Debt Location and Multinational Corporations

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Abstract

We examine the effect of differences in international tax rates and tax regimes on the incremental external debt location choices of multinational firms. We analyze the broadest dataset of international firm-level debt offerings to date which contains 8,287 debt issues from 2,437 firms headquartered in 23 different countries. Our results show that personal and corporate tax differences, the presence of dividend imputation and relief tax systems, and inter-country withholding taxes on dividends and interest income have a significant influence on the corporate decision of where to locate debt as well as the proportion of debt located abroad. Our results are robust to firm and issue specific factors as well as to the effect of legal regimes, development of debt markets, and exchange rate risk differences.

JEL Classifications: F23; F34; G15; G32

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I. Introduction

Faced with a need to issue debt, multinational corporations face a complex capital structure problem. For these organizations, the decision of where to locate debt may require consideration of various tax regimes and credit market institutions as well as the risks associated with fluctuations in exchange rates. As such, an analysis of multinational firms' decisions of where to locate debt can afford a unique opportunity to investigate the influence of international taxes on a firm's capital structure.

In this paper, we examine the influence of differences in international tax rates and tax regimes on a multinational firm's decision of where to locate debt. Specifically, we examine the impact of differences in tax rates and regimes on a multinational firm's marginal decision of whether to issue debt at home through the parent or local subsidiary or abroad through a foreign subsidiary using a unique dataset consisting of 8,287 debt issues from 2,437 firms headquartered in 23 different countries with subsidiaries in a total of 61 countries. Our data permit an empirical analysis of the tax incentives on debt policy that has increased power over previous studies on international capital structure and corporate debt location choices (e.g., Booth, Aivazian, Demirguc-Kunt and Maksimovic (2001), Demirguc-Kunt and Maksimovic (1988), Fan, Titman and Twite (2003), Desai, Foley and Hines (2004), and Huizinga, Laeven and Nicodeme (2008)).[1]

[1] As noted by Graham (1996), Auerbach (2002), and Graham (2003), the estimation of the sensitivity of capital structure to tax incentive has proven challenging as a result of measurement errors.

First, we examine the within firm variation in the decision of where to locate debt (i.e., domestic parent or subsidiary versus foreign subsidiary). Thus, our data are constructed so as to provide a natural control for firm-level variation that may influence a firm's capital structure and are less likely to suffer from omitted variable biases. Second, our data examines the incremental marginal decision of where to locate debt as opposed to the extent of foreign versus domestic debt that exists within a firm's capital structure. By focusing on the marginal decision of where to locate debt, our test provides more power to identify effects that are determined at the margin, such as taxes (MacKie-Mason (1990) and Graham (1996)).[2] Moreover, the incremental approach links the borrowing decision of the firm with variables measured just prior to the debt issuance, allowing analysis of the effect of time-variation in firm characteristics on the debt location choice. Finally, for the first time in the finance literature, we consider all possible tax effects on international corporate debt location decisions: our tax data combine detailed information regarding country-level corporate tax rates, personal tax rates on interest income and capital gains, dividend relief and dividend imputation regimes, and inter-country dividend and interest withholding tax rates.

In our examination of the influence of taxes on multinational firms' marginal decision of where to locate debt, we carefully control for non-tax factors. Specifically, our data combine contract-related information (issue size and issue type), firm-specific accounting information (firm size, leverage, and profitability), and information related to country-level institutional differences in credit markets, rule of law, law systems, and exchange rate risk. Combined, the data is the most comprehensive in the literature in terms

[2] Denis and Mihov (2003) use a similar approach to analyze the public-private debt choice for US firms.

of the number of countries studied, the number of firms considered, and the level of tax-related and institutional related information.

We find that differences in the international tax regimes affect multinational firms' decision of where to locate debt as well as the proportion of debt located abroad. For example, we find multinational firms are more likely to place debt abroad when the firm's foreign subsidiary is located in a country in which debt capital is afforded a greater tax advantage, as measured by the Miller (1977) gains-to-leverage formula or an indicator variable indicating if the tax code permits dividend imputation or dividend relief. We also show that the proportion of the total amount of debt issued multinational firms via their foreign subsidiaries increases in the relative tax advantage of debt in the subsidiary's country and also depends on the presence of inter-country withholding taxes on interest income and dividends. Both finding are consistent with the hypothesis that multinational firms locate debt in tax advantaged countries in order to capture positive valuation effects.

Our tax-related findings are robust. We control for other factors that may also influence a multinational firms' decision of where to locate debt. Our results provide evidence to indicate that multinational headquartered in countries with well developed debt markets are less likely to issue debt abroad. We also find that multinational firms headquartered in common law countries are less likely to issue debt through foreign subsidiaries, especially if these foreign subsidiaries are located in civil law countries or in countries with poorer rule of law. Conversely, multinational firms headquartered in civil law countries are more likely to issue debt through foreign subsidiaries whenever the subsidiary is located in a common law country. These findings are consistent with the hypotheses that firms are willing to commit to more restrictive standards for corporate

governance by issuing debt in international markets (Harvey, Lins and Roper (2004)) and attempt to arbitrage differences in the cost of debt finance resulting from international differences in credit market institutions (Noe (2000) and Titman (2002)).

The rest of the paper is organized as follows. Section II reviews the related literature. Section III provides an overview of the tax-based incentives that may affect a multinational firm's decision of where to locate debt. Section IV outlines our sample selection requirements, describes our data, and provides summary statistics and univariate analysis. Section V provides our multivariate analysis of factors that determine a firm's choice of where to locate debt. Section VI reports robustness checks. Section VII concludes.

II. Related Literature

Much of the prior literature examined on the effect of taxes of firms' debt to equity ratios using available balance sheet information of firms located in different countries. Our data is unique because of our utilization of debt issue-level data as opposed to debt to equity ratios implied from a firm's balance sheet. Moreover, by examining a broad sample of debt issue-level data from companies headquartered around the world, our tests can control for the influence of headquarter location on the decision to locate debt in a foreign subsidiary. Thus, our results are not driven by a small sample of countries with similarly developed debt capital markets.

Of the studies that examine debt policy within multinational firms, Desai, et al. (2004) and Huizinga, Laeven and Nicodeme (2006) are the most related.[3] Using affiliate level data for U.S. multinationals, Desai, et al. (2004) provide evidence that higher local tax rates are correlated with affiliate-level higher debt to asset ratios. Huizinga, et al. (2006) document the ability of differences in international tax rates to explain the cross sectional variation of leverage ratios observed in European firms.

In contrast to these papers, we examine the multinational firms' marginal decision of where to locate debt using an analysis of the within firm variation in debt issue location. In order to exhaustively analyze the effect of taxation on the debt location choice, in addition to corporate taxes and withholding taxes on dividends, we investigate for the first time in the literature the effect of personal taxes, withholding taxes on interest income, and dividend imputation and dividend relief tax regimes on the debt location choice. Moreover, we dramatically extend the sample to include firms from both developed and developing markets. Finally, we examine tax-based incentives on the choice of debt location while controlling for a broader set of factors that may also be related to location choice. Combined, these contributions allow us to provide new evidence and broaden our understanding on international corporate debt location choices.

