

**When Do Foreign Banks Finance Domestic Projects?
New Evidence on the Importance of Legal and Financial Systems**

by

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First Draft: December 23, 2002
Last Draft: April 22, 2004
Current Draft: September 22, 2004

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* Acknowledgements: I would like to thank Lloyd Blenman, Leora Klapper, Florencio López-de-Silanes, Joe Mason, and especially Max Maksimovic and Andrei Shleifer for providing helpful comments; seminar participants at Insead, Darden, and the FMA and SFA Annual Meetings for helpful discussions; and Bill Megginson for graciously letting me extend our previous joint work as a sole author. I would also like to thank the Division of Research at Harvard Business School for supporting this research and Aldo Sesia for research assistance.

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Abstract

This paper analyzes how different legal and financial systems affect the composition of loan syndicates, and how the composition, in turn, affects loan pricing. In contrast with previous work on the availability and allocation of external finance, I study the supply of long-term funds to large, illiquid project companies located in 61 countries. Using a sample of 495 loan tranches worth \$151 billion, I find that foreign banks provide a greater share of total funds in countries with stronger creditor rights, stronger legal enforcement, less-developed financial systems, and less government ownership of banking assets. I also find that loan spreads and fees are positively related to the fraction of total funds provided by foreign banks. These findings show that both legal and financial systems affect the availability of funds, the pricing of funds, and, presumably, capital investment decisions and economic growth.

JEL Classification Codes: G2, K0, O1, P5

Keywords: creditor rights, legal origin, project finance, bank loan, economic development.

Introduction

The direction of causality between the development of financial systems and the rate of economic growth has been the subject of debate for almost 100 years. Schumpeter (1911) argued that banks foster economic growth by identifying and financing attractive investment opportunities. Consistent with this argument, Merton and Bodie (1995) claim that one of the most important functions provided by a financial system is the allocation of resources across time and space. Financial instruments, capital markets, and institutions such as banks arise to overcome market frictions that discourage investment. Well-developed financial systems are better able to overcome these obstacles and allocate scarce resources to optimal investment opportunities. Robinson (1952), arguing the alternative view, claims that financial systems respond to but do not foster economic growth. Subsequent empirical research appears to corroborate the Schumpeterian view that financial systems do, indeed, have a positive impact on economic growth (see Levine, 1997, for a review of the arguments and a summary of the empirical research).¹

More recently, a second line of research highlighting the role of legal systems as a determinant of financial development and economic growth has emerged. La Porta, López-de-Silanes, Shleifer, and Vishny (hereafter, LLSV, 1997 and 1998) show that legal origin is an important determinant of investor protection, and that stronger investor protection results in larger and deeper capital markets. Levine (1999) and Levine, Loayza, and Beck (2000) extend this analysis by showing that stronger investor protection leads to better developed financial intermediaries and faster economic growth.

After concluding that both legal and financial systems affect economic growth, the focus of the analysis has shifted to understanding *how* legal and financial systems affect growth. For example, Demirgüç-Kunt and Maksimovic (1998 and 1999) analyze financing decisions at the firm level and find that both legal rights and financial development affect the ability of firms to raise external finance, particularly long-term debt. Firms in countries with strong legal protection and well-developed financial

¹There is additional evidence at the country (Levine and Zervos, 1998; King and Levine, 1993), industry (Rajan and Zingales, 1998; Wurgler, 2000), and firm levels (Demirgüç-Kunt and Maksimovic, 1998 and 1999; Jayaratne and Strahan, 1996) that is consistent with financial development having a positive impact on economic growth.

systems are able to raise more long-term capital and, subsequently, grow faster. Giannetti (2003) also finds that it is easier for firms to raise long-term debt and borrow against intangible assets in countries that provide stronger creditor rights. And finally, Desai, Foley, and Hines (2004) show that affiliates of US multinational companies use more external debt and less internal corporate debt in countries with well-developed capital markets and stronger creditor rights.

In this paper, I tackle the same question—do legal and financial systems affect firms’ abilities to raise long-term capital—from a different angle and with a potentially more powerful dataset. Whereas Demirgüç-Kunt and Maksimovic focus on the demand for long-term finance by firms, I focus on the supply of long-term funds by banks. In other words, when and under what kinds of conditions will banks agree to finance long-term, illiquid investment opportunities? Specifically, I test whether foreign banks fund domestic projects (capital investments), whether foreign bank participation is a function of a country’s financial and legal systems, and how foreign bank participation affects loan pricing. Levine (1996) addresses the first question qualitatively, but he did not have data to analyze it empirically nor did he address the other two questions.

I examine these relationships in the context of greenfield project companies, which are separately incorporated, legally independent companies financed with nonrecourse debt (Esty, 2002). Mines, power plants, pipelines, and toll roads are examples of assets commonly financed through project companies. For several reasons, project companies are particularly attractive research subjects for a study on the determinants of long-term financing. First, as standalone, greenfield assets, project companies do not have access to internally-generated cash flow. Instead, they must raise all of their capital from external sources. Second, they are created to finance long-term, illiquid assets. For maturity matching reasons, the average project loan has a maturity of over nine years. The use of long-term debt forces capital providers to make long-term assessments of project, industry, legal, and sovereign risks. Third, for agency reasons related to the use of free cash flow (Jensen, 1986), project companies have very high leverage ratios and capital structures comprised almost entirely of a single tranche of amortizing bank debt (Esty, 2003).² In fact, the average project company has a book

² Rajan (1992) highlights the disadvantages of bank control, namely the danger of getting locked into

value debt-to-total capitalization ratio of 70%, and bank loans have historically accounted for over 90% of total project debt.³ And finally, because most of the operating contracts and virtually all of the enforcement of financial claims such as the seizure of collateral upon default depend on the legal system in the country where the project is located, creditors must understand their legal rights as well as the efficiency and reliability of local law enforcement before making their lending decisions.

Using a dataset containing information on 495 syndicated loan tranches to project companies located in 61 different countries, I test whether syndicate composition is related to a country's legal and financial systems, and whether syndicate composition, in turn, affects loan pricing. In particular, I test four hypotheses, three related to syndicate composition and one hypothesis related to loan pricing. The first two hypotheses are: is funding by foreign banks positively related to the strength of creditor rights or to the strength of local legal enforcement. Third, is funding by foreign banks negatively related to a country's level of financial development? And fourth, are loan spreads positively related to the fraction of total funds provided by foreign banks?

I find that syndicate composition is indeed a function of both legal systems and financial development. The total share held by foreign banks is positively related to the strength creditor rights (measured using LLSV's, 1998, creditor rights index) and the strength of legal enforcement (measured using Berkowitz, Pistor and Richard's, 2003, legality index, hereafter BPR); the share held by foreign banks is negatively related to the level of financial development (measured using the ratio of private credit to gross domestic product) and to the level of government ownership of banking assets (measured using data from La Porta, López-de-Silanes, and Shleifer, 2002). These relationships are economically as well as statistically significant. For example, moving across the interquartile range of creditor rights and legal enforcement for countries in my database increases the share held by foreign bank share by 19% and 34%, respectively. A similar move across the interquartile range of the level of financial development and of

banking relationships. Because project finance involves a one-time transaction rather than an on-going relationship, and involves multiple rather than single creditors, concerns regarding lock-in are less relevant in this context. Sponsors that repeatedly use project finance may be more susceptible to this phenomenon, but the mandate process usually ensures that many banks submit offers (see Esty 2001).

³ Even in 2001, a record year for project bond issuance, project bonds accounted for only 19% of total project debt (\$25 billion out of \$133.5 billion; see Esty, 2002).

government ownership of banking assets reduces the share held by foreign banks by 42% and 22%, respectively. These changes in participation by foreign banks are sizeable given the total share held by foreign banks is 74% for the average tranche.

Consistent with the fourth hypothesis, I also show that loan spreads are positively related to the fraction of funds provided by foreign banks: for each incremental 10% of the total tranche provided by foreign banks, borrowers pay approximately 7 basis points more per year in loan spread and 3 basis points more in upfront commitment fees compared to median loan spreads of 102.5 basis points and commitment fees of 30 basis points. In other words, sponsors pay significantly more if they must resort to foreign capital to finance their projects. Viewed collectively, these results establish a link between both legal and financial systems and real economic activity, in this case the financing of large capital investments.

This paper is organized in four sections. The next section provides background information on syndicated lending and describes the primary hypotheses tested later in the paper. Section II describes the dataset and provides univariate analysis of the key variables. The dataset is essentially the same one used by Esty and Megginson (2003) with additional data on lender nationality and indicators of financial system development. I test the hypotheses and present the results in Section III. Finally, I conclude in Section IV.

I. Background and Hypotheses

Before delving into the empirical analysis, I need to establish some basic facts and terminology about syndicated lending. A bank syndicate is a collection of banks that jointly extends a loan to a specific borrower (see Esty, 2001, for a more detailed description of the syndication process.) Syndication differs from a loan sale because it involves a direct contract between each syndicate bank and the borrower (see Pennachi, 1988, for a description of loan sales). Lending syndicates resemble pyramids with a few *arranging banks* (arrangers) at the top and many *providing or participating banks* (providers) at the bottom. Prior to closing a loan, the arranging (or mandated) banks

meet with the borrower, assess the credit quality, negotiate key terms and conditions, and prepare an information memorandum for providing banks. Once the key terms are in place, the arranging banks invite other banks, both domestic and foreign, to participate in the deal and allocate shares to the participating banks as they see fit. The syndication process allows me to assume that syndicate structure is endogenously determined in response to project and country characteristics such as the country's legal and financial systems.

