# THE ROLE OF LOCAL BANKS IN PROMOTING EXTERNAL FINANCE: A STUDY OF SYNDICATED LENDING TO EMERGING MARKET BORROWERS[*]

by

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## Abstract

We study syndicated loans to borrowers from emerging markets, comparing loans funded partially by local banks with loans funded entirely by foreign banks. Controlling for the endogeneity of local bank participation, we find that local banks are associated with loans that are larger, longer, cheaper, and less frequently secured. Moreover, local bank participation is a complement to these three loan terms, suggesting that local banks likely possess a comparative advantage in reducing asymmetric information and addressing agency problems. The results offer additional evidence that factors associated with location remain important in the provision of financial services. By extension, the results suggest that foreign capital is not a perfect substitute for local capital, highlighting the need for policy continued at promoting financial development with emerging market economies.

# 1 Introduction

Some problems inherit in financial intermediation are exacerbated when lending is done from developed to developing countries. Cross-border lenders often have to assess the credit quality of borrowers in unfamiliar markets, and agency problems are potentially more severe as borrowers typically are operating in foreign product markets. While this type of lending has experienced some wide swings in recent years, external foreign capital continues to flow into emerging markets, providing local borrowers with a valuable source of finance.

In this paper, we study the role of local banks in 24 emerging market countries as participants in internationally syndicated loans. We focus on the impact of local banks since they are well positioned to reduce some of the distortions that arise from information asymmetries and agency problems. Prior research has documented that foreign lenders tend to be at a disadvantage in lending to local borrowers (e.g., Berger, Klapper, and Udell 2001), and we conjecture that local banks have an advantage in monitoring local firms. Although syndicated loans are predominately funded by foreign lenders, local lenders do participate in a significant number. We make use of this empirical heterogeneity to compare loan terms across loans with and without local banks, and, thereby, isolate the contribution of local banks to emerging market finance of this type. First, we find that the local banks are more likely to participate in loans to riskier borrowers, and the empirical results indicate correlation between local bank presence and the usual mechanisms used to mitigate these problems, such as loan size, maturity, and collateral. However, after controlling for the endogeneity of the participation decision, we find that local banks tend to be involved in larger loans, longer loans, and loans with lower interest rate spreads. These findings suggest that well-functioning local banks can lower the cost of capital to local firms, most likely by reducing the information asymmetries and agency costs associated with finance that is external to the firm. In addition, they provide support for the broad conclusion from other research that highlights the importance of local financial development in promoting firms' access to external funds and, thereby, boosting economic growth.

Syndicated loans to borrowers from emerging markets typically are offered by a group of international banks. Banks from large money-centers (e.g., New York, London, and Hong Kong) typically are appointed to structure the loan contract, construct the group of lenders, and serve as the mediator between the borrower and the lenders. Local banks participate in one-quarter to one-third of the loans, typically as providers of funds as a participant in the syndicate. Although a combination of local capital constraints and minimum funding requirements likely deter local banks from participating more extensively, participation still is an endogenous decision, and local banks appear to offer their services where most beneficial. Local banks are more likely to participate in loans to firms not rated by a rating agency and firms without foreign affiliation and are less likely to participate in loans to financial firms, all suggesting that local banks are attracted to riskier loans to less transparent borrowers. However, conditional on local bank participation, syndicated loans tend to be significantly larger, longer, and cheaper, suggesting that these loans are actually less risky. The differences are economically large,

so any benefit provided by the local bank is likely accruing to the other members of the syndicate. This result points to local banks reducing information asymmetries and/or providing valuable monitoring services that foreign banks cannot replicate.[1]

Although a combination of local capital constraints and minimum funding requirements prevent local banks from participating in all syndicated loans, providing a relatively clean comparison between loans with and without local participation. Nevertheless, the participation decision is shown to be endogenous, as local banks offer their services where most beneficial. Controlling for the endogeneity using the standard Heckman (1979) sample selection correction and two exogenous instruments (the currency of the loan and the level of liquidity in the local financial system), we show that local banks increase loan size, reduce charged interest rates, and increase the maturity of loans. Moreover, the effects are economically large, despite relatively small funding by local banks, suggesting that the benefits accrue to all members of the syndicate. This result points to local banks reducing information asymmetries and/or providing valuable monitoring services.

The remainder of the paper is organized as follows. The next section discusses some of the literature on the globalization of financial markets. We highlight the literature on the relationship between financial development and economic growth, since our results identify a potential link between a well functioning banking sector and capital costs. Section 3 provides a brief discussion of syndicated lending to emerging market borrowers, providing summary statistics and a general description of the market. We document the significant heterogeneity in local bank participation and propose several hypotheses related to participation and the impact on borrowing coast. Section 4 describes the construction of the loan sample, provides univariate comparisons of loans with and without local banks, and describes our multivariate methodology for separating the effect of selection and treatment on the four loan terms we examine. Section 5 presents a discussion of the results, and the final section draws some conclusions and offers several areas to extend this research.

## 2   Local Financial Development and Globalization

This section discusses two related literatures that are concerned with the barriers created by national boundaries. First, we review the literature assessing the causal impact that national financial development has on economic growth, and second, discuss the literature on the globalization of banking markets. Together, the research indicates that national borders create important distinctions between financial intermediaries.

### 2.1  Financial Development and Economic Growth

There is a well documented positive correlation between countries' economic growth and local financial development, measured in various ways. Levine, Loayza, Beck and (2000)

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[1] Information and monitoring services are not the only potential differences between foreign and local banks. Local banks may have a cost advantage, for example, created by a natural hedges from liabilities offered in the same local market. However, such cost advantages would not produce such large differences in loan terms, since the benefit would accrue only to the local bank.

provide a review of this literature and identify a positive causal relationship between financial intermediary development and economic growth. While this result highlights the benefits of a well-functioning financial sector, the result also suggests that foreign financial intermediaries are not a perfect substitute for local intermediaries. Moreover, the advantage possessed by local intermediaries ultimately is transferred into improved economic growth.

Recently, research has begun to examine more closely the channels through which financial development can promote growth, particularly focusing on firms' access to externally provided finance.[2] Demirguc-Kunt and Maksimovic (1999) find a positive relationship between the size of the banking sector and the use of long term debt by smaller firms, suggesting that a developed banking sector is able to reduce the information and agency costs associated with lending long-term to smaller firms. Similarly, Beck, Demirgic-Kunt, and Maksimovic (2003) find a positive relationship between financial development and firm size, suggesting that strong financial institutions are better able to control the agency problems associated with larger firms. These results intimate that the local bank advantage arises from superior ability to research borrowers and monitor managers, permitting a better allocation of capital.

