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VÍCTOR M. GONZÁLEZ MÉNDEZ

FUNDACIÓN DE LAS CAJAS DE AHORROS
DOCUMENTO DE TRABAJO
Nº 716//2013

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ISSN: 1988-8767

La serie **DOCUMENTOS DE TRABAJO** incluye avances y resultados de investigaciones dentro de los programas de la Fundación de las Cajas de Ahorros.
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FIRM AND COUNTRY DETERMINANTS OF DEBT MATURITY. INTERNATIONAL EVIDENCE*

Víctor M. González Méndez†
Universidad de Oviedo

Abstract

This paper analyzes the effect of firm- and country-level determinants on debt maturity structure and how this effect varies across countries. Results for 39 countries indicate that firm-level variables such as asset maturity, size, firm quality and leverage affect debt maturity structure. While the efficiency of the legal system and the bank concentration show a positive relationship with debt maturity, the degree of investor protection and the weight of banks in the economy have a negative effect on firm debt maturity. However, these firm- and country-level determinants vary according to firm size, institutional and legal environment, and banking structure of the country. The higher the level of legal efficiency, the higher the fulfillment of the agency cost and signaling hypotheses and the lower the validity of the matching hypothesis.

JEL classification: G18, G32.

Keywords: debt maturity, firm-level determinants, legal system, banking structure.

* Financial support from the Ministry of Economy and Competitiveness, Project ECO2012-31772 is gratefully acknowledge.
† Departamento de Administración de Empresas. Facultad de Economía y Empresa. Universidad de Oviedo. Avda. Del Cristo s/n. 33071 Oviedo. Spain. Tel.: + 34 985102826; fax: + 34 985103708; E-mail: vmendez@uniovi.es

I. Introduction

Studies on firm capital structure have recently focused on the influences of institutional and legal features on the amount of debt financing. The literature on firms' capital structure has analyzed the influence of investor protection and institutions and has revealed that institutional factors play an important role in the choice of capital structure. Empirical studies show, for instance, that better protection of creditors increases the availability of debt by reducing adverse selection and moral hazard problems of debt (Levine, 1999; Giannetti, 2003; Antoniou *et al.*, 2008; Bae and Goyal, 2009), while stronger protection of property rights favors increased use of equity over debt (González and González, 2008).

Previous studies allow us to highlight the existence of differences in debt maturity among countries. For example, Barclay and Smith (1995) report a percentage of total long-term debt of around 70% for their sample of US listed firms for the period 1974-1992, while Antoniou *et al.* (2006) show that the maturity of debt –the long-term debt ratio– of French, German and UK listed firms is around 59%, 53% and 46%, respectively. Major differences have also been shown between developed and developing countries. Demirgüç-Kunt and Maksimovic (1999) reveal that firms in developing countries use less long-term debt as a proportion of total debt and that this difference cannot be explained by the maturity of assets.

Despite these differences in debt maturity among countries, the financial literature has focused less on the institutional determinants of debt maturity and the differences of firm-specific determinants among countries. Only Demirgüç-Kunt and Maksimovic (1999) directly examine how the differences in financial and legal institutions affect the use of debt and especially the choice of debt maturity by firms in a sample of 30 countries in the period 1980-1991. Their paper highlights the relevance of the efficiency of the legal system, the level of activity of the stock market, and the size of the banking sector as determinants of debt maturity, revealing the existence of differences in the influence of these aspects according to firm size. More recently, Antoniou *et al.* (2006) analyze the determinants of the debt maturity structure of French, German and UK firms,

finding that the impact of firm-specific factors on debt maturity is country dependent. However, the latter paper does not include explicitly legal and institutional variables, since only three countries are considered. Finally, Hernández-Cánovas and Koëter-Kant (2008) examine the influence of relationship lending on bank debt maturity for a sample of SMEs from 19 European countries, revealing that stronger firm-bank relationships lengthen the maturity of bank loans.

Within this context, the present paper examines how bank concentration, size of the banking sector and legal institutions affect the choice of debt maturity made by firms and how the firm-level explanations of debt maturity vary in a sample of 39 countries in the period 1995-2004. Our paper makes several main contributions to the literature. First, we analyze the firm-level determinants of debt maturity and how observed differences in the institutional and legal environments and in the banking structures across countries affect the debt maturity choice of firms in an international context. Although the influence of legal and institutional environments has been analyzed by Demirgüç-Kunt and Maksimovic (1999), their paper relies on cross-sectional analysis across countries, taking the time-series country means of each variable as observations. We exploit the variation over time of the firm and country variables, but also consider other aspect such as bank concentration. Second, we consider how results vary according to firm size, as reported evidence has highlighted the relevance of this variable. For instance, Giannetti (2003) has shown that the effect of institutional variables on the use of debt depends on firm size for a sample of listed and unlisted companies in eight European countries. Demirgüç-Kunt and Maksimovic (1999) and the present paper find systematic differences in the use of long-term debt between small and large firms. Third, we provide evidence about how the influence on debt maturity of bank concentration, size of the banking system and legal and institutional features varies according to the legal origin, financial development and economic development of the country. Fourth, we study the complementary or substitutive role of legal enforcement and bank concentration and the size of the banking system. Finally, we also provide evidence about how the determinants

of corporate debt maturity vary according to legal, institutional and banking structure variables.

Our results indicate that the matching, signaling and agency cost hypotheses explain the debt maturity structure of firms. As regards country determinants, legal enforcement, protection of investors' rights, bank concentration and size of the banking system influence firm debt maturity. Legal enforcement and, to a slight extent, bank concentration lengthen the maturity of firm debt, while the protection of property rights, creditor rights and the size of the banking system favor the use of short-term debt. These results vary with firm size. There are also important differences in the influence of institutional and legal variables on firm debt maturity depending on the legal origin and financial structure of the country. Moreover, the firm-level determinants vary according to bank concentration, size of the banking sector and legal enforcement.

The rest of the paper is organized as follows. Section II discusses the influence of legal and institutional environment and the structure of the banking system on firm debt maturity as well as the hypotheses tested in the paper. Section III describes the database, methodology, and main variables used in the study. Section IV discusses the empirical results. Finally, Section V provides the conclusions drawn.

II. Theoretical background and hypotheses

Access to external financing will depend partly on the legal and institutional features of the country, seeing as these provide the mechanisms for monitoring and enforcing financial contracts. However, the papers by Rajan and Zingales (1995) and Booth *et al.* (2001) suggest that institutional differences are unimportant in explaining firm capital structure in both developed and developing countries. Both papers show that factors identified as being cross-sectionally correlated with firm leverage in the United States are similarly correlated in other developed and developing countries as well. These studies do not use explicit institutional variables in their estimations.

However, empirical papers including legal and institutional variables in the analysis provide clear evidence about the relevance of these country variables

on the use of debt. Giannetti (2003) explicitly introduces creditor right protection in the analysis of a sample of listed and unlisted companies in eight European countries. Her results suggest that the relevance of institutional variables depends on firm size. The corporate finance decisions of larger listed companies are less subject to institutional constraints in the domestic market due to the fact that they have easier access to international financial markets. However, institutional constraints in domestic markets have a greater impact on the corporate finance decisions of unlisted companies. For these companies, stronger creditor protection makes loans for investing in intangible assets more available and guarantees access to long-term debt for firms in sectors with highly volatile returns. Fan *et al.* (2006) find that institutional factors are critical determinants of firm capital structure in a cross-section of 39 developed and developing countries. A country's legal and tax system, level of corruption, and the availability of information intermediaries explain a significant portion of the cross-country variation in leverage. Firms in common law countries, for example, have less leverage and use more long-term debt. Bae and Goyal (2004) and Qian and Strahan (2007) show the relevance of institutional conditions for terms of bank loans. The former find lenders charge lower spreads on loans in countries with stronger property rights protection, while the latter find that stronger creditor rights enhance loan availability. Finally, González and González (2008) show that stronger protection of property rights reduces the use of debt and that bank concentration favors access to debt.

In summary, we know that legal and institutional environment influence firms' use of debt. We know less, however, about the effect of legal and institutional features on debt maturity, although there are important differences in debt maturity among countries.

Debt maturity may influence the possibility for firms to defraud creditors. Shorter maturities reduce the period in which an opportunistic firm can exploit its creditors without being in default (Diamond, 1991, 1993; Rajan, 1992). In countries in which the legal system does not provide proper protection or it is costly to use, firms will employ short-term debt more than long-term debt. In this context, a positive relationship can be expected between the efficiency of a legal system and the percentage of long-term debt. This relationship has

already been analyzed by Demirgüç-Kunt and Maksimovic (1999). They show that long-term debt is clearly higher in countries with an effective legal system and, consequently, that there is a positive relationship between the quality of legal institutions and firm debt maturity, particularly in the case of large firms.

Banking structure may influence corporate debt maturity. Petersen and Rajan (1994, 1995) highlight the role of bank concentration on the value of lending relationships. Bank concentration may increase the incentives of banks to invest in the acquisition of soft information by establishing close relationships with borrowers over time. This will lead to higher availability of credit, thus reducing corporate financial constraints (Boot, 2000; Dell'Aricia and Marquez, 2004; González and González, 2008). This effect is in line with the fact that relationship banking serves to mitigate information asymmetries between creditors and debtors. Since information asymmetries are greater in long-term debt, we expect bank concentration to have a positive relationship with corporate debt maturity. This expected relationship is consistent with evidence provided by Hernández-Canovas and Koeter-Kant (2008) which reveals that stronger firm-bank relationships lengthen the maturity of bank loans.

Financial intermediaries have advantages in collecting information (Diamond, 1984) and incentives to use this information to discipline borrowers due to the fact that they do not suffer free-rider problems. Thus, the weight of banks in the economy can be expected to facilitate the access of firms to external finance, mainly for smaller firms. Short-term debt allows banks to use their particular advantages in monitoring borrowers. In this respect, a negative relationship can be expected between the weight of banks in the economy and corporate firm debt maturity.

Several papers have shown that the protection of shareholder and creditor rights has a significant influence on the amount of debt (Giannetti, 2003; González and González, 2008) and the cost of debt (Bae and Goyal, 2004; Qian and Strahan, 2007). However, the implications of the protection of investor rights for debt maturity are less clear. For this reason, we consider both variables in the analysis, but we treat the question as an empirical issue.

III. Databases and variables

Our source for firm data is the Worldscope database, which contains financial statement data and stock prices from many countries in comparable form. We initially selected the 49 countries considered by La Porta *et al.* (1998) over the period 1995-2004, but eliminated 10 of them because of lack of data: Colombia, Ecuador, Egypt, Jordan, Kenya, Nigeria, Sri Lanka, Uruguay, Venezuela, and Zimbabwe. The number of countries finally considered is therefore 39, including both developed and developing countries. We excluded financial firms (SIC codes 6000 – 6999).

The model of corporate debt maturity structure includes both firm- and country-level variables. For each country, the firm-specific variables are constructed by taking equally weighted averages of the firm values. The dependent variable is debt maturity (DEBTMAT), defined as the percentage of the firm's total debt that has a maturity of more than one year. The observed differences in debt maturities among countries depend partly on the characteristics of firms in each economy. Thus, we control for the differences in the sample in firm characteristics among countries. To do so, we introduce firm-level variables that are suggested by theory and which have been used in previous studies analyzing firm debt maturity (Myers, 1977; Barnea *et al.*, 1980; Flannery, 1986; Barclay and Smith, 1995; Stohs and Mauer, 1996; Guedes and Opler, 1996; Ozkan, 2000; and Scherr and Hulburt, 2001).