In the empirical section of this paper, I analyze syndicate composition and use it to draw inferences about the importance of legal and financial systems. In particular, I test four hypotheses. The first three hypotheses analyze the relationship between syndicate composition, defined as the fraction of foreign banks by number and by dollar share, and a country's legal and financial systems. The fourth hypothesis tests whether loan pricing is a function of syndicate composition. The four hypotheses are:

H₁: Foreign bank participation is positively related to the strength of creditor rights.

H₂: Foreign bank participation is positively related to the strength of domestic legal enforcement.

H₃: Foreign bank participation is negatively related to the level of financial development.

H₄: After controlling for legal risk (creditor rights and enforcement) and loan characteristics, loan spreads are positively related to the share held by foreign banks

As noted by Esty and Megginson (2003), analysis of project companies is a particularly appropriate setting in which to study the relation between legal risk, defined as the strength of creditor rights and the reliability of legal enforcement, and lending activity because they are, essentially, a bundle of contractual agreements. In fact, some people refer to project finance as "contract finance." Prior to financing a project company, sponsoring firms sign contracts with construction firms, suppliers, customers, and host governments. Lenders, on the other hand, negotiate commitment letters, collateral packages, and loan documents with project companies, and inter-creditor

agreements among themselves. Typically, New York or UK law governs the financing contracts. In contrast, the operating contracts and the enforcement of security provisions (e.g., seizure of collateral upon default) depend on the legal system in the country where the project is located.

In practice, countries vary considerably in terms of the rights they afford creditors and the efficiency with which they enforce contractual provisions and protect property rights. For example, there is a well-documented difference between civil law and common law jurisdictions in terms of investor protection. Coffee (2000) and Beck *et al.* (2003) argue that common law systems provide greater flexibility to address new or unforeseen situations than civil law systems do because they are restricted to the existing body of laws. Consistent with this argument, LLSV (1998) show that common law countries provide stronger legal protection for both shareholders and creditors.

In the context of project finance, Hoffman (1998, pp. 76-77) argues that common law countries provide greater leeway in the types of collateral that can be seized in default and the types of liens that can be placed on assets.⁴ For similar reasons, Walsh (1999, p. 125) concludes, "...civil law jurisdictions restrict the security rights available to project lenders...In contrast to the civil law, the common law offers a far more expedient approach to securing assets." As an example, civil law countries generally forbid "floating liens," do not permit mortgages to be registered in a foreign currency, and forbid foreign entities—including foreign banks—from operating or purchasing foreclosed assets.⁵ Penrose and Rigby (2000, p. 60), two analysts in Standard and Poor's project finance/infrastructure finance group, note:

"In many countries, the notion of contract supported debt remains a novelty. Little case law or civil law, for instance, exists to support the assignment of contracts to lenders as collateral. The legal system may not support the Western-style contracts so typical in project finance."

⁴ Kolo and Wälde (2000) also argue that common law systems provide stronger protection and less opportunity for *ex post* renegotiation than civil law systems in the context of international projects.

⁵ When countries restrict foreign banks from holding security over project assets, the syndicate typically includes one or more local banks and the financing documents include a pro-rated "sharing clause." This clause says that all banks will share amounts received or recovered from the borrower in proportion to their participation in the financing (see Beenhakker, 1997, p. 13).

Similarly, there is wide disparity across countries in the degree to which they enforce legal contracts. Before they agree to invest, creditors must ensure they have rights and that they are enforceable in the host country. According to Moody's (2001, pp. 47, 48):

Project finance is typically a pyramid of contracts. In many countries, investors simply do not know if these contracts will be upheld as legal, binding, or enforceable ...these contracts are worth little more than the paper on which they are written if the host country's legal and political system cannot guarantee that they will be consistently enforced.

Ratings analysts at Fitch (Dell *et al.*, 2001, p. 10) and S&P (Penrose and Rigby, 2000, pp. 44-51) echo similar sentiments regarding the importance of contract enforceability while recent academic research reinforces the relation between judicial efficiency and well-functioning credit markets (see Johnson *et al.*, 2002; Djankov *et al.*, 2003; Giannetti, 2003; and Jappelli, Pagano, and Bianco, 2004). If capital providers cannot rely on consistent and predictable enforcement of contract law, then they will be reluctant to invest particularly over the long-term, particularly illiquid ones.

At first blush, these arguments about creditor rights and legal enforcement could apply equally to both domestic and foreign banks. I assert, however, they are more important for foreign banks for several reasons—Appendix A presents five vignettes illustrating ways countries, borrowers, and domestic creditors discriminate against foreign creditors. First, domestic banks do not always have access to foreign borrowers or the skill to underwrite foreign credits. Instead, they may be forced to make local loans and, to the extent they have excess funds, then to look abroad for additional lending opportunities. Foreign banks, by way of contrast, are actively choosing to lend abroad in particular countries. Second, withholding taxes and many political risks such as currency inconvertibility do not apply to local lenders. Third, there is an on-going debate and an unresolved empirical question in the field of project finance regarding whether foreign or domestic banks are more susceptible to expropriation. On the one hand, Hoffman (1998, p. 109), Finnerty (1996, p. 47), and others argue that host governments are less likely to expropriate their own banks. On the other hand, Moran (1973, pp. 284-85), Clifford Chance (1991, p. 8), and Beenhakker (1997, pp. 7, 13) argue that syndicates comprised of

foreign lenders provide a stronger deterrent against expropriation by raising the cost of adverse sovereign intervention. The idea is that governments will protect their banks and will retaliate against an expropriating country through international trade, aid, and political pressure. Holding expropriation risk constant, I assert that bankers will be more willing to lend to a project company located in a country with stronger creditor rights and better legal enforcement. Conversations with bankers and lawyers who specialize in project finance support this assertion. It is important to recognize that I test for a relation between legal rules and foreign bank participation, but do not test whether syndicate composition does, indeed, deter adverse sovereign intervention.

The third hypothesis, the existence of a negative relation between foreign bank participation and financial development, is more straightforward. At a very basic level, a country with no domestic financial intermediaries cannot finance domestic projects. Such a country will be beholden to foreign financial intermediaries or the local government for funding. Countries with large financial systems have sufficient domestic capital to fund most projects even though they could benefit from the competition introduced by foreign financial intermediaries. Bencivenga and Smith (1991, p. 195) present a model that is consistent with the idea that the development of financial intermediaries "...shifts the composition of domestic savings toward capital, causing intermediation to be growth promoting."

There are also information-based and currency-based reasons to expect a negative relation between financial development and foreign bank participation. In both debt and equity markets, investors exhibit a "home bias", preferring to invest in nearby rather than distant assets (see Coval and Moskowitz, 1999, in the context of equities and Petersen and Rajan, 2002, in the context of bank loans). The rationale is that asymmetric information between local and non-local investors drives the preference for geographically proximate assets. Although this argument may be less applicable to large, capital investments (i.e., the projects in my sample), the availability of information is greater and the ability to monitor project performance is nevertheless easier for domestic lenders given their proximity to the project itself. One might also expect greater domestic bank participation as a way to avoid currency risks. Assuming a loan is made in the local currency, foreign banks will not be able to hedge against currency

fluctuations and/or convertibility risks unless a country has large, liquid capital markets. While it is true that the local office of a foreign bank may raise and invest local funds, it must still convert and repatriate profits at some point in the future. For these reasons, I expect to find a negative relation between financial development and foreign bank participation.

The fourth hypothesis, there is a positive relation between loan spreads and foreign bank participation, is based on two arguments. First, the presence of foreign banks could indicate an absence of lending capacity in the home country. Recognizing the limited capacity, foreign banks with specialized skills in cross-border lending agree to enter the market, but must be induced to do so with additional compensation given their informational disadvantages. A second rationale, in line with the arguments described earlier, is that foreign banks may actually provide deterrence benefits against sovereign intervention. If true, the positive relation between loan pricing and foreign bank participation could simply be compensation for greater deterrence benefits. The deterrence argument hold true even if foreign banks are treated unequally and unfairly in default situations—their presence may lower the probability of default, but not the likelihood they will face discrimination in default situations. If this were true, the presence of foreign banks would lower expected credit loss in default.

The arguments against finding a positive relationship between loan pricing and syndicate composition are based on credit rationing and lending competition. Stiglitz and Weiss (1981) show that when banks use prices rather than quantities to ration credit, they can induce incentive problems, notably adverse selection. As a result, foreign banks may prefer to ration credit rather than to increase loan spreads. At the same time, loan pricing may simply reflect competitive dynamics. If true, then greater foreign participation may simply reflect more competitive pressure during the bidding process to win syndication mandates, and could even result in a negative relationship (i.e., greater foreign bank participation results in lower spreads). Pricing, however, is only one of several criteria used by borrowers when they select lead arrangers. Project sponsors are also interested in execution speed, willingness to underwrite the entire deal (fully underwritten vs. best efforts deals), covenant restrictions, and lending expertise.⁶ Failure to find a positive

⁶Esty (2001) describes the syndication of the Hong Kong Disneyland project loan in which Disney

relation between loan spreads and syndicate composition could, therefore, occur for several reasons.

In summary, there are theoretical arguments supporting each of the three hypotheses. There are, however, valid arguments against each of them, as well. For this reason, I turn to the data to determine the nature of the empirical relationships.

II. Data

I use four types of data in this study: data on syndicated loans, legal systems, financial development, and market risk. The sample of syndicated loans comes from Dealogic's (formerly CapitalData) Loanware database, and is an expanded version of the dataset Esty and Megginson (2003) use to study the relation between creditor rights and debt ownership concentration. The Loanware database contains information on more than 85,000 syndicated loan tranches made between 1980 and April 2000, and provides detailed information on loan tranches, yet it provides little on the borrowing entities (the project companies), sponsoring firms (the equity investors), or lenders.

