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THE IMPACT OF FINANCIAL AND LEGAL STRUCTURES ON THE PERFORMANCE OF EUROPEAN LISTED FIRMS

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ABSTRACT

This study examines the impact of capital structure on the performance of listed firms in the European region by considering different systems of legal protection. Based on 5,050 listed firms in eight European countries, the results of the study reveal that owners in low level of legal investor protection countries are more likely to use the firm's capital structure to serve their own interests. In the case of high level of legal protection the results indicate that debt is used as a disciplinary tool to constrain the expropriation of private benefits.

JEL: K4, F23

KEYWORDS: Capital Structure, Financial Performance, Legal Protection, Financial Behavior, Leverage

INTRODUCTION

During the last half century we have witnessed the development of financial theories that emphasize the importance and impact of financial structure on firm performance. In their seminal work, Modigliani and Miller (1958) lay out the foundations of modern corporate finance by developing a theory that helps us understand factors that determine the firm's capital structure decisions. They demonstrate the value of a firm is independent of its capital structure and consequently there is no correlation between leverage and firm value in a world without taxes, agency conflicts, bankruptcy and transactions costs. Modigliani and Miller (1963) show that when taxes are introduced into their model the value of a leveraged firm is enhanced by the tax shield provided by the tax deductibility of interest payments on corporate debt. Under this condition, the value of the levered firm equals that of the unlevered firm plus the value of the debt tax shield.

Following Modigliani and Miller, several other theories have set out to explain the capital structure choices of firms and their impact on firm value such as the pecking order theory, the free cash-flow theory, the trade-off theory and the agency cost theory. Jensen and Meckling (1976) propose in their agency cost theory the usage of debt as a disciplinary tool to ensure the performance of managerial staff. Doing so serves the best interests of shareholders specifically when control and ownership are separated. Thus, higher debt leads to reduce free cash-flow waste by managers (Jensen, 1986).

Stulz (1990) confirms this effect by indicating that reduction of free cash-flow may decrease the cost of overinvestment and hence increase firm value. However this can also exacerbate the cost of underinvesting by leading managers to reject value enhancing projects. Accordingly, the trade-off theory (Myers, 1984) states that the benefits and costs of capital sources must be traded off until the benefits (e.g. tax advantages) of debt offset the costs (e.g. financial distress) of debt. In Myers (1977) model debt may cause underinvestment in future opportunities, specifically when debt-holders capture most of the investment return while shareholders bear most of the cost. A crucial assumption for this to happen is that the project is equity financed and outstanding debt matures after the return of the new investment is realized so that

the increase in the value of bond-holders claims resulting from this project is an excess of its NPV. In this situation debt will have a negative impact on firm value by creating a conflict between shareholders and debt-holders. Therefore, Myers suggests the use of short-term debt may be a better option to avoid the distortionary effects on investment of such conflicts.

The pecking order theory (Myers and Majluf, 1984) advances the underinvestment argument further by emphasizing the effects of informational asymmetries. For example, if managers' information about the value of the firm is superior to that of the market, firms should finance their investments in a hierarchal order giving priority to sources of capital that reveal the least information; i.e. using retained earnings followed by external financing. And, when external financing is required, debt will be preferred before issuing new equity. In recent years, a host of studies have examined the impact of alternative legal rules regarding investor rights on capital structure choices and firm valuation.

The question is to what extent agency conflicts of equity and debt can be mitigated by the legal system. La Porta et al. (1998) and Claessens et al. (2000) highlight the complexities of managing capital structure by considering how factors such as the legal and regulatory environment of investor protection can explain why some firms are financed differently in different countries. The authors divide European countries into three different families of legal regimes: the French civil law countries, the English common law countries and finally the German civil law countries. In French civil law countries they find that the low level of protection and regulation may increase the level of (outside) investor expropriation. On the other hand, in English common law countries the higher level of regulation and legal protection can reduce the agency cost of debt and more generally the expropriation of outside investors by inside owners (managers). Shleifer and Vishny (1997) reveal that legal protection limits the extent of expropriation of minority shareholders and promotes financial performance. Stiglitz (1985) and Bebchuk (1994) indicate that blockholders can abuse their dominant position especially when weak legal protection exists.

