LEGAL EFFECTIVENESS AND EXTERNAL CAPITAL: THE ROLE OF FOREIGN DEBT

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Abstract

Previous research has documented weak, and sometimes conflicting, effects of legal quality on measures of firm debt. Using WorldScope data for 1,689 firms and a more detailed database with currency denominated debt data for 315 firms across nine East Asian countries, we find that access to foreign financing appears to loosen borrowing constraints associated with poor legal systems. This helps resolve inconsistencies in prior findings as well as explains how legal protection is important for debt use. In particular, we find that the legal effectiveness is important for determining the amount, the maturity, and the currency denomination of debt. We discuss several mechanisms by which firms can avoid the costs of poor legal systems with foreign borrowing. Finally, this paper contributes to the policy debate surrounding the importance of creditor rights for domestic lending.

I. Introduction

Recent research in law and finance has examined the legal determinants of external finance. LaPorta et al. (1997) find that legal rules and origin are important in determining the size of a country's capital markets, especially its equity market. However, the role of legal factors in determining the size of debt markets is less clear. Using firm-level data LaPorta et al. find that the similarity of the ratio of *total debt to sales* across countries of different legal origins is "... remarkable, and suggests ... a potentially important conclusion: large publicly traded firms get external debt finance in almost all countries, regardless of legal rules" (p. 1148). They conjecture that state intervention in the banking system may be the reason for the similarities.

Other research has examined legal determinants of firms' capital structure decisions. For example, Demirguc-Kunt and Maksimovic (1999) study *debt-to-capital* ratios for publicly traded firms in 30 countries and find "that reliance on long-term debt by large firms is clearly higher in countries with an effective legal system" (p. 325), but they also find "no evidence that the index of creditor rights helps predict either short-term or long-term leverage or debt maturity" (p. 329).[1] In addition, Demirguc-Kunt and Maksimovic find that in countries without the right of secured creditors to be paid first in bankruptcy, firms use relatively *more* short-term debt—evidence consistent with the monitoring hypothesis of Diamond (1991). Similarly, Giannetti (2003) finds that firms in countries with stronger creditor rights have higher long-term debt. Recent work by Fan, Titman, and Twite (2003) examines leverage and maturity across 47 countries finding that a common law system is unrelated to leverage, but that weak legal system integrity, as measured by the corruption level, is associated with high leverage and more short-term debt. In sum, while there seems to be some evidence positively linking *long-term* debt and legal effectiveness, the role of legal factors in determining the size of total corporate debt is complex and still not fully understood.

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[1] Specifically, they find that creditor rights are unimportant after controlling for legal origins and legal enforcement.

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In this paper we explain some of the above findings by examining the role of foreign currency (FC) denominated debt as a source of external capital. We argue, and find confirming evidence, that FC debt an important missing piece of the story. We hypothesize that large publicly traded firms usually have access to FC debt, irrespective of the legal environment of the home country. This is because foreign loans often are structured to reduce the reliance on the local legal system (e.g., foreign jurisdictions apply, collateral is off-shore, guarantors' assets are off-shore, etc.). Access to this market loosens borrowing constraints associated with poor legal systems so that the total debt of firms in these countries is comparable to that of firms in the best legal environments.[2] This also has implications for the maturity structure of debt since, consistent with the findings of Demirguc-Kunt and Maksimovic (1999) and Fan, Titman, and Twite (2003), local lenders in poor legal environments (the primary source of capital for smaller firms) prefer short-term loans. Consequently, legal factors are important for determining several aspects of debt, including the amount, the maturity, and the currency denomination of debt, but the importance of legal factors is obscured unless access to foreign currency debt markets is explicitly considered.[3]

To test our hypotheses we examine the capital structure of over 1,600 firms in nine East Asian countries. We combine publicly available data from the WorldScope database with a proprietary database describing the currency denomination of debt. Although our sample of countries is relatively small, it spans the range of legal origins and qualities well, and as we show,

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[2] A similar argument in spirit is made in Faulkender and Petersen (2003) regarding US firms, in which access to public bond market allows US firms to increase their debt level above those of firms without access to public bond markets. In our case, access to FC debt allows firms from poor legal systems to have higher debt than they otherwise would without access to FC debt.

[3] Esty (2003) examines financing of greenfield project companies across 61 countries and finds that foreign banks provide a greater share of total funds in countries with strong creditor rights and strong legal enforcement. However, a greenfield project company from a country with low creditor rights protections differs from a typical foreign company in the same country in the way it seeks foreign funding. Most of these financing contracts are governed by UK or New York law, however, most of the operating contracts and virtually all of the enforcement of financial claims (e.g., seizure of collateral upon default) depends on the legal system in the country where the project is located. In contrast, as we describe in detail in the next

it provides an even stronger characterization of the debt "puzzle" than samples with more countries. In particular, our sample exhibits a significant positive relation between an index of legal effectiveness (the "legality" measure of Berkowitz, Pistor, and Richard, 2003) and external equity, as well as a strong *negative* relation between legality and debt. Advantages of using the legality measure over legal origin are that it is more comprehensive and it explicitly incorporates measures of the risks of expropriation and contract repudiation.

To examine our hypothesis that access to FC debt is critical in the association between corporate borrowing and legal effectiveness, we split our sample into two groups, firms with foreign debt and those without foreign currency debt.[4] First, we find that the negative relation between legality and total debt is only present for firms without FC debt. Second, we find that this negative relation holds for both short-term and long-term debt but it is stronger for short-term debt (consistent with Demirguc-Kunt and Maksimovic, 1999). Next, we find that firms with FC debt residing in countries with poor legality, both borrow less in local currency (short-term and long-term) and more in foreign currency than similar firms residing in countries with strong legality. Thus, for firms with access to foreign debt there is *no* significant difference in total debt ratios across legal regimes because firms from countries with poor legality make up for the lower local currency debt by borrowing more in foreign currency. Finally, we show that, as predicted (and consistent with Fan, Titman, and Twite (2003)), the long-term local currency borrowing is positively affected by legal efficiency, but that firms react to this by adjusting the use of long-term foreign currency debt. Our results are robust to alternative measures of legal effectiveness and alternative specifications.

In addition to examining the question of how legality is related to firm debt, we also briefly discuss how FC debt markets are able to bypass poor legal systems of firms' home

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section, a large part of foreign lending to firms from weak legal environments relies on off-shore accounts (and jurisdictions) or foreign denominated receivables (e.g., export revenues) that act as collateral.

countries. Mechanisms include foreign assets or cashflows that can act as collateral as well as guarantees from foreign shareholders or customers. For example, the ability to seize a collateralized asset in the case of default depends on the quality of enforcement of the country in which the asset is located.

