Capital structure and institutional setting: a decompositional and international analysis

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Abstract

The legal and institutional setting is more and more influential in firms' financial decisions. Our paper analyses firms' capital structure in an international framework in order to assess the different level of debt use across countries and to identify both common and differential explanatory factors. Although the level of financial leverage is quite different, the factors that have traditionally driven capital structure decisions have much in common in all the legal and institutional settings. The performance and size of the firm, the assets tangibility and the growth opportunities have a relevant but differential effect across the different institutional systems. Consequently, our results suggest that the legal and institutional system of each country does not only affect firms' capital structure but also creates the conditions to explain a differential effect of the common determinants of firms' financial choices.

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1. Introduction

The capital structure of firms has been the core of an academic debate for a long time. This debate has run parallel with the research about the influence of the legal and institutional setting on firms' financial decisions. Laws, and specially investor protection, have been proved to have a great influence on the corporate system. In this sense, the analysis of the origins of the legal system can help to explain institutional factors such as corporate governance, the relative importance of capital markets and the development of some industries (La Porta *et al.*, 2000).

This paper is based on both fields and aims to analyse the capital structure of firms in the framework of the legal system of each country. It is a suggestive approach because, although most of the research focuses on developed countries (Rajan and Zingales, 1995), there are notable institutional differences between them which should be taken into account.

This is the main contribution of our paper, as we aim to study the factors determining capital structure in an international framework. We do not simply wish to check the different financial leverage of the different countries or groups of financial systems; we are also interested in analysing different measures of capital structure in order to elucidate how the impact of the factors that have traditionally explained capital structure is conditioned by that legal and institutional framework.

Our results stress the significant differences in financial leverage between countries and between legal frameworks, and how those differences are not due to different factors but to their differential impact. More specifically, we find that the firms belonging to different financial systems show big differences in the level of debt and especially in the maturity structure of debt. In addition, we document the influence of law enforcement and the quality of accounting on firms' capital structure.

Our paper can be divided into four sections. Section 2 looks at the main literature on this topic and we introduce the theoretical background on which the empirical analysis is grounded. Section 3 presents the data, the definition of the variables to be used and the statistical methodology. In section 4, the results of the empirical estimation are reported and discussed. Section 5 includes the most relevant conclusions and some directions for future research.

2. Capital structure and the legal system.

Capital structure has been one of the most controversial topics in finance and there are plenty of papers which have tried to identify its determining factors (Barnea *et al.*, 1985; Harris and Raviv, 1991; Colombo, 2001). Although not exhaustively, the literature has pointed to some of these factors, such as firm size (Marsh, 1982; Jalilvand and Harris, 1984), firm performance (Kester, 1986; Titman and Wessels, 1988), collateral (Bradley *et al.*, 1984; Berger and Udell, 1995), growth opportunities (McConnell and Servaes, 1995), the ownership structure (Kim y Sorensen, 1986; Bergström y Rydqvist, 1990), debt tax shields (Titman and Wessels, 1988) and assets structure (Balakrishnan and Fox, 1993), etc.

In recent years, the literature has paid special attention to the influence of the legal and institutional framework on corporate finance. The financial decisions of firms are not isolated from the institutional characteristics. In fact, the legal and institutional setting creates a net of relations between firms and financial institutions. From this point of view, financial systems have traditionally been classified into two main groups, depending on the orientation or importance of financial intermediaries (Allen, 1995; Allen and Gale, 2001).

There is a Continental or bank-oriented system in which banks play a prominent role as financial channels from the ultimate lenders to the ultimate borrowers. It is the dominating system in Japan and in most Continental European countries such as Germany, France, Italy, Spain, etc. There is also an Anglo-Saxon or market-oriented system (e.g., U.S.A., United Kingdom, etc.) in which banks are not so important and financial functions are directly performed by capital markets. Since both systems show big differences in the extent to which the banks are present in the core of the system, there will also be big differences in the capital structure of the firms (Rajan & Zingales, 1995 and 1998).

In spite of the wide support for this classification, the limitations of this criterion have been underlined in recent years (Corbett & Jenkinson, 1998; La Porta *et al.*, 2000). The banks *vs.* markets scheme relies on two differentiated levels of financial leverage, and Anglo-Saxon firms are usually less leveraged than their Continental counterparts (Rutherford, 1988; Mayer, 1990). Nevertheless, this assertion has been proved not to be completely exact, especially regarding some countries, such as Germany, which are supposed to belong to the bank oriented model (Rajan & Zingales, 1998).

This is why another classification scheme has arisen. Instead of grounding on the importance of markets and financial intermediaries, this new criterion is based on the legal origins of each country (La Porta *et al.* 1997 and 1998; Levine, 1998; Levine *et al.* 2000). Basically, countries are classified into two main groups: common law countries and civil law

countries. While the law is made by judges in common law countries, legal scholars play a prominent role in civil law countries. Civil law countries can be further divided into three origins: the French, Scandinavian and German traditions.

