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Financial Systems, Markets and Institutional Changes

Edited by Ted Lindblom, Stefan Sjögren and Magnus Willesson

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Financial Systems, Markets and Institutional Changes

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Preface

Financial Systems, Markets and Institutional Changes comprises a selection of chapters originally presented as papers at the annual conference of the European Association of University Teachers of Banking and Finance – Wolpertinger 2013 – which was held in August 28–31, 2013 at the School of Business, Economics and Law, Gothenburg University, Sweden. The Wolpertinger 2013 was open for papers in all areas of banking and finance and this volume includes high-quality contributions focusing on financial markets and firms' financing.

As editors, we would like to thank all the contributors to this volume for their contributions and their efforts in keeping up the time schedule. We are also grateful to all the referees who acted as reviewers to the chapters published in this volume – the blind peer review process significantly improved the quality of each contribution. We also want to thank all the conference participants for their active discussions during seminars, for contributing to a constructive atmosphere and for introducing new perspectives on challenges to future studies in banking and finance.

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4

Firm-based and Institutional-based Determinants of the Bank Debt Maturity: New Evidence for Developed Countries

Eleuterio Vallelado, Paolo Saona and Pablo San Martín

4.1 Introduction

The choice between various financial instruments under perfect capital markets is inconsequential to the value of the firm. This basic irrelevancy theorem, originally developed by Modigliani and Miller (1958), covers all types of complexities which commonly characterize financial liabilities. Contributions in the field of finance introduce market imperfections, such as the agency costs of equity and debt, to bridge the gap between theory and the observed reliance of corporations on complex financial instruments. Jensen and Meckling (1976) identify these agency costs as bankruptcy costs associated with managerial consumption of perks, and costs associated with managerial incentive to undertake suboptimal risky projects (Dang, 2011), which transfer wealth from bondholders to shareholders, such as asset substitution problems (Douglas, 2009; Myers, 1977). On the other hand, contributions from the field of law and finance indicate the relevance of institutional setting in the financial decisions of corporations.

The literature on corporate finance shows that the optimal choice of securities and their maturities depends on both the information available to investors and their ability to monitor compliance by reducing agency conflicts as corporate governance mechanisms improve. Since the amount of information available to investors, and their ability to protect their interests, depend on financial and legal institutions, the

firms' financial structures – their maturity and source – should be systematically defined by each country's circumstances (Alcock, Finn, and Tan, 2012; Demirgüç-Kunt and Maksimovic, 1999; Saona and Vallelado, 2010).

Therefore, the goal of this chapter is to examine how companies' characteristics, the institutional setting where they operate, and the introduction of additional regulations on corporate governance impact the firms' bank debt maturity choice. Our empirical analysis includes ten countries (Australia, Belgium, Canada, Denmark, France, Germany, Italy, Spain, the United Kingdom, and the United States) that belong to different institutional settings and have introduced, during the period of study, additional regulations on corporate governance. Four of them have their institutional and legal settings based on common law (Australia, Canada, the United Kingdom and the United States) and the other six countries belong to the civil-law tradition of continental Europe (Belgium, Denmark, France, Germany, Italy, and Spain). The common element is that the ten countries are developed countries belonging to the OECD group, which allows us to consider similarities in the economic framework of this set of countries. It is important to bear in mind that keeping certain economic standards is a requirement for being part of the OECD group, for instance, inflation levels, competitiveness, and income per capita, among others.[1]

Our main contribution is to show how the introduction of new regulation on corporate governance modifies bank debt maturity decisions in corporations located either in civil-law countries or common-law countries. The main findings indicate that the institutional context and the regulations on corporate governance are drivers of the bank debt maturity adopted by listed firms. Thus, the higher transparency associates with additional regulations on corporate governance increases the use of short-term bank debt by corporations. In our opinion, the introduction of new corporate governance regulation has had a substitution effect on ownership structure and short-term bank debt as corporate governance mechanisms. In addition, we observe that funding investments with bank debts of different maturities depends on the extent to which the financial system is either market oriented or banking oriented. The relationship between the external funds needed, the ownership structure, and the bank debt maturity seems to be conditioned by institutional settings. For instance, firms from common-law countries have less concentrated ownership, use lower proportions of short-term bank debt and have a larger need for external funds than firms from civil-law countries.