The remainder of the paper is organized as follows: Section II discuss the extant related research, provides examples of existing structures of foreign currency borrowing, and develops our hypotheses. Section III describes the data. Section IV presents the results from our statistical tests and Section V concludes.

II. Related Research and Hypotheses

A. Related Research

La Porta et al. (henceforth LLSV, 1998) show that legal origin (English, French, German, or Scandanavian) is associated with the level of creditor and investor protection. In a related paper LLSV (1997) find that although aggregate debt levels vary by country, creditor rights and legal origin cannot explain it. They conjecture that a relation between debt and legal structure may not exist since large amounts of debt financing in developing countries is given through government financial intermediaries (who are unlikely to be deterred by weak legal rules). In addition, they note, "The striking result is that our debt measure for large firms does not vary nearly as much as the aggregate measure: large publicly traded firms in countries with low aggregate debt do not have unusually low debt levels."

Leuz and Oberholzer-Gee (2003) examine financing by Indonesian firms before the Asian crisis of 1997 and find support for LSSV's inference that governments facilitate local lending to large companies. More specifically, firms with close political ties to the Suharto

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[4] To be precise, the categories are (1) firms with foreign currency debt and (2) other firms, some of which we know do not have foreign currency debt and some for which we have no information about. If this uncertainty induces a systematic bias, it will be against our findings.

regime are more likely to get low-cost loans and less likely to access foreign capital markets. Thus, political ties and foreign markets can act as something of substitutes in the market for external capital.

An extensive body of finance literature also studies firms' capital structures. For example, models premised on tax shields and financial distress costs (static trade-off), information asymmetries (Barclay and Smith, 1995, and Titman and Wessels, 1988), agency costs (Fama and Miller, 1972, Jensen and Meckling, 1976 and Jensen, 1986) and signaling (Ross, 1977) are all part of the standard capital structure literature. Harris and Raviv (1991) provide a comprehensive survey of the capital structure literature and find that debt use is positively related to fixed assets, nondebt tax shields, investment levels and firm size and negatively related to cash flow volatility, growth opportunities, advertising expenditure, probability of bankruptcy, profitability and uniqueness of product.

The capital structure literature has also directly examined the effect of laws and legal efficiency on external financing decisions. In particular, research has looked at important institutional differences such as legal contracts and their enforcement across countries and noted that this can be an important factor for firm-level capital structure. Analytical frameworks based on agency costs and residual control rights (Jensen and Meckling, 1976; Hart, 1995) are based on "adequate"– and alike – investor protection across countries. Studies such as Hart and Moore (1995) examine optimal capital structure when investors cannot enforce legal rights.

Recent empirical research has examined firms' capital structures using international data. Rajan and Zingales (1995) investigate the determinants of capital structure for G-7 countries conditioning on (among other factors) differences in bankruptcy codes and find that leverage is fairly similar across countries, despite sharp differences in the specific institutional processes for handling financial distress. Aivazian et al. (2001) examine capital structure in 10 developing countries and conclude that debt ratios in developed and developing countries are determined by similar factors but that country-specific factors appear just as important. However, the authors do

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not specifically examine the role of legal structure or effectiveness. Fan, Titman, and Twite (2003) examine leverage amount and maturity across 47 developed and developing countries and find evidence that the corruption level is positively associated with high leverage and with more short-term debt but they find no relationship between common law and leverage.

Gianetti (2003) considers the effect of legal rules, firm-specific characteristics, and the level of financial development on corporate financing decisions for a sample of private and listed European firms. The study documents a positive relation between access to long-term debt and strong legal rules and enforcement. Firms in countries that favor creditor rights are more leveraged and have a higher proportion of long-term capital.

Demirguc-Kunt and Maksimovic (1999) examine debt maturity in 30 developed and developing countries from 1980-1991 and find important differences in the use of long-term and short-term debt. Specifically, larger firms in countries with good legal systems have more long-term debt relative to assets and a longer average maturity of debt. Similarly, large firms in countries with more effective legal systems have less short-term debt. The relation between legal effectiveness and long-term debt is weaker for smaller firms. Overall, these results are consistent with the arguments of Diamond (1991, 1993) and Rajan (1992) that short-term financing is preferred when it is more likely that borrowers could defraud lenders. However, like LLSV, Demirguc-Kunt and Maksimovic find little evidence that the legal tradition (e.g., common or civil law) is important for determining the use of long-term debt relative to assets or debt maturity. They also find that, consistent with the suggestion of LLSV, the use of long-term debt by both large and small firms is positively related to the level of government subsidies.

However, due to paucity of data on foreign currency denominated debt, the literature largely ignores the role of domestic versus foreign debt and the effect it may have on the observed relation between legal effectiveness and debt capital. A few studies have examined the issue tangentially. For example, Allayannis, Brown and Klapper (2003) study the use of foreign debt in East Asia and find that the motivation to use foreign debt is largely motivated by

perceived differences on the cost of funds and the need to access deeper financial markets. However, they find that legal origin does not provide additional explanatory power beyond differences in interest rates and tax policies.

Overall, the relation between legal effectiveness and the use of debt appears dependant on, the sample, the type of debt variables examined, and the specific measures of legal structure. In addition, previous studies do not analyze the interactive relations between legal effectiveness and the currency denomination of debt. We hypothesize that explicitly considering the fact that many firms raise both long-term and short-term debt capital in foreign markets may resolve some of these conflicting results. In other words, only by looking at the breakdown of debt by currency *and* maturity (i.e. short-term local currency debt, short-term foreign currency debt, etc.) can the impact of legal effectiveness on the use of debt capital be properly analyzed.

A. Hypotheses

To motivate our empirical analysis we propose hypotheses relating the use of different types of external capital to legal effectiveness. LLSV (1997, 1998) conjecture that differences in effectiveness of legal systems will result in differences in investor protection that will in turn affect the availability of external equity and debt capital. Their predictions are summarized by the following hypothesis.

> *Hypothesis 1: Poor legal quality results in less external capital, thus there should exist:*
>> *i. a positive relation between legal effectiveness and the amount of external equity, and*
>> *ii. a positive relation between legal effectiveness and the amount of debt.*

An alternative hypothesis suggested by the theoretical results of (Diamond, 1984, 1991,1993) and the empirical results of Demirguc-Kunt and Maksimovic (1999) and Gianetti (2003), among others, suggests:

> *Hypothesis 1A: Poor legal quality implies that external capital will be concentrated in debt (via intermediaries) and in particular short-term debt thus there should exist:*
>> *i. a positive relation between legal effectiveness and equity, and*
>> *ii. a negative relation between legal effectiveness and total debt, and*

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iii. a positive relation between legal effectiveness and debt maturity.