Legal origins determine the characteristics of each system. In fact, creditors' and shareholders' rights, law enforcement, the quality of accountancy, ownership concentration and *per capita* wealth are quite different, conditional upon investor protection. Investors have the best legal protection in common law countries and the worst in the French civil law countries. Similarly, law enforcement and the quality of accountancy are higher in the common law and in the Scandinavian civil law countries than in the others (La Porta *et al.*, 1997).

Financial and institutional systems are relevant because investor protection has a positive effect on the development of capital markets (both equity and debt markets) and, consequently, it affects firms' financial strategy. For instance, weak investor protection implies a more concentrated ownership and control structure (Himmelberg *et al.*, 2004), whereas good protection indirectly leads to the growth of production and productivity through a more efficient resources allocation (La Porta *et al.*, 2000). Likewise, the development of the banking system is positively related to the protection of creditor rights (Levine, 1998) and economic development is enhanced by the institutional framework (i.e. institutional support and economic freedom) as found by Assane and Grammy (2003).

Hence, the legal framework of each country –especially law enforcement and investor protection- has been proved to affect corporate finance (Fabbri, 2001). For instance, Giannetti (2003) has shown how intangible assets –which could be the most difficult assets to fund-, are more easily funded when creditor rights are better protected and that a lower development of capital markets forces firms to use more debt. In addition, Storey (1994) has proved that bank financing is affected by the legal status of the firm.

These two academic fields –namely, capital structure theory and the international comparison of financial systems- are the backbone of our paper since we aim to study the capital structure of an international sample of firms following a decompositional analysis. According to Booth *et al*. (2001), our research is twofold: firstly, in a descriptive approach, we attempt to discover whether capital structure shows significant differences across countries and, secondly, we test whether the factors determining firms' financial decisions have a different influence depending on the legal and institutional framework.

Although the classification scheme according to the institutional environment does not necessary imply any prediction concerning financial leverage but about internal and external

finance (La Porta *et al.*, 1997), there is evidence of the different level of debt and, more specifically, of the different debt maturities across countries. Broadly speaking, firms in the civil law countries usually have more debt and shorter maturity of debt than their common law counterparts (Demirgüc-Kunt and Maksimovic, 1999; Fan *et al.*, 2003). Consequently, we could hypothesize that our results are supposed to show higher financial leverage and shorter maturity of debt in civil-law countries relative to common law countries.

3. Data and methodology

Our data base set is *Compustat*. As is widely known, *Compustat* gathers financial information with high reliability from a large number of firms. Given the high number of countries (and the disparities among them in terms of accounting rules), we have centred on balance sheets and income statements from a sample of 10 countries throughout 1997-2002 (Table 1). These firms can be divided into three of the four above mentioned main institutional settings.

Our methodology follows two steps. The first step is broadly descriptive and aims both to compare the level of debt across countries or across legal systems and to test the existence of possible significant differences through the analysis of variance (hereinafter ANOVA). As stated by Rajan and Zingales (1995), both the level of financial leverage and its sensibility to the influencing factors can critically depend on the kind of measure of financial leverage. Therefore, we propose a set of different measures of capital structure and we decompose them into their basic components. The second methodological stage is mainly explanatory and aims to test the impact of some factors on capital structure. In this phase, we are interested in knowing to what extent the international differences can be explained by a different impact of these factors.

Our sample includes data from Austria and Germany as civil law countries with the German tradition, from Canada, the U.S.A. and the United Kingdom as common law countries, and from Italy, France, Spain, the Netherlands and Belgium as civil law countries with the French tradition. The final distribution by countries and corporate systems is reported in Table 1.

Insert Table 1

We use three main measures of capital structure as suggested by Rajan and Zingales (1995) and, especially, by Bevan and Danbolt (2002), so that we can compare our results with those of the above authors.

The first measure is a general indicator of financial leverage and includes any kind of debt (both financial and commercial debt). We defined B1 as the ratio of financial debt (FD), i.e. costly debt, plus commercial debt (CD) to total assets at book value (TA).

$$\mathrm{B1} = \frac{FD + CD}{TA}$$

The second measures explicitly focuses on costly debt and excludes commercial debt. Consequently we define B2 as total financial debt to book total assets ratio.

$$\mathrm{B2} = \frac{FD}{TA}$$

The last variable is informative of the relation between debt and costly funds (both implicit and explicit cost). These costly funds are costly debt and equity. The main difference between this ratio and previous ones is the exclusion of commercial debt and some elements which are quite difficult to classify such as deferred taxes, minority interests, non-taxable reserves, etc[1].

$$B3 = \frac{FD}{(FD + BV)}$$

Since an all-inclusive explanation of capital structure is beyond the scope of this paper and we simply aim to compare the basic issues of corporate finance across different legal and institutional frameworks, we limit our attention to four variables potentially driving the capital structure decisions of firms (Rajan and Zingales, 1995; Bevan and Danbolt, 2002; Bhaduri, 2002): growth opportunities, firm size, firm performance and assets tangibility.

