

Determinants of Syndicated Loan Spreads in Central, Eastern and South-Eastern European Countries

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Abstract

Despite the importance of the syndicated loan market as a source of international financing there is limited evidence on factors influencing syndicated loan pricing in European developing economies. Focusing in one particular region reduces the problem of cross-country heterogeneity and provides more specific policy recommendations for reducing the cost of funding for firms, in an environment where capital markets are less developed, and banks are seen as the main source of funding. This study investigates the determinants of syndicated loan spreads in a sample of 1004 syndicated loans from the Thomson One Banker database, granted to borrowers from 12 Central, Eastern and South-Eastern European countries. The results show that loan and country characteristics are the most significant determinants of syndicated loan spreads. Lenders seem to price loan characteristics in European transition economies in accordance with the existing academic literature – riskier loans are charged higher spreads. Augmenting the Thomson One Banker with the Worldscope database, we further find that borrower characteristics are generally significant determinants of syndicated loan spreads however their significance weakens once country characteristics are taken into account. Lender characteristics are found not to be significant determinants of syndicated loan spreads in European transition economies. The implication of these results is that governments of European transition countries have a major role to play in providing a macro-economic and legal infrastructure that will enable borrowing firms to get access to funding sources at lower spreads.

Keywords: syndicated loans, spreads, emerging Europe, Thomson One Banker, Worldscope

DOI: 10.7176/JESD/13-18-02

Publication date: September 30th 2022

1. Introduction

The syndicated loan market is an important source of international financing in both developed and developing countries (Ferreira and Matos, 2012; Greenbaum et al. 2019). It has grown rapidly over the past few decades, with volumes in emerging Europe reaching a peak in 2005 of \$ 27.93 billion according to the Bank for International Settlement (2011). Despite its importance there is limited evidence on factors influencing syndicated loan pricing in European developing economies. Focusing in one particular region reduces the problem of cross-country heterogeneity and provides tailored policy recommendations for the countries analysed for reducing the cost of funding and facilitating investments and economic growth.

The primary objective of this study is to draw on recent research into the determinants of syndicated loan pricing in order to identify the most significant factors influencing the determination of syndicated loan spreads in European transition economies. The contribution to the existing literature is twofold. First, this study focuses on European transition economies. A sample that has not been previously studied in terms of syndicated loan spread determinants. Second, in addition to country, borrower and loan characteristics lender characteristics (syndicate size, bank size, foreign/domestic banks) are taken into account to test whether previous findings on syndicated loan pricing in developed and emerging economies hold for European transition economies as well.

Using the Thomson One Banker database (and augmenting it with the Worldscope database) to select a sample of syndicated loans granted to borrowers from 12 emerging European countries, we find that lenders granting loans to European transition economies, value macro-economic variables, other country characteristics (such as control of corruption, rule of law, government effectiveness) as well as loan characteristics when determining syndicated loan spreads. Borrower characteristics are generally significant determinants of syndicated loan spreads however their significance weakens once country characteristics are taken into account, possibly because indicators of macro-economic performance of the borrower's countries take away some of their information content in the eyes of the lenders. Lender characteristics are found not to be significant determinants of syndicated loan spreads in European transition economies. The implication of these results is that European transition countries have a major role to play in providing a macro-economic and legal infrastructure that will enable borrowing firms to get access to funding sources at lower spreads.

The rest of the paper is structured as follows. The next section reviews the existing literature. Section 3 presents the data and methodology. Section 4 presents and discusses the results, while section 5 concludes and provides policy recommendations.

2. Literature review

The literature on syndicated loans has been scarce compared to other sources of corporate financing. In general, research on different aspects of syndication remains fragmented. There are several streams of research directly linked to the syndicated loan market. One stream of research investigates reasons for loan sales, and the determinants of the decision of banks to syndicate loans. Another stream of research studies the effect of information asymmetries on the structure of loan syndicates (Aldasaro et al., 2022; Arscott and Nini, 2022). A less abundant stream of literature focuses on syndicated loan pricing (Lambertini and Mukherjee, 2022; Mi and Han, 2020; Moutinho et al., 2022). This study contributes to the syndicated loan pricing research stream and is most closely related to Altunbas and Gadanez (2004), Focarelli et al (2008) and Haselmann and Wachtel (2011). All these papers use loan spread as the explained (dependant) variable. They differ on the test and control variables they use as well as the countries included in their sample. Altunbas and Gadanez (2004) focus more on macro-economic and loan variables without controlling for lender and borrower characteristics. Their sample includes syndicated loans granted to developing country borrowers. Focarelli et al (2008) include borrower characteristics syndicate composition in their explanatory variable set, but do not account for borrower's country macroeconomic variables. Their sample includes syndicated loans in over 80 countries. Haselmann and Wachtel (2011) use data from 25 European economies and take into consideration the nationality of the banks in the syndicate. They find that in relatively small financial systems 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.

3. Data and methodology

3.1 Sample selection

The sample is selected from the Thomson One Banker Dataset, where care was taken to create a homogeneous sample by including only completed and fully confirmed deals, excluding bilateral loans and loans to government entities and financial institutions, as well as loans with incomplete pricing and maturity information. These restrictions leave a final sample of 1004 loans to borrowers in 12 countries. The size of subsamples used in the analysis is further determined by the availability of particular variables. Country governance indicators are available for 761 loan deals, while borrower's financial information (total assets, leverage, profitability) is available for 260 loan deals.