## 2.2 Globalization of Banking Markets

Recent regulatory changes aimed at encouraging cross-border flows of financial services, as well as improvements in technology, have generated research interest in the international integration of banking markets. The underlying question is whether national borders continue to matter (or ever mattered) in the provision of financial services, particularly corporate loans that are plagued by information asymmetries and agency costs. Two empirical results have emerged.

First, banks exhibit a significant 'home bias' in their asset portfolios, investing significantly more in domestic assets than in foreign assets. For example, Buch, Driscoll, and Ostergaard (2003) find that banks in four industrial countries over-invest domestically relative to an optimal mean-variance portfolio. This fact suggests the existence of an unmeasured benefit associated with investing in domestic versus foreign assets. In a competitive local banking market, any local bank advantage will, at least partially, accrue to local borrowers in the form of lower capital costs. Here we document a similar home bias in syndicated lending and attempt to quantify the benefit passed on to borrowers.

Second, research has also documented that banks tend to behave differently when operating in their home market than when operating abroad. Berger, Klapper, and Udell (2001) use loan-level data from Argentina to test the hypothesis that foreign owned banks are less likely than domestic banks to lend to informationally opaque small businesses. The data allow them to reject the hypothesis that foreign bank ownership is unrelated to the probability of a supplying a loan. Moreover, the effect is strongest when the bank's country is furthest from the borrower's country and when the credit quality of the borrower is more difficult to assess. Since our sample contains much larger firms with more readily available public information, the results are not directly comparable. However, by studying syndicate loans, our results are biased away from finding a local lender effect since

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[2] Here external refers to financing provided from outside the firm, as opposed to retained earnings.

information advantages are likely to be smaller. Conversely, our results may not generalize to syndicated loans to borrowers from industrialized countries, where information asymmetries and agency problems are likely smaller.[3]

## 3   Syndicated Lending to Emerging Markets

In this section, we briefly describe the syndicated loan market, with emphasis on loans to emerging market borrowers. After showing the size and importance of the market, we provide initial evidence about the extent of participation by local banks. The data indicates the existence of a home bias in syndicated lending, with local emerging market banks only participating in loans to local borrowers.

### 3.1   Syndicated Lending

Syndicated loans represent an important source of external finance to emerging markets. Table 1 compares three components of the flow of private market financing into emerging markets: equity, bond, and syndicated loan financing. In general, loan syndications provide financing comparable to bond markets and much larger than equity markets. In Asia, loans were roughly one-half of the total prior to the crisis in 1998 but have recently been displaced by equity and bonds as the most common source of finance. In Eastern Europe, loans have provided roughly one-half of the total in all years excluding the crisis years of 1998 and 1999, where bonds became more important. Loans have been slightly less important in Latin America, where the bond share has often been above 60 percent. Certainly, syndicated loans have served an important role in financing emerging market borrowers during this period.

Syndicated loans involve a collection of banks jointly extending a loan to a particular borrower. Typically, a single loan contract is negotiated by a small number of arranging banks, and a larger number of participant banks join in funding the loan.[4] *Arranging banks* are selected by the borrower and are charged with structuring and drafting the loan contract and soliciting other lenders to join the syndicate. Once the key features of the contract are in place (for example, type of loan, maturity, and initial estimates of amount and price), the arranging banks invite *participant banks* to join the syndicate. Arranging banks receive the bulk of the fees paid by the borrower, and participants receive fees based on the level of their funding. In addition to the shared fees, all lenders providing funds are entitled to

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[3] Given the presumed advantage of local banks, a natural question is why lenders enter foreign markets at all. For the syndicated loan market to emerging market borrowers, local capacity constraints are the obvious answer, where the loans are large relative to local bank assets. In our sample of developing countries, local banks do not participate in loans outside of their country. On the other hand, lenders from some industrial countries participate in foreign loans while simultaneously not entirely funding all local loans, suggesting that the benefit of foreign lending eventually exceeds the benefit of local lending. We view the sample of emerging market borrowers as a cleaner empirical experiment.

[4] Non-bank financial institutions (including investment banks, insurance companies, hedge funds, and special purpose financing vehicles) also participate in loan syndications. However, we will often use the term 'bank' to refer to members of the syndicate.

receive the contractually determined loan spread.[5] Participants in syndicated loans to emerging markets are generally motivated by the high yield offered on many of the assets as well as the opportunity to diversify their loan portfolio.

### 3.2 'Home Bias' in Syndicated Lending

While syndicated loans are the most international of banking products, the data reveal that borrower and lender location remains an important factor affecting the matching of lenders to borrowers. Table 2 presents market shares of lenders from various countries for several regions of borrowers. In a completely global environment where location is irrelevant, lender's shares would be similar in every region.[6] However, we find a substantial regional 'home bias' in lender portfolios.[7] For example, banks from emerging markets only participate in loans to borrowers from their local region and do not participate in loans to borrowers from anywhere else in the world. Most interestingly, this pattern holds for developed countries as well. North American lenders dominate in loans to North American borrowers, while Western European lenders dominate in loans to Western European borrowers. Apparently, location remains important even in the global syndicated loan market, where borrowers are relatively large and relatively more transparent than average firms.[8]

Table 2 also provides an indication of which lenders are providing loans to emerging market borrowers. While the data in Table 2 are only for 2002, the pattern is consistent over time.[9] Asian borrowers are funded predominately by local Asian banks, with European banks (particularly from the U.K.) having about one-third of the market. European banks dominate the market in Eastern Europe, with Germany having a relatively large market share. In Latin America, U.S. and European banks both have significant market share. Spain stands out in Latin America, with a relatively large 9 percent market share, compared to only 4 percent in Western Europe. While not a formal analysis, these data suggest that proximity (either in physical location, language, culture, or some other factor) is important in intermediaries' choice of syndicated loan participations.

### 3.3 Local Banks in Emerging Markets

Local banks are defined as a bank headquartered in the same country as the borrower, for example a Korean bank lending to a Korean borrower. Banks' headquarters are based on

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[5] Syndicated loans are typically priced at a floating rate spread above a common reference rate, such as LIBOR.

[6] We make this assertion assuming that banks are identical. If location is also irrelevant, than each bank should have the same portfolio of assets.

[7] A similar 'home bias' has been documented in the allocation choices of equity investors (see Karolyi and Stulz (2002) for a review of the literature on home bias in equity portfolios) and in the aggregate portfolios of banks (Buch, Driscoll, and Ostergaard (2003) and Buch (2002)).

[8] Bae and Goyal (2003) compare a sample of syndicated loan borrowers with the universe of firms on the Worldscope database and find that syndicated loan borrowers are larger, more profitable, growing faster, and have a larger market to book asset ratio .