Firms have an interest in matching their debt maturities to their asset maturities. If the maturity of debt is shorter than that of assets, the firm may not have sufficient cash available to pay its financial obligations when they are due. However, if debt has a longer maturity, debt payments remain due when the cash flows from assets cease. Matching the maturities of assets and debt reduces these risks and hence we expect a positive relationship between the maturity of assets and firm debt maturity such as the one found by Guedes and Opler (1996), Ozkan (2000) and Stohs and Mauer (1996). As a measure of the maturity of assets, we have considered the ratio between net fixed assets and total assets (ASSET_MAT).

The agency costs of debt may influence corporate debt maturity bearing in mind that outstanding debt may create incentive problems for shareholders, i.e., underinvestment problems. Myers (1977) argues that a firm may control this underinvestment incentive by shortening the effective maturity of its debt so that debt matures before growth options are exercised. This explanation of debt maturity based on agency costs suggests that firms whose value depends to a large extent on investment opportunities have an incentive to borrow short-term. Several papers have provided favorable evidence for this relationship, such as Barclay and Smith (1995), Guedes and Opler (1996) and Ozkan (2000). The variable used as a proxy for the firm's investment opportunity set is the annual growth rate in GDP (GROWTH). This variable has been also used by Demirgüç-Kunt and Maksimovic (1999) as a measure of corporate growth opportunities.

Agency problems between shareholders and debtholders may be particularly severe for small firms as a consequence of underinvestment incentives and risk shifting (Smith and Warner, 1979). Barnea *et al.* (1980) suggest that these problems may be reduced by issuing shorter-term debt. These arguments thus suggest that debt maturity varies directly with firm size. Barclay and Smith (1995), Stohs and Mauer (1996) and Ozkan (2000) provide results in line with a positive relationship between size and debt maturity. We have measured firm size as the natural logarithm of sales (SIZE).

The signaling hypothesis implies that a firm's choice of debt maturity structure can signal insider information about firm quality when insiders are better informed than outside investors (Flannery, 1986). In this context, high-quality firms signal their quality by issuing short-term debt. Following Antoniou *et al.* (2006), we use the ratio of net income plus depreciation to net debt as a proxy for firm quality (FIRM_QUALITY).

Kane *et al.* (1985) develop a model in which the optimal debt maturity structure involves a trade-off between bankruptcy and debt issue flotation costs and the per-period tax advantage of debt financing. In this context, the maturity of debt should rise if the volatility of firm value decreases. The firm's level of volatility is proxied by the absolute value of change in earnings before interest and taxes (VOL_EBIT).

Diamond (1991) shows that liquidity risk increases with leverage and, consequently, that highly leveraged firms may be expected to use more long-term debt. This positive relationship between leverage and debt maturity has been found by Stohs and Mauer (1996) and Scherr and Hulburt (2001). However, Barclay *et al*. (2003) argue that the relationship between leverage and maturity should be negative due to the fact that leverage and maturity are substitutes in mitigating under- and over-investment problems. The opposing arguments and mixed empirical evidence mean that the influence leverage has on debt maturity is basically an empirical question. Leverage has been proxied in this paper as the ratio between total debt and firm market value. Market value of assets is defined as total assets minus the book value of equity plus the market value of equity.

Table 1 provides descriptive statistics of the firm-level variables used in this paper. Panel A describes all the firms included in the sample. For each country and year, we compute a mean value of the firm-specific variables, which is obtained by taking equally weighted averages of the firm values of these variables. Panels B and C present the descriptive statistics according to size. For each country, we split our total sample into quartiles according to the amount of total assets. We define "large firms" as those in the largest quartile in their country and "small firms" as those belonging to the smallest quartile. As in Panel A, the firm-specific variables are constructed by taking equally weighted averages of the values for each year for the subsamples of large and small firms separately. The mean (median) debt maturity of the sample is 47.07 (45.35) percent. Large firms present higher average maturity of debt (59.84 percent) than small firms (36.11 percent). Large firms also show higher maturity of assets and leverage than small firms. However, small firms have higher firm quality and a higher median value of volatility of earnings. Panels D to I provide the descriptive statistics of firm-specific variables for countries according to the legal origin of the country, the structure of the financial system and the level of legal enforcement of the economy. The high and low level groups of RULE_OF_LAW are created by splitting the sample according to the median value of this variable. In line with the expected relationship, countries with a more efficient legal system are seen to have more long-term debt.

TABLE 1

As for the country-level variables, we have used the rule of law component from the Worldwide Governance Indicators (WGI) compiled by Kaufmann *et al.* (2009) to proxy the efficiency of a country's legal system. Rule of law is one of the six dimensions of the WGI and captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence (RULE_OF_LAW). The index ranges from -2.5 to 2.5, low levels of the index denoting less efficiency in the legal system. We have used this measure and not the index prepared by the International Country Risk Guide, which was the proxy used by Demirgüç-Kunt and Maksimovic (1999), because we have annual data on RULE_OF_LAW during the period of our study and it allows us to exploit the variation over time of the variable. Figures 1 and 2 allow us to compare the differences in the classification of countries according to these two measures. It can be seen that both indexes classify the countries under study quite similarly. Countries such as Indonesia, Pakistan, Philippines, Peru and Turkey present lower levels of legal enforcement according to both indexes, whereas the countries with higher levels of legal efficiency in both indicators are Switzerland, Sweden, New Zealand, Finland, Denmark and Norway. Moreover, the correlation between these two indexes is high, presenting a value of 0.9241, using the year 1996 for our proxy of the efficiency of the legal system.

FIGURES 1 AND 2

We use the index developed in Djankov *et al.* (2007) to measure the legal rights of creditors against defaulting debtors (C_RIGHTS). This index follows the creditor rights index proposed by La Porta *et al.* (1998), although in the former case the creditor rights index is constructed in January each year. It measures four powers of secured lenders in bankruptcy: (1) whether there are restrictions, such as creditor consent, when a debtor files for reorganization; (2) whether secured creditors are able to seize their collateral after the petition for reorganization is approved, i.e., whether there is no automatic stay or asset freeze imposed by the court; (3) whether secured creditors are paid first out of

the proceeds of liquidating a bankrupt firm; and (4) whether an administrator, and not management, is responsible for running the business during the reorganization. A value of one is added to the index when a country's laws and regulations provide each one of these powers to secured lenders. It consequently varies between 0 and 4, with higher values indicating stronger creditor rights or stronger protection against borrower expropriation.

We measure the protection of property rights by means of the index of private property rights (S_RIGHTS) published by the Heritage Foundation. This is an annual index of the degree to which private property rights are protected and the degree to which the government enforces laws that protect private property. It also accounts for the possibility that private property may be expropriated, as well as analyzing the independence of the judiciary, corruption within the judiciary, and the ability of individuals and businesses to enforce contracts. This index ranges between 1 and 5; a high score indicating greater legal protection of property (we reverse the scale of the original index).

We also use two variables proxying the banking structure in the country. First, the weight of banks in the economy, measured as the private credit by deposit money banks to GDP (BANK_CREDIT). The data are obtained from Financial Structure and Economic Database (Beck *et al.*, 2006). Second, we also use a measure of the bank concentration in a country. Following Demirgüç-Kunt *et al.* (2004) and Beck *et al.* (2006), we measure bank concentration as the fraction of bank assets held by the three largest commercial banks in the country (BANK_CONC). Figures are obtained from the World Bank Database, whose main source is Fitch IBCA's Bankscope Database. Table 2 reports the descriptive statistics of institutional and legal variables. Debt maturity varies widely among countries. Greece has the lowest level of long-term debt (26.79 percent), while the US has the highest percentage of long-term debt (71.77 percent). The sample includes countries with different institutional enviroments. For instance, 67 percent of the countries are developed countries, 53 percent of the economies have a market-oriented system, and 36 percent of the countries have a common law legal origin. Appendix A summaries how we define the variables used in the empirical analysis and their sources.

TABLE 2

IV. Results

A. Determinants of firm debt maturity

Table 3 presents OLS regressions explaining firm debt maturity. The coefficients of time dummies are not reported to save space. Column (1) shows the results when only firm-level variables are considered. The relation between asset and debt maturities is positive. This is consistent with the matching hypothesis, according to which firms match assets and liabilities to reduce risk. The effect of size on debt maturity is positive, indicating that large firms have larger debt maturities. This positive relationship is in line with the idea that firms with more agency problems –small firms– may use shorter-term debt in order to reduce underinvestment and risk-shifting problems. FIRM_QUALITY has a negative influence on debt maturity, indicating that high-quality firms tend to issue short-term debt as a mechanism to signal private information, as per the signaling hypothesis (Flannery, 1986). Leverage has a negative relationship with debt maturity in a way that is consistent with leverage and debt maturity being substitutes in mitigating under- and over-investment problems. The GROWTH variable has the expected sign, although the coefficients are not statistically significant. On the one hand, the results provide evidence in line with the matching and signaling hypotheses and only partially with the agency cost hypothesis. On the other, there is no evidence in favor of the tax hypothesis, seeing that the variable VOL_EBIT does not have significant coefficients.

The impacts of the proxies of asset maturity, size, firm quality and financial leverage on firm debt maturity are economically important. Using the coefficient in column (1) in Table 3, a one-standard deviation increase in asset maturity and size would respectively cause an increase in the mean value of the dependent variable of 3.82 percent and 11.74 percent. This represents 14.54 percent and 44.75 percent, respectively, of the standard deviation of debt maturity. On the other hand, a one-standard deviation increase in firm quality and leverage would cause a decrease in the mean value of the dependent variable of 5.58 percent and 10.63 percent, respectively.

Columns (2) to (5) include the institutional and legal variables as well as the banking structure variables. Most of the results for firm-level variables discussed above are maintained, except for the variable proxying the quality of the firm (FIRM_QUALITY). This variable loses its statistical significance in column (2).

TABLE 3

The RULE_OF_LAW variable has a positive and significant influence on debt maturity, indicating that firms in countries with strong legal enforcement have higher maturity of debt. This result is similar to that obtained by Demirgüç-Kunt and Maksimovic (1999) and means that the higher the quality of legal institutions, the greater the proportion of long-term financing. This finding is also consistent with the shorter debt maturity found by Fan *et al.* (2006) in countries with high levels of corruption.

The variables that measure the protection of investors' rights have a negative influence on debt maturity. The level of protection of property rights (S_RIGHTS) has a negative influence on debt maturity, while the coefficient of the C_RIGHTS variable is negative and significant. Bank concentration has a positive effect on firm debt maturity. The maturity of debt increases in countries in which bank concentration is high. In contrast, the weight of banks in the economy is seen to have a negative influence on debt maturity. This result highlights the fact that banks promote the use of short-term debt because it facilitates the monitoring of borrowers. These results are maintained when all the variables are included jointly. The impact of the country-level variables is economically significant. A one-standard deviation increase in RULE_OF_LAW, S_RIGHTS, C_RIGHTS, BANK_CONC and BANK_CREDIT, using the coefficients in column (6), would cause a variation in debt maturity of 24.86 percent, -7.64 percent, -2.77 percent, 2.42 percent and -10.18 percent, respectively.