3.2 Variables and descriptive statistics

Table 1 defines all variables used in the analysis, their source and their expected signs. Thomson One Banker provides information on loan contract terms (spread, maturity, loan size, etc.) and some limited information on borrowers and lenders. To obtain more information on the financial characteristics of the borrowing firm, the Thomson One Banker data on loan contracts is matched to Worldscope database for financial statements. Worldscope is provided by Thomson Reuters and is a comprehensive world-wide database containing financial information on public and private companies representing more than 55 established and emerging countries. The two datasets are hand matched by firm name and industry classification code. Firm data for 260 loan contracts are found. If a loan contract was originated in year t to borrower i , the accounting data for borrower i from the year $t-1$ is used. If accounting data for the year $t-1$ was not available for a given borrower, data from year t was used.

Thomson One Banker provides information for all the lenders and their role in the loan contract at inception. Most importantly, lead arrangers for each loan are shown in a separate column, ranked by the share held in the syndicate. Because of the critical role that lead arrangers play in information collection, monitoring and syndication, the focus is on the banks that Thomson One Banker designates as lead arrangers, when defining variables related to the structure of the syndicate (Top 20, Foreign, Mixed, Domestic). Syndicate size is defined by two variables: Number of Lenders and Number of Arrangers, similar to Lee and Mullineaux (2004) and Sufi (2007). The latter is defined as the number of lenders within the syndicate bearing the "Arranger" title, while the former is defined as the total number of lenders within the syndicate. This distinction is made because senior members of the syndicate have different concerns and motivations than other participants. Therefore, the influence of the size of the syndicate on loan spreads can differ in terms of sign and significance depending on the lender's status in the syndicate hierarchy.

The analysis controls for the nationality of both borrowers and lenders by using dummy variables. Foreign is a dummy variable equal to one if the nationality of all lead banks is different from that of the borrower. Mixed is a dummy variable equal to one if the syndicate includes any lead bank whose nationality is different from that of the borrower. Domestic is a dummy variable equal to one if the nationality of all lead arrangers in the syndicate is the same as that of the borrower. Following Nini (2004) a local lender is defined as a bank domiciled in the same country as the borrower that does not have a foreign parent. Using this definition of local lender, foreign banks with subsidiaries in the borrower's country are not considered as local and are grouped with

foreign banks that do not have a local subsidiary. Foreign bank branches are not legally separate from the parent bank and thus maintain full support of the parent bank's capital base and enjoy an equivalent credit rating. Foreign bank subsidiaries are frequently incorporated in one country, but a majority of ownership is held by the parent company which is located in a different country (Houston et al., 2007). For subsidiaries and branches, bank location is determined based on the nation of incorporation of the parent bank (as opposed to the location of the branch or subsidiary) as well. This definition of local banks isolates banks most likely to have an information and/or monitoring advantage as well as banks subject to capacity constraints (Nini, 2004).

To test whether findings are driven by the large global banks that tend to be especially active in the syndicated loan market a variable that proxies for reputation is included. The study controls for bank size by including Top 20 - a dummy variable that takes the value of one if one of the 20 largest banks in the world is one of the lead arrangers in the syndicate, and zero otherwise.

Macro-economic data corresponding to characteristics of the borrowers' countries come from various International Monetary Fund's and World Bank's databases, such as: Quarterly External Debt Statistics, the IMF's World Economic Outlook database, World Development Indicators and Global Development Finance. Following Altunbas and Gadanez (2004) macro-economic information is linked based on the country and the date of loan origination. For example, for a loan granted to a borrower from Bulgaria in 2002, our real GDP growth variable represents Bulgaria's real economic growth for 2002.

To measure the extent to which governance indicators of a country impact the loan spreads charges to borrowers in these countries, governance variables are used from the Worldwide Governance Indicators database. The Worldwide Governance Indicator is a long-standing project with the goal to develop cross-country indicators of governance. It consists of six composite dimensions of indicators of broad dimensions of governance covering 200 countries since 1996: Voice and Accountability, Stability and Absence of Violence/Terrorism, Government Effectiveness, Regulatory Quality, Rule of Law and Control of Corruption. Data sources vary, covering governance perceptions as reported by survey respondents, non-governmental organisations, commercial business information providers and public sector organisations worldwide (Kaufman et al., 2010).

To understand the characteristics of the sample of syndicated loans, in particular in terms of average, median and dispersion Table 2 shows descriptive statistics for all the variables used in the analysis. Panel A uses data of the entire sample (1004 observations). Panel B shows descriptive statistics for the subsample where country governance indicators are available (761 observations), while Panel C uses data for the subsample where borrower's financial characteristics are known (260 observations). The last two columns of Table 2 show the results of the t-test for the difference in means between samples.