The chapter is organized in five sections. After the introduction, a second section presents our arguments about the determinants of the maturity of bank borrowing. The third describes the sample used for the empirical analysis. Section 4.4 presents the main results. The final section of the chapter summarizes the main conclusions.

4.2 Determinants of the maturity of bank borrowing

The maturity of bank borrowing can be examined in the context of agency theory, contracting costs, signalling hypothesis, and the law and finance proposals. From these approaches, we analyse how company characteristics, civil-law/common-law origin and corporate governance regulation influence non-financial firms' bank debt maturity.

The use of short-term bank borrowing might mitigate underinvestment/debt overhang and asset substitution problems more efficiently than public debt (Dewatripont and Tirole, 1994; Galai and Masulis, 1976; Jensen, 1986; Jensen and Meckling, 1976; Myers, 1977). Thus, these problems can be addressed through the choice of lender. In comparison with public debt, banks are in a better position than arm's-length lenders to reduce managerial discretion because of the debt-ownership concentration (Blackwell and Kidwell, 1988; Denis and Mihov, 2003; Fama, 1985; James and Smith, 2000). In the same vein, Lin et al. (2012) find that firms able to choose public debt do so to avoid scrutiny and to insulate themselves from bank monitoring. Underinvestment and asset substitution problems are expected to be more severe for firms with more growth options, where managers have higher degrees of managerial discretion since they have more flexibility in the choice of future investments (Billett, King, and Mauer, 2007; Chen, Ho, and Yeo, 1999). Furthermore, short-term debt could help to alleviate debt overhang (Diamond and He, 2013).[2]

The relevance of bank financing and maturity choice will be the result of the relative incidence that financial markets and intermediaries have on the financial system (Bancel and Mittoo, 2004; Demirgüç-Kunt and Levine, 2001; Korajczyk and Levy, 2003). The law and finance approach is based on the legal tradition of each country (La Porta et al., 1998). According to this approach, the set of institutional factors will also play a relevant role in decisions about bank debt maturity. From this point of view, countries might be classified into two groups: the civil-law countries and the common-law countries. In the first one, bank debt is the most important source for financing firms' operations; while in

the common-law countries, the public debt and capital markets play a determinant role in satisfying firms' financing needs.

Growth options involve agency problems between bondholders and shareholders (De Andrés, Azofra, and Rodríguez, 2000; González, 2012), asymmetries of information (Goyal, Lehn, and Racic, 2002; Myers and Majluf, 1984), and higher derived bankruptcy costs (Harris and Raviv, 1990; Shleifer and Vishny, 1992; Williamson, 1988). Bank borrowing, specifically that which matures sooner, reduces these problems (Flannery, 1986; Guedes and Opler, 1996). This argument can also be supported by the role played by financial intermediaries in each institutional framework. Whereas in the market-oriented financial systems – most of the common-law countries – corporate control is addressed by external mechanisms such as hostile takeovers, the discipline of public (negotiable) debt, and the enforcement of law; in banking-oriented countries – most of the civil-law countries – the corporate governance mechanisms are internal, such as ownership concentration, institutional investors, bank financing, and more specifically, the maturity of bank debt, which helps to match the interests of managers and shareholders (La Porta, Lopez-de-Silanes, and Shleifer, 1999, 2002; La Porta et al., 1997). Consequently, we should observe that the bank debt maturity of firms with growth opportunities is related to the institutional environment where they operate. In banking-oriented countries, the reduction of bank debt maturity helps to improve corporate governance, whereas in market-oriented countries, firms have alternative mechanisms of corporate governance to bank debt maturity.