The full database contains 5,646 loan tranches designated as project finance loans (see **Table I**). After excluding the smallest tranches—those less than \$75 million in size—and tranches lacking complete syndicate share information—the amount held by each bank in the syndicate—the dataset contains 495 tranches from 61 different countries. I focus on larger tranches because they have more complex syndicate structures and because I am interested in studying when banks finance large capital assets. According to Esty and Megginson (2003), the 495 included observations are not statistically different from the excluded observations in terms of financing dates, maturity, or sovereign risk ratings. All of the loans closed between 1986 and 2000, though the majority of them closed between 1995 and 2000. In terms of geographic distribution, U.S. loans comprise the largest fraction of the total sample (15.2%), followed by the UK (9.5%), Australia (6.7%), Indonesia (6.1%), China (5.7%), and

awarded the mandate to Chase based on a “competitively priced”, though not necessarily the lowest-priced bid. Flexibility on key covenants was an equally important selection criterion.

Taiwan (5.1%). All other countries represent less than 5% of the total sample by number. Because the unit of observation is a loan tranche, multiple tranches from the same loan appear as separate observations in the database—there are 468 distinct loans, 22 of which have multiple tranches in the dataset (446 loans have a single tranche while 22 loans account for 49 tranches). Thus, most observations are independent observations.

****** Insert Table I here ******

For each bank in the syndicate, I identify the nationality of its head office using *The Bankers Almanac World Ranking 2000*, and then calculate the number of foreign banks, the total share provided by all foreign banks, and the average share per foreign bank for each tranche at closing. I do not know what happens to ownership positions following closing because the Loanware database only reports syndicate structure as of the loan closing date. Without a doubt, some banks sell down their positions over time, but conversations with project bond traders leads me to believe that trading is relatively infrequent, especially outside of distress situations. Besides nationality, I do not have any other information about the banks such as size, capitalization, or ownership (e.g., private vs. government-owned). In addition to the bank information, I collect data on loan pricing (commitment fees and loan spreads), loan characteristics (closing date, tranche size, maturity), and project characteristics (industrial sector, size, capitalization, and location).

The second set of data pertains to the legal systems in each of the 61 countries. Using LLSV (1998), I record the country's legal origin (English, French, German, or Scandanavian), legal tradition (common vs. civil law), and index of creditor rights. Unfortunately, the data are available for only 49 countries and the creditors rights index is based on the legal rules in existence at a single point in time. Yet alternatives such as legal tradition or legal origin mask the richness imbedded in the creditor rights index. Given the problems with each measure, I use both the creditor rights index and the legal tradition, and conduct sensitivity analysis using Levine's (1998) measure of creditor rights. I also used the World Bank's (2004) expanded creditor rights index which calculates the LLSV index for 131 countries. Regardless of which measure I use, I am

assuming that both the legal origin and creditor rights variables (corporate law) are reasonable proxies for the strength of project finance law.

I measure legal enforcement using BPR's (2003) legality index, which is a summary statistic from a principal components analysis on five measures of legal enforcement obtained from the International Country Risk Guide (ICRG): effectiveness of the judiciary, rule of law, risk of contract repudiation, absence of corruption, and risk of expropriation. The index runs from 8.51 for the Philippines to 21.91 for Switzerland, and covers the same 49 countries in the LLSV (1998) analysis—the values represent averages of monthly ratings over the period from 1980 to 1995, roughly corresponding to my sample period of 1986 to 2000. Knack and Keefer (1995) show that these ICRG variables provide greater explanatory power than other sovereign and legal risk measures. Nevertheless, other authors have used a variety of legal enforcement measures. For example, Demirgüç-Kunt and Maksimovic (1998 and 1999) use a “Law & Order” variable while Levine (1998) uses an average of the rule of law and the risk of contract repudiation, two factors contained in the more comprehensive legality index created by Berkowitz, Pistor, and Richard, to create an “Enforce” variable. I test the robustness of my results using these different enforcement indicators and, for the most part, the results hold due to the high correlations—above 90%—between these variables and the BPR legality index. **Appendix B** shows that my sample contains significant cross-sectional heterogeneity in terms of legal systems and enforcement stringency.

The third set of data includes proxies of a country's level of financial development. Following Levine and Zervos (1998), Beck *et al.* (2003), and Levine *et al.* (2000), I measure the depth a country's financial system using the ratio of financial claims on the private sector by deposit money banks and other financial institutions divided by gross domestic product (GDP)—the “private credit” variable. I calculate the ratio for the year the loan closes (using the prior year-end does not change the results in a material way). If data does not exist for the year the loan closes, then I take the value in the first year that data becomes available. To provide robustness checks, I also collect the ratio of deposit money bank assets to the sum of deposit money and central bank assets, and the ratio of liquid liabilities of banks and other financial intermediaries to

GDP. This data is available in the World Bank's Financial Development Database (see Beck, Demirgüç-Kunt, and Levine, 1999).

In addition to the depth of a country's financial system, I also measure the extent of government involvement in the local banking system by using La Porta, López-de-Silanes, and Shleifer's (hereafter, LLS, 2002) estimate of the fraction of assets in a country's top 10 banks that are owned by the government in 1995. I expect this variable will be negatively related to foreign bank participation in part because large projects require extensive government involvement from permitting to various regulatory approvals. Once a project has been approved, it is likely the government will support it financially. In support, Sapienza (2004) and LLS (2002) show that state-owned (government-owned) banks tend to pursue political rather than financial objectives. Thus, there will be less need for foreign banks. A negative relation might also exist because government ownership of banks is highly correlated with government involvement in the financial sector. In fact, the correlation between the LLS (2002) government ownership variable and the Heritage Foundation's Index of Economic Freedom (the Banking Category index runs from 1, negligible government involvement, to 5, high involvement) is 0.60. Foreign banks may perceive the threat of discrimination is higher in countries with extensive government involvement and, therefore, be less likely to lend into those countries.

The last type of data includes measures of market risk. The main variable is the most recent *Institutional Investor* country credit rating (II RATING) prior to loan closing—the scale runs from 0 (high risk) to 100 (low risk). *Institutional Investor* publishes ratings twice per year based on surveys of 75 to 100 international bankers and weights the results by actual lending exposures. One attractive feature of this rating system is that it provides a forward-looking estimate of sovereign debt capacity and repayment probabilities. As a word of caution, this rating is an inverse measure of risk so that high ratings correspond to low risk. As a further proxy for lending conditions in emerging market countries, I use JP Morgan's Emerging Market Bond Index (EMBI) of sovereign spreads. This index measures the spreads on emerging market bonds and provides a composite view of investor sentiment regarding emerging market investments.

Table II presents summary statistics for the key variables. The statistics are divided into four panels, one each for project and tranche characteristics, foreign bank participation, loan pricing, and legal, financial, and market risk variables. To illustrate the importance of sovereign risk, I also report results for the tranches divided into quartiles based on the *Institutional Investor* country credit rating.

**** **Insert Table II here** ****

A. Project and Tranche Variables

Panel A of Table II provides general information about the projects and loan tranches. Because the Loanware database provides project-level data for only a limited number of observations, the sample sizes drop from 495 to as low as 45 observations for some variables. For the full sample, the average (median) tranche size is \$304 (\$180) million and is part of a project costing \$820 (\$586) million—clearly these are large capital investments. Panel A also confirms the assertion that projects are highly leveraged transactions. Projects have an average (median) book value debt-to-total capitalization ratio of 69.4% (70.7%), and the tranches provide 47.8% (43.8%) of total capital. More importantly, they are long-term commitments: the average tranche matures in 9.4 years while 21% of the tranches mature in 15 years or more. Interestingly, the only variable that is significantly different across the country credit rating quartiles is maturity. As one might expect, loan maturities in low-risk countries (the fourth quartile) are two or three years longer than maturities in high-risk countries.

B. Foreign Bank Participation Variables

Panel B shows the composition of the lending syndicates. Contrary to most of the theoretical models in finance, corporate lending does not fall neatly into one of two binary categories—either single bank creditors or atomistic bondholders. Instead, most corporate credit comes in the form of syndicated bank loans comprised of two to 200

banks. In this sample, the average (median) number of banks involved in one of the syndicates in this sample is 14.5 (12.0), a number that is positively related to sovereign risk. The number of foreign banks and the fraction of total dollars provided by them is also positively related to sovereign risk. The average dollar share provided by foreign banks is 74.0%, yet it is 85.9% in high risk countries and only 69.5% in low-risk countries—the difference is statistically significant at the 1% level. The relation, however, is non-monotonic as foreign bank participation in the third sovereign risk quartile is lower than in the second and fourth (lowest risk) quartiles.

C. Loan Pricing Variables

Panel C of Table II describes loan spreads and fees for the loans used in this study. The median upfront commitment fee (the fee charged for making funds available) is 30 basis points. Fees in the high-risk quartile are higher than for the other quartiles, but not statistically different from the fees in the lowest-risk quartile. This result implies that banks are willing to assume higher levels of other kinds of risks, namely project-related risks, in countries with little sovereign risk. One example of such a risk would be lending against a power plant without a long-term, fixed-rate purchase contract (known as a merchant power plant). A similar pattern exists for loan spreads. Although spreads are available for only 404 of the 495 observations, the median loan spread is 102.5 basis points over a base lending rate such as LIBOR (287 of the 404 observations involve LIBOR pricing; the others involve base rates such as Hong Kong's HIBOR or Singapore's SIBOR, etc.) As one might expect, the loan fees and spreads are higher in the most risky countries, but again the relationship is non-monotonic.