3.3 Methodology

Our methodology employs Panel Least Squares regression model to be able to adjust for the nature of the data. Our data represent unbalanced panel data. In all regressions standard errors are heteroskedasticity robust and clustered at borrowing firm level. In addition to explanatory variables reported, controls for year, country and benchmark rate dummy variables (Libor and Euribor) are included. The general specification that will be tested is the following:

$$Spread_i = \alpha + \sum_k \beta_k W_{ik} + \sum_l \theta_l X_{il} + \sum_m \gamma_m Y_{im} + \sum_n \phi_n Z_{in} + U_i \quad (1)$$

Where, $Spread_i$ is the premium charged on loan i over and above the applicable risk free rate (Libor, Euribor or another pricing reference); α is the intercept term, a constant; W_{ik} is a vector of k loan characteristics; X_{il} is a vector of l borrower's characteristics; Y_{im} is a vector of m country characteristics measuring the performance of the borrower's country; Z_{in} is a vector of n lender's characteristics; U_i is a random disturbance term drawn from a normal distribution. $\beta_k, \theta_l, \gamma_m, \phi_n$ are parameters to be estimated.

4. Results and discussion

Four series of regressions for the entire sample are performed. All regressions include loan and borrower characteristics. The regression with loan and borrower characteristics only is the baseline equation. Country and lender characteristics are added, one at a time to regressions 2 and 3, to measure their impact on loan spreads. The last equation (4) includes all four categories. Regression results are presented in Table 3 and Table 4. Table 4 presents the results for two subsamples analysed. Regressions have in general a good explanatory power as expressed by the adjusted R-squares, ranging from 42% to 54%.

4.1 Loan characteristics

The first hypothesis tested is whether loan characteristics have a significant influence in determining syndicated

loan spreads. The major finding with regards to loan characteristics is that regardless of the specification tested loan variables generally remain significant determinants of loan spreads. The Wald tests in tables 3 and 4 shows that loan characteristics are jointly significant at 1% confidence level. The first hypothesis is therefore accepted. What follows will analyse individual loan characteristics in terms of predicted and realised signs as well as their significance level.

Consistent with the academic literature a negative and significant coefficient for loan size across all the specifications tested is found. Results are consistent with the findings of Kleimeier and Megginson (2000) and Altunbas and Gadanez (2004), suggesting either that banks are benefiting from economies of scale or that safer borrowers are able to arrange larger loans, or both. Large firms who are usually granted larger loans seem to be charged lower spreads as found by Udell and Berger (1993) and Strahan and Weston (1998). A very plausible explanation in the context of European transition economies, is the argument put forward by Moore and Whitehall (2000) that in countries where the financial system is dominated by the banking sector, small businesses, not being able to access the capital markets are at a disadvantage as they are forced to accept any terms and conditions set by their banks. Therefore, small loans which are typically granted to small businesses are charged higher spreads. Larger firms on the other hand being able to access international capital markets have a greater bargaining power towards banks, hence lower spreads on their loans. The negative coefficient of maturity supports the credit-quality hypothesis, which suggests that lenders prefer to lend to riskier borrowers on short-term basis, rather than charge them higher spreads for longer maturity loans. The insignificant coefficient, however suggests that maturity in itself is not a significant determinant of loan spreads. As expected leveraged loans are charged with higher spreads – the coefficient is positive and significant at 1% level. With regards to loan type variables, revolving loans have a negative and significant coefficient. As expected and consistent with Nini (2004), revolving loans expose lenders to less credit risk since many of the proceeds available to the borrower are not drawn resulting in smaller spreads. The coefficient suggests that revolving loans have lower spreads than term loans, since terms loans is the omitted category. Other loan types are more expensive than term loans (positive and significant coefficient). In the sample under study the cheapest loans are revolving loans, followed by term loans, with other loan types being the most expensive. Loan purpose dummy variables are partially significant. Since general corporate purpose is the omitted category, all results are compared to this variable. Loan purpose coefficients are as expected. Relative to general corporate purpose loans, other loan types are generally considered riskier and result in higher spreads with acquisition related loans being the riskiest (highest coefficient). Acquisition related loans is the only loan purpose variable that has significant impact on loan spreads across most of the specifications tested. The sign and significance is consistent with the findings of Kleimeier and Megginson (2000).

4.2 Borrower characteristics

The second hypothesis we test is that borrower characteristics have a significant influence on syndicated loan pricing. To test for the joint significance of borrower characteristics the Wald test for this set of variables is employed. This test is significant at 1% confidence level regardless of the specification tested, although the significance is a somewhat weaker than for the loan characteristics (higher p-values). The significance of borrower's characteristics weakens once country characteristics are taken into account, possibly because indicators of macro-economic performance of the borrower's countries take away some of their information content in the eyes of the lenders. The second hypothesis is accepted at the 1% significant level. Next, the individual sign and significance of each of the borrower characteristics is discussed.

The individual coefficients of borrower characteristics show mixed results. Unlisted companies have higher spreads, however the significance of their coefficients varies depending on the specification tested. The fact that the coefficient of unlisted is not significant all the time, suggests that in developing countries being a stock exchange listed company is not seen by lenders as reducing moral hazard problems. The capital markets in these countries are not at the stage of development where banks can rely on them as providing part of the monitoring duty. Since the stock exchanges of these countries are at their infancy they are not seen as a credible signal of providing market discipline for listed companies. In accordance with what expected the coefficient for Unrated is positive and significant across all specifications tested. The existence of a credit rating is seen as a source of mitigating information asymmetries between borrowers and lenders as well as between syndicate members. This certification by a credit rating agency is particularly important in countries where the transparency of borrowers is generally low, and laws and regulations for accurate and timely disclosure of financial information are not properly enforced. The coefficient for public companies is not significant, contrary to what expected. This may reflect the fact that lenders do not seem to value the public status of the borrower in developing countries as they do in developed ones, possibly because of less developed financial and legal institutions in these countries. The coefficients for all industry dummy variables are negative, indicating that compared to Energy and Power (the omitted industry category) borrowers in all other industries are charged lower spreads. Energy and Power is seen by lenders as an industry with higher uncertainty, hence higher risk. The lowest and the only significant