A limitation of our study relative to Desai, et al. (2004) and Huizinga, et al. (2006) is that our data does not employ subsidiary-level financial statement information.[4] Use of subsidiary-level financial statements can provide additional information regarding the relative growth opportunities within the multinational firm as well as effective tax rates.

[3] Other related studies which examine the tax incentives to debt location in multinational corporations are Chowdhry and Nanda (1994), Chowdhry and Coval (1998), Newberry (1998), and Newberry and Dhaliwal (2001).

[4] No publicly available database exists on subsidiary-level accounting data for non-U.S. and non-European corporations, which compose the majority of our sample.

However, given the nature of global capital markets, firms are increasingly able to separately locate investment and financing choices. Additionally, prior work demonstrates that a firm's effective tax rate is not identical to its marginal tax rate, the factor most important in the decision of debt choice (e.g., Graham (1996)).

III. Taxes and the Decision of Where to Issue Debt

To understand the role of taxes in a multinational firm's decision of where to locate debt, in this section we focus on some of the major themes that potentially impact a multinational firm's decision of where to locate debt. We also present our tax-related empirical questions and describe the variables used in our empirical analysis to investigate those questions.

A. Net tax advantage of domestic debt to foreign debt due to corporate and personal taxes

As argued by Miller (1977), personal taxes on interest income limit the corporate tax-advantage of debt in the domestic setting. In the international setting, the effect of differences in personal tax rates across countries depends upon the degree of integration in capital markets. Whenever investors can freely move in and out of debt capital markets in different countries, an investor demand schedule for corporate debt can be aggregated across countries However, if debt markets are not fully integrated, multinational corporations face country specific demand schedules for corporate debt. In this setting, Hodder and Senbet (1990) demonstrate that a Miller-type equilibrium results within each country while a pecking order results across national debt capital markets. Ceteris paribus, we conjecture that multinational corporations should be more likely to offer debt in the

countries with the highest net tax advantage to debt, where the net tax advantage includes the effects of both corporate and personal tax rates.

A typical measure of the tax benefit of debt in a single country setting is Miller (1977) gains-to-leverage formula:

$$(1) \qquad 1-((1- T_c)(1-T_e)/(1-T_i))$$

where T_c is the rate that corporate income is taxed, T_e is the rate at which capital gains are taxed, and T_i is the rate at which personal income is taxed.[5]

We create a proxy for T_c using the maximum corporate tax rate reported for the parent's (subsidiary's) country of residence in Price Waterhouse's *Corporate Taxes a Worldwide Summary* in the year prior to the debt offering. We also create a proxy for T_e and T_i using the personal income tax rate and long-term capital gain tax rate reported in Price Waterhouse's *Individual Taxes a Worldwide Summary* in the year prior to the debt offering. Parent- and subsidiary-level personal tax rates are defined using the parent's (subsidiary's) country of residence. In our empirical analysis, we measure the relative difference in country-level tax benefit to debt between the parent country and the country of the foreign subsidiary using the difference of the Miller gains-to-leverage ratio between the foreign subsidiary and the parent. This variable is labeled "Relative Miller Gains".

B. The effect of dividend imputation and dividend relief systems

In addition to the level of corporate and personal taxes, also the tax treatments of dividend payments is an important factor that influences the multinational firm's decision

[5] In practice, there are other tax effects that can reinforce or offset the tax incentive to issue debt. Non-debt tax shields should only affect a firm's decision to issue debt to the extent they change a firm's marginal tax rate. Due to data limitations, calculation of firms' expected marginal tax rates is not feasible in this study. See Graham (1996) for an algorithm for marginal tax rates applied to U.S. firms.

where to locate debt. According to Fan, et al. (2003) classification, in the classical tax system dividend payments are taxed at both the corporate and personal levels and interest payments are tax-deductible at the corporate level. The dividend relief tax system differs from the classical tax system in respect to the taxing of dividend payments, i.e., either dividends are not taxed at the corporate level or they are taxed at a reduced rate at the personal level. In dividend imputation tax systems, firms can deduct interest expenses at the corporate level, and domestic corporate taxes paid are distributed to taxable resident shareholders as a tax credit with dividend payments.

In the case of multinational corporations, the decision where to locate debt will vary according to the local dividend tax regime that applies to the parent and its subsidiary. For foreign subsidiaries that operate in dividend tax regimes in which after-tax cost of debt is more costly relative to equity (i.e., dividend imputation or dividend relief tax systems), the incentive to use debt finance is lower and multinational corporations will be less likely to consider issuing debt through these foreign subsidiary. In this study we hypothesize that the tax incentive to issue external debt through a foreign subsidiary located in a country with a classical dividend tax system will be greater for parents operating in countries that adopt dividend imputation or dividend relief tax systems.

Following Fan, et al. (2003), we classify Brazil, Hong Kong, India, Indonesia, Japan, Malaysia, Netherlands, Singapore, South Korea, and Switzerland as classical tax regimes; Sweden and Thailand as dividend relief tax regimes; and Australia, Canada, Finland, France, Germany, Italy, Mexico, Norway, Spain, Taiwan, and the United Kingdom as dividend imputation tax regimes. In our empirical analysis, we control for differences in tax rate regimes by creating a variable, “Relative Dividend Imputation”, that

is one if the tax regime in the foreign country is a dividend imputation based system but the parent country is not; zero if both countries have tax regimes that are either dividend imputation systems or not; and minus one if the parent country is a dividend imputation, but the foreign country is not. The variable "Relative Dividend Relief" is defined similarly.

C. The effect of inter-country withholding tax rates on dividends and interest

In addition to the above tax considerations, the domestic and foreign treatment of repatriated interest payments and dividend income also influence the tax advantage of debt for a multinational firm and its debt location decision. For example, debt issued abroad may lower the foreign subsidiary's taxable income that is subject to the foreign country's corporate tax rate. However, in some cases, this benefit can be limited if the foreign subsidiary must pay withholding taxes on interest or dividend payments made to its domestic parent (Newberry and Dhaliwal (2001) and Graham (2003)). Alternatively, debt issued locally may lower the parent company's taxable income that is subject to tax in the parent company's country. Thus, the relative tax advantage of issuing debt abroad or at home is a function not only of the corporate, personal tax rates and dividend tax systems within a country, but also the tax treatment of repatriated interest and dividend payments for transfers between countries.

Withholding taxes on dividend payments are usually levied by the subsidiary country on outgoing dividend payments used by the subsidiary to transfer income across borders to the parent company (Huizinga, et al. (2006)), and this can lead to additional incentive to issue debt through subsidiaries located in countries that have high dividend

withholding rates. Since withholding taxes on dividends is in essence an additional corporate tax on income, we conjecture that multinational firms will be more likely to issue debt through subsidiaries located in countries with high withholding tax rates on dividends.

