

Factors Influencing Syndicated Loan Spreads: A Review of Literature

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Abstract

In this paper we review the literature on factors influencing syndicated loan spreads, the mechanics and the direction of the impact. The review is structured around four major groups of factors on syndicated loan spreads: loan characteristics, borrower characteristics, country characteristics and lender characteristics. It is intended to facilitate the development of testable hypotheses for different time periods and different geographical samples of countries. It can also serve as a guide for policymakers looking to identify potential indicators that can serve as a basis for further analyses in order to provide recommendations for lowering the cost of funding for borrowing firms.

Keywords: syndicated loans, determinants, loan spreads, literature review

DOI: 10.7176/JESD/13-18-03

Publication date: September 30th 2022

1. Introduction

The syndicated loan market is an important source of financing in the global financial system. Compared to bond and equity financing the volume of international syndicated credit facilities has grown significantly. According to the Bank for International Settlement (2011) the volume of international syndicated credit facilities in developing countries reached a peak in 2007 of \$105.55 billion, compared to \$ 37.19 billion and \$ 76.26 billion for international bond and equity financing, respectively. The primary objective of this study is to draw on recent research into the determinants of syndicated loan pricing to develop hypotheses related to the factors influencing the determination of syndicated loan spreads.

In general, research on different aspects of syndication remains fragmented. A stream of literature directly linked to the syndicated loan market focuses on syndicated loan pricing and how the structure of the syndicate affects the interest rate charged. Angbazo et al. (1998) find that spreads on syndicated highly leveraged transaction loans are smaller when the arranger retains the largest share among all providers, consistent with a certification effect. Nini (2004) shows that syndicated loans in emerging markets with both foreign and domestic lead arrangers have lower spreads than other similar loans which he attributes to the local knowledge of the domestic arrangers. Altunbas and Gadanez (2004) find that in addition to individual loan or borrower considerations, lenders seem to focus more on macro-economic factors to determine the pricing of their loans such as the level of exports relative to debt service in the developing countries where the borrowers are located. Ivashina (2005) studies the relationship between retained share and interest rate while addressing some problems of endogeneity. Qian and Strahan (2007) find that institutional quality influences the characteristics of syndicated loan contracts. In countries with stronger creditor protection, loans have more concentrated ownership, longer maturities and lower interest rates. Focarelli et al. (2007) test whether syndicated loans where a larger share of the facility is retained by the arranger have lower interest rates. They find that this certification effect exists and is greater for facilities characterized by greater due diligence and monitoring efforts. Carey and Nini (2007) examine the home bias in syndicated lending and are puzzled by unexplained pricing discrepancies between the US and European markets. Gianetti and Yafeh (2010) show that loan spreads increase with “cultural distance” between the lead arranger and the borrower. Haselmann and Wachtel (2011) look at the specific role of foreign banks in syndicated loan markets in both large and small markets. They find that usual explanations of foreign banking activities can only account partly for the high rate of foreign involvement in syndicated loan markets. The usual argument is that foreign banks are at a disadvantage because they lack soft information and thus they tend to lend to more transparent firms compared to their domestic counterparts. They find that this relationship only holds in relatively small financial systems. In large developed markets foreign banks tend to lend to especially risky borrowers. Aldasaro et al (2022) find that syndicated loans arranged by non-bank lenders carry a higher spread compared to those arranged by banks, consistent with the premise that firms borrowing from non-banks are riskier. The following section further expands the syndicated loan pricing literature.

2. Factors affecting syndicated loan spreads

This section evaluates the existing literature on factors influencing the syndicated loan spread. We group these into four categories: loan characteristics, borrower characteristics, country characteristics and lender characteristics. Each of these categories include several variables that have been found to be significant

determinants of loan spreads.