The capacity of firms to internally generate cash flow affects agency and the asymmetries of information problems (Bessler, Drobetz, and Grüninger, 2011; De Jong, Verbeek, and Verwijmeren, 2010). Thus, the higher the deficit of funds internally generated, the higher the agency problems, regardless of the institutional setting. Denis and McKeon (2012) point out that the firms that generate a deficit of funds tend to cover such deficits with more debt. With regard to this, Modigliani and Perotti (2000) point out that in financial systems where banking is fairly developed financing through bank debt is pursued, and, more specifically, the issuance of short-term bank debt is used for financing investment with external funds. Hence, firms with insufficient internal funds should issue short-term bank debt to mitigate the moral hazard problems generated by the deficit. Firms with low cash inflows, and therefore higher needs of external funds, are more likely to suffer from an inefficient liquidation process (Houston and Venkataraman, 1994; Shleifer and Vishny, 1992) and/or an inefficient debt pricing for longer maturities. In this scenario, managers of good firms are motivated to issue short-term bank debt. Thus, the moral hazard problems of firms with a deficit of internal funds to finance their investments can be solved using bank debt with short maturities. Then, the short-term bank debt becomes an efficient corporate governance mechanism that interacts with the regulatory and institutional setting.

The zero agency cost base case is, by definition, a firm owned solely by a single owner-manager (Jensen and Meckling, 1976). When management owns less than 100 per cent of the firm's equity, shareholders incur agency costs resulting from the management's shirking and perquisite consumption. Empirically, Ang, Cole and Lin (2000) have observed that agency costs are indeed higher among firms that are not entirely owned by their managers, and that these costs increase as the equity share of the owner-manager declines. Thus, when ownership is concentrated, managers have the incentive to choose the debt maturity that maximizes the firm's value as their first-best policy (Bharadwaj and Shivdasani, 2003; Denis and Mihov, 2003). In countries that offer weak protection of the shareholders' interests, the concentrated ownership structure becomes an efficient mechanism of corporate governance (López, López, and Santamaría, 2007). Thus, if concentrated ownership contributes towards reducing managerial incentives to overinvest it opens the door to external financing. External funds will come mainly from banks due to the civil-law institutional setting. Furthermore, banks that are not shareholders will prefer shorter maturities to cope with asymmetric information about growth opportunities.

Institutional investors serve as an alternative mechanism to control the overinvestment problem (Shleifer and Vishny, 1986) because of their greater experience in gathering information. Besides, the proportion of equity owned by an institutional investor in a particular firm increases its incentives to closely oversee managerial activities in comparison with the situation of a minority investor (Moon and Tandon, 2007). In the same vein, the convergence hypothesis states that firms with high managerial ownership have lower agency costs of debt, leading to higher levels of leverage (Kim and Sorensen, 1986). Therefore, a concentrated ownership structure along with a reduction in the debt maturity structure might be seen as complementary mechanisms of corporate governance to solve the conflicts of interest between shareholders, debt-holders, and managers (Yafeh and Yosha, 2003).[3] Correspondingly, the higher the ownership concentration in a firm, the more it uses

bank debt with short maturity. This situation is particularly relevant in bank-based financial systems where concentrated ownership and bank debt maturity become complementary elements of optimal corporate governance.

The Sarbanes–Oxley Act[4] (Public Law 107–204, 116 Stat. 745) passed in the United States and the equivalent regulation in many other countries were the key to improving the protection of investors and introduced the most comprehensive changes in both corporate governance regulation and in financial practices of listed firms since the 1930s. Specifically, this new legislation promotes transparency by improving the accuracy and reliability of financial information.