Withholding taxes on interest payments made to foreign investors can create a tax-advantage for foreign investors to substitute foreign for domestic issued bonds. Since foreign withholding taxes on interest payments are in addition to domestic personal income taxes, investors may also demand higher rates of return for investing in bonds issued by foreign companies (Kim and Stulz (1992)), creating differences in borrowing costs associated with foreign and domestic debt offerings. We conjecture that multinational corporations will be less likely to issue debt through subsidiaries located in countries characterized by high withholding tax rates on interest.

We create a proxy for withholding tax rates on interest and dividend income using the withholding tax rates reported in Price Waterhouse's *Corporate Taxes a Worldwide Summary* for the year prior to the debt issue. Whenever available, we use the maximum withholding rate specified by the treaty in the country in which the non-resident subsidiary operates. If no treaty exists, we use the maximum withholding rate for non-treaty countries. To our knowledge, our paper is the first to exploit detailed world-wide data on both interest and dividend withholding taxes.

IV. Data

A. Sample Selection

In order to be included in the study, we require consolidated financial statements for the parent company, various country-level proxies, and a record of debt issuance either by the parent or a subsidiary. We compile the sample as follows. From Compustat Global, we create a list of non-U.S. companies from over 80 countries. From Thomson Financial's Security Data Corporation Global New Issues Database (SDC Global New Issue), we extract public and private debt issues from the international Euro market and syndicated banking markets, foreign bond markets in the U.S. and abroad (e.g. Matadors, Samurai, and Bulldog bonds), and 45 domestic markets.[6] We merge the two samples by parent company name (SDC Global New Issue issuer borrow ultimate parent name) and by parent country (SDC Global New Issue issuer borrower ultimate parent country). From this merge, we keep only those issues that have consolidated financial accounting data in the year preceding the debt issue.

The resulting dataset consists of 9,010 debt issues from 2,437 firms headquartered in 23 countries during the sample period 1994 to 2003. The sample includes firms that issue debt solely through the parent company as well as firms that issue debt through either domestic or foreign subsidiaries, or both. Firms that issue debt through foreign subsidiaries make up at least 15% of the firms within the sample, 19% of the total number of issues, and 24% of the aggregate issuance volume.

[6] See Henderson, Jegadeesh and Weisbach (2006) for a thorough description of the international coverage of the SDC New Issues database.

It is important to notice that SDC coverage differs from country to country. For some countries (such as Australia) SDC collects data from statutory filings to regulatory bodies. For other countries (such as Asian Pacific countries), SDC relies on data from multiple informal sources (e.g., wires, news sources, trade publications, foreign stock exchange filings, and proprietary surveys). Therefore, the data might be more comprehensive for some countries than others. This coverage variation introduces noise in the data, biasing our tests against finding evidence of tax effects on multinational debt location decisions.

B. Summary Statistics

Table 1 provides detailed information on the number of issues and number of issuers by country of origin of the parent company and by issuing entity (e.g. parent versus subsidiary issue). Our data include a significant number of both parent and subsidiary level issues (4,998 parent and 3,289 subsidiary). We separate issuing subsidiaries between domestic and foreign. We classify all subsidiaries that operate in countries other than the parent country as foreign subsidiaries.

Over the sample period, subsidiaries placed almost 40% of the total number of debt issues offered in international marketplaces. Within the sample, Japanese based firms are heavily represented and account for almost 40% (42%) of the total number of debt issues (firms). Among countries, there is significant variation in the use of subsidiary debt. Parents located in Thailand raise external debt through subsidiaries the least (25% of their total issues) and German firms locate debt in subsidiaries most often (80% of their total issues).

Within our sample of 3,289 subsidiary debt issues, 1,548 (47%) are foreign subsidiary debt issues. Similar to our finding above, Japanese firms are heavily represented and account for just over 41% of the total number of issues from foreign subsidiaries. Among countries, there is significant variation in the use of foreign subsidiary debt. Parents located in Thailand raise external debt through foreign subsidiaries the least (2.6% of their total subsidiary issues) and Swiss firms locate debt in foreign subsidiaries most often (82% of their total subsidiary issues). We exploit this variation in our multivariate analysis.

The extent to which parent firms locate debt in subsidiaries is the focal point of this study. However, the reader may be interested in which types of debt contracts are most likely to be raised through subsidiaries as well. In the sample, 43% (42%) of the total number of issues of straight debt (syndicated term loans) are issued by subsidiaries. However, convertible debt is most often issued by the parent company. Only 17% of all convertible debt issues are issued by a subsidiary.[7]

Table 2 presents information on the number of issues and number of issuers by foreign subsidiary country. The foreign subsidiaries that issue debt during our sample period are located in 66 countries. Within our sample the country with the largest number of foreign subsidiaries issuing debt is the United States (102 subsidiaries issuing debt 547 times). Netherlands is the only country in our sample with more debt issues by foreign subsidiaries than by domestic parents (249 versus 80).

Table 3 presents issue characteristics by issuing entity (i.e., parent, domestic subsidiary, or foreign subsidiary). Within the sample, we find that debt issues by foreign

[7] Detailed univariate statistics about the distribution of issues by debt type are available upon request from the authors.

subsidiaries have significantly larger principal than issues by domestic firms (either parent companies or domestic subsidiaries). Debt issued by foreign subsidiaries also has on average significantly longer dated maturities than debt issued by domestic subsidiaries or parent companies. In an unreported analysis, we disaggregate issue-specific information by debt type (straight bonds, convertible bonds, and loans). This analysis shows that the difference in issue size and maturity between issues by domestic firms and foreign subsidiaries holds for straight and convertible bonds, but not for bank loans.

Table 4 provides issue-level summary statistics for our proxies of tax-based incentives. For each external debt issue, the table reports means and medians. The first column identifies parent-level issues and tabulates the summary statistics using parent country information. The second column identifies debt issued by subsidiaries located in the same country of the parent. Here, the summary statistics also use parent country information. The next two columns identify external debt issued by foreign subsidiaries and provide summary statistics using both country-level information from either the parent or foreign subsidiary. The last column presents p-values of two-sample t-tests of the mean and Wilcoxon tests of the medians for the values presented in the previous two columns.

From these univariate summary statistics, we find preliminary evidence that differences in tax rates and regimes are related to firms' debt location decision. The p-values of the differences presented in the last column show that firms that issue debt in foreign subsidiaries have significantly higher gains to leverage as imputed by the Miller (1977) ratio. The significant difference in the gains-to-leverage formula appears to be driven by differences in personal income taxes between parent and foreign subsidiary countries rather than differences in corporate taxes.

We also find that multinational corporations that locate debt in foreign subsidiaries are on average more likely to have parents domiciled in countries that employ dividend imputation rather than foreign subsidiaries domiciled in countries that employ dividend imputation (40% versus 22%). Since tax systems that employ dividend imputation tend to decrease the relative tax benefit of debt, multinational corporations may preferentially issue debt in countries that do not adopt this type of tax regime.

