship lending that was highlighted in 2.11.3 requires both views to be addressed in the illumination provided by the interview findings.

5.5.13.1 Relationship lending: the practitioners' view

All research participants define the German corporate syndicated lending market as *relationship-driven*, with related aspects representing essential pricing determinants. This fact distinguishes this corporate²³⁸ from opportunistic markets, for example for LBOs and project or other asset financings. The relationship aspect appears to be particularly pronounced in Germany, but is likewise mentioned to be relatively distinct within the wider European market.

<u>Finding:</u> *Ceteris paribus*, lender-borrower relationship-aspects determine German corporate syndicated loan pricings.

I 2	When you look at a client relationship that you have as a bank, you have to see the loan generally as the anchor of this relationship.
I 5	Relationship is an important pricing driver especially in Germany. I think that is special.
Ι7	It seems to be especially pronounced in Germany in a sense, although I am not sure whether that is too much different in the UK or in France. It certainly is pretty much pronounced here in Germany.
I 19	At the end, it is all about the relationship. Corporate syndicated lending has relatively little to do with rationale investment decisions.

The following interviewee statements exemplify this:

²³⁸ In light of the definition applied in this thesis.

Analyses of the interview data with respect to the determinant category *lender-borrower relationship* enabled me to establish the corresponding determinants displayed in Figure 57.



Figure 57. Lender-borrower relationship and its determinants.

5.5.13.1.1 Cross-selling potential and relationship discount

German corporate syndicated loans are said to constitute "entry-keys" and "anchors" of bankborrower relationships, grounded on the ensuing underlying phenomena: Banks avail significant balance sheet shares or in other words allocate capital by committing to join syndicated loans. From a bank's point of view, these commitments are presuppositions to be rewarded with, or realistically to compete for, cross-selling²³⁹ opportunities, also often referred to as ancillary business. This cross-selling might be lucrative capital markets business or more standardised financial services, enabling banks to generate ("risk-free") fee income. Examples of capital markets cross-selling are bonds, Schuldschein, equity, M&A, or other advisory mandates. Examples of standard financial services are cash management, foreign exchange, or guarantee businesses. The latter is particularly important for clients that might be not able to conduct a broad menu of capital markets business at all. Thus, by means of granting syndicated loans, banks take substantial balance sheet risks by backing loans with common equity and by taking respective default risks. In return, borrowers usually reward the lenders with non-risky, fee-generating business opportunities. Without the loan commitment, banks would basically be "suspended" from the opportunity to access or to compete for crossselling. In other words, the syndicate provides a group-exclusive access to cross-selling.

²³⁹ In practice, loan professionals commonly simply use the term "cross-sell" as can be seen in various related interviewee statements throughout this section.

According to the research participants, it is common that borrowers—especially with respect to more standardised financial services—precisely allocate ancillary business based on banks' lending shares in their syndicated loan. Interestingly, this is said to be the case across the borrower-size spectrum. In other words, smaller and perhaps also privately held firms are said to adhere to this relationship rationale. For clients that are users of the wider capital markets, this also holds true for straightforward transactions like frequent bond issuances, for instance, under *EMTN*²⁴⁰ programmes. For complex investment banking services like M&A or IPO advisory, being a syndicate member usually puts banks in the position to realistically compete for cross-selling. In a similar vein, Elsas (2005) stated, that a pivotal factor of a lending relationship in general, is the relative commitment size of a lender vis-à-vis its total debt position. Hence, the underlying rationale of banks investing in corporate relationships via syndicated loans is different compared to the one of, for example, corporate bond investors acting risk-neutrally and commonly not conducting further business with issuers.

<u>Finding:</u> From a bank's perspective, an existing syndicated loan lender-borrower relationship can be interpreted as the precondition for being awarded cross-selling opportunities.

²⁴⁰ According to Ramanthan (2012, p. 395), "Euro Medium Term Notes (EMTNs) allow for debt issuance in different currencies and maturities under one umbrella agreement. This agreement is like a "shelf registration" in which investors can issue debt on multiple occasions for a specified period of time but need only to file one offering prospectus".

The following interviewee statements exemplify this:

- I 4 We define ourselves a relationship bank. Therefore, our strategy is to grant loans, but to earn money with other banking products. Clients are usually willing to distribute other business in accordance to the respective credit stakes of the syndicate banks. Therefore, whenever you have a credit relationship, you are a financing partner of the client and you are then qualified to do additional business. My impression is that this additional business distribution is really calculated by the borrower in accordance with the stake of the bank in the loan. You have the situation that you can only have crosssell once you have a credit relationship. That is for pricing a very relevant determinant.
- I 5 Syndicated lending is the key entrance-card into additional ancillary business. Only those banks who participate in the loan have an opportunity or are being given an opportunity to compete for all sorts of other business.
- I 8 The discussion that you have with corporates is that they define their relationship banks with view to their respective share in a syndicated loan. They look at commitments over the next five years and they define the bank pool which then does nearly all the side business with the client. If you are not in the deal, you will not get the cash management mandate for a company or important capital market transactions of derivatives business.
- I 16 What I have seen in recent years is that nearly all borrowers in the market look at their syndicate and the respective lending percentages. With respect to easy business like cash-management, they allocate the cross-sell exactly based on that share. One rather small client told me that he-via certain IT-allocates its cash management services in light of the loan shares to the syndicate banks. I found that very interesting. I mean we talk about the corporate-world, right? For LBOs this would be inherently different, as we see different investors there.

It is commonly understood that cross-selling potential leads to price reductions in German corporate syndicated lending, the so-called *relationship discount*. In other words, this discount leads to pricings being more favourable compared to what factual risk-neutral creditworthiness views would suggest. In other words, these loans appear to be *factually under-priced*, as exemplified by the following statements:

I 2	I would expect that basically everybody is kind of complaining. You as a bank are lending to a good relationship borrower actually not receiving the price on your loan as you would expect it under normal fully competitive circumstances, because of the relationship.
I 16	The pricing of any transaction is just one aspect of a relationship. Banks are inclined to accept certain discounts if they like the client and are constantly awarded with cross sell from him.
I 17	Everybody has an idea of what the fair market pricing would be and then you can deduct what you call the relationship discount. It is at the end a black box as everybody has its own opinion on how large this discount should be.

Under the theoretical view, relationship loans would not be factually under-priced as they were simply cheaper to produce by the relationship lender given its information-related cost savings (Boot & Thakor, 1994; Calomiris & Pornrojnangkool, 2009; Sharpe, 1990). Likewise, for participants, no factual under-pricing would occur given the lower information asymmetry premium they require. In practice, the magnitude of under-pricing depends foremost on the potential for ancillary business.

With respect to extant academic literature, these findings might be related to the discussion of bundling benefits, for which, however, only weak evidence has been presented. According to

Schenone (2010), bundling of financial services under the theoretical assumption of information economies of scope is not a significant driver of pricings in relationship lending. Kysucky and Norden (2016) found that product synergies drive pricings downward in the U.S. whereas relationship lending in Europe does not necessarily bring these borrower benefits.

<u>Finding:</u> *Ceteris paribus*, corporate syndicated loan pricings are a declining function of a borrowers' cross-selling potential.

In practice, banks tend to move even beyond this, not only agreeing to discounts on loan pricing compared to arm's length instruments, but even accepting loan pricings that do not fully cover their actual costs (*loss-leading pricings*). In section 5.5.3.5, I introduced the common loan pricing and profitability calculation approaches conducted by banks. Even if these calculations, being based on either one or the other approach, or on a mixed approach—resulted in negative return contributions, lenders would tend to accept shortfalls, a mechanism visualised through Figure 58.



Figure 58. Syndicated loan profitability.

This at-first-view counterintuitive, irrational lender behaviour carries the underlying justification that the ancillary business should firstly compensate for banks' losses until breakeven 1 (Figure 59) and secondly lead to an overall profitability of the lender-borrower relationship (break-even 2). In other words, the profitability of loans on a stand-alone basis is of minor importance in corporate syndicated lending. The balance sheet risk taken by lenders is remunerated risk-adequately and covers full costs from an overall relationship perspective only when cross-selling increases revenues to a sufficient level.



Figure 59. Relationship profitability.

It is hence reasonable to state that banks tend to "buy" themselves in or "invest" in relationships by availing loss-leading syndicated loan commitments with the goal to "boost" the overall relationship in profitable territories over time.

<u>Finding:</u> *Ceteris paribus*, banks tend to accept real and/or opportunity-cost losses on German corporate syndicated loans under the assumption that future cross-selling more than compensates for the loss taken.

All interviewees agreed on this, as exemplified by the following statements:

I 2	We as a lending bank in the corporate world accept loss-leading syndicated loans as we expect that cross-sell comes in and that over time the whole relationship is getting profitable.
I 4	Hardly anybody is interested in pure credit lending because these corporate loans often carry very low pricings and shortfalls.
Ι7	People always have said it does not make sense that the loan or lending in general is a continuously loss leading exercise in a bank relationship with a particular client. It always has been the case and continued to be the case over the last 20 years.
I 8	Most of the deals do not cover the costs. This is the common understanding of banks and clients in Germany. They expect you to give something and then you get something in return. This is the reason why it is OK to accept shortfalls or, in another words, loss-leading loans.
I 13	It is a remarkable phenomenon but it is as old as the syndicated loan market in Germany that you make losses on those loans.
I 19	Unfortunately, nearly all corporate loan transactions nowadays do not cover our costs. They produce losses and that is ok for the banks being active in the German market and I would say also in Europe, as they expect future revenues out of ancillary business. The loan is just one part of the medal. If the cross-sell really materialises, there is nothing wrong with it. It is in my view just a market practise that has been established over decades. In general, this works quite well in the market.

5.5.13.1.2 Adherence to hidden contracts

If the anticipated ancillary business does not materialise after a certain amount of time²⁴¹, so that not only the loan itself was loss-making but the overall relationship remains so too, lenders need to evaluate a possible relationship discontinuation. Such a discontinuation might either be executed by off-loading the loan in the secondary market or by not taking part in renewals or extensions. With respect to the latter, syndicated loans are commonly equipped with extension options²⁴² that can be exercised by the borrower at the loans' first or second anniversary. If the borrower exercises the option after year one, the lifetime shifts back to five years. The same functioning applies by exercising the second extension option in year two (LMA, 2013; Slaughter & May, 2013). As lenders are required to vote on such extensions, non-approval would result in the commitment of the bank to end one year earlier than the commitments of the approving lenders. Disapproval of the extension, however, also causes the respective bank to be cut off immediately from ancillary business for the remaining four years, making it a finely-judged decision to choose this way of discontinuation.

²⁴¹ Commonly over the lifetime of the loan.

²⁴² Usually so-called 5+1+1-year facilities. In other words, a five-year tenor with two one year extension options.

The following interviewee statements exemplify this:

- 17 That is always the discussion and it is at the end a difficult one. Some banks do this relatively rigidly but you only get a real opportunity to do this once there is a maturity. We also have transactions in which we have two extension options and not to extent as a bank, especially as a current market practice says that the extension option is already exercised after the first or second year. Therefore, you are stuck with the non-extended portion of the loan for further three or four years, if you do not extend it. You then have money committed, and have ruined or at least worsened the relationship by not extending. It is always a difficult decision. That decision in theory is relatively easy, because you only look at the numbers and say, "Ok;" it has not worked out over the last five years. Thus, I do not participate in the refinancing, but especially for foreign banks probably active in Germany, it is a matter of how often can you do this, unless or until you lose the critical mass of relationships which you need to have to pay the people active at the banks.
- I 18 Once you articulate to the client that you do not want to be part of the syndicated loan any more, he will directly cut you off from the cross-sell. On the one hand, you therewith signal to the client that you do not want to conduct business with him anymore and another bank needs to step in for you. This bank then wants to see cross-sell as well, which is limited overall.

Given the factual under-pricing, a possible secondary sale—especially if the buyer acted riskneutrally—is likely to lead to losses, as prices would only be achieved below par. Thus, together with the mechanisms of extension options discussed earlier, it is reasonable to assume that relationship lenders might be effectively "locked in" by borrowers by facing discontinuation costs. These conclusions appear to turn previous theories upside-down. Rajan (1992), for example, assumed borrowers to be locked in by their relationship lender whilst facing high switching costs.

<u>Finding:</u> *Ceteris paribus*, corporate syndicated loan borrowers are able to lock in their relationship lenders who face relationship discontinuation costs.

According to eight interviewees, the decision whether to discontinue constantly non-profitable relationships is determined by diverse bank internal considerations.²⁴³ However, four of these interviewees pointed out that approaches to the measurement of relationship profitability have become more sophisticated over time. In the past, banks have often realised that the ancillary promised by borrowers did not materialise. Hence, a slight tendency towards more decisively leaving such a relationship might be present today, or a movement in this direction may have started. This is especially underpinned by the statement of interviewee 21, highlighting that it has become more common that lenders pre-agree to certain cross-selling events²⁴⁴ with mandate letters or private side-letters.

²⁴³ See section 5.5.3.7 and the discussions on banks' lending philosophies.

²⁴⁴ For example, a mandate to originate a corporate bond.

I 21 In cases in which we accept a very low pricing, we try to fix a bond- or Schuldschein mandate with signing the loan. We want to enhance the chance of a profitable relationship with the client. That it is particularly important when competition is high.

As a side note, these techniques for more accurately measuring the overall relationship profitability might well be significantly enhanced if banks applied the "novel *ex post* total cost of borrowing (p.a. yield) framework" as developed in 5.4.4. Given that banks tend not to conduct rigid *ex post* reassessments of factual syndicated loan yields, the relationship profitability measurement is likely to be predominantly based on a comparison of the shortfall—as calculated *ex ante* based on the expected *ex post* yield—with the cross-selling related revenues made within a loan's lifetime. Applying the *ex post* reassessment in the manner of Table 82 is likely to reveal that shortfalls have *ex ante* been either overestimated or underestimated. Hence a much clearer view on the overall relationship profitability could be reached.

<u>Finding</u>: Based on various bank related reasons like the new "locked-in hypothesis", the decision whether to discontinue constantly non-profitable lending relationships is ambiguous.

The following interviewee statements exemplify this:

I 4	Banks` internal controlling has to capture precisely, whether you have a fair share of cross-sell.
I 13	For a couple of years maybe and I think that the monitoring of relationship profitability is getting much more strict in many banks. That is why we see many banks selling out of relationships after a while, because they just could not make them profitable. And then other banks can step into these relationships in such situations hoping to make the relationship profitable then. The whole thing is very bizarre.
I 15	This will be measured after a year as to whether they have delivered or not. We would step out of the relationship if it does not make sense overall and, if it is loss leading, we would not do the loan.

In theory, discontinuations should reduce loan supply and subsequently lead to higher pricing again. In light of the current syndicated loan market environment,²⁴⁵ this appears however not to be feasible in the short run.

Given the incompleteness of loan contracts, the above-mentioned hidden rationale of lenderborrower-relationships tending to drive syndicated loan pricings downwards, is based on elements of hidden contracting between lender and borrower being publicly unobservable. Firstly, there is an *ex ante* assurance of being awarded or being enabled to compete for cross-

²⁴⁵ See section 5.5.15.

selling when joining or staying in a lending syndicate. Secondly, a further aspect of such unobservable contracts embedded in a relationship loan is common, especially with respect to large revolving credit facilities for listed multinational companies. As already stressed, lots of these are in place for commercial paper back-up purposes, tending to remain virtually undrawn (Voisey, 2016). Although the borrower might face situations where drawing the loan would appear to be more favourable as compared to tapping the commercial paper or capital market in general, they tend to refrain from doing this. The relationship lender expects the borrower not to draw, which is particularly important with regards to regulatory required liquidity ratios, under which a lesser drawdown rate needs to be assumed, in the case a facility is not placed with draw intention (LMA, 2015). In other words, banks' cost bases would rise in the case of borrower "misbehaviour", a fact that would even accelerate possible shortfalls, although utilisation fee concepts might in principle partly address these concerns (Wherity, 2011).

I 18 As these kinds of loan commitments are historically basically never drawn down, banks often consider this fact and internally allocate less liquidity or funding to a particular loan, which allows lower margin levels, or reduces the shortfall these loans usually produce. The model based on which such the allocation is made would, however, need to be changed if frequent drawings might occur making the loan with respect to internal calculations more expensive.

Furthermore, large clients usually state that it would be a bad signal to the capital markets if bank debt needs to be used for the financing of general corporate purposes. This is in line with Gupta et al. (2008, p. 354), "[These] companies have a greater ability to disintermediate their fund raising activities and borrow directly from the public capital markets via equity, bond or commercial paper issuance".

The statements of interviewees 3 and 10 underpin this:

I 3 When we talk about really big clients, the ones who are stock-listed, have commercial paper programmes, and bonds outstanding, then these do not need bank debt for their daily business. They need us when it comes to the financing of an acquisition. Would e.g., a revolving credit facility, initially meant to serve as a back-up-line be drawn by a client to finance its warehouse that would be really a weird signal to the capital markets community.

I 10 Interestingly enough when we look at 2007 or 2008, everyone was scared that borrowers might just draw down their lines of credit but actually, they did not. Our experience was they had not at all. Structurally there was no drawing and that has given many banks a lot of confidence that these lines of liquidity are just that. Why? Because for a large well-rated corporate, there are other sources of liquidity to access. They are higher priced potentially, but in the past these sources have been there.

In line with Boot and Thakor (2000), this kind of financing for the biggest clients is meant as an ultimate liquidity insurance. However, other than as stated by Berg et al. (2016), even if the draw option would value "in the money", it is very unlikely to be exercised in Germany. Thus, the underlying assumption in defining revolving loans as credit derivatives with the respective counterparties acting risk-neutrally does not hold for German corporate syndicated revolving credit facilities. In practice back-up lines are predominantly in place to satisfy rating agencies' requirements to have an outstanding back-up line with a residual maturity of at least one year in place if the borrower uses a commercial paper programme (Voisey, 2016). Agencies require this to evaluate a client being secured against possible liquidity shocks in the commercial paper market (Gatev & Strahan, 2009). These facts further underpin that a distinction is important within the revolving credit area between pure back-up as well as working capital or general corporate purposes. Furthermore, I can confirm the thoughts of Harjoto et al. (2006), who stated that RCFs in general are more relationship-oriented than term loans.

According to interviewee 13, during the financial crisis, one German corporate decided to draw down its back-up line, an incidence not being well received by its lender-group leading to tougher negotiations and pricing premiums in the aftermath.

I 13 It works to the downside as well. We have seen this for the company "x" that did not act the way that banks expected it to act. The clients' back-up RCF was expected not to be drawn. And they drew it for financial gains. This was reflected in the terms and conditions that banks quoted to this company thereafter for a while to the downside. Banks made it more expensive. It is all a give and take at the end.

The aforementioned example suggests that non-compliant behaviour regarding hidden contracts may reduce the relationship discount or might even lead to relationship penalties or discontinuation.

<u>Finding:</u> *Ceteris paribus*, non-compliant client behaviour with respect to syndicated loans' hidden contracts has an upward influence on pricing.

5.5.13.2 Relationship lending: the theoretical view in the extant literatures

The aspects of relationship lending discussed above, based on the interview data are predominantly built on a forward-looking element, namely, the anticipated revenues generated by means of cross-selling, driving pricing discounts via a rising function of this anticipation. The theoretical definition of relationship lending and its impact on pricing is, however, founded on a different underlying rationale, a backward view with regards to the mainly soft information on borrowers' default risk gathered over time. It is useful here to recall the related discussion whilst reviewing the associated literature in 2.11. Relationship discounts are apparent due to lower costs of information production resulting from various

interactions with clients over time (Bharath et al., 2011; Boot & Thakor, 2000). Theory suggests that banks engage in relationship lending to produce proprietary information leading to an information monopoly, resulting in credit assessment advantages vis-à-vis uninformed competitors. Subsequently, relationship lenders might possibly "lock in" their clients and are enabled either to extract rents or share information production related cost savings with the clients (Mattes et al., 2013).

Regarding the practitioner-based definition and the syndicate structure issues discussed in 5.5.9 and 5.5.10, informational frictions appear to play a less prominent role in general in Europe and in Germany in particular. In the German corporate syndicated loan market, a rather diffuse and well-informed group of banks competes for loan mandates to access the lucrative cross-selling opportunities. As the cross-selling potential rises with firm size, larger and thus probably more transparent firms benefit the most from relationship discounts. However, based on the interviewee statements presented earlier, smaller syndicated loan borrowers also benefit from relationship discounts. In their case, the cross-selling is rather standardised bank business such as cash-management.

With a view to very small bilateral lending relationships with corporates or retail clients, which are not the focus of this work, the information production element might indeed be more prominent. Syndicated lending relationships are, however, less grounded on proprietary information production in Germany, but constitute a sufficient condition for a profitable client relationship. In hard terms, without syndicated lending there might be no fruitful business relationships with large enterprises.

Based on the interviewees' statements, the theoretical information-asymmetry-grounded definition of relationship lending is likely, however, to be also more practically valid in the U.S., where most research had been conducted. According to 13 research participants, as with the transparency situation with respect to publicly available pricing information, this practitioner-based relationship feature is said to be less pronounced in the U.S., where each corporate loan is required to be profitable in stand-alone terms. This is in line with Yafeh and Yosha (2001), who stated that arm's length driven markets such as the U.S. are associated with less pronounced lender-borrower-relationships compared to bank-based ones like Germany. Further, Strahan (2008) reported the role of relationship lending in the U.S. to be relatively clear, whereas outside the U.S. it is not.

The statement of Bharath et al. (2007, p. 411) looking at non-financial stock-listed U.S. borrowers, can be interpreted as supporting evidence: "Although lending relationships do

have a positive (but economically small) impact on the probability of generating future investment banking business, overall, the impact of relationships seems to be considerably stronger in the loan market compared to the public debt or equity markets". In other words, and following their argument, banks acting for U.S. clients are also likely to be awarded with public debt or equity mandates, for example, without participating in a syndicated loan—a fact that is almost impossible in Germany.

In another inquiry, Bharath et al. (2011) studied relationship lending effects in the light of information asymmetry theory for the U.S. and found that predominantly opaque borrowers benefit from relationship discounts due to less informational frictions and lower information cost production associated with repeated lending relationships, which are (partly) passed on to borrowers. For the U.S. syndicated loan market, which is more concentrated with respect to active bookrunners and, furthermore, characterised by a very deep and developed institutional investor base being active in the corporate market, these reported rationales appear sensible (Bharath et al.; Gupta et al., 2008). In contrast, the European market in general, and the German one in particular, are not shaped by a high degree of institutional investor loan supply (Shivdasani & Wang, 2011).

The following table plots a U.S.-based bookrunner league table from 2000 to 2015, derived by applying identical selection criteria compared to the German one²⁴⁶ presented earlier.

²⁴⁶ See Tables 8 and 68.

U.S.: Cornorate syndicated loan bookrunner league table 2000 to 2015				
	Bookrunner	Deal value (€ mn equivalent)	No.	%-share
1	J.P. Morgan	4,849,940.68	13,492	26.69
2	Bank of America Merrill Lynch	3,574,058.90	16,105	19.67
3	Citi	2,259,221.28	5,006	12.43
4	Wells Fargo Securities	1,448,120.54	8,849	7.97
5	Barclays	654,633.63	2,200	3.60
6	Deutsche Bank	531,259.21	1,986	2.92
7	Credit Suisse	464,935.58	1,688	2.56
8	NatWest Markets	325,260.76	1,449	1.79
9	Morgan Stanley	322,292.23	1,055	1.77
10	Goldman Sachs	315,296.09	1,156	1.73
11	BNP Paribas	299,248.13	1,140	1.65
12	Mitsubishi UFJ Financial Group	251,605.84	1,095	1.38
13	PNC Bank NA	238,162.14	2,758	1.31
14	SunTrust Robinson Humphrey Inc	210,556.22	1,679	1.16
15	RBC Capital Markets	185,269.61	1,041	1.02
16	US Bancorp	178,924.84	1,661	0.98
17	UBS	166,380.81	697	0.92
18	KeyBanc Capital Markets	155,013.08	1,396	0.85
19	HSBC	128,921.43	463	0.71
20	General Electric Co	128,842.05	1,302	0.71
21	BMO Capital Markets	117,830.37	1,011	0.65
22	Scotiabank	96,800.79	498	0.53
23	Bank of New York Mellon Corp	87,865.24	376	0.48
24	Mizuho	80,021.05	324	0.44
25	Credit Agricole CIB	67,556.78	398	0.37

Source: Based on Dealogic Loanware secondary data.

Table 85. U.S. corporate syndicated loan bookrunner league table 2000 to 2015.

The 25 banks amount to an overall share of the total bookrunner volume of roughly 95%, with the top three institutions—J.P. Morgan Chase, Bank of America, Merrill Lynch and Citigroup together—accounting for a market share of almost 60%. In comparison, in the German market the top three institutions only achieve a share of circa 30%. Furthermore, the finding of this research that large, cross-selling rich clients benefit most from relationship lending directly contradicts that of Bharath et al. (2011) that relationship benefits disappear for borrowers for a certain size. The finding is exemplified by the statement of interviewee 5:

I 5 The bigger the client, the more cross-sell is available.

Further support is provided by Calomiris and Pornrojnangkool (2009), who found banks to price financial services tactically by being able to extract rents. Based on their findings, loans tend to be even more expensive if bundled with further security underwriting business. In Germany, these security underwriting businesses would be classified as cross-selling leading to relationship discounts.

Taking these findings together, it is realistic to assume that in the U.S.—in line with information asymmetry theory—costs and benefits of relationship lending chiefly accrue based on scale economies in information production which financiers might enjoy vis-à-vis, for example, relatively uniformed (institutional) investors. Here, the theoretical definition of syndicated lending as being a hybrid of relationship lending and publicly traded debt carrying elements of delegated monitoring seems to hold.

The fact that major U.S. banks are also active in German corporate syndicated lending leads to the assumption that foreign banks at least partly adopt different market practices whilst crossing borders. This is underlined by interviewee statements²⁴⁷ of foreign banks in general and U.S.-based ones in particular, stating that communicating this relationship rationale to their headquarters in the U.S. is difficult, as markets work differently there.

<u>Finding:</u> The relationship aspect (practitioners' view) of corporate syndicated lending is less pronounced in the U.S. market and based on different underlying rationales.

The following interviewee statements exemplify this:

I 9	In the U.S., banks are more rigorous and it is more a capital markets approach. You have to have this or this return. If you not get it then you choose other financing instruments, like buying a bond.
I 10	As I understand the difference in terms of banking model in that respect is huge.
I 14	When I spend a couple of years in New York and found it very refreshing that the pricing in the U.S. market for debt is more rational and a loan is expected to wash your face independently of ancillary business. And coming back to Europe from the US, I was quite shocked at how much tighter pricing is here and how much more it is dominated by excessive competition.