The Sarbanes–Oxley law was originally applied to all American listed firms. However, this law has had implications beyond the American frontiers because foreign firms trading in the American stock markets are forced to draw up their financial statements according to the US GAAP, along with subsidiaries of American firms. Additionally, this law directly affected the international financial community, motivating the development of similar legislations in other countries, for instance, the CLERP in Australia; the Corporate Governance Act in Belgium (Lippens Code); Bill 198 in Canada; the Danish Companies Act in Denmark; the Financial Security Law in France; the German Corporate Governance Code (Cromme Code) in Germany; the L262–2005 in Italy; the Law 44/2002 in Spain; or the Companies Act in the United Kingdom. Table 4.1 provides a brief description of the extent of the corporate governance legislations passed across the counties included in our sample.

If civil-law countries are associated with lower protection of investors' rights in comparison to common-law countries, then additional regulation on corporate governance should have a greater impact on civil-law countries' usage of bank debt maturity. For instance, if new corporate governance regulation is effective, we should observe greater benefits of such regulation in civil-law countries than in common-law countries, improving market and legal systems efficiency, and an effect on the corporate governance role of bank debt maturity. Furthermore, one of the goals of corporate governance regulation is to improve transparency which should help to alleviate asymmetries of information. Thus, we should observe that, after the new regulation is passed in each country, shareholders are more worried about inefficient liquidation than about underinvestment when companies use bank debt maturity.

Table 4.1 Description of the corporate governance legislations across countries

Country	Name Act	Details	Characteristics
Australia	CLERP (Corporate Law Economic Reform Program (Governance)	Passed on June 30, 2004.	Improvements in transparency, accountability and rights of shareholders.
Belgium	Corporate Governance Act	The Act was adopted on April 6, 2010 and published in the Belgian State Gazette on 23 April 2010	The Act, which applies to companies listed on a regulated market in Belgium (i.e., Euronext Brussels), amends the Belgian Company Code in four main areas: a) Creation of a remuneration committee; b) Approval of a corporate governance statement; c) Approval of a remuneration report; and d) Specific rules on executive remuneration and severance packages.
Canada	Bill 198	Passed on 7 April 2003.	It provides the Ontario Securities Commission (OSC) with authority over corporate controls. Specifically, the OSC is given power to: Enact rules requiring audit committees; systems of internal controls; disclosure controls and procedures; request CEOs and CFOs to provide certifications related to internal controls and to disclosure controls and procedures. It also allows the OSC to define auditing standards for the reporting of internal controls.
Denmark	Danish Companies Act	Danish Executive Order No. 172 (22 February 2010).	The new act regulates public and private companies and modernizes and simplifies the overall regulation of both types of company.
France	Financial Security Law of France	Law 2003–706 (1 August 2003).	The Financial Security Law rests mainly on: An increased responsibility of leaders; a strengthening of internal control; and a reduction in the sources of conflicts of interest.
Germany	German Corporate Governance Code	Approved on 26 February 2002, the Code adopted various amendments on 26 May 2010.	The Code presents essential statutory regulations for the management and supervision of German listed companies and contains internationally and nationally recognized standards for good and responsible governance.
Italy	L262–2005 ('Disposizioni per la Tutela del Risparmio e la Disciplina del Mercati Finanziari')	Passed on 28 December 2005.	The law was promulgated for the protection of savings and regulation of the financial markets. It is part of a broad set of measures aimed at guaranteeing the stability of the financial markets and protecting investors.

Continued

4.3 Data and variables

Our source of information is twofold: financial information and firms' market value was obtained from the Osiris database; whereas the information about the ownership structure has been gathered from Thomson ONE Banker. Our total sample includes 2,592 firms from Australia, Belgium, Canada, Denmark, France, Germany, Italy, Spain, the United Kingdom, and the United States, with a total of 12,184 firm-year observations. The period under study ranged from 1996 to 2008 to avoid biases in our findings due to the financial recession. These countries are part of different institutional settings: they either have a common-law background (Australia, Canada, the United Kingdom and the United States) or a civil-law tradition (Belgium, Denmark, France, Germany, Italy, and Spain). All the countries belong to the OECD group and, therefore, share similar economic characteristics which make them comparable.