[9] The notable exception is Japanese lenders, which have significantly reduced their market during the 1990s. This effect is strongest in Latin America and Eastern Europe.

the location of the parent, and for foreign banks, no distinction is made between lending through the home office or a local subsidiary.[10] Borrowers' locations are based on the country of the borrowing entity, although we do control for subsidiary status in the multivariate analysis.

Local lenders participate in a significant fraction of loans to local borrowers in all three regions. Based on the syndicated loan sample used here, local lenders participate in roughly one-third of all loans in Asia and roughly one-quarter of all loans in Latin America and Eastern Europe. Variation across countries reflects in part the local level of financial development, including differences in the quantity and quality of local banks. For example, Asia (particularly Taiwan and South Korea) is home to many large, globally active banks. Similarly, variation over time is partly due to changes in the capacity of local banks. Many of the sample countries' banking systems experienced negative shocks during the period, especially at the time of the Mexican crisis in 1995, the Asian crisis in 1997, and the Russian crisis in 1998.

### 3.4 Local Banks and Borrower Cost of Capital

Given prior research results that identify location as important, we use the variation in local bank participation to compare loan terms across loans with and without a local bank participant. We focus on four endogenous terms that prior research has highlighted as important features of the loan contract: loan size, maturity, interest rate, and use of collateral.

Rationing in loan markets can occur in quantity as well as the price of funds, since limiting loan size is a mechanism for banks to reduce the costs of asymmetric information (Stiglitz and Weiss, 1981). In the syndicated loan market, it happens during the syndication process that loan size is reduced rather than the spread being raised, suggesting quantity rationing. If local banks have superior information about a borrower, we could expect to see loans with local participants to be larger on average.

We also use maturity and collateral status to capture additional influences of local banks. Limiting loan maturity is one method for combating adverse selection and moral hazard, since frequent loan repayment provides an opportunity for lenders to gather information and monitor the borrower. If local banks offer an alternative mechanism for treating these problems, we could expect loans with local participation to have longer maturity. Similarly, collateral reduces lenders credit exposure, restricts the borrower's ability to continue borrowing, and limits borrower moral hazard through a threat to seize assets. Again, if local banks enjoy an advantage in addressing asymmetric information and agency costs, we could expect loans with local participants to be less frequently collateralized.

Finally, we compare loan spreads across loans with and without local participation, using the spread as the ultimate gauge of the cost of a loan. Loan spreads primarily reflect estimated credit risk and the ability of lenders to bear that risk. Local banks likely have inferior ability to bear the credit risk associated with syndicated loans, since they probably

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[10] In practice, very few syndicated loans are made through local subsidiaries.

face higher capital costs and receive a smaller diversification benefit. However, the prior research discussed above suggests superior ability in estimating credit risk and potentially superior ability in actually reducing credit risk through valuable borrower monitoring. Depending on the relative size of each effect, we could expect to see loans with local participation to carry higher or lower spreads on average.

Finally, we note that simple comparisons are likely to be biased since local bank participation is an exogenous decision, and local banks are likely to participate where their benefit is largest. Specifically, we fear that unobserved differences between borrowers are affecting both loan terms and local bank participation. To produce consistent estimates, we use Heckman's two stage estimator, experimenting with several variables as exogenous first-stage instruments. As a result, we estimate not only the independent impact that local participation has on loan terms but also the degree of complementarity between local participation and loan terms created by unobserved heterogeneity.

## 4   Sample Construction and Summary Statistics

In this section, we describe the loan data used in both to construct the summary statistics reported above and in our subsequent econometric analysis.

### 4.1  Loan Data Generation

Loanware is a dataset compiled by a division of Dealogic, a joint venture by Computasoft Ltd. and Euromoney Institutional Investor Plc. Dealogic compiles new issue information on global syndicated loans, collecting borrower information, syndicate composition, and details of each loan. The original sample consists of all loan tranches in the Loanware database where the borrower is from a country in Asia (excluding Japan), Eastern Europe, or Latin America. When we restrict the sample to loans signed between 1995 and 2002, the May 2003 release yields 8,239 unique loan tranches.[11] In order to create a homogeneous sample of syndicated loans to non-governmental entities, we remove several categories of loans from this set. First, we remove tranches identified as amendments to existing loans and loans remaining uncommitted as of the release date. Second, we remove loans identified as private placements and bilateral loans between a borrower and a single lender. We also remove loans to borrowers identified as government entities and project finance companies. These restrictions reduce the sample to 6,424 tranches. Next, we drop all tranches for which Loanware does not provide complete information on the structure of the syndicate (including all arranging and participant banks, along with amounts provided), pricing information, and maturity. Finally, we restrict attention to floating rate loans made over a base rate of LIBOR, EURIBOR, HIBOR, SIBOR, or TIBOR. This restriction ensures that we can control for any base rate effects and restricts the sample to loans made in a currency that also trades in the inter-bank market. The restrictions reduce the sample to

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[11] On occasion, a single borrower will enter into more than one loan tranche organized by the same arranger and commencing on the same day. Rather than aggregate multiple tranches into a single loan "deal", we treat each tranche as a separate observation since the participants often vary across tranches in the same deal.

2,873 loan tranches.[12] Finally, we only consider loan in countries with at least 20 tranches meeting the above criteria. This final restriction results in the final sample of 2,721 loan tranches.

Table 3 provides the list of countries included in the sample along with the number of tranches from each country and the percentage of tranches containing a local participant. Asia is by far the largest region, representing nearly three-fifths of the total sample. As expected, each region is dominated by a few large countries. Asia (9 total countries) is the least concentrated region, yet China, Hong Kong, and South Korea account for over 65 percent of the observations. In Eastern Europe (7 total countries), Hungary and Russia account for half of the observations. In Latin America (8 total countries), Argentina, Brazil, Chile, and Mexico account for over eighty percent of the observations. Representation varies over the sample period, but typically a few countries account for a majority of each market in each year.

Table 4 provides a summary of the sample across years within each region. The time series variation reflects region specific macroeconomic trends. For example, the number of loans made in Asia drops off significantly after 1997, due to the aftermath of the Asian crisis. Similarly, loan quantities drop in Eastern Europe in 1999 and in Latin America in 2002, reflecting broader conditions in the regions. Local lender participation displays some variation over time, likely reflecting the capacity of the local banking sector. For example, local Asian banks participated less frequently in 1999 and 2000, reflecting the particular impact that the financial crisis had on Asian financial intermediaries.

## 4.2  Country Level Variables

We use two variables to control for differences across country in credit risk and local banking market liquidity. As a rough measure of the potential supply of funds in the local banking market, we use the ratio of highly liquid liabilities (currency plus demand deposits) of all financial institutions to GDP, labeled LOCALLIQ. This variable is measured at the country level and only varies at a yearly frequency.[13] Prior studies of financial sector development have used this variable as a measure of financial depth. Standardization by GDP controls for size effects. Tables 3 and 4 report the mean and range of LOCALLIQ across countries and across time. At the country level, there is a strong positive correlation between local bank participation rates in syndicated loans and the measure of local liquidity. Additionally, LOCALLIQ varies across time within every country, allowing us to measure the impact of local liquidity within specifications that include country fixed effects.