Besides data issues as stressed earlier, these different underlying market rationales and standards of a bank-based financial system (Germany) compared to a market-based one (U.S.) could be a further explanation for "the pricing puzzle" (Carey & Nini, 2007) in extant academic literature on syndicated lending.

²⁴⁷ Given the confidentiality issue mentioned in section 3.5.7.1, I refrain from providing sample interviewee statements in that respect.

5.5.14 Conclusion: lender-borrower relationship

Relationship discounts appear to be primarily driven by expected revenues generated via future ancillary business and to only a limited degree by cost savings in information production regarding creditworthiness assessments, as extant literature commonly predicts.

Under the extant relationship lending definition, severe information asymmetries between lead lenders and participants with respect to the credit assessment of a borrower are the sufficient condition for relationship lending to exist at all. As discussed in the section on syndicate structure, such information asymmetries do not however appear to be a significant issue in the market under investigation. In other words, less (soft) information-based related cost savings of one vis-à-vis another bank occur in reality. Logically, the relationship component needs to be predominantly built on different underlying rationales, as established in 5.5.13.1. Furthermore, the classical relationship theory was established to be more likely applicable to the U.S. market, whereas not to the German one. In that vein, Strahan (2008) rightly remarked the role of relationship lending especially outside the U.S. to remain unclear—a gap which has been narrowed by this research.

The discussion remains to be enhanced by prioritising the determinants in light of their different influential magnitudes towards their determinant category (Figure 60).



Figure 60. Lender-borrower relationship: determinant prioritisation.

It became apparent that the predominant pricing driver of the overall relationship concept is the cross-selling potential that banks anticipate, which influences their individual willingness to accept discounts. However, this concept may only work consistently if clients adhere to hidden contracts and provide the respective cross-selling in reality. Another established element of adherence to hidden contracts is related to back-up RCFs being mutually agreed to remain undrawn. In the words of, Shockley and Thakor (1997), the availed option to utilise these loans is expected never to be exercised by the borrower even if it would rationally make sense to do so.

5.5.15 Syndicated loan market environment

All research participants highlighted the respective "sentiment" of the German syndicated loan market to constitute a respective pricing determinant. The drivers of the specific *syndicated loan market environment* are, on the one hand, driven by general ones discussed throughout 5.5.11, but also by conditions specific to syndicated loans, pushing the bargaining power of lenders vis-à-vis borrowers in one or the other direction (Grunert & Norden, 2012).

<u>Finding:</u> *Ceteris paribus*, corporate syndicated loan pricings are driven by the syndicated loan related market environment.

The following interviewee statements exemplify this:

I 1	You need to make sure that it is a market pricing. Otherwise, you have no chance to make the deal.
I 4	However, if you are asked as a syndication person, at what price you can place the risk or what is the best mix between placing the risk and winning the mandate in the first place, then you really must revert to market standards and current pricings.
I 15	First of all, of course the market environment. The market now is very different compared to after the financial crisis, so it goes without saying that the market and the future market outlook and industry sector of the borrower are very important.

Analyses of the interview data with respect to the determinant category syndicated loan market environment enabled me to establish the corresponding determinants displayed in Figure 61.



Figure 61. Syndicated loan market environment and its determinants.

5.5.15.1 Syndicated loan benchmarks

In section 5.5.11.4, I established that external benchmarking, by means of screening current secondary market spreads of non-syndicated-loan debt capital markets instruments, influenced corporate syndicated loan pricing. Benchmarking to outstanding and/or recently signed syndicated loans of the respective borrower itself, or to those of comparable borrowers, are also a key pricing determinant. Thus, benchmarking exercises are important loan originator tasks for deriving pricing offers. Given the external and internal opacity, these exercises are mainly based on non-public information that banks collect, store, and facilitate by repeatedly joining syndicated loan transactions. In other words, this benchmarking takes place in privacy hidden to outsiders. Next, this benchmarking can only be conducted based on pricings that finally materialise in the market and in which the specific bank either took part or had been asked to take part.²⁴⁸ Information about the bids other lenders might have quoted via the "modern" best efforts process is unobservable. Given the current bargaining power of borrowers vis-à-vis lenders and the triggered downward pressure via hidden RfP-processes, these benchmarks are thus not only incomplete, but are also not reflective of an average view of all syndicate banks, but are likely biased towards lower bids. These phenomena are discussed more thoroughly in Chapter 6.

All interviewees agreed on this.

<u>Finding:</u> *Ceteris paribus*, benchmarking via comparable syndicated loan transactions determines German corporate syndicated loan pricings.

The following interviewee statements exemplify this:

I 1	Then the comparable deals in the market are very strong determinants. We conduct a lot of benchmarking.
I 6	Assuming that it is a greenfield loan, a debut deal, then we probably just work purely on the basis of comparable deals and try to find the best comparable to get an idea of what could be a fair pricing package for the client.
Ι7	And then what we have seen as comparable deals in other similar transactions? When I say similar transactions, we are not just looking the German market, but also at the European market to search for comparable deals.
I 9	We are looking at what we have seen from peer transactions from the market in our internal database. Then we come to a certain pricing.
I 16	You need to get a good feeling of what the level for the margin is, what the upfront fee level, is and what you would need to pay to the market as participation fee and so on.

²⁴⁸ Via invitation letter and term sheet, the respective pricing gets revealed to the invited bank irrespective of a possible succeeding commitment.

5.5.15.2 Market balance and competition

Supply and demand mismatches might cause upward or downward pressure on pricings as highlighted by all interviewees. Loan supply is mainly driven by shape and concentration of banking systems in general. If many banks compete for business and if these tend to be well capitalised and liquid, loan supply tends to be high (Boyd, De Nicoló, & Al Jalal, 2006). Loan demand on the other side is driven by various components like firms' cash positions, their general investment sentiment as well as their possible access to other financing products. Furthermore, the general economic situation and the interrelated degree of confidence into the economy are important and determine the above-mentioned sentiment. According to four interviewees, this sentiment—with respect to German corporate syndicated lending—can be studied relatively precisely by looking at activity levels in event-related financings, such as acquisitions. According to Fitzgerald (2011), corporate managers are often reluctant to take excessive incremental risks in pursuing M&A in times of economic stress.

In general, supply and demand constitute the bargaining power of financiers vis-à-vis borrowers (Boot, 2000). According to Grunert and Norden (2012), tougher competition among lenders raises the bargaining power of debtors.

<u>Finding:</u> *Ceteris paribus*, syndicated loan supply and demand are main pricing determinants.

The following interviewee statements exemplify this:

Ι5	Supply and demand is also a question of whether banks are willing to lend and that perspective is driven by the overall sentiment of the market and the particular bank. If a bank has lots of capital available and says we want to invest this capital, then we can be more aggressive on the margin side and on the fee side.
I 14	Of course, supply and demand is underneath everything.
I 17	At the end, it is all about the market.
I 21	A syndicated loan is a product for which you have supply by banks and demand by clients. Possible imbalances of supply versus demand shapes the general environment; a kind of sentiment which determines all other aspects somewhat.

According to all interviewees, the German corporate syndicated loan market is currently characterised by a supply and demand mismatch in favour of borrowers. Loan demand appears too low to allow for a fair market equilibrium to be established.

The following interviewee statements demonstrate this:

I 2	There is not much credit demand at the moment.
I 6	In today's markets, I need to evaluate what the borrower is willing to pay me rather than what are the costs related to the loan.
I 5	Competition is fierce, a fact that puts pressure on pricing. But also, things like other commercial terms such as security or covenants are simply competed away.
I 10	If you look at German treasurers, they have a large range of banks they can talk to and it is very easy for them to substitute banks.
I 12	It is also dependent on the cycle you are in. Is it a borrower's market? Is it a bank market? And it will change constantly. We are seeing this. We are in a borrower market at the moment with very low rates.
I 17	I mean it is obvious that we would love to close more deals here in Germany. But there are just too few to match the high levels of liquidity. Banks want to put their balance sheets to work at the moment. Unfortunately, clients do not demand enough loans at the moment.
I 21	We as banks are under-lent.

This lack of loan demand creates fierce lender competition, pressuring pricings downwards and bank risk-taking upwards (Broecker, 1990). Further non-price-related standards are becoming more lax, in line with Mattes et al. (2013), who suggest that credit standards are relatively lax in good times, which might lead to higher default risks in banks credit portfolios.

Due to its strong economy, shaped by many market-leading corporates, as well as relatively low bankruptcy levels, Germany is characterised by a bank market with numerous active institutions and a relatively low level of concentration. Thus, bankers tend to characterise the German loan market as "overbanked". Based on the interviewee statements, it is realistic to conclude that active banks in the German syndicated loan market are currently facing severe competition, leading to relatively low pricings and favourable non-price terms.

<u>Finding:</u> *Ceteris paribus*, German corporate syndicated loan pricings are a declining function of lender competition.

The following interviewee statements exemplify this:

I 3	Another aspect is that the market is so competitive, that things like other commercial terms, for example, security, are simply competed away.
I 8	The German market tends to be especially competitive in pricing compared to Southern Europe.
I 10	If you look at German treasurers, they have a large range of banks they can talk to and it is very easy for them to substitute banks. If you just look at one particular product let's say international cash management, there are five banks you can actually choose from outside of the German bank universe. A supply and demand mismatch is out there now.
I 14	And those are the two things certainly the fact that the German banking market is overbanked and undersupplied with lending opportunities is and has for several years now been artificially impressing pricing in the market so I think bank on bank competition is a huge factor in this market.

5.5.16 Conclusion: syndicated loan market environment

Section 5.5.15 established the syndicated loan market environment as the major driver of the bargaining power of lenders vis-à-vis borrowers, currently leading to fierce lender competition given a relatively low loan demand that faces an abundance of supply. This determinant category is particularly important, as it is likely to cross-determine all other price determinants in their respective magnitude.

The discussion remains to be enhanced by prioritising the determinants in light of their different influential magnitudes towards their determinant category (Figure 62).



Figure 62. Syndicated loan market environment: determinant prioritisation.

The factors shown in Figure 62 tend to constitute equally strong price determinants. Furthermore, these elements are hard to separate. If, for instance, a supply and demand mismatch in favour of borrowers puts downward pressure on pricing, the syndicated loan benchmarks accordingly become cheaper as well.

6 Integration and conceptual framework

6.1 Introduction

Section 5.5 established the main determinants of German corporate syndicated loan pricing based on an implicit underlying *ceteris paribus* assumption. The coding procedures of the interview material led to the formation of eight determinant categories, where each of which consisted of various determinants.

According to the research participants, all determinants are different in their specific pricing impacts' magnitude and interdependent by means of complex interactions. Hence, the "allelse-being-equal" potentially conflicting as well as reciprocally enhancing phenomena must be disentangled and integrated. At this point, I face a complex residual challenge of integrating the findings, as recognised by the following statements:

Ι2	There is a huge variety of elements. Honestly, I find it very difficult to prioritise these correctly. From the outside, it may all seem that it is a relatively easy process to come to a pricing package for particular client, but in fact it is not, because there are just so many elements which influence pricing one way or the other that it is almost impossible to say with certainty that even when you carefully derive a certain pricing for a particular client, it will work in the market unless proven. Further, there are so many elements of pricing often even bilaterally negotiated and completely unrevealed to the public that it is hard to really comment on syndicated loan pricings from an outside perspective.
I 8	It is a very complicated issue. Everything interacts to a certain extent. It is also very complicated if not impossible to really separate all these different determinants.

I 13 There are so many things in this market which are entirely unscientific and often irrational.

I 20 The beauty of this private market is that there are so many things to take into account that it cannot be reduced to a simple econometric model.

In other words, a puzzle remains to be built that strives, at least to a certain extent, to rationalise and make sense of the price determination of German corporate syndicated loans. With the new conceptual framework, I attempt to capture the multidimensionality of German corporate syndicated loan pricing determinants by means of linking, prioritising, and combining them as well as by capturing their multifarious interfaces.

Whilst devising the framework, grounded in the answers of the research participants, I could provide novel perspectives on financial scholars' classical definitions of relationship lending. These novel perspectives ultimately enabled me to solve the puzzle.

6.2 A piecewise strategy towards an integrated framework

As an initial step, I provide a straightforward preliminary prioritisation analysis based on a scaling with respect to how interviewees positioned pricing determinants by answering the question, "How do you prioritise the various determinants of pricing from your banks' point of view"?



Figure 63. Preliminary prioritisation of pricing determinant categories.

Based on the interviewee statements and the straightforward prioritisation as displayed in Figure 63, two determinant categories appear to be overwhelmingly present: "Lenderborrower relationship" and "syndicated loan market environment" have been identified as paramount pricing determinants by the interviewees, with most reporting similar underlying rationales. Nineteen research participants explicitly prioritised either "lender-borrower relationship" or "syndicated loan market environment" as the most significant pricing determinant. Hence, it is reasonable to assume that the two determinant categories constitute outstanding pillars of an integrated determinant framework.

However, it is also commonly understood that syndicated loan pricing should primarily compensate lenders for the borrowers' default-risk that they take. Here, "borrower-specific credit risk profile and rating", "credit story", and "contractual features" would intuitively be the weightiest.

I will start the derivation of the framework with a closer look at the lender-borrower relationship aspect as well as the extant literature's theoretical understanding of syndicated lending in general.

6.2.1 A hybrid of relationship lending and publicly traded debt

Based on the interviewee statements, it became apparent that the relationship concept in German corporate syndicated lending is predominantly built on a forward-looking element, the anticipated cross-selling that determines pricing or relationship discounts via a rising function of its anticipated magnitude. In other words, the higher the anticipated revenues generated via future cross-selling, the larger the discount, resulting in factually under-priced loans.

In contrast, recent academic research emphasises relationship lending and its impact on pricing to be founded on a backward view with respect to the borrower information, mainly soft, that banks accumulate over time. Under this assumption, relationship discounts might appear to be grounded on banks' lower costs of information production with these cost-savings resulting from numerous past interactions. Lower costs of *ex ante* default prediction and *ex post* monitoring might be passed on to borrowers, resulting in certain discounts (Boot & Thakor, 1994; Bris & Welch, 2005).

The disparity between extant research and the conclusions drawn from my qualitative fieldwork, lead to the supposition that the commonly applied definition of syndicated lending—as constituting "a hybrid of relationship lending and publicly traded debt" (Altunbas et al., 2006b, p. 6) with only the lead arrangers carrying such relationships with borrowers, and with participants joining syndicates at arm's length—merits a critical review. This definition suggests that syndicated lending exhibits classical theoretical banking elements of delegated monitoring, where participant banks delegate monitoring duties to the arranger/relationship bank (Diamond, 1984).

Following these anecdotal assumptions, participants would agree to accept certain price discounts if the lead arranger proved already to have had a long-lasting, deep relationship with the borrower and was, hence, expected to conduct superior due diligence and monitoring. Here, for both parties—lead arranger and participant—the pricing would effectively be risk-neutral.

In 5.5.10, I established why German corporate syndicated lending involves rather limited elements of delegated monitoring, as each bank is responsible to conduct proper monitoring and due diligence. Accordingly, banks in the German corporate syndicated loan market tend to be generally symmetrically informed whilst assessing a borrowers' specific credit risk profile and its rating. Second, if this rationale held true for the German corporate syndicated

loan market, it would be illogical that pure arm's length participants would accept shortfalls,²⁴⁹ while also lacking access to relationship-related cross-selling. In other words, for these banks the loan itself would need to be profitable in its own right and risk-neutrally priced. This necessity would be intensified by the fact that the all-in pricing or the newly established lender-individual *ex post* total cost of borrowing measure is significantly higher for active bookrunner(s) or banks committing a relatively high loan share, given the upfront fee structures staggered by commitment level. Thus, the definition of syndicated lending as a hybrid of relationship lending and publicly traded debt does not adequately reflect and address the nature of German corporate syndicated lending.

By discussing semantical issues, the definition's second part, "publicly traded debt" is likely to be implicitly related to the participants joining the facility at arms-length, which I explained was not the case in practice. One could also take it literally, however, as syndicated loans happen to be traded on secondary markets. In corporate syndicated lending, however, only very little trading activity is identified, making the second part of the definition ("publicly traded debt") almost obsolete. Not surprisingly, secondary loan trading was not mentioned as a significant pricing determinant by any research participant, as exemplified by the following statements:

I 16 Secondary market trading in syndicated loans is a pure LBO-game. Here you have daily price quotations and relatively liquid markets. In normal corporate loans, there is no frequent trading activity and no daily price quotations. If any trading is done, it is "ad-hoc" and with a special intention of the seller. But that is as I said very rare.

The remark of Dolvin et al. (2007, p. 84) that "most syndicated loans trade in an active secondary market, similar to bonds" does not apply to the market under study.

Scale economies in information production are not only a less-pronounced issue in general, but they also only play indirect roles within banks' syndicated loan cost-based pricing tools. I thank an anonymous reviewer for bringing to my attention that the internal bank credit rating of his or her employer values the length of client relationships in the qualitative part of the

I 3 The secondary market liquidity is mostly important for loans that you expect to be traded. When we think about corporate lending, I would say 90% of the loans that we avail to corporates are relationship-driven. Therefore, they are not prone to be traded in the secondary market because participating banks want to reflect to the client, that they are standing with them and they do not trade this away. In the case of a sell-off in the secondary market, the access to ancillary business would basically be gone. Again, that is very true for the German market.

²⁴⁹ Real loss-leading loans.

internal rating-methodology, however with a rather low overall weight of less than one percent. The rating itself is only one cost-driving element within a loan cost equation, a fact taking the relationship duration factor far below an overall one percent threshold. According to this referee, in administrative costs associated with the issuing of a syndicated loan, the relationship factor is usually not captured at all. If possible information monopolies would be priced, these administrative costs would need to be higher for relatively new vis-a-vis repeated and established relationships, as costs of information production. In other words: The costs to conduct (initial) due diligence and monitoring, would be higher.

Soft information in general happens to play only minor roles in due diligence processes and in concrete credit-risk assessments, which is—given the sizes of borrowers and loans—a highly institutionalised and regulated process, relying predominantly on hard information that all active bank players in the German corporate market tend to share.

In that context, Udell (2008, p. 98) rightly points out, "The management of bank credit risk has moved from a qualitative-based exercise to a quantitative-based exercise". The fact that the author relates this to SMEs—which are commonly associated with more opacity—makes this argument even more profound considering the large corporate group being studied within this work. A supporting argument has been delivered by Strahan (2008), who suggests that large and mostly well-established borrowers can be credit-assessed by predominantly hard information such as audited financial statements. Cole et al. (2004) point out that larger banks commonly base their lending decisions on systematic as well as verifiable information sets.

In summary, based on mainly hard information facilitated via their cost-based credit pricing and return models, banks can calibrate their own risk-neutral pricing by being relatively symmetrically informed. In the case in which a bank would facilitate its risk-neutral pricing deviation based on the market opportunity cost-based approach, it would simply look at nonsyndicated loan capital market benchmarks and perhaps add its individual funding spread.

Thus, the relationship-pricing—in the sense of a corporate syndicated lending professional's definition—where non-lead lenders are also provided with cross-selling based on their respective loan share, seems to be grounded to a lesser extent in information asymmetry issues.

Another element of the classical definition is that it assumes the lead arranger pursues certain tasks on behalf of the borrower. According to Godlewski et al. (2012) and Ivashina (2009), the arranger largely determines the initial set of potential participants to be invited and

specifies certain ticket sizes and the titles awarded to the invited banks. However, in line with the "modern" best efforts syndication process, it appears that lead arranger, bookrunner or coordinator is rather an operative function in the issuing process of a common syndicated loan rather than a reflection of the original definition within relationship banking theory.

6.2.2 Transaction-based lending and cross-selling option

Taking everything together, it is reasonable to interpret German corporate syndicated lending as one form of transaction-based lending (Udell, 2008), when considering due diligence and monitoring from a risk evaluation and management perspective.

As foreshadowed in 6.2.1, each bank, be it an active bookrunner or the smallest participant, is likely to have appropriate tools at hand to calibrate their individual risk-neutral syndicated loan pricing for each loan type, without being affected by significant information disadvantages that could potentially severely limit their ability to do so. Hence, with regards to banks' individual price calibration ability, I agree with Champagne and Kryzanowski (2007, p. 3,146) who remarked, "[Syndicated lending] is becoming more transactional in nature".

Lenders calibrating pricings based on a cost-based approach would conduct this transactionbased lending pricing technique via its sub-form *financial statement lending* predominantly based on hard information culled from borrowers' financial statements, the main ingredients of internal ratings. Banks applying a market opportunity cost-based approach would conduct their risk-neutral price deviation based on transaction-based lending pricing techniques in a form of arm's-length capital markets benchmarking.

The degree of anticipated future ancillary business, the "heart" of the relationship component under the practitioner-based definition, affects banks' concrete price setting via the relationship discount. The degree of a banks' accepted pricing discount is at the end to be evaluated and decided upon by their internal stakeholder(s) that has (have) to allocate the related shortfall and, therefore, have a strong incentive to access future cross-selling to (over)compensate for, or, in other words, re-earn this shortfall.

Thus, from a single bank point of view, I define the first part of the price setting of German corporate syndicated loans as *a transaction-based lending technique with the relationship discount representing the price for an implicit option-to-sell ("cross-selling option") granting the right to access and to ("realistically") compete for future cross-selling.*

Hence, if one client with a weaker specific credit risk profile vis-à-vis another presents higher cross-selling potential, it can obtain a lower-cost syndicated loan compared to the client with a stronger credit quality. It is reasonable to add that the pricing in its own right is not risk-neutral. This principle is illustrated by the following interviewee statements:

I 13 We see better priced deals for weaker ratings in the case of really strong cross-sell wallets.

I 19 It might appear astonishing to outsiders that two clients even of identical credit quality and business sector might have different prices depending on their ancillary business potential.

I explicitly define the *cross-selling option* as "implicit" because it is important to emphasize that the underlying mechanisms and phenomena partly adhere to common stock option theories and its valuation as presented by, among others, Black and Scholes (1973), while also exhibiting major differences. In other words, elements of the theories' underlying ideas provide an appropriate conceptual analogy that supports me by shedding light on certain phenomena in relation to the study. "A put option gives its holder the right to sell a specified amount of the underlying asset during some period in the future at a predetermined price". Furthermore, "the option writer is the person from whom the option buyer purchases the option contract" (Levy & Post, 2005, p. 650).

In the German corporate syndicated lending context, the cross-selling option functions as follows: It grants relationship lenders the "right" to sell an unspecified amount of financial services to a borrower during the lifetime of the loan at non-predetermined prices. In contrast to the sell option in the sense of Levy and Post, the cross-selling option does not securitise the right to sell financial services, but rather grants this right, based on hidden contracting between borrower and relationship lender. The discretion as to whether, when, what, and at what price the cross-selling options' owner can sell financial services is not securitised and is based on hidden contracts.²⁵⁰

Hence, the value of the option is tied to these hidden contracts with the option's writer (borrower) assuring its owner the option to sell and to compete realistically for the sale of financial services, with the respective prices being likely to boost the overall relationship profitability in positive or risk-neutral territory.

²⁵⁰ As outlined in section 5.5.13.1.1, it might however be the case that future cross-selling events are pre-agreed within a mandate letter or within a separate side-letter. Here a kind of securitisation would be given.

In light of theoretical ideas of, for example, Black and Scholes (1973), the price of the crossselling option might be partly determined by similar underlying mechanisms. The higher the probability-weighted anticipated revenues generated via ancillary business, the higher the option's value. Further, the value is determined by the loan's real (average) maturity. Hence, based on already executed cross-selling and/or the related expectation for the residual loanlifetime, the option might implicitly be "in the money" or out of it. The following interviewee statement illustrates the pragmatic view of this taken by the bank:

19 The most important part is the potential of generating revenues in the future. In addition, I think the politically correct expression for that is "relationship". But really, relationship means, that, yes, we have a working relationship, which is beneficial. Clients work with a certain bank and banks want to work with a certain client. I think in the future there is going to be revenue coming out sufficiently to cover costs effectively of the relationship. That is the main determinant for pricing.

In a case where the expectations are not being met, a relationship discontinuation might be considered. In the case of a risk-neutral syndicated loan pricing at signing, the price for this option would be zero.

The cross-selling option's valuation is complex and individual from bank to bank. Here, soft factors and relationship-related interactions are likely to be more pronounced, in a sense that well-established relationship managers, accompanied by experienced product specialists such as a loan originator, might enhance the pay-off-structure of the option or, more practically, initiate more ancillary business.

This might *ex ante* be anticipated or forecasted by the respective lender, leading to its willingness to pay a higher price for the cross-selling option in comparison to banks not having such well-established contacts into the borrowing firm. With respect to the valuation of the cross-selling option, a backward component is also included, namely, the experience in relation to hidden contracts, especially with respect to past degrees of cross-selling materialisation. Thus, one could argue that some elements of the theoretical relationship lending definition are relevant in light of a possibly superior ability of more experienced syndicate banks to evaluate the cross-selling option, compared to a possible new syndicate member. As the new entrant is also likely to benefit from cross-selling distribution-key is simply related to the loan share. This assessment is, however, separated from the default risk prediction. Furthermore, syndicates for German corporates tend to have become smaller, and active banks and clients tend to know each other over numerous repayment cycles, thus weakening this factor's importance.

Tentatively, I can thus summarise each individual bank's price view to consist of its individual risk-neutral pricing and the embedded individual cross-selling option valuation.

Bank individual relationship pricing (1)

Risk-neutral pricing
Value of cross-selling option

- Value of cross-senting option

= Bank individual relationship pricing (1)

 Table 86. Bank individual relationship pricing (1).

6.2.3 Syndicated loan market environment, syndicate structure and syndication mode

So far, the pricing discussion based on two determinant sets of issues—the "classical" ones that determine the risk-neutral pricing and the cross-selling option, determined by the relationship aspect—have been at the level of the individual bank. Thus, the determinant categories "syndicated loan market environment" and "syndicate structure and syndication mode" remain to be integrated into this new perspective on German corporate syndicated lending.

At this point, it is useful to recall that all of the interviewees highlighted the syndicate loan market environment to be the most pivotal pricing determinant category, alongside the relationship aspect. In this model, I define the syndicated loan market environment as the market place where supply and demand of banks' individual relationship prices converge. The connector or catalyst between banks' individual views—mainly based on the classical determinant set that leads to a risk-neutral pricing net of the individual cross-selling option valuation—with the syndicated loan related market environment is "syndicate structure and syndication mode".

Given the overall opacity of the market in bidding-phases, especially given the disappearance of market-soundings, bank-individual relationship prices are effectively quoted within a black box. No bidder is thus aware of their counterparts' offers. As already suggested in 5.5.9.3, this process implies certain elements of first-price, sealed-bid options (McAfee & McMillan, 1987). I defined this phenomenon as the "modern" best efforts syndication process.

The current syndicated loan market environment has been established to be shaped by a high degree of competition, with loan supply outweighing corresponding demand levels. Thus, the syndicated loan market environment via supply and demand correlations and the interrelated

level of competition together determine the general bargaining power of lenders vis-à-vis borrowers.