These hypotheses are predicated on the binding nature of the local legal system. If creditors and borrowers can avoid a poor local legal system by writing debt contracts that are enforced in countries with better legal systems, as we described earlier, then these predictions should only apply to local contracts. Since poor legal effectiveness is likely to be a binding constraint that results in less than optimal lending, we expect firms that can use foreign currency to loosen this constraint, will do so. Therefore, we suggest the following hypothesis.

> *Hypothesis 2: When possible, firms will avoid the constraints of a poor legal system by contracting for debt outside their home country (i.e., by using foreign currency debt), thus there should exist:*
>> *i. no relation between legal effectiveness and total debt or debt maturity for firms with sufficient access to foreign debt, and*
>> *ii. a positive (negative) relation between legal effectiveness and the use of both short-term and long-term local (foreign) currency debt.*

In summary, observed empirical relations that appear contradictory can be explained by separately examining local and foreign currency debt.

III. Data

We rely on two primary data sources for our study. The first is firm-level accounting data from the WorldScope Database. We examine all firms with sufficient data for fiscal year 1996 in nine East Asian countries: China, Hong Kong, Indonesia, Malaysia, The Philippines, Singapore, South Korea, Taiwan, and Thailand. All together our sample includes 1,689 firms. By country, our sample size ranges from a low of 71 firms in the Philippines to a high of 309 firms in Malaysia (see Table 1).

We calculate external capital ratios for equity and both short-term and long-term debt. External equity is defined as the market value of equity multiplied by one minus the average percentage of market capitalization closely held as reported by Dahlquist et al. (2003, p. 95).

Following LLSV, we calculate capital ratios by dividing external capital measures by total sales.[5] We calculate several control variables that have consistently been shown to be related to capital structure such as firm size (log of sales in U.S. dollars), asset tangibility (fixed assets as a percent of total assets), profitability (operating margin), and the ratio of market-to-book value of equity.

WorldScope does not have data on the currency denomination of debt so we rely on a database created by Swiss Bank Corporation – Warburg Dillon Reed (SBC-WDR) that estimates the level of both short-term and long-term debt in local and foreign currency. This is the same database examined by Allayannis, Brown, and Klapper (2003) and includes data on 315 firms from the same East Asian countries; 179 firms out of the 315 have foreign currency debt. Additional details regarding these data are available in the appendix of Allayannis, Brown, and Klapper (2003).

Our measure of legal effectiveness is the "Legality" index generated by Berkowitz, Pistor, and Richard (2003). The variable is generated by taking the first principal component of the five "enforcement" variables reported by LLSV (1998). Specifically,

$$Legality = 0.381*(Efficiency\ of\ the\ Judiciary) + 0.579*(Rule\ of\ Law) + 0.503*(Corruption) + 0.349*(Risk\ of\ Expropriation) + 0.384*(Risk\ of\ Contract\ Repudiation)$$

This measure (the first principal component) accounts for 84.6% of the variance in the five measures. Berkowitz, Pistor, and Richard (2003) do not report a legality index for China, therefore we compute this value by regressing the *International Country Risk* (ICR) Financial Risk Index on the available values of legality and using the predicted value of 14.6 for China. Alternatively, omitting the 98 Chinese firms from all of the subsequent analysis leaves the results and conclusions unchanged.

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[5] LLSV also examine the external capital measures standardized by profits but we do not, because we concentrate on firm-level analysis and not all firms are profitable.

IV. Results

In this section we describe the tests of our hypotheses and the results from these tests. Our main hypothesis is that foreign debt allows firms which reside in countries with poor legal systems to overcome borrowing constraints in their local markets and thus to achieve their preferred level of debt financing. Our starting point is a descriptive examination similar to LaPorta et al. (1997) of external equity and debt capital that firms use and the relation to legal environment. We aggregate to the country level and compare external capital ratios with a country's legal environment.[6]

Our sample of 1689 firms from 9 East Asian countries spans the range of legal systems well: three countries have an English legal origin (Hong Kong, Malaysia and Singapore), two have a German legal origin (South Korea and Taiwan), three have a French legal origin (Indonesia, Philippines and Thailand) and one has a socialist legal origin (China). Table 1 presents some descriptive statistics. Among the three primary legal origins the distribution of firms is fairly even ranging from 397 firms of French legal origin to 749 of English legal origin.

The next column shows the legality index for each country. Unsurprisingly, the highest average legality measures are found among countries with an English legal origin (average of 18.2), then among countries with a German legal origin (average of 15.8), and finally among countries with a French legal origin (average of 11.0). China has a legality index that is roughly the same as the average of the German legal origin countries.

Columns 3 and 4 of Table 1 report the aggregate ratios of external market capitalization to sales and total debt to sales at the country level and then aggregated across legal origin. Consistent with LLSV (1997), these estimates suggest that the better the legal environment, (i.e., the higher the level of the legality index), the greater the relative value of external equity capital.

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[6] Country level data based on median cash-flow yields qualitatively similar results to those presented in Table 1. Finally, using assets instead of sales did not make any difference in the results.

The ratio of market-cap to sales increases from 0.34 for firms from countries with a French legal origin to 0.75 for firms from countries with an English legal origin. However, there is considerable variation in the measures at the country and firm level which is partly attributable to differences in industry mix, firm size, and other factors (as we show subsequently).

The total debt to sales ratios reveal a different story. Debt ratios across the legal origins are *inversely* related to the legality index so that firms in French legal origin countries tend to have the greater values of debt . This result is in contrast with LLSV (1997) who find that legal origin is unrelated to the level of debt capital. Our later and narrower sample suggests a more extreme result that firms residing in countries with low legality measures have *more* debt capital than firms residing in countries with high legality measures.[7] However, this result is consistent with the findings of Demirguc-Kunt and Maximovic (1999) and Fan, Titman, and Twite (2003).

We further examine the impact of legality on the structure of debt looking at short-term and long-term debt separately (columns 5 and 6 of Table 1). The alternative Hypothesis 1A predicts that debt maturity is positively related to legal quality hence firms in poor legality countries will tend to rely more on short-term debt. Consistent with this hypothesis, we find that firms residing in countries with lower legality measures tend to rely more on short-term debt than firms residing in countries with high legality measures. The ratio of short-term debt to sales decreases from 0.30 to 0.15 as we move from low legality (French origin) to high legality (English origin). Examination of the long-term debt ratio reveals a weak relation between legality and long-term debt. French and German legal origin firms seem to have roughly the same amount of long-term debt which is substantially more than English legal origin firms.

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[7] Note that the negative relationship between legality and debt capital is not a "mechanical" relation expected as a result of our finding that legality is positively linked to equity. The ratio that we use reflects the magnitude of external capital in each country not relative levels of firm capital (such as a debt-equity ratio).

Chinese firms have an overall reliance on debt and equity similar to firms from German legal origin but exhibit a higher (lower) reliance on short-term (long-term) debt.