As a measure of country-level credit risk, we use the Institutional Investor country credit rating, labeled IICREDIT. This variable is taken from the most recent issue of *Institutional Investor* prior to the signing of the loan. This measure is based on a bi-annual survey of approximately 100 international bankers that results in a score between zero and

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[12] The significant exclusion predominately reflects loans without pricing information. The incidence of missing information is slightly higher than that for loans to borrowers in developed countries. The excluded tranches tend to be smaller and have fewer lenders but otherwise appear similar.

[13] The source of the data is the World Bank's Financial Development Database.

100, with higher values representing better risk. The variable is measured at the country level and only varies at a twice per year frequency. Tables 3 and 4 also report the sample mean and range for IICREDIT. Sample means are weighted by the number of loans in the sample, which masks some of the variation due to the endogeneity of the loan decision. For example, the time series variation in IICREDIT shows only a modest decline in Asia around the crisis, reflecting the fact that the reduction in loans was sharpest in the countries hardest hit by the Asian crisis (e.g., Indonesia, South Korea, and Thailand). As with LOCALLIQ, the range of IICREDIT indicates both significant cross-country and time series variation.

### 4.3 Endogenous Loan Terms

We consider four terms related to the loan tranche as endogenous measures of capital costs: the size (in millions of US dollars) of the loan, the maturity (in months) of the loan, the spread (in basis points) charged on the loan, and an indicator that the loan is backed by specific collateral. The variables are labeled TRANCHESIZE, MATURITY, LOANSPREAD, and SECURED. Tables 3 and 4 provide sample means for these variables across regions and over time.

The syndicated loan market reflects developments in the broader economies of the three regions. Average loan spreads display a pattern roughly consistent with the broad trends observed in the local economies. Spreads range from an average of roughly 100 bps in Asia to in excess of 250 bps in Latin America and vary over time with local credit conditions. Syndicated loans tend to be medium maturity, averaging four to five years in length. Loan size varies across regions, but the average tranche is roughly $100M to $150M as of 2002. Finally, syndicated loans are often secured by specific collateral, with the sample average ranging between one-third and one-half of all loans.

### 4.4 Loan Specific Explanatory Variables

We collect a set of explanatory variables related to the loan and the borrower to control for observable differences between sample observations. Sample statistics are reported in Table 5.

We collect only one additional loan-related variable because we want to avoid endogeneity problems associated with other loan terms. We construct a dummy variable, labeled LOCALCUR, indicating that the loan is denominated in the borrower's local currency. No loans from Eastern Europe or Latin America are made in a local currency, because our base-rate restriction removes all such loans from the sample. However, some Asian loans are made in a local currency. We use LOCALCUR as an instrument for local bank participation, assuming that the currency is exogenously determined by the nature of the borrower's project. Furthermore, local banks are likely to favor assets denominated in the local currency, making LOCALCUR a viable instrument.

As an additional instrument for local bank participation in Asian and European loans, we construct a variable correlated with the relationship that the arranging banks have with local banks. The variable LOCALUSINGARR is a dummy variable that takes the value of one if at least one of the arranging banks on the loan has used a local participating bank in a previous loan. We expect that prior use of an arranging bank would be positively

correlated with subsequent use. Assuming that the prior activities of an arranging bank due not significantly influence the choice of arrangers, we also assume that LOCALUSINGARR is independent of our endogenous loan terms. This variable is nearly always one (over 98 percent) for Asian loans, reflecting the significant number of local arrangers and participants. However, in Europe and Latin America, this variable shows sufficient variation to serve as a useful instrument.

In addition to the Institutional Investor country credit risk score, only one other measure of credit risk is readily available about the borrowers in the sample. Namely, the dummy variable UNRATED is set to one to indicate that the borrower does not have an agency rating. Most borrowers are unrated, and we view the presence of an agency rating as an indicator of reduced credit risk and increased transparency. Local banks participate in relatively more unrated loans than rated loans.

We use three dummy variables related to the type of borrower. First, FINANCIAL indicates that the borrowing firm is a financial intermediary. Financials are known to have unique credit risk related to the nature of their deposit liabilities and may not provide the same diversification benefits to local lenders as non-financial firms. Second, we include a dummy variable PUBLIC that indicates the borrower is at least partially owned and controlled by the government. Similar to a financial firm, a public firm may receive explicit or implicit financial support that makes it a better credit risk. Finally, we use an indicator that the firm is locally owned and controlled, as opposed to an affiliate of a foreign firm, labeled LOCALFIRM. Most borrowers are not subsidiaries of foreign parents, and univariate statistics indicate that local banks are more likely to fund a loan to a local borrower than a subsidiary of a foreign parent.

Finally, we use dummy variables related to the purpose of the loan (e.g., general corporate use, merger-related), the type of loan (e.g., revolving credit facility, term loan), and the borrower's industry (e.g., telecommunications, real estate). These variables help control for differences in credit quality across sample loans.

### 4.5 Methodology

Since we are primarily concerned with differences in loan characteristics across two groups of loans, our primary empirical specification regresses a loan characteristic (TRANCHESIZE, MATURITY, LOANSPREAD, or SECURED) on a set of exogenous variables and a dummy variable indicating if the loan has a local participant or not. To control for the endogeneity of local participation, we use a first stage probit to construct the inverse-Mills ratio, which is used to augment the second stage OLS regression. We perform the analysis separately for Asia but group Latin America and Eastern Europe together.

The first stage probit model uses LOCALLIQ, LOCALCUR, and LOCALUSINGARR as explanatory variables but do not include these in the loan term regressions. The probit model is estimated by maximum likelihood, and we use the parameter estimates to construct the inverse-Mills ratio to include in the second stage regressions.

Loan size, margin, maturity, and secured status are the four principal endogenous variables. We regress each of them on a set of variables assumed to be exogenous, an indicator variable that equals one if the loan has a local participant, and the estimated

inverse Mills ratio from the first stage Probit. Including the inverse-Mills ratio corrects for the endogeneity of the local participant variable. Moreover, the sign of the coefficient on the inverse-Mills ratio is an estimate of the sign of the correlation between the loan term and local participation created by unobserved factors.

# 5 Empirical Results

## 5.1 First Stage Probit Results

Table 6 presents the results of the first stage probit model of local participation. Two sets of results are presented, one for loans to Asian borrowers and one for loans to Eastern European and Latin American borrowers.