Table 5 provides issue-level summary statistics of various firm-level attributes that may be related to a firm's debt location decision. We measure all firm-level controls using parent-level information available in the year preceding the debt issue. On a consolidated basis, multinational corporations that borrow through foreign subsidiaries tend to be significantly larger, be more highly levered, have lower asset tangibility, lower effective tax rates, and longer asset maturity.

It may be the case that both the parent and foreign subsidiaries of larger firms are more recognizable to international investors. In this case, larger multinational corporations face lower costs of asymmetric information when issuing through foreign subsidiaries and thus face lower costs of borrowing through foreign subsidiaries in certain marketplaces.[8] We would like to emphasize that the column presenting means and medians of parent and domestic subsidiary issuers contains data pertaining both to mono and multi-national firms as long as these firms issue domestically. The presence of multinational firms in both the domestic firms' and foreign subsidiaries' columns of Table 5 bias the data against finding a significant difference in the firm-level attributes.

[8] Consider CEMEX. CEMEX is headquartered in Mexico, but also operates foreign subsidiaries in the United States. Comparing the cost of debt capital across both markets, CEMEX may decide to issue in the United States. In order to minimize the cost of debt finance, CEMEX borrows through its U.S. affiliate so that the affiliate can pledge capital that can be seized in the event of default by U.S. creditors. Since CEMEX is large and well recognized by U.S. investors, they are willing to borrow through the affiliate.

V. Multivariate Analysis

A. Multivariate analysis of the decision of where to locate debt

In Table 6, we present a logistic analysis of the corporate debt location choice. The dependent variable in the logistic regression is zero if the debt is issued by either the parent or a domestic subsidiary and one if it is issued by a foreign subsidiary. The right hand side variables include the variables: Relative Miller Gains, Relative Dividend Imputation, Relative Dividend Relief, and various issue-level, firm-level, and country-level controls (described in the Appendix). Finally, in each regression model, we include parent-based country-level and year fixed effects.[9]

The first column of Table 6 examines tax-based incentives of debt location in multinational corporations. Consistent with Hodder and Senbet (1990), we find that firms are more likely to locate debt in a foreign subsidiary when the foreign subsidiary operates in a tax environment that provides for greater tax advantage of debt as measured by the Relative Miller Gains. While consistent with Desai, et al. (2004) and Huizinga, et al. (2008), our findings are robust to the influence of personal tax rates due to our examination of the relative difference in Miller's gains to leverage as opposed of the differences in corporate statutory tax rates.

The coefficients of the variables Relative Dividend Imputation and Relative Dividend Relief are negative and significant. This result confirm that multinational firms headquartered in countries with dividend imputation or dividend relief systems are more

[9] Unlike other international studies, we can use parent-based country-level fixed effects because our subsidiary-to-parent ratios provide within-country variation in the institutional, tax, and legal variables.

likely to issue debt through a subsidiary located in a country without dividend imputation or relief taxation where the after-tax cost of debt is lower relative to equity.

In the second column of Table 6, we expand our logistic regression to control for the possible influence of issue-level and firm-level characteristics that may impact the within firm variation in the decision of where to locate debt. Consistent with Table 5, the coefficients of our firm-level characteristics show that larger and more profitable firms are more likely to issue debt through a foreign subsidiary. Companies with more tangible assets are more likely to issue debt domestically. Domestic issues are usually larger and convertible debt is more likely to be issued domestically. Even controlling for issue-level and firm-level variables, we still find that multinational firms are more likely to locate debt in a foreign subsidiary when the foreign subsidiary operates in a tax environment that provides for greater tax advantage of debt.

In addition to tax considerations and firm-specific characteristics, a multinational corporation's decision of where to locate debt may also be related to differences in legal protection (La Porta, Lopez-de-Silanes, Shleifer and Vishny (1997), La Porta, Lopez-de-Silanes, Shleifer and Vishny (1998)), the development of debt markets and financial intermediaries (Titman (2002)), and exchange rate risk (Shapiro (1984)). Even though not the focus of this study, we control for all these factors in our multivariate analysis.

As a proxy for the legal regime in a country, we use country-level dummies indicating whether a country legal system is based upon common law. We identify common law countries in our dataset following La Porta, et al. (1997). To examine rule of law, the second determinant of the legal protection provided by a country, we use the rule of law indicator created by La Porta, et al. (1998). To proxy for the development of debt

markets we measure the ratio of a country's net deposits to gross domestic product ("GDP") as reported by the International Financial Statistics ("IFS"). Similar to Allayannis, Brown and Klapper (2003), we measure exchange rate risk by calculating the ratio of the short-term lending rate in the subsidiary country to the short-term lending rate in the parent country as provided by the World Bank.

In order to analyze these factors in our multivariate analysis, we create relative variables for each proxy by dividing its value in the subsidiary country by its value in the parent country. The variables so generated are Relative Common Law, Relative Rule of Law, Relative Deposits / GDP, and Relative Short Term Interest**.**

The last column of Table 6 presents the results of a regression in which we control for the effects of these variables on the debt location decision of multinational corporations in addition to the variables presented in the other two columns. Both the relative common law and rule of law variables are positive and significant. Parents located in civil (common) law countries are more (less) likely to issue debt through subsidiaries located in common (civil) law countries. Moreover, parent located in countries with poor (good) law enforcement and less (more) developed debt market are more likely to issue debt internationally (domestically). These results complement those of Desai, et al. (2004) who find foreign subsidiary domiciled in poor creditor protection countries to issue less external debt and to borrow more internally. The coefficient of the Relative Short Term Interest variable suggests that multinational companies are more likely to issue debt in countries with high exchange rate risk, measured by the relative subsidiary-to-parent country short term interest rate. This result shows that foreign debt issuance is also used as an exchange rate risk hedging strategy.

Even controlling for institutional country variables, our tax variables maintain their statistical significance. The tax-related variables are also characterized by relevant economic significance. An increase in the Relative Miller Gains variable from its 25th to its 75th percentile while all the other variables retain their median values increases the probability of issuing debt through a foreign subsidiary by 7.36%. If a subsidiary is located in a country with dividend imputation (dividend relief) while the parent is headquartered in a country with a classical dividend tax system, the probability of issuing debt though the foreign subsidiary is 16.46% (3.37%) lower.

B. Multivariate analysis of the proportion of debt located in foreign subsidiaries

Table 7 presents the results of the regression in which the dependent variable is the ratio of the amount of debt issued by a foreign subsidiary located in a specific country to the total amount of debt issued by the multinational firm in a fiscal year. Since companies issue debt only in a limited set of foreign countries, the dependent variable of the regression is left-censored at zero. We estimate a Tobit regression to account for the censoring of the dependent variable.

While the logistic regression presented in Table 6 examines the binary choice between issuing debt domestically or abroad, the Tobit regression of Table 7 examines the corporate choice concerning the portion of total debt issued each year in each foreign country where subsidiaries are located. Since this analysis excludes debt issued domestically, it allows an examination of the effect of dividend and interest withholding taxes on the multinational corporations' debt location decision.