To test our hypotheses more precisely we estimate regression models using firm-level data with equity or debt ratios as the dependent variables, legality as an explanatory variable and a set of control variables to account for other probable determinants of external finance levels. The first two columns of Table 2 show results from tests with the market capitalization and total debt ratios as the dependent variables using all firms in our sample. As suggested by the findings in Table 1 legality is strongly positively related to the amount of firms' external equity capital and strongly negatively related to the amount of total debt. The positive relation for external equity is consistent with both Hypothesis 1 and its alternative. However, the negative relation for total debt is inconsistent with Hypothesis 1 (that total debt and legal quality are positively related). Instead, it is consistent with the alternative (that total debt and legal quality are negatively related). Thus, these results support the monitoring models of Diamond (1991, 1993).

It is interesting to note the relations between external capital and the other variables included in the regression. Larger firms with less tangible assets tend to have both less (or less valued) external equity and less debt. In contrast, more profitable firms have more (or more highly valued) equity but less debt which is consistent with the pecking-order theory and the results of many prior empirical studies (see, for example, Rajan and Zingales, 1995).

The remainder of Table 2 presents results from similar tests that examine firms based on their use of foreign currency debt. The third and fourth set of results repeat the analysis in the first two columns but only for firms we do not identify as having foreign currency debt. These results are nearly identical to those for the full sample in so far as there exists a strong positive relation between legality and external equity and a strong negative relation between legality and total debt. Results for the control variables are also nearly identical to the full sample. Examining only firms with foreign currency debt yields different results from the full sample, but results consistent with our hypotheses regarding FC debt. The fifth column shows that the strong

positive relation between external equity and legality also holds for firms with FC debt. However, as predicted by Hypothesis 2 there is no relation between legality and total debt for firms with FC debt. Note that this result is not simply because the smaller sample size limits the power of the test—the coefficient value of -0.012 is close to zero (about one third of the coefficients obtained from the estimations using all firms and firms without FC debt). In addition, the firm-specific control variables are all significant at the 1% level. Similarly, the estimation with external equity (previous column) uses the same sample of firms and does not lack power. Finally, the adjusted R-squared is quite high—more than twice that of the other two specifications with total debt. In summary, this evidence is suggestive of our hypothesis regarding FC debt. To obtain more direct results, we now examine the use of FC debt in more detail.

We begin by examining the maturity of debt for firms with and without FC debt. Recall, the alternative Hypothesis 1A suggests that firms in low legality countries will have relatively more (less) short-term (long-term) debt. If FC debt allows firms to loosen the borrowing constraint imposed by legality, then we should expect no relation between maturity and legality for firms with FC debt. Columns 1 and 2 of Table 3 present the results on short-term and long-term debt for the sample of firms with no foreign debt. Consistent with our alternative Hypothesis 1A, we find that legality is negatively and significantly associated with short-term debt, thus indicating a higher reliance of firms in poor legality countries on short-term debt. However, we find a similar negative association between long-term debt and legality indicating that firms in low legality countries also use more long-term debt. However, the smaller magnitude of the coefficient on the legality variable suggests this is a somewhat less important effect for long-term debt. The third column reports the results of a more direct test examining the ratio of long-term debt to all debt (the maturity ratio) and finds no significant relation between legality and debt maturity for firms that do not use foreign currency debt.

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The last three columns of Table 3 repeat the analysis in the first three columns using only firms with foreign currency debt. The results are again consistent with our Hypothesis 2 which predicts that there will be no relation between the extent of debt use and legal effectiveness for firms with access to foreign currency debt markets. We note that the result also holds if we use the maturity ratio. So far our result are just suggestive of the role FC debt plays in determining the overall level of debt capital since we do not have detailed data on the currency denomination of debt for all the firms in our sample.

To distinguish more clearly the pivotal role of FC debt, we now limit our analysis to the 179 firms which use foreign currency debt. Table 4 contains our primary results. As a first cut, Panel A shows mean local, foreign, and total debt broken down by maturity for firms that reside in countries with an English legal origin (high legality) versus firms that reside in countries without an English legal origin (low legality). We begin by noting that the total debt ratios for English legal origin and other legal origin countries are not statistically different (1.170 versus 1.099 respectively). However, examination of the components of debt shows that there exist substantial differences in the composition of debt.

In contrast to the prior findings, the results are largely consistent with Hypothesis 1 that legal effectiveness is positively related to availability of debt. Firms in countries with an English legal origin use both significantly more local currency long-term debt and significantly less short-term foreign currency debt than firms in countries with other legal origins. The results for LC short-term debt and FC long-term debt are suggestive of the hypothesized relation but not statistically significant (in a two-tailed nonparametric test). However, firms with FC debt in high legality countries use significantly more total local currency debt. Overall, the results in Panel A are consistent with the notion that access to foreign debt allows firms in low legality countries to get around a borrowing constraint that may be binding for firms with access to only local currency debt markets.

Panel B of Table 4 reports the coefficients and *p*-values for the legality variable for

regressions similar to those in Table 3 (i.e., the regressions also include other firm-specific

variables and 1-digit SIC dummy variables). Here the results are strong and clear. The legality

measure is positively related to both short-term and long-term (as well as total) *local currency*

debt. This is consistent with Hypothesis 1 that legal effectiveness is positively related to the use

of debt. Likewise, the legality measure is negatively related to both short-term and long-term (as

well as total) *foreign currency* debt. This is consistent with Hypothesis 2 that firms with access to

foreign currency debt will use it to overcome the borrowing constraints created by the poor

quality legal environment. In the case of our sample, the firms are successful at this (perhaps

because of their above average size) and the relation between legality and total debt in all

currencies is not statistically different from zero. Finally, we note, primarily as a robustness

check, that the relation between legality and the proportion of debt that is denominated in foreign

currency is significantly negative (last column of Panel B).

The economic significance of the results in Panel B is surprisingly large. An increase of

10 points in the legality index (roughly equivalent to moving from Indonesia to Hong Kong) is

estimated to on average

- increase the local currency debt ratio by 0.20 or about 46% of the mean value for

  all firms (0.433), and

- decrease the foreign currency debt ratio by 0.29 or about -42% of the mean value

  for all firms (0.683) .

Thus, these magnitudes suggests that legal effectiveness has a substantial influence on the

currency denomination of debt even though the effect on the total amount of debt large public

firms obtain is not statistically significant.

Overall, the results are robust to the inclusion of additional variables known to explain

cross-sectional differences in capital structure and the use of FC debt such as family group

ownership structure, a foreign equity listing, foreign currency cash flows, capital intensity, and

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the level of business risk. We do not include these because the variables are not available for all firms and they do not appreciably change the results. We also examine other measures of legal effectiveness such as creditor rights (from LSSV, 1998) and a categorical variable for legal origin (i.e., English=1, German/Socialist=2, and French=3) and obtain results similar to those reported.

