Syndicated loans, foreign banking and capital market development*

Rainer Haselmann and Paul Wachtel

January 2009

ABSTRACT

In this paper we examine the role of syndicated loan markets in financial market development in 24 European countries. We find credit spreads to be negatively related to market size in small markets and positively related in large financial markets. Syndicated loans play a different role in large versus small financial systems. In small markets, loan syndications are a substitute for missing public debt markets, while in large financial markets loan syndicates enable arrangers to spread risk more efficiently. Foreign banks tend to reinforce this effect. In small markets, they transfer external finance across borders and in large markets they tend to take on more risky projects. Consequently, we find that characteristics of loan contracts arranged by foreign banks in small versus large markets differ considerably.

JEL Codes: F36, G15, G21, P34.

*University of Mainz, rainer.haselmann@uni-mainz.de; Stern School of Business, New York University, pwachtel@stern.nyu.edu; We would like to thank Thorsten Beck, William Greene, Steven Ongena, Beatrice Weder di Mauro and the seminar participants at Bar Ilan University for their helpful comments. The usual disclaimer on errors applies here as well.

1. Introduction

One of the puzzles of 20th century macroeconomics is the extent to which capital market integration did not occur. Feldstein and Horioka (1980) famously observed that even among developed countries capital markets were barely integrated. However, signs of change in the aggregate data do appear in the mid 1990s (Blanchard and Giavazzi 2002). In addition, banking data also indicates that capital market integration is finally underway. The volume of cross border lending has risen dramatically, cross border bank mergers are common and barriers to foreign bank entry have broken down (Clarke, Cull, Peria, and Sanchez 2003). The evidence with national data does not indicate exactly how market integration is taking place. In this paper we use disaggregated data on the syndicated loan market in Europe to investigate the patterns of capital market integration. More specifically, we examine two issues: first, the role that the syndicated loan markets plays in capital market integration, especially in countries with small financial systems and second, the role foreign banks play in the process.

The syndicated loan market provides a good laboratory to examine how integration takes place because it is large and has many cross border features. In this market firms can go to either domestic or foreign banks (or a consortium of both) that will syndicate a loan to buyers in any market. We will use detailed data on syndicated loans, including interest rates, from Dealscan. We match the loan data with information about the borrowing firms from Amadeus. Thus, our data set includes detailed information on lenders and borrowers throughout Europe for the period 1995 - 2007.[1]

Although syndicated loans are often viewed as a hybrid with characteristics of bank loans and public debt, they are closer to bank debt because of the role of the lead arranger (Dennis and Mullineaux 2000 and Sufi 2007). The lead arranger drafts the loan terms, monitors compliance and typically holds the largest share of the loan. Of course, the fact that the loan is syndicated and that only a part of it is likely to remain on the balance sheet of the

[1]The one drawback of the data set is that it is restricted to relatively large firms and loans. Small businesses, entrepreneurs and non-corporate borrowers will not be participating in this market so our topic is capital market globalization for larger firms.

arranger creates pricing incentives that might be different than in other debt markets (Harjoto, Mullineaux, and Yi 2006). However, our interest is not the comparison of syndicated loans to other sources of financing but in the activities of foreign arrangers in the syndicated loan market and differences in market activity across countries. Although loan syndication is an international phenomenon with broadly similar characteristics in many countries, there is little prior cross-national research. Carey and Nini (2007) examine the home bias in syndicated lending and are puzzled by unexplained pricing discrepancies between the U.S. and European markets.

There does not appear to be any prior research that looks at the implications of this loan market for capital market development and integration in Europe. In addition, this paper is the first to analyze the specific role of foreign banks in syndicated loan markets. Many syndicated loans involve cross border activity. In our sample 71 percent of all syndicated loans include at least some foreign participation and in 29 percent of the syndicated loans a foreign bank is the lead arranger. There is an extensive literature on foreign banking activity but it virtually always discusses the expansion of banks into smaller or emerging markets. In the syndicated loan market we find foreign bank expansion in both large and small countries.

Thus, our extensive data on syndicated loans allows us to investigate some important questions about the development of capital markets. First, how does the syndicated loan market work to integrate capital markets? Second, what motivates foreign banks to arrange cross border loans and enter new markets? Third, why do financial institutions operate differently in small and large countries?

Small countries, and there are many countries in Europe with tiny financial markets, suffer a disadvantage (Bossone and Long 2001, Andritzky 2007). In addition to diseconomies of scale, small economy markets are unable to provide the range of services found in major financial centers from sophisticated equity markets to competitive provision of banking services. Such disadvantages of size should be an incentive for firms to seek financing from foreign sources. We will show that syndicated loans with foreign lead banks compensate for the disadvantages of small size in smaller European countries.

In addition, syndicated lending has increased in large countries as well. In large countries the syndicated loans have high interest rates suggesting that loan syndications allow for financing of riskier projects by increasing the supply of funds and increasing risk sharing possibilities. Thus, in large countries as well, syndication is a form of capital market globalization. In summary, the availability of loan syndication appears to be a supply shift in small countries and a demand shift in large countries. That is, it increases the availability of credit in small markets and leads to lower rates. While in large countries, it leads to greater demand by firms that were otherwise constrained and increases rates.

In the first section, we describe the dataset constructed from Dealscan and Amadeus and briefly summarize earlier work on syndicated loans. In the second section, we develop our hypotheses and relate them to the literature. In section three, we present estimates of our base line model for rate spreads in the syndication market and describe how the market is affected by the size and depth of national capital markets. In the following section, we use a probit model to explain the choice between foreign and domestic lead bankers. The last section summarizes our conclusions.