The first column of Table 7 examines tax-based incentives of debt location in multinational corporations. The positive coefficient on the relative Miller gains-to-leverage ratio is consistent with the view that firms are more likely to issue larger quantities of debt through a subsidiary in countries where personal and corporate taxes provide a higher tax advantage of debt. The relative dividend imputation and dividend relief variables are negative and significant. Multinational corporations issue larger quantities of debt through subsidiaries located in countries without dividend imputation of dividend relief rules where the after-tax cost of debt is relatively lower than the cost of equity.

Consistent with our hypothesis that multinational corporations might be less likely to issue debt through subsidiaries located in countries characterized by high withholding tax rates on interest, the interest withholding variable is negative and significant. Multinational firms issue larger quantities of debt in foreign countries with low or non-existing interest withholding taxes. This result is consistent with the view that, since foreign withholding taxes on interest payments are in addition to domestic personal income taxes, investors may demand higher rates of return for investing in bonds issued by foreign companies creating differences in borrowing costs associated with foreign and domestic debt offerings.

As in table 6, in the second column of Table 7 we expand our tobit regression to control for the possible influence of issue-level characteristics and firm-level characteristics that may impact the corporate debt location decision. The results for the control variables are consistent with those presented in the first column of Table 6. The tax-based variables significant in the first column maintain their significance also when

controlling for firm and issue-level variables. However, differently from the results in the first column, the dividend withholding variable is positive and significant. This result is consistent with the hypothesis that firms issue larger amount of debt through foreign subsidiary located in countries with higher withholding taxes on dividends. The subsidiary country can levy taxes on outgoing dividend payments used by the subsidiary to transfer income to the parent company leading to additional incentives to issue debt through subsidiaries located in high dividend withholding rate countries.

Huizinga, et al. (2006) do not find a significant effect of dividend withholding rates on debt location decision by multinational corporations. The difference between the results of our study and those of Huizinga, et al. (2006) might derive by the difference in the two samples. While Huizinga, et al. (2006) limit their analysis to European companies, we extend our analysis to all non-U.S. firms. Since our sample also comprises non-European firms, our dividend withholding variable has a larger variability, which, in turn, increases the power of our test.

In addition to the tax-based variables and the firm and issue-level controls, the third column of Table 7 also controls for the effects of legal and institutional variables on the debt location decision of multinational corporations. The relative rule of law variable is positive and significant suggesting that multinational corporations issue larger quantity of debt in countries with better rule of law. The coefficients for the proxies for debt market development and exchange rate risk ("Relative Deposits / GDP" and "Relative Short Term Interest" respectively) are not significant. This result in combination with the significance of these variables in Table 6 suggests that, even though multinational firms are more likely to issue abroad in countries where debt markets are more developed and in countries with

higher risk of currency depreciation, the relative quantity of debt issued through subsidiaries in different foreign countries is not significantly affected by the specific debt market development and exchange risk of each single country. For the remaining variables the results of this regression are consistent with those presented in the other columns.

VI. Robustness Tests

A. Exclusion of Japanese Multinational Corporations

As shown in Table 1, out of the 4,998 parent companies in our sample, 2,341 (46.8%) are from Japan. To verify that our results are not exclusively driven by Japanese corporations, we replicate the analysis presented in Table 6 excluding parent companies domiciled in Japan. The results are presented in Table 8. All the coefficients of the regression in Table 8 maintain their significance as in Table 6. Overall, the results in Table 8 show that our results are not driven by Japanese corporations.

B. Alternative Proxies

The multivariate analysis presented in Tables 6 and 7 comprises a limited selection of proxies for country legal protection, debt market development, and exchange rate risk. We check the robustness of our results by estimating similar regressions with different proxies.

The level of corruption in a country provides a proxy for the threat of expropriation of investor rights and the integrity of the legal system. Therefore, corruption can be used as an alternative proxy for rule of law (see, for example, Fan, et al. (2003)). When we estimate our regressions substituting the rule of law variable with the corruption index

provided by Transparency International, our results do not change significantly. Another proxy for rule of law and legal enforcement is the legality index created by Berkowitz, Pistor and Richard (2003). This index is derived by the summary statistic from a principal component analysis of five measures of legal enforcement: effectiveness of the judiciary, rule of law, risk of contract repudiation, absence of corruption, and risk of expropriation. Our multivariate results are robust to the substitution of rule of law with the legality index.

In Tables 6 and 7, the ratio of a country's net deposits to GDP proxies for the development of debt markets in different countries. An alternative proxy for debt market development is the ratio of aggregate debt (sum of bank debt of the private sector and outstanding non-financial bonds) to GDP (see for example LLSV (1997)). We re-estimate our regressions with aggregate debt to GDP instead of net deposits to GDP. Our results are robust to this change in the debt market development proxy.

Finally, in our main regressions, we measure exchange rate risk by calculating the ratio of the short-term lending rate in the subsidiary country to the short-term lending rate in the parent country as provided by the World Bank. A possible alternative to this variable is the sovereign yield spread proxied by the country credit rating provided by *Institutional Investor*. Our multivariate results are robust to the substitution of lending rate differential with country credit rating differential.[10]

VII. Conclusions

This paper examines the external debt financing choices of multinational firms by examining the incremental debt decision of companies located in 23 countries spanning ten

[10] Unreported tables containing the results of these regressions are available upon request from the authors.

years (from 1994 to 2003). This study benefits from the broadest international dataset and the most complete set of tax-related variables and institutional controls in the context of the international capital structure literature to date. Our empirical analysis allows us to provide new powerful tests of the ability of multinational firms to arbitrage differences in international tax rates, while controlling for the level of debt market development, legal regimes, and exchange rate risk in their choice of debt location.

Unlike previous studies on international corporate debt decisions (e.g., Desai, et al. (2004) and Huizinga, et al. (2008)), we examine a firm's incremental debt issuance decision. This novel approach in the context of multinational corporate structure decisions links the borrowing decision of the firm with variables measured just prior to the debt issuance, allowing analysis of the effect of time-variation in firm characteristics on the debt location choice. Moreover, this approach provides more power to identify effects that are determined at the margin, such as taxes.

Our results provide strong support for tax-based theories of debt location. Consistent with our predictions, we find that parent companies that operate in favorable (unfavorable) tax environments for corporate debt (measured by the Miller (1977) gains-to-leverage ratio) are less (more) likely to issue through foreign subsidiaries located in countries with tax rates less (more) favorable for corporate debt. We also show that parent companies domiciled in countries that employ dividend imputation or dividend relief are more likely to locate debt through foreign subsidiaries in countries that employ the classical dividend tax system. Moreover, we find that multinational corporations issue larger quantities of debt through subsidiaries located in countries that enforce low

withholding taxes on interest income and high withholding taxes on dividends with the country where the parent company resides.