In situations where the bargaining power lies with the borrowers, as is the case in the current environment, borrowers are enabled to "cherry-pick" at the lower end of the offered relationship pricings, then pass them on to the set of more expensive bidders to trigger a downward adjustment process. This process is unobservable for the involved banks. Thus, banks are only aware with certainty of final pricings which are unlikely to represent an average relationship pricing, but rather represent the lower end. This pricing subsequently gets warehoused in private bank databases, logically being biased towards these lower-end pricings. Thus, if banks expand their individual pricing process by private benchmarking before placing a bid, as 15 research participants argued is done in practice, they would benchmark themselves not towards an average market price but to a lower end view, which might further decrease the individual relationship-pricing.

Bank individual relationship pricing (2)		
	Risk-neutral pricing	
-	Value of cross-selling option	
=	Bank individual relationship pricing (1)	
+/-	Benchmarking residual	
=	Bank individual relationship pricing (2)	

Table 87. Bank individual relationship pricing (2).

Thus, in the current market environment a downward pricing spiral seems active, triggered by the markets' opacity, by the general mechanisms of the market with regards to relationship discounts, and by the current syndicated loan market environment.

This "cherry-picking" at the lower end is likely to constitute the key driver of shrinking relative syndicate sizes as established. In other words, there would likely not be enough cross-selling available to satisfy a larger group of banks—a trend that is possibly accelerated by the fact that shortfalls for the initial higher-end bidders are likely to be higher, resulting in an even increased need of cross-selling. These phenomena present another argument for downplaying the role of information asymmetry-related pricing drivers, in favour of syndicate structure and relationship aspects.

This process is explained in the following interviewee statement:

I 20 Borrowers are in a good position at the moment. However they cannot play that game forever. At the end, even in this very low pricing environment, enough cross-sell needs to be ensured by a borrower on the long run. So, if the clients pushes for the lower pricing ends as they logically do, they need to keep the bank group very small as the cross-selling would simply not be enough to feed a large bank group at a very low pricing. Of course, this leads to high ticket lending which is ok as banks tend to be ready to put their balance sheet to work and as they face low loan demand levels. Maybe in a few years' time it will look different. We'll see.

In a slightly weakened version, this process should also hold for underwritings. Here, borrowers usually only request bids from a smaller number of banks who then face market risks. Hence, and as established in 5.5.9.4, pricings tend to be *ceteris paribus* higher by choosing this mode of syndication.

In the case of a converse syndicated loan market environment, as, for example, induced by a financial crisis like the 2008/2009 crisis, where loan markets might not be capable of fully absorbing demand levels,²⁵¹ relationship discounts might even fully disappear. In other words, the cross-selling option would value at zero. In this situation, the overall opacity might conversely trigger an upward pricing trend in favour of banks.

As a side note, with respect to a cross-selling option's value in the secondary loan market, interesting questions remain open. Earlier, I established that a lending share qualifies a syndicate member to be awarded *pro rata* shares of standard bank-product cross-selling and to compete for complex business like IPO or M&A advisory mandates. Therefore, in a possible secondary sell-down to another relationship lender that strives to be awarded future cross-selling as well, the option should be of value for potential secondary market buyers, paying a certain price for the remaining loan lifetime. In that case, the loan could either be sold at par or the loss/shortfall should at least be reduced to some extent. Given the circumstance that German corporate syndicated loans happen to be only very rarely traded, the experience of the research participants in that context is scarce, and, hence, an empirical answer cannot be given. However, it is reasonable to assume that no relationship lender would be interested in off-loading a German corporate syndicated loan piece if the cross-selling option was "in the money". In other words, discontinuation is only likely in scenarios of non-adherence to the hidden contracts in an anticipated manner, or where the borrower faces other issues with

²⁵¹ So-called *credit rationing*.

respect to its creditworthiness. Hence, it appears unlikely that potential buyers would significantly pay for that option with the initial costs being "sunk".

I now attempt to integrate and visualise my thoughts into one conceptual framework.

6.3 Integrated conceptual pricing framework and conclusion

Figure 64 presents the framework as informed by the arguments presented throughout this chapter. To summarise, according to this novel perspective on German corporate syndicated loan pricing, the related determinant categories can be classified into four major parts.

First, a set of standard credit price determinants represents the basis for a transaction-based syndicated loan price determination at the level of the individual bank, which has either been conducted by means of a cost- or a market opportunity cost-based approach. The result of this calibration, is therefore, the bank's individual risk-neutral pricing. In practice, these risk-neutral views happen to vary quite significantly from bank to bank, with the respective reasoning having been established in 5.5.3.5 and elsewhere.

Secondly, banks individually evaluate future cross-selling potential with the specific borrower and pay a price for an implicit cross-selling option, with its respective value representing a discount to the risk-neutral-pricing. This "relationship pricing (1)" will be adjusted by a benchmarking exercise based on private benchmarking information, leading to a "bankindividual relationship pricing (2)", which subsequently gets quoted into the "syndicated loan market environment" (determinant part three), which is clouded by opacity.

Thirdly, "syndicate structure and syndication mode" acts as a catalyst and facilitates individual bank relationship prices, in the sense of hidden auctions, into a final pricing consensus.



Figure 64. German corporate syndicated loan conceptual pricing framework.

I acknowledge that this framework, although derived from a broad range of practitioner views that have been extensively discussed, is at the end a model which most likely does not fully capture the overall complexity and interconnectedness of the various price determinant categories.

Hence, the eight determinant categories in reality cannot be seen as fully separable, as they are inter-connected in numerous ways. In the framework, I highlighted two such possible connections via dashed arrows that signal the links between cross-selling potential and syndicate size, and the lender's size and capitalisation with its ability to offer large-scale underwritings.

Besides the potential shortcomings of this framework, it nonetheless provides an enhanced understanding of German corporate syndicated loans' price determinants, their related interactions, and the so far hidden underlying processes of price setting. These new insights into the reality of syndicated lending have enabled me to combine them within a holistic pricing framework. Given the dynamics of the context, I strongly suggest that it would be a worthwhile undertaking to repeat syndicated loan studies on a continuous basis and critically assess certain phenomena in light of current market developments and trends. In other words, theory and practice should repeatedly be compared and critically questioned so that both theory and practice benefit from one another.

I therefore agree with the general statement of Christodoulakis and Olupeka (2010, p. 325), who asserted, "Syndication is an instrument of a dynamic industry; hence a continuous modification of the basic practices is expected." However, it is also important to recognise that theory must also develop to keep abreast of these changes.

7 Conclusion

7.1 Introduction

Chapter 7 completes the thesis by recapitulating the main research findings as answers to the research questions (7.2) and by introducing and discussing the contributions to knowledge generated by the study in 7.3.

The limitations to the research will be reviewed in 7.4 and suggestions provided for possible future avenues of inquiry (7.5). After having remarked on possible political and regulatory implications (7.6), I discuss the contributions of the research to practice (7.7) and conclude by offering personal reflections on the overall research process in 7.8.

7.2 Review of main findings as answers to the research questions

As suggested by Wallace and Wray (2011), whilst critically reviewing the extant worldwide syndicated lending literature in Chapter 2, I noted a series of knowledge gaps that I subsequently addressed through a set of research questions and their corresponding objectives. By exploring and analysing the "hidden drivers" of banks' pricing of syndicated loans to German corporate borrowers, I developed an enriched understanding of the elements and determinants of pricing, and its underlying processes and decisions. In other words, this study of the German corporate syndicated lending market, predominantly by means of an extensive piece of qualitative research, has revealed and substantiated some important and to date hidden phenomena in relation to different dimensions of pricing.

I begin below by providing brief reviews of the most important findings, ordered by the thematic structure of the thesis that was itself derived from the sequence of the research questions.

7.2.1 German corporate syndicated loans' pricing opacity

RQ 1 analysed the transparency situation regarding German corporate syndicated loan pricing.

RQ 1: What are the limitations of publicly available information concerning German corporate syndicated loan pricing?

By means of the extensive quantitative analyses presented throughout Chapter 4, I located major shortcomings regarding quantity and quality of publicly available data concerning

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German corporate syndicated loan pricing. The analysis was based on a secondary data sample sourced from Dealogic Loanware and containing publicly available data on German corporate syndicated loans from 2000 to 2015 in general, with a special emphasis on pricing and its various elements.

Public pricing information appeared to be limited, and if available, was mostly so only in the form of initial margin levels. Initial margins, however, which were made public only in roughly 10% of all newly issued loans in 2015, constitute only one part of complex pricing structures. Numerous further constituents such as additional per annum elements for RCFs as well as certain upfront fees constitute important pillars of pricing that all interact with each other. Even less data appeared to be in the public domain regarding these further pricing elements. In 2015, for example, no utilisation or participation fees were published.

Interestingly, the level of publicity declined significantly within the period under study, an observation that contradicts the widespread *a priori* belief that financial markets tend to constantly gain in transparency over time (Berg et al., 2017). According to the data, from a high in 2004, where at least the initial margin was published in roughly 60% of newly issued German corporate syndicated loans, the proportion with publicised data declined steadily to a low of circa 10% in the post-crisis years.²⁵² Accordingly, the data from the German market contradicts the assertion by Bharath et al. (2007) and Santos and Winton (2008) that public database coverage regarding syndicated lending has constantly improved in recent years. A brief comparison with the market for U.S.-based borrowers indicated that the transparency of syndicated loan pricing data has indeed increased over time, a fact that indicates major differences between the two markets.

Next, I established that the sample of loan data published is affected by various types of bias, making it inappropriate to take these data forward for an in-depth quantitative pricing analysis. One example of non-random sample selection is the fact that average deals with available margin were on average almost five times higher as compared to transactions where it was unavailable. In 2008, this ratio almost reached nine. Furthermore, pricing information was significantly more often available for rated borrowers who are, according to Focarelli et al. (2008) and others, of higher creditworthiness as well as likely to borrow larger amounts. To conclude, a downward bias regarding the average costs of German corporate syndicated

²⁵² Meaning: The financial crisis around 2008/2009.

loans was located, which rendered methods such as that of Heckman (1979) to reconstruct valid results based on incomplete data unsuited to this context.

The reasons for the omission of certain pricing data were by no means random, but seemingly based on major structural causes. Constructing meaningful quantitative pricing measures for German corporate syndicated loans appeared to be impossible without an explanation for these phenomena. This led to the question as to what are the underlying drivers of this increased pricing opacity, which highlighted the need for a qualitative study to reach the overall research aim, to explore and analyse the "hidden drivers" of banks' pricing of syndicated loans to German corporate borrowers, thereby developing an enriched understanding of the elements and determinants of pricing and its underlying processes and decisions.

7.2.2 Drivers of the pricing opacity of German corporate syndicated loans

The limitations of public pricing data revealed by answering RQ 1 were subsequently confirmed by all the research participants who contributed to the qualitative fieldwork. RQ 2 required an exploration of the reasons for the general and, furthermore, steadily increasing opacity.

RQ 2: Why are some aspects of corporate syndicated loan pricing elements for German borrowers made public and others not?

By exploring RQ 2 in 5.2, I was able to establish and to prioritise the key underlying causal phenomena of the (increased) pricing opacity. The fact that German borrowers possess power of discretion with regards to any sort of syndicated loan announcements provides them with the essential tool either to tactically exercise the option to publish certain pricing elements or to address their general striving for confidentiality by refusing to do so. Particularly low pricings were found to be sometimes published because of pride in having achieved attractive terms, confirming the reported downside bias. In general, a trend towards confidentiality was established for non-public and/or unrated firms that constitute most of borrowers in German corporate syndicated lending. Based on the interviewee statements, I was further able to reveal an additional bias in the data set related to a specific loan type, the back-up-RCF, where due to tactical considerations only parts of the pricing packages have sometimes been published, leading to misinterpretation for outsiders. I labelled this the "single transaction pricing downside bias".

In addition, bank-related reasons, such as increased confidentiality concerns in light of harsher compliance and regulatory requirements and a striving to build private market knowledge reinforce the overall trends towards more opacity.

With respect to the market for U.S.-based borrowers, and in line with the findings of my quantitative analysis, a much higher degree of publicity was reported. The research participants related this to a different legal environment with respect to compulsory SEC-filings as well as to a greater openness of clients regarding pricing in general (Schenone, 2010). With respect to the wider European market, most interviewees reported published loan information to be similarly limited and comparable to the situation in Germany.

7.2.3 Pricing elements of German corporate syndicated loans

The answers to RQ 1 and RQ 2 demonstrated the limitations of publicly available pricing information and its general unsuitability to use for analysis. In particular, I showed that with respect to the various pricing elements other than initial margin levels in particular, the respective roles that further elements play within pricing structures remained unclear. Furthermore, a prioritisation from a bank point of view was needed to understand the underlying logic of specific pricing structures.

RQ 3: How can the various German corporate syndicated loan pricing elements be classified and prioritised from a lending banks' perspective?

The discussion of pricing elements revealed that not only much public pricing data is missing in general, but also that numerous elements of pricing in common practice have not yet been researched at all. Hence, a comprehensive listing of "all" German corporate syndicated loan pricing elements needed to be established, followed by a discussion of their individual *raison d'être* and underlying mechanics. These rationales often appeared to be grounded on to date hidden and unexplained phenomena. For example, participation and arrangement fees are not solely awarded to either participants or arrangers, as suggested by extant literature such as Altunbas et al. (2006b), but in practice appear to be detached from their intuitive purposes. This fact is related to the accounting perspective within banks under which participation fees—and their various, so far neglected sub-forms—are treated as per annum elements and, hence, are amortised over the lifetime of the loan. Arrangement fees, in contrast, do not have to be treated this way, a fact which—at first glance illogically—leads pure participant banks to likewise require this price constituent then being labelled as a "passive arrangement, bookrunner, or coordination" fee by practitioners.

Given the almost complete lack of loan data in the public domain, the reality surrounding utilisation fees and their respective uses would have been impossible to reveal from the available data set without the primary research conducted for this study.

From the perspective of an entire bank, I established that the relative importance of the various pricing elements would be an increasing function of their share of the total payments received. However, from the perspective of the bank's internal stakeholders, prioritisation appeared to vary based on specific incentive structures. By and large, my efforts to clarify this interbank prioritisation revealed complex pricing structures and often counterintuitive use of certain elements, reflecting the occasionally competing interests of different banks' internal stakeholders such as the loan product unit or the respective asset owners. The loan product units were said to be mainly interested in increasing payments from arrangement fees, as these are generally their main revenues. In contrast, the asset owners mainly focus on the per annum elements. Because syndicated lending involves numerous banks that team up to provide loans, this multiplies the number of internal stakeholders whose interests are likely to complicate competition across the syndicate banks. The overall effect is that this leads to theoretical and first intention rationales to be sometimes misleading, with the real grounds being hidden and driven by special interests, as well as current market practice.

It also became apparent that pricing decisions are not solely made *ex ante*, but are subject to dynamic changes and possible re-evaluations of respective determinants throughout a loan's lifetime. In other words, the "price-tag" and pay-off structure of a syndicated loan at signing and the anticipated revenues based on this initial price-tag appear to vary quite significantly from an *ex post* perspective. This fact distinguishes the syndicated loan from, for example, common corporate bonds, where investors can *ex ante* relatively rigidly calculate their returns (Feldstein et al., 2012; Ramanthan, 2012).

The classification and discussion of the price elements further discovered pricing structures and mechanisms to differ extensively across four major loan types. Most extant studies of pricing tend to simply lump together pricing of term and revolving debt, whereas a smaller number of researchers acknowledged different price mechanisms between the two loan types (Berg et al., 2016). However, the interview data revealed that a more granular differentiation was needed to address and understand the complexity and individuality of pricing structures. Thus, I decided to proceed with four different loan types that appeared to be most common in the market under investigation: RCF; back-up RCF; term loan; acquisition term loan. For these four loan types, with each carrying inherently different price mechanisms in light of their diverging *raisons d`être*, new price definitions and measures needed to be established.

7.2.4 German corporate syndicated loans' pricing definition

The analysis and discussions around RQ 3 revealed that the term "pricing", its related elements, their interaction, and their underlying rationales are far more complex than existing bodies of research would suggest. Here, pricing was predominantly defined in terms of the initial margin (e.g. Focarelli et al. 2008; Wasan et al. 2013), or the AISD (e.g., Calomiris and Pornrojnangkool 2009; Hale & Santos 2009). Given the revealed complexity of the issues surrounding numerous pricing elements and their varying functioning and interaction across four major loan types, I attempted to explain and define "pricing" first, before moving on towards the discussion of the determinants of pricing decisions. In other words, before discussing the determinants of pricing decisions, the term "pricing" and what is meant by it in relation to the different loan types needed to be explored, as it is insufficiently addressed within the extant literature.

RQ 4: How can the complexity and multidimensionality of German corporate syndicated loan pricings be summarised and explained?

New pricing definitions for the four most common loan types within the market under study were derived from analysis of the interview data. Given the nature of the data, I first provided a qualitative framework, with the intention of explaining and making sense of the term "pricing" in more depth.

These definitions address loan type differentiations by incorporating "all" possible pricing elements, by integrating *ex ante* as well as *ex post* reciprocity, and by integrating factual (average lifetime) as well as specific draw-down scenarios. As discussed earlier, pay-off structures of German corporate syndicated loans are often unpredictable and further appear to differ across banks, underscoring the private and bespoke character of pricings that are shaped by numerous "hidden drivers". Qualitatively, pricing was characterised as an expected *ex post* complex, interwoven, and somehow determinant-weighted cocktail of its numerous pricing elements in light of the factual (average) lifetime and average draw percentage.

I then converted the qualitative framework into a new quantitative *ex post* total cost of borrowing framework which could not be taken forward because of the public data situation, but nevertheless provided a tool for future research and bank practitioners.

7.2.5 Pricing determinants of German corporate syndicated loans

After having extensively built the foundation via RQ 1 through RQ 4, section 5.5 explored and established the determinants of German corporate syndicated loan pricing that were synthesised into a holistic conceptual framework in Chapter 6. As Kim et al. (2014) noted, despite fairly extensive numbers of scholarly attempts to elucidate the determinants of syndicated loans pricing, existing worldwide evidence remains fragmented and sometimes contradictory. Hence, for a major syndicated lending market, namely the German corporate one, I aimed at closing this gap and addressed it via the final research question.

RQ 5: What are the pricing determinants in the German market for corporate syndicated loans and how do they interact with each other?

The analysis of the interview data revealed pricing determinants to be versatile, highly interrelated, and difficult to disentangle. Hence, I first established a several determinant categories that each included various determinants under an implicit *ceteris paribus* assumption. These determinants were then prioritised in terms of their relative effects on pricing. Further, comments on the different influence of specific determinants in light of the four loan types were provided if needed. Eight determinant categories were identified, as shown in Table 88.

Eight pricing determinant categories	
1	Borrower-specific credit risk profile and rating
2	Lender characteristics
3	Contractual features
4	Credit story
5	Syndicate structure and syndication mode
6	General market environment
7	Lender-borrower relationship
8	Syndicated loan market environment

Table 88. Eight pricing determinant categories.

Discussions in relation to "borrower-specific credit risk profile and rating" broadly confirmed the extant worldwide syndicated loan pricing literature. In line with common *a priori* intuition, borrowers' creditworthiness, as represented by its credit rating, determines pricing. In line with Cole et al. (2004) and Strahan (2008), predominantly hard information such as financial data was established to constitute crucial ingredients. Also, in line with the literature, firm size, transparency, and capital markets access were found to influence pricing in the expected manner (Fang et al., 2016; Mattes et al., 2013; Santos & Winton, 2008). Besides these, softer determinants like management quality and ethical behaviour have been identified, with the former being especially important in company-transforming M&A-financings.

In light of "lender characteristics" and their impact on German corporate syndicated loan pricing, findings based on the research data confirmed the literature's view on bank type and its relationship to pricing, in the sense that investment banks are associated with higher pricing (Calomiris & Pornrojnangkool, 2009; Harjoto et al., 2006). Furthermore, factors that are currently underestimated within the extant literature, including banks' individual funding costs, lending philosophical considerations and different credit pricing and return models, have been established to constitute key determinants of lender characteristics.

Concerning the "contractual features" determinant category, in general research participants broadly related relatively higher loan amounts to lower pricings in general corporate financings, such as large back-up RCFs, and with higher pricings in large event-related financings, leaving the overall influence ambiguous. Extant literature predominantly reported negative relationships between loan amount and pricing (Alexandre et al., 2014; Haselmann & Wachtel, 2011). Other than amount, pricings of general corporate financings were said not to be tremendously affected by contractual features such as maturity or certain protection mechanisms like covenants and security. Based on certain borrower quality clusters, contractual structures were rather said to adhere to specific templates, or in other words, market standards. Other than suggested by Melink and Plaut (1986), non-price related terms and conditions happen to be no instruments that can be traded-off against pricings. They are sequential rather than simultaneously determined. In event-related financings—specifically for acquisition term loans—contractual features become key price determinants, being subject to more intense negotiation.

In relation to "credit story", which I defined as the overall underlying rationale for issuing a syndicated loan, I established that general corporate financings were usually less credit storyintensive whereas pricing of event-related financings is significantly influenced by a coherent credit story. With revolving loans, the draw expectation as one element of the overall credit story affects pricing as well as the pricing structure. Extant literature tends to have thematised "uses of proceeds" as a foremost contractual feature by presenting a broad consensus that acquisition financings carry higher pricings (Christodoulakis & Olupeka, 2010; Hale & Santos, 2009).

On "syndicate structure and syndication mode", interview outcomes revealed that the impact of the sheer syndicate size on pricing was ambiguous. Extant literature appeared to be discordant in this respect as well, with Wu et al. (2013) reporting a negative relationship and

Carey and Nini (2007) a positive one. According to most interviewees, the relative number of lenders was said to be more closely related to the degree of anticipated cross-selling. Overall, the research revealed that the syndicate's structure is to a lesser extent driven by asymmetric information issues than is suggested by the extant literature such as Sufi (2007).

Interestingly, the underlying processes regarding how lending syndicates are set up was revealed to have changed over time. Perhaps surprisingly, these processes seem not to be of significant interest for recent scholars. For general corporate financings, the "modern" best efforts syndication process—where borrowers create hidden lender competition via private RfP-processes and themselves pre-place their facilities—*ceteris paribus* tends to drive pricing downwards.

In line with anecdotal evidence, discussion of the influence of the "general market environment" on pricing revealed German corporate syndicated loan pricings to be to a much lesser extent driven by "normal" economic cycles in comparison to, for example, developing markets or ones with relatively weak legal infrastructures (Gaul & Uysal, 2013; La Porta et al., 1997; Qian & Strahan, 2007). Furthermore, increasingly intense regulation is *ceteris paribus* associated with higher pricings. Non-syndicated-loan capital markets benchmarks, such as CDS or corporate bond spreads are important determinants of pricing in general, and become the key determinant if banks were to calibrate their risk-neutral pricing view based on an arm's length capital markets benchmarking.

Discussions of the relevance of the "lender-borrower relationship" to pricing revealed factors in this category to constitute key determinants of syndicated loan pricing, in a sense that future cross-selling potential, *ceteris paribus*, leads to price discounts, or in other words to factually under-priced loans. It is common market practice that banks even engage in lossleading transactions with the implicit expectation that future cross-selling revenues boost the overall relationship into profitable territory. It was established that this relationship context is based on hidden contracting. As with the treatment of syndicate structural issues, the underlying rationales of relationship lending have predominantly been assumed to be based on issues of information asymmetry (e.g., Bharath et al., 2011; Alexandre et al., 2014), which was refuted by the research participants.

The "syndicated loan market environment" via supply, demand, and the level of lender competition was found to constitute a further pricing determinant. Benchmarking to outstanding syndicated loans was mentioned to be a key price determinant in this respect.

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After specific in-depth discussions under the implicit *ceteris paribus* view and after having prioritised each determinant within its corresponding determinant category, I synthesised all elements into an original, fully integrated conceptual framework. This appeared particularly challenging as all elements were found to be different in the magnitude of their specific impacts on pricing, but also interdependent by means of complex interactions.

The key ingredient that enabled me finally to complete this puzzle was a critical assessment of the anecdotal definition of syndicated lending as being a hybrid of relationship lending and publicly traded debt (Altunbas et al., 2006b). I established that this definition was out of date and did not represent the current reality for German corporate borrowers. I finally defined parts of the price setting of German corporate syndicated loans as a transaction-based lending technique in the sense of Udell (2008), with the relationship discount representing the price for an implicit option-to-sell ("cross-selling option"), granting banks the right to access and to ("realistically") compete for future cross-selling. Hence, individual bank relationship pricings established by means of transaction-based price setting techniques net of a relationship discount, or in other words the value of the cross-selling-option, which is likely to be further adjusted by a so-called benchmarking residual, are processed in the "syndicated loan market environment". Via elements of hidden auction theory, here, all bank-individual relationship prices are processed and facilitated, with "syndicate structure and syndication mode" representing the catalyst that brings together supply and demand.

7.3 Contributions to knowledge

The study adds important insights and novel perspectives to financial intermediation and corporate finance literature in general and to various strands of extant syndicated lending research in particular. It is the first work dedicated to explaining the relative opacity of the German corporate syndicated lending market and identifying the underlying rationales behind this. Furthermore, the study has produced these outcomes in and for one of the world's largest economies.

Additionally, the analyses provide novel insights and enhance the understanding of the relatively loosely and sometimes incongruously defined term "pricing" by taking its different and hitherto neglected elements into account and by carefully distinguishing diverging structures in light of different syndicated loan types. Furthermore, this research is the first to analyse and synthesise comprehensively the pricing determinants of the German corporate syndicated loan market based principally and extensively on qualitative fieldwork, comprising interviews with distinguished lending professionals.

By contributing to extant knowledge in this way, the work addresses several dimensions of knowledge—bank stakeholders, bank best practice, policy, and regulation. In the following sub-sections of 7.3, I will summarise and discuss the most significant contributions to knowledge.

7.3.1 New insights into limitations of market transparency

Whilst some authors, Carey and Nini (2007) or Houston et al. (2017) among them, have commented on a general lack of published data regarding syndicated lending, the related underlying phenomena as well as the possible consequences have largely been neglected. It became apparent that the scholarly community interested in syndicated lending broadly followed Champagne and Kryzanowski (2007, p. 3,146) who remarked, "While most interbank relationships are not observable to outsiders, loan syndicates represent visible manifestations of bank interactions that can be studied".

Hence, my work, based as it is on extensive quantitative analyses, is the first one to have proven that publicly available pricing data for German corporate syndicated loans is not adequate for use in serious quantitative inquiry, as it is affected by extensive omissions and bias. Hence, my work contributes a contradictory stance in the finance literature in general, which tends to postulate that financial markets have constantly gained in transparency over time.