2. Data and literature

Our primary sample is based on syndicated loans from Loan Pricing Corporation's Dealscan dataset for all European countries that report more than 50 loans. We specialize on only one specific geographic area in order to reduce the problem of cross-country heterogeneity.[2] Dealscan provides detailed information on loan contract terms (most importantly the spread above LIBOR), lead arrangers and lenders. Excluding loans to the finance industry, we obtain information on 15,585 deals for the years 1995 to 2007. Definitions of the variables constructed from Dealscan are shown in Table I. These include loan characteristics such as maturity and size. In addition, other work (Sufi 2007) with the Dealscan data has indicated that both the loan purpose and the tranche type have a significant effect on loan rates. The

[2] Carey and Nini (2007) find that there a significant differences in loan pricing between different geographic areas that cannot be explained by loan, borrower and lender characteristics.

parameterization here with dummy variables is designed to capture these influences in a tractable fashion.

In order to obtain more information on the characteristics of the borrowing firm, we match the Dealscan data on loan contracts to Bureau van Dyck's Amadeus database for financial statements. The characteristics of the borrowing firm capture differences in risk due to the firm's industry and the financial condition of the firm. Amadeus is a comprehensive, pan-European database containing financial information on public and private companies of all sizes. Since there is no common identification code for the Amadeus and Dealscan databases, we match the two datasets by firm name and industry classification code using the 'Reclink' algorithm in Stata. We are able to obtain firm data from Amadeus for 6416 Dealscan loan contracts. Since we do not know whether a loan was granted at the end, beginning or within a year, we match the accounting data from the year t-1 to each loan contract that was that became active in year t. If accounting data for the year t-1 was not available for a given firm, we use data from year t. The distribution of observations across countries is shown Table II along with the mean spreads. Finally we obtain macro data on financial sector size, development and concentration from the World Bank World Development Indicators and from Barth, Caprio, and Levine (2008). The mean spread over LIBOR of syndicated loans differs enormously across European countries. Foreign banks charge on average a higher spread than domestic banks, which can be explained by higher costs for foreign banks to overcome cultural and regulatory barriers involved with cross-border lending (Buch 2003, Mian 2006).[3] Loan contracts with several lead arrangers that have at least one foreign and one domestic participant in the lead role show the lowest average spread. This could be due to competitive supply and the presence of a domestic arranger. The differences in mean spreads across countries can of course be due to a variety of factors including the characteristics of the borrowers and of the loans. We will control for these characteristics and examine the determinants of loan spreads further in the following section.

We are not the first researchers to utilize the Dealscan data on loan syndications. Earlier work has focused on the structure of the financial industry without information about the

[3] A bank is defined as foreign owned if foreigners or foreign entities own 50 percent or more of its assets. In addition, a bank is considered foreign if it is a subsidiary of a domestic bank that is itself owned by foreigners.

borrowing firm or characteristics of the national markets. For example, Harjoto, Mullineaux, and Yi (2006) examine the differences in loan pricing by investment banks and commercial banks and, similarly, Steffen (2008) analyzes the effect on loan pricing of an ongoing banking relationship between the lead arranger and the borrower. Earlier, Carey, Post, and Sharpe (1998) used syndicated loan data to examine differences in the lending behavior of banks and private finance companies. They find that both types of intermediaries are equally likely to finance information-problematic borrowers. Ivashina (2008) models the determinants of the fraction of a syndicated loan that is retained by the lead bank. Sufi (2007) examines the determinants of syndicated loan structures and finds that when the moral hazard problem in loan monitoring is severe, a larger share of the loan is retained by the lead bank. Qian and Strahan (2007) find that institutional quality (e.g. creditor rights) influences the characteristics of syndicated loan contracts. In countries with stronger creditor protection, loans have more concentrated ownership, longer maturities, and lower interest rates.

Among the recent papers on syndicated lending, our analysis is most closely related to Carey and Nini (2007). They examine differences in syndicated loan pricing in geographic areas. They find that interest rate spreads on loans are smaller in Europe than in the US which cannot be explained by differences in lender, borrower or loan characteristics. They argue that the differences persist because borrowers have a strong home bias. Thus, national markets remain segmented which differs from our findings below that cross border syndication and foreign bank participation have led to substantial strides in market integration.

3. Hypotheses

The first issue we examine is the relationship between the size of a financial system and the average spread on syndicated loans. Small and large financial markets tend to differ in several dimensions. First, larger more developed financial systems are more competitive. They tend to have less concentrated banking systems and more active non-bank financial institutions competing as lenders (Bossone and Long 2001). There is additional competition from cross border lending and relatively high volumes of syndicated loans in larger countries.

Furthermore, equity and bond markets are concentrated around large financial centers and play a negligible role in small financial systems. Second, the prevalence of large banks leads to scale economies in financial services that should be reflected in smaller spreads. Third, standardized accounting information, ratings agencies and active public securities markets all serve to make information about firms more transparent in large markets.