Some of this evidence has been previously provided by other studies. For example, Demirgüç-Kunt and Maksimovic (1999) showed that the higher the quality of legal institutions, the greater the proportion of long-term debt.

However, Demirgüç-Kunt and Maksimovic (1999) do not find the protection of investor rights to be statistically significant.

B. Determinants of firm debt maturity across firm size

Table 4 presents the results when the firms in the sample are split into large and small firms according to their total assets. Columns (1) to (3) show the results for large firms and columns (4) to (6) for small firms. The results obtained for large and small firms differ substantially. As for the firm-specific variables, there are three important differences. First, the matching hypothesis is not fulfilled for small firms, as the variable ASSET_MAT presents an insignificant coefficient when the institutional and banking structure variables are included in the estimations. Second, the signaling hypothesis applies to large firms, but not in the case of small firms, due to the fact that the FIRM_QUALITY variable is not significant for small firms. Third, leverage and debt maturity have a negative relationship in the case of large firms, though the relationship is positive for small firms.

TABLE 4

There are also differences between large and small firms according to the country-level variables. Legal enforcement and protection of creditor rights have a positive and negative influence, respectively, on debt maturity, as can be seen in the results shown in Table 3. However, the protection of property rights and the variables of banking structure only have a significant influence on the debt maturity of small firms. The sign of the coefficient of S_RIGHTS is negative and significant. In line with the results shown in Table 3 for the total sample, bank concentration has a positive effect and the weight of banks in the economy has a negative influence on the debt maturity of small firms. Banking structure has no influence on the debt maturity of large firms. Firm-specific variables explain the debt maturity of large firms to a greater extent. In the case of small firms, however, country variables seem to have more influence on debt maturity.

C. Determinants of firm debt maturity across countries

We also analyze whether the evidence provided in Table 3 and 4 is homogenous across countries. Tables 5 and 6 analyze how firm-level and country-level determinants vary according to the legal origin and the financial structure of the country and reveal that the results are far from homogenous around the world.

The results when the sample is split into countries with a common law and non-common law legal origin are presented in Table 5 for the total sample and for large and small firms. Columns (1) and (2) show important differences in the coefficients of the variables, especially in the case of the institutional and banking structure variables. We provide evidence in favor of the maturity and signaling hypotheses and partially in favor of the agency cost hypothesis, regardless of the legal origin of the country.

TABLE 5

As far as institutional and legal variables and banking structure variables are concerned, legal enforcement and the weight of banks in the economy have a positive and negative effect, respectively, on debt maturity structure. These influences are the same as those discussed in Table 3. However, the results differ significantly when considering bank concentration and the protection of investor rights. In this respect, a higher bank concentration has a negative influence, while strong protection of creditor rights has a positive effect on corporate debt maturity in countries with a common law origin. These signs are the opposite of those discussed in Table 3 and for countries with a non-common law legal origin. The opposite sign of the coefficient of bank concentration reflects the important differences of banks in common law countries versus countries with another legal origin. The results seem to suggest that bank concentration facilitates the establishing of close relationships with borrowers over time only in countries with a non-common law legal origin. It allows for mitigating the information asymmetries that affect long-term debt to a greater extent. Another difference is that, in countries with a common law origin, the protection of property rights has no influence on firm debt maturity. The percentage of explanation of the model also differs between both groups of countries. For countries with a legal origin different from common law, the

model explains 47.04 percent of the variance of the dependent variable. However, this percentage increases to 81.57 percent in the case of countries with a common law legal origin.

The results also vary significantly when we consider large and small firms (columns (3) to (6)). The comparison between large and small firms was carried out in Table 4; we shall now focus on the comparison according to legal origin. Regardless of the legal origin of the country, the results for large firms (columns (3) and (4)) show clear support for the matching of assets and signaling hypotheses and partial support for the agency cost hypothesis, as also occurred for the total sample.

The main differences are found in the variables proxying banking structure. First, we observe that the higher the banking concentration in the country, the higher the debt maturity for large firms in countries with a non-common law legal origin, while this variable does not have a significant effect on debt maturity in countries with a common law legal origin. Second, BANK_CREDIT negatively influences the debt maturity of large firms in countries with a common law origin. The coefficient of this variable in non-common law countries is not significant. In the case of large firms, the weight of banks in the economy does not favor the use of short-term debt in countries with a legal origin different from common law, as it does in common law countries. The coefficient of the efficiency of the legal system is only significant for large firms in countries with a common law legal origin, although the coefficient has the same sign and is almost significant in countries with another type of legal origin.

As for small firms (columns (5) and (6)), we observe that the matching assets and liabilities hypothesis is also fulfilled for small firms in countries with a non-common law legal origin. The effect of size is only significant in countries with a common law legal origin. There are three important differences for institutional and legal variables and banking structure variables. First, legal enforcement is a non-significant variable for small firms in countries with a common law origin, while it has a positive influence on debt maturity in countries with another type of legal origin. Second, bank concentration has a negative effect on the debt maturity of small firms in countries with a common law origin and a positive

effect in countries with a non-common law legal origin. The effect of bank concentration on debt maturity according to the legal origin of the country is the same as that previously discussed for the total sample. Finally, the protection of creditor rights also has the same influence on debt maturity as in the total sample; i.e., the sign of the coefficient is positive in countries with a common law origin and negative in other countries.

Summing up, the main result brought to light by the estimations in Table 5 is that the effect of institutional and banking structure variables on debt maturity depends on the legal origin of the countries. The weight of banks in the economy tends to have a negative influence on debt maturity, except in the case of large firms in countries with a legal origin different from common law, in which the effect is not significant. Bank concentration has a positive effect in countries with a non-common law legal origin, while the effect is negative for the total sample and small firms in common law countries. Legal enforcement has a positive effect, although this effect is not always significant. On the other hand, the legal origin of the country shows no differences in the determinants of debt maturity at the firm level.

We also divided the sample according to the structure of the financial system into bank- and market-oriented systems. The results of the determinants of the debt maturity structure are shown in Table 6.

TABLE 6

The results for the total sample reveal that in, bank-oriented systems, the asset maturity hypothesis is one of the determinants at the firm level, as was also shown in Table 3. This does not occur, however, in market-oriented systems, in which size, signaling and leverage are important determinants of debt maturity. As far as institutional and banking structure variables are concerned, legal enforcement and the weight of bank credit with respect to GDP respectively have a positive and negative effect on debt maturity, regardless of the orientation of the financial system. However, the other three country-level variables present differences in their coefficients among bank- or market-oriented countries. Bank concentration has a negative and significant coefficient

in market-oriented financial systems, as occurred in common law countries, whereas its effect on debt maturity is not significant in bank-oriented financial systems. The influence of the protection of investor rights is also negative in market-oriented financial systems. In contrast, the protection of creditor rights presents a positive relationship with debt maturity in bank-oriented financial systems. Except for the bank concentration variable, the influences of institutional and banking structure variables on debt maturity in market-oriented financial systems are the same as those found for the total sample in Table 3. For bank-oriented countries, the model explains 38.30 percent of the variance of debt maturity. This percentage reaches a value of 83.94 in the case of countries with a market-oriented financial system.

Analysis of the determinants of firm debt maturity according to the financial structure of the country reveals the different influence that institutional and banking structure variables have on debt maturity for large and small firms, as also occurred in the total sample. Large firms' debt maturity is less dependent on institutional and banking structure variables in countries with bank-oriented financial systems, as only the protection of property rights and, to a slight extent, the protection of creditor rights are significant. In countries with market-oriented financial systems, on the one hand, the efficiency of the legal system has a positive effect, as is to be expected, on debt maturity. On the other hand, bank concentration and the protection of creditor rights present a negative coefficient.

The results for small firms in countries with bank-oriented financial systems are similar to those highlighted for the total sample, with legal enforcement and the protection of creditor rights presenting a positive coefficient and the weight of banks in the economy, a negative coefficient. The effect of institutional and banking structure variables for small firms in countries with market-oriented financial systems present results similar to those obtained for the total sample in these countries, except for the coefficient of bank concentration.

D. Interactions between legal enforcement and banking structure

The following step in this research study was to analyze whether the influences of legal enforcement and banking structure are independent of one another, or whether the effects are complementary or substitutive. We create two new variables as an interaction between the variables RULE_OF_LAW, BANK_CONC and BANK_CREDIT. The BCONC*RULE_OF_LAW variable measures the differential effect of bank concentration when the level of legal enforcement is high. The estimations are presented in Table 7 for the total sample and for the samples of large and small firms. We confirm the results obtained previously for firm-level variables: the matching and the signaling hypotheses are not fulfilled for small firms, and the level of leverage presents a different sign for large and small firms.

As for the signs of the new interaction variables in the total sample (columns (1) to (3)), we can see that both variables, BCONC*RULE_OF_LAW and BCREDIT*RULE_OF_LAW, have a positive and significant coefficient for the total sample. These results reveal that bank concentration and the weight of banks in the economy have a positive differential effect on debt maturity when they exist in countries with efficient legal systems. Moreover, bank concentration has no effect on debt maturity in countries with low levels of legal enforcement. However, the weight of banks in the economy continues to have a negative influence on debt maturity when the efficiency of the legal system is low; this negative effect being partially compensated for by the presence of high levels of legal enforcement. Summing up, legal enforcement and bank concentration do not directly influence debt maturity, while the weight of banks has a negative effect. However, both variables, bank concentration and the weight of banks in the economy, have a positive influence on debt maturity in countries with high levels of legal enforcement. The positive effect of bank concentration and the efficiency of the legal system on debt maturity is only significant when both features take place jointly.

TABLE 7

The results for large firms present two main differences compared to those obtained for the total sample. First, the level of legal enforcement has a positive effect on debt maturity. Second, bank concentration favors short-term debt in

countries with high levels of legal enforcement. The results for small firms are similar to those obtained for the total sample. The only difference is that bank concentration has a negative effect on debt maturity in environments characterized by low levels of legal enforcement.

E. Influence of the efficiency of the legal system and banking structure on the firm-level determinants of firm debt structure

Results in Tables 3 to 7 show that institutional, regulatory and banking structure variables are important determinants of corporate debt maturity. Moreover, their influence depends on firm size and on the institutional environment of the country. Consequently, we now analyze whether traditional explanations of debt maturity vary according to size and country environment. To do so, we interact the efficiency of the legal system and the banking structure variables with the firm-level determinants of debt maturity and carry out the estimations for the total sample and for the subsamples of large and small firms. On the one hand, the coefficient of the firm-level determinants of debt maturity shows the influence of these variables on debt maturity in countries with low legal enforcement, bank concentration or weight of banks in the economy, respectively. On the other hand, the interaction terms RULE_OF_LAW*ASSET_MAT, RULE_OF_LAW*GROWTH, RULE_OF_LAW*SIZE, RULE_OF_LAW*VOL_EBIT, RULE_OF_LAW*FIRM_QUALITY and RULE_OF_LAW*LEV, for instance, capture the differential effect of the variables ASSET_MAT, GROWTH, SIZE, VOL_EBIT, FIRM_QUALITY and LEV for countries with higher levels of legal enforcement. Thus, RULE_OF_LAW*ASSET_MAT in column (1) indicates the difference in the fulfillment of the matching hypothesis according to the efficiency of the legal system. The results can be seen in Table 8.