Our results on the tax effects on international corporate debt location decisions are robust to issue and firm-level characteristics, development of debt markets, exchange rate risk, and differences in legal regimes. Overall our paper presents strong evidence that tax-based incentives have significant influence on the multinational firms' debt location choice in addition to institutional factors such as the development of financial markets, and difference in legal regimes across countries.

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Appendix
Variables Definitions and Sources

Variable	Definition	Source
Aggregate debt/GDP	Ratio of the sum of bank debt of the private sector and outstanding non-financial bonds to GDP.	International Financial Statistics, International Monetary Fund
Asset Tangibility	Fraction of fixed assets calculated as gross plant, property, and equipment divided by total assets	Global Vantage
Capital Gain Tax Rate	Country capital gain tax rate	Price Waterhouse's *Taxes a Worldwide Summary*
Common Law	Indicator variable equal to one if the sub country is a common law country as defined by LLSV(1998) and zero otherwise.	LLSV (1998), Treisman (2000)
Convertible	Indicator variable equal to one when the issue is convertible debt	SDC
Corporate Tax Rate	Country corporate tax rate	Price Waterhouse's *Corporate Taxes a Worldwide Summary* and *Taxes a Worldwide Summary*
Creditor Right	Add one when (1) the country imposes restrictions, such as creditor's consent of minimum dividends to file for reorganization; (2) secured creditors are able to gain possession of their security once the reorganization petition has been approved (no automatic stay); (3) secured creditors are ranked first in the distribution of the proceeds that result fron the disposition of the assets of the bankrupt firm; (4) the debtor does not retain the administration of its property pending the resolution of the reorganization. This index ranges from zero to four.	LLSV (1997)
Deposits / GDP	Ratio of the country's deposits to GDP.	International Financial Statistics, International Monetary Fund
Dividend Imputation System	An indicator equal to one if the country adopts the dividend imputation tax system, zero otherwise.	Fan, Titman and Twite (2003)
Dividend Relief System	An indicator equal to one if the country adopts the dividend relief tax system, zero otherwise.	Fan, Titman and Twite (2003)
Dividend Withholding Tax Rate	Dividend withholding tax rate between the subsidiary country and the parent country. Whenever available, we use the maximum withholding rate specified by the treaty in the country in which the non-resident subsidiary operates. If no treaty exists, we use the maximum withholding rate for non-treaty countries.	Price Waterhouse's *Corporate Taxes a Worldwide Summary* and *Taxes a Worldwide Summary*
Effective Tax Rate	Corporate taxes paid divided by taxable income	Global Vantage
Income Tax Rate	Country personal income tax rate	Price Waterhouse's *Taxes a Worldwide Summary*

Interest Withholding Tax Rate	Interest withholding tax rate between the subsidiary country and the parent country. Whenever available, we use the maximum withholding rate specified by the treaty in the country in which the non-resident subsidiary operates. If no treaty exists, we use the maximum withholding rate for non-treaty countries.	Price Waterhouse's *Corporate Taxes a Worldwide Summary* and *Taxes a Worldwide Summary*
Leverage	Total debt divided by total assets	Global Vantage
Loan	Indicator variable equal to one when the issue is a bank loan	SDC
Log Assets	Natural logarithm of *Assets*	Global Vantage
Log Maturity	Natural logarithm of debt maturity expressed in years. For firms that issue multiple contracts in a single year, we calculate a duration weighted maturity using the individual debt proceeds amounts as the weights.	SDC
Log Principal	Natural logarithm of the debt issue dollar amount. For firms that issue multiple contracts in a single year, we aggregate the proceeds amount across similar contracts.	SDC
Miller Gains-to-Leverage	Miller (1977) gains-to-leverage formula. The Miller (1977) gains-to-leverage formula is: 1-((1- Tc)(1-Te)/(1-Ti)) where Tc is the corporate tax rate, Te is the tax rate on capital gains, and Ti is the tax rate on interest income.	Price Waterhouse's *Corporate Taxes a Worldwide Summary* and *Taxes a Worldwide Summary*
Relative Common Law	Indicator variable equal to one if the subsidiary country is a common law country and the parent country is not a common law country, zero if either or neither countries are common law countries, and minus one of the subsidiary country is not a common law country and the parent country is a common law country.	LLSV (1998), Treisman (2000)
Relative Creditor Rights	Indicator variable equal to one if the subsidiary country has more creditor rights than the parent country, equal to zero if both countries have the same number of creditor rights, and equal to minus one if the subsidiary country has less creditor rights than the parent country.	LLSV (1997)
Relative Deposits / GDP	Ratio of the subsidiary country's deposits to GDP divided by the ratio of the parent country's deposits to GDP.	International Financial Statistics, International Monetary Fund
Relative Dividend Imputation	An indicator equal to one if the subsidiary country adopts the dividend imputation tax system and the parent country does not, equal to zero if either or neither countries adopt the dividend imputation tax system, and equal to minus one if the subsidiary country does not adopt the dividend imputation tax system but the parent country does.	Fan, Titman and Twite (2003)
Relative Dividend Relief	An indicator equal to one if the subsidiary country adopts the dividend imputation tax system and the parent country does not, equal to zero if either or neither countries adopt the dividend imputation tax system, and equal to minus one if the subisidiary country does not adopt the dividend imputation tax system but the parent country does.	Fan, Titman and Twite (2003)
Relative Miller Gains	Difference between the Miller (1977) gains-to-leverage formula for the subsidiary country and for the parent country. The Miller (1977) gains-to-leverage formula is: 1-((1- Tc)(1-Te)/(1-Ti)) where Tc is the corporate tax rate, Te is the tax rate on capital gains, and Ti is the tax rate on interest income.	Price Waterhouse's *Corporate Taxes a Worldwide Summary* and *Taxes a Worldwide Summary*

Relative Rule of Law	Indicator variable equal to one if the subsidiary country has a higher rule of law score than the parent country, zero if both countries have the same rule of law score, and minus one if the subsidiary country has a lower rule of law score than the parent country.	International Country Risk Guide
Relative Short Term Interest	Ratio of the short-term lending rate in the subsidiary country to the short-term lending rate in the parent country.	World Development Indicators, World Bank
ROA	EBITDA divided by total assets	Global Vantage
ROA St. Dev.	Standard deviation of EBITDA divided by total assets for the previous 10 years (or for all available years if fewer than 10)	Global Vantage
Rule of Law	Assessment of the law and order tradition in the country. Average of the months of April and October of the monthly index between 1982 and 1995. Scale from 0 to 10, with lower scores for less tradition for law and order.	International Country Risk Guide
Short-Term Interest Rate	Country short-term lending rate.	World Development Indicators, World Bank
Total Assets	Total assets of the firm expressed in millions of dollars calculated at the end of the fiscal year preceding the debt issue.	Global Vantage

Table 1
Descriptive Statistics by Parent Country and Issuing Entity

This table provides information on the number of issues and number of issuers (in parenthesis) by country of origin of the parent company and by issuing entity (e.g. parent versus domestic and foreign subsidiary issues).