D. Legal, Financial, and Market Risk Variables

Panel D of Table II presents descriptive statistics for the legal system, financial development, and market risk variables. The LLSV (1998) creditor rights index shows

that the average (median) score is 2.4 (2.0) on a scale from 0 (weak) to 4 (strong). Because it is available for only 49 countries, it covers only 406 of the tranches. It does not cover countries like China or any of the socialist countries. The expanded World Bank (2004) creditor rights index covers 131 countries and 486 observations in my sample. It has an average (median) score of 2.2 (2.0), which is slightly lower than the LLSV (1998) index levels. The BPR legality index has an average score of 17.5 and a standard deviation of 4.0, which indicates there is significant cross-sectional heterogeneity within the sample in terms of enforcement. Legality is highly positively correlated with country risk: low legality indices occur in countries with high risk (low II RATINGS). Similarly contract repudiation and expropriation risk are highly, positively correlated with country credit ratings. These variables come from International Country Risk Group (ICRG), appear in LLSV (1998), and are averages of the monthly scores from 1982 to 1995.

I measure financial development using three variables: private credit as a percent of GDP, liquid liabilities as a % of GDP, and deposit bank assets as a percent of total bank assets (deposit plus central bank assets). The private credit measure exhibits the greatest cross sectional heterogeneity, particularly at either end of the country credit rating spectrum. The high-risk countries exhibit the least amount of depth (the private credit ratio equals 40.4%) while the low-risk countries exhibit the most depth (the ratio equals 140.4%). At the same time, the high-risk countries exhibit the highest level of government ownership of banking assets: government ownership of assets in the top 10 banks is 49.4% in the high risk countries and only 2.8% in the low-risk countries.

In terms of market risk, the average tranche is in a country with an II RATING of 68.5. For purposes of comparison, New Zealand, Iceland, and the United Arab Emirates had 1999 II RATINGS of 74.0, 67.8, and 63.2, respectively. More than 10% of the tranches are in countries with risk ratings below 44.0; Egypt (45.4), India (44.3) and Argentina (42.4) had 1999 II RATINGS at this level. The second measure of market risk is the JP Morgan Emerging Market Bond Index (EMBI). The average spread at the time the deals closed was 808 basis points. With a standard deviation of 289.6 basis points, there is considerable time-series variation over the sample period.

Compared to Kleimeier and Megginson's (2000, see Table 4) more general analysis of "high information" project finance loans contained in the Loanware database, my sample contains larger tranches (\$304 million vs. \$177 million), with slightly longer average maturities (9.4 vs. 8.6 years), with an equal number of syndicate banks (14.5 banks), and with slightly higher sovereign risk (II RATING of 68.5 vs. 74.6).⁷ In terms of pricing, this sample has a lower average spread (122.8 vs. 130.0 basis points) and lower average commitment fees (31.9 vs. 36.9 basis points). Not having access to their sample, I cannot test the statistical significance of any of these differences. With the exception of size, however, the differences are not large, which provides some support for the assertion that sample selection biases are not affecting these results. The difference in size can largely be explained by the fact that I exclude tranches under \$75 million.

III. Empirical Analysis

As described in the introduction, I conduct the empirical analysis in two parts. The first part analyzes whether syndicate composition (i.e., foreign bank participation) is a function of legal and financial systems—hypotheses H₁, H₂, and H₃. The dependent variables are the total dollar share of the tranche provided by foreign banks, the average share held by a foreign bank, and the number of foreign banks. Because the share variables are bounded by zero below and by one above, I use a Tobit regression specification and report the results in Table IV below. Similarly, the regression using the number of foreign banks as the dependent variable is bounded below by zero because a syndicate does not have to contain any foreign banks.

The second part analyzes whether syndicate composition affects loan pricing. This analysis, designed to address hypothesis H₄, differs from the Tobit regression analysis in several important ways. Given the endogenous nature of specific loan

⁷ Project loans are very different from general-purpose corporate loans, the most common type of loan in the Loanware database. According to Kleimeier and Megginson (2000), project finance loans are larger (\$177 million vs. \$131 million), have longer maturities (8.6 vs. 4.6 years), have more syndicate members (14.5 banks vs. 9.4 banks), and are located in riskier countries (II Rating of 74.6 vs. 87.3). All of these differences are statistically significant at the 5% level.

characteristics and pricing, I estimate a recursive system of equations using three stage least squares (3SLS) and three independent variables: loan pricing (spread), tranche maturity, and foreign bank dollar share. Of these variables, I am particularly interested in loan pricing and whether it is a positive function of foreign bank participation, as predicted.

The independent variables fall into three categories: loan/tranche variables, legal and financial system variables, and market risk variables. The loan/tranche variables include the tranche SIZE (natural log of the size in millions) and MATURITY (in years). In addition, there are two dummy variables. I include a DOMESTIC CURRENCY dummy variable, which equals one for tranches in the local currency and zero otherwise, to account for hedging motivations and currency risk exposure. Because foreign banks will be more exposed to domestic currency exchange rate fluctuations, convertibility regulations, and repatriation regulations, they will be more reluctant to take foreign currency exposure, *ceteris paribus*. For this reason, I expect the domestic currency dummy variable will have a negative coefficient. The other dummy variable accounts for the presence of a multi-lateral or bi-lateral agency such as the International Finance Corporation (IFC) or the U.S. Export-Import Bank (U.S. Exim—an export credit agency) in the deal. These agencies help facilitate lending in high-risk settings and help deter sovereign interference. Their involvement not only suggests a higher level of ex ante sovereign risk, it also indicates a lower level of ex post project risk, all else equal. Because they participate as equity investors, lenders, and guarantors, I measure their participation in a binary fashion (present/not present) rather than in degree (e.g. fraction of total capital). The AGENCY PARTICIPATION dummy variable equals one if one or more of these agencies participates in the deal in some capacity, and zero otherwise. I expect the coefficient on this variable to be positive because multi-lateral agencies reduce sovereign risk and protect contractual agreements, thereby making it more attractive for foreign banks to participate in the syndicate.

I also include a LOAN PRICING RESIDUAL variable to control for unobserved project risk. I do not include information on the sponsors due to the nonrecourse nature of the loan nor do I include other project characteristics that could clearly be relevant. For example, whether a project contains a long-term purchase contract or a fixed-price

construction contract (or both) has a major effect on the overall level of risk, assuming creditworthy counterparties. Unfortunately, the Loanware database does not include this information nor can I obtain it from the proprietary loan documents supporting each deal. The fact that most project companies are private (not listed) firms severely hinders data collection of this kind. To address this problem, I create a new variable using the loan spread to measure residual project risk. First, I regress the loan spread on all of the independent variables using an OLS specification (results not shown), and then calculate a LOAN PRICING RESIDUAL for use in the Tobit regressions on syndicate composition. The idea is that the regression residual will be a proxy for unobserved project risk with positive residuals indicating higher project risk. Foreign banks should be less willing to lend to projects with greater project-specific and, possibly unobservable, risks.

The legal system variables cover both creditor rights and enforcement. According to hypothesis one (H₁), the coefficients on the LLSV CREDITOR RIGHTS index and the COMMON LAW dummy variable should be positive, implying higher foreign bank participation in countries with strong creditor rights. According to hypothesis two (H₂), the coefficient on the BPR LEGALITY index should also be positive. PRIVATE CREDIT, per hypothesis three (H₃), should be negative: foreign bank participation should be higher in countries with less-developed financial systems. The second dimension of a country's financial system is the extent of government ownership and control of bank assets. I predict the GOV'T OWNERSHIP variable will have a negative sign for the reasons described earlier. Finally, in terms of market risk, I expect foreign bank participation to be lower when sovereign risk is high. In other words, II RATING and JP MORGAN EMBI should both have negative coefficients. In addition, I include dummy variables for the countries such as the US and UK with the largest number of observations. Because only the US dummy variable is significant, it is the only one I include in the final set of regressions.

One potential complication with this specification is the known positive relation between investor protection and financial development (see LLSV, 1997; and Levine, 1999). Panel A of Table III presents the simple correlations between the key variables used in this study where the correlations are calculated at the country, not the

observation, level. It shows that the correlation between the LLSV CREDITOR RIGHTS and the FOREIGN BANK PERCENT variables is 0.11. The positive, albeit insignificant, correlation is consistent with hypothesis one (H_1). The negative correlation between BPR LEGALITY and FOREIGN BANK PERCENT is not consistent with hypothesis two (H_2), but the pairwise correlation fails to control for the impact of other variables. Finally, the negative correlation between PRIVATE CREDIT and FOREIGN BANK PERCENT is consistent with hypothesis three (H_3). One potentially troubling aspect of this analysis is that many of the independent variables are highly correlated. As shown in Table III, both the GOV'T OWNERSHIP and II RATING variables are significantly correlated with other variables. Panel B of the table shows the correlations between some of the variable used in the analysis and alternative variables used by other researchers. Most of these correlations are very high. For example, the correlation between my measure of legal enforcement (BPR Legality) and Levine's Enforce variable is 0.94.

****** Insert Table III here ******

A. Syndicate Composition

Table IV presents the results from the Tobit regressions on the relation between syndicated composition, legal systems, and financial development. Regressions #1 through #4 use the dollar share provided by foreign banks as the dependent variable, regression #5 uses the average share held by foreign banks, and regression #6 uses the number of foreign banks. The differences between regressions #1 through #4 have to do with the included independent variables: regression #1 uses the World Bank (2004) expanded creditor rights index, regression #2 uses the LLSV (1998) creditor rights index and adds the BPR Legality index, regression #3 adds the LOAN PRICING RESIDUAL, and regression #4 uses the COMMON LAW dummy variable instead of the LLSV CREDITOR RIGHTS variable as a robustness check.

Unfortunately, the sample size falls from 495 tranches in the univariate analysis to somewhere between 280 to 418 tranches in the multivariate analysis depending on the regression specification. Despite the reduction in sample size, I am unable to detect

statistical differences between any of the key variables (e.g., tranche SIZE, BPR LEGALITY, II RATING, etc.) when I compare the excluded tranches against the included tranches. Despite the reduction in sample size, the regressions explain a large amount of the variation in syndicate composition: all of the Chi-squared statistics are significant at the 1% level.