Furthermore, by its qualitative research design, my study is the first to establish reasons for the increasing opacity. The reported opacity with regards to the German market is hypothesised to be similarly true for the wider European market or at least major parts of it. Hence, my study demonstrates that extant European literature that has solely relied on those published data carries the risk of having provided distorted evidence and drawn tainted conclusions from such evidence. Accordingly, the quality of available data should be acknowledged more clearly in future works.

7.3.2 Reconceptualisation of the term "pricing" in light of different loan types

This work is the first that comprehensively establishes the *raison d'être* and the relative importance of the various pricing elements of German corporate syndicated loans. In doing so, I have revealed that existing studies have broadly neglected the complexity of pricing and the diverging mechanisms of pricing across four major loan types. Hence, the use of pricing proxies as dependent variables in the regressions used in extant literature cannot adequately address this complexity. Simply using initial margin as a pricing proxy neglects numerous

additional pricing elements, whereas AISD incorporates only some of them. Even the recently established new "TCB" definition by Berg et al. (2016) only partly closes this gap and, furthermore, is grounded on a somewhat misleading supposition that RCFs generally constitute credit risk derivatives in the manner of Boot et al. (1987). I established that this is not the case for both common as well as back-up RCFs with the latter being—based on hidden contracting—not expected ever to be drawn, irrespective of whether the imbedded option to draw (Berg et al. 2016) was "in the money".

With respect to AISD, I revealed that mixed interpretations and labelling across data providers, leading to a general danger of non-comparability, might well be a significant issue. AISD was found to constitute an automated field with the data providers, taking a value after at least an initial margin has been reported, irrespective of whether all or any parts of the equation were available. Overall, I revealed serious potential for misinterpretation in studies of loan pricing and, thus, present a valuable contribution to financial contracting research.

7.3.3 Enhanced understanding of the determinants of syndicated loan pricings

This inquiry adds to the relatively widespread body of syndicated loan price determinant literature that has been shown to appear somewhat fragmented and that tends to focus on just one or only few different determinant groups (Kim et al., 2014).

By means of the in-depth analysis of the various determinant categories and determinants, this research makes a significant contribution to knowledge regarding these determinant categories such as characteristics of borrowers and lenders as well as specific contractual features. A new dimension of richness of understanding has been added by this empirical study, one that enables the determinants to be named in accordance with the language used by the lending professional research participants, rather than simply adopting the parlance of extant literature. For instance, through discussion of an at-first-glance, already documented theme, the "lender-borrower-relationship", it became apparent that this concept's underlying rationale and the phenomena that surround it are inherently different in the market under study, as compared to those embraced by the largely U.S.-based literature. By exploring and revealing these, this study provides a significant enhancement to the body of relationship lending literature, regarding which Strahan (2008) remarked that the role of relationship lending, especially outside the U.S., remains unclear.

Beyond this, completely or partly new determinant categories such as "credit story", "syndicate structure and syndication mode", and "syndicated loan market environment" have

been established, each embracing a set of newly-revealed pricing determinants. One of the striking contributions in this respect is that a wide body of existing literature on syndicate structure (e.g., Ivashina, 2009; Gadanecz et al., 2012; Focarelli et al., 2008) that examined its directional influence on pricing based on information asymmetry theoretical assumptions was refuted for the market at hand, with the syndication mode in the manner of the newly established "modern" best efforts syndication process being the pivotal driving force of pricing. It was revealed by the research that the syndicate structure is instead linked to the cross-selling potential of a borrower, rather than constituting a direct pricing determinant.

Finally, to the best of my knowledge, this research has contributed the results of a first attempt to establish a holistic, multi-factor picture of the German corporate syndicated loan market and its idiosyncrasies with regard to pricing determinants.

7.3.4 New insights into "the pricing puzzle"

Numerous excurses to non-German syndicated lending markets, particularly to the broader European and U.S. ones, enabled me to provide two novel perspectives on to date discordant views of extant literature concerning "the prizing puzzle", as presented in 2.6.2. To recap, Carey and Nini (2007) showed that spreads of corporate syndicated loans in Europe tend to be significantly lower compared to U.S. ones, without being able to provide sufficient reasoning. Other authors who picked up the issue were unable to establish consistent evidence. Champagne and Coggins (2012) explained the puzzle in terms of a lower sensitivity of pricing and syndicate structure in Europe compared to the U.S. Gaul and Uysal (2013) found that equity volatility as a measure of firm volatility explains the pricing differences between U.S. and European borrowers, whereas Berg et al. (2017) did not confirm this finding. Instead, Berg et al. (2017) were able to explain "the pricing puzzle" in terms of different pricing structures for revolving credit facilities of European vis-à-vis U.S.-based clients. Given the insights of this thesis with respect to data publicity and related underlying forces between Europe and the U.S., it is reasonable to assume that the puzzle might at least partly be elucidated by data quality issues. An important factor in explaining "the pricing puzzle" is the severe downside bias in the German syndicated loan sample, with the data situation in wider Europe in comparison to the U.S appearing to be similarly weak.

As a secondary explanation, this study revealed that the nature of syndicated lending in general and the role of the lender-borrower relationship in particular is different between the two markets. The phenomenon of factually under-priced syndicated loans, induced through relationship discounts, was recognised to play no pivotal role in the U.S., where such loans

are rather interpreted as stand-alone profitable financial services. Supporting evidence was provided by Yafeh and Yosha (2001), stating that arm's length driven markets such as the U.S. are associated with less pronounced lender-borrower relationships, compared to bank-based ones like Germany. This is underpinned by the statements of the interviewees, who discussed major general differences in the ways in which U.S. capital markets function in comparison to Germany. In line with Bartram et al. (2012), the former is said to be more open and investor-driven.

This second explanation emphasises that it is very much worthwhile to study the German corporate syndicated lending market in its own right, rather than simply transferring the findings of the broad body of U.S.-based research.

7.3.5 Reconceptualisation of the general nature of syndicated lending

The general and specific findings of the research enabled me to place them in the wider context of the general nature of syndicated lending. All the puzzle pieces together led to the conclusion that the extant understanding of syndicated lending should be redefined in the light of corporate syndicated lending in the German market. Accordingly, this work makes a significant contribution to the literature regarding the theory of syndicated loans.

Altunbas et al. (2006b, p. 6), defined syndicated loans as "hybrids of relationship lending and publicly traded debt", with elements of delegated monitoring in the sense of Diamond (1984) being inherent to the phenomenon. I have concluded that members of German corporate lending syndicates are relatively symmetrically informed regarding their individual borrower creditworthiness assessments. However, they constantly compete for significant lending shares that provide them with an implicit option to sell future financial services to the borrowers. This has relatively little in common with the information-based relationship lending definition of extant literature and with delegated monitoring in the sense that uninformed arm's length participant banks rely on the credit assessment and monitoring efforts of the lead lender(s).

Given the relationship concept as discussed, I tend to disagree with Jones et al. (2005), who conceptualised syndicated lending as a means of shrinking the differences between intermediated bank debt and disintermediated public debt. Given the factual under-pricing inherent to the market functioning of German corporate syndicated lending, the market is significantly different from the disintermediated debt markets, where risk-neutral investors

seek opportunistically priced assets without the intention of conducting further business with a borrower.

7.4 Limitations of the research

7.4.1 My role as a researcher

One limitation is that my expertise as a lending professional influenced the overall work. Hence —and perhaps to a higher degree than is common qualitative studies in general—I as a researcher implicitly took an active role in the research process and so could be recognised as a research participant. Analytical processes were shaped by my own inductive processes. If the same study was conducted by non-professionals, the outcomes would likely have been inherently different. However, given the very complex and idiosyncratic structures of the market under study, I argue that my ability to understand these issues enhanced the overall research quality, outweighing possible negative influences. Throughout the research, I was aware of this issue and consciously tried to detach myself from the data. Furthermore, I took other measures, such as talking to supervisors and constantly discussing findings with peers, providing a degree of triangulation to limit and ameliorate negative personal bias.

7.4.2 Sampling of research participants

As is the case with qualitative works in general, sampling cannot be fully comprehensive. The entire population would have included hundreds of loan professionals being active in the German corporate syndicated lending market. As the sample was in effect determined by the department heads of the major banks, it was not a random sample. However, the diversity within the sample and the emergence of consensus on numerous issues, backed by the views of the key informants and triangulation processes discussed above, indicate that a satisfactory level of data quality was achieved.

7.4.3 Scope of the research project

Overall, the research covered a relatively broad spectrum of related phenomena. This was necessary to establishing a broad knowledge foundation in relation to numerous so far neglected and hidden phenomena. I am aware of the fact that this breadth could possibly be at the cost of a certain degree of detail in relation to themes which might well constitute more specialised research topics in their own right. For example, the discussion of pricing determinants that carried the aim of establishing a multifactor picture based on the interviewee statements was intentionally very broad and the depth of discussion was driven by the respective foci of the interviewees from one pricing element to another. This led to the fact that sometimes very complex topics, such as the influence of regulation on pricing, were not thematised by the research participants to the same levels of depth, as were, for example, some issues surrounding lender-borrower relationships.

7.5 Avenues for future research

As one common goal of exploratory research is to enrich the understanding of certain phenomena, various future research avenues regularly lead from it (Miles & Huberman, 1994; Patton, 2002). In that vein, I will provide some ideas regarding possible avenues for future research.

7.5.1 Apply novel "corporate syndicated loan" definition

Throughout this study, I established that syndicated lending as an overall asset class consists of numerous sub-asset classes such as LBO and project financings. To simply conflate these classes, which differ significantly across numerous characteristics, carries the risk of diluting results. Hence, I accordingly recommend that they be clearly distinguished in future research.

7.5.2 Study data transparency in other markets

This work was the first to establish that pricing analyses based on officially published information on the German corporate syndicated lending market are unfeasible because of the severe limitations of the data. Apart from some straightforwardly conducted excurses, it remains to be further established whether public data in other markets have comparable limitations and whether existing studies provide practical useful evidence. Hence, it would be a worthwhile exercise to study the representativeness of U.S., UK, and general European samples in a similarly comprehensive way.

7.5.3 Conduct study from a borrower's perspective

This study was intentionally conducted from a bank's perspective. It is likely that certain perceptions and reasoning from a borrower point of view would be different and would provide further insights.

7.5.4 Take into account new pricing definition in light of different loan types

In 5.4., I presented possible new pricing measures that more accurately apprehend the price complexity and multidimensionality in light of different loan types. As already mentioned, for researchers being reliant on officially published information, it is unrealistic in the short run to fully apply these definitions as presented. I recommend, however, that scholars who conduct future research take my related thoughts into consideration and perhaps also make use of my

novel quantitative price measure framework as a foundation for establishing more specific measures in the future. In relation to extant literature, it would also be interesting to screen relevant studies in relation to misinterpretation and calculation discrepancies with respect to AISD and, if appropriate, to repeat certain calculations based on a more realistic view of AISD. If scholars in the future should decide to take the "classical" AISD as a proxy, I strongly recommend that they calculate it manually rather than making use of the data providers' labelling.

7.5.5 In-depth microstructure analyses of various pricing elements

This work revealed that in addition to the pricing elements mentioned in extant literature, numerous other exist in practice. It is likely that the price determination is different across these other related pricing elements. In this vein my research provided some important ground work towards more precisely conceptualising syndicated loan pricing and its highly complex structures. The determinants have been mainly discussed by using "pricing" as a single term. Future works could analyse the determinants of each individual element for each individual loan type in research at the detailed level, for example by means of case studies of specific lending processes.

7.5.6 In-depth microstructure analyses of various pricing determinants

As with the detailed research into pricing elements as proposed in 7.5.5, the various price determinants could be researched in greater depth in further studies. The aim of this research was to develop a multifactor picture of the various German corporate syndicated loan price determinants as completely as possible to gain an enhanced in depth understanding of the overall market functioning. As a follow-up, it would be useful to research specific determinants one at a time to enrich understanding of their operation.

7.5.7 In depth microstructure analyses of lender-borrower and/or lender-lender interaction

The multi-party nature of syndicated lending opens numerous possibilities for future research, especially with a focus on practical processes. Such research could usefully be conducted at the level of the deal, whereby some cases of syndicated loan deals with a focus of the interaction of lenders and borrowers would generate new insights into the micro-structures of such negotiations and syndication processes. This could be of interest, given the established "modern" best efforts syndication process that characterises certain elements of hidden auctions. In that respect, the interactions between lenders should also be of interest for future

research as this was revealed to have changed from interactions via classical syndications, where one or a small number of lead banks invited a large number of participants, towards more club-style syndicates.

7.5.8 Constantly repeat research in the light of changing market practice

As Christodoulakis and Olupeka (2010, p. 325) continue to remind us, "Syndication is an instrument of a dynamic industry; hence a continuous modification of the basic practices is expected". I agree with this and recommend that researchers should constantly question anecdotal and established assumptions concerning the underlying mechanisms of syndicated lending. This is likely to be more useful if a qualitative approach is adopted that can reveal such changes of practice. Where appropriate, such new findings could then be quantitatively tested in further studies. This underscores the benefits of qualitative and quantitative research as complementary rather than competing forms of science.

7.6 Political and regulatory implications

This study revealed an "official/external" and an "unofficial/internal" pricing opacity of the German corporate syndicated lending market and the various interrelated phenomena. These findings should be of prime interest to regulators and policy makers. The almost completely muted academic literature in this respect is noteworthy.

According to Kysucky and Norden (2016), a stable financial system with strong financial intermediaries leads to improved financing of the corporate sector. Though, the demonstrable opacity could cause serious harm to the overall stability of the banking architecture in the long run. Market opacity in general tends to be advantageous for those contract-parties holding the bargaining power which enables them to improve their profitability.

In the current syndicated loan market environment, this bargaining power tends to reside with borrowers vis-à-vis the lender universe, a fact leading to even more significant degrees of factually under-priced loans than already induced via relationship discounting. The magnitude of this under-pricing is accelerated by the overall opacity situation. As shown in the earlier discussion, by means of private RfP-processes that include elements of hidden auctions, borrowers are enabled to create completely hidden competitive bidding processes that tend to push pricings further down. The statement of interviewee 6 provides a specific account of this reality:

I 6 In today's markets, I need to evaluate what the borrower is willing to pay me rather than what are the costs related to the loan. Nobody really cares about credit risk any more. If you priced things off credit risk, which I do not see anyone do in corporate Germany, the margins would need to be much higher than they are.

In this respect Broecker (1990), remarked that lack of loan demand creates lender competition, putting downward pressure on pricings and increasing bank risk-taking. Further, non-price-related standards are said to becoming more lax, in line with Mattes et al. (2013), who argue that credit standards are relatively low in good times, which might lead to higher default risks in banks' credit portfolios. I agree with Carletti (2008, p. 461), who noted, "Analysing how competition in the banking sector works and whether it is beneficial is a difficult task". Overall, however, it is sensible to assume that noticeable percentages of German corporate syndicated loan assets in banks' balance sheets would likely value below par if they were to be marked to market,²⁵³ thus representing large-scale inventory risks. These hidden potential losses are possibly being revealed in secondary market sell-downs where risk-neutral investors would only be willing to purchase such assets with discounts. Furthermore, I established that even relationship lenders acting as buyers in the secondary market are most likely not to pay significant prices for the embedded cross-selling options, as the sell-off of a relationship syndicated loan would likely constitute a negative market signal (Dahiya et al., 2003). This assumption is shared with Gorton and Pennacchi (1995), stating a secondary sale would likely be perceived as a sale of underperforming loans by the market.

In comparison, the corporate bond market, where secondary markets tend to be liquid, similar under-pricing tendencies would directly be revealed with respective valuations falling below par, once free to trade. In the current liquid syndicated loan market environment— characterised by fierce lender competition and a supply and demand mismatch in favour of borrowers—predominantly being a take and hold marked with an almost complete silent secondary market, this is not yet a serious issue.²⁵⁴ In the future, however, if banks—perhaps to meet harsher regulatory requirements with respect to their capital ratios and liquidity— might be forced to off-load large loan pieces from their hold-to-maturity valued bank books to free-up capital, losses would ultimately need to be channelled through their P&L (Carlstrom & Samolyk, 1995).

²⁵³ Meaning: revaluing the price of an asset or a portfolio of assets on a frequent/daily basis.

 $^{^{254}}$ If a loan has been granted by a bank with the intention to hold it until maturity, it is commonly valued at amortised costs (LMA, 2015).

As established beforehand, this loss potential may be exacerbated because the German corporate syndicated loan secondary market is largely illiquid. In that context, Amihud and Mendelson (1986) found that illiquid financial assets in general trade at lower prices. Overall, I found that German corporate syndicated loan borrowers are not locked-in or held-up by their relationship lenders due to switching costs, as postulated by authors such as Houston and James (1996), Rajan (1992), or Sharpe (1990). Instead, in the market at hand, relationship lenders—in the sense of the newly established practitioner-based definition—are being locked-in by their borrowers, by facing high discontinuation costs.

A further issue is related to underwritings, which in today's markets tend to be absorbed by the market rather easily. In a "tougher", less liquid syndicated loan market environment, where banks might appear to be "pickier", pricings would need, however, to meet the riskreturn-based requirements of lenders accurately. The opacity, as stressed above, leads to either over- or under-pricing of such underwritten deals, increasing the danger of stalled underwritings in times of economic turmoil, for example, or of changes in regulatory requirements, leading to substantial bulk risks exposures on banks' balance sheets. With a view toward the major underwritten by only six banks, this might carry serious risk potential. Overall, these mechanisms and phenomena underpin the statement of Carletti (2008, p. 450), "It is well known that banks are special in that they are vulnerable to instability".

In summary, given the large amounts related to single borrowers in syndicated lending, the opacity of the German corporate syndicated lending market might lead to severe market imbalances and risks for the overall banking system. In the more granular bilateral lending market, this is likely not to be as serious an issue, as diversification effects happen to be more effective.

In accordance with most of the interviewees, I advocate for more pricing transparency, which, in the long run, would lead to a more stable financial system. In the short term, however, it is possible that full transparency would lead to increased pricings for clients with currently high bargaining power and to reduced pricings for clients with currently lower bargaining power. After a process of adjustment, a more risk-adequate market equilibrium would be established. Furthermore, market dumping would be less pronounced. In such a situation, the perspective of Jones et al. (2005), who stated that syndicated lending shrinks the differences between

intermediated bank debt and disintermediated public debt, might be a more realistic possibility.

Beside possible legal changes, for example, the obligation to make certain pricing elements of deals exceeding a certain size public to a banking supervisory authority, adjustments in the league table policies of private data providers might foster such a development. As league tables are an important marketing tool for banks, data providers like Dealogic Loanware and LPC could change their policies in the sense of only providing league table credit if pricings are reported. This would lead to the banking community exerting a strong pressure on clients and would subsequently lead to at least a better degree of transparency. Over the short run, this is certainly not feasible, but I find it important to make policy and regulatory makers aware of such risks inherent to the banking system. As a side note, it would be interesting to see whether the relationship-concept in the sense of relationship discounts would survive in a fully transparent market or whether it was simply a result of the opacity. The fact that relationship discounts only play minor roles in the more transparent U.S. syndicated lending market might be an indication of the latter.

7.7 Contributions to practice

Besides contributing new knowledge to the research community, Ph.D. theses often contribute valuable insights into professional practice. Therefore, I now comment on related practical contributions of my work.

7.7.1 Sourcebook for practitioners or new professionals in syndicated lending

Other than source books such as Fight (2004) or Rhodes et al. (2004), as well as publications of the Loan Market Association, up-to-date literature that provides a comprehensive overview of syndicated loan price elements is scarce. Accordingly, this thesis, or a publication derived from it, could provide a "go-to" source for new or relatively inexperienced practitioners in the field of corporate syndicated lending, providing valuable support to them in becoming operationally ready to execute specific lending transactions.

7.7.2 Enhanced understanding of market opacity

An in-depth understanding of the market's opacity and its underlying forces is important for practitioners. My work explained that this opacity might carry both positive as well as negative effects on the syndicated lending market from a bank's perspective and on the overall stability of the banking system. A richer understanding of this would enhance the awareness of practitioners in the field.

7.7.3 New pricing measures to be applied by banks

My newly established quantitative *ex post* total cost of borrowing framework provides a valuable tool for bank practitioners. The research revealed indications that even banks do not rigorously track the pay-off structures of granted syndicated loans and so might not exactly know what the yield of such a transaction might have been *ex post*. Respective time series analyses might not only lead to enhanced understanding of loan originators and banks in general. Banking-authority approved adjustments in *ex ante* RWA allocation frameworks could lead to more accuracy regarding the adequate mapping of risk in financiers' balance sheets and could ultimately enhance the stability of the banking system overall. In addition, awareness of the factual yield of a syndicated loan *ex post* would allow banks to assess more correctly the relationship profitability.

7.8 Personal reflection

Conducting this research and writing this thesis over the last three years has led to some major personal benefits. My understanding and appreciation of these enhancements was facilitated by critical reflective thinking throughout the research, as prescribed by the reflective practitioner model of Schön (1983).

A Ph.D. should demonstrate a researcher's capabilities in conducting a comprehensive piece of empirical research of a to-date understudied topic. I recognised this as being a highly challenging, demanding process, characterised by uncertainty, personal pressure, and mostly hard and lonely work. Overcoming these challenges has shown me that large-scale projects can successfully be managed with a strong will, discipline, and open-mindedness regarding new themes and approaches. As an example of the latter, my new awareness of philosophical assumptions increased my creativity in choosing and combining certain research methods especially in the qualitative domain.

The combination of professional work and experience in the field of research, as well as the parallel work on a scholarly level was exciting and fulfilling. The different viewing angles of theory and practice, and the reflective and open-minded combination of both in my view at the end, led to a higher quality academic work and one that enhanced my own understanding of the complex phenomena of syndicated lending, an enhancement that I can use to improve my daily work as a banking professional. I strongly recommend that both theory and practice should continuously be critically questioned and compared, so that each is enabled to benefit from the other.

In sum, conducting the Ph.D. "journey" was a very worthwhile experience that will have permanently changed and enhanced my approach towards both academic and professional topics within the sphere of my professional interests.

References

- Ahrens, T. (2008). Overcoming the subjective-objective divide in interpretive management accounting research. *Accounting, Organisations and Society, 33*, 292-297.
- Alexandre, H., Bouaiss, K., & Refait-Alexandre, C. (2014). Banking relationships and syndicated loans during the 2008 financial crisis. *Journal of Financial Services Research*, 46, 99-113.
- Allen, F., & Gale, D. (1995). A welfare comparison of intermediaries and financial markets in Germany and the US. *European Economic Review*, *39*, 179-209.
- Allen, F., & Gale, D. (2001). Comparing financial systems. Cambridge: University Press.
- Allen, L., & Gottesmann, A. A. (2006). The informational efficiency of the equity market as compared to the syndicated bank loan market. *Journal of Financial Services Research*, 30, 5-42.
- Allen, L., Gottesmann, A. A., & Peng, L. (2012). The impact of joint participation on liquidity in equity and syndicated bank loan markets. *Journal of Financial Intermediation*, 21, 50-78.
- Altunbas, Y., & Gadanecz, B. (2004). Developing country economic structure and the pricing of syndicated credits. *Journal of Development Studies*, 40, 143-173.
- Altunbas, Y., Gadanecz, B., & Kara, A. (2006a). The evolution of syndicated loan markets. *The Service Industries Journal*, 26, 689-707.
- Altunbas, Y., Gadanecz, B., & Kara, A. (2006b). Syndicated loans: a hybrid of relationship lending and publicly traded debt (1 ed.). New York: Palgrave Macmillan.
- Altunbas, Y., & Kara, A. (2011). Why do banks join loan syndications? The case of participant banks. *The Service Industries Journal*, *31*, 1063-1074.
- Amihud, Y., & Mendelson, H. (1986). Asset pricing and the bid-ask spread. *Journal of Financial Economics*, 17, 223-249.
- Anagnostopoulou, S. C., & Drakos, K. (2016). Bank loan terms and conditions: is there a macro effect? *Research in International Business and Finance*, *37*, 269-282.
- Angbazo, L. A., Mei, J., & Saunders, A. (1998). Credit spreads in the market for highly leveraged transaction loans. *Journal of Banking & Finance*, 22, 1249-1282.
- Antczak, S. J., Fabozzi, F. J., & Lee, J. (2012). Leveraged loans. In F. J. Fabozzi (Ed.), *The Handbook of Fixed Income Securities* (8 ed., pp. 289-298). USA: McGraw Hill.
- Armitage, S. (1995). Banks' information about borrowers: the stock market response to syndicated loan announcements in the UK. *Applied Financial Economics*, *5*, 449-459.
- Asquith, P., Beatty, A., & Weber, J. (2005). Performance pricing in bank debt contracts. *Journal of Accounting and Economics*, 40, 101-128.
- Bace, E. (2016). Bank profitability: liqudity, capital and asset quality. *Journal of Risk* Management in Financial Institutions, 9, 327-331.
- Bacon, M. (2012). *Pragmatism* (1 ed.). Cambridge: Polity Press.
- Bae, K.-H., & Goyal, V. K. (2009). Creditor rights, enforcement, and bank loans. *Journal of Finance*, 64, 823-860.

- 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, 247-288.
- Balluck, K. (2016). Investment banking: linkages to the real economy and the financial system. *Bank of England, Quarterly Bulletin Q1*, 4-22.
- Banerjee, S., & Cadot, O. (1996). Syndicated lending under asymmetric creditor information. *Journal of Development Economics*, 49, 289-306.
- Barbosa, L., & Ribeiro, N. (2007). Determinants of spreads in syndicated loans to euro area corporates. *Economic Bulletin; Banco de Portugal*, 65-74.
- Bartram, S. M., Brown, G., & Stulz, R. M. (2012). Why are U.S. stocks more volatile? *Journal of Finance*, 67, 1329-1370.
- Bauer, F., Matzler, K., & Wolf, S. (2016). M&A and innovation: the role of integration and cultural differences - a central European targets perspective. *International Business Review*, 25, 76-86.
- Beck, T., Demirgüc-Kunt, A., & Maksimovic, V. (2005). Financial and legal constraints to growth: does firm size matter? *Journal of Finance*, 60, 137-177.
- Becker, W., & Ulrich, P. (2009). Spezifika des Controllings im Mittelstand Ergebnisse einer Interviewaktion. *Controlling & Management*, 53, 308-316.
- Behr, P., & Schmidt, R. H. (2015). The German banking system: characteristics and challanges. *House of Finance: white Paper 32*, 1-27.
- Benston, G. (1990). The separation of commercial and investment banking. *Oxford University Press, New York.*
- Berg, T., Saunders, A., & Steffen, S. (2016). The total cost of corporate borrowing in the loan market: don't ignore the fees. *Journal of Finance*, *71*, 1357-1392.
- Berg, T., Saunders, A., Steffen, S., & Streitz, D. (2017). Mind the gap: the difference between U.S. and European loan rates. *Review of Financial Studies*, *30*, 948-987.
- Berger, A. N., Dai, Q., Ongena, S., & Smith, D. C. (2003). To what extent will the banking industry be globalized? A study of bank nationality and reach in 20 European nations. *Journal of Banking & Finance*, 27, 383-415.
- Berger, A. N., & Udell, G. F. (1990). Collateral, loan quality, and bank risk. *Journal of Monetary Economics*, 25, 21-42.
- Berger, A. N., & Udell, G. F. (1995). Relationship lending and lines of credit in small firm finance. *Journal of Business*, 68, 351-381.
- Berger, A. N., & Udell, G. F. (1996). Universal banking and the future of small business In A. Saunders & I. Walter (Eds.), *Finanical System Design* (pp. 559-627). Irwin: Burr Ridge.
- Berger, A. N., & Udell, G. F. (2002). Small business credit availability and relationship lending: the importance of bank organisatinal structure. *Economic Journal*, 112, 32-53.
- Berlin, M., & Mester, L. J. (1992). Debt covenants and renegotiation. *Journal of Financial Intermediation*, 2, 95-133.
- Bernanke, B., & Gertler, M. (1995). Inside the bank box: the credit channel of monetary policy transmission. *Journal of Economic Perspectives*, 9, 27-48.