In countries with low levels of legal efficiency, the firm-level determinants that explain debt maturity are asset maturity, size and leverage. The positive sign of ASSET_MAT is consistent with the validity of the matching hypothesis, seeing as those firms whose assets have higher maturities also have higher debt maturities. The positive coefficient of SIZE is in line with the agency cost hypothesis. Small firms may suffer particularly severe agency problems and

these problems may be reduced by using short-term debt. Finally, the positive relationship between leverage and debt maturity provides evidence in favor of the arguments put forward by Diamond (1991), as liquidity risk increases with leverage and hence highly leveraged firms can be expected to use more long-term debt. As for the institutional and banking structure variables, the coefficients are similar to those shown in column (6) of Table 3.

The variables RULE_OF_LAW*ASSET_MAT, RULE_OF_LAW*GROWTH, RULE_OF_LAW*FIRM_QUALITY and RULE_OF_LAW*LEV have a negative and significant coefficient in countries with high levels of legal enforcement. First, the negative coefficient of RULE_OF_LAW*ASSET_MAT variable shows that the hypothesis of matching assets and liabilities is fulfilled less as the efficiency of the legal system increases. Second, the negative coefficient of the RULE_OF_LAW*GROWTH variable reveals that the agency cost hypothesis has more validity in countries with a highly efficient legal system to the extent that the firms borrowing short-term are those with more investment opportunities. Third, the negative coefficient of the interaction variable between RULE_OF_LAW and firm quality shows that the signaling hypothesis is a determinant of debt maturity only in countries with strong legal enforcement. Finally, the negative effect of RULE_OF_LAW*LEV implies that, in countries with a highly efficient legal system, the role of leverage as a substitute mechanism for debt maturity for under- and over-investment problems prevails over the arguments put forward by Diamond (1991).

Column (2) shows the results when considering the interactions between the bank concentration variable and the firm-level determinants. The interaction variables are not significant; i.e., there are no differences in the determinants of debt maturity according to the degree of bank concentration. The determinants of debt maturity are asset maturity and size, regardless of the concentration of the banking system.

TABLE 8

The results for the interactions between BANK_CREDIT and the firm-level determinants of debt maturity are shown in column (3) for the total sample. In

countries with a low weight of banks in the economy, the determinants of debt maturity are asset maturity, growth, size, and leverage. In particular, the effect of growth has the opposite sign to the expected one. The interaction variables highlight several differential effects in the determinants of debt maturity according to the weight of banks in the economy. First, the coefficients of BCREDIT*GROWTH and BCREDIT*SIZE provide mixed support for the agency cost hypothesis. On the one hand, the sign for the coefficient of BCREDIT*GROWTH is consistent with an incentive to borrow short-term for those firms whose value depends to a large extent on investment opportunities in countries characterized by a high weight of banks in the economy. However, the coefficient of BCREDIT*SIZE is negative and not positive, as would be expected from the agency cost hypothesis. As for the influence of leverage in countries with a high weight of banks in the economy, this is negative, revealing that leverage and debt maturity are substitute mechanisms to avoid or reduce under- and over-investment problems.

An analysis of the determinants of debt maturity for large and small firms according to institutional and banking structure variables are shown in columns (4) to (9). For large firms in countries with weak legal enforcement (column (4)) or low weight of banks in the economy (column (6)), we show that the firm-level determinants of debt maturity are maturity of assets, size and firm quality. When analyzing how these results vary in countries with strong legal enforcement, we observe only one difference, namely that the interaction variable RULE_OF_LAW*LEV has a negative coefficient. On the other hand, we can observe a lesser degree of fulfillment of the hypothesis of matching assets and liabilities in countries with a high weight of banks in the economy. For large firms, we also find that most of the firm-level determinants have an influence only when there is a high concentration of banks. In fact, only the leverage variable has a significant influence on debt maturity when the degree of bank concentration is low. However, asset maturity, size and leverage explain the debt maturity for large firms in countries with a high concentration of banks. Firm-specific determinants only affect debt maturity in the presence of high levels of bank concentration.

Columns (7) to (9) show the results of how firm-level determinants of debt maturity vary according to institutional and banking structure variables in the case of small firms. We can observe that the agency cost hypothesis explains debt maturity better in countries with strong legal enforcement, high bank concentration and a high weight of banks in the economy, as the firms whose value depends on investment opportunities to a major extent have more incentives to borrow short-term. In countries with strong legal enforcement, high bank concentration and a high weight of banks in the economy, we can also see a negative effect of leverage on debt maturity, which reduces the positive influence that leverage has on debt maturity.

V. Conclusions

This paper analyses the effect of firm-level and country-level variables on corporate debt maturity. The results highlight the relevance of the matching, signaling and agency cost hypotheses for a sample of 39 countries. Leverage has a negative and significant effect on debt maturity, providing evidence consistent with debt maturity and leverage acting as substitutive mechanisms in mitigating under- and over-investment problems.

As regards the role of institutional and legal and banking structure variables, the results reveal that the efficiency of the legal system and bank concentration have a positive influence on debt maturity. First, the positive effect of legal quality shows that firms use more short-term debt in countries in which the legal system does not provide proper protection. Second, the positive relationship between bank concentration and debt maturity provides evidence in line with the reduction of information asymmetries as a consequence of relationship banking. On the other hand, the protection of investor rights and the weight of banks in the economy show a negative relation with debt maturity. The weight of banks in the economy incentivizes the use of short-term debt, as it enables banks to use their particular advantages to monitor borrowers. However, these results are not homogenous around the world. We show that aspects such as legal origin and the financial structure of the country affect the results.

Moreover, firm size also affects the role of firm- and country-level determinants of debt maturity. In fact, country-level determinants have less influence on debt maturity in the case of large firms. Only the efficiency of the legal system and the protection of creditor rights are significant for large firms. In contrast, institutional and legal and banking structure determinants have more influence for small firms. Size also implies differences according to the firm-level explanations of debt maturity. The assets and liabilities matching and signaling hypotheses have less validity for small firms. Moreover, financial leverage has an opposite sign in large and small firms. The relationship between leverage and debt maturity is negative for large firms, in line with the idea that both variables act as substitutive mechanisms in mitigating under- and over-investment problems. However, the relationship is negative for small firms, revealing that highly leveraged firms use more long-term debt due to the fact that liquidity risk increases with leverage.

Finally, we also obtain evidence about how the efficiency of the legal system and banking structure influence the firm-specific determinants of debt maturity. A high level of legal efficiency implies higher fulfillment of the agency cost and signaling hypotheses. However, the matching hypothesis has less validity in countries with a high level of legal quality.

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Figure 1. Rule of Law of countries

The figure presents the level of rule of law in the sample countries in 1996. Rule of law is one of the six dimensions of the Worldwide Governance Indicators compiled by Kaufmann *et al.* (2009). Rule of law captures perceptions of the extent to which agents have confidence in and abide by the rules of society and, in particular, the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.

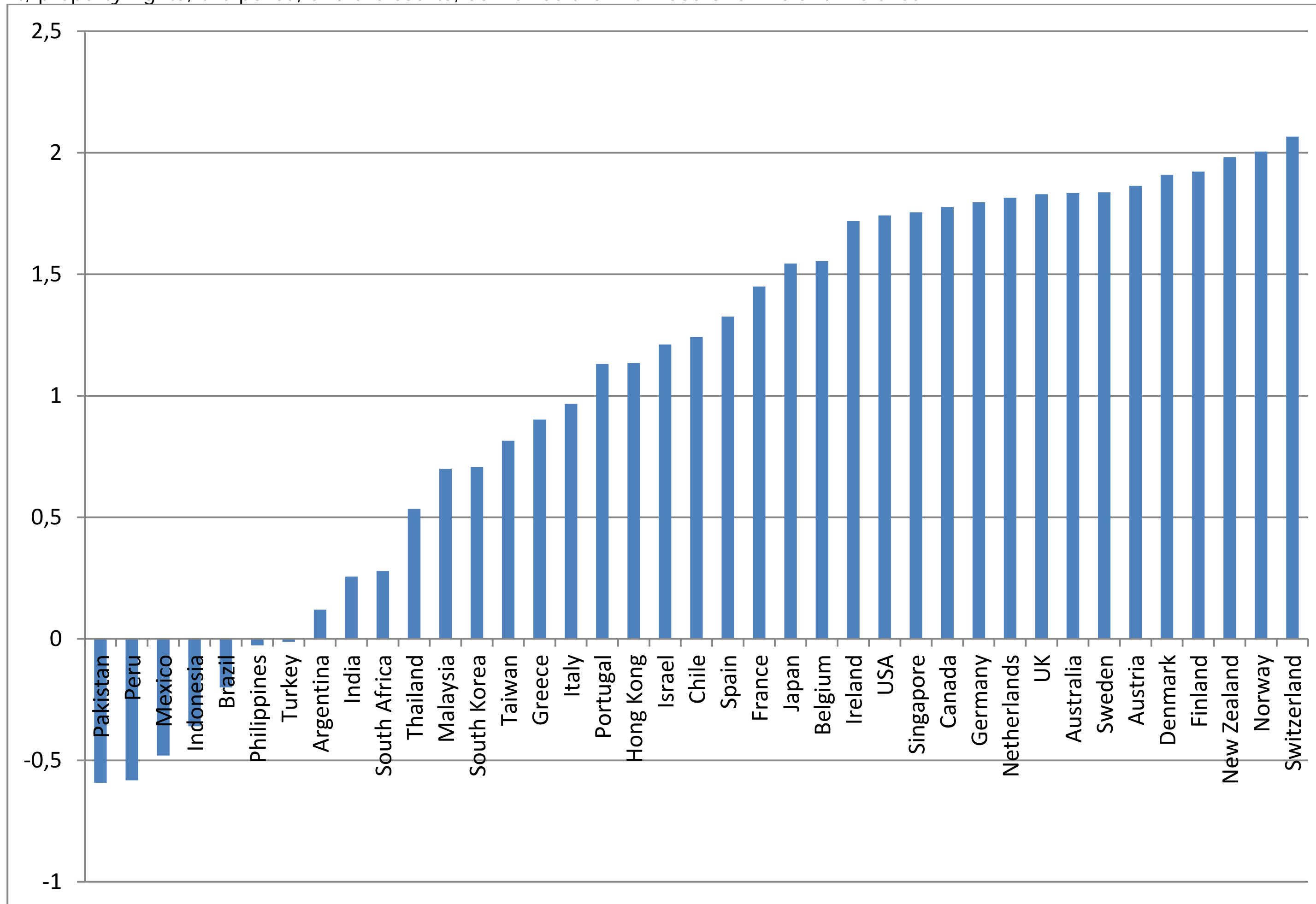

Figure 2. Law and Order of countries

The figure presents the level of law and order in the sample countries. Law and Order is prepared by the International Country Risk Guide ranging between zero and ten, with high values denoting more reliance on the legal system.