Banking markets in small financial systems are generally more concentrated and less competitive (Bossone and Long 2001). The well-known structure-conduct paradigm for the banking industry suggests a positive relationship between loan rates and market concentration (Hannan 1991). There exists, however, a competing theory developed by Petersen and Rajan (1995). They argue that banks are better able to build up a relationship with their clients in a less competitive banking sector. In this case, banks with market power can offer lower interest rates because they are better informed. Thus, there are arguments that spreads might be higher or lower in smaller countries with less competitive financial industries.[4]

Furthermore, syndicated loan markets are a device to spread credit risk among different market players across borders. Thus, the relationship between market size and interest spreads may differs from other credit markets. Syndicated loan markets may play a very different role in large country financial systems where there is an ample supply of finance from other sources as compared to small countries. When there is an ample supply of funds from traditional sources such as banks and public debt markets, loan syndications enable arrangers to spread risks efficiently and thus increase the supply of funds to risky ventures. As a result, loan syndication in large financial markets may be associated with higher risks and larger spreads. In small financial systems, however, loan syndications might be a substitute for the missing public debts markets. Syndication increases the supply of lending services and may be associated with lower spreads in smaller less developed financial markets.

These arguments are summarized in our first two hypotheses:

H1: Interest rate spreads on syndicated loans may decrease or increase with the size of a financial market.

[4]Evidence from other markets suggests that spreads are higher when banking is more concentrated and less competitive (e.g. Cetorelli and Strahan 2006, Beck, Demirguc-Kunt, and Martinez Peria 2007.

H2: Rate spreads are negatively related to market size and depth in small counties and positively related in large countries.

The next issue of interest is the function foreign banks play in syndicated loan markets in small and large financial systems. In the traditional banking market, Claessens and van Horen (2008) argue that banks enter a foreign market when they can increase profitability within an acceptable risk profile. In developed countries, the literature presumes that foreign banks follow their home customers (Buch and Golder 2001). Their activities are often unprofitable in developed markets but are viewed as important to their home country strategy. For developing markets, foreign banks bring expertise and funding availability to underdeveloped financial markets. Studies of the relative performance of foreign banks such as Claessens, Demirguc-Kunt, and Huizinga (2001) and Bonin, Hasan, and Wachtel (2005) find that foreign banks have higher profits than domestic banks in developing countries, but the opposite is the case for developed countries. We will examine whether similar motivations are reflected in the syndicated loan market.

There is a wide literature on foreign banking that documents the costs to foreign banks in overcoming informational, cultural and regulatory barriers (Khanna and Palepu 1999, Buch 2003). One finding of this literature is that 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). Furthermore, foreign banks tend to lend more to large firms thereby neglecting small and medium enterprises (Sengupta 2007). Such informational costs may be higher in small foreign markets where the fixed costs of setting up a foreign operation cannot be spread across a large volume of activity. In this case, foreign lead or arranger banks should have smaller spreads in large developed markets than in small markets. That is, if better risk management and technology advantages are the rationale for foreign bank activity then we should observe smaller spreads in larger markets (or smaller difference between the spreads for foreign and domestic banks in larger markets).

We maintain that foreign banking activity in syndicated loan markets differs from ordinary foreign bank entry. Foreign banks play different roles in small as compared to large financial systems. In small markets, loan syndication by foreign banks brings external fi-

nance to undeveloped markets. In large countries foreign bank activity is different. The classic distinction that foreign banks lend to hard information firms and domestic banks to soft information firms does not apply in large markets. Domestic banks in large markets are able to provide external financing for domestic as well as multinational firms. Thus, the comparative advantage of foreign banks must lie elsewhere. Foreign banks in large markets are better able to diversify risk than domestic banks because of their cross border activity. Therefore they tend to take on more risky instead of less risky projects. Such lending should be highly profitable to foreign banks. These arguments are summarized by our next two hypotheses:

H3: In large countries, foreign arrangers should be willing to take on more risk so spreads should be larger as compared to small countries.

H4: Loan characteristics of foreign banks should differ in large versus small financial systems. In large financial markets foreign lead arranger banks should lend to riskier projects than in small markets.

4. Results

Syndicated loans are made with a variety of contractual structures and with various terms and purposes. In addition, the loans are made to firms in all industries. Thus, before we examine our hypotheses, we start with the formulation of a base line regression to explain interest rate spreads in the syndicated loan market that controls for both loan and borrower characteristics:

$$log(spread_{ijt}) = \alpha_{it} + \beta_{jt} + \varepsilon_{ijt} \tag{1}$$

The dependent variable is the logarithm of the spread between the Libor rate and the specific loan contract rate. Loan contract characteristics are summarized by α_{it} and borrower characteristics by β_{jt}. The variables used to control for the specific characteristics of the loan as well as the risk characteristics of the borrowing firm are shown in Table I.

Least squares estimates of the base line equation for all loans in our sample and with loans for leveraged buyouts (LBOs) excluded are shown in the first two columns of Table III. The full sample regression consists of 4119 loans for which all data are available and with LBO loans omitted the sample is reduced to 1840.[5] The base line equation explains 56 percent of the variance in spreads in the full sample and 33 percent with LBOs excluded. The dummy variable on LBO loans in the full sample equation indicates that the spread on LBO loans is on average twice as large as the spread on other loans. Loans for financing LBOs are conceptually different than a firm's borrowing for capital projects or operational purposes. The very nature of an LBO indicates that there are other risk characteristics that are not measured by the pre-loan financial condition of the borrowing firm. For this reason, we concentrate on estimates for the smaller sample that excludes LBO loans. The last columns of Table III show the baseline equation estimated for loans with foreign lead arrangers, domestic lead arrangers and mixed leads.

Although, the base line regression explains a large amount of the variance among loans, the lender and loan characteristics do not account for the large country effects seen in the raw data. Of the control variables included in our specification, the most important determinants of the spread are the size of the loan and the size of the borrower, the borrowers leverage ratio, the presence of covenants, whether the borrower is a public company and the loan tranche type.[6] In the following sections we use the basic framework provided by the base line equation to explore the hypotheses posed above.