- Besanko, D., & Thakor, A. V. (1987). Collateral and rationing: sorting equilibra in monopolistic and competitive credit markets. *International Economic Review*, 28, 601-689.
- Bester, H. (1985). Screening vs. rationing in credit market under asymmetric information. *Journal of Economic Theory*, 42, 167-182.
- Bharath, S. T., Dahiya, S., Saunders, A., & Srinivasan, A. (2007). So what do I get? The bank's view of lending relationhsips. *Journal of Financial Economics*, 85, 368-419.
- Bharath, S. T., Dahiya, S., Saunders, A., & Srinivasan, A. (2011). Lending relationships and loan contract terms. *The Review of Financial Studies*, *24*, 1141-1203.
- Bharath, S. T., Sunder, J., & Sunder, S. V. (2008). Accounting quality and debt contracting. *The Accounting Review*, 83(1), 1-28.
- Bhaskar, R. (1989). *Reclaiming reality: a critical introduction to contemporary philosophy*. London: Verso.
- Bhattacharya, S., & Thakor, A. V. (1993). Contemporary banking theory. *Journal of Financial Intermediation*, *3*, 2-50.
- Bilgrami, A. (2002). Realism and relativism. Philosophical issues, 12, 1-24.
- Black, F., & Scholes, M. (1973). The pricing of options and corporate liabilities. *Journal of Political Economy*, *81*, 637-654.
- Blaikie, N. (2000). Designing social research (2 ed.). Cambridge: Polity.
- Bleymüller, J., Gehlert, G., & Gülicher, H. (2008). *Statistik für Wirtschaftswissenschaftler* (15 ed.). München: Franz Vahlen.
- BMI. (2016). European banking loan data.
- Bobrow, B., Tech, M., Redding, L., Spiro, A., & Ganz, E. (2007). The primary market. In A. Taylor & A. Sansone (Eds.), *The Handbook of Loan Syndications & Trading* (pp. 155-207). New York: McGraw Hill.
- Boehmer, E., & Megginson, W. L. (1990). Determinants of secondary market prices for developing country syndicated loans. *The Journal of Finance*, 45, 1517-1540.
- Bolton, P., & Scharfstein, D. (1996). Optimal debt structure and the number of creditors. *Journal of Political Economy*, 104, 1-25.
- Boot, A. W. A. (2000). Relationship banking: what do we know? *Journal of Financial Intermediation*, 9, 7-25.
- Boot, A. W. A., & Thakor, A. V. (1994). Moral hazard and secured lending in an infinitely reoeated credit market game. *International Economic Review*, *35*, 899-920.
- Boot, A. W. A., & Thakor, A. V. (2000). Can relationship banking survive competition? *The Journal of Finance*, *55*, 679-713.
- Boot, A. W. A., Thakor, A. V., & Udell, G. F. (1987). Competition, risk neutrality and loan commitments. *Journal of Banking & Finance*, 11, 449-472.
- Bosch, O., & Steffen, S. (2011). On syndicate composition, corporate structure and the certification effect of credit ratings. *Journal of Banking & Finance*, *35*, 290-299.
- Boubakri, N., & Ghouma, H. (2010). Control/ownership structure, creditor rights protection, and the costs of debt financing: international evidence. *Journal of Banking & Finance*, *34*, 2481-2499.

- Boyd, J. H., De Nicoló, G., & Al Jalal, A. (2006). Bank risk taking and competition revisited: new theory and new evidence. *Manuscript, Carlson School of Management, University of Minnesota*.
- Brick, I., & Palia, D. (2007). Evidence of jointness in terms of relationship lending. *Journal of Financial Intermediation*, *16*, 452-476.
- Bris, A., & Welch, I. (2005). The optimal concentration of creditors. *Journal of Finance*, 60, 2193-2212.
- Broecker, T. (1990). Credit-worthiness tests and interbank competition. *Econometrica*, 58, 429-452.
- Bronfenbrenner, U. (1976). The experimental ecology of education. *Teachers College Record*, 78, 157-178.
- Bryman, A., & Bell, E. (2015). *Business research methods* (4 ed.). UK: Oxford University Press.
- Buch, C. M., & Golder, S. M. (2001). Foreign versus domestic banks in Germany and the US: a tale of two markets? *Journal of Multinational Financial Management*, *11*, 341-361.
- Bulmer, M. G. (1979). Principles of statistics (2 ed.). New York: Dover Publications.
- Burak Güner, A. (2008). Bank lending opportunities and credit standards. *Journal of Financial Stability*, 4, 62-87.
- Bushman, R. M., Smith, A. J., & Wittenberg-Moerman, R. (2010). Price discovery and dissemination of private information by loan syndicate participants. *Journal of Accounting Research*, 48, 921-972.
- Calomiris, C. W., & Pornrojnangkool, T. (2009). Relationship banking and the pricing of financial services. *Journal of Financial Services Research*, 35, 189-224.
- Carey, M., & Nini, G. (2007). Is the corporate loan market globally integrated? A pricing puzzle. *The Journal of Finance*, 62, 2969-3007.
- Carletti, E. (2008). Competition and regulation in banking. In A. V. Thakor & A. W. A. Boot (Eds.), *Handbook of Financial Intermediation and Banking* (1 ed., pp. 449-482). USA: Elsevier.
- Carlstrom, C. T., & Samolyk, K. A. (1995). Loan sales as a response to market-based capital constraints. *Journal of Banking & Finance, 19*, 627-646.
- Casolaro, L., Focarelli, D., & Pozzolo, A. F. (2008). The pricing effect of certification on bank loans: evidence from the syndicated credit market. *Journal of Monetary Economics*, 55, 335-349.
- Champagne, C., & Coggins, F. (2012). Common information asymmetry factors in syndicated loan structures. *Journal of Banking & Finance, 36*, 1437-1451.
- Champagne, C., & Kryzanowski, L. (2007). Are current syndicated loan alliances related to past alliances? *Journal of Banking & Finance*, 31, 3145-3161.
- Charmaz, K. (2006). Constructing grounded theory: a practical guide through qualitative qnalysis (1 ed.). London: Sage.
- Chaudhry, S. M., & Kleimeier, S. (2015). Lead arranger reputation and the structure of loan syndicates. *International Financial Markets, Institutions and Money, 38*, 116-126.
- Chava, S., Livdan, D., & Purnanamdam, A. (2009). Do shareholder rights affect the cost of bank loans? *Review of Financial Studies*, 22, 2973-3004.

- Chowdhry, B., & Nanda, V. (1996). Stabilization, synidcation and pricing of IPOs. *Journal of Financial and Quantitative Analysis*, *31*, 25-42.
- Christodoulakis, G. A., & Olupeka, T. (2010). Pricing and momentum of syndicated credit in Europe. *Omega*, *38*, 325-332.
- Clark, A. M. (1998). The qualitative-quantitative debate: moving from positivism and confrontation to post-positivism and reconciliation. *Journal of Advanced Nursing*, 27, 1242-1249.
- Clark, R. (2001). European banking after the Euro: progress and problems. *Managerial Finance*, 27(9), 21-31.
- Clarke, G., Cull, R., Peria, M. S. M., & Sanchez, S. M. (2003). Foreign bank entry: experience, implications for developing economies, and agenda for further research. *World Bank Research Observer, 18*(1), 25-59.
- Clifford Chance. (2014). The new UK competition regime.
- Coffey, A., & Atkinson, P. (1996). *Making sense of qualitative data: complementary research strategies* (1 ed.). Thousand Oaks: Sage.
- Cohen, L., & Manion, L. (1987). Research methods in education (2 ed.). London: Croom Helm.
- Cohen, L., Manion, L., & Morrison, K. (2007). *Research methods in education* (6 ed.). London: Routledge.
- Cole, R. A., Goldberg, L. G., & White, L. J. (2004). Cookie cutter vs. character: the micro structure of small business lending by large and small banks. *Journal of Financial and Quantitative Analysis*, *39*, 227-251.
- Coleman, A. D. F., Esho, N., & Sharpe, I. G. (2002). Do bank characteristics influence loan contract terms. *Working Paper, University of New South Wales*.
- Conlan, C. (2011). The leveraged loan market. In N. Voisey & A. Slocombe (Eds.), *The Loan Book* (pp. 82-88). London: Loan Market Association.
- Cook, D., Schellhorn, C., & Spellmann, L. (2003). Lender certification premiums. *Journal of Banking & Finance*, 27, 1561-1579.
- Corbin, J., & Strauss, A. (1990). Grounded theory research: procedures, canons and evaluative criteria. *Zeitschrift für Soziologie*, 19, 418-427.
- Corbin, J., & Strauss, A. (1996). *Basics of qualitative research* (4 ed.). USA: Sage.
- Corbin, J., & Strauss, A. (2015). Basics of qualitative research: grounded theory procedures and techniques and procedures for developing grounded theory (4 ed.). Thousand Oaks: Sage.
- Craig, B. R., & Dinger, V. (2013). Deposit market competition, wholesale funding and bank risk. *Journal of Banking & Finance, 37*, 3605-3622.
- Creswell, J. W. (2007). *Qualitative inquiry and research design: choosing among five approaches*. Thousand Oaks: Sage.
- Creswell, J. W. (2009). *Qualitative, quantitative, and mixed methods approaches* (3 ed.). Thousand Oaks: Sage.
- Creswell, J. W., & Plano Clark, V. L. (2007). *Designing and conducting mixed methods research*. Thousand Oaks: Sage.
- Crotty, M. (1998). The foundations of social research. London: Sage.

- Cutcliffe, J. R. (2000). Methodological issues in grounded theory. *Journal of Advanced Nursing*, 31, 1476-1484.
- Dahiya, S., Puri, M., & Saunders, A. (2003). Bank borrowers and loan sales: new evidence on the uniqueness of bank loans. *Journal of Business*, 76, 563-582.
- De Fiore, F., & Uhlig, H. (2011). Bank finance versus bond finance. *Journal of Money, Credit* and Banking, 43, 1399-1421.
- De Franco, G., Kothari, S. P., & Verdi, R. (2001). The benefits of financial statement comparability. *Journal of Accounting Research*, 49, 895-931.
- De Haas, R., & van Horen, N. (2013). Running for the exit? International bank lending during a financial crisis. *Review of Financial Studies*, 26, 244-285.
- Dealogic Loanware. (2016). Loan analytics user guide.
- Degryse, H., & Van Cayseele, P. (2000). Relationship lending within a bank-based system: evidence from European small business data. *Journal of Financial Intermediation*, 9, 90-109.
- Denis, S. A., & Mullineaux, D. J. (2000). Syndicated loans. *Journal of Financial Intermediation*, 9, 404-426.
- Dennis, S. A., Nandy, D., & Sharpe, I. G. (2000). The determinants of contract terms in bank revolving credit agreements. *Journal of Financial and Quantitative Analysis*, 35(1), 87-110.
- Denzin, N. K. (1978). Sociological methods: a source book (2 ed.). New York: McGraw-Hill.
- Denzin, N. K., & Lincoln, Y., S. (2005). *The sage handbook of qualitative research* (3 ed.). London: Sage.
- Deutsche Bundesbank. (2016). Interbank market. Retrieved from https://www.bundesbank.de/Navigation/DE/Service/Glossar/_functions/glossar.html?l v2=129526&lv3=146636
- Dey, I. (1993). *Qualitative data analysis*. London: Routledge.
- De Young, R., William, W. C., & Udell, G. F. (2004). The past, present and future for community banks. *Journal of Financial Services Research*, 25(2/3), 85-134.
- Diamond, D. W. (1984). Financial intermediation and delegated monitoring. *Review of Economic Studies*, 51, 393-414.
- Diamond, D. W. (1991). Monitoring and reputation: the choice between bank loans and directly placed debt. *Journal of Political Economy*, *99*, 689-721.
- Dolvin, S. D., Pyles, M. K., & Woodside, B. (2007). The effect of resale constraints on abnormal returns of borrowers in syndicated loans. Academy of Banking Studies Journal, 6(2), 81-96.
- Drucker, S., & Puri, M. (2005). On the benefits of concurrent lending and underwriting. *The Journal of Finance*, 60, 2763-2799.
- Easterby-Smith, M., Thorpe, R., & Jackson, P. (2012). *Management reserach* (4 ed.). London: Sage.
- Eichengreen, B., & Mody, A. (2000). Lending booms, reserves and the sustainability of shortterm debt: inferences from the pricing of syndicated bank loans. *Journal of Development Economies*, 63, 5-44.
- Eisenhardt, K. M., & Graebner, M. E. (2007). Theory building from cases: opportunities and challanges. *Academy of Management Journal*, 50(1), 25-32.

- Ellemann, P. (2011). Introduction to the crisis of 2007-2009: when and why the bubble burst. In N. Voisey & A. Slocombe (Eds.), *The Loan Book* (pp. 44-51). London: Loan Market Association.
- Elsas, R. (2005). Empirical determinants of relationship lending. *Journal of Financial Intermediation*, 14, 32-57.
- Esty, B. C. (2001). Structuring loan syndicates: a case study of the Hong Kong disneyland project loan. *Journal of Applied Corporate Finance*, *14*(3), 80-95.
- European Central Bank. (2017). Euribor definition. Retrieved from https://www.ecb.europa.eu/home/glossary/html/glosse.en.html#454
- European Comission. (2009). Commission staff working document on the implementation of comission recommendation of 6 May 2003 concerning the definition of micro, small and medium-sized enterprise. Brussels.
- European Comission. (2017). What is an SME? Retrieved from http://ec.europa.eu/growth/smes/business-friendly-environment/sme-definition_de
- Everling, O., & Kreutz, R. (2012). Rating. In H. J. Hockmann & F. Thießen (Eds.), *Investmentbanking* (3 ed., pp. 536-554). Stuttgart: Schäffer-Poeschel.
- Fang, X., Li, Y., Xin, B., & Zhang, W. (2016). Financial statement comparability and debt contracting: evidence from the syndicated loan market. *Accounting Horizons*, 30, 277-303.
- Federal Deposit Insurance Corporation. (2016). FDIC Law, Regulations, Related Acts. Retrieved from https://www.fdic.gov/regulations/laws/rules/6000-300.html#6000sec.2
- Feldstein, S. G., Fabozzi, F. J., Grant, A., & Ratner, D. (2012). Municipal bonds. In F. J. Fabozzi (Ed.), *The Handbook of Fixed Income Securities* (8 ed., pp. 225-258). USA: The McGraw Hill Companies.
- Fight, A. (2004). Syndicated lending. Burlington: Elsevier Butterworth-Heinemann.
- Fitzgerald, I. (2011). The primary market: western Europe. In N. Voisey & A. Slocombe (Eds.), *The Loan Book* (pp. 52-59). London: Loan Market Association.
- Flannery, M. (1986). Asymmetric information and risky debt maturity choice. *Journal of Finance*, 41, 18-38.
- Focarelli, D., Pozzolo, A. F., & Casolaro, L. (2008). The pricing effect of certification on syndicated loans. *Journal of Monetary Economics*, 55, 335-349.
- Francois, P., & Missonier-Piera, F. (2007). The agency structure of loan syndicates. *The Financial Review*, 42, 227-245.
- Freedman, D., Pisani, R., & Purves, R. (2009). *Statistics*. New York: W.W. Norton&Company.
- Fulghieri, P., & Goldman, E. (2008). The design of debt contracts In A. V. Thakor & A. W. A. Boot (Eds.), *Handbook of Financial Intermediation and Banking* (1 ed., pp. 5-40). USA: Elsevier.
- Gaab, M. (2011). Setting the scene. In N. Voisey & A. Slocombe (Eds.), *The Loan Book* (pp. 108-110). London: Loan Market Association.
- Gadanecz, B. (2003). *The pricing and structure of syndicated loans: three empirical studies.* (Doctor of Philosophy), University of Wales, Bangor, Wales.

- Gadanecz, B., Kara, A., & Molyneux, P. (2012). Asymmetric information among lending syndicate members and the value of repeat lending. *International Financial Markets, Institutions and Money*, 22, 913-935.
- Gande, A., & Saunders, A. (2012). Are banks still special when there is a secondary market for loans? *The Journal of Finance*, 67, 1649-1684.
- Gasbarro, D., Le, K., Schwebach, R. G., & Zumwalt, J. K. (2004). Syndicated loan announcements and borrower value. *The Journal of Financial Research*, *37*, 133-141.
- Gatev, E., & Strahan, P. E. (2009). Liquidity risk and syndicate structure. *Journal of Financial Economics*, *93*, 490-504.
- Gaul, L., & Uysal, P. (2013). Can equity volatility explain the global loan pricing puzzle? *The Review of Financial Studies*, *26*, 3225-3265.
- Ghattas, M. G. (1987). *Spread determination under conditions of credit rationing* (Doctor of Philosophy), Brickbeck College, London.
- Giannetti, M., & Laeven, L. (2012). The flight home effect: evidence from the syndicated loan market during financial crises. *Journal of Financial Economics*, 104, 23-43.
- Giannetti, M., & Yafeh, Y. (2012). Do cultural differences between contract parties matter? Evidence from syndicated bank loans. *Management Science*, 58, 365-383.
- Glaser, B. G., & Strauss, A. (1967). *The discovery of grounded theory: strategies for qualitative research*. New Brunswick (U.S.A.) and London (U.K): Aldine Transaction.
- Gläser, J., & Laudel, G. (2010). *Experteninterviews und qualitative Inhaltsanalyse* (Vol. 4). Wiesbaden: VS Verlag.
- Gobbi, G., & Lotti, F. (2004). Entry decisions and adverse selection: an empirical analysis of local credit markets. *Journal of Financial Services*, *26*, 225-244.
- Godlewski, C. J. (2010a). Banking environment and loan syndicate structure: a cross-country analysis. *Applied Financial Economics*, 20, 637-648.
- Godlewski, C. J. (2010b). How to get a syndicated loan fast? The role of syndicate composition and organization. *Revue de l'association française de finance*, *31*(2), 51-92.
- Godlewski, C. J., Sanditov, B., & Burger-Helmchen, T. (2012). Bank lending networks, experience, reputation, and borrowing costs: empirical evidence from the French syndicated loan market. *Journal of Business Finance & Accounting*, 39(1), 113-140.
- Godlewski, C. J., & Weill, L. (2008). Syndicated loans in emerging markets. *Emerging Markets Review*, 9, 206-219.
- Godlewski, C. J., & Weill, L. (2011). Does collateral help mitigate adverse selection? A cross-country analysis. *Journal of Financial Services Research*, 40, 49-78.
- Goeke, M. (2008). Der deutsche Mittelstand Herzstück der deutschen Wirtschaft. Wiesbaden: Springer.
- Gonzales, L. (2014). Banking during bubbles: what difference does it make on post-bubble lending? *Journal of Applied Finance & Banking*, *4*, 255-271.
- Gorton, G. B., & Pennacchi, G. (1995). Bank loan sales: marketing nonmarketable assets. *Journal of Monetary Economics*, 35, 389-411.
- Gorton, G. B., & Schmid, F. A. (2000). Universal banking and the performance of German firms. *Journal of Financial Economics*, 58, 29-80.

- Gottesmann, A. A., & Roberts, G. S. (2004). Maturity and corporate loan pricing. *The Financial Review*, 39, 55-77.
- Gould, S. J. (1988). The mismeasure of man (4 ed.). London: Penguin Books.
- Goulding, C. (2002). Grounded theory: a practical guide for management business and market researchers (1 ed.). London: Sage.
- Graham, J. R., Li, S., & Qiu, J. (2008). Corporate misreporting and bank loan contracting. *Journal of Financial Economies*, 89(1), 44-61.
- Griwers, P., & Poschmann, J. (2012). Asset Backed Securities. In H. J. Hockmann & F. Thießen (Eds.), *Investmentbanking* (3 ed., pp. 513-535). Stuttgart: Schäffer-Poeschel.
- Grix, J. (2002). Introducing students to the generic terminology of social research. *Politics*, 22(3), 175-186.
- Grix, J. (2004). The Foundations of Research. London: Palgrave Macmillan.
- Grunert, J., & Norden, L. (2012). Bargaining power and information in SME lending. *Small Business Economy*, *39*, 401-417.
- Grunert, J., Norden, L., & Weber, M. (2005). The role of non-financial factors in internal credit ratings. *Journal of Banking & Finance*, 29, 509-531.
- Guba, E., G., & Lincoln, Y., S. (1994). Competing paradigms in qualitative research. In N. Denzin, K. & Y. Lincoln, S. (Eds.), *Handbook of qualitative research* (pp. 105-117). London: Sage.
- Gupta, A., Singh, A. K., & Zebedee, A. A. (2008). Liquidity in the pricing of syndicated loans. *Journal of Financial Markets*, *11*, 339-376.
- Haas, R. (2016). Syndicated loans in Western Europe: a versatile and reliable funding source.In N. Voisey & A. Slocombe (Eds.), 20 Years in the Loan Market (pp. 34-43).London: Loan Market Association.
- Hackethal, A. (2004). German banks and banking structure. *Oxford University Press, Chapter* 3, 71-105.
- Hainz, C., & Wiegand, M. (2013). How does relationship banking affect credit financing? Evidence from the financial crisis. *IFO Working Paper*, 157.
- Hale, G. (2007). Bonds or loans? The effect of macroeconomic fundamentals. *The Economic Journal*, 117, 196-215.
- Hale, G., & Santos, J. A. (2009). Do banks price their informational monopoly? *Journal of Financial Economics*, 93, 185-206.
- Hallak, I., & Schure, P. (2011). Why larger lenders obtain higher returns: evidence from sovereign syndicated loans. *Financial Management, Summer 2011*, 427-453.
- Harjoto, M., Mullineaux, D. J., & Yi, H. (2006). A comparison of syndicated loan pricing at investment and commercial banks. *Financial Management*, 35(4), 49-70.
- Haselmann, R., & Wachtel, P. (2011). Foreign banks in syndicated loan markets. *Journal of Banking & Finance*, *35*, 2679-2689.
- Haug, S. (2004). Wissenschaftstheoretische Problembereiche empirischer Wirtschafts- und Sozialforschung: Induktive Forschungslogik, naiver Realismus, Instrumentalismus, Relativismus. In U. Frank (Ed.), Wissenschaftstheorie in Ökonomie und Wirtschaftsinformatik: Theoriebildung und -bewertung, Ontologien, Wissensmanagement (pp. 85-107). Wiesbaden.

- Heckman, J. J. (1974). Shadow prices, market wages and labour supply. *Econometrica*, 42, 679-694.
- Heckman, J. J. (1976). The common structure of statistical models of trunctation, sample selection and limited dependent variables and a simple estimator for such models. *Annals of Economic and Social Measurement*, *5*, 475-492.
- Heckman, J. J. (1979). Sample selection bias as a specification error. *Econometrica*, 47, 153-161.
- Hockmann, H. J., & Thießen, F. (2012). Grundbegriffe des Investmentbankings. In H. J. Hockmann & F. Thießen (Eds.), *Investmentbanking* (3 ed., pp. 3-10). Stuttgart: Schäffer-Poechel Verlag.
- Holmstrom, B., & Tirole, J. (1997). Financial intermediation, loanable funds, and the real sector. *Quarterly Journal of Economics*, 112, 663-691.
- Holmström, N., & Tirole, J. (1998). Private and public supply of liquidity. *Journal of Political Economy*, 106(11), 1-40.
- House, E. (1991). Realism in research. Educational Researcher, 20(6), 2-25.
- Houston, J. F., Itzkowitz, J., & Naranjo, A. (2017). Borrowing beyond borders: foreign assets, lender choice, and loan pricing in the syndicated bank loan market. *Journal of Corporate Finance*, 42, 315-334.
- Houston, J. F., & James, C. M. (1996). Bank information monopolies and the mix of private and public debt claims. *Journal of Finance*, *51*, 1863-1899.
- Howcroft, B., Kara, A., & Marques-Ibanez, D. (2014). Determinants of syndicated lending in European banks and the impact of the financial crisis. *International Financial Markets, Institutions and Money, 32*, 473-490.
- Howell, K. E. (2013). An introduction to the philosophy of methodology. London: Sage.
- Hubbard, R. G., Kuttner, K. N., & Palia, D. (2002). Are there bank effects in borrowers' cost of funds? Evidence from a matched sample of borrowers and banks. *Journal of Business*, 75, 559-581.
- Ivashina, V. (2009). Asymmetric information effects on loan spreads. *Journal of Banking & Finance*, 92, 300-319.
- Ivashina, V., & Scharfstein, D. (2010). Loan syndication and credit cycles. American Economic Review: Papers & Proceedings, 100, 57-61.
- Jiminez, G., & Saurina, J. (2004). Collateral, type of lender and relationship banking as determinants of credit risk. *Journal of Banking & Finance*, 28, 2191-2212.
- Jones, J. D., Lang, W. W., & Nigro, P. J. (2005). Agent bank behaviour in bank loan syndications. *The Journal of Financial Research*, 28, 385-402.
- Jorion, P., Shi, C., & Zhang, S. (2009). Tightening credit standards: the role of accounting quality. *Review of Accounting Studies*, 14(1), 123-160.
- Kaya, H. D. (2011). The effect of firm characteristics on choice of debt financing. *International Journal of Management*, 28, 199-208.
- Kelemen, M., & Rumens, N. (2008). An introduction to critical management research. London: Sage.
- Keskin, K. (2016). Inverse s-shaped probability weighting functions in first-price sealed-bid auctions. *Review of Econometric Design*, 20, 57-67.