Growth opportunities, according to McConnell and Servaes (1995) and Lasfer (1995), are proxied by MTB or the market-to-book ratio (book value of debt plus market equity value to book total assets ratio). The size of the firm is measured through the log of the firm's turnover and the performance of the firm is measured with the EBIDTA (earnings before interest, depreciation, taxes and amortizations) to total assets ratio. Assets tangibility is measured through the assets with a physical existence (PA) to total assets ratio. These definitions can be expressed as follows:

[1] We have defined three measures of capital structure analogously to B1, B2 and B3 with market values instead of book values. Results are not reported for simplicity but are fully consistent.

$$MTB = \frac{(TA - BV + VM)}{TA} \qquad PROF = \frac{EBITDA}{TA}$$

$$LOGSALE = Ln(Turnover) \qquad TANG = \frac{PA}{TA}$$

The explanatory analysis is run through regression analysis with the panel data method. The model to be tested can be expressed as follows:

$$L_{it} = \alpha + \beta_1 MTB_{it} + \beta_2 LOGSALE_{it} + \beta_3 PROF_{it} + \beta_4 TANG_{it} + \eta_i + \varepsilon_{it}$$

In this equation, i sub-index stands for the individual and t sub-index for the time. η_i is the fixed-effects term which is firm specific and ε_{it} is the random component which is supposed to introduce all the remaining factors potentially affecting capital structure. The fixed-effects term introduces firm specific factors which can be correlated with the set of independent variables and whose omission could bias the results of the estimation. This fixed effect or unobservable and constant heterogeneity can not only be identified, but also treated by panel data procedures (Arellano, 2003; Baltagi, 2004).

Panel data is basically a multivariate regression analysis along with the use of the Hausman test to detect the existence of these underlying individual effects and their correlation with the explanatory variables. When the Hausman test suggests the rejection of the null hypothesis of no correlation between the fixed effects term and the independent variables, the within-groups estimation provides consistent estimators. If the null hypothesis is not rejected, a random model or generalized least squares provides consistent and asymptotically efficient coefficients.

Nevertheless, there is a lot of literature suggesting the endogeneity of some right-hand side variables, so we should control for this possible endogeneity (Cho, 1998; Demsetz and Villalonga, 2001). There are a number of procedures to deal with this problem and we will stress the generalizad method of moments GMM (Arellano and Bond, 1991; Mairesse and Hall, 1996). The GMM is based on the use of instrumental variables according to the structure of available lagged variables which are supposed to be endogenous. By counting on more instruments than variables to be estimated, GMM provides more efficiently estimated coefficients. This is why, in our last stage, we report the results from the GMM estimation for MTB and PROF in order to test the robustness of our previous results.

4. Results

The first step is a test of possible significant differences for the measures of capital structure among different legal systems. Results are reported in Table 2 and, although they are perhaps too detailed, they show a common and persistent pattern for B1, B2 and B3 across legal systems: whereas firms in the French civil law countries are the most leveraged, their German civil law counterparts are the least prone to debt. Although these results hold for the three measures of financial leverage, they are inconsistent with our expectations, since civil law firms were hypothesized to have more debt than common law firms. Consequently, new analyses are required to solve this conflict.

The next stage is an ANOVA to test the extent to which one can assert that different institutional and legal settings have different mean values of capital structure. ANOVA results, reported in Table 3, are quite significant and show that we can reject the equality of means across the three groups with a confidence level higher than 99%.

Insert Tables 2 and 3

Nevertheless, this evidence requires a more detailed development with bilateral comparisons between pairs of systems as reported in Table 4. This table shows that, on average, the level of financial leverage is significantly different across groups of countries and corroborates the fact that firms from the French tradition of civil law countries are the most leveraged, whereas their German civil law counterparts are those with the least leverage. Consequently, the market *vs.* banks classification scheme seems to lose importance relative to the legal roots and the institutional development criterion for classifying countries and explaining financial decisions (La Porta *et al.*, 2000).

Insert Table 4

We should note that there are some discrepancies in capital structure (for instance, the ranking based on B2 *vs.* the ranking based on B1 and B3). In order to elucidate this issue, we decompose the total debt to total assets ratio (B1) as a function of the maturity structure (Bevan and Danbolt, 2002; Ozkan, 2002). So, we have defined LTDTA as the proportion of long term debt over total assets and STDTA as the proportion of short term debt over total assets. Even short term debt can be divided into suppliers or commercial debt (COMTA) and the other short term debt (OSTDTA)[2].

[2] All these measures have been scaled by total assets.

Results exhibit big differences according to the institutional framework. Consistent with our expectations and with previous literature, while Anglo-Saxon firms are those with the highest long term debt ratio (19.4%), the German civil law firms are those with the lowest long term debt (9.6%). On the contrary, if we focus on the short term debt, we can see how French civil law firms are the most leveraged companies whereas Anglo-Saxon firms are the least ones. In turn, different kinds of debt seem to have an asymmetric role: common law firms appear to be more prone to long term debt whereas civil law firms tend to borrow to short term. Among the possible explanations to these results, we could cite that both the legal protection of investors and the quality of legal enforcement foster long term lending relations, as well as institutional investors and the activity in capital markets –more often in common law countries than in civil law ones.