****** Insert Table IV here ******

Looking first at the dollar share regressions (regressions #1 through #4) and the legal system variables, there is strong support for hypothesis one (H_1): foreign banks provide a larger share of funds in countries with stronger creditor rights and with stronger legal enforcement. Both measures of creditor rights (high values on the LLSV CREDITOR RIGHTS INDEX or the COMMON LAW dummy variable) are significant in regressions #1 through #4—they are also individually significant when I run the regressions without BPR LEGALITY or PRIVATE CREDIT (not shown). In terms of magnitude, foreign banks hold 38% more ($= 4 * 0.095$, from regression #3) in countries with strong creditor rights (the LLSV creditor rights index equals 4) than in countries with weak creditor rights (the LLSV index equals 0). Across the interquartile range of countries in my database, foreign banks hold 19% larger shares in countries with stronger creditor rights. Considering that foreign banks hold 74% of the tranches on average (see Panel B of Table II), these numbers are both statistically and economically significant. As a robustness check, I re-ran regression #3 after substituting the COMMON LAW dummy variable for the LLSV CREDITOR RIGHTS variable. Foreign banks hold shares that are 13.5% more (regressions #4) in countries with common law legal systems than with civil law systems—common law systems provide greater creditor rights on average.

The BPR LEGALITY index is significant in regressions #2 and #3, as well as when it is included by itself without measures of creditor rights or financial development (not shown). The high degree of correlation between the legal system variables (common law countries tend to have stronger legal enforcement) partially explains the loss in significance in regressions #4. In terms of magnitude, moving from a country like Mexico or India with a legality index rating of approximately 12.80 to a country like

Australia or the UK with a rating of 20.44 (the change represents the inter-quartile range for countries in my sample) increases foreign bank participation by 33.6% [= (20.44 – 12.8) * 0.044, from regression #3]. This difference represents 45% of the average share held by foreign banks in all deals (= 33.6% / 74.0%).

Consistent with hypothesis three (H_3), the prediction that there is a negative relation between the level of financial development and foreign bank participation, I find that PRIVATE CREDIT has a negative and significant coefficient in all regressions—the average coefficient in regressions #2 through #4 is – 0.382. Once again using India (with PRIVATE CREDIT equal to 20-25% during my sample period) and Australia (with PRIVATE CREDIT equal to 75-95% during my sample period) as an example, foreign banks will hold 24% less of the loan tranche in Australia [= (85% - 22.5%) * -0.382]. The difference is even more dramatic if I analyze the interquartile range based on the PRIVATE CREDIT variable: the share held by foreign banks is 42% higher in the 75th percentile country compared to the 25th percentile country. In other words, where the local banking market is deep, domestic banks supply a larger fraction of the funds.

The second measure of a country's domestic financial system is GOV'T OWNERSHIP which is also significant and negative in regressions #2 through #4. The negative coefficient implies that foreign banks hold smaller total shares in countries where the local government is actively involved in the banking system. As an example, foreign banks will provide 22% less of the funds in a country where the government owns 40% of the assets in the top 10 banks compared to a country where the government is not involved in the banking system [= (40% - 0%) * -0.557 from regression #3]), which is approximately the interquartile range in my sample. The analysis does not indicate whether the reduced participation is because the foreign banks are not needed or they are more reluctant to lend in countries with extensive government involvement in the financial system.

As for the other variables, the DOMESTIC CURRENCY dummy variable is negative, significant, and large. This finding implies that foreign banks are less willing to fund loan tranches exposed to currency risk. The AGENCY PARTICIPATION dummy variable is positive and significant indicating that foreign banks provide a larger total share of tranches when they are protected by the presence of a multi-lateral or bi-lateral

agency. When included in the regression—see regressions #3 and #4—the LOAN PRICING RESIDUAL is negative and significant. This result is consistent with foreign banks holding smaller shares of riskier loan tranches, assuming this variable is a valid proxy for unobserved or unmeasured loan risk. Both measures of market risk, II RATING and JP MORGAN EMBI are also significant and negative as predicted. The coefficient on the II RATING variable is negative meaning that foreign bank participation declines as sovereign risk decreases—countries with low sovereign risk tend to have larger domestic banking systems. The negative coefficient on the JP MORGAN EMBI implies that foreign bank participation declines when emerging market spreads widen. Alternatively, foreign banks are less likely to lend when emerging market risk is high. The sector dummy variables are jointly significant in most regressions. Finally, of the country dummy variables, only the US dummy variable is significant (it is positive).

Regressions #5 (average foreign bank share⁸) and #6 (number of foreign banks) provide additional insight into these results. As one might predict, the number of foreign banks increases and their average share falls as tranche size increases. Banks, in general, are not willing to hold very large positions. In fact, using data from Table II, the dollar value of the median foreign bank share is \$14 million (= \$180.0 million median tranche size * 7.8% median foreign bank share). The number of foreign banks and average shares are related to the legal and financial system variables. In countries with stronger creditor rights, there are more foreign banks in the syndicate, but they do not hold larger average shares. Conversely, in countries with stronger enforcement, the number of foreign banks does not change, but they hold larger average shares. Thus it appears that stronger creditor rights encourages entry while stronger legal enforcement enhances banks' willingness to hold larger positions and be less diversified. In either case, total foreign bank participation increases. Finally, as the domestic financial system becomes more developed, fewer foreign banks join the syndicate and they hold smaller positions; they are replaced by domestic banks.

⁸ The reason regression #5 has fewer observations than regressions #4 or #6 is that some tranches have no foreign banks. These tranches are included in regression #6 with a dependent value equal to zero, but are not included in regression #5. The reason regression #4 has more observations than regressions #3 or #6 (304 vs. 302) is that LLSV (1998) classify Venezuela and Jordan by legal origin, but do not provide a score on the creditor rights index for with country.

I check the robustness of these findings with sensitivity analysis. One concern is that several of the explanatory variables may be endogenous. For example, maturity, loan pricing, and agency participation are all functions of loan risk. In the next section, I show the results hold when using a system of recursive equations for these variables. I also reran the regressions with alternative variables. The results hold when I use liquid liabilities as a percent of GDP and deposit bank assets as a percent of total bank assets instead of PRIVATE CREDIT; the Levine (1998) measure of creditor rights instead of LLSV CREDITOR RIGHTS; year dummy variables instead of the JP MORGAN EMBI; and the ICRG composite risk rating instead of the II RATING (this variable is only marginally significant at the 12% level). When I use either Demirgüç-Kunt and Maksimovic's (1998) Law and Order variable, Levine's (1998) Enforce variable, or the ICRG contract repudiation variable instead of the BPR LEGALITY INDEX, the results are unchanged.

In addition to verifying the results with alternative variables, I also changed the regression sample and specification. First, I ran the same regressions that appear in Table IV after excluding the low-risk countries with II RATINGS above 85. The sample contains many tranches from developed countries like the U.S. and U.K., yet they exhibit little cross-section heterogeneity in terms of legal or financial systems. The results for the high-risk countries are the same even though the sample size dropped considerably. I also ran a fixed effects regression specification to control for the inclusion of loans with multiple tranches. Again, the basic results remain unaffected. Based on this analysis, I conclude that my primary findings are robust to alternative variables and regression specifications.

B. Loan Pricing

To verify the results in Table IV and to test hypothesis four (H_4)—that loan pricing is positively related to foreign bank participation—I estimate a recursive system of equations using three stage least squares (3SLS). The dependent variables are the loan spread (in basis points), the total dollar share held by foreign banks, and the tranche

maturity (in years). Essentially, I am estimating the loan pricing equation, but using instruments for foreign bank share and maturity as the two most important endogenous variables.

****** Insert Table V here ******

The results appear in Table V. As one might expect, loan spreads fall as creditor rights and enforcement strengthen (LLSV CREDITOR RIGHTS and BPR LEGALITY increase). For example, as creditor rights increase from 0 (low) to 4 (high), loan spreads fall by 32 basis points ($= 4 * -8.077$ from regression #1), which is economically significant compared to the median loan spread of 102.5 basis points (see Panel C of Table II). This finding is consistent with Qian and Strahan's (2004) analysis of creditor rights and the pricing of international corporate bank loans. Similarly, when enforcement improves loan spreads fall. As the BPR LEGALITY variable increases across the inter-quartile range, loan spreads fall by 38 basis points [$= (20.44 - 12.80) * -4.978$ from regression #1]. After controlling for creditor rights and enforcement, loan pricing is positively related to the total syndicate share held by foreign banks. In terms of magnitude, a 10% increase in foreign bank share increases loan spreads by 7.3 basis points ($= 10\% * 73.250$ from regression #1). As seen in the data, foreign bank share changes dramatically across countries and tranches. A one standard deviation change in foreign bank share of 31.6% (Panel B of Table II) would, according to these results, increase loan spreads by 26 basis points ($= 31.6\% * 73.250$ from regression #1). This finding is consistent with the idea that limitations on the availability of domestic capital are costly to borrowers seeking long-term financing. It is also consistent with the idea that foreign banks charge for providing protection against sovereign interference. Unfortunately, I cannot discriminate between these two explanations. The primary concern with regression #1 is that it has low explanatory power—the pseudo R-squared is only 1%—even though several of the coefficients are individually significant and the Chi-squared statistic is highly significant.

Among the other variables in regression #1, only the JP MORGAN EMBI index is significant. The positive coefficient indicates that spreads are higher when investors

view conditions in emerging markets to be riskier. Neither maturity nor tranche size is significant. Similarly, sovereign risk (II RATING) is not significant. In some ways, it is not surprising that the sovereign risk variable is insignificant. Project finance involves, to borrow Finnerty's (1996) term, asset-based financial engineering. Through careful structuring, sponsors are able to create entities that have higher credit ratings than the sponsoring firms or the host countries.⁹ And in developed countries, lenders often accept greater levels of credit risk by, for example, accepting merchant (market) risk rather than signing fixed price, fixed quantity off-take agreements that produce more stable cash flows .