We included all listed non-financial firms from ten OECD countries. The panel data is unbalanced because some firms disappear during the period of analysis and/or we discarded those observations for which we had incomplete data. Likewise, we exclude financial firms, since the very nature of their business would distort the results. We also excluded the years in which firms have no debt in their balance sheets, since this situation does not allow us to account for the problems of asymmetric information and agency costs related to debt. The sample was divided into two groups according to their legal tradition (Table 4.2). As an additional institutional factor, we compare the results for the pre- and post-periods of the introduction of corporate governance regulations in each country (hereafter CGR) in order to assess the structural change generated by the new regulations that increased monitoring of management's activities by independent directors, auditors, and regulators.

The maturity of bank borrowing is measured as the ratio of short-term bank debt to total bank debt (SBDBD).[5] Johnson (1997b) argues that there is no clear empirical distinction between short- and long-term debt. In spite of this, we have used bank debt with a maturity less than or equal to one year as short-term bank debt, and the rest as long-term bank debt. Unfortunately, the available data does not allow any other classification. Most other works also use this accounting classification to measure bank debt maturity (Demirgüç-Kunt and Maksimovic, 2002; Johnson, 1997b; Ozkan, 2002).

Following Johnson (1997a, 1997b), Cuñat (1999), Krishnaswami, Spindt and Subramaniam (1999), and Barclay, Max and Smith (2003b)

Table 4.1 Continued

Country	Name Act	Details	Characteristics
Spain	Law 44/2002 ('Financial System Reform Measures')	Passed on 22 November 2002, and revised in its last version on 24 March 2013	The goals of this regulation are basically three: to increase efficiency and to enhance the competitiveness of the Spanish financial industry; to improve the protection of consumers of financial services; and to improve the financing conditions of small and medium enterprises (SMEs)
UK	Companies (Audit, Investigations and Community Enterprise) Act 2004	The key provisions of the Companies Act 2004 came into force on 6 April 2005.	It includes the strengthening of auditors' rights to information from directors and employees, the widened powers of the FRRP (Financial Reporting Review Panel) to obtain information from auditors, and the new regime for regulating auditors.
USA	Sarbanes–Oxley Act	Pub. L. No. 107–204, 116 Stat. 745 (30 July 2002).	Principal components of the SOX Act: Established independent oversight of public company audits. Strengthened audit committees and corporate governance. Enhanced transparency, executive accountability and investor protection. Enhanced auditor independence.
Europe	8th EU Directive	The former version was released on 10 April 1984.	The 8th EU Directive, also known as the audit directive or Euro SOX, regulates the auditing of financial statements in the European Union (EU). Its aim is to ensure that investors and other interested parties can rely fully on the accuracy of audited financial statements. EU member states were required to translate it into national law by 29 June 2008.

Table 4.2 Descriptive statistics and test of mean differences among the variables by legal system and application of corporate governance legislation (CGR)

	Mean				Mean Common-law			Mean Civil-law		
Variables	Total Sample	Common Law	Civil Law	Mean Diff Test P-Value	Before CGR	After CGR	Mean Diff Test P-Value	Before CGR	After CGR	Mean Diff Test P-Value
SBDB	0.2094	0.1900	0.3138	(0.0000)	0.1780	0.1989	(0.0000)	0.2857	0.3192	0.0755
Q	1.2347	1.2473	1.1672	(0.0013)	0.7150	1.6418	(0.0000)	0.9248	1.2133	0.0000
NEF	0.0782	0.0918	0.0053	(0.0000)	0.2311	–0.0114	(0.0000)	0.0695	–0.0069	0.0237
OWN	0.3126	0.2791	0.4925	(0.0000)	0.2806	0.2780	(0.5679)	0.5386	0.4838	0.0008
LNTAB	12.9170	12.8191	13.4425	(0.0000)	12.7751	12.8517	(0.0721)	14.1952	13.2993	0.0000
ROA	0.0220	0.0198	0.0338	(0.0000)	0.0239	0.0168	(0.0012)	0.0295	0.0346	0.2181
SGROWTH	0.1560	0.1577	0.1470	(0.6017)	0.2569	0.0841	(0.0000)	0.1589	0.1447	0.7065
Z	6.8351	6.5541	8.3433	(0.0000)	6.9522	6.2590	(0.0000)	7.5195	8.5000	0.0841
NDTS	0.0032	0.0005	0.0178	(0.0000)	0.0006	0.0004	(0.5128)	0.0285	0.0157	0.0504
CGR	0.6161	0.5743	0.8402	(0.0000)	0.0000	1.0000	(0.0000)	0.0000	1.0000	0.0000
Obs.	12184	9591	2593		4083	5508		414	2179	