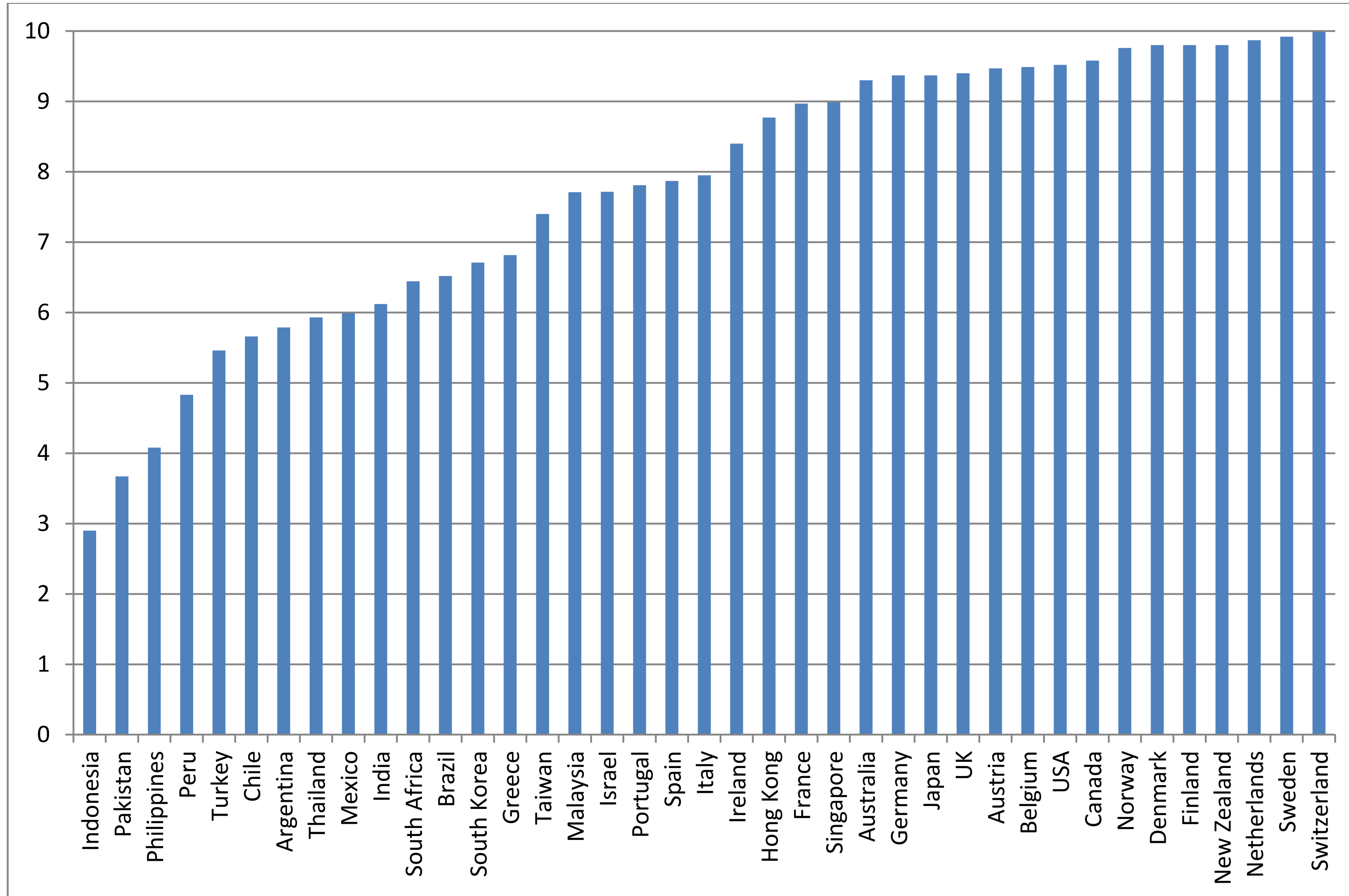

Table 1. Descriptive statistics of firm specific variables

Panels A, B, C, D, E, F, G, H and I report the descriptive statistics of firm-level variables for the total sample, for large firms and small firms, for countries with common law and non-common law legal origin, for bank- and market-oriented financial systems, and for countries with high and low levels of RULE_OF_LAW, respectively. DEBT_MAT is the percentage of the firm's total debt that has a maturity of more than one year. ASSET_MAT is the ratio between net fixed assets and total assets. SIZE is the natural logarithm of sales. VOL_EBIT is the absolute value of change in earnings before interest and taxes. FIRM_QUALITY is the ratio of net income plus depreciation to net debt. LEV is the ratio between total debt and the firm's market value.

	DEBT_MAT (%)	ASSET_MAT (%)	SIZE	VOL_EBIT (%)	FIRM_QUALITY	LEV (%)
Panel A: Total Sample						
Mean	47.07	35.82	4.82	4.97	2.68	32.21
Median	45.35	38.85	4.84	1.45	2.19	30.41
Standard dev	12.35	7.91	0.82	48.72	2.10	10.24
First quartile	37.90	30.44	4.28	0.85	1.25	24.60
Third quartile	56.41	41.89	5.38	2.38	3.68	39.49
N	351	351	351	351	351	351
Panel B: Large firms						
Mean	59.84	39.47	6.78	11.65	1.59	36.76
Median	57.43	38.99	6.87	0.84	0.85	35.65
Standard dev	13.22	9.23	0.99	187.57	2.08	12.02
First quartile	50.27	32.46	5.87	0.54	0.54	28.43
Third quartile	68.77	46.39	7.61	1.58	1.88	43.41
N	350	350	350	350	350	350
Panel C: Small firms						
Mean	36.11	32.59	2.90	2.89	3.27	26.06
Median	34.59	32.68	2.87	1.45	2.11	24.22
Standard dev	16.71	10.15	0.95	6.78	4.43	12.28
First quartile	23.76	26.04	2.47	0.90	0.81	17.58
Third quartile	46.49	38.78	3.56	2.36	4.92	33.13
N	341	341	341	341	341	341
Panel D: Common law legal origin						
Mean	47.80	36.98	4.66	9.70	3.25	29.67
Median	46.82	37.42	4.57	1.71	3.00	28.51
Standard dev	13.79	6.01	0.86	81.15	2.00	9.08
First quartile	34.18	31.58	3.93	1.07	1.71	23.12
Third quartile	58.51	42.18	5.39	2.61	4.47	33.52
N	126	126	126	126	126	126
Panel E: Non-common law legal origin						
Mean	46.66	35.17	4.92	2.32	2.36	33.64
Median	44.89	34.08	4.95	1.31	1.77	32.28
Standard dev	11.47	8.74	0.79	3.82	2.09	10.59
First quartile	39.51	29.39	4.38	0.81	1.10	26.06
Third quartile	53.51	41.44	5.38	15.88	2.97	40.65
N	225	225	225	225	225	225
Panel F: Bank-oriented system						
Mean	47.01	33.37	4.89	1.97	2.45	33.12
Median	45.71	32.19	4.99	1.37	1.97	31.82
Standard dev	11.05	7.71	0.78	2.09	1.82	9.54
First quartile	40.83	28.56	4.39	0.90	1.25	26.11
Third quartile	53.76	38.98	5.37	2.09	3.14	40.55
N	162	162	162	162	162	162
Panel G: Market-oriented system						
Mean	47.70	38.07	4.76	7.71	2.94	31.63
Median	46.48	37.75	4.63	1.52	2.51	29.21
Standard dev	13.45	7.63	0.88	67.97	2.33	10.88
First quartile	36.68	32.40	4.18	0.84	1.21	23.48
Third quartile	57.60	43.54	5.49	2.58	4.01	38.52
N	180	180	180	180	180	180
Panel H: High Rule of Law						
Mean	53.65	32.15	5.09	7.94	2.48	27.69
Median	53.68	32.22	5.09	1.65	2.25	26.67
Standard dev	11.27	6.08	0.77	68.72	1.64	6.87
First quartile	44.93	28.34	4.56	0.98	1.29	23.18
Third quartile	62.58	35.65	5.56	2.72	3.33	31.54
N	176	176	176	176	176	176
Panel I: Low Rule of Law						
Mean	40.45	39.51	4.55	1.98	2.88	36.75
Median	39.80	40.40	4.52	1.29	1.91	35.74
Standard dev	9.55	7.83	0.78	2.68	2.46	11.05
First quartile	33.32	33.11	3.88	0.74	1.15	29.06
Third quartile	46.37	45.63	5.12	2.09	4.30	44.47
N	175	175	175	175	175	175

Table 2. Descriptive statistics of country variables

Table 2 reports the descriptive statistics of country-level variables. DEBT_MAT is the percentage of the firm's total debt that has a maturity of more than one year; RULE OF LAW is one of the six dimensions of the Worldwide Governance Indicators compiled by Kaufmann *et al.* (2009) and it is a measure of the efficiency of the legal system. S_RIGHTS measures the protection of property rights; C_RIGHTS measures creditor rights; BANK_CONC is the fraction of assets held by the three largest commercial banks in each country; BANK_CREDIT is the ratio of private credit by deposit money banks to GDP; GROWTH is the growth rate of the GDP; DEVELOP is a dummy variable that takes the value of one for developed countries, and zero for developing countries; MARKET is a dummy variable that takes the value of one if the financial system of the country is a bank-oriented system, and zero otherwise; LEGAL_ORIGIN is a dummy variable that takes the value of one if the countries has a common law origin, and zero otherwise.