Once we have checked the differences between legal systems in terms of capital structure, we can test whether the factors determining firms' financial choices are responsible for those differences. We have made capital structure depend on four of the factors which are most usually supposed to affect a firm's finance: growth opportunities (MTB), firm size (LNSALES), firm performance (EBITDA) and assets tangibility (TANG). The results of the regression analysis with the method of panel data are reported in Tables 5 and 6. For each explanatory variable and for each measure of capital structure four estimations are provided. The first one has been run over the entire sample while the second, the third and the fourth are estimated for the Anglo-Saxon, the French and the German tradition of civil law system respectively.

Insert Tables 5 and 6

In general terms, the results reported in Table 5 show a common pattern for the four explanatory variables in all the legal systems and for all the measures of capital structure. Although we do not aim to explain corporate finance decisions in each institutional framework but simply to show the common and the distinctive features, we should try to provide some justification for these results.

Growth opportunities and firm performance are proved to have a negative and significant relation with financial leverage, whereas the size of the firm and the assets tangibility is positively related. These results can be explained by the link between the size of the firm and the asymmetric information in capital markets (Ojah and Manrique, 2005). Since large companies are usually better known in capital markets, there is less asymmetry between a firm's informed managers and investors, so that large firms can more easily borrow from capital markets. The negative relation between debt and firm performance has

been widely documented by previous research into the pecking order theory of capital structure (Myers, 1977; Myers and Majluf, 1984). Nevertheless, the effect of growth opportunities and assets tangibility requires further explanation.

As far as growth opportunities are concerned, their negative impact -when significant- is noticeable and coherent with previous research (Bevan and Danbolt, 2002). A more detailed analysis as a function of maturity structure confirms that firms with more growth opportunities rely on commercial debt because this kind of debt does not impose such constraining covenants as other types of credit (Barclay and Smith, 1999).

Table 5 also shows how assets tangibility is positively related to debt for all the measures of capital structure and in all the legal systems. This result can be explained on the basis of tangible assets as collateral: the more important the tangible assets are the more collateral the firm puts and, consequently, the lower the interest rate is. Notwithstanding, Table 6 shows remarkable differences conditional upon the kind of debt: whereas TANG is positively related to LTDTA, it is negatively related to STDTA. This means that long term debt is likely to fund long term assets (which can be put as collateral for long term debt) and short term debt will fund current assets.

To sum up, our results up to this point show: 1) Noticeable and quite consistent differences in the level of financial leverage across the firms from different legal systems; 2) Financial leverage is affected by the same factors which have traditionally been supposed to explain capital structure. But, if this is the case, one should question how the same factors could produce such large differences across the systems or, more precisely, across countries. This is why, in the subsequent analysis, we introduce two country specific characteristics which are related to the legal and institutional framework: law enforcement and the quality of accounting. Based on data from La Porta *et al.* (1998), we have defined two dummy variables (DEL and DQA) that equal 1 if law enforcement or the quality of accounting is above the mean of the sample[3]. These dummy variables have interacted with the four explanatory variables in order to test if they have differential effects conditioned by the law enforcement and the quality of accounting.

Results are displayed in Table 7. For the sake of simplicity, we will just comment on the most general and common features instead of a too detailed explanation of the results.

[3] The countries with the best law enforcement in our sample are Canada, The United States, Belgium, Holland and Austria, whereas the countries with the best quality of accounting are Canada, The United Kingdom, The United States, France, Holland and Spain. It is interesting to note that this classification differs from the civil *vs.* common law, so that the dummy variables do not measure the legal tradition but these two features of the legal and institutional setting.

The interacting variables are quite significant, so we can assert that growth opportunities, the size and performance of the firm, and the assets tangibility have a different effect depending on those two characteristics. Two results, nevertheless, deviate from this pattern: neither the interaction of MTB and the dummy of quality accounting nor the interaction of TANG and quality accounting seem to have a significant impact. Excluding these exceptions, Table 7 is interesting because it suggests that different levels of leverage are not *per se* a result of the legal environment, but that the legal setting creates the conditions so that those factors have a differential impact.

We have run some additional regressions in order to check the robustness of our results. Firstly, we have defined a dummy variable for each institutional setting. These dummies (DFC and DGC[4]) have interacted with the four above-mentioned explanatory variables to test possible differential effects depending on the legal system. Results are shown in Table 8 and are consistent with previous ones: the four variables continue to be significant and, in addition, the interacting variables are also statistically significant, with the sole exception of MTB in some estimations. Since a very exhaustive explanation might obscure the general meaning of the regression, just a general comment can be suitable: the high significance of the interacting variables allows us to infer that the four determinants of capital structure have a differential influence in each legal system.

Another sensitivity analysis takes into account the possible endogeneity of the explanatory variables. As some authors have pointed out (Demsetz and Lehn, 1985; Jensen, 1986; McConnell and Servaes, 1995), some firms' characteristics that we have assumed exogeneous could be affected by the firms' capital structure. Thus, we have replicated the previous regressions with the generalized method of moments (GMM) to control for the potential endogeneity of the explanatory variables (Table 9). Results basically remain the same as the previous ones with two small exceptions: PROF is no longer as significant as it was and MTB coefficients are inconsistent for some estimations. Notwithstanding, the Hansen test, which aims to control the overidentification restrictions –and, consequently, the validity of instruments- does not support the accuracy of the instruments. Additionally, the second order serial correlation would advise some caveat in analyzing GMM results because the weakness of the instruments reduces the efficiency of the estimations and increases the possible bias.