The evidence generally indicates that legal protections might explain, at least in part, differences in capital structures in different countries (e.g. Antoniou et al. JFQA 2008, Alves et al. JMFM 2011). The aim of this study is to provide new evidence on this topic by addressing the following questions: What is the influence of legal protection on the capital structure choices of European firms? What is the influence of capital structure on firm performance across different families of European legal regimes? More specifically, we focus on the interaction between capital structure and the performance of European listed firms by considering the different regimes of legal protection. This provides an opportunity to investigate if the legal protection systems in Europe are an important determinant of financial behavior. We carry out our empirical analysis based on new data extracted as of the end of 2012. We recognize it is impossible to study capital structure without considering micro factors that shape firms' financing decisions. We pay particular attention to the ownership dimension by examining the impact of ownership structure in conjunction with the legal investor protection regime. Bebchuk (1994) indicates that differential voting and pyramid schemes are used to facilitate expropriation through debt especially when weak legal protection exists. Indeed we can address another important question, namely: What happens to financial performance if large shareholders can expropriate bondholders especially in the case of weak legal protection? The next section explains briefly the impact of capital structure on financial performance, the legal regimes and their impact on financial behavior and the interaction between ownership and capital structures. Section 2 outlines the methodology and describes the data. Section 3 reports the results and concludes the paper.

LITERATURE REVIEW

Agency theory (Jensen and Meckling, 1976) is based on the premise that managers (agents) will not watch over the businesses of a firm as would the owners (principals). The fundamental element behind this theory is the separation between ownership and management, which may increase the conflicts and consequently the agency costs by moving each entity to achieve its own interests. For Jensen (1986), the excess of free

cash-flow is the most important cause of conflicts between managers and shareholders. Accordingly, he proposes to mitigate the opportunistic behavior of a manager by increasing the firm's ratio of debt to total financing. In this case, debt will have a positive impact on firm value through the pressure to generate cash flow in order to service debt. Harris and Raviv (1991) survey evidence that shows debt can act as a monitoring and incentive device. And Dewatripont and Tirol (1994) confirm that by providing performance contingent managerial incentives debt can enhance investor control rights. In Shleifer and Wolfenzon (JFE 2002) distortions caused by private extraction of benefits of control by insiders increase the cost of external finance with weak investor protection increasing these costs further.

In Sarkar and Zapatero (2003) debt has a positive impact on firm profitability. Frank and Goyal (2003), report that equity issues rather than debt issues track much more closely firm financing deficit practices, contrary to what is advocated by the pecking order theory. They find greater support for the pecking order theory among large firms, which is expected as these firms face a less severe adverse selection problem. Moreover, Margaritis and Psillaki (2009) confirmed the free cash flow theory by reporting that firms with high leverage are lesser able to invest in projects showing negative net present value.

While some studies have reported a positive impact of debt on performance, other have found a negative relationship between debt and financial performance. For example, some firms (e.g. growth firms) may be more vulnerable and lose more of their value when they go into financial distress. In this case, theory predicts a negative relation between leverage and profitability. Empirical studies generally support this prediction (e.g. Rajan and Zingales (1995). Similar findings on the relationship between debt and profitability are reported by Chiang et al. (2002) and Eriotis et al. (2002). Abor (2005) find that high long-term debt is negatively correlated with profitability in Ghana, Bhagat and Bolton (2008) in the US, and Ghosh (2008) in India. As for the relation between the expropriation and the usage of debt, many studies point to the presence of expropriation. Recently, Bai et al. (2013) reported a positive and significant relationship between expropriation and debt usage of Chinese firms. The authors measure the amount of expropriation by aggregating the value of corporate loans made to the controlling shareholder. This result is consistent with the prior study of Faccio et al. (2001) in which they argue that higher leverage ensures the controlling shareholder more resources to expropriate private benefits without diluting his controlling.
Theories and empirical studies document mixed and significant results, which lead us to formulate the following hypothesis:

H0: There is a significant impact of leverage on the performance of listed firms.

Possible endogeneity problems in this study have to be considered. In its simplest form, a possible problem of endogeneity might arise if firm performance causes choices about capital structure. Bergeret al. (2006) and Margaritis et al. (2010) argue that capital structure may be endogenously determined by firm performance. In such a case, causality might not always run from capital structure to performance. The reverse direction might also be true. Therefore, the simultaneous equations regression analyses are employed to capture if the firm performance is affected by the capital structure.