2.1 Loan Characteristics

The literature on syndicated loan pricing has shown that several loan characteristics have an impact on loan pricing. The following loan characteristics are discussed:

Maturity, relates to the period the lender is exposed to the credit risk. The effect of maturity on loan spreads is generally not found to be uniform in the academic literature. The maturity-loan spread link remains open to interpretation because this link reflects two opposing effects. Borrowers prefer long term debt as they want to avoid costly liquidation at short-term maturities. Lenders, on the other hand prefer short-term debt in order to control agency problems such as substitution and underinvestment. This suggests that borrowers are willing to incur and lenders demand higher spreads for loans with longer maturity. More formally this represents the trade-off hypothesis, which predicts a positive relationship between spreads and maturity. The alternative to the trade-off hypothesis is the credit quality hypothesis, which suggests a negative relationship between spreads and maturity. Instead of offering longer term loans at higher rate lenders limit their exposure through forcing riskier borrowers to take short-term loans. Strahan (1999) finds such a negative relationship for his sample of revolvers and term loans. Dennis et al (2000) find a negative relationship between loan spreads and maturity for revolving loans. Kleimeier and Megginson (2000) find that loan maturity and spread are significantly and positively related, except for project finance loans. Consequently, the predicted sign of this variable can be positive or negative.

Loan size, captures the bank exposure on a given loan/borrower. The academic literature generally shows that loan size and spreads have a significant negative relationship. This relationship is due to several factors. First, large loans are generally made to bigger and more mature firms who have ongoing banking relationship and are more transparent to the public. Hence, loans to small businesses are seen as requiring greater control and administrative oversight (Berger and Udell, 1993 and Strahan and Weston, 1998). Second, economies of scale that determine the administrative and financial costs of loan assessment can be achieved more easily with large loans. Kitchen (1986) claimed that the yield per dollar on a small loan is not much greater than the administrative costs of providing it. Third, lack of competition in the financial system of a country. When the financial system of a country is dominated by the banking sector the majority of small business finance is obtained from commercial banks (Moore and Whitehall, 2000). In such an environment small businesses which usually obtain smaller loans are forced to accept the high spreads charged by their commercial banks. Kleimeier and Megginson (2000) find a negative and significant relation between loan prices and size for most syndicated credits except for project finance loans. The predicted sign for this variable is negative.

Loan purpose, variable is defined as one of the following: general corporate purpose, refinancing, acquisition related, project finance and multipurpose. Eichengreen and Mody (2000) find that spreads on loans to finance infrastructure projects are usually higher than on other types of loans. Kleimeier and Megginson (2000) report that merger and acquisition-purpose loans, are relatively more expensive than loans with other purposes. Relative to general corporate purpose loans, other loan types are generally considered riskier and carry higher spreads. These variables help control for differences in credit quality across loans. If all loan purpose categories are compared to general corporate purpose (the omitted category), the expected sign for loan purpose dummies is positive.

Loan type defined as either a term loan or a revolving bank facility. Term loans are instalment loans which cannot be re-borrowed once repaid. These funds are typically drawn down at one time, but occasionally do have a delayed take-down period. Another feature is that the loan principal is usually amortized, although the loan may be prepaid without additional fees. Revolving facility loans may be drawn down, repaid and reborrowed any number of times. An interest fee is charged on the outstanding loan amount as is a commitment fee (on any commitment unused) and a facility fee (on the total commitment amount available). Under a revolving facility many of the proceeds available to the borrower are not drawn, exposing lenders to less credit risk and typically resulting in smaller spreads (Nini, 2004). Angbazo et al. (1998) find that revolving loans have a negative and significant impact on loan spreads, in a sample of highly leveraged transaction loans. If term loans are the omitted category, the expected sign of the Revolving facility loan type is negative.

Loan grade refers to whether the loan is categorised as highly leveraged or non-leveraged. This variable controls for the risk profile of the loan. Angbazo et al. (1998) list the criteria defining highly leveraged loans as: all loan financings used for buyouts, acquisitions, recapitalizations; all loan financings which double the borrower's liabilities and result in a leverage ratio higher than 50%, or increase the leverage ratio higher than 75%; all loan facilities that are designated as highly leveraged by the syndication agent. The expected sign of the Leveraged dummy variable is positive, reflecting the higher risk highly leveraged loans have compared to non-leveraged ones.