	DEBT_MAT (%)	RULE OF LAW	S_RIGHTS	C_RIGHTS	BANK CONC (%)	BANK CREDIT (%)	GROWTH (%)	DEVELOP	MARKET	LEGAL ORIGIN
Argentina	43.76	-0.29	3.40	1.00	40.94	19.15	0.22	1	0	0
Australia	51.89	1.79	5.00	3.00	63.47	83.04	2.68	1	1	1
Austria	41.89	1.84	5.00	3.00	70.84	98.47	2.15	1	0	0
Belgium	48.72	1.45	5.00	2.00	88.42	75.68	1.99	1	0	0
Brazil	43.96	-0.28	3.00	1.00	43.68	27.81	1.08	0	1	0
Canada	63.01	1.77	5.00	1.00	55.50	64.96	2.35	1	1	1
Chile	47.20	1.17	5.00	2.00	55.21	54.92	3.36	0	1	0
Denmark	53.85	1.87	5.00	3.00	78.31	83.06	1.74	1	1	0
Finland	64.93	1.90	5.00	1.00	98.38	57.18	3.54	1	0	0
France	46.58	1.37	4.00	0.00	55.92	84.49	1.62	1	0	0
Germany	46.85	1.72	5.00	3.00	65.48	111.31	1.20	1	0	0
Greece	26.79	0.77	3.70	1.00	72.02	47.71	3.24	1	0	0
Hong Kong	33.00	1.10	5.00	4.00	69.91	156.63	1.79	1	1	1
India	59.41	0.11	3.00	2.00	36.61	26.04	4.44	0	0	1
Indonesia	39.84	-0.77	2.60	2.30	60.11	33.20	1.76	0	0	0
Ireland	53.37	1.62	5.00	1.00	65.07	91.30	6.08	1	0	1
Israel	45.40	0.98	4.00	3.10	75.25	78.39	1.38	1	0	1
Italy	41.78	0.83	4.00	2.00	40.49	68.36	1.41	1	0	0
Japan	42.63	1.42	4.70	2.00	37.80	110.87	0.87	1	0	0
Malaysia	30.95	0.49	3.60	3.00	46.32	92.88	2.87	0	1	1
Mexico	59.07	-0.43	3.10	0.00	67.65	19.06	1.20	0	1	0
Netherlands	53.96	1.77	5.00	3.00	72.77	126.24	2.21	1	1	0
New Zealand	59.38	1.86	5.00	4.00	78.17	105.10	2.20	1	0	1
Norway	66.97	1.91	5.00	2.00	89.91	65.74	2.52	1	0	0
Pakistan	31.59	-0.75	2.70	1.00	60.09	22.83	1.54	0	0	1
Peru	41.08	-0.62	2.80	0.00	73.25	21.81	1.98	0	1	0
Philippines	35.69	-0.39	3.40	1.00	51.05	37.36	1.87	0	1	0
Portugal	42.13	1.19	4.00	1.00	85.55	111.66	2.39	1	0	0
Singapore	36.35	1.61	5.00	3.00	92.11	101.96	3.28	1	1	1
South Africa	46.13	0.16	3.00	3.00	74.13	66.06	1.08	0	1	1
South Korea	39.33	0.72	4.80	3.00	44.60	69.81	4.23	0	1	0
Spain	45.62	1.29	4.00	2.00	56.48	89.45	2.75	1	0	0
Sweden	67.72	1.83	4.40	1.10	97.82	59.79	2.94	1	1	0
Switzerland	64.00	1.99	4.89	1.00	71.18	160.22	0.90	1	1	0
Taiwan	35.28	0,84	4,70	2,00	30,71	-	3,89	1	-	0
Thailand	33.04	0.33	4.20	2.40	53.06	92.49	2.21	0	1	1
Turkey	29.79	-0.05	3.70	2.00	65.86	16.05	2.82	0	1	0
UK	58.17	1.77	5.00	4.00	49.34	125.23	3.29	1	1	1
US	71.77	1.64	5.00	1.00	29.86	39.63	2.22	1	1	1
Mean	47.07	0.93	4.20	1.97	62.79	75.04	2.15	0,67	0,53	0,36
Median	45.35	1.22	4.00	2.00	63.14	73.93	2.29	1,00	1,00	0,00
Standard dev	12.35	0.90	0.92	1.12	18.46	40.76	2.98	0,48	0,51	0,49
First quartile	37.90	0.15	3.15	1.00	46.85	36.89	0.83	0,00	0,00	0,00
Third quartile	56.41	1.75	4.01	3.00	75.77	102.88	3.61	1,00	1,00	1,00

Table 3. Determinants of firm debt maturity

Regressions are estimated using OLS. The dependent variable (DEBT_MAT) is the percentage of the firm's total debt that has a maturity of more than one year. ASSET_MAT is the ratio between net fixed assets and total assets. GROWTH is the growth rate of the GDP. SIZE is the natural logarithm of sales. VOL_EBIT is the absolute value of change in earnings before interest and taxes. FIRM_QUALITY is the ratio of net income plus depreciation to net debt. LEV is the ratio between total debt and the firm's market value. RULE_OF_LAW is one of the six dimensions of the WGI and it is a measure of the efficiency of the legal system. S_RIGHTS measures the protection of property rights. C_RIGHTS measures creditor rights. BANK_CREDIT is the ratio of private credit by deposit money banks to GDP. BANK_CONC is the fraction of assets held by the three largest commercial banks in each country. T-statistics are in parentheses. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)
Intercept	0.2517*** (4.24)	0.2872*** (4.38)	0.2074*** (2.92)	0.2760*** (4.44)	0.2038** (2.83)
ASSET_MAT	0.2280*** (2.66)	0.5144*** (6.26)	0.5228*** (6.34)	0.4583*** (5.77)	0.4742*** (5.91)
GROWTH	-0.0455 (-0.21)	-0.2035 (-1.06)	-0.2047 (-1.06)	-0.2670 (-1.43)	-0.2685 (-1.42)
SIZE	0.0673*** (9.10)	0.0531*** (7.87)	0.0591*** (8.22)	0.0546*** (8.48)	0.0603*** (8.65)
VOL_EBIT	0.0001 (0.81)	0.0000 (0.16)	0.0000 (0.30)	-0.0000 (-0.10)	0.0000 (0.05)
FIRM_QUALITY	-0.0126*** (-4.49)	-0.0042* (-1.55)	-0.0056* (-1.91)	-0.0044* (-1.71)	-0.0052* (-1.84)
LEV	-0.4905*** (-7.13)	-0.2450*** (-3.59)	-0.2584*** (-3.78)	-0.1491** (-2.17)	-0.1552** (-2.24)
RULE_OF_LAW	-	0.1136*** (8.48)	0.1015*** (7.07)	0.1389*** (9.66)	0.1301*** (8.58)
S_RIGHTS	-	-0.0487*** (-4.22)	-0.0458*** (-3.87)	-0.0408*** (-3.61)	-0.0393*** (-3.38)
C_RIGHTS	-	-0.0277*** (-5.68)	-0.0252*** (-5.11)	-0.0135*** (-2.64)	-0.0117** (-2.25)
BANK_CONC	-	-	0.0653** (2.22)	-	0.0619** (2.09)
BANK CREDIT	-	-	-	-0.1186*** (-6.49)	-0.1179*** (-6.35)
F test	11.80***	18.65***	16.72***	21.99***	19.45***
Adj R-squared	0.3017	0.4616	0.4520	0.5315	0.5181
# observations	351	351	344	334	327

Table 4. Determinants of firm debt maturity according to firm size

Regressions are estimated using OLS. Columns (1) to (3) show the results for large firms, and columns (4) to (6) for small firms. For each country, we split the total sample into quartiles according to the amount of total assets. Large firms are those in the largest quartile in their country and small firms, those belonging to the smallest quartile. The firm-specific variables are constructed by taking equally weighted averages of the values for each year for the samples of large and small firms separately. The dependent variable (DEBT_MAT) is the percentage of the firm's total debt that has a maturity of more than one year. ASSET_MAT is the ratio between net fixed assets and total assets. GROWTH is the growth rate of the GDP. SIZE is the natural logarithm of sales. VOL_EBIT is the absolute value of change in earnings before interest and taxes. FIRM_QUALITY is the ratio of net income plus depreciation to net debt. LEV is the ratio between total debt and the firm's market value. RULE_OF_LAW is one of the six dimensions of the WGI and it is a measure of the efficiency of the legal system; S_RIGHTS measures the protection of property rights; C_RIGHTS measures creditor rights; BANK_CREDIT is the ratio of private credit by deposit money banks to GDP. BANK_CONC is the fraction of assets held by the three largest commercial banks in each country. T-statistics are in parentheses. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	0.1360*	0.1350	0.1356	0.4133***	0.4675***	0.3306***
	(1.80)	(1.61)	(1.35)	(8.13)	(5.90)	(3.76)
ASSET_MAT	0.6304***	0.7482***	0.7128***	-0.4177***	-0.1459	0.0252
	(8.04)	(10.12)	(8.97)	(-4.44)	(-1.51)	(0.24)
GROWTH	0.3099	0.1793	0.2395	0.3046	0.0299	-0.2549
	(1.37)	(0.86)	(1.09)	(0.89)	(0.09)	(-0.79)
SIZE	0.0576***	0.0391***	0.0352***	0.0323***	0.0193**	0.0325***
	(8.00)	(5.49)	(4.42)	(3.36)	(2.09)	(3.40)
VOL_EBIT	0.0000	0.0000	0.0000	0.0015	0.0008	0.0009
	(1.13)	(0.47)	(0.39)	(1.15)	(0.69)	(0.78)
FIRM_QUALITY	-0.0178***	-0.0129***	-0.0171***	-0.0008	0.0021	0.0014
	(-5.70)	(-4.33)	(-4.91)	(-0.39)	(1.09)	(0.63)
LEV	-0.3562***	-0.2015***	-0.2011***	-0.0040	0.2091**	0.2224***
	(-6.11)	(-3.48)	(-3.28)	(-0.05)	(2.40)	(2.46)
RULE_OF_LAW	-	0.0620***	0.0671***	-	0.1270***	0.1611***
		(4.31)	(3.89)		(5.79)	(6.55)
S_RIGHTS	-	0.0047	0.0045	-	-0.0485****	-0.0490***
		(0.36)	(0.32)		(-2.45)	(-2.48)
C_RIGHTS	-	-0.0237***	-0.0230***	-	-0.0390***	-0.0192**
		(-4.24)	(-3.61)		(-4.94)	(-2.19)
BANK_CONC	-	-	0.0006	-	-	0.0876*
			(0.02)			(1.80)
BANK CREDIT	-	-	-0.0111	-	-	-0.1311***
			(-0.49)			(-4.23)
F test	11.80***	15.01***	13.08***	3.06***	6.91***	6.57***
Adj R-squared	0.3022	0.4056	0.4133	0.0782	0.2281	0.2497
# observations	350	350	327	341	341	319

Table 5. Determinants of firm debt maturity and legal origin

Regressions are estimated using OLS. The sample is split according to the legal origin of the country into common law and non-common law countries. The sample is also split according to firm size. For each country, we split the total sample into quartiles according to the amount of total assets. Large firms are those in the largest quartile in their country and small firms, those belonging to the smallest quartile. The firm-specific variables are constructed by taking equally weighted averages of the values for each year for the samples of large and small firms separately. The dependent variable (DEBT_MAT) is the percentage of the firm's total debt that has a maturity of more than one year. ASSET_MAT is the ratio between net fixed assets and total assets. GROWTH is the growth rate of the GDP. SIZE is the natural logarithm of sales. VOL_EBIT is the absolute value of change in earnings before interest and taxes. FIRM_QUALITY is the ratio of net income plus depreciation to net debt. LEV is the ratio between total debt and the firm's market value. RULE_OF_LAW is one of the six dimensions of the WGI and it is a measure of the efficiency of the legal system; S_RIGHTS measures the protection of property rights; C_RIGHTS measures creditor rights; BANK_CREDIT is the ratio of private credit by deposit money banks to GDP. BANK_CONC is the fraction of assets held by the three largest commercial banks in each country. T-statistics are in parentheses. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