Note: This table shows the descriptive statistics and the test of mean differences among the subsamples of common-law and civil-law countries and by the application of the new legislation on corporate governance measured by CGR variable. The null hypothesis is that equal means exist among the variables for each category. The statistical significance proves whether this hypothesis is accepted. The variables are: short-term bank debt to bank debt (SBDBD), growth opportunities (Q), the external funds needed for financing of the firm's portfolio of projects (NEF), the ownership in the hands of the main shareholder (blockholder) and in the hands of the executives (OWN), the company size (LNTAB), the return of assets (ROA), the sales growth (SGROWTH), default risk (Z), the non-debt tax shield (NDTS), and the dummy variable used to account for Sarbanes-Oxley Act in the case of the US and the legislation on corporate governance in the other countries included in the sample (CGR).

among others, we used as a proxy for growth opportunities the market to book value ratio (Q).

According to Hawawini and Viallet (2011) we computed the ratio of external funds need (NEF) as the difference between the growth rate in total assets and the ROE over 1-ROE.

As a measure of ownership concentration, we used the percentage of closely held stocks, which corresponds to the percentage of shares in the hands of the controller stockholder plus the ownership of the managers (OWN).

We also included in our analysis: the firm's size, return on assets, the growth of sales, the bankruptcy risk, and the non-debt tax shield. These variables appear in most empirical works on bank debt (Barclay, Max, and Smith, 2003a; Dang, 2010; Gottesman and Roberts, 2004; Ozkan, 2002; Rauh and Sufi, 2010; Saona and Vallelado, 2005, 2010). The logarithmic transformation of the book value of firm assets was our measure of firm size (LNTAB).[6] To measure the profitability of the firms' portfolio of projects, we used return on assets (ROA) measured as the earnings before taxes over total assets. Sales growth is the measure of the firm's activity (SGROWTH). We measured the bankruptcy risk (Z) as EBITDA plus equity over total assets and all this was divided by the standard deviation of return on equity. Annual depreciation over total assets is the measure for the non-debt tax shield (NDTS). To account for corporate governance regulation we built a dummy variable (CGR) that takes value 1 for all the years after the regulation was passed in each country and 0 otherwise.

We highlight the importance of the role played by the capital market financing in these countries in comparison with bank financing, and the different institutional environments in which the firms have to make their debt decisions. To do so, we built one sample for civil-law countries and another for common-law countries (Demirgüç-Kunt, Laeven, and Levine, 2004; Demirgüç-Kunt and Maksimovic, 1999, 2002).

In the same vein, the firm-year observations for the subsamples of civil-law companies and common-law companies are divided according to whether they are before or after the introduction of corporate governance regulation in each country.

The empirical analysis includes a descriptive analysis and a mean-difference analysis aimed at exploring the main differences between the variables included in this study for each institutional framework, comparing them before and after the introduction of corporate governance regulation.

4.4 Results

Table 4.2 shows that using short-term bank borrowing is clearly different in our two institutional/legal contexts. In the civil-law regime firms have in average a higher proportion of short-term bank debt (31.38 per cent), lower maturity, than in the common-law regime (19.0 per cent). On the other hand, the firm size for civil-law countries is larger than in the common-law countries, as well as the profitability which is about 3.38 per cent versus 1.98 per cent for firms in common-law countries.