V. Discussion

The results from the previous section show that foreign currency debt is an important part of understanding the relation between capital structure and legal effectiveness. Nonetheless, the precise methods by which firms change the legal treatment of their debt is also interesting. In practice there exist many mechanisms by which firms avoid poor local legal environments. In this section we briefly discuss a few of them.

A. Bank Debt

Relative to domestic banks, foreign banks have difficulty collecting local information. In addition, foreign banks are often unwilling to accept local collateral because of weaknesses in land and collateral titling, registration, and collection. Similarly, in the case of bankruptcy and asset disputes, the courts often treat foreign banks differently.[8] However, as our results suggest, foreign banks are able to make secured loans, even in lending environments that discourage domestic lending, by demanding foreign collateral including foreign assets, cash flow, and guarantors.

In general, foreign banks prefer to lend to firms with a proven track record of foreign earnings and expected future foreign cash earnings sufficient to make foreign-denominated loan payments. Prior to the East Asian crisis, foreign banks lent more to firms in the region with greater foreign cashflow and foreign cash reserves (Allayannis, Brown, and Klapper, 2003). For example, banks required borrowers to open offshore cash accounts (e.g. firms were required to

have cash collateral in bank accounts in Singapore). In general, foreign banks were unwilling to make collateralized loans against local assets because of weaknesses in laws governing the securing of assets and the enforcement of contracts. For example, the cost of contract enforcement in East Asia is 66.3% of GNI per capita, versus 7.1% on OECD countries (Djankov, et al 2003).

In East Asia and other emerging markets jurisdictions with weak property rights, foreign banks also use forms of collateral other than local fixed assets. For example, many firms use foreign guarantors, often at the foreign bank with which the guarantor has a relationship (e.g. some tire part manufacturers in Mexico receive guarantors from Goodyear Tire and Rubber Co. to borrow in the US). Foreign banks also allow stock shares as collateral. Prior to the East Asian crisis, foreign banks lending in Asia generally asked for significant margins. For example, in Malaysia, where this is a common practice, the ratio of the value of shares pledged as collateral was about 146 percent of total debt outstanding at the end of October 1997.[9]

More recently, advances in technology have allowed foreign banks to collateralize future foreign-denominated export receivables flowing into an offshore collateral account. For example, these accounts may use real-time, on-line ledgers to track the financial transactions of borrowers. For instance, in East Asia, in 1999 China Offshore Shipping & Trading Co. (Costco) pledged future receipts from shipments that arise from U.S. companies shipping goods out of China. A special purpose vehicle was set up as the holder of future receipts to pay investors.[10] In Latin America, in 2003, Orix Trade Capital syndicated a U.S.$30 million pre-export finance loan secured by future dollar receivables flowing to a U.S. collateral account for Brazilian company Braskem.[11] And in Iran, in 2003 a consortium of international banks led by Deutsche Bank provided a finance package to the National Iranian Oil Company (NIOC), which is backed by an

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[8] See "Some Lenders Still Struggle in Asia," Karen Richardson and Shawn Crispin, Wall Street Journal, March 1, 2004, p. A14.
[9] "Local banks take long-term views", Business Times, Dec 5, 1997.
[10] Sclafane, Susanne, 1999, "New cover protects Asias investments", National Underwriter, September 27.

off-shore collateral structure based on oil agreements with reputable export trading companies.[12] Off-shore accounts have even allowed foreign lending to countries with very weak rule of law, such as the former Soviet Union states. For example, in Georgia, Citicorp financed the equipment to build a privately owned air traffic control system that will be repaid from revenues Georgia receives from international aircraft crossing its air space. The revenues will be deposited in an account with the International Air Transport Association in Switzerland, from which repayments will be made.[13]

Foreign banks have been successful in collecting assets located in jurisdictions with better legal protection. For example, in 1998 Lehman Brothers Holdings was able to freeze the foreign assets of Russia's largest private retail bank SBS-Argo in parts of Europe following legal action in London, although Russia was in the process of nationalizing the assets of the bank in Russia.[14]

B. Other Arrangements

Because of the difficulty and risk of collateralizing assets in a country with weak legal environment, firms may create wholly-owned offshore subsidiaries or even incorporate in a foreign country. For example, many Russian companies have incorporated offshore. Although this requires additional time and expense, greater legal protection is given to foreign banks that collateralize shares using offshore bank accounts of firms located in an offshore jurisdiction. In the case of Russia, the civil code prohibits the enforcement of security interests other than through the judicial proceedings (e.g. creditors may not seize collateral in the case of default before going to court), yet the judicial system in Russia ranks low in judicial enforcement. To enforce a contract in Russia takes about 160 days and costs over 20 percent of GDP per capita,

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[11] "Orix arranges Brazilian pre-export finance," Trade Finance, September 2003.
[12] "Finance package signed for National Iran Oil Company", 2003, Deusche Bank Press Releases, November 27.
[13] "Ex-Im Bank, Georgia sign project incentive agreement", Export-Import Bank of the United States, July 18, 1997.
[14] "Lehman wins decision to freeze foreign assets of big Russian bank", Wall Street Journal, Oct 1, 1998.

relative to 17 days and 7 percent in OECD countries.[15] In addition, debtors can be granted a one-year moratorium on enforcement and the claims of secured lenders are subordinate to several other categories of creditors. Furthermore, Russian courts have ruled hedging instruments (such as currency forward contracts) to be "unenforceable gambling contracts", which reduces the ability of Russian firms to manage their foreign-denominated borrowing risk. Finally, it is not possible to pledge a Russian bank account or accounts receivable (expected cash).[16]

C. Is Legal Effectiveness the Fundamental Factor?

The implicit finding in our results is that a weak legal system does not eliminate the availability of local currency debt—it just raises the cost of it. This suggests that interest rates should be negatively related to the legality measure. Table 5 reports the difference between the London Interbank Offer Rate (LIBOR) and local (similar-quality) short-term interest rates as of the end of 1996. Interest rates in high legality (English legal origin) countries are quite low—on average below LIBOR. In German and Socialist legal origin countries (South Korea, Taiwan, and China) interest rates average about 4% higher than LIBOR. Finally, in French legal origin countries interest rates are the highest, averaging more than 6% more than LIBOR. Overall, the Pearson correlation coefficient between interest rates and the legality measure is -0.77. The strong correlation probably explains why Allayannis, Brown, and Klapper (2003) find that legal origin has no additional explanatory power beyond interest rates in their analysis of foreign currency debt use by East Asian firms.