Regression #2 in Table V is similar to regression #2 in Table IV and, for the most part, the coefficients have similar signs, levels of significance, and magnitudes. Because it is estimated as part of a system, it gives some confidence that the coefficients are not biased due to endogeneity. That said, it is possible that the DOMESTIC CURRENCY and AGENCY PARTICIPATION dummy variables are endogenously determined, and that the PRIVATE CREDIT variable remains a function of the local legal system. Lacking better instruments, I cannot eliminate all of the potential bias due to endogeneity.

Regression #3 shows the tranche maturity is strongly associated with sovereign risk and tranche size. Moving from a country like India with an II RATING of 44 to Australia with an II RATING of 74, extends loan maturity by 1.2 years [= (74 – 44) * 0.040]. Compared to a median maturity of 9.0 years (see Table II), this extension represents a 14% increase in maturity. The tranche size variable is also positive and significant. Barclay and Smith (1995) claim debt maturity is related to firm size in part because of scale economies in issuance costs. Finally, the sector dummy variables are not jointly significant. Individually, however, power and transportation projects have the longest maturities, while mining and oil and gas projects have the shortest maturities.

I also run this analysis on loan fees instead of loan spreads using the same basic regression specification. In general, the results (not shown) are similar in terms of significance levels. The dependent variable in the first regression is the upfront,

⁹My analysis (Esty, 1999) of the Petrozuata project provides a good example. Through careful structuring and extensive risk mitigation, the sponsors created an investment grade project in a sub-investment grade country (Venezuela). In fact, the project bond rating beat the sovereign foreign currency rating by five notches. This ability to “pierce the sovereign ceiling” is not uncommon in project finance.

commitment fee paid by borrowers to get funds. Like spreads, commitment fees are a negative function of creditor rights (stronger rights lead to lower fees), a negative function of enforcement (stronger enforcement leads to lower fees—this finding is not significant however), and a positive function of foreign bank participation. In terms of magnitude, a 10% increase in foreign bank share increases loan fees by 2.5 basis points ($= 10\% * 25.212$). Compared to a median commitment fee of 30.0 basis points (see Table II), this change represents an 8% increase.

IV. Conclusion

Using a unique dataset of firms that are totally dependent on external finance and a new empirical approach based on debt ownership structure, I show that both legal and financial systems affect the ability to raise external finance. Foreign banks are more willing to finance large, long-term, illiquid project companies in countries that provide strong creditor rights backed by reliable legal enforcement. At the same time, they are more likely to finance projects in countries with less-developed financial systems and less government involvement in the banking system (with less government ownership of bank assets). Based on this analysis, it appears that foreign banks step in to fill the financing gap left by domestic banks. When such a gap exists, however, project sponsors must pay more to get foreign banks to participate in the deals. While these spread and fee increases are statistically and economically significant, they may not be large enough to discourage the average investment proposal—would a 25 basis point increase in loan rates discourage investment? Nevertheless, they could discourage investment opportunities with marginal profitability.

At one level, these results contribute to our growing understanding of the determinants and impact of alternative debt ownership structures. Academic researchers have traditionally classified debt ownership as either single bank creditors or atomistic bondholders. Yet this paper shows that the structures actually observed in practice lie somewhere in the middle: bank syndicates range in size from just a few banks to over 100 banks with an average of almost 15 banks. Moreover, the composition of lending

syndicates varies on many heretofore unstudied dimensions: domestic vs. foreign banks, arranging vs. participating banks, private-sector vs. government-owned banks, banks with large vs. small final hold positions, and relationship vs. transaction banks. Changes in syndicate composition along these various dimensions surely affects governance mechanisms such as monitoring of on-going performance, re-contracting in the event of default, and prevention of strategic default, but in ways that are still not well understood. The description of syndicate composition and particularly its impact on firm performance is fertile territory for future research.

At a broader level, these results contribute to the ongoing debate on law, finance, and economic development. Although only a fraction of the differences in economic growth across industrialized nations can be explained by physical capital accumulation (see Solow, 1957; King and Levine, 1994; and Krugman, 1993)—“total factor productivity” appears to explain a larger fraction of the differences in economic growth—Demirgüç-Kunt and Maksimovic (1998 and 1999) show that the ability to finance long-term growth opportunities is an important determinant of economic growth. By focusing on a specific type of growth opportunity, namely large capital expenditures funded through project companies, this paper shows that a both a country’s legal and its financial systems affect investment and financing decisions in ways that could affect economic growth. While this paper does not establish the full link to economic growth, it does show that both legal and financial systems affect the availability of funds and, presumably, investment decisions and economic growth in ways that are consistent with theory.

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Table I
Distribution of Syndicated Loans by Year

This table shows the distribution of syndicated loans from the Dealogic (CapitalData) Loanware database by year (excluding bilateral loans). The columns include all tranches, all project finance tranches, project finance tranches greater than \$75 million, and project finance tranches greater than \$75 million with syndicate data (our sample).

Signing Date	All Loan Types		Project Finance Loans All Tranches		Project Finance Loans Tranches > \$75 Million		Project Finance Loans Tranches > \$75 million with Syndicate Data		Percent by	
	Value (\$B)	Number	Value (\$B)	Number	Value (\$B)	Number	Value (\$B)	Number	Value (8/6)	Number (9/7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1986	228.7	1,447	9.8	97	8.2	33	0.8	2	9.8	6.1
1987	363.7	2,041	21.7	143	18.9	58	0.7	4	3.7	6.9
1988	578.0	2,836	19.1	215	14.4	72	0.7	3	4.9	4.2
1989	676.5	3,218	28.5	215	24.6	99	4.4	13	17.9	13.1
1990	574.6	3,626	45.4	232	41.7	109	5.2	25	12.5	22.9
1991	554.2	3,765	49.9	331	44.7	148	6.3	21	14.1	14.2
1992	625.9	4,880	48.9	381	42.6	177	6.9	28	16.2	15.8
1993	788.6	5,031	53.0	398	45.8	174	9.8	31	21.4	17.8
1994	1,073.3	5,732	60.8	386	54.3	183	11.1	39	20.4	21.3
1995	1,396.9	7,019	72.5	493	65.1	241	19.6	73	30.1	30.3
1996	1,609.3	8,317	58.5	455	49.7	187	16.4	66	33.0	35.3
1997	2,056.8	10,016	99.7	513	92.2	279	27.2	77	29.5	27.6
1998	1,698.7	8,703	75.5	459	68.3	243	18.4	61	26.9	25.1
1999	1,947.3	8,028	85.1	544	77.1	282	11.4	46	14.8	16.3
2000	542.2	1,760	31.2	89	30.1	51	11.7	6	38.9	11.8
Total	\$15,688.4	85,066	\$822.5	5,646	\$726.6	2,545	\$150.5	495		
	% of Total		5.2%	6.6	4.6	3.0	1.0	0.6		
	% of Project Finance				88.4	45.1	18.3	8.8		

Source: Dealogic (Capital DATA) Loanware database.

Table II
Univariate Analysis

This table provides univariate analysis of the main variables used in the study. The variables are broken into four groups: project variables (Panel A); foreign bank participation variables (Panel B), loan pricing variables (Panel C), and legal, financial, and market risk variables (Panel D). The first four columns show the number of loan tranches with data available, and the mean, median, and standard deviation for each variable. The second four columns show the mean for each variable calculated within quartiles based on *Institutional Investor* Country Risk Ratings. The first three quartiles (higher risk) are tested against the fourth quartile (lowest risk) using a t-test.

Variable	All Project Finance Loan Tranches				Distribution by <i>Institutional Investor</i> Country Credit Rating (Means) ^a			
	Number	Mean	Median	Std. Dev.	First Quartile (High Risk)	Second Quartile	Third Quartile	Fourth Quartile (Low Risk)
Panel A: Project and Tranche Variables								
Project Size (\$ millions)	113	\$820.0	\$586.0	\$1302.1	\$816.0	\$903.5	\$869.8	\$680.6
Tranche Size (\$ millions)	495	304.0	180.0	540.9	\$276.0	\$266.6	\$383.2	\$293.3
Leverage (Debt/Total Project Size)	45	69.4%	70.7%	13.7%	73.9%	64.3%	67.0%	72.2%
Tranche/Total Debt (%)	45	66.3%	67.6%	28.2%	60.1%	61.9%	71.8%	73.3%
Maturity (Years)	474	9.4	9.0	4.8	9.3 **	8.3 **	9.1 **	11.2
Panel B: Foreign Bank Participation Variables								
Total Number of Banks	495	14.5	12.0	10.3	16.1 **	15.2 *	14.6 *	12.3
Number of Foreign Banks	495	11.1	9.0	9.9	14.2 **	13.2 **	8.3	9.0
Total Foreign Banks Number Share (% of total # of banks)	495	73.6%	84.5%	32.3%	84.4% **	81.8% **	55.9% **	67.9%
Total Foreign Bank Dollar Share (% of total dollars in tranche)	495	74.0%	85.7%	31.6%	85.9% **	81.9% **	58.0% **	69.5%
Average Foreign Bank Share (%)	458	11.1%	7.8%	10.2%	12.4%	9.3% **	9.9% *	12.6%
Panel C: Loan Pricing Variables (bp)								
Commitment Fees	262	31.9	30.0	20.3	41.8	25.9 **	24.3 *	36.3
Loan Spread	404	122.8	102.5	79.1	157.8 *	103.3 **	93.6 **	135.7
Panel D: Legal, Financial, and Market Risk Variables								
Legal System								
LLSV Creditor Rights [0 - 4 strong]	406	2.4	2.0	1.4	2.6 **	3.5 **	2.1	2.0
World Bank (2004) Creditor Rights	486	2.2	2.0	1.1	1.7 *	2.8 **	2.2	2.0
BPR Legality (8 – 22 strong)	408	17.5	19.1	4.0	10.7 **	17.1 **	19.2 **	20.7
Expropriation Risk [0 - 10 low]	408	8.8	9.3	1.26	6.8 **	8.1 **	9.3 **	9.9
Contract Repudiation [0 - 10 low]	408	8.3	8.8	1.34	5.9 **	8.2 **	9.0 **	9.2
ICRG Composite Rating [0 – 100 low risk]	493	77.4	80.0	7.55	69.2 **	75.6 **	81.7 **	83.1
Financial System								
Private Credit as % of GDP	480	97.1%	95.1%	45.9%	40.4% **	104.5% **	99.9% **	140.4%
Liquid Liabilities as % of GDP	480	81.1%	64.9%	41.7%	44.5% **	105.9% **	98.2% **	74.0%
Deposit Banks vs. Central Bank	434	93.7%	96.1%	7.8%	87.3% **	96.2% *	96.9% *	95.1%
Gov't Ownership of Banks (LLS)	484	27.3%	12.3%	32.7%	49.4% **	34.6% **	25.6% **	2.8%
Market Risk								
<i>Institutional Investor</i> Rating [0 high risk to 100 low risk]	493	68.5	68.5	18.2	44.1 **	62.4 **	78.2 **	89.7
JP Morgan EMBI Spread (bp)	452	808.2	771.5	289.6	760.5	793.7	856.7	824.9