Across the two regions, only several variables provide consistent results. Most importantly, the instruments for local participation have the expected sign and significance. In Asia, loans made in a local Asian currency are significantly more likely to attract a local participant. The estimated coefficient suggests that local currency loans are nearly twice as likely to have a local participant as loans made in another currency. In Latin America and Eastern Europe, the dummy variable indicating that an arranging bank has a prior relationship with a local bank is strongly positively correlated with local participation. In both regions, the measure of local banking liquidity has an increasing and convex relationship with local bank participation. The size of the coefficient indicates that participation in syndicated loans is only marginally affected by local liquidity. Nevertheless, our instruments allow us to extract the exogenous component of local bank participation.

Several other variables are worth noting. First, the estimated coefficient on the local firm dummy variable is positive and significant in both regions. The size of the coefficient indicates significant changes in probability across loans to local firms versus affiliates of foreign firms. As expected, local banks are less likely to participate in a loan to a foreign affiliate. Local banks also appear attracted to unrated firms, public firms, and non-financial firms. Financial firms are likely to have lower credit risk due to their, potentially implicit, government subsidization, and unrated firms are likely to be more opaque than firms that are rated. We view the combined evidence as suggesting that local lenders are more valuable for borrowers that are more opaque and possibly carry higher credit risk.

## 5.2 Loan Characteristics Results

Tables 7 and 8 present the results for the second stage OLS regressions for the four endogenous loan variables. We first discuss some of the control variables and then focus on the results for the local participant dummy and inverse-Mills ratio.

The Institutional Investor country credit rating is meant to help control for credit risk associated with a particular loan. As expected, the estimated relationship is significantly negative, yet concave, with the spread charged on a loan. The measure is also positively related to loan size and negatively related to the presence of collateral. As expected, IICREDIT is capturing differences in credit quality across countries and time, and loan terms reflect these differences.

Similarly, the unrated dummy variable  is positively related to the loan spread and presence of collateral and negatively related to loan size. Firms rated by a rating agency are likely larger and less opaque than their unrated counterparts. Again, the syndicate members adjust loan terms accordingly by raising the cost of the loan, requiring collateral more often, and limiting the size of the borrowing.

The borrower type dummy variables indicate that financial firms and public firms are viewed as less risky and local firms as more risky. Financials and publics generally receive larger loans, longer maturity loans, lower spreads, and are less likely to pledge collateral. Local firms tend to pay higher spreads yet have smaller loans.

Loans structured as revolvers seem to have unique characteristics, perhaps reflecting the unique nature of the risk created or reflecting a unique type of borrower that uses a revolver. Revolving loans are larger and shorted maturity in both regions. However, revolvers carry higher spreads in Asia and lower spreads in Latin America and Eastern Europe.

Loan purpose and borrower industry dummy variables are included in all regressions, and the estimated coefficients are generally plausible. For example, loans to telecommunications firms are significantly larger than average, reflecting the size of the firms in the industry (during the 1990s at least), and loans used for a change of corporate control are more likely to be secured, reflecting the risk of such projects.

In the Asia regressions, a dummy variable indicating that the loan happens in 1998 is included to control for the unique situation surrounding the Asian crisis. As expected, loans during that period carry higher spreads and more often carry collateral.

The results on the local participation are more significant in Asia, yet the estimated coefficients are generally consistent across the regions. Most notably, bans with local participants carry significantly lower spreads on average than loans without a local lender in the syndicate. The estimated coefficients suggest a roughly 50 basis point effect from including a local participant in the syndicate. This effect is economically quite large, particularly in Asia where the average loan spread is much lower than the other regions.

Loans with local participants also tend to be larger, longer, and less frequently secured, although the statistical and economic significance varies across region. In Asia, the impact on loan size and presence of collateral is statistically and economically quite large. In Latin America and Eastern Europe, the coefficients are not statistically significant, but the estimated impact on loan size is quite large.

In the Asian market, the estimated coefficient on the inverse-Mills ratio is statistically different from zero in the spread, size, and collateral regressions. Moreover, the sign of the coefficient indicates that the local participant dummy variable is endogenous and correlated with unobservable factors that also affect loan terms. Concerning loan spreads and collateral, the positive coefficient suggests that unobserved factors associated with increased likelihood of local participation are also associated with higher loan spreads and additional collateral. Concerning loan size, the negative coefficient suggests that unobserved factors increasing local participation are associated with smaller loans. Together, the results suggest that the unobserved factors are likely related to credit quality, information asymmetries, and agency costs, since these are the precise factors the

encourage higher spreads, collateral, and smaller loans. Not surprisingly, these are the exact loans where local banks are most likely to participate.

In total, the economic and statistical significance, combined with the consistency across the four endogenous variables, suggest two important results. First, local lenders are more likely to participate in loans that are smaller, shorter, secured, and carry a higher spread. This suggests unobserved factors that are influencing both participation and the choice of these loan terms. Moreover, the influence of these factors is consistent with the impact of observable factors, since local banks are more likely to participate in loans to unrated borrowers, local firms, and non-financials. Second, conditional on the unobservable information affecting the participation decision, the economic impact of local lenders participating in the syndicate is significant. Loans with local participants tend to be larger, have a longer maturity, less often secured, and carry a lower spread. We interpret the combined evidence as suggesting that loan arrangers use both loan terms and local banks to mitigate the problems associated with asymmetric information and agency costs.

## 6 Conclusions

In a sample of syndicated loans to emerging market borrowers, we show that local lenders help lower the charged interest rate spread that borrowers pay. Additionally, local lenders help increase the size of loans, lengthen the maturity of loans, and reduce the need for collateral. Moreover, local lenders are most likely to participate in loans where these terms are being used to address the contractual issues that arise in financial intermediation, such as moral hazard and adverse selection. We interpret the result as suggesting that local lender participation is a complement to these other loan terms that ultimately reduces the cost of capital for local borrowers.

While the data suggests that local banks can lower the cost of capital for their local borrowers, the exact source of the advantage remains unknown. While we conjecture that local banks are superior at evaluating borrowers and monitoring contract compliance, empirical confirmation remains elusive. Data on ex-post outcomes, such as default rates and recovery amounts would be useful in further assessing the benefit of local banks.

This research contributes to our understanding of the organization of banking markets and the relation between financial development and economic growth. By studying individual loans data in emerging markets, we can identify the impact of local banks at a micro-level. The results confirm the positive the impact that local banks provide relative to foreign banks, suggesting that foreign financial development is not a perfect substitute for local financial development. Since the sample covers a recent time period, the results highlight the importance of continued policy to foster financial development in emerging market economies.