coefficient however is for telecommunication companies, which is seen as an industry with steady cash flows, low uncertainty and low risk. The rest of industry categories have an insignificant influence on loan spreads. As explained in the data section, the sample excludes borrowers from the financial and the government sector. Previous research (e.g. Eichengreen and Mody (2000)) shows that financial and government entities seem to be able to obtain lower spreads than other borrowers because they are perceived as safer borrowers. Since we do not include these two kinds of entities in our sample we do not expect a significant difference on the spread charged among borrowers from other sectors. The insignificant coefficients prove our expectations.

To test for the significance of borrower's financial characteristics, the sample is reduced to 260 loan deals (from 1004 deals initially), because of lack of data availability for the entire sample. Regressions 3 and 4 in Table 4, include three additional firm level variables: borrowers size, profitability and leverage. In general, these variables are not found to be significant determinants of loan spreads, contrary to what expected. Larger firms are seen as less risky and are typically charged lower spreads. However, the coefficient on borrower's size results positive, suggesting that larger firms carry higher spreads. In regression 3 this effect is significant at the 5% significance level, while in regression 4 where country and lender characteristics are included the coefficient loses its significance. The sign for the profitability and leverage coefficients are as expected, however not significant.

The insignificance of borrower's accounting data in determining the loan spread charged confirms the fact that an accurate and credible financial disclosure has not reached the level that can be used by banks in the process of setting the terms of the contract. Financial disclosure which is lacking enforcement and transparency forces banks to judge the risk of the firm they are lending to either by a certification from a rating agency or by the industry they belong to.

4.3 Country characteristics

The third hypothesis we test is that country characteristics are significant determinants of syndicated loan spreads. The results show that country characteristics are jointly significant at the 1% significance level.

Results in Table 4 show that all macro-economic variables are significant. Borrowers in countries with higher real economic growth are charged lower spreads. The real GDP growth coefficient is negative and significant. This is consistent with the view that higher rates of economic growth make the burden of debt servicing easier to bear in the future. The results are consistent with both Eichengreen and Mody (2000) and Altunbas and Gadanez (2004). With regards to the coefficient of inflation, results show that it is significant, however with the opposite sign from that predicted. Lenders do not seem to increase interest rates as inflation rates rise and the economic growth becomes unsustainable. This might be evidence of banks fuelling an unsustainable credit boom by keeping interest rates low for a long time. The coefficient of the ratio of reserves to GDP is positive and significant. Borrowers from countries with higher liquidity are charged higher spreads. Lenders do not see increasing reserves as indicators of improved liquidity and good financial prospects of the borrower's country. Consistent with the willingness to pay framework developed by Gersovitz (1985) lenders charge higher interest rates in countries with high reserves. They interpret high reserves as a sign that the country is preparing a strategic default and is choosing not to use reserves to pay off their debt. Results are consistent with Altunbas and Gadanez (2004) who find a positive and significant coefficient for the reserves to GDP ratio. The coefficient of imports to exports ratio is negative and significant. Typically high import to export ratios would indicate that a country is more dependent on foreign trade and can be more vulnerable to foreign shocks. This would lead to higher risk and higher loan spreads. However, consistent with the argument of Altunbas and Gadanez (2004) a higher propensity to import indicates that adjustment costs are lower, hence lower loan spreads. The solvency of a country as measured by the ratio of external debt to GDP is shown to be a significant determinant of syndicated loan spreads. The coefficient of this ratio is positive and significant. The higher the debt burden a country the more likely it is to be in distress and default.

The coefficient and significance of country governance indicators are tested in the subsample with 761 observations (from initially 1004) since governance indicators scores were not available for the entire sample. Table 4 (regressions 1 and 2) shows that governance indicators have a significant impact on loan spreads. From six variables representing governance indicators the most significant one is Rule of Law. The sign of this variable is negative and significant as predicted. This suggests that in countries with higher quality of contract enforcement, property rights, with a well functioning police and court, borrowers are charged lower spreads. To gain an understanding of the magnitude of this spread reduction, the coefficient shows that a one unit increase in the Rule of Law variable decreases loan spreads by 130 bps. The next most significant variable is Control of Corruption. The coefficient is negative and significant. In countries with a better system for corruption control, where public power is not exercised for private gain, lenders charge lower spreads to borrowers from these countries. A one unit increase of the Control of Corruption variable is associated with 65 bps decrease of loan spread. Government Effectiveness and Voice and Accountability are the other two significant variables from the set of governance indicators. Their sign is negative as predicted. This indicated that lenders reward borrowers

from countries with high quality of civil service that is independent of political pressure, governments with high quality of policy formulation and implementation as well as governments where citizens are able to actively participate and engage themselves in the public life. Two remaining governance indicators: Political Stability and Regulatory quality do not seem to be taken into consideration by lenders when determining loan spreads

4.4 Lender characteristics

The fourth hypothesis we test is that lender characteristics are significant determinants of syndicated loan pricing. As with the preceding categories the Wald test was used to determine the joint significance of lender characteristics. Results show that lender characteristics are not jointly significant at the 1% significance level. Therefore, hypothesis four cannot be accepted at the 1% significance level.