The four Institutional Investor (II) ratings quartiles are: II Ratings ≤ 55.6 , $55.6 < \text{II Ratings} \leq 68.5$, $68.5 < \text{II Ratings} \leq 86.9$, and II Ratings > 86.9 . Significance testing: ** and * indicate significance at the 1% and 10% levels, respectively, using a 2-tailed test.

Table III
Correlation Matrix

Panel A: This table presents the pairwise correlations between the key variables used in the regression analysis. The correlations are run at the country level, not at the observation level. Asterisks indicate significance at the 5% level or better (significance levels are in parentheses). Shaded boxes highlight important correlations.

	% Foreign Bank \$ Share	Loan Spread (bp)	Gov't Ownership of Banks	BPR Legality	LLSV Creditor Rights	Common Law Dummy	Private Credit	<i>Instit.</i> <i>Investor</i> Rating	Ln of Real GDP
% Foreign Bank Dollar Share	1.00								
Loan Spread (in basis points)	-0.08 (60.6%)	1.00							
Gov't Ownership of Top 10 Banks	0.06 (67.8%)	0.32 * (4.4%)	1.00						
BPR Legality Index	-0.35 * (3.3%)	-0.43 * (2.2%)	-0.53 * (0.1%)	1.00					
LLSV Creditor Rights Index	0.11 (51.0%)	-0.21 (30.3%)	0.11 (52.7%)	0.02 (91.7%)	1.00				
Common Law Dummy Variable	-0.02 (88.5%)	-0.14 (39.7%)	-0.28 * (5.8%)	0.19 (26.0%)	0.42 * (1.0%)	1.00			
Private Credit as % of GDP	-0.22 (11.9%)	-0.53 * (0.1%)	-0.44 * (0.2%)	0.64 * (0.0%)	0.24 (15.3%)	0.16 (27.7%)	1.00		
<i>Institutional Investor</i> Risk Rating	-0.31 * (1.8%)	-0.47 * (0.1%)	-0.45 * (0.1%)	0.88 * (0.0%)	0.06 (74.2%)	-0.04 (76.8%)	0.75 * (0.0%)	1.00	
Ln(Real GDP \$1985)	-0.20 (16.4%)	-0.05 (78.4%)	0.12 (43.0%)	0.06 (70.7%)	0.01 (95.1%)	0.03 (85.6%)	0.27 * (6.5%)	0.33 * (1.7%)	1.00

Panel B: Key correlations between key variables used in this analysis and alternative measures used by other authors:

Corr [LLSV Creditor Rights Index, Levine's (1998) Creditor Rights Index] = 0.94

Corr [BPR Legality Index, Levine's (1998) Enforce variable] = 0.97

Corr [BPR Legality Index, Demirgüç-Kunt and Maksimovic's Law & Order variable] = 0.93

Corr [LLS (2002) Government Ownership of Banks in 1995, LLS (2002) Government Control of Banks in 1995] = 0.95

Corr [LLS (2002) Government Ownership of Banks in 1995, BCL (2001) Government Ownership of Banks in 1997] = 0.69

Corr [Private Credit as % GDP, Liquid Liabilities as % GDP] = 0.73

Table IV
Regression Analysis of Syndicate Composition

This table shows the results (coefficients and t-statistics) of Tobit regressions on the composition of lending syndicates. The dependent variables are the total dollar share provided by foreign banks (regressions #1 through #4), the average share held by a foreign bank (regression #5), and the number of foreign banks (regression #6).

	Foreign Bank Financing					
	Total Dollar Share (Regr. #1)	Total Dollar Share (Regr. #2)	Total Dollar Share (Regr. #3)	Total Dollar Share (Regr. #4)	Average Share (Regr. #5)	Number of Foreign Banks (Regr. #6)
Constant	1.094 ** 5.29	1.183 ** 5.30	1.253 ** 6.11	1.625 ** 7.81	0.337 ** 7.85	-12.811 ** -2.86
Loan Variables						
Ln(Tranche Size in millions)	-0.023 -0.84	0.012 0.40	-0.004 -0.17	-0.004 -0.15	-0.051 ** -8.77	7.149 ** 11.80
Maturity (in years)	-0.0001 -0.03	0.002 0.38	0.003 0.60	0.004 0.76	0.001 0.99	-0.360 ** -3.37
Domestic Currency Loan Dummy	-0.464 ** -7.95	-0.512 ** -8.43	-0.423 ** -7.24	-0.415 ** -6.88	-0.014 -1.07	-3.981 ** -2.91
Agency Participation Dummy	0.480 ** 3.84	0.307 * 2.04	0.377 * 2.17	0.344 * 1.92	0.052 * 2.36	-2.777 -1.15
Loan Pricing Residual			-0.001 ** -4.18	-0.001 ** -3.90	-0.0001 -0.88	-0.008 -1.30
Legal and Financial System Variables						
LLSV Creditor Rights	0.200 ** 7.48	0.075 ** 3.69	0.095 ** 4.87		0.005 1.29	1.678 ** 4.12
Common Law Dummy				0.135 * 1.97		
BPR Legality Index		0.033 * 2.44	0.044 ** 3.53	0.020 1.46	0.010 ** 4.20	-0.278 -1.04
Private Credit as % of GDP	-0.312 ** -4.14	-0.322 ** -4.00	-0.455 ** -6.07	-0.368 ** -5.05	-0.042 * -2.52	-6.878 ** -4.06
Government Ownership of Top 10 Banks	0.010 0.10	-0.594 ** -5.09	-0.557 ** -5.26	-0.581 ** -4.68	-0.020 -0.84	-11.572 ** -5.04
Market Risk Variables						
<i>Institutional Investor</i>	-0.003	-0.008 **	-0.010 **	-0.008 *	-0.001 *	0.003
Country Risk Rating	-1.16	-2.61	-3.36	-2.39	-2.34	0.05
JP Morgan Emerging Market Bond Spread	-0.0001 * -2.01	-0.0001 * -1.73	-0.000 * -1.85	-0.0002 * -2.19	-0.00001 -1.36	-0.002 -1.07
US Dummy Variable	Included *	Included *	Included *	Included *	Included *	Included *
Sector Dummy Variables	Included	Included *	Included *	Included *	Included	Included *
Number of Observations	418	356	302	304	280	302
Pseudo R-Squared	34.5%	35.9%	50.1%	44.9%	-16.7%	9.8%
Likelihood Ratio (Chi-Square)	241.1	211.52	236.2	213.8	102.3	212.34
Probability > Chi-Square	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Note: ** and * denote significance at the 1% and 10% level in a one-tailed test, respectively.

Table V
Loan Pricing Analysis Using a Recursive System of Equations

This table shows the results from the estimation of a system of three equations in an attempt to control for the endogeneity of syndicate composition and loan terms (i.e. maturity and pricing). The dependent variables are the loan spread (in basis points), the dollar share of the tranche provided by foreign banks, and the tranche maturity (in years); the system is estimated using three-stage least squares. The table shows coefficients and t-statistics for each variable.

	Loan Spread (in basis points)	Foreign Bank Dollar Share of Tranche	Tranche Maturity (in years)
	(Regr. #1)	(Regr. #2)	(Regr. #3)
Constant	152.015 ** 3.26	1.038 ** 10.17	0.022 0.01
Foreign Bank Dollar Share of Tranche	73.250 ** 2.98		
Maturity (in years)	-1.980 -1.10		
Loan Variables			
Ln(Tranche Size in millions)	-7.702 -1.30		0.703 * 2.09
Domestic Currency Loan Dummy		-0.256 ** -7.04	
Agency Participation Dummy		0.090 1.28	
Legal and Financial System Variables			
LLSV Creditor Rights Index	-8.077 * -2.42	0.079 ** 6.47	
BPR Legality Index	-4.978 * -1.99	0.038 ** 4.88	
Private Credit as % of GDP		-0.366 ** -8.00	
Government Ownership of Assets in Top 10 Banks		-0.393 ** -6.22	
Country and Market Risk Variables			
<i>Institutional Investor</i> Country	0.533	-0.008 **	0.040 **
Risk Rating	0.84	-4.25	2.65
JP Morgan Emerging Market Bond Spread	0.038 * 1.93	-0.0001 * -1.94	-0.001 -0.93
US Dummy Variable		Included *	
Sector Dummy Variables			Included
Asian Crisis Year Dummies (1997-2000)	Included		
Number of Observations	302	302	302
Pseudo R-Squared	0.1%	47.8%	25.6%
Likelihood Ratio (Chi-Square)	53.1	281.6	106.2
Probability > Chi-Square	0.0%	0.0%	0.0%

Note: ** and * denote significance at the 1% and 10% level in a one-tailed test, respectively.