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**Table 1. Gross Private Market Financing to Emerging Markets**
*(in billions of U.S. dollars)*

| Region | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|---|---|
| **Asia** | **79.6** | **109.4** | **115.7** | **34.2** | **56.0** | **85.9** |
| Bond Share (percent) | 33 | 41 | 39 | 36 | 42 | 29 |
| Equity Share (percent) | 10 | 10 | 12 | 13 | 33 | 37 |
| Loan Share (percent) | 57 | 49 | 48 | 51 | 26 | 35 |
| | | | | | | |
| **Eastern Europe** | **17.3** | **21.6** | **38.9** | **35.6** | **26.2** | **37.0** |
| Bond Share | 38 | 35 | 42 | 67 | 53 | 38 |
| Equity Share | 3 | 6 | 8 | 7 | 5 | 9 |
| Loan Share | 58 | 59 | 50 | 26 | 42 | 53 |
| | | | | | | |
| **Latin America** | **35.9** | **63.0** | **89.2** | **65.7** | **61.4** | **69.1** |
| Bond Share (percent) | 65 | 74 | 58 | 60 | 62 | 52 |
| Equity Share (percent) | 2 | 6 | 6 | 0 | 1 | 7 |
| Loan Share (percent) | 34 | 20 | 36 | 40 | 36 | 41 |

Source: IMF, Global Financial Stability Report (2001).
Notes: Numbers in bold represent the total amount of private financing to emerging market countries within a particular region. The shares are the dollar shares of each instrument.

**Table 2. Syndicated Loan Market Shares by Lender Country and Borrower Region**
*(loan provider shares in 2002)*

| | | Borrower Region | | | |
|---|---|---|---|---|---|
| Lender Country | Asia | Eastern Europe | Latin America | Western Europe | North America |
| **(1) North America** | **9** | **8** | **32** | **15** | **63** |
| USA | 9 | 6 | 28 | 13 | 55 |
| Canada | 0 | 1 | 4 | 2 | 7 |
| | | | | | |
| **(2) Europe** | **29** | **75** | **51** | **74** | **30** |
| Belgium | 1 | 5 | 2 | 2 | 1 |
| France | 5 | 11 | 9 | 13 | 5 |
| Germany | 6 | 31 | 14 | 20 | 8 |
| Netherlands | 4 | 7 | 7 | 7 | 4 |
| Spain | 0 | 2 | 9 | 4 | 1 |
| Switzerland | 0 | 1 | 0 | 2 | 4 |
| U.K. | 11 | 3 | 5 | 19 | 6 |
| Other | 2 | 15 | 4 | 7 | 2 |
| | | | | | |
| **(3) Japan** | **7** | **4** | **6** | **4** | **5** |
| | | | | | |
| **(4) Asia** | **53** | **0** | **0** | | |
| China | 16 | | | | |
| Korea | 4 | | | | |
| Singapore | 3 | | | | |
| Taiwan | 19 | | | | |
| Other | 11 | | | | |
| | | | | | |
| **(5) Eastern Europe** | **0** | **6** | **0** | | |
| Poland | | 2 | | | |
| Other | | 3 | | | |
| | | | | | |
| **(6) Latin America** | **0** | **0** | **9** | | |
| Brazil | | | 3 | | |
| Mexico | | | 3 | | |
| Other | | | 3 | | |
| | | | | | |
| **(7) Other** | **2** | **7** | **2** | **7** | **2** |

Source: Authors' calculations based on Loanware data.

**Table 3. Summary Statistics by Country**

*(1995-2002 combined)*

| Country | Number of Loan Tranches | Percent with Local Participant | Sample Means | | | | II Country Credit Risk | | Liquid Assets to GDP Ratio | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Loan Size (US$ mil) | Spread (bps | Maturity (months) | Secured (percent) | Mean | Range | Mean | Range |
| **Asia** | | | | | | | | | | |
| China | 257 | 38 | 44 | 44 | 109 | 18 | 57 | 5 | 69 | 34 |
| Hong Kong | 247 | 30 | 121 | 46 | 129 | 15 | 65 | 8 | 172 | 72 |
| Indonesia | 94 | 30 | 54 | 43 | 164 | 27 | 49 | 31 | 39 | 8 |
| South Korea | 556 | 67 | 60 | 47 | 78 | 17 | 69 | 27 | 78 | 30 |
| Malaysia | 58 | 40 | 116 | 57 | 99 | 17 | 62 | 17 | 121 | 31 |
| Philippines | 59 | 44 | 131 | 48 | 204 | 20 | 44 | 11 | 62 | 12 |
| Singapore | 47 | 51 | 157 | 47 | 122 | 28 | 84 | 7 | 96 | 24 |
| Thailand | 154 | 19 | 75 | 45 | 104 | 12 | 61 | 17 | 86 | 36 |
| Taiwan | 77 | 77 | 83 | 62 | 69 | 66 | 77 | 6 | 178 | 72 |
| **Eastern Europe** | | | | | | | | | | |
| Czech Republic | 52 | 12 | 150 | 51 | 65 | 10 | 61 | 5 | 43 | 7 |
| Croatia | 35 | 37 | 65 | 44 | 126 | 11 | 36 | 27 | 30 | 23 |
| Estonia | 17 | 29 | 26 | 36 | 108 | 6 | 37 | 12 | 8 | 4 |
| Hungary | 69 | 25 | 77 | 54 | 64 | 7 | 50 | 25 | 27 | 2 |
| Poland | 43 | 28 | 94 | 43 | 85 | 16 | 55 | 18 | 25 | 12 |
| Romania | 25 | 72 | 87 | 23 | 271 | 40 | 32 | 6 | 15 | 5 |
| Russia | 133 | 28 | 110 | 21 | 447 | 51 | 28 | 20 | 35 | 8 |
| **Latin America** | | | | | | | | | | |
| Argentina | 140 | 29 | 120 | 34 | 303 | 19 | 39 | 30 | 27 | 11 |
| Brazil | 152 | 48 | 180 | 32 | 270 | 43 | 40 | 9 | 29 | 4 |
| Chile | 152 | 9 | 177 | 51 | 123 | 10 | 63 | 8 | 42 | 10 |
| Colombia | 66 | 24 | 117 | 53 | 260 | 14 | 45 | 9 | 32 | 4 |
| Mexico | 215 | 29 | 163 | 41 | 213 | 27 | 50 | 24 | 25 | 6 |
| Panama | 14 | 29 | 271 | 62 | 173 | 21 | 38 | 19 | 60 | 20 |
| Peru | 21 | 43 | 78 | 57 | 288 | 5 | 36 | 12 | 30 | 10 |
| Venezuela | 38 | 39 | 145 | 53 | 285 | 26 | 35 | 11 | 18 | 9 |

Source: The Loanware sample provides the statistics loan statistics. Liquid Assets to GDP (*localliq*) is from the World Bank's Financial Development Database. II Country Credit Risk (*IIcredit*) is from various issues of *Institutional Investor*. For *localliq* and *IIcredit*,

Notes: Means are unweighted sample means across the 8 years 1995-2002 and 16 half-years, respectively. The range is the maximum less the minimum over the same period.