	Total sample		Large firms		Small firms	
	Non-common law	Common law	Non-common law	Common law	Non-common law	Common law
	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	0.1119	0.0620	-0.0307	0.2059	0.2371**	0.3305**
	(1.34)	(0.51)	(-0.30)	(1.12)	(2.01)	(2.14)
ASSET_MAT	0.4425***	0.4410***	0.7034***	0.3797***	0.2527*	-0.2850
	(4.73)	(3.02)	(7.81)	(3.17)	(1.97)	(-1.56)
GROWTH	-0.4011	-0.1793	-0.3461	0.3835	-0.3544	-0.2461
	(-1.61)	(-0.85)	(-1.37)	(1.40)	(-0.79)	(-0.58)
SIZE	0.0488***	0.0876***	0.0406***	0.0484***	0.0181	0.0278**
	(5.46)	(8.32)	(4.71)	(3.52)	(1.21)	(2.26)
VOL_EBIT	0.0024	-0.0000	0.0046*	0.0000	0.0011	0.0018
	(1.47)	(-0.29)	(1.76)	(0.26)	(0.62)	(1.34)
FIRM_QUALITY	-0.0068*	-0.0067*	-0.0136***	-0.0157***	-0.0008	0.0019
	(-1.79)	(-1.94)	(-3.50)	(-3.38)	(-0.28)	(0.67)
LEV	-0.0541	-0.1334	-0.1022	-0.0884	0.0776	0.1588
	(-0.64)	(-1.21)	(-1.60)	(-0.87)	(0.67)	(1.04)
RULE_OF_LAW	0.1017***	0.0893***	0.0327	0.0919***	0.1509***	0.0429
	(5.04)	(4.02)	(1.62)	(3.43)	(4.45)	(1.06)
S_RIGHTS	-0.0358**	0.0159	-0.0113	0.0171	-0.0280	0.0281
	(-2.27)	(0.89)	(-0.71)	(0.76)	(-1.00)	(0.88)
C_RIGHTS	-0.0173**	0.0274***	-0.0223***	-0.0181	-0.0308**	0.0338**
	(-2.18)	(3.33)	(-2.84)	(-1.64)	(-2.26)	(2.02)
BANK_CONC	0.2169***	-0.1072***	0.2032***	-0.0455	0.1918***	-0.2701***
	(5.58)	(-2.68)	(4.98)	(-0.88)	(2.75)	(-3.61)
BANK CREDIT	-0.0638***	-0.2576***	0.0305	-0.0851**	-0.0915**	-0.2341***
	(-2.60)	(-8.28)	(1.22)	(-2.04)	(-2.17)	(-3.60)
F test	10.35***	30.11***	8.81***	19.10***	5.83***	4.90***
Adj R-squared	0.4704	0.8157	0.4259	0.7334	0.3199	0.3782
# observations	201	126	201	126	196	123

Table 6. Determinants of firm debt maturity and market structure

Regressions are estimated using OLS. The sample is split according to the market structure of the country into market-oriented and bank-oriented systems. The sample is also split according to firm size. For each country, we split the total sample into quartiles according to the amount of total assets. Large firms are those in the largest quartile in their country and small firms, those belonging to the smallest quartile. The firm-specific variables are constructed by taking equally weighted averages of the values for each year for the samples of large and small firms separately. The dependent variable (DEBT_MAT) is the percentage of the firm's total debt that has a maturity of more than one year. ASSET_MAT is the ratio between net fixed assets and total assets. GROWTH is the growth rate of the GDP. SIZE is the natural logarithm of sales. VOL_EBIT is the absolute value of change in earnings before interest and taxes. FIRM_QUALITY is the ratio of net income plus depreciation to net debt. LEV is the ratio between total debt and the firm's market value. RULE_OF_LAW is one of the six dimensions of the WGI and it is a measure of the efficiency of the legal system; S_RIGHTS measures the protection of property rights; C_RIGHTS measures creditor rights; BANK_CREDIT is the ratio of private credit by deposit money banks to GDP. BANK_CONC is the fraction of assets held by the three largest commercial banks in each country. T-statistics are in parentheses. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

	Total sample		Large firms		Small firms	
	Bank-oriented	Market-oriented	Bank-oriented	Market-oriented	Bank-oriented	Market-oriented
	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	0.0600	0.5408***	-0.0703	0.2586**	0.3484**	0.6277***
	(0.52)	(7.79)	(-0.40)	(2.08)	(2.48)	(6.34)
ASSET_MAT	0.3352**	-0.0306	0.6605***	0.5514***	0.0034	-0.3098***
	(2.43)	(-0.40)	(5.51)	(4.68)	(0.02)	(-2.73)
GROWTH	0.2644	-0.1094	1.3777***	-0.2299	-0.1230	0.1281
	(0.86)	(-0.64)	(3.96)	(-0.86)	(-0.24)	(0.35)
SIZE	0.0243*	0.0678***	0.0106	0.0459***	0.0053	0.0390***
	(1.77)	(12.06)	(0.65)	(5.64)	(0.32)	(3.44)
VOL_EBIT	0.0037	-0.0000	-0.0004	0.0000	0.0011	-0.0004
	(1.00)	(-0.22)	(-0.25)	(0.37)	(0.44)	(-0.33)
FIRM_QUALITY	0.0042	-0.0113***	-0.0120***	-0.0232***	0.0044	0.0011
	(0.95)	(-4.31)	(-2.71)	(-4.27)	(1.52)	(0.39)
LEV	0.2182*	-0.2558***	0.2589**	-0.3967***	0.3909***	0.3180***
	(1.66)	(-4.28)	(2.18)	(-5.65)	(2.85)	(3.01)
RULE_OF_LAW	0.1253***	0.1184***	0.0434	0.0529***	0.2143***	0.1743***
	(4.47)	(9.29)	(1.37)	(2.68)	(4.74)	(7.06)
S_RIGHTS	0.0040	-0.0493***	0.0557**	0.0093	-0.0324	-0.0686***
	(0.20)	(-4.82)	(2.31)	(0.55)	(-0.99)	(-3.22)
C_RIGHTS	0.0232***	-0.0483***	-0.0183*	-0.0368***	0.0380***	-0.0746***
	(2.79)	(-9.82)	(-1.72)	(-5.07)	(2.91)	(-7.25)
BANK_CONC	0.0398	-0.0585**	0.0360	-0.1034***	-0.0604	0.0588
	(0.71)	(-2.29)	(0.54)	(-2.56)	(-0.71)	(1.11)
BANK CREDIT	-0.2207***	-0.0294**	-0.0590	0.0263	-0.3464***	-0.0022
	(-5.26)	(-2.02)	(-1.21)	(1.15)	(-5.57)	(-0.07)
F test	5.93***	48.87***	5.54***	15.40***	3.26***	12.38***
Adj R-squared	0.3830	0.8394	0.3633	0.6113	0.2288	0.5570
# observations	152	175	152	175	146	173

Table 7. Bank concentration and legal and institutional features

Regressions are estimated using OLS. The sample is split according to the legal origin of the country in common law and non-common law countries. The sample is also split according to firm size. For each country, we split the total sample into quartiles according to the amount of total assets. Large firms are those in the largest quartile in their country and small firms, those belonging to the smallest quartile. The firm-specific variables are constructed by taking equally weighted averages of the values for each year for the samples of large and small firms separately. The dependent variable (DEBT_MAT) is the percentage of the firm's total debt that has a maturity of more than one year. ASSET_MAT is the ratio between net fixed assets and total assets. GROWTH is the growth rate of the GDP. SIZE is the natural logarithm of sales. VOL_EBIT is the absolute value of change in earnings before interest and taxes. FIRM_QUALITY is the ratio of net income plus depreciation to net debt. LEV is the ratio between total debt and the firm's market value. RULE_OF_LAW is one of the six dimensions of the WGI and it is a measure of the efficiency of the legal system; S_RIGHTS measures the protection of property rights; C_RIGHTS measures creditor rights; BANK_CREDIT is the ratio of private credit by deposit money banks to GDP. BANK_CONC is the fraction of assets held by the three largest commercial banks in each country. T-statistics are in parentheses. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

	Total sample			Large firms			Small firms		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Intercept	0.2707***	0.2850***	0.3377***	0.0717	0.2066*	0.1406	0.4741***	0.3946***	0.5241***
	(3.62)	(3.94)	(4.53)	(0.67)	(1.96)	(1.27)	(5.03)	(4.46)	(5.56)
ASSET_MAT	0.4658***	0.3746***	0.3735***	0.7328***	0.6576***	0.6752***	0.0195	-0.0290	-0.0301
	(5.87)	(4.61)	(4.64)	(9.15)	(7.90)	(8.10)	(0.19)	(-0.28)	(-0.29)
GROWTH	-0.2725	-0.2280	-0.2339	0.2329	0.2471	0.2402	-0.2113	-0.2216	-0.1833
	(-1.46)	(-1.24)	(-1.29)	(1.07)	(1.14)	(1.11)	(-0.67)	(-0.70)	(-0.59)
SIZE	0.0640***	0.0553***	0.0587***	0.0346***	0.0308***	0.0298***	0.0370***	0.0307***	0.0350***
	(9.14)	(8.03)	(8.45)	(4.36)	(3.77)	(3.65)	(3.91)	(3.26)	(3.75)
VOL_EBIT	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0011	0.0007	0.0009
	(0.25)	(0.22)	(0.39)	(0.26)	(0.49)	(0.35)	(0.94)	(0.61)	(0.77)
FIRM_QUALITY	-0.0055*	-0.0045	-0.0048*	-0.0168***	-0.0177***	-0.0173***	0.0004	0.0018	0.0009
	(-1.95)	(-1.63)	(-1.74)	(-4.80)	(-5.08)	(-4.97)	(0.20)	(0.85)	(0.43)
LEV	-0.2040***	-0.1243*	-0.1681**	-0.1718***	-0.1770***	-0.1413**	0.2019**	0.2216***	0.2024**
	(-2.90)	(-1.84)	(-2.43)	(-2.71)	(-2.86)	(-2.20)	(2.28)	(2.50)	(2.32)
RULE_OF_LAW	0.0535*	0.0909***	0.0275	0.1204***	0.0489**	0.1080***	0.0158	0.1095***	-0.0227
	(1.78)	(5.28)	(0.92)	(3.38)	(2.55)	(3.01)	(0.34)	(3.83)	(-0.48)
S_RIGHTS	-0.0365***	-0.0359***	-0.0337***	0.0025	0.0039	0.0015	-0.0459**	-0.0449**	-0.0423**
	(-3.16)	(-3.16)	(-2.99)	(0.18)	(0.28)	(0.11)	(-2.37)	(-2.30)	(-2.21)
C_RIGHTS	-0.0129**	-0.0072	-0.0086*	-0.0225***	-0.0194***	-0.0186***	-0.0216**	-0.0135	-0.0161*
	(-2.51)	(-1.40)	(-1.67)	(-3.55)	(-2.96)	(-2.84)	(-2.51)	(-1.54)	(-1.87)
BANK_CONC	-0.0661	0.0405	-0.0682	0.0931	-0.0114	0.0929	-0.1786**	0.0648	-0.1829**
	(-1.26)	(1.39)	(-1.34)	(1.44)	(-0.32)	(1.44)	(-2.08)	(1.34)	(-2.16)
BANK_CREDIT	-0.1060***	-0.2204***	-0.2040***	-0.0185	-0.0786**	-0.0935**	-0.1143***	-0.2564***	-0.2309***
	(-5.64)	(-7.46)	(-6.82)	(-0.80)	(-2.01)	(-2.35)	(-3.73)	(-5.34)	(-4.85)
BANK_CONC*RULE_OF_LAW	0.1090***	-	0.0937**	-0.0768*	-	-0.0875*	0.2222***	-	0.2081***
	(2.95)		(2.59)	(-1.71)		(-1.95)	(3.72)		(3.53)
BANK_CREDIT*RULE_OF_LAW	-	0.0786***	0.0739***	-	0.0473**	0.0518**	-	0.0997***	0.0920***
		(4.39)	(4.14)		(2.11)	(2.31)		(3.38)	(3.17)
F test	19.37***	20.53***	20.24***	12.65***	12.79***	12.48***	7.20***	7.03***	7.55***
Adj R-squared	0.5299	0.5451	0.5534	0.4169	0.4198	0.4250	0.2806	0.2750	0.3018
# observations	327	327	327	327	327	327	319	319	319

Table 8. Bank concentration and legal and institutional features

Regressions are estimated using OLS. The sample is split according to the legal origin of the country into common law and non-common law countries. The sample is also split according to firm size. For each country, we split the total sample into quartiles according to the amount of total assets. Large firms are those in the largest quartile in their country and small firms, those belonging to the smallest quartile. The firm-specific variables are constructed by taking equally weighted averages of the values for each year for the samples of large and small firms separately. The dependent variable (DEBT_MAT) is the percentage of the firm's total debt that has a maturity of more than one year. ASSET_MAT is the ratio between net fixed assets and total assets. GROWTH is the growth rate of the GDP. SIZE is the natural logarithm of sales. VOL_EBIT is the absolute value of change in earnings before interest and taxes. FIRM_QUALITY is the ratio of net income plus depreciation to net debt. LEV is the ratio between total debt and the firm's market value. RULE_OF_LAW is one of the six dimensions of the WGI and it is a measure of the efficiency of the legal system. S_RIGHTS measures the protection of property rights; C_RIGHTS measures creditor rights; BANK_CREDIT is the ratio of private credit by deposit money banks to GDP. BANK_CONC is the fraction of assets held by the three largest commercial banks in each country. T-statistics are in parentheses. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively..