	All Issuers		Headquarters		Domestic Subsidiary		Foreign Subsidiary	
Japan	3384	(1023)	2341	(959)	404	(137)	639	(77)
United Kingdom	743	(264)	486	(225)	158	(71)	99	(42)
South Korea	594	(81)	341	(71)	197	(30)	56	(15)
Canada	530	(177)	358	(162)	123	(32)	49	(23)
Germany	410	(62)	85	(47)	72	(19)	253	(30)
France	357	(95)	203	(84)	108	(22)	46	(20)
Taiwan	335	(77)	201	(75)	101	(22)	33	(15)
Australia	222	(83)	129	(64)	59	(26)	34	(16)
Hong Kong	222	(86)	82	(49)	101	(45)	39	(12)
Switzerland	190	(45)	66	(34)	22	(11)	102	(20)
Spain	157	(34)	49	(26)	35	(13)	73	(10)
India	149	(41)	94	(37)	48	(9)	7	(4)
Thailand	149	(51)	111	(47)	37	(15)	1	(1)
Mexico	143	(35)	90	(31)	49	(14)	4	(2)
Netherlands	134	(43)	80	(32)	23	(13)	31	(17)
Singapore	126	(43)	55	(31)	49	(14)	22	(6)
Indonesia	89	(43)	49	(35)	32	(11)	8	(6)
Brazil	87	(28)	53	(25)	31	(13)	3	(2)
Malaysia	81	(51)	45	(33)	28	(16)	8	(7)
Sweden	71	(16)	25	(12)	30	(8)	16	(4)
Norway	45	(23)	24	(17)	12	(9)	9	(3)
Italy	41	(19)	15	(14)	11	(6)	15	(4)
Finland	28	(17)	16	(12)	11	(5)	1	(1)
Total	8287	(2437)	4998	(2122)	1741	(561)	1548	(338)

Table 2
Descriptive Statistics by Foreign Subsidiary Country

This table provides information on the number of foreign-subsidiary issues and issuers (in parenthesis) by country of the foreign subsidiary.

	Foreign Subsidiary	
	Issues	Issuers
United States	547	(102)
Netherlands	249	(44)
United Kingdom	179	(20)
Australia	57	(16)
Cayman Islands	52	(15)
Singapore	33	(5)
Hong Kong	32	(10)
Canada	29	(6)
Luxembourg	26	(10)
Brazil	22	(3)
Indonesia	21	(5)
China	20	(9)
Belgium	19	(3)
France	18	(6)
Thailand	18	(6)
Chile	18	(7)
Malaysia	16	(4)
Japan	15	(4)
Mexico	12	(3)
Jersey	12	(6)
Bermuda	12	(2)
Germany	11	(3)
South Korea	9	(2)
Spain	9	(8)
Others	112	(39)
Total	1548	(338)

Table 3
Univariate Analysis – Issue Characteristics

This table presents issue characteristics by issuing entity (i.e., parent, domestic subsidiary, or foreign subsidiary). Debt issues are aggregated by issuer, year, type, country, and marketplace. The yield to maturity of loans is calculated by adding monthly LIBOR to the average loan spread to LIBOR. Duration, maturity, coupon, and yield to maturity are a principal-weighted average of the aggregated debt issues. The p-values refer to two-sample t-tests of the mean and Wilcoxon tests of the median between issues by domestic firms (both parents and domestic subsidiaries) and foreign subsidiaries.

		Parent	Dom. Sub.	For. Sub.	p-values
Principal ($M)	Mean	243.7	276.9	366.6	0.045
	Median	96	118	112	0.092
	N	4995	1741	1548	
Duration	Mean	5.5	5.0	4.6	0.068
	Median	5	4	4	0.088
	N	3077	779	691	
Maturity	Mean	7.5	7.6	10.7	0.039
	Median	5	5	5	0.375
	N	4993	1741	1547	
Coupon (annual %)	Mean	4.1	5.6	4.3	0.766
	Median	3.0	5.1	3.9	0.352
	N	2806	749	673	
Yield to Maturity (%)	Mean	4.2	5.5	4.7	0.382
	Median	3.1	5.0	3.9	0.277
	N	3224	1064	887	

Table 4
Univariate Analysis – Country-Level Tax Variables

This table provides summary statistics for tax-based incentive variables. For each external debt issue, the table reports means and medians. The first column identifies parent-level issues and tabulates the summary statistics using parent country information. The second column parent country information reports parent country information for external debt issued by subsidiaries located in the same country of the parent. The next two columns identify external debt issued by foreign subsidiaries and provide summary statistics using both country-level information from either the parent or foreign subsidiary. The p-values refer to two-sample t-tests of the mean and Wilcoxon tests of the median of country-level information between the parent and foreign subsidiary countries for external debt issued by foreign subsidiaries. All variables are defined in the Appendix.

		Parent	Dom. Sub.	For. Sub. Parent co.	For. Sub. Sub co.	p-values
Corporate Tax Rate	Mean	32.56	30.74	33.45	31.40	0.238
	Median	33.00	30.00	35.00	35.00	0.421
Income Tax Rate	Mean	40.30	38.38	44.03	36.75	0.006
	Median	40.00	40.00	48.09	39.60	0.009
Capital Gain Tax Rate	Mean	21.77	18.08	17.44	17.60	0.634
	Median	20.00	20.00	20.00	20.00	0.749
Miller Gains-to-Leverage	Mean	0.10	0.06	0.00	0.10	0.000
	Median	0.10	0.07	0.07	0.14	0.000
Dividend Imputation System	Mean	0.33	0.42	0.40	0.22	0.004
	Median	0.00	0.00	0.00	0.00	0.068
Dividend Relief System	Mean	0.03	0.04	0.01	0.09	0.104
	Median	0.00	0.00	0.00	0.00	0.243
Dividend Witholding Tax Rate	Mean	na	na	na	11.77	na
	Median	na	na	na	15.00	na
Interest Witholding Tax Rate	Mean	na	na	na	7.60	na
	Median	na	na	na	10.00	na

Table 5
Univariate Analysis – Firm-Level Variables

This table provides mean, median, number of observations, and p-value of two-sample t-tests of the mean and Wilcoxon tests of the median for the firm-level control variables. External debt issues are identified on the basis of the country of the entity that offered the security, i.e., domestic firm (parent or subsidiary), or foreign subsidiary. All firm-level controls are measured using parent-level information available in the year preceding the debt issue. All variables are defined in the Appendix.