**Table 4. Summary Statistics by Year**
*(all countries combined)*

| Year | Number of Loan Tranches | Percent with Local Participant | Sample Means Loan Size (US$ mil) | Maturity (months) | Spread (bps) | Secured (percent) | II Country Credit Risk Mean | Range | Liquid Assets to GDP Ratio Mean | Range |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | **Asia** | | | | | | | |
| 1995 | 305 | 52 | 49 | 53 | 93 | 23 | 65 | 37 | 79 | 110 |
| 1996 | 419 | 54 | 57 | 50 | 89 | 18 | 66 | 45 | 82 | 113 |
| 1997 | 352 | 45 | 67 | 48 | 94 | 21 | 64 | 42 | 91 | 110 |
| 1998 | 80 | 41 | 96 | 42 | 164 | 40 | 60 | 39 | 116 | 135 |
| 1999 | 65 | 31 | 94 | 36 | 172 | 22 | 56 | 55 | 120 | 153 |
| 2000 | 119 | 31 | 102 | 43 | 136 | 13 | 62 | 60 | 118 | 165 |
| 2001 | 108 | 52 | 179 | 41 | 132 | 18 | 64 | 64 | 135 | 179 |
| 2002 | 101 | 45 | 118 | 38 | 105 | 11 | 64 | 65 | 132 | 179 |
| | | | **Eastern Europe** | | | | | | | |
| 1995 | 24 | 21 | 91 | 41 | 151 | 4 | 46 | 44 | 30 | 27 |
| 1996 | 52 | 13 | 133 | 43 | 167 | 2 | 42 | 42 | 31 | 38 |
| 1997 | 114 | 24 | 111 | 37 | 235 | 11 | 36 | 40 | 29 | 36 |
| 1998 | 61 | 28 | 78 | 40 | 200 | 28 | 43 | 31 | 28 | 34 |
| 1999 | 20 | 25 | 65 | 34 | 163 | 40 | 50 | 40 | 29 | 25 |
| 2000 | 28 | 39 | 83 | 38 | 196 | 43 | 50 | 45 | 32 | 28 |
| 2001 | 25 | 56 | 70 | 29 | 325 | 68 | 40 | 35 | 36 | 31 |
| 2002 | 50 | 44 | 97 | 31 | 316 | 62 | 41 | 35 | 36 | 31 |
| | | | **Latin America** | | | | | | | |
| 1995 | 33 | 9 | 126 | 44 | 242 | 30 | 46 | 36 | 30 | 15 |
| 1996 | 68 | 10 | 148 | 50 | 161 | 10 | 47 | 33 | 31 | 30 |
| 1997 | 126 | 33 | 170 | 48 | 167 | 25 | 46 | 32 | 30 | 23 |
| 1998 | 134 | 22 | 177 | 37 | 215 | 27 | 45 | 30 | 31 | 37 |
| 1999 | 97 | 24 | 168 | 36 | 367 | 26 | 46 | 28 | 33 | 41 |
| 2000 | 123 | 29 | 145 | 41 | 236 | 25 | 48 | 32 | 30 | 47 |
| 2001 | 128 | 33 | 150 | 41 | 207 | 23 | 49 | 32 | 30 | 53 |
| 2002 | 89 | 55 | 136 | 43 | 274 | 21 | 46 | 50 | 29 | 53 |

Source: Same as Table 3.
Notes: Sample means are across all loan tranches in a particular year and region, and therefore reflect the number of loans actually made.

**Table 5. Summary Statistics for Regression Covariates**

| Variable Type | Variable | Asia | | Eastern Europe | | Latin America | |
| | | No Local Participant | Some Local Participant | No Local Participant | Some Local Participant | No Local Participant | Some Local Participant |
|---|---|---|---|---|---|---|---|
| Loan Terms | Tranche Size | 76.0 | 78.2 | 106.2 | 78.4 | 160.2 | 147.4 |
| | Loan Spread | 106.8 | 104.4 | 211.6 | 256.1 | 202.1 | 301.4 |
| | Maturity | 41.6 | 53.3 | 38.3 | 33.5 | 42.6 | 41.4 |
| | Percent Secured | 0.14 | 0.27 | 0.22 | 0.38 | 0.23 | 0.26 |
| | | | | | | | |
| Credit Risk Measures | II Credit Risk | 61.1 | 67.0 | 42.0 | 39.5 | 48.3 | 43.5 |
| | Unrated | 0.78 | 0.93 | 0.83 | 0.86 | 0.62 | 0.70 |
| | | | | | | | |
| Borrower Type | Financial Firm | 0.39 | 0.23 | 0.61 | 0.41 | 0.13 | 0.05 |
| | Public Firm | 0.29 | 0.22 | 0.45 | 0.39 | 0.16 | 0.13 |
| | Local Firm | 0.79 | 0.91 | 0.84 | 0.96 | 0.78 | 0.87 |
| | | | | | | | |
| Loan Type | Revolving Credit | 0.11 | 0.10 | 0.27 | 0.21 | 0.23 | 0.21 |
| | Term Loans | 0.89 | 0.90 | 0.73 | 0.79 | 0.77 | 0.79 |
| | | | | | | | |
| Loan Purpose | General Corporate | 0.69 | 0.60 | 0.79 | 0.80 | 0.51 | 0.39 |
| | Change of Control | 0.02 | 0.04 | 0.02 | 0.01 | 0.12 | 0.12 |
| | Capital Structure | 0.22 | 0.16 | 0.16 | 0.16 | 0.37 | 0.49 |
| | Trade Related | 0.06 | 0.18 | 0.02 | 0.04 | 0.01 | 0.00 |
| | Property Related | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | | | |
| Borrower Industry | Air Transport | 0.03 | 0.07 | 0.02 | 0.00 | 0.00 | 0.00 |
| | Telecommunications | 0.04 | 0.03 | 0.05 | 0.07 | 0.17 | 0.13 |
| | Electronics | 0.05 | 0.13 | 0.00 | 0.00 | 0.01 | 0.00 |
| | Energy Related | 0.08 | 0.06 | 0.23 | 0.31 | 0.26 | 0.28 |
| | Real Estate | 0.03 | 0.05 | 0.00 | 0.00 | 0.01 | 0.02 |
| | Other | 0.77 | 0.66 | 0.70 | 0.62 | 0.55 | 0.57 |
| | | | | | | | |
| Instruments | Asian Currency | 0.01 | 0.02 | | | | |
| | Arranger Used Local | | | 0.83 | 0.97 | 0.75 | 0.97 |
| | Local Liquidity | 0.99 | 0.94 | 0.31 | 0.29 | 0.31 | 0.28 |

Source: Same as Table 3.