2.2 Borrower's characteristics

The effect of borrower's characteristics on loan spreads has been well documented in the literature. Prior studies

mainly investigate borrower characteristics which are more closely related to debt agency problems. Two debt agency problems identified in the literature are risk-shifting or asset substitution problem (Jensen and Meckling, 1976) and the other is the under-investment problem (Myers, 1977). More recently, Lambertini and Mukherjee (2022) find that bank holding companies that failed the stress tests increased syndicated loan spreads. The following borrower characteristics are discussed:

Borrower's Size, as measured by firm's total assets. One would expect that borrower size is negatively related to loan spreads since smaller firms are assumed to have higher risk due to higher information costs, while larger firms are likely to be more diversified, hence lower expected bankruptcy cost and lower risk. Petersen and Rajan (1994) find that adverse selection and moral hazard have more influence on small and young corporate borrowers. Larger companies are more diversified, mature and better known. They have lower default risk. They have also been around longer, meaning that they have had time to gain reputation, which is a very important element when accessing the debt market. This suggests that larger firms should have less difficulty in borrowing, and obtain better terms when doing so. The expected sign of this variable is negative.

Leverage, as measured by the ratio of total debt to total assets. The agency theory of debt, suggests that firms with higher leverage have greater agency costs of debt since they are more likely to underinvest when a disproportional amount of benefit accrues to the lender. (Myers, 1977). He further states that as firm leverage increases, equity holders have incentive to under-invest in positive NPV projects. Being aware of these debt agency problems, debt holders price the debt appropriately and are expected to demand higher returns. High-leveraged firms are considered riskier, since they are more likely to increase the riskiness of their assets. However, higher leverage could also proxy for the fact that the firm has already accessed the debt market several times, while acquiring reputation which reduces contracting problems in the future. The expected sign of this variable can therefore be positive and negative.

Profitability, as measured by the total operating income. It is another measure of the firm's riskiness. Profitable firms have lower default risk and less severe moral hazard problems. Firms that are less profitable are less likely to expropriate assets and to increase the risk of conducting their business operations. Thus, the more profitable the firm the lower contracting costs are expected to be. The expected sign of this variable is negative.

To account for the impact of publicly available information on the loan spread, two variables are discussed: *Unrated* a variable indicating firms with no Standard and Poor's debt rating, and *Unlisted* a variable indicating borrowing firms not listed on a stock exchange. Unrated is an important variable since credit rating agencies are an alternative source of information that decreases information asymmetries not only between lenders and borrowers but between syndicate members as well. The expected sign of this variable is positive since the absence of a rating exacerbates the adverse selection problem. This problem results from information asymmetries between the lead bank and the borrower. Borrowers without a rating are expected to be of worse credit quality, less transparent and carry higher spreads. Furthermore, listed companies are expected to carry lower spreads as they are constantly exposed to market discipline and scrutinized by the public, compared to unlisted firms. The expected sign of Unlisted is positive.

Public is a variable which controls whether the borrowing firm has a public status. The expected coefficient is negative since borrowers with a public status are perceived by lenders as having good cash flow, hence a low possibility of default.

Industry, defined as one of the following: Energy and Power, Telecommunications, Industrials, Materials, Other. Loan contract terms differ by industry since different industries pose different risks for lenders. For example, Eichengreen and Mody (2000) report that when financial institutions borrow on the syndicated loan market, they seem to be able to obtain lower spreads than non-financial borrowers. Lenders could change the mix of industries they lend in different countries depending on the perceived riskiness of a particular industry in that country. In general industries that face greater product market competition or those with mostly intangible assets are considered riskier and attract higher loan price.

2.3 Country characteristics

There is a stream of academic literature which started to appear in the late 1970s with the Latin American financial crises which examines the effects of sovereign borrowers' macro-economic characteristics on the financing conditions obtained by them. Most of the studies that link macroeconomic variables to financing contracts focus on secondary bond spreads (Mauro et al. (2002); Forbes and Rigobon (2002)). However, the importance of country characteristics has now been widely recognised and most of the papers analysing loan spread determinants control for this set of variables. Eichengreen and Mody (2000) analyse the determinants of spreads on syndicated loans to emerging markets while controlling for macroeconomic characteristics of the country of the borrower such as: the ratio of debt to GNP, whether the country has rescheduled in the preceding year, the ratio of debt service to exports, and the variance of export growth. They find that spreads charged by international banks to emerging market borrowers reveal a market that reacts to macroeconomic and financial information in much the same way as the bond market. Altunbas and Gadanez (2004) find that macro-economic

variables are stronger determinants of syndicated loan pricing than micro-economic ones. In developing countries lenders seem to focus more on macro-economic factors such as the level of exports relative to debt service where the borrowers are located.