Moreover, we can observe in Table 4.2 that after the introduction of additional corporate governance regulation (CGR variable), firms in both common- and civil-law countries have increased their use of short-term bank debt. Historically, firms in civil-law countries use bank debt with lower maturities than in common-law countries. This result confirms the dependence of civil-law companies on their banks. Banks become a supplier of funds and are delegated supervisors for non-financial firms. Even though the introduction of corporate governance regulation improves transparency it does not modify the controlling role of the banking system as a cornerstone in civil-law countries.

In both institutional environments the growth opportunities are higher than 1 on average, which means that the companies in the sample have growth options. Nevertheless, firms in common-law countries have statistically more growth opportunities than in civil-law countries. The operating activities of firms for the entire period of analysis (1996–2008) seem to grow at the same pace regardless of the institutional setting the firms are part of: there is no statistically significant difference in terms of how fast the sales grow in both contexts.

Our data shows that in common-law countries higher growth opportunities are related with a lower proportion of short-term bank debt and lower bank debt maturity. This means that firms in common-law countries do not solve the moral hazard problems of growth opportunities with short-term bank debt. Once the corporate governance regulation is considered the capital structure decisions change in common-law countries, as we observe lower maturities and higher growth opportunities. This result is in agreement with the findings of Custódio, Ferreira and Laureano (2013) that show a decrease in debt maturity of US firms which concentrates on those with higher information asymmetry.

In the same way, firms in civil-law countries reduce the maturity of bank debt and increase their growth opportunities after the introduction of corporate governance regulation. The reduction in bank debt maturity is not as significant as in common-law countries. The higher disciplining devices and tighter regulation push managers to use more short-term bank debt for financing the firms' growth options. This governance mechanism involves higher supervision by banks and short-term outflows of money, which reduce the discretional behaviour of managers in using the available cash flow in suboptimal investment decisions.

A higher need for external funds is observed for firms operating in common-law countries. Furthermore, we observe higher bankruptcy risk (lower values of Z) and a lower non-debt tax shield than in civil-law countries. As expected, the ownership structure is more concentrated for firms operating in the civil-law regime. The higher concentration observed in this context is considered the answer to weak protection of the interests of investors.

Firms in common-law countries combine higher needs for external funds (NEF) and a lower proportion of short-term bank debt. The opposite finding is observed in companies operating in the civil-law countries. Thus, the use of bank debt maturity to deal with moral hazard problems is conditioned by the environment where the firm operates. However, it is not only the institutional setting that seems to play an important role in both financing and governing firms, but also corporate governance regulation. Before the introduction of CGR, firms in common-law countries show a higher need for external funds and lower proportions of short-term bank debt. However, once the corporate governance regulation is adopted in the common-law countries of our sample, we observe no need for external funds, on average, and a higher proportion of short-term bank debt. The situation looks quite similar for firms in civil-law countries. Thus, these results confirm the interaction between bank debt maturity and regulatory and institutional settings as an explanation for how companies finance their investment projects.

The ownership structure (OWN) is an important corporate governance mechanism particularly in civil-law countries, where the protection of investors' rights is much weaker than in common-law countries. We observe a substitution effect between the ownership structure and the short-term bank debt, with both operating as corporate governance mechanisms. Thus, after the introduction of additional corporate

governance regulation our data shows a significant reduction in ownership concentration and an increase in the proportion of short-term bank debt. In civil-law countries particularly, ownership concentration plays a major role in explaining bank debt maturity. Before corporate governance regulation (CGR) the ownership structure and bank debt maturity were complementary mechanisms of governance, but such complementarities moved towards substitutive after the CGR.

The passing of the new regulations has increased transparency regardless of the institutional setting, improving the internal governance mechanisms of firms in both institutional environments and favouring some convergence in the role played by ownership structure and debt maturity to cope with moral hazard problems.

Profitability (ROA) is higher in civil-law countries than in common-law countries. The introduction of corporate governance regulation influences profitability in a different way in civil and common-law countries. In civil-law countries profitability is higher before than after CGR whereas we observe the opposite for common-law countries.