- Killam, L. (2013). Research terminology simplified: paradigms, axiology, ontology, epistemology and methodology. Sudbury.
- Kim, M., Kliger, D., & Vale, B. (2003). Estimating switching costs: the case of banking. *Journal of Financial Intermediation*, 12, 25-56.
- Kim, M., Surroca, J., & Tribó, J. A. (2014). Impact of ethical behavior on syndicated loan rates. *Journal of Banking & Finance*, *38*, 122-144.
- Kopecky, K. J., & Xiao, Y. (2013). The effect of the lead arranger's reputation on the retained share in a syndicated loan. *The Journal of American Academy of Business, Cambridge*, 19(1), 20-27.
- Kornmeier, M. (2007). Wissenschaftstheorie und wissenschaftliches Arbeiten (1 ed.). Heidelberg: Physica-Verlag.
- Kuckartz, U. (2014). Mixed Methods Methodologie, Forschungsdesigns und Analyseverfahren. Wiesbaden Springer.
- Kuhn, T. S. (1962). The structure of scientific revolutions: University of Chicago Press.
- Kysucky, V., & Norden, L. (2016). The benefits of relationship lending in a cross-country context: a meta-analysis. *Management Science*, 62(1), 90-110.
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. (1997). Legal determinants of external finance. *Journal of Finance*, *52*, 1131-1150.
- Laubrecht, S., & Heller, S. (2012). Syndizierte Finanzierung. In H. J. Hockmann & F. Thießen (Eds.), *Investmentbanking* (3 ed., pp. 345-364). Stuttgart: Schäffer-Poeschel.
- Lee, S. W., & Mullineaux, D. J. (2004). Monitoring, financial distress, and the structure of commercial lending syndicates. *Financial Management*, *33*(3), 107-130.
- Leland, E., & Pyle, D. (1977). Information Asymmetries, Financial Structure, and Financial Intermediation. *Journal of Finance*, *32*, 371-387.
- Levy, H., & Post, T. (2005). Investments. Edinburgh Gate: Pearson Education.
- Lim, J., Minton, B. A., & Weisbach, M. S. (2014). Syndicated loan spreads and the composition of the syndicate. *Journal of Financial Economics*, 111, 45-69.
- LMA. (2013). A Loan Market Association Guide: A Guide to Syndicated Loans & Leveraged Finance Transactions.
- LMA. (2014). Notice on the application of competition law to syndicated loan arrangements.
- LMA. (2015). Regulation and the loan market.
- LMA. (2016a). A Loan Market Association publication: schuldscheindarlehen LMA product guide.
- LMA. (2016b). Multicurrency term and revolving facilities agreement.
- Loan Pricing Corporation. (2016). DealScan users' manual.
- Lu, X., & White, H. (2014). Robustness checks and robustness tests in applied economics *Journal of Econometrics*, 178, 194-206.
- Mahajan, A., & Fraser, D. R. (1986). Dollar eurobond pricing and U.S. bond pricing. *Journal* of International Business Studies, 17, 21-37.
- Malone, S. (2011). The borrower/lender relationship: the lender perspective. In N. Voisey & A. Slocombe (Eds.), *The Loan Book* (pp. 114-120). London: Loan Market Association.

- Maskara, P. K. (2006). Participation of investment banks and non-bank financial institutions in syndicated loans. *Working Paper, University of Kentucky*.
- Maskara, P. K. (2010). Economic value in tranching of syndicated loans. *Journal of Banking & Finance, 34*, 946-955.
- Mason, J. (2002). Qualitative researching (2 ed.). London: Sage.
- 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, 477-499.
- Mattes, J. A., Steffen, S., & Wahrenburg, M. (2013). Do information rents in loan spreads persist over the business cycles? *Journal of Financial Services Research*, 43, 175-195.
- Matthews, K., & Thompson, J. (2014). The economics of banking (3 ed.). Chichester: Wiley.
- Maxwell, J. A. (2005). *Qualittaive research design: an interactive approach*. Thousand Oaks: Sage.
- McAfee, R., & McMillan, J. (1987). Auctions and bidding. *Journal of Economic Literature*, 25, 699-738.
- McCahery, J., & Schwienbacher, A. (2010). Bank reputation in the private debt market. *Journal of Corporate Finance, 16*, 498-515.
- Mcmahon, A. (2011). The project finance market. In N. Voisey & A. Slocombe (Eds.), *The Loan Book* (pp. 89-93). London: Loan Market Association.
- Megginson, W. L., Poulsen, A. B., & Sinkey, J. F. (1995). Syndicated loan announcements and the market value of the banking firm. *Journal of Money, Credit and Banking*, 27, 457-475.
- Melink, A., & Plaut, S. (1986). Loan commitment contracts, terms of lending, and credit allocation. *The Journal of Finance*, 41, 425-435.
- Meller, F. (2013). Banken als Intermediäre im traditionellen Bankgeschäft Bedrohung durch Basel III? *Corporate Finance Fachportal*, 2, 92-100.
- Mercedes Adamuz, M., & Hernández Cortès, J. (2015). Endogenous screening and the formation of loan syndicates. *International Review of Economics and Finance, 31*, 290-307.
- Mikkelson, W. H., & Partch, M. M. (1986). Valuation effects of security offerings and the issuance process. *Journal of Financial Economics*, 15, 31-60.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: an expanded sourcebook* (2 ed.). London: Sage.
- Modigliani, F., & Miller, M. (1958). The cost of capital, corporate finance, and the theory of investment. American Economic Review, 48, 261-297.
- Mohr, P., & Bärtl, S. (2012). Mergers & Acquisitions: Die M&A-Beratung. In H. J. Hockmann & F. Thießen (Eds.), *Investmentbanking* (3 ed., pp. 238-276). Stuttgart: Schäffer-Poeschel.
- Mora, N. (2015). Lender exposure and effort in the syndicated loan market. *The Journal of Risk and Insurance*, 82, 205-251.
- Morgan, D. L. (2007). Paradigms lost and pragmatism regained, Methodological implications of combining qualitative and quantitative methods. *Journal of mixed methods research*, 1(1), 48-76.

- Mosebach, M. (1999). Market response to banks granting lines of credit. *Journal of Banking & Finance*, 23, 1707-1723.
- Moses, J. W., & Knutsen, T. L. (2012). *Ways of knowing* (2 ed.). Hampshire: Palgrave Macmillan.
- Nigro, P. J., Jones, J. D., & Aydogdu, M. (2010). Some evidence on the secondary market trading of syndicated loans. *Journal of Business & Economics Research*, 8(5), 33-49.
- Nini, G. (2004). The role of local banks in promoting external finance: a study of syndicated lending to emerging markets borrowers. *Paper submitted for CGFS Working Group on Financial Sector FDI*.
- Nini, G., Smith, D. C., & Sufi, A. (2012). Creditor control rights, corporate governance, and firm value. *Review of Financial Studies*, 25, 1713-1761.
- O'Brian, R. (2001). An overview of the methodological approach of action research. In R. Richardson (Ed.), *Theory and practice of action research*. João Pessoa: Universidade Federal da Paraíba.
- O'Donovan, M. (2011). The borrower/lender relationship: the borrower perspective. In N. Voisey & A. Slocombe (Eds.), *The Loan Book* (pp. 111-113). London: Loan Market Association.
- Oliver Wyman. (2015). Post-crisis changes in the stability of the US banking system: evidence from US bank holding companies from 2004 to 2014.
- Ortiz-Molina, H., & Penas, M. F. (2008). Lending to small businesses: the role of loan maturity in adressing informational problems. *Small Business Economics*, 30, 361-383.
- Panyagometh, K., & Roberts, G. S. (2010). Do lead banks exploit syndicate participants? Evidence from ex post risk. *Financial Management*, 273-299.
- Patton, M. Q. (2002). *Qualitative research & evaluation methods* (3 ed.). Thousand Oaks: Sage.
- Peirce, C. S. (1975). Was heißt Pragmatismus. In E. Martens (Ed.), *Texte der Philosophie des Pragmatismus* (1 ed., pp. 99-127). Stuttgart: Reclam.
- Pennacchi, G. (1988). Loan sales and the cost of bank capital. *Journal of Finance*, 43, 375-395.
- Petersen, M. A. (2004). Information: hard and soft. Northwestern Kellogg School of Management Mimeo.
- Petersen, M. A., & Rajan, R. G. (2002). Does distance still matter? The information revolution in small business lending. *The Journal of Finance*, *57*, 2533-2570.
- Philippe, C. (1980). Estimation of the predictive power of a regression model. *Journal of Applied Psychology*, 65, 407-414.
- Phillips, D. C. (1987). *Philosophy, science, and social inquiry: contemporary methodological controversies in social science and related applied fields of research.* Oxford: Pergamon Press.
- Pichler, P., & Wilhelm, W. J. (2001). A theory of the syndicate: form follows function. *Journal of Finance*, 56, 2237-2264.

- Pilger, D. (2012). Leveraged buyouts: a practical introductory guide to LBOs. Hampshire: Harriman House.
- Pouliot, V. (2007). "Subjectivism": Toward a constructivist methodology. *International Studies Quarterly*, 51, 359-384.
- Preece, D., & Mullineaux, D. J. (1996). Monitoring, loan renegotiability, and firm value: the role of lending syndicates. *Journal of Banking & Finance, 20*, 577-593.
- Qian, J., & Strahan, P. E. (2007). How laws and institutions shape financial contracts: the case of bank loans. *Journal of Finance*, 62, 2803-2834.
- Rajan, R. G. (1992). Insiders and outsiders: the relationship between relationship and arm's length debt. *Journal of Finance*, 47, 1367-1400.
- Ramanthan, K. (2012). International bond markets and instruments. In F. J. Fabozzi (Ed.), *The Handbook of Fixed Income Securities* (8 ed., pp. 385-407). USA: The McGraw Hill Companies.
- Remenyi, D., Money, A., & Twite, A. (1991). *Measuring and managing IT benefits*. Oxford: NCC-Blackwell.
- Remenyi, D., Williams, B., Money, A., & Swartz, E. (1998). Doing research in business and management (1 ed.). London: Sage.
- Rhodes, T., Clark, K. T., & Campbell, M. (2004). *Syndicated lending practice and documentation* (4 ed.). London: Euromoney Books.
- Roberts, M. R., & Sufi, A. (2009). Renegotiation of financial contracts: evidence from private debt agreements. *Journal of Financial Economics*, 93, 159-184.
- Robson, C. (2011). Real world research: a resource for users of social research methods in applied settings (3 ed.). Chichester: John Wiley.
- Saldana, J. (2013). The coding manual for qualitative researchers (2 ed.). London: Sage.
- Santos, J. A. C., & Winton, A. (2008). Bank loans, bonds, and information monopolies across the business cycle. *The Journal of Finance*, *63*, 1315-1359.
- Saunders, A., & Steffen, S. (2011). The costs of being private: evidence from the loan market. *The Review of Financial Studies*, 24, 4091-4122.
- Saunders, M., Lewis, P., & Thornhill, A. (2012). *Research methods for business students* (6 ed.). Harlow: Pearson.
- Schenone, C. (2010). Lending relationships and information rents: do banks exploit their information advantages? *The Review of Financial Studies*, 23, 1149-1199.
- Schildbach, J. (2012). Universalbanken: gut für Kunden und Finanzstabilität: Warum eine Aufspaltung falsch wäre. *Deutsche Bank: Aktuelle Themen Globale Finanzmärkte*, 1-24.
- Schmidt, R. H., & Tyrell, M. (2004). What constitutes a financial system in general and the German financial system in particular? In J. P. Krahnen & R. H. Schmidt (Eds.), *The German financial system* (pp. 16-67). Oxford: University Press.
- Schnabl, P. (2012). The international transmission of bank liquidity shocks: evidence from an Emerging Market. *Jorunal of Finance*, 67, 897-932.
- Schniewind, H. J. (2012). Projektfinanzierung. In H. J. Hockmann & F. Thießen (Eds.), *Investmentbanking* (3 ed., pp. 365-384). Stuttgart: Schäffer-Poeschel.
- Schön, D. A. (1983). *The reflective practitioner: how professionals think in action*. New York: Basic Books Inc.
- Schubert, H. J. (2010). Neopragmatismus. In M. Hagner, D. Thomä, & C. Vismann (Eds.), *Pragmatismus zur Einführung* (1 ed., pp. 142-195). Hamburg: Junius Verlag.
- Schure, P., Scoones, D., & Qinghua, G. (2005). A theory of loan syndication. *Finance Research Letters*, 2, 165-172.
- Scotland, J. (2012). Exploring the philosophical underpinnings of research: relating ontology and epistemology to the methodology and methods of the scientific, interpretive, and critical research paradigms. *English Language Teaching*, 5(9), 9-16.
- Shachat, J., & Wei, L. (2012). Procuring commodities: first-price sealed-bid or English auctions? *Marketing Science*, 31, 317-333.
- Sharpe, S. A. (1990). Asymmetric information, bank lending and implicit contracts: a stylized model of customer relationships. *Journal of Finance*, 45, 1069-1087.
- Shivdasani, A., & Wang, Y. (2011). Did structured credit fuel the LBO boom? Jorunal of *Finance*, 66, 1291-1321.
- Shockley, R. L., & Thakor, A. V. (1997). Bank loan commitment contracts: data, theory, and tests. *Journal of Money, Credit and Banking*, 29, 517-534.
- Sickel, H. S. (2010). Konsortialkreditvertrag (Sickel). In A. Becker, M. Berndt, & J. Klein (Eds.), Konsortialkreditgeschäft und Sicherheitenpools: Verträge sicher gestalten und praktikabel umsetzten (3rd ed., pp. 3-34). Heidelberg: Finanz Colloquium Heidelberg.
- Siegel, J. (2005). Can Foreign Firms bond themselves effectively by renting US Security Laws? *Journal of Financial Economics*, 75(2), 319-359.
- Simons, K. (1993). Why do banks syndicate loans? *New England Economic Review, Federal Reserves, Bank of Boston*, 45-52.
- Slaughter and May. (2013). The ACT borrower's guide to LMA loan documentation for investment grade borrowers.
- Smith, Jr., C. W. (1980). On the theory of financial contracting: the personal loan market. *Journal of Monetary Economics*, *3*, 333-357.
- Standard & Poor's (S&P). (2011). A guide to the loan market.
- Stein, I. (2014). The price impact of lending relationships. *German Economic Review*, 16, 367-389.
- Strahan, P. E. (1999). Borrower risk and the price and nonprice terms of bank loans. *Working Paper, Federal Reserve Bank of New York.*
- Strahan, P. E. (2008). Bank structure and lending: what we do and do not know. In A. V. Thakor & A. W. A. Boot (Eds.), *Handbook of Financial Intermediation and Banking* (1 ed., pp. 107-131). USA: Elsevier.
- Sufi, A. (2007). Information asymmetry and financing arrangements: evidence from syndicated loans. *The Journal of Finance*, 62, 629-668.
- Tashakkori, A., & Teddlie, C. (2010). *The Sage handbook of mixed methods in social and behavioural research*. Thousand Oaks: Sage.
- Teddlie, C., & Tashakkori, A. (2009). Foundations of mixed methods in social & behavioral research. Thousand Oaks: Sage.
- Thakor, A. V., Hai, H., & Greenbaum, S. I. (1981). Bank loan commitments and interest rate volatility. *Jorunal of Banking and Finance*, *5*, 497-510.
- Thau, A. (2011). The Bond Book (3 ed.). USA: The McGraw Hill Companies.

- Thießen, H. J. (2012). Finanzsysteme, Stabilität und Krisen. In H. J. Hockmann & F. Thießen (Eds.), *Investmentbanking* (3 ed., pp. 80-97). Stuttgart: Schäffer-Poeschel.
- Thomas, H., & Wang, Z. (2004). The integration of bank syndicated loan and junk bond markets. *Journal of Banking & Finance*, 28, 299-329.
- Treacy, W. F., & Carey, M. (2000). Credit risk rating systems at large US banks. *Journal of Banking & Finance*, 24, 167-201.
- Trevino, L. K., Weaver, G. R., & Reynolds, S. J. (2006). Behavioral ethics in organisations: a review. *Journal of Management*, *32*, 951-990.
- Udell, G. F. (2008). What's in a relationship? The case of commercial lending. *Business Horizons*, *51*, 93-103.
- University of Gloucestershire. (2008). Research ethics: a handbook of principles and procedures. Retrieved from https://infonet.glos.ac.uk/departments/registry/researchadmin/Research%20Ethics%20 documents/Research%20Ethics%20Handbook%20final%20Nov%2010.pdf.
- Voisey, N. (2016). The syndicated loan as a financing instrument. In N. Voisey & A. Slocombe (Eds.), 20 Years in the Loan Market (pp. 26-32). London: Loan Market Association.
- Voisey, N., & Slocombe, A. (2011). Never mind the price, feel the quality: the historical development of the investment grade market. In N. Voisey & A. Slocombe (Eds.), *Developing Loan Markets* (pp. 22-30). London: Loan Market Association.
- Von Moltke, C. (2013). Introduction to project finance as a financing product in developing markets. In N. Voisey, A. Slocombe, & G. Haley (Eds.), *Developing Loan Markets* (pp. 132-139). London: Loan Market Association.
- Wakefield, J. C. (1995). When an irresistible epistemology meets an immovable ontology. *Social Work Research*, 19(1), 9-17.
- Wallace, M., & Wray, A. (2011). Critical reading and writing for postgraduates (2 ed.). London: Sage.
- Wasan, S., Vijayakumar, J., & Daniels, K. N. (2013). Accrual quality and borrowing costs in the syndicated loan market. *Journal of Accounting and Finance*, *13*(6), 45-63.
- Watson, D., & Head, A. (2001). *Corporate finance: principles & practice* (2 ed.). Edinburgh Gate: Pearson.
- Wengraf, T. (2001). *Qualitative research interviewing: biographic and narrative semistructured methods*. London: Sage.
- Wherity, N. (2011). LMA investment grade documentation: how it stood up to the crisis of 2007-2009 and the LMA response. In N. Voisey & A. Slocombe (Eds.), *The Loan Book* (pp. 144-150). London: Loan Market Association.
- Wilson, R. B. (1968). The theory of syndicates. *Econometrica*, 36, 119-132.
- Winton, A. (1997). Competition among financial intermediaries when diversification matters. *Journal of Financial Intermediation*, 6, 307-346.
- Wood, P. R. (2016). Foundations of the loan market. In N. Voisey & A. Slocombe (Eds.), 20 Years in the Loan Market (pp. 19-25). London: Loan Market Association.
- Wu, W., Chang, H., Suardi, S., & Chang, Y. (2013). The cascade effect on lending conditions: evidence from the syndicated loan market. *Journal of Business Finance & Accounting*, 40, 1247-1275.

Yafeh, Y., & Yosha, O. (2001). Industrial organization of financial systems and strategic use of relationship banking. *European Finance Review*, *5*, 63-78.

Yin, R. K. (2014). Case study research: designs and methods (5 ed.). Thousand Oaks: Sage.

Appendix A: Core literature synthesis: full list of findings

Determinant	Pricing direction	Pricing definition	Borrower region under study	Time frame	Reference	Consensus within extant literature	Detailed discussion in table
			Borrower related sp	ecifics			
	1	C	Financial informa	tion	1		
High market-to-book-ratio	Ļ	reference rate	U.S.	1987-2002	Santos and Winton (2008)		57
Borrower beta coefficient	→	Spread over reference rate	Europe	1990-2008	Christodoulakis and Olupeka (2010)		22
	1	Spread over reference rate	Cross-country	1990-2001	Focarelli, Pozzolo, and Casolaro (2008)		49
	↑	AISD	U.S.; Europe	1990-2011	Gaul and Uysal (2013)		24
	1	AISD	Wordwide	1990-2011	Anagnostopoulou and Drakos (2016)		47
High stock-return volatility	Ť	AISU	U.S.	1986-2011	Berg, Saunders, and Steffen (2016)		15
	1	Spread over reference rate	U.S.	1987-2002	Santos and Winton (2008)		57
	Ť	AISD	U.S.; Canada	1996-2003	Harjoto, Mullineaux, and Yi (2006)		32
	1	AISD	U.S.	1992-2008	Fang, Li, Xin, and Zhang (2016)		27
High cash flow	Ļ	AISD	Europe	1995-2007	Haselmann and Wachtel (2011)		34
High current ratio	Ļ	AISD	U.S.	1986-2003	Bharath, Dahiya, Saunders, and Srinivasan (2011)		55
Low interest-coverage-ratio	1	Spread over reference rate	U.S.	1987-2002	Santos and Winton (2008)		57
High EBITDA	↓	Spread over reference rate	Cross-country	1990-2001	Focarelli, Pozzolo, and Casolaro (2008)		49
	Ļ	AISD	UK	1989-2007	Saunders and Steffen (2011)		63
High degree of tangible assets	Ļ	AISD	Wordwide	1990-2011	Anagnostopoulou and Drakos (2016)		47
	Ļ	Spread over reference rate	U.S.	1987-2002	Santos and Winton (2008)		57
	Ļ	AISD	Europe	1995-2007	Haselmann and Wachtel (2011)		34
	1	Spread over reference rate	Cross-country	1990-2001	Focarelli, Pozzolo, and Casolaro (2008)		49
	1	AISD	Wordwide	1990-2011	Anagnostopoulou and Drakos (2016)		47
	1	AISD	U.S.	1986-2003	Bharath, Dahiya, Saunders, and Srinivasan (2011)		55
	1	AISD	U.S.	1998-2003	Schenone (2010)		61
	1	AISD	Europe	1995-2007	Haselmann and Wachtel (2011)		34
High leverage-ratio	1	Spread over reference rate	Europe	1990-2008	Christodoulakis and Olupeka (2010)		22
	1	AISD	U.S.; Europe	1990-2011	Gaul and Uysal (2013)		24
	1	AISD	U.S.; Canada	1996-2003	Harjoto, Mullineaux, and Yi (2006)		32
	1	Spread over reference rate	U.S.	1987-2002	Santos and Winton (2008)		57
	1	AISD	U.S.	1992-2008	Fang, Li, Xin, and Zhang (2016)		27
	1	Spread over reference rate	U.S.	1991-2002	Wasan, Vijayakumar, and Daniels (2013)		28
	↑	Spread over reference rate	Cross-country	2003-2007	Kim, Surroca, and Tribó (2014)		29
	↓	Spread over reference rate	U.S.	1987-2002	Santos and Winton (2008)		57
	↓	AISD	U.S.	1990-August 2010	Wu, Chang, Suardi, and Chang (2013)		53
	↓	AISD	U.S.	1986-2003	Bharath, Dahiya, Saunders, and Srinivasan (2011)		55
High profitability	Ļ	AISD	Wordwide	1990-2011	Anagnostopoulou and Drakos (2016)		47
	↓	AISD	U.S.; Canada	1996-2003	Harjoto, Mullineaux, and Yi (2006)		32
	Ļ	Spread over reference rate	Cross-country	2003-2007	Kim, Surroca, and Tribó (2014)		29
	Ļ	AISD	ик	1989-2007	Saunders and Steffen (2011)		63
High accrual quality	Ļ	Spread over reference rate	U.S.	1991-2002	Wasan, Vijayakumar, and Daniels (2013)		28
High degree of accounting/financial statement comparability	Ļ	AISD	U.S.	1992-2008	Fang, Li, Xin, and Zhang (2016)		27

Determinant	Pricing direction	Pricing definition	Borrower region under study	Time frame	Reference	Consensus within extant literature	Detailed discussion in table
		1	Borrower related sp	ecifics	1	1	
	↑	AISD	Legal form&owner	1992-2008	Fang Li Xin and Zhang (2016)		27
Opaque	 ↑	AISD	ик	1989-2007	Saunders and Steffen (2011)		63
	1	AISD	U.S.	1998-2003	Schenone (2010)		61
	•	AISD	Furope	1995-2007	Haselmann and Wachtel (2011)		34
Public legal form	•	AISD	U.S.: Canada	1996-2003	Harioto, Mullineaux, and Yi (2006)		32
		AISD	UK	1989-2007	Saunders and Steffen (2011)		63
	+ →	Spread over	U.S.: Canada: Europe	2003-2008	Alexandre, Bouaiss, and Refait-		59
Public legal form (but listed on onaque segment)		reference rate	UK	1989-2007	A lexandre (2014) Saunders and Steffen (2011)		63
Private legal form & public bond market access	1	AISD	ик	1989-2007	Saunders and Steffen (2011)		63
	↓ ↑	Spread over	Cross-country	2003-2007	Kim Surroca and Tribó (2014)		29
Ownership concentration (high degree)	 ↑	reference rate		1989 2007	Saunders and Steffen (2011)		63
		ЛБР	Capital markets ac	cess	Saunders and Stenen (2011)		
	Ļ	Spread over reference rate	U.S.	1987-2002	Santos and Winton (2008)		57
Capital markets access (to public bond market)	Ļ	AISD	υк	1989-2007	Saunders and Steffen (2011)		63
	Ļ	AISD	U.S.	1987-2002	Hale and Santos (2009)		62
Capital markets access (in general)	Ļ	Spread over reference rate	Europe	1990-2008	Christodoulakis and Olupeka (2010)		22
Syndicated loan after equity IPO	Ļ	AISD	U.S.	1998-2003	Schenone (2010)		61
		Spread over	Age				
	Ļ	reference rate	U.S.	1987-2002	Santos and Winton (2008)		57
Old	Ļ	AISD	U.S.; Europe	1990-2011	Gaul and Uysal (2013)		24
	Ļ	reference rate	Cross-country	2003-2007	Kim, Surroca, and Tribó (2014)		29
Externally rated	Ļ	AISD	Worldwide	1990-2011	Anagnostopoulou and Drakos		47
	Ļ	Spread over	Cross-country	2003-2007	(2016) Kim, Surroca, and Tribó (2014)		29
	1 1	AISD	Worldwide	1990-2011	Anagnostopoulou and Drakos		47
	1 1	AISD	U.S.	1998-2003	(2016) Schenone (2010)		61
	↑	AISD	U.S.	1987-1999	Maskara (2010)		44
	^	Spread over	Euro-area	1999-	Barbosa and Ribeiro (2007)		38
Externally low (weak) rated	 ↑	reference rate	U.S.: Europe	1992-2002	Carey and Nini (2007)		23
	↑ ↑	Spread over	U.S.: Canada: Europe	2003-2008	Alexandre, Bouaiss, and Refait-		59
	↑	reference rate	UK	1989 2007	Alexandre (2014)		63
	 ↑	Spread over	US	1991 2007	Wasan, Vijayakumar, and Daniels		28
		reference rate	Sector		(2013)		20
Utilities	Ļ	Spread over reference rate	Europe	1990-2008	Christodoulakis and Olupeka (2010)		22
		Spread over	Ethical behavior	ur 2002 205-			
High degree of ethical behaviour High degree of ethical behaviour by borrower &	↓	reference rate Spread over	Cross-country	2003-2007	Kim, Surroca, and Tribó (2014)		29
lender	∣↓	reference rate	Cross-country Draw behaviou	2003-2007 r	Kim, Surroca, and Tribó (2014)		29
	Ļ	AISU	U.S.	1986-2011	Berg, Saunders, and Steffen (2016)		15
Low draw probability of RCF	Î	AISD	U.S.	1986-2011	Berg, Saunders, and Steffen (2016)		15
		I	Size	1	Mattas Staffan and W-b		
	Ļ	AISD	ик	1996-2005	(2013)		58
	Ļ	AISD	U.S.	2010	(2013) (2013)		53
	Ļ	AISD	U.S.	1988-1999	Gottesmann and Roberts (2004)		39
	Ļ	AISD	U.S.	1986-2003	Bnarath, Dahiya, Saunders, and Srinivasan (2011)		55
Large	Ļ	AISD	Wordwide	1990-2011	Anagnostopoulou and Drakos (2016)		47
B*	Ļ	AISD	U.S.; Canada	1996-2003	Harjoto, Mullineaux, and Yi (2006)		32
	Ļ	Spread over reference rate	U.S.	1987-2002	Santos and Winton (2008)		57
	Ļ	AISD	Europe	1995-2007	Haselmann and Wachtel (2011)		34
	↓	Spread over reference rate	Europe	1990-2008	Christodoulakis and Olupeka (2010)		22
	Ļ	Spread over reference rate	Cross-country	2003-2007	Kim, Surroca, and Tribó (2014)		29
Market capitalisation	\rightarrow	Spread over reference rate	Europe	1990-2008	Christodoulakis and Olupeka (2010)		22