Drawing from previous research we discuss the following macroeconomic variables:

Solvency of the borrower's country, as measured by the ratio of external debt to GDP. Solvency is an indicator of a country's debt relative to its earnings. The higher this ratio the more likely the country is to be distressed and therefore default. Several studies find that higher ratios of debt to export or debt to output are associated with higher sovereign loan spreads (see Hanson (1974); Harberger (1980); Sachs (1984); Eaton and Gersovitz (1981); and Edwards (1983)). Boehmer and Megginson (1990) investigate the factors that determine secondary market prices of developing country syndicated loans. They find that solvency is an important determinant of syndicated loan spreads. Altunbas and Gadanez (2004) find a significant and positive coefficient on the ratio of debt to GDP. Their results are in accordance with the results of the academic literature (Eichengreen and Mody (2000); Sachs (1984)). The expected sign of the coefficient is positive, i.e. the solvency ratio raises the pricing of syndicated credit.

Liquidity of the borrower's country, as defined by the ratio of reserves to GDP. Edwards (1983) notes that the ratio of international reserves to GDP measures the level of international liquidity held by a sovereign borrower and is expected to have a negative effect on spreads. Generally, higher reserves increase liquidity and contribute to improved creditworthiness. However, Gersovitz (1985) uses the willingness to pay framework to argue that a country can choose not to use reserves for debt service, if it can protect them from seizure. In the early 1980s it was thought that developing countries were choosing to rebuild reserves rather than service debts. Argentina was prepared to threaten its creditors with having to classify its loans as non-performing rather than use its increased reserves for debt service (Gersovitz, 1985). Altunbas and Gadanez (2004) find a positive and significant coefficient for the ratio of reserves to GDP. They conclude that the interpretation that reserves may be used to reduce the cost of default seem to prevail over the other interpretation that high reserves convey good news about borrower's country finances and prospects, and that lenders penalize borrowers seen to be preparing a strategic default. The expected sign of this variable is therefore ambiguous. Relatively high values of this ratio indicate that a country can weather liquidity crisis – this variable is expected to be negatively associated with the pricing of syndicated loans. However, according to the willingness to pay approach high values of this ratio may result in an increase in the country risk premium – this variable is expected to have a positive coefficient.

Economic growth and its sustainability, as measured by real GDP growth and inflation rate. Real GDP growth is an indicator of the evolution of the country's wealth. Higher rates of GDP growth indicate better financial prospects and increased ability to service debts. Eichengreen and Mody (2000) find that high country growth rates enhance the ability to repay and produce a statistically significant and quantitatively large reduction in spreads. Similarly, Altunbas and Gadanez (2004) find a significant and negative coefficient on GDP growth rate, indicating that lenders seem to reward borrowers from growing economies. High values of the real GDP growth variable are associated with relatively cheaper syndicated credits as long as the economic growth is sustainable. In order to control for the sustainability of growth, inflation is included as an explanatory variable into the model. Cantor and Packer (1996) note that a high rate of inflation points to structural problems in the government's finances. Altunbas and Gadanez (2004) find a significant and positive coefficient on the inflation rate, indicating that lenders penalize unsustainable economic growth that will eventually lead to inflationary pressure. Real GDP growth rate is expected to carry a negative coefficient, while the coefficient for inflation is expected to be positive.

Economic openness, as measured by the ratio of imports to exports. High values of this ratio point to excessive dependence of the country on foreign trade. Frenkel (1983) and Balassa (1986) suggest that open economies are more vulnerable to foreign shocks. We expect that higher values of the ratio of imports to exports will raise spreads. However, a high propensity to import may suggest that adjustment costs are lower and this may lower spreads (Altunbas and Gadanez, 2004). Therefore, the expected sign of this variable can be both positive and negative.

Country Governance Indicators.- Besides macroeconomic variables we discuss variables which represent different aspects of country governance.