This quick calculation suggests two things. First, the cost to firms of an ineffective legal system (in terms of the effect on interest rates) is probably considerable. Second, interest rate variables may represent sufficient statistics for describing the cost of a poor legal system. It also highlights one short-coming of our analysis. In so far as legal effectiveness is highly correlated with other country-specific factors, it is difficult with a small number of countries to statistically

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[15] See http://rru.worldbank.org/DoingBusiness/default.aspx.

differentiate that legal effectiveness is the fundamental factor driving the results. For example,

we obtain similar results using short-term interest rates instead of legality as an explanatory

variable. However, intuition suggests that the level of equilibrium interest rates derives in part

from the legal environment and that the converse is unlikely.

Other country-specific factors are somewhat more difficult to disentangle. For example,

the efficiency of the banking sector or the size of the government bond market may help

determine the supply of (especially long-term) local currency debt. The next column in Table 5

shows the relation between net interest margin for the commercial banking sector.[17] The strong

negative correlation is consistent with firms in low legality countries seeking foreign capital

because of an inefficient banking system. The last column of Table 5 shows the size of the

government bond market as a percent of GDP. As expected, countries with poor legal quality

have low levels of public-market government borrowing, thus this could also explain the positive

relation between levels of local currency debt and legality. However, in both of these cases it is

again likely that legal effectiveness is the driving factor. Banks will need to charge more for

loans if recovering assets in bankruptcy is relatively more costly in a poor legal system. Likewise,

the level of a government's public borrowing may be a symptom of poor legal quality as well as a

determinant of corporate long-term debt if lenders worry that poor legal quality extends to the

government's ability (or desire) to pay debtors. We believe the latter are more likely scenarios,

but a detailed analysis is beyond the scope of this paper.

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[16] "Hurdles to overcome: Marian Hagler of Coudert Brothers looks at how borrowers and lenders in
Russian corporate financings are coping with legal obstacles," by Marian Hagler ,The Banker, May 2002.
[17] Net interest margin is considered a measure of banking efficiency and is defined as accounting value of
a bank's net interest revenue as a share of its total assets. Values are from Beck, Demirguc-Kunt, and
Levine (2000).

VI. Conclusions

The main findings of this paper are that:

- In East Asia, there exists a strong negative relation between the use of debt and the effectiveness of the legal system consistent with the monitoring theories of Diamond (1991, 1993).

- When examining only firms known to have foreign currency denominated debt, there exists no relation between legal effectiveness and total debt.

- Nonetheless, firms with foreign currency debt exhibit a positive relation between the use of local currency debt and legal effectiveness, as well as a negative relation between the use of foreign currency debt and legal effectiveness. These relations hold for both short-term and long-term debt.

- There are a variety of known mechanisms by which borrowers can effectively change the legal jurisdiction of their borrowing.

Thus, legal effectiveness can have opposite effects on the level of debt depending on whether or not the firm can borrow abroad. Specifically, for firms without access to foreign currency debt legal effectiveness seems to increase the attractiveness of debt perhaps because (especially short-term) debt reduces the possibility that firms will be able to defraud external providers of capital. However, for firms that can bypass the local legal system and contract for debt in a more effective legal system, the role of legality is reversed. In this case firms borrow less local currency and more in foreign currency in support of the hypothesis that ineffective legal systems inhibit the availability of external capital. Taken together these results resolve apparent inconsistencies in existing empirical work and also indicate quite conclusively that poor legal quality acts as a costly constraint for many firms needing access to outside funds.

References

Aivazian, Varouj, Laurence Booth, Asli Demirguc-Kunt, and Vojislav Maksimovic, 2001, Capital Structure in Developing Countries, *Journal of Finance* 56, 87-130.

Allayannis, Yiorgos, Gregory Brown, and Leora Klapper, 2003, Capital Structure and Financial Risk: Evidence from Foreign Debt Use in East Asia, *Journal of Finance* 58, 2667-2709.

Barclay, Michael, and Clifford Smith, 1995, The Maturity Structure of Corporate Debt, *Journal of Finance* 50, 609-631.

Beck, Thorsten, Asli Demirguc-Kunt, and Ross Levine, 2000, A New Database on Financial Development Structure, *World Bank Economic Review*, September, 597-605.

Berkowitz, Daniel, Katharina Pistor, and Jean-Francois Richard, 2003, Economic Development, Legality and the Transplant Effect, *European Economic Review* 47, 165-195.

Dahlquist, Magnus, Lee Pinkowitz, René M. Stulz, and Rohan Williamson, 2003, Corporate Governance and the Home Bias, *Journal of Financial and Quantitative Analysis* 38, 87-110.

Demirguc-Kunt, Asli, and Vojislav Maksimovic, 1999, Institutions, Financial Markets, and Firm Debt Maturity, *Journal of Financial Economics* 54, 295-336.

Diamond, Douglas, 1984, Financial Intermediation and Delegated Monitoring, *Review of Economic Studies* 51, 393-414.

Diamond, Douglas, 1991, Monitoring and Reputation: The Choice Between Bank Loans and Directly Placed Debt, *Journal of Political Economy* 99, 689-721.

Diamond, Douglas, 1993, Seniority and Maturity of Debt Contracts, *Journal of Financial Economics* 33, 341-368.

Djankov, Simeon, Rafael La Porta, Florencio Lopez-de-Silanes, and Andrei Shleifer, 2003, Courts, *Quarterly Journal of Economics* 118, 453-517.

Esty, Benjamin, 2003, When Do Foreign Banks Finance Domestic Investment? New Evidence on the Importance of Legal and Financial Systems, Harvard Business School working paper.

Fan, Joseph P.H., Sheridan Titman, and Garry Twite, 2003, An International Comparison of Capital Structure and Debt Maturity Choices, Hong Kong University of Science and Technology working paper,.

Fama, Eugene, and Merton Miller, 1972, *The Theory of Finance*, Dryden Press.

Faulkender, M. and M. Petersen, 2003, Does the Source of Capital Affect Capital Structure?, NBER working paper.

Gianetti, Mariassunta, 2003, Rule of Law, Risk Sharing and the Cost of Funds, Stockholm School of Economics working paper.

Harris, Milton and Artur Raviv, 1991, The Theory of Capital Structure, *Journal of Finance* 46, 297-355.

Hart, Oliver, 1995, Corporate Governance: Some Theory and Implications, *The Economic Journal* 105, 678-89.

Hart, Oliver, and J. Moore, 1995, Debt and Seniority: An Analysis of the Role of Hard Claims in Constraining Management, *American Economic Review* 85, 567-85.

Jensen, Michael, and William Meckling, 1976, Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure, *Journal of Financial Economics* 3, 305-360.

Jensen, Michael, 1986, Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers, *American Economic Review* 76, 323-329.