Determinant	Pricing direction	Pricing definition	Borrower region under study	Time frame	Reference	Consensus within extant literature	Detailed discussion in table	
The prizing puzzle								
]	Regional pricing diff	erences				
	Ļ	AISD	U.S.; Europe	1992-2009	Berg, Saunders, Steffen, and Streitz (2017)		25	
Europe vs. U.S. (revolving credit facilities)	î	AISU	U.S.; Europe	1992-2009	Berg, Saunders, Steffen, and Streitz (2017)		25	
	\rightarrow	тсв	U.S.; Europe	1992-2009	Berg, Saunders, Steffen, and Streitz (2017)		25	
Europe vs. U.S. (term loan)	Ļ	AISD	U.S.; Europe	1992-2009	Berg, Saunders, Steffen, and Streitz (2017)		25	
	Ļ	Spread over reference rate	U.S.; Canada; Europe	2003-2008	Alexandre, Bouaiss, and Refait- Alexandre (2014)		59	
Europe re LIS	Ļ	AISD	U.S.; Europe; Asia	1998-2009	Champagne and Coggins (2012)		51	
Europe vs. U.S.	Ļ	AISD	U.S.; Europe	1992-2002	Carey and Nini (2007)		23	
	\rightarrow	AISD	U.S.; Europe	1990-2011	Gaul and Uysal (2013)		24	

Determinant	Pricing direction	Pricing definition	Borrower region under study	Time frame	Reference	Consensus within extant literature	Detailed discussion in table		
			Lender related sp	ecifics					
			Туре				_		
T	↑	AISD	U.S.; Canada	1996-2003	Harjoto, Mullineaux, and Yi (2006)		32		
nives then bank	↑ (AISD	U.S.	1992-2002	Calomiris and Pornrojnangkool (2009)		60		
Investment bank as lender for borrower after equity underwriting	Ļ	AISD	U.S.	1992-2002	Calomiris and Pornrojnangkool (2009)		60		
	Nationality								
	→	Spread over reference rate	France	1992-2006	Godlewski, Sanditov, and Burger- Helmchen (2012)		52		
Lender and borrower of same nationality	Ļ	Spread over reference rate	Euro-area	1999- October 2006	Barbosa and Ribeiro (2007)	-	38		
	1	Spread over reference rate	Euro-area	1999- October 2006	Barbosa and Ribeiro (2007)		38		
Foreign	1	AISD	Cross-country	1998- November	Houston, Itzkowitz, and Naranjo (2017)		35		
Foreign (borrower has assets in lender country)	Ļ	AISD	Cross-country	1998- November	Houston, Itzkowitz, and Naranjo (2017)		35		
Foreign (in large financial system)	î	AISD	Europe	1995-2007	Haselmann and Wachtel (2011)		34		
Foreign (in small financial system)	Ļ	AISD	Europe	1995-2007	Haselmann and Wachtel (2011)		34		
			Financial inform	ation					
Large	Ļ	AISD	U.S.	1992-2002	Calomiris and Pornrojnangkool (2009)		60		
Well diversified credit portfolio	Ļ	AISD	U.S.	1993-2004	Ivashina (2009)		50		
Undercapitalised bank as lender for opaque borrower	\rightarrow	AISD	UK	1996-2005	Mattes, Steffen, and Wahrenburg (2013)		58		
"Strong" bank as lender for opaque borrower (in recession)	\rightarrow	AISD	UK	1996-2005	Mattes, Steffen, and Wahrenburg (2013)		58		
Undercapitalised bank as lender for opaque borrower (in a recession)	Î	AISD	UK	1996-2005	Mattes, Steffen, and Wahrenburg (2013)		58		
			Reputation		1				
High reputation in general (lead arrangers and participants)	Ļ	Spread over reference rate	France	1992-2006	Godlewski, Sanditov, and Burger- Helmchen (2012)		52		
High reputation of lead arranger	Ļ	AISD	U.S.	1993-2004	Ivashina (2009)		50		
	1	Spread over reference rate	U.S.; Canada; Europe	2003-2008	Alexandre, Bouaiss, and Refait- Alexandre (2014)		59		
Reputable lead arranger for transparent	1	AISD	U.S.; Europe; Asia	1998-2009	Champagne and Coggins (2012)		51		
borrower	Ļ	AISD	Worldwide	1993-2006	Gadanecz, Kara, and Molyneux (2012)		56		
Remitable lead arranger for oname borrower		AISD	U.S.; Europe; Asia	1998-2009	Champagne and Coggins (2012)		51		
	→	AISD	Worldwide	1993-2006	Gadanecz, Kara, and Molyneux (2012)		52		

Determinant	Pricing direction	Pricing definition	Borrower region under study	Time frame	Reference	Consensus within extant literature	Detailed discussion in table
		Syn	dicated loan contrac	tual features	;		
			Various optio	ns			
Amount increase option	Ļ	Spread over reference rate	Cross-country	1990-2001	Focarelli, Pozzolo, and Casolaro (2008)		49
Maturity extension option	Ļ	Spread over reference rate	Cross-country	1990-2001	Focarelli, Pozzolo, and Casolaro (2008)		49
Secondary market trading permitted	Ļ	Spread over reference rate	Cross-country	1990-2001	Focarelli, Pozzolo, and Casolaro (2008)		49
			Loan size		((2000)		-
	Ļ	AISD	Europe	1995-2007	Haselmann and Wachtel (2011)		34
	Ļ	AISD	U.S.	1990-August 2010	Wu, Chang, Suardi, and Chang (2013)		53
	Ļ	AISD	U.S.	1993-2004	Ivashina (2009)		50
	Ļ	Spread over reference rate	Euro-area	1999- October 2006	Barbosa and Ribeiro (2007)		38
	Ļ	AISD	U.S.; Europe	1992-2009	Berg, Saunders, Steffen, and Streitz (2017)		25
	Ļ	Spread over reference rate	France	1992-2006	Godlewski, Sanditov, and Burger- Helmchen (2012)		52
	Ļ	Spread over reference rate	Europe	1990-2008	Christodoulakis and Olupeka (2010)		22
Lange	Ļ	AISD	U.S.; Europe	1992-2002	Carey and Nini (2007)		23
Laige	↓	Spread over reference rate	U.S.; Canada; Europe	2003-2008	Alexandre, Bouaiss, and Refait- Alexandre (2014)		59
	Ļ	AISD	U.S.	1987-2002	Hale and Santos (2009)		62
	Ļ	Spread over reference rate	U.S.	1987-2002	Santos and Winton (2008)		57
	Ļ	Spread over reference rate	Cross-country	1990-2001	Focarelli, Pozzolo, and Casolaro (2008)		49
	Ļ	AISD	U.S.; Europe	1990-2011	Gaul and Uysal (2013)		24
	Ļ	AISD	UK	1989-2007	Saunders and Steffen (2011)		63
	1	Spread over reference rate	Cross-country (excl. e.g., U.S.; Germany)	1991-2006 (August)	Godlewski and Weill (2011)		42
	Ť	AISD	U.S.	1992-2002	Calomiris and Pornrojnangkool (2009)		60

Determinant	Pricing direction	Pricing definition	Borrower region under study	Time frame	Reference	Consensus within extant literature	Detailed discussion in table
		Sync	licated loan contract	ual features		1	
			Protection mechan	nisms			
	1	AISD Spread over	U.S.; Europe	1992-2002	Carey and Nini (2007)		
Appearance of guarantee(s)	1	reference rate	U.S.	1987-2002	Santos and Winton (2008)		57
	1	AISD	U.S.	2010	(2013)		53
	Ļ	Spread over reference rate	Euro-area	October 2006	Barbosa and Ribeiro (2007)		38
	1	AISD	U.S.	1993-2004	Ivashina (2009)		50
	1	AISD	U.S.	1986-2003	Bharath, Dahiya, Saunders, and Srinivasan (2011)		55
	1	AISD	UK	1996-2005	Mattes, Steffen, and Wahrenburg (2013)		58
Appearance of covenant(s)	↑ (Spread over	Cross-country (excl.	1991-2006	Godlewski and Weill (2011)		42
	↑ (AISD	UK	1989-2007	Saunders and Steffen (2011)		63
	Ļ	AISD	U.S.	1990-August	Wu, Chang, Suardi, and Chang		53
		Spread over	U.S.: Canada: Europe	2010	(2013) Alexandre, Bouaiss, and Refait-		59
	*	reference rate Spread over	Cross country	2002 2007	Alexandre (2014)		20
	<u> </u>	reference rate Spread over	Closs-country	2003-2007			- 29
	Ť	reference rate	0.8.	1987-2002	Santos and Winton (2008)		5/
	<u>↑</u>	AISD Spread over	U.S.	1988-1999	Gottesmann and Roberts (2004)		39
	1	reference rate	Euro-area	October 2006	Barbosa and Ribeiro (2007)		38
	1	AISD	U.S.	2010	(2013) (2013)		53
	1	AISD	U.S.; Europe	1992-2009	Berg, Saunders, Steffen, and Streitz (2017)		25
	1	AISD	U.S.	1986-2003	Bharath, Dahiya, Saunders, and Sriniyasan (2011)		55
Appearance of collateral	↑ (AISD	U.S.	1992-2002	Calomiris and Pornrojnangkool		60
		AISD	U.S.; Europe	1992-2002	Carey and Nini (2007)		23
	<u>†</u>	AISD	U.S.	1987-2002	Hale and Santos (2009)		62
		AISD	UK	1996-2005	Mattes, Steffen, and Wahrenburg		58
		Spread over	Cross-country (excl.	1991-2006	(2013) Codlewski and Weill (2011)		42
		reference rate	e.g., U.S.; Germany)	(August)	Lucehing (2000)		
		AISD	0.5.	1995-2004	Ivasnina (2009)		50
	1	AISD Spread over	U.S.; Canada	1996-2003	Harjoto, Mullineaux, and Yi (2006) Focarelli Pozzolo, and Casolaro		32
	1	reference rate	Cross-country	1990-2001	(2008)		49
Tranched syndicated loan for average borrower		AISD	U.S.	1987-1999	Maskara (2010)		44
Tranched syndicated loan for risky borrower		AISD	U.S.	1987-1999	Maskara (2010)		44
High number of tranches	* 	AISD	US	1993-2004	Ivashina (2009)		44
		AIED	U.S.	1097 2002	Hele and Santas (2000)		
	Ļ	AISD	0.3.	1987-2002	Hale and Santos (2009)		62
	ļ - ļ	AISD Spread over	U.S.	1987-1999	Maskara (2010)		44
Revolving credit facility	↓ 	reference rate	Euro-area	October 2006	Barbosa and Ribeiro (2007)		38
	Ļ	AISD	U.S.	1998-2003	Schenone (2010)		61
	Ļ	spread over reference rate	Europe	1990-2008	(2010)		22
	1	AISD	U.S.; Europe	1992-2009	Berg, Saunders, Steffen, and Streitz (2017)		25
	1	AISD	UK	1996-2005	Mattes, Steffen, and Wahrenburg (2013)		58
Syndicated bridge term loan	1	Spread over reference rate	Euro-area	1999- October 2006	Barbosa and Ribeiro (2007)		38
	¢	Spread over	U.S.	1987-2002	Santos and Winton (2008)		57
		AISD	U.S.	1987-2002	Hale and Santos (2009)		62
	↑ 1	AISD	U.S.	1998-2003	Schenone (2010)		61
	↑	Spread over	Euro-area	1999-	Barbosa and Ribeiro (2007)		38
	+	reference rate	US · Europe	Uctober 2006	Berg, Saunders, Steffen, and Streitz		25
		4160	U.S., Europe	1992-2009	(2017)		22
Syndicated term loan		AISD	U.S.; Europe	1992-2002	Carey and Nini (2007)		
	<u> </u>	AISD Spread over	U.S. Cross-country (eycl	1987-2002	Hale and Santos (2009)		62
	1	reference rate	e.g., U.S.; Germany)	(August)	Godlewski and Weill (2011)		42
	1	AISD	U.S.; Canada	1996-2003	Harjoto, Mullineaux, and Yi (2006)		32
	Ļ	Spread over reference rate	U.S.	1987-2002	Santos and Winton (2008)		57

Determinant	Pricing direction	Pricing definition	Borrower region under study	Time frame	Reference	Consensus within extant literature	Detailed discussion in table
		Syn	dicated loan contract	tual features	5		
			Maturity				_
	1	Spread over reference rate	Cross-country	1990-2001	Focarelli, Pozzolo, and Casolaro (2008)		49
	1	Spread over reference rate	Euro-area	1999- October 2006	Barbosa and Ribeiro (2007)		38
	Ť	Spread over reference rate	U.S.	1991-2002	Wasan, Vijayakumar, and Daniels (2013)		28
	t	AISD	U.S.	1998-2003	Schenone (2010)		61
	¢	Spread over reference rate	Cross-country	2003-2007	Kim, Surroca, and Tribó (2014)		29
	¢	Spread over reference rate	France	1992-2006	Godlewski, Sanditov, and Burger- Helmchen (2012)		52
	t	Spread over reference rate	U.S.; Canada; Europe	2003-2008	Alexandre, Bouaiss, and Refait- Alexandre (2014)		59
Long	¢	Spread over reference rate	Europe	1990-2008	Christodoulakis and Olupeka (2010)		22
	1	AISD	UK	1989-2007	Saunders and Steffen (2011)		63
	Ļ	Spread over reference rate	U.S.	1987-2002	Santos and Winton (2008)		57
	Ļ	AISD	U.S.	1986-2003	Bharath, Dahiya, Saunders, and Srinivasan (2011)		55
	Ļ	AISD	U.S.	1990-August 2010	Wu, Chang, Suardi, and Chang (2013)		53
	Ļ	AISD	U.S.	1988-1999	Gottesmann and Roberts (2004)		39
		AISD	Europe	1995-2007	Haselmann and Wachtel (2011)		34
	→	Spread over reference rate	Cross-country (excl. e.g., U.S.; Germany)	1991-2006 (August)	Godlewski and Weill (2011)		42
Long (revolving credit facilities)	→	AISD	U.S.	1988-1999	Gottesmann and Roberts (2004)		39
Long (term loans)	1	AISD	U.S.	1988-1999	Gottesmann and Roberts (2004)		39
	1		Uses of procee	ds	1		
Working capital	Ļ	AISD	U.S.	1987-2002	Hale and Santos (2009)		62
	Ļ	AISD	U.S.	1998-2003	Schenone (2010)		61
Commercial paper back-up	Ļ	AISD	U.S.; Europe	1992-2002	Carey and Nini (2007)		23
Refinancing	↓	AISD	U.S.	1987-2002	Hale and Santos (2009)		62
	Ļ	Spread over reference rate	U.S.	1987-2002	Santos and Winton (2008)		57
Repayment	Ļ	Spread over reference rate	Cross-country (excl. e.g., U.S.; Germany)	1991-2006 (August)	Godlewski and Weill (2011)		42
	1	Spread over reference rate	U.S.; Canada; Europe	2003-2008	Alexandre, Bouaiss, and Refait- Alexandre (2014)		59
	1	Spread over reference rate	Euro-area	1999- October 2006	Barbosa and Ribeiro (2007)		38
	1	AISD	U.S.; Europe	1992-2002	Carey and Nini (2007)		23
Acquisitions	1	AISD	U.S.	1998-2003	Schenone (2010)		61
	1	AISD	UK	1989-2007	Saunders and Steffen (2011)		63
	1	Spread over reference rate	Europe	1990-2008	Christodoulakis and Olupeka (2010)		22
	\rightarrow	Spread over reference rate	U.S.	1987-2002	Santos and Winton (2008)		57

Determinant	Pricing direction	Pricing definition	Borrower region under study	Time frame	Reference	Consensus within extant literature	Detailed discussion in table	
Macroeconomic environment								
Economic cycle								
Pagagoion in homeown country	Î	AISD	U.S.	1987-2002	Hale and Santos (2009)		62	
Recession in borrower country	1	Spread over reference rate	U.S.	1987-2002	Santos and Winton (2008)		57	
		Financ	ial information of bo	rrower cou	ntry			
Good solvency	Ļ	Spread over reference rate	Europe	1990-2008	Christodoulakis and Olupeka (2010)		22	
	Ļ	AISD	Wordwide	1990-2011	Anagnostopoulou and Drakos (2016)		47	
rign degree of GDP growth	↓ Sp	Spread over reference rate	Europe	1990-2008	Christodoulakis and Olupeka (2010)		22	
		AISD	Wordwide	1990-2011	Anagnostopoulou and Drakos (2016)		47	
rigi deot to GDP ratio	\rightarrow	Spread over reference rate	Europe	1990-2008	Christodoulakis and Olupeka (2010)		22	
Trade balance	-	Spread over reference rate	Europe	1990-2008	Christodoulakis and Olupeka (2010)		22	
High reserves to GDP ratio	Ļ	Spread over reference rate	Europe	1990-2008	Christodoulakis and Olupeka (2010)		22	
High aggregate risk	1	Spread over reference rate	Europe	1990-2008	Christodoulakis and Olupeka (2010)		22	
Low unemployment rate	Ļ	AISD	Wordwide	1990-2011	Anagnostopoulou and Drakos (2016)		47	
Degree of inflotion		AISD	Wordwide	1990-2011	Anagnostopoulou and Drakos (2016)		47	
	\rightarrow	Spread over reference rate	Europe	1990-2008	Christodoulakis and Olupeka (2010)		22	

Determinant	Pricing direction	Pricing definition	Borrower region under study	Time frame	Reference	Consensus within extant literature	Detailed discussion in table	
			Syndicate struc	ture				
			Syndication mo	ode				
Club deal	Ļ	Spread over reference rate	Cross-country	1990-2001	Focarelli, Pozzolo, and Casolaro (2008)		49	
			Number of lend	lers			_	
	Ļ	Spread over reference rate	Cross-country (excl. e.g., U.S.; Germany)	1991-2006 (August)	Godlewski and Weill (2011)		42	
	Ļ	AISD	U.S.	1992-2002	Calomiris and Pornrojnangkool (2009)		60	
	Ļ	AISD	U.S.	1990-August 2010	Wu, Chang, Suardi, and Chang (2013)		53	
High	Ļ	Spread over reference rate	Cross-country	2003-2007	Kim, Surroca, and Tribó (2014)		29	
	1	Spread over reference rate	U.S.; Canada; Europe	2003-2008	Alexandre, Bouaiss, and Refait- Alexandre (2014)		59	
	1	AISD	U.S.; Europe	1992-2002	Carey and Nini (2007)		23	
		Spread over reference rate	U.S.	1987-2002	Santos and Winton (2008)		57	
	\rightarrow	Spread over reference rate	Europe	1990-2008	Christodoulakis and Olupeka (2010)		22	
Information asymmetries								
Information asymmetries within in syndicate	t	AISD	U.S.	1993-2004	Ivashina (2009)		50	
Relational distance (low degree of information flow between lenders)	1	AISD	U.S.	1990-August 2010	Wu, Chang, Suardi, and Chang (2013)		53	
Participant lender facing information asymmetries to borrower	1	AISD	Worldwide	1993-2006	Gadanecz, Kara, and Molyneux (2012)		56	
			Retained lead s	hare	-		_	
High for transparent borrower	Ļ	AISD	Worldwide	1993-2006	Gadanecz, Kara, and Molyneux (2012)		56	
High for one one borrower	Ļ	Spread over reference rate	Cross-country	1990-2001	Focarelli, Pozzolo, and Casolaro (2008)		49	
	t	AISD	Worldwide	1993-2006	Gadanecz, Kara, and Molyneux (2012)		56	
	Ļ	Spread over reference rate	Cross-country	1990-2001	Focarelli, Pozzolo, and Casolaro (2008)		49	
High in general	Ļ	AISD	U.S.	1993-2004	Ivashina (2009)		50	
	1	Spread over reference rate	U.S.; Canada; Europe	2003-2008	Alexandre, Bouaiss, and Refait- Alexandre (2014)		59	
			Position within ne	twork				
Central	Ļ	Spread over reference rate	France	1992-2006	Godlewski, Sanditov, and Burger- Helmchen (2012)		52	
	1		Quality	1	1			
High	Ļ	AISD	U.S.; Europe; Asia	1998-2009	Champagne and Coggins (2012)		51	
	1		Concentratio	n	1			
High	1	AISD	U.S.; Europe; Asia	1998-2009	Champagne and Coggins (2012)		51	
	\rightarrow	Spread over reference rate	France	1992-2006	Helmchen (2012)		52	
		0 1	Syndicated loan h	istory				
existence of identical previous syndicate whilst lending during 2008 financial crisis	↓	spread over reference rate	U.S.; Canada; Europe	2003-2008	Alexandre, Bouaiss, and Refait- Alexandre (2014)		59	

Determinant	Pricing direction	Pricing definition	Borrower region under study	Time frame	Reference	Consensus within extant literature	Detailed discussion in table	
Lender-borrower relationship								
			Syndicated loan h	istory				
Borrower has past relationships with participants	Ļ	AISD	Worldwide	1993-2006	Gadanecz, Kara, and Molyneux (2012)		56	
Borrower has past relationships with entire syndicate	Ļ	Spread over reference rate	U.S.; Canada; Europe	2003-2008	Alexandre, Bouaiss, and Refait- Alexandre (2014)		59	
		Ар	pearance of relation	ship lender				
As lead bank (2008 financial crisis)	Ļ	Spread over reference rate	U.S.; Canada; Europe	2003-2008	Alexandre, Bouaiss, and Refait- Alexandre (2014)		59	
For bank dependent borrower in recession (undercapitalised bank)	1	AISD	UK	1996-2005	Mattes, Steffen, and Wahrenburg (2013)		58	
For bank dependent borrower in recession ("healthy" bank)	→	AISD	UK	1996-2005	Mattes, Steffen, and Wahrenburg (2013)		58	
For bank dependent borrower in recession	1	Spread over reference rate	U.S.	1987-2002	Santos and Winton (2008)		57	
For borrower after bond IPO	Ļ	AISD	U.S.	1987-2002	Hale and Santos (2009)		62	
For borrower after equity IPO	Ļ	AISD	U.S.	1998-2003	Schenone (2010)		61	
	1	AISD	UK	1989-2007	Saunders and Steffen (2011)		63	
For opaque borrowers	1	AISD	U.S.	1998-2003	Schenone (2010)		61	
	Ļ	AISD	U.S.	1986-2003	Bharath, Dahiya, Saunders, and Srinivasan (2011)		55	
For very large borrowers	\rightarrow	AISD	U.S.	1986-2003	Bharath, Dahiya, Saunders, and Srinivasan (2011)		55	
	Ļ	AISD	U.S.	1987-2002	Hale and Santos (2009)		62	
In general	Ļ	AISD	U.S.	1986-2003	Bharath, Dahiya, Saunders, and Srinivasan (2011)		55	
	Ļ	Spread over reference rate	Cross-country	2003-2007	Kim, Surroca, and Tribó (2014)		29	
For borrower near equity or debt underwriting	1	AISD	U.S.	1992-2002	Calomiris and Pornrojnangkool (2009)		60	

Determinant	Pricing direction	Pricing definition	Borrower region under study	Time frame	Reference	Consensus within extant literature	Detailed discussion in table
Secondary market trading							
Trading activity							
Secondary market trading for private legal	+	AISD	IIK	1080 2007	Soundary and Staffan (2011)		63
form borrower		AISD	OK	1989-2007	Saunders and Stenen (2011)		05
Secondary market trading for public legal form	\rightarrow	AISD	UK	1989-2007	Saunders and Steffen (2011)		63
borrower					. ,		
Secondary market trading contractually		Spread over	Cross country	1000 2001	Focarelli, Pozzolo, and Casolaro		49
permitted	+	reference rate	erence rate		(2008)		42

Appendix B: Interview invitation material



Interview Invitation Letter

Title of Ph.D. Thesis:

Corporate Syndicated Loan Pricings in Germany: an Exploration of the Hidden Drivers

Ph.D. Candidate:

Name:	Daniel Scl	Daniel Schmidt					
Address:	Zum Apot	Zum Apothekerhof 6					
	60594 Fra	nkfurt am Main					
	Germany						
	Mobile:	+ 49 175 5469782					
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Name:	Prof Gerald Watts	Dr Sainey Faye
	United Kingdom	United Kingdom
Mobile:	+ 44 7970650344	+ 44 7984801991
Email:	geraldwatts@me.com	fayebiram@hotmail.com

Dear [...],

I am a research student (Doctor of Philosophy / Ph.D.) at the University of Gloucestershire and I am delighted to invite you to participate in an interview session on the above mentioned research topic.

The overall interview will be scheduled for approximately 120 minutes, whereof the actual /main interview will take approximately 90 minutes. The interview will be conducted in a quiet location free from disturbances and can take place in a location selected by you. Otherwise, I can offer an appropriate location.

The interview is planned to be audio-recorded. If you do not agree, there will be no audiorecording, and I will take handwritten notes. In any case, you will receive the respective transcript for a final review and sign-off. You have the possibility to indicate "off the record information", which will be deleted and won't be a part of the analysis. The interview transcripts will be stored electronically. Your name as well as all kind of information in relation to the firm / institution you are working for will be anonymised and will not be published. Audio-records and transcription material will be destroyed after the final approval of the thesis by the respective examiners. This research project will result in a doctoral thesis (Ph.D.) and the findings might be presented at conferences and might be published entirely or in part (e.g., in journal articles).

By taking part in this research project, you will support finance researchers/scientists as well as practitioners to enrich their understanding regarding Corporate Syndicated Loan Pricings in Germany.

Upon request, I shall send you the finally approved thesis. There are no known risks for you participating in this study.

Aim of this research:

The aim of the research work is to explore and analyse the "hidden drivers" of banks' pricing of syndicated loans to German corporate borrowers, thereby developing an enriched understanding of the elements and determinants of pricing and its underlying processes and decisions.