		Parent and Dom. Sub.	For. Sub.	p-values
Total Assets	Mean	10797	42884	0.000
	Median	2695	29552	0.000
	N	6263	1417	
Total Sales	Mean	9250	45302	0.000
	Median	2070	26755	0.000
	N	6249	1412	
Leverage	Mean	0.65	0.73	0.078
	Median	0.66	0.76	0.053
	N	6263	1415	
ROA	Mean	0.09	0.09	0.856
	Median	0.09	0.09	0.933
	N	6262	1417	
ROA st dev	Mean	0.06	0.04	0.425
	Median	0.04	0.03	0.569
	N	6262	1417	
Interest Coverage	Mean	7.77	4.72	0.043
	Median	3.22	2.97	0.164
	N	6195	1405	
Asset Tangibility	Mean	0.40	0.31	0.034
	Median	0.37	0.29	0.048
	N	6263	1417	
Market to Book	Mean	7.81	4.20	0.080
	Median	1.52	1.52	0.695
	N	4344	715	
Effective Tax Rate	Mean	0.29	0.20	0.059
	Median	0.33	0.35	0.478
	N	6258	1417	
Asset Maturity	Mean	26.56	10.73	0.027
	Median	12.48	8.32	0.048
	N	4471	1023	

Table 6

Logistic analysis of the corporate debt location choice between parent and foreign subsidiary

This table presents logistic regressions of the corporate debt location choice. The dependent variable is 0 if the debt is issued by either the parent or a domestic subsidiary and 1 if it is issued by a foreign subsidiary. Across each regression model, we control for country and year fixed effects. All variables are defined in the Appendix. P-values are reported in parenthesis. Statistically significant coefficients, at a minimum 10% confidence level, are reported in bold.

	(1)	(2)	(3)
Intercept	**-2.35**	**-10.56**	**-28.17**
	(0.000)	(0.000)	(0.000)
Log Assets		**0.66**	**0.56**
		(0.000)	(0.000)
Leverage		0.21	0.58
		(0.405)	(0.340)
ROA		**1.70**	**2.16**
		(0.042)	(0.037)
ROA St. Dev.		0.06	-0.02
		(0.697)	(0.982)
Asset Tangibility		**-2.15**	**-1.98**
		(0.000)	(0.000)
Effective Tax Rate		-0.01	-0.01
		(0.467)	(0.415)
Log Principal		**-0.38**	**-0.43**
		(0.000)	(0.000)
Log Maturity		0.02	0.12
		(0.785)	(0.274)
Convertible		**-0.40**	**-0.84**
		(0.032)	(0.063)
Loan		**0.66**	**0.90**
		(0.055)	(0.000)
Relative Miller Gains	**5.06**	**2.22**	**1.87**
	(0.000)	(0.002)	(0.010)
Relative Dividend Imputation	**-1.62**	**-5.75**	**-7.84**
	(0.000)	(0.000)	(0.000)
Relative Dividend Relief	**-3.42**	**-1.13**	**-1.60**
	(0.000)	(0.049)	(0.038)
Relative Common Law			**4.28**
			(0.000)
Relative Rule of Law			**7.71**
			(0.000)
Relative Deposits / GDP			**3.12**
			(0.000)
Relative Short Term Interest			**10.83**
			(0.000)
N	8245	7134	6914
Pseudo R^2	0.19	0.34	0.51

Table 7
Tobit analysis of the amount of corporate debt issued in different foreign subsidiary countries.

This table presents a Tobit regression of the amount of corporate debt issued in different foreign subsidiary countries. The dependent variable is the ratio of the amount of debt issued by a foreign subsidiary located in a specific country to the total amount of debt issued by the corporation in a fiscal year. Since companies issue debt only in a limited set of foreign countries, the dependent variable of the regression is left-censored at zero. Across each regression model, we control for country and year fixed effects. All variables are defined in the Appendix. P-values are reported in parenthesis. Statistically significant coefficients, at a minimum 10% confidence level, are reported in bold.

	(1)	(2)	(3)
Intercept	**-4.26**	**-8.30**	**-9.08**
	(0.000)	(0.000)	(0.000)
Log Assets		**0.36**	**0.35**
		(0.000)	(0.000)
Leverage		0.22	0.17
		(0.268)	(0.362)
ROA		0.37	0.20
		(0.150)	(0.638)
ROA St. Dev.		0.14	0.13
		(0.286)	(0.573)
Asset Tangibility		**-1.02**	**-0.99**
		(0.000)	(0.000)
Effective Tax Rate		-0.01	-0.01
		(0.355)	(0.300)
Relative Miller Gains	**0.70**	**0.44**	**0.23**
	(0.000)	(0.000)	(0.029)
Relative Dividend Imputation	**-0.15**	**-0.65**	**-0.91**
	(0.002)	(0.000)	(0.000)
Relative Dividend Relief	**-0.64**	**-1.23**	**-1.16**
	(0.000)	(0.000)	(0.000)
Dividend Withholding	0.00	**0.01**	**0.01**
	(0.402)	(0.055)	(0.018)
Interest Withholding	**-0.03**	**-0.02**	**-0.02**
	(0.000)	(0.000)	(0.000)
Relative Common Law			0.11
			(0.120)
Relative Rule of Law			**2.62**
			(0.000)
Relative Deposits / GDP			-0.52
			(0.120)
Relative Short Term Interest			0.00
			(0.800)
N (uncensored)	535	530	522
Log-Likelihood	-2731.81	-5458.1	-2618.03

Table 8
Robustness Check - Logistic analysis of the corporate debt location choice excluding parent companies headquartered in Japan

This table presents a logistic regression of the corporate debt location choice. The dependent variable is 0 if the debt is issued by either the parent or a domestic subsidiary and 1 if it is issued by a foreign subsidiary. Across each regression model, we control for country and year fixed effects. All variables are defined in the Appendix. P-values are reported in parenthesis. Statistically significant coefficients, at a minimum 10% confidence level, are reported in bold.

	(1)	(2)	(3)
Intercept	**-2.62**	**-13.65**	**-24.22**
	(0.000)	(0.000)	(0.000)
Log Assets		**0.51**	**0.55**
		(0.000)	(0.000)
Leverage		0.22	0.48
		(0.674)	(0.427)
ROA		**2.01**	**2.10**
		(0.040)	(0.041)
ROA St. Dev.		0.10	0.03
		(0.857)	(0.961)
Asset Tangibility		**-1.54**	**-1.77**
		(0.000)	(0.000)
Effective Tax Rate		-0.01	-0.01
		(0.478)	(0.514)
Log Principal		**-0.29**	**-0.43**
		(0.000)	(0.000)
Log Maturity		0.11	0.18
		(0.245)	(0.118)
Convertible		-0.43	**-0.76**
		(0216)	(0.075)
Loan		**0.56**	**1.00**
		(0.000)	(0.000)
Relative Miller Gains	**4.69**	**3.27**	**1.57**
	(0.000)	(0.000)	(0.015)
Relative Dividend Imputation	**-4.56**	**-7.78**	**-7.14**
	(0.000)	(0.000)	(0.000)
Relative Dividend Relief	**-1.39**	**-1.20**	**-1.29**
	(0.000)	(0.066)	(0.071)
Relative Common Law			**3.20**
			(0.000)
Relative Rule of Law			**7.29**
			(0.000)
Relative Deposits / GDP			**2.57**
			(0.000)
Relative Short Term Interest			**7.98**
			(0.000)
N	4862	4209	3694
Pseudo R^2	0.338	0.276	0.434