Although the concept of governance is widely discussed among scholars and policymakers, there is as yet no unified definition of what constitutes governance or institutional quality. Some authors and organisations define it more broadly while others focus more narrowly on public sector management issues. The narrower definition focuses on whether existing rules and laws are enforced, while the broader one emphasizes more the justice of the content of the laws.

The World Governance Indicators database defines governance as consisting of three main elements (Kaufmann et al, 2010): first, the process by which governments are selected monitored and replaced; second, the capacity of the government to effectively formulate and implement sound policies; third, the respect of citizens and the state for the institutions that govern economic and social interactions among them. Two

measures of governance correspond to each of these three areas, resulting in a total of six dimensions of governance: Voice and Accountability.- the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association and a free media. Political Stability and Absence of Violence/Terrorism.- the likelihood that the government will be destabilized or overthrown by unconstitutional means including politically motivated violence and terrorism. Government Effectiveness.- measures the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation and the credibility of the government's commitment to such policies. Regulatory Quality.- the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. Rule of Law.- the quality of contract enforcement, property rights, the police and the courts, as well as the likelihood of crime and violence. Control of Corruption.- the extent to which public power is exercised for private gain, as well as "capture" of the state by elites and private interests.

Battacharya and Daouk (2005) state that it is the enforcement, not the existence of laws that affects the loan contracting process. Moutinho et al. (2022) find that borrowers from countries with a Continental governance system pay lower syndicated loan spreads compared to borrowers from countries with an Anglo-Saxon governance system. Qian and Strahan (2007) focus on creditor rights and find that stronger legal rights result in loans with longer maturities and lower spreads. Bae and Goyal (2009) examine both creditor rights and the enforceability of contracts and show that it is the enforceability not merely the existence of rights, that matters to loan contracting. Their results show that banks respond to poor enforceability of contracts by reducing loan amounts, shortening loan maturities and increasing loan spreads. Girardone and Snaith (2011) find that lower levels of aggregate political risk result in cheaper project finance loans. They find that the disaggregated political risk as a pricing determinant is negligible for developed countries, but significant for developing countries. For the latter they further find that loan spreads are negatively related to the effectiveness, quality and strength of a country's legal and institutional systems while lower levels of government stability and democratic accountability are associated with lower loan spreads. Bae and Goyal (2003) find that banks charge higher loan spreads when property rights are weaker. They further show that governance mechanisms at the firm level affect loan spreads too, but these are second order effects. Hence, improvement in the cost of external financing will be greater with policies that improve property rights protection at the country level rather than with policies that aim at improving governance mechanisms at the firm level. Laeven and Majnoni (2004) find that judicial efficiency and inflation rates are the main drivers of loan spreads across countries. Their results suggest that improvements of judicial efficiency and judicial enforcement of debt contracts are critical to lowering the cost of financial intermediation for households and firms. The expected sign for the governance indicators is negative.

2.4 Lender Characteristics

The literature on syndicated loan pricing in developing countries have generally neglected this category of variables when analysing the determinants of loan pricing. Coleman et al. (2002) investigate whether bank characteristics influence loan contract terms. The main finding of their study is that, while controlling for borrower and loan contract features, the effects of bank characteristics on contract terms are both statistically and economically significant. Arscott and Nini (2022) find the participation of a government-sponsored enterprise in the syndicate lowers interest rates on term loans to eligible borrowers. Furthermore, Mi and Han (2020) find that syndicated loan prices are more sensitive to lead arranger's market concentration than to borrower's market concentration. The following variables are discussed:

Syndicate size, as measured by the number of lead arrangers and the number of lenders. The structure of the syndicate can influence the effectiveness of monitoring and thus the setting of loan contract terms. For large syndicates where the lead arranger and syndicate members hold relatively small proportions of the loan, the lead arranger may shirk on its monitoring responsibilities (Dennis and Mullineaux, 2000). Reflecting the reduced benefit of monitoring to the borrower this suggests that the spread will decline for very large syndicates or where the lead arranger holds a relatively low proportion of the loan. In the first case a decrease in share of the loan retained by the lead bank (a more diffuse, large syndicate) increases spread demanded by participant banks due to an increase in information asymmetry costs. In the second case, a decrease in the share of the loan retained by the lead bank decreases spread demanded by lead banks due to reduction in its credit risk exposure. Furthermore, Preece and Mullineaux (1996) argue that large bank syndicates complicate loan restructurings and increase contractual inflexibility because of the greater likelihood of hold-out problems among syndicate members. Borrowers are willing to pay a premium for this contractual flexibility, hence an inverse relationship between syndicated loan spread and syndicate size. The expected sign of this variable can thus be positive and negative, depending on which of the effects dominate the others in equilibrium.