	Total sample			Large firms			Small firms		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Intercept	-0.1245	-0.0511	-0.1608	0.1241	1.0404***	-0.0301	-0.0218	-0.2714	0.0944
	(-1.53)	(-0.25)	(-1.45)	(1.12)	(3.33)	(-0.21)	(-0.20)	(-1.55)	(0.73)
ASSET_MAT	0.6165***	0.7876***	0.5403***	0.6402***	0.0030	1.0121***	0.4871***	0.5708	0.0839
	(5.32)	(2.78)	(3.05)	(4.44)	(0.01)	(5.39)	(3.24)	(1.65)	(0.35)
GROWTH	0.2123	0.6539	0.5562*	0.1655	0.3480	0.3916	0.1224	2.3091**	0.9144
	(1.09)	(1.03)	(1.67)	(0.69)	(0.49)	(0.98)	(0.34)	(2.27)	(1.59)
SIZE	0.0719***	0.0601**	0.0735***	0.0317***	-0.0257	0.0391***	0.0541***	0.0685*	0.0457**
	(9.06)	(2.28)	(6.03)	(3.12)	(-0.88)	(2.77)	(3.58)	(1.88)	(2.02)
VOL_EBIT	0.0005	-0.0046	0.0002	-0.0001	0.0030	0.0012	0.0041	0.0006	0.0010
	(0.20)	(-1.21)	(0.13)	(-0.08)	(0.45)	(0.56)	(1.33)	(0.10)	(0.32)
FIRM_QUALITY	0.0013	0.0057	0.0010	-0.0142***	-0.0175	-0.0152***	0.0048	0.0081	0.0024
	(0.39)	(0.54)	(0.19)	(-3.42)	(-1.38)	(-2.59)	(1.65)	(1.03)	(0.54)
LEV	0.2185***	0.1399	0.4520***	-0.0875	-0.8560***	-0.1147	0.3595***	1.1396***	0.6767***
	(2.61)	(0.65)	(3.46)	(-1.08)	(-4.42)	(-0.95)	(3.45)	(3.80)	(4.01)
RULE_OF_LAW	0.4426***	0.1252***	0.1396***	0.0480	0.0559***	0.0785***	0.4307***	0.1462***	0.1674***
	(7.80)	(8.18)	(9.05)	(0.57)	(3.27)	(4.20)	(7.78)	(6.02)	(6.71)
S_RIGHTS	-0.0331***	-0.0385***	-0.0349***	0.0042	0.0160	0.0052	-0.0392**	-0.0460**	-0.0447**
	(-3.07)	(-3.30)	(-3.05)	(0.30)	(1.16)	(0.37)	(-2.02)	(-2.40)	(-2.23)
C_RIGHTS	-0.0077	-0.0142***	-0.0144***	-0.0230***	-0.0208***	-0.0170**	-0.0127	-0.0279***	-0.0223**
	(-1.50)	(-2.66)	(-2.71)	(-3.42)	(-3.26)	(-2.40)	(-1.46)	(-3.24)	(-2.51)
BANK_CONC	0.0540*	0.4605	0.0607**	0.0104	-1.5494***	0.0002	0.0561	1.0426***	0.0839*
	(1.93)	(1.47)	(2.12)	(0.28)	(-3.10)	(0.01)	(1.18)	(4.44)	(1.74)
BANK_CREDIT	-0.0895***	-0.1060***	0.3877***	-0.0034	-0.0308	0.3483*	-0.1025***	-0.0911***	0.1721
	(-5.07)	(-5.37)	(2.83)	(-0.15)	(-1.36)	(1.85)	(-3.30)	(-2.94)	(1.29)
RULE_OF_LAW*ASSET_MAT	-0.2409**	-	-	0.0674	-	-	-0.4963***	-	-
	(-2.46)			(0.59)			(-4.08)		
RULE_OF_LAW*GROWTH	-0.6380***	-	-	0.2061	-	-	-0.6939**	-	-
	(-3.28)			(0.88)			(-2.01)		
RULE_OF_LAW*SIZE	-0.0068	-	-	0.0065	-	-	-0.0119	-	-
	(-1.10)			(0.81)			(-1.16)		
RULE_OF_LAW*VOL_EBIT	-0.0003	-	-	0.0001	-	-	-0.0019	-	-
	(-0.21)			(0.09)			(-1.02)		
RULE_OF_LAW*FIRM_QUALITY	-0.0061**	-	-	-0.0023	-	-	-0.0014	-	-
	(-2.17)			(-0.75)			(-0.62)		
RULE_OF_LAW*LEV	-0.5123***	-	-	-0.1483*	-	-	-0.1878*	-	-
	(-6.85)			(-1.88)			(-1.89)		
BCONC_ASSET_MAT	-	-0.5330	-	-	1.1310**	-	-	-0.8148	-
		(-1.21)			(2.33)			(-1.56)	
BCONC_GROWTH	-	-1.6306	-	-	-0.1393	-	-	-4.5150***	-
		(-1.52)			(-0.12)			(-2.61)	
BCONC_SIZE	-	0.0029	-	-	0.1054**	-	-	-0.0613	-
		(0.07)			(2.26)			(-1.05)	
BCONC_VOL_EBIT	-	0.0084	-	-	-0.0055	-	-	0.0013	-
		(1.21)			(-0.44)			(0.13)	
BCONC_FIRM_QUALITY	-	-0.0180	-	-	0.0011	-	-	-0.0105	-
		(-1.08)			(0.06)			(-0.86)	
BCONC_LEV	-	-0.5461	-	-	1.1238***	-	-	-1.5865***	-
		(-1.55)			(3.57)			(-3.49)	
BCREDIT_ASSET_MAT	-	-	-0.2205	-	-	-0.5112*	-	-	-0.1322
			(-0.90)			(-1.95)			(-0.43)
BCREDIT_GROWTH	-	-	-1.2846***	-	-	-0.2812	-	-	-1.7645***
			(-3.13)			(-0.57)			(-2.60)
BCREDIT_SIZE	-	-	-0.0264*	-	-	-0.0178	-	-	-0.0159
			(-1.81)			(-1.03)			(-0.61)
BCREDIT_VOL_EBIT	-	-	-0.0003	-	-	-0.0017	-	-	0.0001
			(-0.12)			(-0.55)			(0.04)
BCREDIT_FIRM_QUALITY	-	-	-0.0048	-	-	-0.0030	-	-	-0.0003
			(-0.71)			(-0.42)			(-0.06)
BCREDIT_LEV	-	-	-0.8118***	-	-	-0.1406	-	-	-0.6665***
			(-5.24)			(-0.92)			(-3.16)
F test	21.40***	15.45***	17.70***	10.32***	11.38***	10.22***	6.80***	6.70***	5.78***
Adj R-squared	0.6100	0.5257	0.5615	0.4167	0.4433	0.4141	0.3130	0.3096	0.2733
# observations	327	327	327	327	327	327	319	319	319

Appendix A. Variables

The table shows the definition of variables used in the paper and their sources.

Name	Definition	Source
	FIRM-LEVEL VARIABLES	
DEBT_MAT	The annual country average of the percentage of the firm's total debt (long-term debt plus debt in current liabilities) that has a maturity of more than one year.	Worldscope
ASSET_MAT	The annual country average of the ratio between net fixed assets and total assets.	Worldscope
GROWTH	The annual growth rate in GDP.	International Monetary Fund
SIZE	The annual country average of the natural logarithm of sales.	Worldscope
FIRM_QUALITY	The annual country average of the ratio of net income plus depreciation to net debt	Worldscope
VOL_EBIT	The annual country average of the absolute value of change in earnings before interest and taxes.	Worldscope
LEV	The annual country average of the ratio between total debt and the firm's market value. The market value of assets is defined as total assets minus the book value of equity plus the market value of equity.	Worldscope
	COUNTRY-LEVEL VARIABLES	
RULE_OF_LAW	Rule of law is one of the six dimensions of the Worldwide Governance Indicators. Rule of law captures perceptions of the extent to which agents have confidence in and abide by the rules of society and, in particular, the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.	Kaufmann *et al*. (2009)
S_RIGHTS	An indicator of the degree to which private property rights are protected and the degree to which government enforces laws that protect private property. It also accounts for the possibility that private property may be expropriated and analyzes the independence of the judiciary, corruption within the judiciary, and the ability of individuals and businesses to enforce contracts. It ranges between 1 and 5. We reverse the scale of the original index, a high score indicating greater legal protection of property.	Heritage Foundation
C_RIGHTS	This index measures four powers of secured lenders in bankruptcy: (1) whether there are restrictions, such as creditor consent, when a debtor files for reorganization; (2) whether secured creditors are able to seize their collateral after the petition for reorganization is approved, i.e., whether there is no automatic stay or asset freeze imposed by the court; (3) whether secured creditors are paid first out of the proceeds of liquidating a bankrupt firm; and (4) whether an administrator, and not management, is responsible for running the business during the reorganization. A value of one is added to the index when a country's laws and regulations provide each one of these powers to secured lenders; it consequently varies between 0 (poor creditor rights) and 4 (strong creditor rights).	Djankov *et al.* (2007)
BANK_CONC	The fraction of bank assets held by the three largest commercial banks in the country.	Financial Development and Structure Dataset (World Bank). Beck et al. (2006)
BANK_CREDIT	The ratio of the private credit by deposit money banks to GDP.	Financial Development and Structure Dataset (World Bank). Beck et al. (2006)
DEVELOP	Dummy variable that takes a value of 1 for developed countries and 0 for developing economies. Developed countries are countries classified as high income and upper middle income and developing countries are countries classified as low income and lower middle income according to GNI per capita, calculated using the World Bank's Atlas method.	Financial Development and Structure Dataset (World Bank). Beck et al. (2006)
MARKET	A dummy variable that takes the value of 1 if it is a market-based financial system, and 0 otherwise.	Demirgüç-Kunt and Levine (2001)
LEGAL ORIGIN	A dummy variable that takes the value of 1 if the country is of common law legal origin, and 0 otherwise.	La Porta *et al.*, (1998)

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