4.1. Market Size and loan spreads

Our first hypothesis is about the relationship between market size and the average spread. The summary statistics in Table II show clearly that spreads are higher in large countries. Average rate spreads tend to be largest in the most developed markets such as Germany. This observation could of course be due to differences in the characteristics of both lenders

[5]There are fewer observations in column (1) of Table III than in Table II because of missing data for some loan and borrower characteristics.

[6]We do not show alternative specifications because the variables included are those suggested in the literature and the estimates are robust to including or excluding variables.

and borrowers among countries. Syndicated loans are made with a variety of contractual structures and with various terms and for various purposes. In addition, the loans are made to firms in all industries. The characteristics of both borrowers and loan structures differ from country to country

We use two measures of market size - the log of credit and the credit to GDP ratio - which we add individually to the baseline equation. In the first equation we examine the actual size of the credit market, lgcredit is the log of total credit (in billions of $ for the year in which loan was made). The second equation uses financial depth, pdcredit is the ratio of total credit to GDP in the country where the loan was made. In Table IV we show just the coefficient on the market size variable. The first column shows the market size variables added to the base line for all non LBO loans. These results suggest that there is a positive relationship between the market size and the spread. However, our earlier discussion indicated that the relationship might be more subtle; that is, the effect of market size might differ between large and small markets.

Thus, we separate the sample into a large country group (UK, Germany, France and Italy) and a small country sample (the remaining European countries).[7] The baseline equation for the spread with one of the market size measures is estimated for each country group. The equations are estimated for all non LBO loans and include the base line variables plus the dummy that indicates a lead foreign bank arranger.[8] The last two columns of Table IV show the coefficients for the scale variables in each sample. A one percent increase in the size of the credit market is associated with 15.5 bp increase in spreads in the large countries and a 10.5 bp decrease in the spread in small companies.

The results provide striking support for H2. In large countries, spreads on syndicated loans increase with the size or depth of the financial market. This finding suggests that loan syndication is associated with increased risk taking in larger markets. In smaller countries there is a negative relationship between financial market size and loan spreads though the

[7] We experimented with alternative break points between the large and small countries and found that the results reported here are robust.

[8] A few observations are lost because aggregate credit data is missing for some transition countries in the mid 1990s.

relationship is not significant for financial depth. In small countries, the spreads are negatively related to financial market size or depth. The comparison of the characteristics of big and small country borrowers in the syndicated loan market shown in Table V supports this interpretation. While firms borrowing in large markets are larger in size, they tend to be more leveraged and have fewer tangible assets to pledge as collateral compared to the borrowers from small markets. Risk taking in large markets goes beyond the effect of these observable characteristics which are included in the baseline specification and held constant in these regressions.

Our interpretation of H2 is that loan syndication expands the range of financial services available in small and undeveloped financial markets. An important way in which this occurs is through the participation of foreign banks in the syndication or as lead arrangers which will be analyzed next.

4.2. Foreign lead arrangers in syndicated loan markets

Our third hypothesis deals with foreign bank participation in syndicated loan markets in large and small countries. In our sample, 21 percent of the loans in large countries and 41 percent of the loans in small countries use a foreign lead arranger. Mixed foreign and domestic leads are more common in large countries and purely domestic lending is more common is large countries too. Our hypotheses suggest that there is a different motivation for foreign participation in large and in small countries. In order to test for this we estimate the base line equation for all non LBO loans and add dummy variables for foreign participation and country size as well as its interaction. The specific parameterization including an interaction term takes the following form:

$$log(spread_{ijt}) = \alpha_{it} + \beta_{jt} + \gamma Foreign + \sigma BigCountry + \delta Foreign * BigCountry + \varepsilon_{ijt} \quad (2)$$

with α_{it} being short for the baseline loan contract characteristics and $beta_{jt}$ being short for borrower characteristics. In addition, Foreign is a dummy for foreign bank participation and BigCountry is a dummy for the large financial markets (UK, Germany, France and Italy).

The coefficient of interest is δ which measures whether foreign banks charge a different spread in small versus large financial markets compared to domestic banks. A summary of results, the coefficients on the dummy variables and the interaction terms for estimates with all non-LBO loans are shown in Table VI.

The first three equations do not have an interaction term. Spreads are larger for big country borrowers and when there is a foreign lead arranger. The latter effect is only significant when we include bank fixed effects.[9] In the last three columns we add the interaction term between foreign bank lead arranger and big countries. The results are striking; the foreign banks charge higher spreads than domestic banks for similar loans in big countries. One way to view these results is to think of the domestic bank syndicator in a small country as the base case. Referring to equation (4), [10] the results indicate that the foreign lead arranger in the small country charges slightly less, the foreign dummy is negative but small and insignificant. Spreads are about one-third larger for domestic syndicators in big countries (the coefficient of 0.34 on the big country dummy). Foreign banks in big countries are charging more than 50 percent more than a domestic syndicator in a small country. The positive interaction coefficients indicate that foreign banks charge a higher spread in large as compared to small countries. In addition, foreign bank syndicators have about the same spreads as domestic syndicators in small countries but have substantially higher spreads in large countries. This finding is in contrast to the usual understanding of foreign banking activity and suggests that syndicated loan markets differ from regular loan markets. For example, Mian (2004) argues that private domestic banks appear to be more ”aggressive” in their lending than foreign banks. We find that foreign banks earn higher spreads - especially in larger financial markets - suggesting that foreign banks are the more aggressive lenders at least in large markets. Comparing borrower characteristics of foreign and domestic bank customers in the syndicated loan markets supports our finding. As shown in Table V, for-

[9] We can include bank fixed effects and the foreign dummy because many banks are active in both their home markets (where they are not foreign) as well as elsewhere. Similarly, the big country effect cannot be estimated with borrower fixed effects because each borrower is country specific.