The firm's activity, measured by the growth rate of annual sales (SGROWTH), presents similar results for civil-law and common-law countries, before as well as after corporate governance regulation (CGR). Concerning bankruptcy risk (Z) we can see that firms in civil-law countries have lower insolvency risk than companies in common-law countries. Additionally, common-law firms increase their insolvency risk after the introduction of corporate governance regulation whereas civil-law companies reduce it.

Non-debt tax shields (NDTS) are higher in companies operating under civil-law. The introduction of corporate governance regulation produces significant changes in civil-law countries. In this case, firms in this institutional setting before the CGR have a higher proportions of tax shields. Thus these firms will be the ones able to take advantage of longer maturities in order to benefit from higher tax shields. The opposite is observed after the CGR.

4.5 Conclusions

The way capital structure, and specifically the source of debt and its maturity, helps stockholders to control their managers is, on the one hand, by reducing the free cash flow, and with it the likelihood of undertaking unprofitable investment projects (overinvestment problem); and on the other hand, by avoiding both the underinvestment problem and the asset substitution problem. Thus, our research documents that there are interactions between regulatory and institutional setting and the source of debt and its maturity to reduce firms' agency problems between stockholders, debt-holders, and managers.

Our aim is to relate the decisions of bank debt maturity to firm-based, institutional settings, and regulatory changes in corporate governance, as drivers of this decision. Specifically, we use growth opportunities, the external funds needed, the ownership structure, the size of the company, profitability, the growth of sales, bankruptcy risk, and non-debt tax shields as firm-based determinants of bank debt maturity. As institutional-based determinants we have considered the legal origin and the banking/capital market-orientation of the different countries included in this study as institutional-based determinants. Finally, the regulatory changes have been included by considering the introduction of corporate governance regulation (CGR) during the period of analysis in each country of the sample.

Thus, we observe that the relationship between the external funds needed, the ownership structure, and the bank debt maturity seem to be conditioned by institutional setting. For instance, firms from common-law countries have less concentrated ownership, use lower proportions of short-term bank debt and have a larger need for external funds than firms from civil-law countries.

Our data does reveal the differential effect of the institutional contexts and regulatory changes in corporate governance on the bank debt maturity adopted by listed firms. For instance, we find that the asymmetries of information related to investment are better solved by shortening the bank debt maturity in the common-law context after the introduction of new rules on firms' transparency (CGR). In the civil-law countries the short-term bank debt is systematically used to finance companies' investments, which means bank debt maturity is a disciplining device over the entire period analysed. In this legal setting, the introduction of corporate governance regulation to increase transparency helps to reinforce the role of bank debt maturity as a disciplining device. Thus we observe a decrease in ownership concentration and a higher proportion of short-term bank debt in the period where the new regulation on corporate governance has been implemented. Furthermore, the introduction of similar regulation in countries with different legal traditions produces some degree of convergence in the use of bank debt maturity as a disciplining device.

Notes

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1. For instance, the OECD obligates the members to improve their individual standards in the institutional, legal, and budgetary areas.
2. Diamond and He (2012) argue that short-term debt could increase debt overhang problems if volatility of the firm value is high, market leverage increases due to bearish stock markets or the firm is close to default.
3. These arguments are supported by Dewatripont and Tirole (1994) who hold that firms with highly concentrated ownership structures will issue bank debt because bank debt and the concentrated ownership structure are complementary elements in the design of an optimal corporate governance system.
4. Senator Paul Sarbanes and Representative Michael Oxley are the main creators of the proposal.
5. We have to recognize that the limited available information about bank debt, in general, and bank-debt maturity in particular, has significantly reduced the number of observations in some countries considered in this study. Nevertheless, the size of the firms' sample per country is representative of each country in terms of total assets and market capitalization.
6. This is the usual solution to working with variables that have non-negative and high-variance values.

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