Leuz, Christian, and Felix Oberholzer, 2003, Political Relationships, Global Financing, and Corporate Transparency, Wharton School working paper.

LaPorta, Rafael, Florencio López-de-Silanes, Andrei Shleifer, and Robert Vishny, 1997, Legal Determinants of External Finance, *Journal of Finance* 52, 1131-1150.

LaPorta, Rafael, Florencio López-de-Silanes, Andrei Shleifer, and Robert Vishny, 1998, Law and Finance, *Journal of Political Economy* 101, 1113-1155.

Rajan, Raghuram, and Luigi Zingales, 1995, What Do We Know About Capital Structure? Some Evidence from International Data, *Journal of Finance* 50, 1421-1460.

Ross, Stephen, 1977, The Determination of Financial Structure: The Incentive-Signaling Approach, *Bell Journal of Economics* 8, 23-40.

Titman, Sheridan, and Robert Wessels, 1988, The Determinants of Capital Structure Choice, *Journal of Finance* 43, 1-19.

Table 1: External Capital and Legality in East Asia (Medians)

This table reports country medians for the 1,689 East Asian firms in the full sample for 1996. Countries are arranged by legal origin. The legality index is from Berkowitz, Pistor and Richard (2003) except for China which was estimated using other data (see main text). Market capitalization, total debt, short-term debt, long-term debt, and sales are from the Worldscope database.

Country / Legal Origin	(1) Number of Firms	(2) Legality Index	(3) Market Capitalization / Sales	(4) Total Debt Debt / Sales	(5) Short-term Debt / Sales	(6) Long-term Debt / Sales
Hong Kong	268	19.1	0.46	0.31	0.16	0.08
Malaysia	309	16.7	1.25	0.40	0.18	0.11
Singapore	172	19.5	0.59	0.29	0.12	0.06
English Origin	749	18.2	0.75	0.34	0.15	0.09
South Korea	243	14.2	0.15	0.61	0.30	0.24
Taiwan	202	17.6	1.66	0.37	0.18	0.12
German Origin	445	15.8	0.44	0.53	0.27	0.20
Indonesia	119	9.2	0.35	0.56	0.23	0.23
Philippines	71	8.5	1.15	0.43	0.18	0.13
Thailand	207	12.9	0.26	0.66	0.37	0.19
French Origin	397	11.0	0.34	0.60	0.30	0.19
China (Socialist Origin)	98	14.6	0.48	0.52	0.34	0.07
Total	1689					

Table 2: Regression Analysis of External Capital Factors

This table reports results from OLS regressions with value ratios (market capitalization divided by total sales and total debt divided by total sales) as the dependent variables. Coefficients and p-values (calculated using two-tailed tests and heteroskedasticity consistent standard errors) are tabled. Coefficients significant at the 5% level are in bold face. Not all variables are available for all firms so regressions are estimated using all firms for which sufficient data are available. The first set of results is for all firms. The second set of results is for firms in the SDC-WDR database without foreign currency debt and firms not in the SBC-WDR database which are assumed to not have foreign currency debt. The third set of results is for firms with foreign currency debt in the SBC-WDR database. Data for log sales, asset tangibility (fixed assets as a percent of total assets), and profitability (operating income divided by total sales) are from the Worldscope database. Dummy variables for 1-digit SIC codes of 2, 3, 4, 5, 6, 7, and 8 are included (SIC<1000 is the base case).

| | All Firms | | | | Without Foreign Currency Debt | | | | With Foreign Currency Debt | | | |
| | MktCap / Sales | | Total Debt / Sales | | MktCap / Sales | | Total Debt / Sales | | MktCap / Sales | | Total Debt / Sales | |
	Coef.	p-value	Coef.	p-value	Coef.	p-value	Coef.	p-value	Coef.	p-value	Coef.	p-value
Legality	**0.064**	<.0001	**-0.041**	<.0001	**0.070**	<.0001	**-0.035**	<.0001	**0.109**	<.0001	-0.012	0.5354
Log Sales	**-0.193**	<.0001	**-0.042**	0.0013	**-0.227**	<.0001	**-0.044**	0.0021	**-0.182**	0.0002	**-0.151**	0.0066
Asset Tangibility	**1.075**	<.0001	**1.121**	<.0001	**0.972**	<.0001	**1.024**	<.0001	0.666	0.073	**1.132**	0.0090
Profitability	**2.268**	<.0001	**-0.361**	0.0108	**1.950**	<.0001	**-0.701**	<.0001	**5.049**	<.0001	**1.935**	0.0038
SIC-2	**-0.273**	<.0001	**-0.380**	<.0001	**-0.275**	0.0008	**-0.372**	<.0001	-0.083	0.7087	-0.278	0.2775
SIC-3	**-0.233**	0.0005	**-0.353**	<.0001	**-0.225**	0.0047	**-0.347**	<.0001	-0.247	0.2579	-0.296	0.2441
SIC-4	**-0.021**	0.0022	0.063	0.4949	-0.124	0.2742	-0.111	0.2517	0.113	0.6526	0.333	0.2421
SIC-5	-0.428	0.8437	**-0.439**	<.0001	**-0.440**	<.0001	**-0.426**	<.0001	-0.128	0.6101	-0.402	0.1734
SIC-7	**-0.236**	<.0001	-0.167	0.1094	-0.215	0.0858	-0.127	0.225	-0.333	0.3824	-0.433	0.3345
SIC-8	**-0.510**	0.0502	**-0.330**	0.0157	**-0.500**	0.0011	**-0.341**	0.0108	-0.734	0.3253	0.635	0.4741
Intercept	**1.684**	<.0001	**1.555**	<.0001	**2.045**	<.0001	**1.543**	<.0001	0.950	0.1681	**2.398**	0.0027
Adj R-Squared	0.279		0.164		0.262		0.149		0.576		0.376	
Number of Firms	1558		1634		1401		1469		157		164	

Table 3: Regression Analysis by Debt Maturity

This table reports results from OLS regressions with debt ratios (short-term debt divided by total sales, long-term debt divided by total sales, and long-term debt divided by total debt) as the dependent variables. Coefficients and p-values (calculated using two-tailed tests and heteroskedasticity consistent standard errors) are tabled. Coefficients significant at the 5% level are in bold face. Not all variables are available for all firms so regressions are estimated using all firms for which sufficient data are available. The first set of results is for firms in the SDC-WDR database without foreign currency debt and firms not in the SBC-WDR database which are assumed to not have foreign currency debt. The second set of results is for firms with foreign currency debt in the SBC-WDR database. Data for log sales, asset tangibility (fixed assets as a percent of total assets), profitability (operating income divided by total sales), and the market-to-book ratio (market value of equity divided by the book value of equity) are from the Worldscope database. Dummy variables for 1-digit SIC codes of 2, 3, 4, 5, 6, 7, and 8 are included (SIC<1000 is the base case).