Bank size may serve as a proxy for both monitoring ability and bank risk. Byers et al (1998) use lender size as a proxy for specialized expertise in the loan functioning arguing that a larger bank can monitor more effectively because they have more specialized staff and better monitoring technology. Large banks are also

likely to be better diversified and thus have lower risk. The reputation for ability to perform screening, monitoring and due diligence proxied by this variable should lead to lower loan spreads. However, large banks can exploit their market power and charge higher interest rates (Focarelli et al., 2008). The effect of this variable on loan spreads is therefore ambiguous. Haselmann and Wachtel (2011) use a dummy variable that takes the value of one if the lead arranger is one of the ten largest banks in the world and zero otherwise. They find that the coefficient on this dummy variable is positive and statistically highly significant, suggesting that the very large banks charge a higher spread on average. The expected sign on this variable can be both positive and negative.

Foreign vs. Domestic banks.- The literature on foreign banking indicates that foreign and domestic banks behave differently. Foreign bank lending to informationally opaque borrowers is restricted by the geographic and cultural distance between a foreign bank's headquarters and the local market (Mian, 2006). Berger, Klapper and Udell (2001) argue that local banks enjoy a dual advantage of monitoring ability and information about borrowers over non-local banks. They find lower spreads for local banks in a sample of Argentinian loans and interpret it as evidence of an existence of an informational advantage of local banks. Nini (2004) investigates whether the participation of local banks in a syndicate influences the loan spread using a sample of syndicated loans from 13 emerging countries in Eastern Europe and Latin America. He finds that spreads are generally lower for syndicated loans where local banks participate. This conclusion supports the view that local banks in emerging countries are well positioned to alleviate information asymmetries. The effect of foreign participation on loan spreads is unclear. Esty (2006) argues that foreign participation will increase loan spreads if foreign lenders receive additional compensation for providing greater deterrence against sovereign intervention. On the other hand Stiglitz and Weiss (1981) find that foreign banks might prefer to ration credit than to increase loan spreads (to avoid adverse selection problems). Another possibility is that foreign bank participation is associated with greater competitive pressures during the bidding process, which leads to lower spreads. Fungacova et. al. (2009) examine whether local bank participation exerts an impact on the spread for syndicated loans in Russia. They find no significant impact on the spread when there is a local bank participation in a syndicated loan. They conclude that local banks do not benefit from an advantage in monitoring ability and accessing information in Russia. Haselmann and Wachtel (2011) analysing cross border syndicated loan deals in 25 European countries, find that spreads are significantly lower for mixed lead arrangers, although there is no significant difference between domestic and foreign lead arrangers. When they split the sample in large versus small financial systems, they find that in less developed countries the foreign arranger effect turns negative. The expected sign for variables indicating foreign and mixed syndicates can be positive and negative.

3. Conclusion

In this paper we review the syndicated loan pricing literature in order to identify the main factors influencing the determination of syndicated loan spreads. Four groups of factors are considered: borrower, loan, country and lender characteristics. The mechanics of the impact on spreads of each of these factors is explained with the predicted sign of the impact as derived from the existing theoretical and empirical literature. These relations can be tested in different environments and sample periods. The list of influencing factors is by no means exhaustive and can be extended or modified based on the particular context analysed or the availability of data. Nevertheless, we believe to have provided a comprehensive list of the main factors that are likely to determine syndicated loan spreads that can serve as a basis for further empirical and theoretical analyses. This review can be extended by discussing the implications of the global financial crises and the recent COVID-19 pandemic on the syndicated loan market in general, and syndicated loan pricing in particular. This will provide a more comprehensive review of factors affecting syndicated loan spreads in normal times and in times of crises and identify potential channels through which the negative effects of the crises can be mitigated. We leave this extension for future research.

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