[4] Dummy for the French civil and the German civil countries.

5. Concluding remarks

Recent research has shown the influence of the legal and institutional setting on firms' financial decisions. These decisions are no longer due just to firms' value enhancement strategies but are also affected by the legal framework in which firms operate. Our paper joins analyses of firms' capital structure in an international framework in order to test differences across countries or legal systems and to find common points in the factors potentially affecting capital structure.

We begin with a division of the countries according to the characteristics of the corporate system. The traditional bank-oriented *vs.* market-oriented classification scheme is no longer practical enough and we need to use more precise criteria based on the legal origin of institutions. In fact, as a first conclusion of our paper, we can assert that the global consideration of the bank oriented system is inexact since it includes a number of countries with fairly different corporate systems. When we decompose capital structure in a set of different measures, we find that the firms in the French tradition of civil law countries are more leveraged than their common law counterparts and we also find that the firms in the German tradition of civil law are the least leveraged ones. More important than the level of leverage, our analysis reveals a clear difference in debt maturity so that, the more the rights of investors are protected, the longer the term of the debt becomes.

Although the use of debt is different across legal systems, the factors traditionally thought as determinants of capital structure have much in common in different financial systems. Although the performance and the size of the firm, the assets tangibility and growth opportunities have a similar effect in the three scenarios, there are specific effects conditional on the legal systems. Consequently, our results suggest that the effect of the factors that have traditionally been considered determinants of capital structure depends on the legal and institutional setting and that these differential effects can explain international disparities in capital structure. Our research has also shown that the introduction of some variables concerning the legal protection of investors, such as the enforcement of the law and the quality of the financial information, can help to explain firms' financial choices.

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Table 1: Sample distribution across countries

Countries	Number of firms	Countries	Number of firms
United States	2,827	Holland	185
United Kingdom	675	Belgium	102
Canada	464	Italy	209
Total common law	**4,066**	France	564
Germany	671	Spain	103
Austria	92	**Total French civil law**	**1,163**
Total German civil law	**763**	**Total**	**5,992**

Table 2: Mean value of debt conditional upon the legal system

The whole number of observations is 18,003 for common law countries, 4,854 for the French tradition of civil law countries and 3,029 from the German tradition of the civil law countries. B1 and M1 are all-items including definitions of capital structure, B2 and M2 includes just costly debt and B3 and M3 are scaled by costly liabilities. LTDTA and STDTA stand for long term debt or short term debt to total assets respectively. COMTA stands for commercial debt to total assets ratio and OSTTA for other short term debt to total assets ratio.

		Mean			Mean
B1	Anglo.	0,3279	LTDTA	Anglo.	0,1946
	French	0,3894		French	0,1319
	Germ.	0,2839		Germ.	0,0968
	Total	0,3343		Total	0,1714
B2	Anglo.	0,2368	STDTA	Anglo.	0,1334
	French	0,2313		French	0,2575
	Germ.	0,1896		Germ.	0,1871
	Total	0,2302		Total	0,1629
B3	Anglo.	0,3276	COMTA	Anglo.	0,0912
	French	0,3780		French	0,1581
	Germ.	0,3186		Germ.	0,0943
	Total	0,3360		Total	0,1041
			OSTTA	Anglo.	0,0422
				French	0,0994
				Germ.	0,0928
				Total	0,0588

Table 3: Analysis of the variance depending on the legal system

		Square mean	F-Test	p-value		Square mean	F-Test	p-value
B1	Between-groups	11.585	336.06	0.000	LTDTA	17.048	673.608	0.000
	Within-groups	0.034				0.025		
B2	Between-groups	2.886	94.35	0.000	STDTA	30.462	2273.038	0.000
	Within-groups	0.030				0.013		
B3	Between-groups	5.376	93.90	0.000	COMTA	8.725	1288.853	0.000
	Within-groups	0.057				0.006		
					OSTTA	8.238	1427.425	0.000
						0.005		

Comment [Y1]: Los comas no deberían de ser puntos. Quiero decir decimal (que es punto en inglés) y no mil (que es coma en inglés?

Table 4: Bilateral *post-hoc* tests

	System I	System II	Difference	p-value		Difference	p-value
B1	Anglo.	French	-0,061	0,000	LTDTA	0,062	0,000
		German	0,044	0,000		0,097	0,000
	French	German	0,105	0,000		0,035	0,000
B2	Anglo.	French	0,005	0,055	STDTA	-0,124	0,000
		German	0,047	0,000		-0,053	0,000
	French	German	0,041	0,000		0,070	0,000
B3	Anglo.	French	-0,050	0,000	COMTA	-0,066	0,000
		German	0,009	0,056		-0,003	0,052
	French	German	0,059	0,000		0,063	0,000
					OSTTA	-0,057	0,000
						-0,050	0,000
						0,006	0,000

Table 5: Factors affecting capital structure.