Appendix A

Examples of Discrimination Against Foreign Creditors

Although discrimination against a specific creditor or a specific class of creditors—defined as unfair or unequal treatment whether legal or no—can happen in almost any legal environment, one of the most common forms of discrimination is against foreign creditors. Discrimination of this sort can take many forms ranging from differences in restrictions on business operations or collateral rights to differences in the way banks are treated in default situations. For example, borrowers may repay domestic, but not foreign banks, repay foreign-denominated loans at pre-devaluation rates, or sell secured or collateralized assets held by foreign creditors (asset stripping or fraudulent conveyance). Part of the problem is that many countries such as Thailand, Indonesia, Russia, and China either do not have modern bankruptcy laws or have only recently created them. The Asian crisis of 1997-98 highlighted the shortcomings in many countries legal and financial systems and the vulnerability foreign creditors faced when operating in these countries. Below I describe five vignettes to illustrate situations where foreign creditors were disadvantaged relative to domestic creditors.

Example #1: Default of Asia Paper & Pulp (China, Indonesia, and Singapore; 2000-04)

Asia Pulp & Paper Company (APP), a Singapore-based holding company with operations in Indonesia and China, borrowed almost \$14 billion to finance its rapid expansion during the 1990s. APP unilaterally called a debt moratorium on its interest and principal payments beginning in March 2001, yet its Indonesian subsidiary continued to pay interest to holders of its local currency denominated (rupiah) bonds. Then in September 2003, APP transferred ownership of its Chinese holding company to creditors with close ties to the founding Widjaja family in a debt-for-equity swap rather than keeping it as part of the collateral pool available to all creditors.¹⁰ At the same time, the Chinese holding company paid Chinese banks over \$700 million in debt service, against the debt moratorium and to the detriment of other creditors holding claims on the parent company including some of the world's largest banks such as Deutsche Bank, BSP Paribas, Citigroup, ABN Amro, and the U.S. Export-Import Bank (the U.S. export credit agency). The *Wall Street Journal* summarized the situation this way: "...the Widjaja family's ability to remain at the helm of APP illustrates how much influence business interests continue to have on government policy. It also underscores how defenseless foreign creditors can be in Indonesia's legal system."¹¹ This vignette illustrates unequal treatment of foreign and domestic creditors as well as the difficulties foreign creditors have in seizing collateral.

10 Timothy Mapes, "New Allegations Cloud APP Plan to Settle Debts," *The Asian Wall Street Journal*, June 17, 2004, p. A1.

11 Timothy Mapes, "Tough Workout: Asian Paper Giant Survives Debt Saga as Creditors Fume," *The Wall Street Journal*, August 15, 2003, p. A1.

Example #2: Tokobank (Russia, 1998)

The Russia Central Bank took over Tokobank, once the 11th largest bank in the country, in May 1998. Although foreign banks held 67% of Tokobank's debt (\$340 million out of \$510 million), they were given only three of the seven seats on the creditors' committee.¹² Russian officials, who claimed most of the foreign banks had filled out their ballots incorrectly when electing the committee members and selecting a liquidator for the bank, declared their votes invalid. The remaining four seats went to a Russian creditor who held 20% of the debt; this group also selected the liquidator. According to one analyst, some Russian creditors, but not all, received up to 50% of their claims determined by convoluted schemes that foreign creditors could not figure out. On the other hand, foreign banks received almost nothing.¹³ This vignette illustrates how foreign creditors may receive unfair treatment in default situations.

Example #3: Enron (United States, 2001)

On October 25, 2001, Citigroup and JP Morgan Chase, the two lead arrangers of a \$1 billion loan to Enron Corporation, asked banks in the loan syndicate to fund their contributions. Shortly thereafter, on December 2, 2001, Enron filed for bankruptcy protection. Unicredito Italiano, a Milan-based bank and a member of the loan syndicate, filed a lawsuit against JP Morgan Chase and Citigroup seeking damages for the \$55 million in losses it suffered as a result of Enron's bankruptcy. Unicredito Italiano claimed that JP Morgan Chase and Citigroup withheld information about Enron's precarious financial health. The suit alleges, "[Citigroup and JP Morgan Chase] have a duty to disclose otherwise undetectable relationships, transactions, and fraudulent activities between the borrower and themselves." The suit further alleges that Citigroup and JP Morgan Chase were soliciting credit obligations from other lenders while trying to reduce their own exposures to Enron.¹⁴ As article in the *Wall Street Journal* described the situation this way: "The case is likely to raise questions about the relationship between the powerful banks that arrange large loans for corporations and the smaller banks that participate in these syndications. The goal of such arrangements is for all the banks in the syndicate to share equally the risk of financing a borrower. But the suit alleges J.P. Morgan and Citigroup, through their role as lead arrangers of the financing, had detailed knowledge of Enron's finances, knowledge they used to protect their own finances at the expense of other syndicate members."¹⁵ Although the lawsuit has not been resolved, this vignette illustrates the information-based disadvantage foreign creditors face even in well-developed markets like the U.S., and how this information can be used against them.

12 Andrew Higgins, "The Lion's Share: As One Bank Shows, Bankruptcy in Russia Is a Real Cat Fight...", *The Wall Street Journal*, April 5, 1999, p. A1.

13 "Moscow City Court of Arbitration Completed Procedure in Bankruptcy Against Tokobank on January 13. Each of the Corporate Creditors Will Receive in Average Only 6% of the Claims," *Banking and Exchanges Weekly*, January 17, 2000, p. 7.

14 The quotes and most of the background information come from "Bank vs. Bank: Unicredito's Enron Suit Moves Forward," by John Hintze, *Bank Loan Report*, November 25, 2002.

15 Jathon Sapsford, "Italian Lender is Latest to Sue Enron Lenders," *The Wall Street Journal*, February 11, 2002, p. C1.

Example #4: Vietnamese Banking Laws (Vietnam, 1990-2004)

Vietnam's investment laws during the 1990s and early 2000s favored domestic lenders over foreign lenders by restricting their ability to accept local-currency deposits, thereby creating a currency mismatch for local currency loans, and preventing them from accepting land use rights or land as collateral.¹⁶ Because foreign banks were at a disadvantage in taking valid security over project assets, they had to rely more on assessing operating profits and obtaining loan guarantees. In the case of syndicated loans involving domestic and foreign lenders, Vietnamese institutions must represent the syndicate in matters involving collateral rights.¹⁷ Although these laws have changed in the early 2000s, this vignette illustrates how banking regulations can discriminate against foreign creditors.

Example #5: Jasmine International (Thailand, 2003-2004)

Jasmine International, a Thai telecommunications concern founded by Thailand's commerce minister and majority-owned by his family, ran into financial trouble during the Asian Crisis. It began a process of restructuring its debt in 1999, which culminated in a restructuring proposal in the middle of 2002. According to the proposal, Jasmine would repay its local lender Bangkok Bank, but not its foreign lenders, in full. This unequal treatment has generated numerous lawsuits, most of which have not yet been resolved. Nevertheless, one local paper concluded, "No wonder then that international investors often view Thai companies as acting in bad faith. In the Jasmine case, the bottom line is that major Thai creditors get paid in full while most foreign creditors get less than 20 per cent of the debt owed them. The only flag being waved here is a large red one throughout the international business community."¹⁸ This vignette illustrates unequal treatment in default in favor of the local creditors despite requirements for *pari passu* treatment.

16 Thuc Doan, "A New Capital Channel," *Saigon Times*, November 29, 2001.

17 "Legal Advice," *The Saigon Times Daily*, December 6, 2002.

18 "Jasmine Case Highlights the Pitfalls of Doing Business in Thailand," *The Nation* (Thailand), August 10, 2003.

Appendix B

Matrix of Countries Based on Legal Risk and Enforcement

This table shows a distribution of sample countries based on their level of legality rating (Weak vs. Strong Enforcement on the BPR Legality Index) and their legal origin (Civil vs. Common Law from LLSV, 1998). The numbers in parentheses following the country indicate the *Institutional Investor* country credit rating as of September 1999, and the Berkowitz, Pistor, and Richard (2003) legality ratings, respectively. Legal origin is a proxy for creditor rights: on average, common law countries provide strong creditor protection than civil law countries do. The countries in bold have the most number of observations in the dataset.

		BPR Legality Index	
		Weak Enforcement (Low Legality Index)	Strong Enforcement (High Legality Index)
LLSV Legal Origin	Common Law (stronger)	Malaysia (51.7, 16.67) Thailand (48.3, 12.94) India (44.2, 12.80) Kenya (24.8, 12.00) Zimbabwe (25.1, 11.59) Nigeria (17.9, 9.39)	New Zealand (74.0, 21.55) Canada (83.5, 21.13) United States (90.9, 20.85) Australia (75.8, 20.44) UK (90.2, 20.41) Singapore (81.9, 19.53)
	Civil Law (weaker)	Brazil (36.5, 14.09) Mexico (48.2, 12.82) Argentina (42.4, 12.34) Turkey (38.9, 11.84) Columbia (44.1, 11.58) Peru (37.0, 10.10) Indonesia (27.1, 9.16) Philippines (45.9, 8.51)	Switzerland (93.0, 21.91) Denmark (85.1, 21.55) Austria (89.4, 20.76) Germany (92.0, 20.44) France (91.4, 19.67) Spain (87.2, 17.13) Taiwan (75.3, 17.62)