As far as the individual coefficients for lender characteristics are concerned Number of Lenders is the only variable that is significant across most of the specifications. The coefficient on this variable is negative. The greater the number of lenders in the syndicate the lower the portion held by each one of them. This suggests that lenders have less credit exposure and demand lower spreads. Furthermore, the inverse relationship found between loan spread and syndicate size is consistent with the findings of Preece and Mullineaux (1996) that as syndicate size increases loan restructuring becomes more complicated. Borrowers are not willing to pay higher spreads for a contractual agreement that is inflexible because of the syndicate structure. In the context of European transition economies syndicate size becomes even more important. Where creditor rights, property rights and law enforcement are weak information asymmetries between lenders and borrowers are more pronounced. Syndicate structure is seen by lenders as an effective way of diversifying risk by increasing the size of the syndicate. While larger syndicates reduce risk for each individual lender, they make loan restructuring and renegotiation more difficult for the borrower. The variable Number of lead arrangers has a positive coefficient as predicted. As the number of lead arrangers increases, the proportion of the loan amount held by them drops. As their credit exposure decreases they might shirk on their responsibility to monitor. This makes other participant banks demand higher spread. The coefficient on this variable is however not significant. The coefficient for Top 20 is negative but insignificant. Larger banks do not seem to capitalize on their experience and monitoring ability to offer cheaper loans to developing country borrowers. With regards to the nationality of the banks participating in the syndicate there is no evidence that foreign, domestic or mixed syndicates charge different spreads. The expectation was that local banks because of their advantage in monitoring ability and information about the borrower over foreign banks will charge borrowers less. There is, however no indication that in the sample analysed local banks have or take advantage of such information. The results are consistent with Fungacova et al (2009) who find no significance impact on the spread when local banks participate in the syndicate. This suggests that local banks do not seem to benefit from an advantage in monitoring ability and accessing information.

5. Concluding remarks and policy implications

This study uses panel least square regressions to analyse the determinants of syndicated loan spreads granted to a sample of borrowers from Central, Eastern and South-Eastern Europe. We find country and loan characteristics to be the most important determinants of syndicated loan spreads in European transition economies. Indicators of country's economic strength (high GDP growth, rule of law, control of corruption, government effectiveness, voice and accountability) decrease the cost of borrowing, while indicators of country's economic weakness (high ratio of external debt to GDP) raise the cost of borrowing. Lenders generally seem to price loan characteristics in European transition economies in accordance with the existing academic literature. Furthermore, borrower characteristics is an important category determining syndicated loan spreads, however its importance weakens once country characteristics are taken into account. This indicates that lenders value country characteristics more than firm level information when determining loan spreads. Lender characteristics do not seem to be important determinants of syndicated loan spreads.

These results can be viewed more broadly, in the context of government policymaking, and can help governments understand what should be done to lower the cost of funding for the businesses. The findings of this study lead to the following policy recommendations: governments should work on reducing macro-economic weaknesses (high external debt to GDP), and enhance macro-economic strengths (real and sustainable GDP growth rate). It was shown that these variables had significant influence in lowering syndicated loan spreads. Furthermore, governments should increase legal and regulatory measures to control corruption, improve rule of law and government effectiveness. It was shown that these country governance indicators significantly reduce loan spreads

This study can be extended in several directions. First, further work is needed to provide more evidence for the determinants of syndicated loan spreads in European transition economies. A special emphasis should be put on the supply side factors (lender characteristics), namely, lender's size, profitability and capital ratio. This would shed some light on which bank characteristics are associated with lower spreads and provide

recommendations for building an efficient banking system which will lower the cost of borrowing. Second, it would be interesting to analyse if the results for syndicated loans hold for bilateral loans as well, so as to have a more complete picture of sources of financing for European transition economies. We leave these extensions for future research.

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Table 1. Definition of variables

Variable Name	Definition	Expected Sign	Source
A. Loan Characteristics			
Spread	Natural logarithm of the annual spread (in basis points) paid over LIBOR, EURIBOR or any other pricing reference.	/	Thomson One Banker
Loan Size	Natural logarithm of the face value of the commitment facility	(-)	Thomson One Banker
Maturity	Maturity of loan contract in years	(+, -)	Thomson One Banker
Leveraged	Dummy for the grade of the loan contract. Equal to one if the loan contract is leveraged.	(+)	Thomson One Banker
Loan Type	Dummy variables for each of the following categories: 1= Revolving Loans, 2= Term Loans (omitted category), 3= all other types of loans	(-)	Thomson One Banker
Loan Purpose	Dummy variables for each of the following categories: 1= Multi-purpose, 2= Refinancing, 3= Acquisition Related, 4= Project Finance, 5= Other, 6= General Corporate Purpose (omitted category)	(+)	Thomson One Banker
B. Borrower Characteristics			
Unlisted	.=1 if the borrower is not listed on a stock exchange.	(+)	Thomson One Banker
Unrated	.=1 if a Standard & Poor's rating does not exist.	(+)	Thomson One Banker
Public	.=1 if the borrower has a public status	(-)	Thomson One Banker
Industry	Dummy variables for each of the following categories: 1= Energy and Power (omitted category), 2= Telecommunications, 3= Industrials, 4= Materials, 5= other industries	(+, -)	Thomson One Banker
Borrower Size	Natural logarithm of total assets (in thousand US\$)	(-)	Worldscope
Leverage	Ratio of debt to total assets	(+, -)	Worldscope
Profitability	Operating Income	(-)	Worldscope
C. Country Characteristics			
GDP growth	Real GDP growth rate (annual %)	(-)	International Monetary Fund
Inflation	Inflation rate (annual %)	(+)	International Monetary Fund
Imports to Exports	The ratio of total exports to total imports	(+, -)	World Bank
Reserves to GDP	The ratio of international reserves to GDP.	(+, -)	World Bank
External Debt to GDP	The ratio of total external debt (private and public) to GDP	(+)	World Bank
Country Governance Indicators	Six dimensions of governance are included: 1= Voice and Accountability, 2= Political Stability, 3= Government Effectiveness, 4= Regulatory Quality, 5= Rule of Law, 6= Control of Corruption.	(-)	World Governance Indicators database