[10] The results with bank fixed effects may be less reliable because the sample size is much smaller because the name of the bank is often not shown in the data.

eign banks engage with smaller borrowers compared to domestic banks (measured by total assets) even in small financial systems.

To further illustrate these finding, we estimate a probit model on a dummy variable that takes the value of one if a loan contract is written by a foreign versus a domestic lead arranger (mixed leads are omitted in this analysis). We also test whether the spread on a loan associated with foreign lead arrangers differs between foreign lead arrangers operating in small versus large financial systems. The probit results are shown in Table VII. On average foreign lead arrangers charge a higher spread in both small and large financial markets but the effect is much larger in large markets. This is in line with previous literature that argues that foreign banks need to be compensated for overcoming informational and cultural barriers (see e.g. Buch 2003). The magnitude and significance of the spread coefficient is, however, higher in large countries. This result is surprising, since informational and cultural barriers are expected to be higher in small as compared to large financial systems. In the bottom of Table VII the marginal effect of the corresponding coefficients are provided. This marginal effect gives the change in probability for an infinitesimal change in the log(spread).

This finding suggests that foreign lead arrangers engage in different kind of lending arrangements in small versus large systems. To directly illustrate our fourth hypothesis we compare differences in loan characteristics between foreign and domestic lead arrangers in small versus large financial systems. Our claim is that there is more risk being taken on by foreign arrangers in larger financial markets. The leverage and tangibility ratios of the borrowers are general indicators of the riskiness of loans with industry and loan term characteristics held constant. Thus, in Table V we compare means of the leverage and tangibility ratios of borrowers foreign banks lend to in small versus large markets. These figures suggest that in larger financial systems, foreign banks are willing to engage in lending with more leveraged borrowers that have a lower level of tangible assets.

5. Conclusion

One financial market where cross border activity is substantial is the syndicated loan market. In our sample of European loan syndications since 1995, fully 71 percent of all loans include some foreign participation. Loan syndications provide a convenient and relatively accessible means for banks to cross national borders. A bank can diversify its portfolios by lending abroad without establishing a banking operation which would involve regulation in the host country and without raising funds in a foreign market. However, it is also the case that foreign banks may face higher information costs in a foreign environment.

To better understand the integration of capital markets in Europe, we analyze the spreads faced by banks on syndicated loans. We find that the motivation for foreign entry differs between small and large countries. Surprisingly, rate spreads increase with market size in large countries, particularly for foreign banks. This suggests that loan syndications which spread risks are used for risky lending in large countries. In small countries, where markets are less developed, spreads decrease with market size. That is, in small countries, loan syndications serve to complete markets and fill in for the absence of domestic borrowing opportunities. In the smaller countries, as the market grows, lending becomes more competitive and spreads decline.

Overall, syndicated lending is an important vehicle for foreign bank participation in both large and small countries. However, capital market integration serves different functions in the large and small markets.

References

Andritzky, J. R., 2007, "Capital Market Development in a Small Country: The Case of Slovenia," IMF Working Papers 07/229, International Monetary Fund.

Barth, J. R., J. Caprio, Gerard, and R. Levine, 2008, "Bank regulations are changing : for better or worse ?," Policy Research Working Paper Series 4646, The World Bank.

Beck, T., A. Demirguc-Kunt, and M. S. Martinez Peria, 2007, "Reaching out: Access to and use of banking services across countries," *Journal of Financial Economics*, 85, 234–266.

Blanchard, O., and F. Giavazzi, 2002, "Current Account Deficits in the Euro Area: The End of the Feldstein Horioka Puzzle?," *Brookings Papers on Economic Activity*, 33, 147–210.

Bonin, J. P., I. Hasan, and P. Wachtel, 2005, "Bank performance, efficiency and ownership in transition countries," *Journal of Banking & Finance*, 29, 31–53.

Bossone, Biagio; Honohan, P., and M. Long, 2001, "Policy for Small Financial Systems," Discussion paper.

Buch, C. M., 2003, "Information or Regulation: What Drives the International Activities of Commercial Banks?," *Journal of Money, Credit and Banking*, 35, 851–69.

Buch, C. M., and S. M. Golder, 2001, "Foreign versus domestic banks in Germany and the US: a tale of two markets?," *Journal of Multinational Financial Management*, 11, 341–361.

Carey, M., and G. Nini, 2007, "Is the Corporate Loan Market Globally Integrated? A Pricing Puzzle," *Journal of Finance*, 62, 2969–3007.

Carey, M., M. Post, and S. A. Sharpe, 1998, "Does Corporate Lending by Banks and Finance Companies Differ? Evidence on Specialization in Private Debt Contracting," *Journal of Finance*, 53, 845–878.

Cetorelli, N., and P. E. Strahan, 2006, "Finance as a Barrier to Entry: Bank Competition and Industry Structure in Local U.S. Markets," *Journal of Finance*, 61, 437–461.

Claessens, S., A. Demirguc-Kunt, and H. Huizinga, 2001, "How does foreign entry affect domestic banking markets?," *Journal of Banking & Finance*, 25, 891–911.