**Table 6. Multivariate Determinants of Local Participation**
*(First stage probit)*

| Variable Type | RHS Variable | Asia | Eastern Europe + Latin America |
|---|---|---|---|
| Intercept | Intercept | 0.03 | -0.75 |
| | | (0.95) | (0.75) |
| Credit Risk Measures | II Credit Risk | -0.05 | 0.01 |
| | | (0.03) | (0.03) |
| | II Credit Risk Squared | 0.00 *** | 0.00 |
| | | (0.00) | (0.00) |
| | Unrated | 0.53 *** | 0.15 |
| | | (0.11) | (0.10) |
| Borrower Type | Financial Firm | -0.14 | -0.33 *** |
| | | (0.09) | (0.13) |
| | Public Firm | 0.25 *** | -0.13 |
| | | (0.09) | (0.11) |
| | Local Firm | 0.55 *** | 0.48 *** |
| | | (0.11) | (0.13) |
| Loan Type | Revolving Credit | -0.07 | -0.23 ** |
| | | (0.12) | (0.10) |
| Crisis Dummy | Year = 1998 | 0.16 | |
| | | (0.17) | |
| Loan Purpose | Dummies Included | YES | YES |
| Borrower Industry | Dummies Included | YES | YES |
| Instruments | Asian Currency | 0.93 *** | |
| | | (0.33) | |
| | Arranger Used Local | | 1.06 *** |
| | | | (0.16) |
| | Local Liquidity | 2.95 *** | 5.62 *** |
| | | (0.45) | (2.06) |
| | Local Liquidity Squared | -1.00 *** | -6.43 ** |
| | | (0.17) | (3.05) |

Notes: Reported values are estimated coefficients from a probit model where the dependent variable is an indicator that the loan tranche has a local participant. Standard Errors are in parentheses, and 1, 5, and 10 percent significance is indicated with "***", "**", and "*".

**Table 7. Multivariate Determinants of Loan Terms - Asia**
*(Second stage OLS)*

| RHS Variable | Spread | Tranche Size | Maturity | Secured |
|---|---|---|---|---|
| Intercept | 532.0 *** | 243.3 *** | 34.8 * | 0.80 *** |
| | (34.0) | (46.6) | (18.1) | (0.22) |
| II Credit Risk | -12.3 *** | 7.5 *** | 0.0 | -0.03 *** |
| | (1.2) | (1.6) | (0.6) | (0.01) |
| II Credit Risk Squared | 0.1 *** | -0.1 *** | 0.0 | 0.00 *** |
| | (0.0) | (0.0) | (0.0) | (0.00) |
| Unrated | 26.5 *** | -29.7 *** | 1.6 | 0.12 *** |
| | (4.9) | (6.7) | (2.6) | (0.03) |
| Financial Firm | -13.3 *** | -0.8 | -9.6 *** | -0.07 *** |
| | (3.4) | (4.6) | (1.8) | (0.02) |
| Public Firm | 4.1 | 21.3 *** | 1.7 | 0.01 |
| | (3.3) | (4.6) | (1.8) | (0.02) |
| Local Firm | 13.0 *** | -22.6 *** | -2.2 | 0.11 *** |
| | (4.8) | (6.6) | (2.5) | (0.03) |
| Revolving Credit | 9.8 ** | 16.0 *** | -13.6 *** | 0.00 |
| | (4.3) | (5.9) | (2.3) | (0.03) |
| Year = 1998 | 46.9 *** | 10.5 | -2.6 | 0.22 *** |
| | (5.8) | (7.9) | (3.1) | (0.04) |
| Dummies Included | YES | YES | YES | YES |
| Dummies Included | YES | YES | YES | YES |
| Local Participant | -54.6 *** | 113.5 *** | 7.4 | -0.17 ** |
| | (13.3) | (18.2) | (7.1) | (0.09) |
| Inverse Mills Ratio | 41.3 *** | -71.3 *** | -3.1 | 0.12 ** |
| | (8.1) | (11.1) | (4.3) | (0.05) |
| R-Squared | 0.332 | 0.182 | 0.220 | 0.332 |

Notes: Reported values are OLS estimated coefficients. All 1,548 Asian observations are used for each model. Standard Errors are in parentheses, and 1, 5, and 10 percent significance is indicated with "***", "**", and "*". The Inverse Mills Ratio is taken from the first stage Probit model reported in Table 6.

**Table 8. Multivariate Determinants of Loan Terms – Eastern Europe and Latin America**
*(OLS)*

| RHS Variable | Spread | Tranche Size | Maturity | Secured |
|---|---|---|---|---|
| Intercept | 880.6 *** | 204.7 *** | -9.7 | 0.39 ** |
| | (56.1) | (78.2) | (9.9) | (0.17) |
| II Credit Risk | -22.2 *** | -2.8 | 1.6 *** | 0.00 |
| | (2.4) | (3.3) | (0.4) | (0.01) |
| II Credit Risk Squared | 0.2 *** | 0.0 | 0.0 ** | 0.00 |
| | (0.0) | (0.0) | (0.0) | (0.00) |
| Unrated | -0.5 | -59.0 *** | 4.8 *** | 0.05 * |
| | (9.0) | (12.5) | (1.6) | (0.03) |
| Financial Firm | -42.7 *** | -30.5 * | -4.4 ** | -0.15 *** |
| | (12.3) | (17.1) | (2.2) | (0.04) |
| Public Firm | -54.7 *** | 37.0 *** | 3.6 ** | 0.05 |
| | (10.0) | (14.0) | (1.8) | (0.03) |
| Local Firm | 19.8 * | -29.2 * | 1.4 | 0.01 |
| | (12.0) | (16.7) | (2.1) | (0.04) |
| Revolving Credit | -26.3 *** | 23.9 * | -11.4 *** | 0.00 |
| | (9.6) | (13.3) | (1.7) | (0.03) |
| Dummies Included | YES | YES | YES | YES |
| Dummies Included | YES | YES | YES | YES |
| Local Participant | -48.5 * | 26.5 | 5.9 | -0.03 |
| | (27.5) | (26.1) | (6.6) | (0.12) |
| Inverse Mills Ratio | -4.4 | -27.8 | -3.9 | 0.05 |
| | (23.0) | (32.1) | (4.1) | (0.07) |
| R-Squared | 0.381 | 0.076 | 0.160 | 0.106 |

Notes: Reported values are OLS estimated coefficients. All 1,173 non-Asian observations are used for each model. Standard Errors are in parentheses, and 1, 5, and 10 percent significance is indicated with "***", "**", and "*". The Inverse Mills Ratio is taken from the first stage Probit model reported in Table 6.