Estimated coefficients and (t-statistics). *** for a confidence level higher than 99%, ** for a confidence level higher than 95% and * for a confidence level higher than 90%. Hausman test follows a χ^2 distribution with so many degrees of freedom as estimated coefficients.

	B1				B2				B3			
	Total	Anglo	French	German	Total	Anglo	French	German	Total	Anglo	French	German
MTB	-0.0007 (-1.62)	-0.0001 (-0.35)	0,002 (1.91)*	-0,002 (-1.84)*	-0.001 (-4.04)**	-0.001 (-2.50)**	-0,000 (-0.15)	-0,002 (-2.07)**	-0.001 (-2.76)**	-0.001 (-1.63)	0,001 (0.54)	-0,001 (-0.64)
LSALES	0.036 (22.38)**	0.028 (14.80)**	0,065 (17.55)**	0,064 (11.93)**	0.028 (17.77)**	0.021 (11.60)**	0,053 (15.37)**	0,044 (8.37)**	0.049 (22.64)**	0.036 (14.75)**	0,094 (18.39)**	0,088 (10.93)**
PROF	-0.081 (22.49)**	-0.092 (-20.90)**	-0,290 (-16.04)**	-0,025 (-3.70)**	-0.070 (-20.34)**	-0.080 (-18.85)**	-0,259 (-15.71)**	-0,019 (-2.93)**	-0.106 (-22.32)**	-0.119 (-20.98)**	-0,422 (-17.33)**	-0,034 (-3.33)**
TANG	0.123 (16.38)**	0.122 (13.73)**	0,055 (2.89)**	0,163 (7.73)**	0.197 (27.12)**	0.192 (22.35)**	0,186 (10.37)**	0,203 (9.92)**	0.215 (21.47)**	0.207 (18.10)***	0,137 (5.18)**	0,284 (9.05)**
Adj.-R^2	0.1443	0.1950	0.0657	0.0805	0.2188	0.2750	0.0890	0.0710	0.2221	0.2864	0.1420	0.1324
Hausman test	509.79**	449.59**	164.47**	62.57**	377.63**	341.22**	158.53**	46.74**	390.14**	366.13**	137.88**	56.93**

Table 6: Factors determining capital structure.

Estimated coefficients and (t-statistics). *** for a confidence level higher than 99%, ** for a confidence level higher than 95% and * for a confidence level higher than 90%. Hausman test follows a χ^2 distribution with so many degrees of freedom as estimated coefficients.

	LTDTA				STDTA			
	Total	Anglo	French	German	Total	Anglo	French	German.
MTB	-0.001 (-2.23)**	-0.001 (-1.74)*	-0,001 (-0.29)	-0,001 (-0.45)	0.001 (0.59)	0.001 (1.95)*	0,003 (2.42)**	-0,002 (-1.67)*
LSALES	0.019 (13.14)***	0.018 (10.10)***	0,031 (10.12)***	0,011 (2.79)**	0.016 (13.91)***	0.009 (7.46)***	0,033 (10.12)***	0,053 (10.89)***
PROF	-0.047 (-14.16)***	-0.053 (-12.69)***	-0,131 (-8.83)***	-0,016 (-3.14)***	-0.034 (-12.77)***	-0.038 (-12.76)**	-0,159 (-10.14)***	-0,009 (-1.48)
TANG	0.174 (25.13)***	0.172 (20.17)***	0,194 (12.07)***	0,149 (9.41)***	-0.051 (-9.20)***	-0.050 (-8.33)***	-0,139 (-8.2)***	0,014 (0.74)
Adj.-R^2	0.2704	0.2821	0.1695	0.1475	0.0673	0.0734	0.0674	0.0482
Hausman test	412.61***	333.62***	60.99***	30.48***	742.44***	352.27***	110.62***	70.54***
	COMTA				OSTTA			
	Total	Anglo	French	German	Total	Anglo	French	German.
MTB	0.001 (5.89)***	0.001 (6.12)***	0,003 (3.76)***	0,001 (0.36)	-0.001 (-2.86)**	-0.001 (-1.27)	0,001 (0.14)	-0,002 (-2.03)**
LSALES	0.008 (13.69)***	0.006 (10.50)***	0,011 (5.73)***	0,020 (8.54)***	0.008 (7.81)***	0.003 (2.56)**	0,021 (7.79)***	0,032 (7.31)***
PROF	-0.010 (-7.54)***	-0.011 (-7.79)***	-0,030 (-3.17)***	-0,006 (-1.91)*	-0.023 (-10.19)**	-0.026 (-10.24)***	-0,128 (-9.67)***	-0,003 (-0.59)
TANG	-0.073 (-25.35)***	-0.070 (-23.28)***	-0,130 (-12.54)**	-0,039 (-4.22)***	0.022 (4.61)***	0.020 (3.80)***	-0,008 (-0.60)	0,053 (3.10)***
Adj.-R^2	0.1580	0.1302	0.1797	0.1246	0.0013	0.0049	0.0025	0.0100
Hausman test	617.32**	391.45**	59.42***	45.04**	285.87**	83.56***	82.76***	41.34***