Claessens, S., and N. van Horen, 2008, "Location Decisions of Foreign Banks and Institutional Competitive Advantage," DNB Working Papers 172, Netherlands Central Bank, Research Department.

Clarke, G., R. Cull, M. S. M. Peria, and S. M. Sanchez, 2003, "Foreign Bank Entry: Experience, Implications for Developing Economies, and Agenda for Further Research," *World Bank Research Observer*, 18, 25–59.

Dennis, S. A., and D. J. Mullineaux, 2000, "Syndicated Loans," *Journal of Financial Intermediation*, 9, 404–426.

Feldstein, M., and C. Horioka, 1980, "Domestic Saving and International Capital Flows," *Economic Journal*, 90, 314–29.

Hannan, T. H., 1991, "Foundations of the Structure-Conduct-Performance Paradigm in Banking," *Journal of Money, Credit and Banking*, 23, 68–84.

Harjoto, M., D. Mullineaux, and H.-C. Yi, 2006, "A Comparison of Syndicated Loan Pricing at Investment and Commercial Banks," *Financial Management*, 35, 49–70.

Ivashina, V., 2008, "Asymmetric Information Effects on Loan Spreads," *Journal of Finance*.

Khanna, T., and K. Palepu, 1999, "Emerging Market Business Groups, Foreign Investors, and Corporate Governance," NBER Working Papers 6955, National Bureau of Economic Research, Inc.

Mian, A., 2004, "Foreign, Private Domestic, and Government Banks: New Evidence from Emerging Markets," *Journal of Banking and Finance*.

Mian, A., 2006, "Distance Constraints: The Limits of Foreign Lending in Poor Economies," *Journal of Finance*, 61, 1465–1505.

Petersen, M. A., and R. G. Rajan, 1995, "The Effect of Credit Market Competition on Lending Relationships," *The Quarterly Journal of Economics*, 110, 407–43.

Qian, J., and P. E. Strahan, 2007, "How Laws and Institutions Shape Financial Contracts: The Case of Bank Loans," *Journal of Finance*, 62, 2803–2834.

Sengupta, R., 2007, "Foreign entry and bank competition," *Journal of Financial Economics*, 84, 502–528.

Steffen, S., 2008, "What Drives Syndicated Loan Spreads? Moral Hazard and Lending Relationships," Working paper series, Goethe University Frankfurt;New York University - Department of Finance.

Sufi, A., 2007, "Information Asymmetry and Financing Arrangements: Evidence from Syndicated Loans," *Journal of Finance*, 62, 629–668.

Table I
Definition of variables

Characteristics of borrowing firm:	
log(asset):	logarithm of total assets
Tangibility:	ratio of firms fixed assets to total assets
Leverage:	ratio of debt to total assets
ROE:	return on shareholder funds (equity)
Cash:	ratio of cash flow to operating profit
WorkingCap:	working capital per employee
Sichightech:	Dummy if firm operates in high tech industry
Siclowtech:	Dummy if firm operates in low tech industry
Sicholding:	Dummy if firm is a financial holding company
Tikdum:	Dummy if firm is publicly listed
Characteristics of loan:	
log(spread):	basis points above LIBOR
Maturity:	maturity of loan contract in months
log(loansize):	logarithm of the face value of the loan (in $)
Pcorporate:	Dummy if loan is for corporate purpose
Plbo:	Dummy if loan is for leveraged buyout
Pproject:	Dummy if loan is to finance a project
Coven:	Dummy if financial covenants are specified in the contract
Nrlenders:	number of lenders participating in loan
Trevolver:	Dummy if specific tranche type is revolver loan
TtermA:	Dummy if specific tranche type is term A loan
TtermB:	Dummy if specific tranche type is term B loan
Ttermrest:	Dummy if specific tranche type is higher than term B loan

Table II

Sample composition and spreads by country and nationality of arranger

Notes: This table reports the number of loan contracts and mean spreads above Libor for each sample country. In the last three columns mean spreads arranged by nationality of the lead arrangers are shown. A lead arranger is classified as 'Foreign' if the lead arranger's (or all lead arrangers in case of multiple lead arrangers) country of origin differs from the borrower's country of origin. A lead arranger is classified as 'Domestic' of the country of origin of borrower and lead arranger is identical. If a loan contract is arranged by multiple lead arrangers that are classified as 'Domestic' and 'Foreign', the 'Mixed' category is coded.

				Spread by lead arranger nationality		
country	Freq.	Percent	Spread	Foreign	Domestic	Mixed
Austria	21	0.33	254.64	293.06	-	24.17
Belgium	80	1.25	180.18	199.08	86.25	113.33
Croatia	17	0.26	140.00	130.36	-	185.00
Czech Rep.	22	0.34	103.09	102.05	125.00	-
Denmark	45	0.70	205.82	263.15	-	145.89
Finland	93	1.45	119.84	140.09	68.50	90.89
France	1099	17.13	187.53	283.61	169.83	160.52
Germany	1392	21.70	222.65	294.80	214.25	190.33
Greece	83	1.29	125.03	168.84	142.50	85.74
Hungary	9	0.14	42.86	55.60	-	81.25
Iceland	10	0.16	151.50	115.00	175.83	-
Ireland	38	0.59	215.07	221.79	75.00	167.50
Italy	375	5.84	189.22	233.45	174.89	189.31
Luxembourg	23	0.36	170.00	183.81	-	25.00
Netherlands	337	5.25	199.27	245.06	208.28	182.87
Norway	140	2.18	139.98	179.62	111.12	108.10
Poland	85	1.32	99.47	110.81	96.00	79.04
Portugal	30	0.47	72.21	59.88	30.00	86.53
Romania	29	0.45	235.00	234.46	-	250.00
Slovakia	11	0.17	140.82	138.00	-	148.33
Spain	683	10.65	132.83	203.00	100.65	105.33
Sweden	240	3.74	194.61	297.35	76.61	101.59
Switzerland	160	2.49	144.35	167.53	238.75	121.43
United Kingdom	1394	21.73	215.61	231.48	263.13	157.17
Total	**6,416**	**100**	**191.16**	**233.25**	**199.98**	**156.16**