Table 1. (Continued)

D. Lender Characteristics			
Number of Lenders	Number of lenders in the syndicate	(+, -)	Thomson One Banker
Number of Lead Arrangers	Number of lead arrangers in the syndicate	(+, -)	Thomson One Banker
Top 20	.=1 if any of the lead arrangers in the syndicate belongs to the largest 20 banks in the world (as measured by total assets).	(+, -)	Bankers Almanac World Ranking
Foreign	.=1 if the nationality of <i>all</i> lead arrangers in the syndicate is different from that of the borrower.	(+, -)	Hand collected
Mixed	.=1 if the nationality of <i>any</i> lead arrangers in the syndicate is different from that of the borrower.	(+, -)	Hand collected
Domestic	.=1 if the nationality of all lead arrangers in the syndicate is the same as that of the borrower (omitted category).	(+, -)	Hand collected
E. Other			
Year Dummy	Dummy variables for the year in which the deal was originated.	/	Thomson One Banker
Country Dummy	Dummy variables for all 12 countries included in the sample.	/	Thomson One Banker
Euribor	.=1 if the benchmark rate is Euribor.	/	Thomson One Banker
Libor	.=1 if the benchmark rate is Libor.	/	Thomson One Banker

This table presents all variables used in the regressions. It shows the name of each variable, a brief description, their sources and the expected signs.

Table 2. Descriptive Statistics

Variable	Panel A: Entire Sample N=1004			Panel B: Reduced Sample N=761			Panel C: Reduced Sample N=260			Difference in means A-B	Difference in means A-C
	Mean	Median	Standard Deviation	Mean	Median	Standard Deviation	Mean	Median	Standard Deviation	t-stat	t-stat
Loan Characteristics											
Spread	195.640	150.000	155.078	198.106	150	158.294	205.752	165.000	166.793	(-0.328)	(-0.922)
Loan Size	478.117	200.000	841.220	549.470	247.531	922.963	802.047	508.471	1156.959	(-1.692)**	(-5.088)***
Maturity	5.332	5.003	4.200	5.280	5.003	4.382	4.173	3.003	2.661	(0.249)	(4.234)***
Leveraged	0.540	1	0.499	0.552	1	0.498	0.588	1	0.493	(-0.504)	(-1.404)
Term Loan	0.587	1	0.493	0.594	1	0.491	0.615	1	0.487	(-0.309)	(-0.840)
Revolving Loan	0.147	0	0.355	0.137	0	0.344	0.150	0	0.358	(0.639)	(-0.105)
Multipurpose	0.450	0	0.498	0.456	0	0.498	0.427	0	0.496	(-0.241)	(0.673)
General Corp Purp	0.241	0	0.428	0.231	0	0.422	0.281	0	0.450	(0.477)	(-1.320)
Refinancing	0.074	0	0.261	0.084	0	0.278	0.085	0	0.279	(-0.805)	(-0.591)
Acquisition Related	0.065	0	0.246	0.083	0	0.276	0.123	0	0.329	(-1.448)	(-3.159)***
Project Finance	0.087	0	0.281	0.075	0	0.263	0.019	0	0.138	(0.893)	(3.747)***
Other loan purps	0.085	0	0.279	0.072	0	0.259	0.065	0	0.248	(0.953)	(1.017)
Borrower Characteristics											
Unlisted	0.728	1	0.445	0.702	1	0.458	0.262	0	0.440	(1.218)	(15.095)*
Unrated	0.881	1	0.323	0.876	1	0.329	0.742	1	0.438	(0.319)	(5.713)*
Public	0.307	0	0.461	0.331	0	0.471	0.754	1	0.432	(-1.089)	(-14.107)*
Energy and Power	0.360	0	0.480	0.361	0	0.481	0.400	0	0.491	(-0.078)	(-1.205)
Telecommunications	0.208	0	0.406	0.189	0	0.392	0.208	0	0.406	(0.985)	(0.017)
Industrials	0.136	0	0.343	0.141	0	0.348	0.058	0	0.234	(-0.250)	(3.494)***
Materials	0.171	0	0.377	0.187	0	0.390	0.219	0	0.415	(-0.831)	(-1.789)**
Borrower's Size							305,075.500	133,557.000	415,533.400		
Leverage							0.383	0.413	0.494		
Profitability							50,341.630	11,377.000	76,998.100		

Table 2. (Continued)