Table 7: Factors determining capital structure with law enforcement and the quality of accounting

Estimated coefficients and (t-statistics). *** for a confidence level higher than 99%, ** for a confidence level higher than 95% and * for a confidence level higher than 90%. Hausman test follows a χ^2 distribution with so many degrees of freedom as estimated coefficients. Independent variables have interacted with a dummy of law enforcement (DEL) and with a dummy of the quality of accounting (DQA)

	B1		B2		B3		LTDTA		STDTA		COMTA		OSTTA	
MTB	0.001 (1.08)	-0.0017 (-1.35)	-0.0007 (-0.8)	-0.0026 (-2.09)**	0.0008 (0.65)	-0.0017 (-1.02)	0.0005 (0.6)	-0.0007 (-0.55)	0.0005 (0.71)	-0.0011 (-1.14)	0.0017 (4.82)***	0.0008 (1.72)*	-0.0012 (-2.08)**	-0.0019 (-2.34)**
LSALES	0.0628 (20.76)***	0.0704 (14.63)***	0.0489 (16.78)***	0.0493 (10.63)***	0.0851 (21.19)***	0.0937 (14.66)***	0.0302 (10.78)***	0.0184 (4.13)***	0.0327 (14.6)***	0.052 (14.66)***	0.0139 (11.91)***	0.0211 (11.39)***	0.0188 (9.67)***	0.0309 (10.02)***
PROF	-0.138 (-14.74)***	-0.0338 (-4.81)***	-0.1248 (-13.83)***	-0.0265 (-3.91)***	-0.2029 (-16.32)***	-0.0461 (-4.93)***	-0.062 (-7.15)***	-0.0187 (-2.88)***	-0.0761 (-10.99)***	-0.0151 (-2.91)***	-0.0132 (-3.66)***	-0.0073 (-2.7)***	-0.0629 (-10.46)***	-0.0078 (-1.73)*
TANG	0.1158 (9.04)***	0.1457 (7.48)***	0.2071 (16.76)***	0.195 (10.39)***	0.2239 (13.16)***	0.2419 (9.36)***	0.1758 (14.82)***	0.1525 (8.47)***	-0.0599 (-6.33)***	-0.0068 (-0.47)	-0.0913 (-18.47)***	-0.0493 (-6.58)***	0.0314 (3.82)***	0.0425 (3.41)***
MTB*DLE	-0.002 (-1.89)*		-0.0013 (-1.26)		-0.003 (-2.07)**		-0.002 (-1.98)**		-0.0001 (-0.07)		-0.0007 (-1.75)**		0.0007 (0.97)	
LSALES*DLE	-0.0372 (-10.33)***		-0.0298 (-8.59)***		-0.051 (-10.68)***		-0.0145 (-4.36)***		-0.0226 (-8.52)***		-0.0074 (-5.31)***		-0.0153 (-6.62)***	
PROF*DLE	0.0677 (6.67)***		0.0643 (6.58)***		0.1139 (8.46)***		0.0179 (1.91)**		0.0498 (6.64)***		0.0034 (0.87)		0.0464 (7.14)***	
TANG*DLE	0.0078 (0.49)		-0.0188 (-1.23)		-0.0196 (-0.93)		-0.0029 (-0.2)		0.0107 (0.92)		0.0266 (4.36)***		-0.0159 (-1.57)	
MTB*DQA		0.0016 (1.14)		0.0012 (0.89)		0.0006 (0.3)		-0.0002 (-0.18)		0.0018 (1.76)*		0.0004 (0.71)		0.0014 (1.6)
LSALES*DQA		-0.0378 (-7.39)***		-0.0237 (-4.81)***		-0.0498 (-7.32)***		0.0019 (0.41)		-0.0397 (-10.53)***		-0.0141 (-7.15)***		-0.0257 (-7.82)***
PROF*DQA		-0.0645 (-7.88)***		-0.0599 (-7.59)***		-0.0828 (-7.62)***		-0.0382 (-5.05)***		-0.0263 (-4.35)***		-0.0045 (-1.44)		-0.0217 (-4.14)***
TANG*DQA		-0.0276 (-1.31)		0.0008 (0.04)		-0.0338 (-1.21)		0.0248 (1.27)		-0.0523 (-3.36)***		-0.0284 (-3.49)***		-0.024 (-1.77)*
Adj-R^2	0.0512	0.0447	0.0479	0.1207	0.0741	0.1135	0.0883	0.2816	0.1432	0.0597	0.1894	0.0494	0.054	0.0585
Hausman test	646.91***	635.1***	540.37***	434.08***	536.43***	462.59***	494.81***	412.65***	530.14***	750.67***	450.07***	731.96***	214.98**	255.6***

Comment [Y2]: Otra vez puntos y comas?

Table 8: Factors determining capital structure with dummy variables for institutional settings

Estimated coefficients and (t-statistics). *** for a confidence level higher than 99%, ** for a confidence level higher than 95% and * for a confidence level higher than 90%. Hausman test follows a χ^2 distribution with so many degrees of freedom as estimated coefficients. Independent variables have interacted with dummy variables of the French civil system (DFC) and the German civil system (DGC).