Table III
Estimates of the base line equation

Notes: The table shows regression results from estimating specification $log(spread_{ijt}) = \alpha_{it} + \beta_{jt} + \varepsilon_{ijt}$. The dependent variable is the logarithm of the spread between the Libor rate and the specific loan contract rate. Loan contract characteristics are summarized by α_{it} and borrower characteristics by β_{jt}. Variables are defined as in Table I. Robust t-statistics are reported below each coefficient in parentheses. In column 1, estimates for the entire sample are presented. In column 2, LBO loans are excluded from the sample. In columns 3, 4 and 5, loan contracts with 'Foreign', 'Domestic' and 'Mixed' lead arrangers are included in the sample, respectively. The bottom line of the table states the number of observations and adjusted R-squared of each estimation. *,**,*** indicates significance at the 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)	(4)	(5)
Dependent:	log(spread)	log(spread)	log(spread)	log(spread)	log(spread)
Sample:	all	excl. LBOs	foreign leads	domestic only	mixed leads
maturity	0.005	-0.000	0.003	-0.001	0.001
	(9.68)**	(0.07)	(2.43)*	(2.15)*	(0.60)
lgloansize	-0.059	-0.119	-0.097	-0.090	-0.178
	(4.98)**	(5.86)**	(2.34)*	(3.12)**	(5.04)**
lgasset	-0.016	-0.021	-0.029	-0.003	-0.023
	(4.50)**	(4.01)**	(2.26)*	(0.31)	(2.85)**
tangibility	-0.183	-0.165	-0.136	-0.101	-0.077
	(4.17)**	(2.11)*	(0.74)	(0.92)	(0.59)
leverage	0.369	0.482	0.723	0.166	0.730
	(7.40)**	(5.27)**	(3.51)**	(2.01)*	(3.88)**
sichtech	-0.036	-0.083	0.012	-0.095	-0.101
	(1.23)	(1.60)	(0.08)	(1.06)	(1.46)
siclowtech	-0.074	-0.020	0.004	-0.011	-0.011
	(2.89)**	(0.40)	(0.04)	(0.14)	(0.14)
sicholding	-0.096	-0.211	-0.199	-0.402	-0.105
(sic rest left out)	(2.95)**	(4.52)**	(1.94)	(4.73)**	(1.59)
pcorporate	0.194	-0.109	-0.169	-0.063	-0.042
	(2.79)**	(1.63)	(1.39)	(0.76)	(0.26)
plbo	1.003	0.000	0.000	0.000	0.000
(pproject left out)	(14.54)**	(.)	(.)	(.)	(.)
ROE	-0.258	-0.088	0.542	-0.201	-0.872
	(2.12)*	(0.34)	(1.56)	(0.27)	(1.59)
cash flow	-0.132	-0.229	-0.362	-0.184	-0.074
	(2.29)*	(3.00)**	(1.79)	(1.32)	(0.73)
working cap	-0.186	-0.380	0.219	8.400	1.051
	(0.15)	(0.27)	(0.07)	(0.71)	(0.67)
Covenant	0.261	0.472	0.720	0.322	0.400
	(7.14)**	(9.33)**	(6.66)**	(3.23)**	(6.25)**
nrlenders	-0.014	-0.008	-0.012	-0.006	-0.003
	(10.17)**	(3.51)**	(2.64)**	(1.12)	(0.86)
tikdum	-0.184	-0.150	-0.130	-0.183	-0.115
	(5.20)**	(3.43)**	(1.39)	(1.88)	(1.96)
trevolver	-0.219	-0.105	0.030	-0.101	-0.186
	(8.40)**	(2.86)**	(0.35)	(1.63)	(3.31)**
ttermA	0.018	0.564	1.051	0.360	0.233
	(0.55)	(4.38)**	(6.49)**	(2.48)*	(0.76)
ttermB	0.130	0.727	1.211	0.507	0.291
	(3.87)**	(5.72)**	(7.35)**	(3.92)**	(0.98)
ttermrest	0.252	0.804	0.896	0.629	0.689
	(7.18)**	(3.64)**	(2.04)*	(1.38)	(2.04)*
Constant	5.291	6.894	6.231	6.410	7.714
	(24.91)**	(20.00)**	(8.53)**	(12.87)**	(13.35)**
Observations	4119	1840	398	528	914
R-squared	0.56	0.33	0.42	0.20	0.29

Table IV
Market size/depth and average loan spreads

Notes: The table shows regression results from estimating specification $log(spread_{ijt}) = \alpha_{it} + \beta_{jt} + \delta \cdot CreditMarket + \varepsilon_{ijt}$. The dependent variable is the logarithm of the spread between the Libor rate and the specific loan contract rate. Loan contract characteristics are summarized by α_{it} and borrower characteristics by β_{jt}. *CreditMarket* is short for measures of the credit market size and depth of each borrower's country of operation. Variables are defined as in Table I. Robust t-statistics are reported below each coefficient in parentheses. In column 1, estimates for the entire sample are presented. In column 2, the specification is run only for larger countries (UK, Germany, France and Italy) and in column 3 only for small countries (the remainder of the sample countries). LBO loans are excluded from the sample. Only the coefficients of *CreditMarket* are reported below. The second line of the table states the number of observations and the bottom line the adjusted R-squared of each estimation. *,**,*** indicates significance at the 10%, 5%, and 1%, respectively.