Scope of this research:

The research project focusses on German Corporate Borrowers and the respective pricing mechanisms in the primary market. Especially worth to mention is that Leveraged Buy Out as

well as Project Finance transactions are <u>not</u> included here. Further, the focus lies on Revolving Credit Facilities as well as Term Loans. Guarantee facilities are <u>not</u> a special focus.

Background information:

Bank lending environments are a crucial driver of economic prosperity and thus, an important field for research. However, the in-depth analysis of banks' lending activities is shrouded with difficulties, as the debtor-creditor relationship is private and individually negotiated, which makes it impossible to get comprehensive access to individual loan specifications. Unlike data regarding fully disintermediated capital market instruments, such as corporate bonds or publicly traded equities, terms and conditions of bank loans in general are typically not in the public domain. An exception is the Syndicated Loan market for which public data is available to a certain extent. Various commercial information providers such as Dealogic Loanware or Thomson Reuter's Loan Pricing Connector collect accessible data regarding syndicated loans and subsequently make these public. Thus, researchers have used these data samples to analyse market phenomena and various aspects (e.g., pricing) of Syndicated Lending. The majority of academic work on syndicated loan pricing – predominantly based on secondary data samples, analysed by means of quantitative methods – has been conducted by using USbased samples. In comparison, studies on European loan pricing are smaller in number, and none of these specifically focus on pricing in the German corporate syndicated loan market. This appears somewhat surprising, because the German economy is more dependent on bank lending than the Anglo-Saxon countries, where capital markets tend to be more liquid, transparent, deeper and more integrated. It is possible that this disparity has its roots in the availability and quality of syndicated loan data in the public domain, which vary significantly between different capital markets. My hypothesis therefore is that - with respect to the German context - pricing data in the public domain are incomplete, and that it is thus supposable that other 'hidden' drivers and mechanisms of pricing exist. To meet the abovementioned research aim, it would be inappropriate to use solely quantitative approaches of recent – mainly US-based - sample studies. Therefore, your contribution to this research by means of interviews will help to explore and analyse the "hidden drivers" of banks' pricing of syndicated loans to German corporate borrowers, thereby developing an enriched understanding of the elements and determinants of pricing and its underlying processes and decisions.

Interview format:

Semi-structured in-depth interview

Subject	Responsible	Approximate duration (in minutes)
a) General personal introduction	Interviewee and Daniel Schmidt	3
b) Introduction to research project	Daniel Schmidt	5
c) Introduction to research design	Daniel Schmidt	5
d) Introduction to interview process	Daniel Schmidt	5
e) Signing of "Informed Consent Form"	Interviewee	2
f) Interview	Interviewee and Daniel Schmidt	90
g) Concluding discussion	Interviewee and Daniel Schmidt	10
Total		120

Indicative timetable of interview:

Overview of main interview topics:

- Public data availability and quality with respect to the German Corporate Syndicated Loan Market
- Determinants of the various pricing elements of Corporate Syndicated Loans in Germany
- Prioritisation of the various pricing elements and the respective determinants from the lenders' point of view
- Process of making Syndicated Loan pricing offers to a German corporate

I conduct the research based on the guidelines of the *University of Gloucestershire's Handbook of Research Ethics*. The research plan and design has been approved by the University, but the contents and opinions expressed in this research instrument are those of the researcher and in no way represent those of the University of Gloucestershire.

Your participation in this interview is highly appreciated.

Thank you very much.

Daniel Schmidt



Informed Consent Form

Title of Ph.D. Thesis:

Corporate Syndicated Loan Pricings in Germany: an Exploration of the Hidden Drivers

Ph.D. Candidate: Daniel Schmidt

I confirm that I have received and read the invitation & information letter.		No
I understand that I take part in a postgraduate research study (Ph.D project).	Yes	No
I understand that I have the right to reject the participation in the research at any time & stage.	Yes	No
I understand that the interview will be audio recorded and transcribed thereafter.	Yes	No
I understand that I have the right to refuse the audio recording at any time & stage.	Yes	No
I understand that my name and anything related to the institution / company I work for will be anonymised and confidentiality respected at all times.	Yes	No
I understand that the research will result in a Ph.D. Thesis and that respective research findings might be presented at conferences and may be published in academic journals – full confidentiality will be respected at all times.	Yes	No
I understand, that audio-records and transcription material will be destroyed after the final approval of the thesis by the respective examiners.	Yes	No
I understand that I can contact the researcher at any time to ask questions concerning the research.	Yes	No
I would like to participate in this research.	Yes	No
I would like to receive a summary of the research findings.	Yes	No

Name:

Job position:

Years of experience in the syndicated loan business:

Contact details:

Date:

Signature:

Appendix C: Example (full-) interview transcription

R

How do you describe quantity and quality of publicly available information/data on the German Corporate syndicated loan market?

I4

There are public available databases, like Loan Connector, Thomson Reuters, Bloomberg, and Dealogic Loanware etc. Further, there are magazines, which announce the closing of transactions or potential closings in the future, which sometimes revert to rumours or press releases. This is interesting for us, because not all borrowers in the syndicated loan market are our clients. We are not participating in all deals, which come into the market. However, the substance of this information is not always reliable and often the information is weak. That means they are not detailed in terms of pricing, structure, composition of the syndicate etc. The content is often of only very limited additional value for us.

R

Do you see systematic differences between different corporate borrower groups/types in Germany?

I4

Whenever it comes to publicity, there is a standard wording in the mandate documents, which outlines if the borrower is fine to announce the loan after it has been signed. It is fully at the borrower's discretion. Publicly listed companies are usually used to announce these kinds of instruments. For other clients it is often a clear no go, because it is e.g. a privately owned Mittelstand company, which does not like to disclose any information. This is also fine for us as a bank. A lot of transactions we are doing, are not going into these public databases at all, because we have a standard that we – for any kind of publicity – require the written consent of the borrower. This is often not given.

R

Is Germany special in that context? And if why? Why are corporates so reluctant to publish information, especially with view to pricing?

I4

This is a German speciality. First, we have the so-called "Bankgeheimnis" in Germany, which is something of very high value for our clients. Talking about financials and personal earnings is not common and not liked, whereas in the US for instance, people are proud on declaring what value they have contributed. Therefore, this is something, which is very special in Germany. Opaqueness is important for them. We do not have this share culture here in Germany. We only have a limited number of publicly listed companies, where the transparency is quite high. Whenever you have a private company, you often do not find any information at all. In addition, it goes even further. We see the phenomenon that companies, who have corporate bonds outstanding rather choose a Schuldschein going forward, because this product is less transparent and you do not see on a daily basis the market risk perception via daily prices on Bloomberg.

R

How did this quantity and quality change over time?

I4

It changed a lot after the financial crisis. The announcement of loan details, the willingness to announce pricings has shrunk dramatically because the pricings went up. I mean each corporate before the financial crisis, proudly presented their very, small, tiny, little margins, that they negotiated with their bank group to demonstrate the market, what a perfect and strong credit they are, but during the crisis, pricings went up and nobody or hardly anybody had the interest to present these increased pricings to the public. Therefore, since then we have seen a lack of public pricings and this remains stable until now, due to the very tough competition in the market. Whenever you declare pricings, it is market intelligence, which you as a bank share with your competitors. There are banks who no longer push clients to allow them to publish their pricings. Banks often have an own interest to keep pricings unrevealed. For our specific institution, it is completely up to the customer. If it does not want to publish anything, we are fine with this. Of course, there are banks that are dependent on league table rankings and they have a strong interest that each deal goes into that so that they have a strong interest that the customer declares at least the deal public. That is not the case for our bank so much. Therefore, the second argument is of course you as a bank have an interest to have a decent stake in the league table rankings, because also your competitors show to their clients where they and we are standing. On the other hand, you – given the high competition in the market – have the argument to not declare this deal public, because you maybe show market potential to competitors, which in a refinancing situation makes your life more difficult. This is particularly the case for debut transactions in the rather small- to midcap area.

R

How does that situation with respect to public data affect the work of corporate loan originators in the German market?

I4

In a way that you need to manage to collect and use internal, private information as good as you can. It is the only source you have. You can also revert to other data's like bond-, CDS spreads or Schuldschein yields for example. In addition, of course to your own deal pipeline; e.g. negotiations with other customers that you have. What these are willing to pay. Deals recently closed, or deals you are invited to participate.

R

How would be the situation without access to any kind of private information?

I4

It would not really be possible to price a loan in line with current market terms. However, you have of course your internal pricing models that are a pure institutional, or a pure private thing. That plays also an important role in pricings. However, if you get asked as a Syndication person, at what price you can place the risk or what is the best mix between placing the risk and winning the mandate in the first place, then you really have to revert to market standards and current pricings. But you also have the situation that there hardly is any clear market price because you could discuss on so many customers, are they comparable, or to what degree are they comparable to another recent deal? Therefore, you hardly have any perfect matching comparable for non-public corporate borrowers. It is thus also a matter of experience, feeling and negotiation ability of the originator.

R

What are ALL the pricing elements of a "common" corporate syndicated loan to a German borrower? For what specifically does each of these compensate the lender?

I4

You have two key elements. There is a fee component, which is more or less an upfront fee that is paid once the deal has been closed. Then you have running p.a. fees like margin and commitment fees. At the end, there is a market standard that banks are used to generate fee income, once they close such a transaction, but my impression is that a CFO or a Treasurer of the borrower considers the all in pricing for a syndicated loan. If you are having a high upfront fee and a low margin or vice versa is a matter of negotiation, but also subject to

market standards. I mean hardly any customer likes to pay upfront fees that is clear. Everybody also likes to have a low margin. You nowadays commonly find elements like utilisation fee concepts, which are an instrument to reduce the commitment fee on undrawn revolving facilities. That is good for customers. You have ticking fees in acquisition bridges. These are also special elements, which help the client as well as the banks to deliver an interesting structure and a low priced offer for this special credit, the client needs.

R

How do you prioritise these pricing elements form your banks' point of view?

I4

Whenever the bank decides to join or to participate in a syndicated loan, it first looks at the economics of this particular credit. They do a calculation with their expected probability of drawings across the lifetime of the loan and often this business does not fulfil the profit requirements that we have or does not cover the costs plus the amount of profit we would like to earn. This is mostly driven by the RWA profitability of this loan. Secondly, there is a calculation, where the relationship manager who is responsible for this account summarise the additional income, which we generate with the client to make a strategy that you – across the lifetime of the loan – contribute benefit with this client to the bank. This is finally the number that is interesting for our investment board, so they judge on this number. Whenever the RWA profitability is not given and you do not earn additional money (cross-sell), then the likeliness that the deal goes through is low.

R

So you are saying that the customer as well as the bank and its various entities look rather on the all in pricing than on specific pricing elements?

I4

We as a bank are flexible on that. We have of course also risk officers who say, if I need to accept this risk, how does it pay out for the bank in total? Thus, also the risk officer needs and wants to make sure that the bank earns a decent income with this kind of risk. In addition, you have product units who need fee income. A decent fee stake, which is common in the market, should be an element that it works for all parties within the bank.

R

So the whole pricing package can be summarised as a compromise between all parties?

I4

Yes.

R

What are the determinants of the various pricing elements? What is responsible for a particular pricing element to be high or low?

I4

If you have a customer that pays a low margin, then we talk about clients that usually have a very good rating. Therefore, rating is the first issue. Then the amount loaned is an issue. The size of the client is an issue. What revenues do you generate with this particular loan for the client? In addition, what additional income can you generate? As I said, the most important issue that influences the price is the rating, because the risk costs are very large factor in the overall calculation. In addition to that, you have to look at the structure of the loan. That means tenor, flexibility, drawing possibilities for RCFs, etc. All that together influences your costs of funding. That is the second part of the medal, which is also very important for pricing. It makes a significant difference whether the customer goes for a short-term loan or a long lasting revolver with all kind of flexibilities.

R

What specifically interests me is the bank-borrower-relationship component of syndicated lending in Germany. Can you please comment on that in relation to pricing?

I4

We define ourselves as a relationship bank. Therefore, our strategy is to grant loans, but earn money also with other bank products. Clients are usually willing to distribute other business in accordance to the respective credit stakes of the syndicate banks. Therefore, whenever you have a credit relationship, you are a financing partner of the client and you are then qualified to do additional business. An example is: if you have a highly leveraged company, you have a very thick package of credit documentation, because you would not give money out without any conditions. You need to have clear guidelines on what the client is allowed to do and how the credit terms are and so on. In the case, the client then likes to buy an interest rate or foreign exchange swap-derivative, you need credit lines in place for this kind of business. If you don't know the credit risk behind this client, because you are not a lender and do not know the credit documentation, you hardly would find a bank that would offer just the pure derivative product. Out of this tradition, you have the situation, that you do this kind of swap

LIII

businesses etc. and other businesses like transaction banking only as a lending bank. You need credit lines also to know the credit matrix of the client, to get a feeling of the creditworthiness in constantly dealing with this risk. To sum it up, you have the tradition, that the bank who is engaged in the credit, who has committed to credit line and approved the name for a decent risk stake, is also qualifying then for additional cross-sell business that often needs additional risk participations. With Investment grade blue chip borrowers, you have the situation that everybody wants to have cross-sell business. On the other side, hardly anybody is interested in pure credit lending because of often very low pricings and shortfalls. Thus, the treasurers of these companies have the rule only to qualify banks for additional businesses once they have a credit relationship. My impression is that this additional business distribution is really calculated by the borrower in accordance with the stake of the bank in the loan. Companies have to try to be fair with that to have good relationships with their banks as well. They need to ensure their funding also in tough times. You have the situation that you can only have cross-sell - additional side business - once you have a credit relationship. That is for pricing a very relevant determinant.

R

Which role does competition and number of banks active in the syndicated loan business in Germany play?

I4

It is the situation where you have to have your calculations properly done. Banks' internal controlling has to capture precisely, whether you have a fair share of cross sell and have additional fair income compensating for the credit related costs you have internally. So what we see in the market is that these kind of frequent issuers, blue chip companies are reducing their bank groups because the treasurer always says, "I cannot serve 25 banks with cross sell". Thus, many clients have a common interest to reduce the bank group to a minimum. The bank then needs to provide a higher credit proportion but it is also awarded and profiting from higher amounts of crosssell. In addition, with a higher probability of being awarded crosssell of course. If a customer has a bond mandate to provide, he would not nominate 25 banks for this. There is a natural restriction in numbers of banks that could participate in that crosssell business. Therefore, we have seen smaller syndicates in these days. Banks are obviously willing to accept a greater shortfall at the beginning but then trade with a higher probability of generating additional business.

R

How do you prioritise the various determinants of pricing from your banks' point of view?

I4

First, you need to transport the customers' requirements into a bank product. You need a bank product that says e.g. 5-year revolving credit facility with these and these options. Then you have the client, with his rating and then you can calculate what the costs for the bank are to providing x million in that loan. That is the first calculation that you have to make. Then you have the cross sell element, which I mentioned before. The question here is which shortfall you can accept. Then, third, you have the situation that you need to be competitive from a market perspective. You need to do your assessment, what other banks do, how they would price the deal and what price they would be able to accept internally to build a consortium. We are talking about syndicated loans. We need a price for a 600mn deal where we just take 50mn so we need a consensus pricing. The particular special interests of a single bank are irrelevant. Given the opaqueness we have talked earlier about regarding public market data, it is a matter of experience and trust to your internal calculation instruments. Basically, what your credit portfolio manager says he would need. Thus, the most relevant issue is your own calculation plus the experience what the common market price would be, what the customer would expect as a price and what the customer would be willing to pay for the loan.

R

That is interesting and different to studies I have read. There they tend to believe, that market power is more at the bank side and the bank decides on if a loan gets granted or not. Can you comment? Are we in a buyers or sellers' market?

I4

During my Bankausbildung, at school, you learned that you have so-called AGB (Allgemeine Geschäftsbedingungen). A customer would come to the bank and subject to the pre-defined conditions in the AGB, the customer pays a certain price. In the blue chip, commercial or corporate banking area, this is not the case. All prices are individually negotiated. You hardly have any standard pricings. It is simply a matter of negotiation at the end. If you have a bond mandate for example, you look at Bloomberg, look what comparable transactions you can find and then you have a yield curve where you pretty much obviously can say, ok within a short range that is the pricing for the client. It is easy to judge. As our product is more opaque given the lack of information available and given the various structures, many deals are specially structured and tailor-made. This has also pricing relevance. The opaqueness makes it

really complicated.

The point you did not bring is actually is that more and more customers are now having advisors on board. They more and more use financial advisors. I yesterday joined a meeting where a mid-cap company had an advisor who was collecting offers and selecting two lead banks out of these offers. Therefore, they try to somewhat generate transparency by having financial advisors, which are also standard in M&A deals in the leveraged loan market e.g.

That is something important and a new trend in the corporate world to squeeze the best pricing.

R

How do syndicated loan originators set the pricing of a corporate syndicated loan for a German borrower?

I4

As we are dealing with rather big clients and are dealing with Syndicated Loans, which are having a relatively high volume, it is very relevant for us to be part of this financing, once this is a target customer of us. We in our team have the standard, that whenever we pitch for a transaction – when we are seeing a customer – we discuss the pricing package in our team and agree, as a team on the structure that we think is the best for the client. We use a form that is called pricing sheet. There we comment on the structure of the loan, the respective hold levels the consortium. Then we add comparable transactions, we add CDS and or bond spreads when we have them available, we determine the actual or the recent instruments of the client and in a discussion that is like a dry run for the pitch, we agree on the pricing that we as a bank recommend to the borrower. Our team does a recommendation, but the final internal price comes from the credit portfolio manager, who is in charge of signing of into the credit. We as Syndication people do not have any credit competences. We are just servicers, advising the credit department on this special market segment and instrument. This works well, because you have then the experience of all originators, sales persons that have seen other transactions or might have another opinion. It is always important to think about, how the client, usually the respective treasurer will think about our offer. He has maybe seen five to ten other banks before we pitch. Therefore, they have a very good view on their market standing at that time, which we as a single bank do not have. Therefore, we need to do our homework properly to get the best possible feeling where a potential market price could be.

R

Are there differences between originator mentalities (e.g., the quantitative and the feeling person)? Can you comment on those phenomena?

I4

As I told you, we have a mix of doing calculations and feeling. I would say that feeling is 80% of the game because sometimes you have very strong names or you have sometimes the situation, where deal constellations can be more competitive or less competitive and that is a relevant issue for pricing. Sometimes you have business models that hardly a bank touches. Therefore, you have higher placement risk, and you need a higher price. This does not go into a system and cannot be really calculated.

R

Anything I have forgotten, which is also important?

I4

Yes maybe. Other instruments. We see also the Schuldschein instrument as a competitive product to the Syndicated Loan. The treasurer is not doing a beauty contest only with credit people from various banks, but also with other product people. You compete also with other instruments like Schuldscheine. We have seen that prices in the Schuldschein market can be even more attractive than in the Syndicated Loan market. Given the very high liquidity in the market, the flooding with liquidity by the central bank, the very low interest rates, and the high liquidity in the market from institutional investors and from savings banks prices are also very thin in the Schuldschein market. These are game changers.

In addition, the high regulation. Banks will struggle going forward to take huge and long-term credits and this will be more and more pricing relevant going forward.

Appendix D: Coding examples

Text Selection Summary Distribution	Search
Texts Poles	✓ Codes
All texts - Select by clicking on texts Tatcaly exercising x	Publicly available data on
• With subco	des Clear fiter German Corporate Syndicated Loans
	Data Provider Processes
companies do very often not like to disclose the margin that they got to the market	Quantity and Quality: Pricing- related Information
might be very few exceptions, where corporates and the treasury teams are keen to show to the market that they made a success	Quantity and Quality: Non- Pricing related Information
	 Reasons for Quality & Quantity of public data availability
One of the reasons certainly is that people do not want do disclose what their actual costs of borrowings are.	Tactically exercising discretion
There might be a few exceptions with view to some highly rated, mostly listed blue chip companies. For marketing purposes, some of them do disclose their initial margin, which then becc	nmes a Nature of the Market
statement of their financial strength when they got away with an optically very low margin.	Regulation and Compliance
Althous for susmally as the other olds who are easy that to actual in the such investment and a service area definited do not used to disclose their exists and they do not used to accurate a	Changes over time
Currens for example on the other side who are may be located in the sub-investment grade or crossover area definitely do not want to disclose their pricing as they do not want to create an negative perception of their financial strength of the respective company.	Pre-Financial Crisis Period
	Financial Crisis Period
You have confidentiality agreements in the legal documentation and in the mandate documents, which makes it up to the borrower on to decide whether he wants to disclose anything. Bar	Comparison to other Markets
without permission of the borrower cannot disclose anything.	Other Financing Products
The key rationale behind that is that corporates in general are reluctant to have competitors see how much they are paying for their financings, especially when they are getting more expe	nsive. Wider Europe
	 Influence on work of Loan Originators
The financing costs increased exponentially in the aftermath of the crisis as one would expect. It was kind of a secret building exercise of the borrowers.	Market Power / Share
Prior to the crisis, you did have - at least from the large cap companies - a couple of useful information in the public domain. They were inclined to share pricing information with the mark	et Need of Private Information
because it was in part a matter of being proud to show the market how low the margin on their loans were.	Originator Skills Justification / communication
there was also tactic involved. Borrowers usually structured their revolvino facilities with utilisation fee concerts which reduced the initial marnin. Then they however only weblicked this was	vith borrower V low Benchmarking to other Products
margin without mentioning utilisation fees. Thus it looked at a first few very cheap. But that does not reflect what the borrower would really have to pay if he would actually draw down mone	Comparison to bond market
	Market Sounding
The major difference that you see is with the US market, where listed companies by law are obliged to file their whole documentation package with the SEC. You even see mandate docum	Pricing offer Differences Transparency vs.
Publicly available data on German Corporate Syndicated Loans — Reasons for Quality & Quantity of public data availability — Tactically exercising discretion power by Borrower	Intransparency Representativeness of public
	pricing data
	2013
	Al memos
Text Selection Summary Distribution	Search
Text Selection Summary Distribution Texts Codes	Search
Text Selection Summary Distribution Texts Codes All texts - Select by clicking on texts Price_Creas Set Water x	Search Codes Codes Syndicate Structure 7
Text Selection Summary Distribution Texts Codes All texts - Select by clicking on texts Pre:: Cross Sel Walet ¥	Search Cear filer Cear
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Text Selection Summary Distribution Texts Codes All texts - Select by clicking on texts Pre_Cross Sel Water x Then we have other soft factors, like what is the cross sell expectation of this client? Can the client maybe get a lower pricing because banks get compensated with revenues of other product selling?	Search Codes Sent Visio Codes Send Visio Codes Send Codes Send Codes Cear file Cea
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Appendix E: Servicing- and 3rd party pricing elements

Below, I display the discussions on the pricing element-group *third-party expenses* and *servicing elements*. As stressed in 5.3, non-bank parties, like external lawyers, are involved in syndicated lending with their work having to be compensated accordingly (Altunbas et al., 2006b). As I conducted the study from the bank/lender perspective, and to omit brevity, I provide the related discussion in this Appendix E.

Servicing elements

A syndicated loan needs some kind of management during its lifetime and these management tasks are being compensated by the lender.

Servicing per annum elements

Facility agency fee

I have provided definition of a facility agent and its respective tasks in section 2.4.7.3. The *facility agency fee* is the usually per annum paid compensation for these tasks.

The following interviewee statement exemplifies this:

I 13 The permanent servicing of a facility by the facility agent will have to be compensated.

Security agency fee

In the case that a synicated loan is secured, the security package needs to be managed over the lifetime of the loan. These tasks may include the ongoingly checking and documenting of the security and its current values. This is being compensated via a further per annum fee via a *security agency fee*. Often these tasks are combined with those of the usual facility agent.

The following interviewee statement exemplifies this:

I 18 This is similar to a facility agency fee, but only with a focus on secured transactions where the client for example, because of its rating—needs to put security in place and the agency has a need to also monitor, administrate, and continuously valuate the security over the lifetime of the facility.

Servicing upfront elements

Transfer fee

Transfer fees are compensation mostly for the facility agent, in the case of a secondary trade during the lifetime of a syndicated loan, which needs to be admistered. As the loan market is an "over-the-counter" market without automated trading processes, such as clearing, these might represent a quite significant workload. The following interviewee statement exemplifies this:

I 3 Further, you may have pre-agreed fees for transfers. That again is a part of the servicing fees for the agent.

3rd party elements

I labelled the last fee elements 3^{rd} party elements. These are also common in syndicated lending, but are not for the benefit of the lender(s), but rather are for third parties involved. These elements are mostly irregular or upfront payments.

Advisory fee (non-bank related)

In 5.3.2.2.3, I discussed bank-related advisory fees. However, it might also be possible that a third party, like a consultancy firm, executes these tasks. The following interviewee statement exemplifies this:

I 16 This could be either bank and/or non-bank-related. It is not a fee solely paid for putting the concrete facility in place. It is more for the process beforehand e.g., if the client needs to have advice in his specific situation as to what kind of products are best for him. This could be a syndicated loan, a bond, or a Schuldschein for instance. Then the client is asking either bank or some kind of financial advisor for this financial advice on how to structure the whole financing package.

Legal fee

Especially in the negotiating and drafting phase of the facility agreement, external lawyers are retained to perform these tasks. It is common that both the lender(s) as well as the borrower itself are being advised by an external law firm. Although the structuring banks—mostly the documentation agent—mandates the bank to be represented by counsel, the borrower pays the bill for both its own attorneys and the bank's attorneys.

The following interviewee statement exemplifies this:

I 18 This is related to external legal firms. Banks receive their arrangement and other fees which are related to putting the facility in place and to coordinating and placing it. Legal fees are not for the internal legal departments of the banks, which are acting as arranger or something like that, but for external legal counsels like Allen&Overy, Freshfields, etc. These companies are assisting either the banks and / or the client to secure to put the facility agreement properly in place. These fees have all to be paid by the borrower, both for the borrower itself and for the lenders external legal firm. In practice, the respective documentation agent is asking a legal advisor to advice for the banks side but it is market since that the borrower pays theses fees. Legal fees also can occur not only for putting the facility in place in the first place, but also in case of a facility which is already running and the client is asking for an amendment. For this change in contract terms, external legal firms could also be involved. If it is a huge amendment banks are asking again for external legal advice, which the client also must pay for.

Syndication platform fee

In standard syndicated loan structuring and placement processes, many documents are shared within the Bookrunner group and later with the invited banks. Comittments as well as declines need to be put into a so-called *order book*. These processes are suppored by *syndication platforms* like "Intralinks" or "Debtdomain", who are compensated by a fee.

I 21 Most facilities are structured and syndicated in a way that the one, two or three banks who are actively arranging the facility are preparing an information package for banks to be invited and to give them the chance to have a look at term sheets and stuff like. To share all these documents and to run syndication books, it is standard to use one distribution platform nowadays. Market standard here is debt domain. The fee for this service usually must be paid by the client.