Variable	Panel A: Entire Sample N=1004			Panel B: Reduced Sample N=761			Panel C: Reduced Sample N=260			Difference in means A-B		Difference in means A-C	
	Mean	Median	Standard Deviation	Mean	Median	Standard Deviation	Mean	Median	Standard Deviation	t-stat	t-stat	t-stat	t-stat
Country Characteristics													
GDP growth	0.043	0.050	0.036	0.046	0.052	0.038	0.048	0.052	0.037	(-1.781)		(-2.021)*	
Inflation	0.113	0.090	0.164	0.099	0.091	0.071	0.100	0.097	0.057	(2.284)		(1.257)	
Imports to Exports	1.044	1.064	0.205	1.043	1.064	0.208	1.021	1.064	0.223	(0.137)		(1.598)	
Reserves to GDP	0.454	0.308	0.348	0.506	0.388	0.344	0.594	0.516	0.394	(-3.143)*		(-5.623)*	
External Debt to GDP	0.858	0.663	0.608	0.947	0.801	0.639	0.803	0.801	0.364	(-2.954)*		(1.370)*	
Voice and Accountability				0.123	0.475	0.846							
Political Stability No violence				0.061	0.240	0.720							
Government Effectiveness				0.163	-0.023	0.533							
Regulatory Quality				0.244	0.332	0.646							
Rule of Law				-0.104	-0.099	0.781							
Control of Corruption				-0.195	-0.154	0.683							
Lender Characteristics													
Number of Lead Arrangers	5.679	4.000	4.780	6.181	4	4.919	7.296	6.000	5.240	(-2.183)**		(-4.780)*	
Number of Lenders	10.285	9.000	6.918	10.108	9	6.752	11.296	10.000	6.680	(0.508)		(-2.135)*	
Top 20	0.636	1	0.481	0.705	1	0.456	0.788	1	0.409	(-3.043)**		(-4.702)**	
Foreign	0.700	1	0.458	0.699	1	0.459	0.715	1	0.452	(0.051)		(-0.477)	
Mixed	0.277	0	0.448	0.288	0	0.453	0.269	0	0.444	(-0.503)		(0.246)	
Domestic	0.023	0	0.150	0.013	0	0.114	0.015	0	0.123	(1.497)*		(0.747)	

Table 3. Effect on spreads (entire sample)

Variables	1		2		3		4	
	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE
Loan Characteristics								
Loan Size	-0.01	(0.00)***	-0.02	(0.00)***	-0.01	(0.00)**	-0.02	(0.00)***
Maturity	-1.26	(0.87)	-0.48	(0.92)	-1.12	(0.86)	-0.25	(0.93)
Leveraged	191.77	(7.08)***	176.28	(5.91)***	191.14	(6.89)***	176.98	(5.80)***
Revolving Loan	-21.99	(8.79)**	-13.31	(7.40)*	-22.17	(9.55)**	-11.55	(7.98)
Other loan types	22.83	(8.80)***	17.31	(8.21)**	25.16	(8.71)***	18.15	(8.40)**
Multipurpose	15.89	(7.39)**	6.07	(6.56)	16.46	(7.23)**	7.72	(6.60)
Refinancing	13.54	(16.12)	6.09	(12.91)	13.87	(15.68)	7.04	(12.78)
Acquisition Related	66.94	(26.45)**	76.48	(25.42)***	58.43	(26.43)**	73.22	(25.38)***
Project Finance	29.52	(11.67)**	13.12	(11.02)	29.68	(11.65)**	13.32	(10.83)
Other loan purpose	6.85	(12.82)	-3.09	(13.13)	5.46	(12.86)	-5.96	(13.48)
Borrower Characteristics								
Unlisted	30.66	(13.70)**	20.79	(13.05)	23.70	(14.57)	20.65	(13.99)
Unrated	34.31	(9.95)***	19.58	(9.08)**	33.11	(10.03)***	19.09	(9.19)**
Public	-29.28	(12.83)	11.70	(12.55)	-18.97	(14.44)	14.78	(13.90)
Telecommunications	-34.96	(11.34)***	-21.41	(10.26)**	-34.71	(10.95)***	-20.99	(10.13)**
Industrials	-5.19	(9.95)	-8.89	(7.57)	-12.56	(10.62)	-12.03	(8.72)
Materials	-4.48	(8.44)	0.31	(7.49)	-5.46	(8.71)	-0.35	(7.27)

Table 3. (Continued)

Variables	1		2		3		4	
	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE
Other industries	2.17	(13.15)	-4.02	(11.02)	-3.86	(12.72)	-5.64	(11.18)
Country Characteristics								
GDP growth			-775.76	(132.98)***			-770.20	(135.09)***
Inflation			-43.15	(15.08)***			-38.43	(15.57)**
Imports to Exports			-171.07	(18.02)***			-170.18	(18.60)***
Reserves to GDP			40.66	(16.23)**			38.74	(17.56)**
External Debt to GDP			26.69	(11.26)**			24.37	(11.93)**
Lender Characteristics								
Number of lead arrangers					1.23	(1.01)	0.38	(1.08)
Number of lenders					-2.68	(0.55)***	-1.52	(0.62)**
Top 20					6.50	(7.24)	-2.50	(6.88)
Mixed					12.67	(7.38)*	1.10	(6.89)
Domestic					47.48	(35.98)	44.12	(35.49)
Constant	95.51	(18.32)***	246.40	(26.31)***	99.84	(21.95)***	257.09	(27.84)***
N	1004.00		1004.00		1004.00		1004.00	
Adj-R-square	0.44		0.53		0.45		0.54	
Wald Test Probabilities								
Wald Loan	0.0000		0.0000		0.0000		0.0000	
Wald Borrower	0.0000		0.0035		0.0001		0.0032	
Wald Country			0.0000				0.0000	
Wald Lender					0.0000		0.0271	