	All countries	Large countries	Small countries
Observations	1835	974	861
lgcredit	0.036	0.155	-0.104
	(2.35)**	(2.18)**	(-4.03)***
R-squared	0.332	0.411	0.301
pdcredit	0.001	0.003	-0.0003
	(2.07)**	(3.47)***	(-0.40)
R-squared	0.332	0.416	0.286

Table V
Borrower characteristics

Notes: This table reports mean values of borrower characteristics. The sample is split up between big and small countries ('BigCountry' and 'SmallCountry'). 'BigCountry' is short for the countries UK, Germany, France, Italy and 'SmallCountry' are the remaining sample countries. Further, the sample is split up between borrower characteristics that have a loan contract with a 'Domestic' and 'Foreign' lead arranger. Variables are defined as in Table I. The corresponding number of observations is reported in parentheses below each mean value.

					BigCountry		SmallCountry	
	BigCountry	SmallCountry	Foreign	Domestic	Foreign	Domestic	Foreign	Domestic
Total Assets	4120	50.2	748	2750	2000	4550	13.8	68.6
	(n=1557)	(n=1313)	(n=700)	(n=2170)	(n=259)	(n=1298)	(n=441)	(n=872)
Leverage	0.63	0.59	0.62	0.61	0.69	0.61	0.57	0.60
	(n=1547)	(n=1313)	(n=698)	(n=2162)	(n=257)	(n=1290)	(n=441)	(n=872)
Tangibility	0.61	0.65	0.63	0.63	0.59	0.62	0.66	0.64
	(n=1547)	(n=1304)	(n=694)	(n=2157)	(n=257)	(n=1290)	(n=437)	(n=867)

Table VI
Lending spreads of foreign lead arrangers in small versus large countries

Notes: The table shows regression results from estimating specification $log(spread_{ijt}) = \alpha_{it} + \beta_{jt} + \gamma Foreign + \sigma BigCountry + \delta Foreign * BigCountry + \varepsilon_{ijt}$. The dependent variable is the logarithm of the spread between the Libor rate and the specific loan contract rate. Loan contract characteristics are summarized by α_{it} and borrower characteristics by β_{jt}. *Foreign* is a dummy for foreign bank participation and *BigCountry* is a dummy for the large financial markets (UK, Germany, France and Italy). The coefficient δ measures whether foreign banks charge a different spread in small versus large financial markets compared to domestic banks. Variables are defined as in Table I. Robust standard errors are reported below each coefficient in parentheses. The bottom line of the table states the number of observations and the adjusted R-squared of each estimation. *,**,*** indicates significance at the 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Foreign	0.06	0.06	0.28	-0.06	-0.05	0.12
	(0.051)	(0.073)	(0.084)***	(0.067)	(0.083)	(0.111)
BigCountry	0.38	-	0.38	0.34	-	0.28
	(0.053)***		(0.099)***	(0.053)***		(0.110)***
Foreign*BigCountry	-	-	-	0.27	0.30	0.29
				(0.092)***	(0.105)***	(0.135)**
Loan Characteristics	yes	yes	yes	yes	yes	yes
Borrower Characteristics	yes	yes	yes	yes	yes	yes
Borrower Fixed Effects	no	yes	no	no	yes	no
Bank Fixed Effects	no	no	yes	no	no	yes
adj. R-squared	35.12%	20.55%	33.43%	35.45%	21.80%	33.96%
N	1835	1789	726	1835	1789	726

Table VII
Loan spreads of foreign and domestic lead arrangers

Notes: The table shows results from estimating the probit model $Foreign = \gamma \cdot log(spread_{ijt}) + \alpha_{it} + \beta_{jt} + \varepsilon_{ijt}$. The dependent variable *Foreign* is a dummy that takes the value of one if the lead arranger's country of origin differs from the borrower's country of origin and zero otherwise. $log(spread_{ijt})$ is the logarithm of the spread between the Libor rate and the specific loan contract rate. Loan contract characteristics are summarized by α_{it} and borrower characteristics by β_{jt}. Variables are defined as in Table I. Robust standard errors are reported below each coefficient in parentheses. In column 1, the estimates of the entire sample are shown. In column 2, only loan contracts from borrowers originated from small countries and in column 3, only from large countries are included in the sample. Large countries are UK, Germany, France, Italy and small countries are the remaining sample countries. The bottom line of the table states the number of observations and the pseudo R-squared of each estimation. *,**,*** indicates significance at the 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)
Sample	All	Small countries	Large countries
Dependent	Foreign	Foreign	Foreign
log(Spread)	0.11 (0.045)**	0.12 (0.063)*	0.28 (0.078)***
Loan Characteristics	yes	yes	yes
Borrower Characteristics	yes	yes	yes
marginal effect of log(Spread)	0.03 (0.013)**	0.04 (0.022)*	0.05 (0.013)***
Pseudo R-squared	4.86%	4.68%	17.18%
N	1894	890	1004