	B1	B2	B3	LTDTA	STDTA	COMTA	OSTTA
MTB	-0.0002 (-0.36)	-0.0014 (-2.61)***	-0.0012 (-1.64)*	-0.001 (-1.88)*	0.0008 (1.87)*	0.0012 (5.59)***	-0.0004 (-1.21)
LSALES	0.0285 (15.35)***	0.0216 (12.08)***	0.0367 (14.9)***	0.0187 (10.88)***	0.0098 (7.14)***	0.0069 (9.59)***	0.0029 (2.44)**
PROF	-0.092 (-21.68)***	-0.0804 (-19.63)***	-0.1193 (-21.19)***	-0.0538 (-13.67)***	-0.0382 (-12.21)***	-0.0117 (-7.12)***	-0.0266 (-9.76)***
TANG	0.1222 (14.25)***	0.1926 (23.28)***	0.2079 (18.29)***	0.1726 (21.72)***	-0.0505 (-7.97)***	-0.0704 (-21.28)***	0.02 (3.62)***
MTB*DFC	0.0028 (1.67)*	0.0012 (0.74)	0.0022 (1.00)	0.0006 (0.4)	0.0022 (1.76)*	0.0016 (2.48)**	0.0006 (0.53)
LSALES*DFC	0.0368 (7.82)***	0.032 (7.06)***	0.0581 (9.32)***	0.013 (2.99)***	0.0237 (6.84)***	0.0048 (2.62)***	0.019 (6.29)***
PROF*DFC	-0.1981 (-9.48)***	-0.1793 (-8.9)***	-0.3034 (-10.95)***	-0.0774 (-4.00)***	-0.1207 (-7.83)***	-0.0188 (-2.33)**	-0.1019 (-7.6)***
TANG*DFC	-0.067 (-2.81)***	-0.0065 (-0.28)	-0.0707 (-2.24)**	0.0221 (1.00)	-0.0891 (-5.07)***	-0.0604 (-6.58)***	-0.0286 (-1.87)*
MTB*DGC	-0.0022 (-1.52)	-0.0012 (-0.89)	-0.0001 (-0.03)	0.0005 (0.38)	-0.0027 (-2.54)**	-0.001 (-1.72)*	-0.0018 (-1.88)*
LSALES*DGC	0.0364 (6.15)***	0.0225 (3.94)***	0.0518 (6.6)***	-0.0073 (-1.34)	0.0437 (10.01)***	0.0139 (6.08)***	0.0298 (7.85)***
PROF*DGC	0.0666 (8.03)***	0.0608 (7.6)***	0.0851 (7.74)***	0.0375 (4.88)***	0.029 (4.75)***	0.0058 (1.81)*	0.0233 (4.37)***
TANG*DGC	0.041 (1.75)*	0.0104 (0.46)	0.0763 (2.46)**	-0.0235 (-1.08)	0.0645 (3.73)***	0.0306 (3.39)***	0.0339 (2.25)**
Adj.-R^2	0.068	0.0905	0.1096	0.1802	0.0824	0.0430	0.0815
Hausman test	658.3***	500.73***	521.0***	445.24****	594.38***	569.75***	233.2***

Table 9: Factors determining capital structure (GMM estimation)

Estimated coefficients and (t-statistics). *** for a confidence level higher than 99%, ** for a confidence level higher than 95% and * for a confidence level higher than 90%. Wald test is a test of joint significance for all the variables. Hansen test of overidentification restrictions allows controlling the validity of instruments and follows a χ^2 distribution with so many degrees of freedom as the difference between the number of instruments and the number of regressors. AR(1) and AR(2) are tests or first and second order serial correlation.

	B1	B2	B3	LTDTA	STDTA	COMTA	OSTTA
MTB	0,0085 (2,9)***	0,0048 (1,82)*	0,0019 (0,55)	0,0025 (1,09)	0,0064 (4,06)***	0,0053 (5,69)***	0,0008 (0,65)
LSALES	0,0298 (5,56)***	0,0253 (5,66)***	0,0433 (6,87)***	0,0169 (4,06)***	0,0178 (5,64)***	0,0037 (1,64)*	0,0084 (4,37)***
PROF	-0,0444 (-1,34)	-0,0902 (-3,06)***	-0,0972 (-2,35)**	-0,0504 (-2,46)**	-0,0211 (-1,21)	0,0004 (0,08)	-0,0344 (-2,55)**
TANG	0,1862 (10,11)***	0,229 (13,23)***	0,2502 (10,89)***	0,2133 (14,15)***	-0,0458 (-3,49)***	-0,0424 (-5,84)***	0,0071 (0,68)
Wald test	164,6***	276,9***	245,5***	273,6***	59,7***	96,6***	28,3***
Hansen test	19,412***	13,28**	10,07	7,52	14,97**	77,82***	20,03***
AR(1)	-7,15***	-7,37***	-6,29***	-10,04***	-13,41***	-8,81***	-12,69***
AR(2)	-5.59***	-5,04***	-4,84***	-4,73***	-4,84***	-2,19**	-4,03***

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