This table reports coefficient estimates from regressions relating loan spread to loan characteristics, borrower characteristics, lender and country characteristics. In addition to variables reported all regressions include year, country and benchmark rate (euribor, libor) dummies. Standard errors are heteroskedasticity robust, clustered at borrower level. * indicates significance at 1% level, ** significance at 5% level, *** significance at 1% level.

Table 4. Effect on spreads (sub-samples)

Variables	1		2		3		4	
	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE
Loan Characteristics								
Loan Size	-0.01	(0.00)***	-0.01	(0.00)***	-0.01	(0.01)*	-0.01	(0.01)*
Maturity	-0.63	(1.01)	1.32	(1.18)	4.08	(4.76)	3.12	(5.41)
Leveraged	190.03	(7.46)***	162.24	(9.76)***	182.29	(16.80)***	156.11	(19.58)***
Revolving Loan	-23.48	(13.35)*	-16.63	(11.40)	-14.87	(17.94)	-14.09	(17.47)
Other loan type	32.25	(11.54)***	21.53	(10.53)**	68.07	(23.46)***	49.53	(21.73)**
Multipurpose	9.25	(9.60)	8.38	(9.06)	9.50	(16.84)	-13.46	(15.86)
Refinancing	-0.46	(18.88)	2.29	(14.12)	9.75	(15.20)	11.59	(15.97)
Acquisition Related	47.00	(18.80)**	60.35	(16.84)***	33.90	(44.53)	18.19	(29.00)
Project Finance	15.31	(17.12)	0.83	(15.27)	-15.83	(32.25)	2.37	(31.13)
Other loan purpose	0.94	(14.31)	-10.03	(13.46)	14.29	(22.49)	17.63	(23.47)
Borrower characteristics								
Unlisted	46.92	(18.48)**	-14.33	(17.17)	107.41	(36.12)***	74.18	(38.49)*
Unrated	49.52	(12.84)***	32.67	(11.09)***	70.67	(16.07)***	35.16	(13.51)***
Public	-40.59	(16.25)*	-19.98	(14.08)	134.77	(42.20)***	61.90	(42.20)
Telecommunications	-22.77	(16.15)	-2.33	(15.05)	-6.37	(26.33)	-10.30	(30.95)
Industrials	-5.16	(7.18)	-15.69	(12.56)	-10.01	(14.98)	-5.56	(22.23)
Materials	-12.46	(14.09)	-5.12	(12.12)	-17.46	(16.88)	-16.97	(16.78)

Table 4. (Continued)

Variables	1		2		3		4	
	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE
Other industries	3.86	(15.80)	13.57	(16.22)	-3.94	(23.79)	-10.13	(26.23)
Borrower Size					0.00	(0.00)**	0.00	(0.00)
Profitability					-7.47	(10.97)	-9.76	(13.85)
Leverage					0.00	(0.00)	0.00	(0.00)
Country Characteristics								
GDP growth			-1005.91	(167.47)***			-786.48	(293.64)***
Inflation			-142.11	(66.35)**			125.37	(222.62)
Imports to Exports			-146.92	(27.20)***			-148.68	(40.45)***
Reserves to GDP			23.88	(30.60)*			31.33	(27.22)*
External Debt to GDP			25.02	(16.30)			113.15	(34.47)***
Voice and Accountability			-111.33	(43.57)**				
Political Stability No violence			30.36	(19.20)				
Government Effectiveness			-81.41	(32.61)**				
Regulatory Quality			-51.69	(35.19)				
Rule of Law			-130.00	(41.53)***				
Control of Corruption			-64.71	(34.44)*				
Lender Characteristics								
Number of Lead Arrangers			0.09	(1.20)			0.72	(2.06)
Number of Lenders			-0.74	(0.67)**			0.08	(1.01)
Top 20			-14.26	(7.41)*			-13.07	(12.29)
Mixed			-2.12	(7.92)			27.32	(17.42)
Domestic			57.38	(27.71)			-4.78	(61.17)
Constant	97.04	(22.64)***	238.29	(29.57)***	-130.47	(55.91)**	79.56	(80.83)

Table 4. (Continued)

	1	2	3	4
N	761.00	761.00	260.00	260.00
Adj-R-square	0.42	0.53	0.42	0.51
Wald Test Probabilities				
Wald Loan	0.0000	0.0000	0.0000	0.0000
Wald Borrower	0.0001	0.0358	0.0000	0.0290
Wald Country		0.0000		0.0000
Wald Lender		0.0506		0.5120

This table reports coefficient estimates from regressions relating loan spread to loan characteristics, borrower characteristics, lender and country characteristics. In addition to variables reported all regressions include year, country and benchmark rate (euribor, libor) dummies. Standard errors are heteroskedasticity robust, clustered at borrower level. * indicates significance at 1% level, ** significance at 5% level, *** significance at 1% level.