| | Without Foreign Currency Debt | | | | | | With Foreign Currency Debt | | | | | |
| | Short-Term Debt / Sales | | Long-Term Debt / Sales | | Long-Term Debt / All Debt | | Short-Term Debt / Sales | | Long-Term Debt / Sales | | Long-Term Debt / All Debt | |
	Coef.	p-value	Coef.	p-value	Coef.	p-value	Coef.	p-value	Coef.	p-value	Coef.	p-value
Legality	**-0.020**	<.0001	**-0.015**	0.0008	0.001	0.5559	0.000	0.9945	-0.005	0.7643	0.002	0.6827
Log Sales	**-0.056**	<.0001	0.005	0.5886	**0.042**	<.0001	-0.026	0.1273	**-0.160**	0.0013	-0.008	0.5737
Asset Tangibility	**0.215**	<.0001	**0.737**	<.0001	**0.419**	<.0001	-0.071	0.6037	0.612	0.1271	**0.525**	<.0001
Operating Profit	**-0.746**	0.0011	-0.026	0.7872	**0.189**	0.0012	-0.057	0.7831	**2.840**	<.0001	**0.615**	0.0006
Market-to-Book	**-0.007**	<.0001	-0.005	0.4751	0.000	0.9652	**-0.048**	0.0007	**-0.125**	0.0027	0.010	0.4184
SIC-2	-0.175	0.3109	**-0.166**	0.0004	**-0.073**	0.0064	-0.107	0.1651	-0.147	0.5150	0.042	0.5215
SIC-3	**-0.176**	0.0001	**-0.155**	0.0007	-0.045	0.0804	**-0.174**	0.0241	-0.184	0.4122	0.032	0.6182
SIC-4	**-0.198**	<.0001	0.112	0.0876	0.048	0.1966	-0.106	0.2168	**0.573**	0.0243	0.056	0.4394
SIC-5	**-0.237**	0.0019	**-0.174**	0.0017	-0.057	0.0696	**-0.286**	0.0015	-0.103	0.6918	0.060	0.4225
SIC-7	**-0.110**	<.0001	0.022	0.7539	-0.023	0.5735	-0.144	0.2877	-0.332	0.4013	-0.148	0.1954
SIC-8	-0.224	0.1060	-0.093	0.2987	0.046	0.3738	**0.952**	0.0005	-0.312	0.6899	-0.371	0.1012
Intercept	**1.461**	<.0001	0.194	0.1600	**-0.347**	<.0001	**0.936**	0.0002	**-0.332**	0.0010	0.207	0.3237
Adj R-Squared	0.117		0.130		0.373		0.173		0.451		0.451	
Number of Firms	1443		1443		1382		164		164		164	

Table 4: Currency and Maturity of Debt of Foreign Currency Debt Users

This table reports results of analysis using only firms with foreign currency debt in the SBC-WDR database. Panel A shows mean debt-to-sales ratios for total debt, local currency debt, and foreign currency debt where local and foreign currency debt are further divided by maturity. P-values from a two tailed nonparametric Wilcoxon test are also reported. Panel B reports results from OLS regressions with debt ratios by currency (short-term debt divided by total sales, long-term debt divided by total sales, and total debt divided by total sales) as the dependent variables. The last column reports results from using foreign currency debt as a percent of total debt as the dependent variable. Coefficients and p-values (calculated using one-tailed tests and heteroskedasticity consistent standard errors) are tabled. Coefficients significant at the 5% level are in bold face. All regressions are estimated using 164 firms. The same control variables as examined in Table 3 are included but results are not reported. These include log of sales, asset tangibility (fixed assets as a percent of total assets), profitability (operating income divided by total sales), and the market-to-book ratio (market value of equity divided by the book value of equity) from the Worldscope database. Dummy variables for 1-digit SIC codes of 2, 3, 4, 5, 6, 7, and 8 are included (SIC<1000 is the base case).

Panel A: Means of Debt-to-Sales Ratios

Legal Origin	Number of Firms	Total Debt	Local Currency Debt			Foreign Currency Debt			Legality Index
			Short-Term	Long-Term	Total	Short-Term	Long-Term	Total	
English (High Legality)	41	1.170	0.184	0.396	0.580	0.086	0.504	0.590	18.5
Other	138	1.099	0.150	0.237	0.386	0.161	0.551	0.713	12.4
p-value for difference		0.433	0.366	0.054	0.083	0.009	0.130	0.138	

Panel B: OLS Regression Coefficients for Legality (N=164)

	Total Debt	Local Currency Debt			Foreign Currency Debt			FC Debt / Total Debt
		Short-Term	Long-Term	Total	Short-Term	Long-Term	Total	
Legality (coefficient)	-0.015	0.006	**0.014**	**0.020**	**-0.006**	**-0.023**	**-0.029**	**-0.014**
p-value (one-tailed test)	0.184	0.098	0.048	0.039	0.032	0.022	0.016	0.020
Adusted R-squared	0.414	0.140	0.215	0.197	0.083	0.376	0.367	0.193

* Control variables and 1-digit SIC codes are also included in the regression but the results are not tabled.

Table 5: Legality and Other Country Factors

This table reports measures of legality, short-term interest rates, net interest margin for banks, and size of the government bond market (all in 1996) for the 9 East Asian countries we examine. Countries are arranged by legal origin. The legality index is from Berkowitz, Pistor and Richard (2003) except for China which was estimated using other data (see main text). Short-term interest rates and LIBOR (London Interbank Offered Rate) are from DataStream. Net interest margin is considered a measure of banking efficiency and is defined as accounting value of a bank's net interest revenue as a share of its total assets. Values are from Beck, Demirguc-Kunt, and Levine (2000). Government bond market data are from the Bank for International Settlements.

Country / Legal Origin	Legality	Short-term Rate minus LIBOR	Net Interest Margin	Government Bond Market / GDP
Hong Kong	19.11	0.06%	2.9%	1.8%
Malaysia	16.67	1.82%	3.3%	26.1%
Singapore	19.53	-2.51%	2.7%	16.0%
English Origin	18.44	-0.21%	3.0%	14.6%
South Korea	14.23	7.26%	2.6%	8.4%
Taiwan	17.62	0.75%	2.4%	15.7%
German Origin	15.93	4.01%	2.5%	12.1%
Indonesia	9.16	9.54%	4.3%	0.0%
Philippines	8.51	3.37%	4.2%	7.4%
Thailand	12.94	6.41%	3.3%	7.2%
French Origin	10.20	6.44%	3.9%	4.9%
China (Socialist Origin)	14.64	4.76%	2.9%	9.9%
Correlation with Legality (by country)		-0.77	-0.84	0.46