In recent years, a host of European studies have discussed the importance of laws and regulations to explain financial behavior. For La Porta et al. (1998) and Claessens et al. (2000), it is impossible to explain the impact of any financial behavior without considering its country's regulations. In Europe, regulations vary a lot across countries due to differences in legal origin. We examine three legal origins: French civil law, English common law and finally German and Scandinavian (GS) civil law. The basis of French civil law is identified by the French revolution in the 19th century. The development of France in the colonial era and the dissolution of the Portugal - Spanish empires have extended French civil law to many nations such as: Netherlands, Italy, Belgium, Spain, Portugal and Switzerland. For La Porta et al. (1998) the French civil law countries have the worst legal protections due to some criteria such as: the highest level of concentrated ownership, the highest level of deviation from the principle of one-share/one-vote and the lowest incidence

of allowing voting by mail. In this circumstance of low legal protections, high debt levels may be used to increase tunneling and expropriation of outside shareholders. Accordingly, Bebchuk et al. (2000) pointed out that a low level of legal protection leads to increased tunneling in leveraged CMS. Controlling-minority structure: places corporate control in the hands of an insider who holds a small fraction of the firm's cash-flow rights. Bertrand et al. (2002) argued the same results in the case of pyramid structure. Under a pyramidal structure, the ultimate owner has the ability to use debt in order to expropriate resources from affiliated companies to those higher up the pyramid. In the same context of French civil law, Boubaker (2007) reported that external financing eases the expropriation of outside shareholders.

In 2001, Faccio et al. revealed the absence of transparency and disclosures norms enable owners to use debt more effectively to extract private benefits, which has a negative impact on stock valuations. Consistent with these results, Johnson et al. (2000) found that weak legal protection has an important role to play in stock market declines. Therefore, when legal protection is weak, debt fails to serve its disciplinary role and becomes a tool for owners to expropriate company resources. As for common law, the literature indicates that this regulation system was developed according to the principle in which it is unfair to treat similar facts differently. Common law has its roots with the English colonists in some countries such as: US, Canada, Hong-Kong and Australia. In European countries, Ireland was the subject of the first extension of common law system outside the UK.

To prove the importance of common law, La Porta et al. (1998) reported that countries with English common law afford the strongest protection for minority investors. In their papers (1998, 1999 and 2000), the authors found that common law is characterized by the highest incidence of law protecting oppressed minorities. Moreover, they reported that common law has the highest average anti-director rights score. Finally, La Porta el al. (1998) revealed many significant differences between common law and civil law, indicating that strong legal protection decreases the risk of expropriation. In 1995, Zingales confirmed that English common law reduces the ability to extract private benefits by limiting the discretionary power of a manager. In 2001, Dyck and Zingales reported that the levels of private benefits are significantly lower in countries with English legal origins than in French legal origin countries. In this case of legal protection, a high level of debt acts as a disciplining device (Sarkar et al. 2008), by aligning the interests of shareholders with the interests of managers (Jensen, 1986). For Day and Taylor (2004), the effectiveness of debt as a monitoring device depends on the institutional context such as the effective bankruptcy laws. Consistent with these results, it can be argued the disciplinary role of debt is sensitive to the legal protection of the country. In the case of a high level of protection, debt can be used to reduce minority expropriation and increase firm performance.

Finally, German and Scandinavian codes are derived from Roman legal traditions, the most developed one around the world. German codes had an important influence on the legal regulations in many European countries such as Switzerland and Austria. However, the Scandinavian countries (Finland, Sweden, Denmark and Norway) have a distinct civil law derived from German Law. In our study, we consider German and Scandinavian civil law in the same family of regulations based on civil legal regulation. Consistent with this reasoning, La Porta et al. (1998) reported that German and Scandinavian civil law countries are in the middle in terms of legal protection. Their results show that common law countries have the strongest level of protection while civil law countries have the weakest level. Dyck and Zingales (2001) reported that private benefits are highest in countries with French code (21%) then countries with German and Scandinavian legal origins (11% and 4%). Their results confirmed the importance of legal rights in any cross country analysis. For the authors, a higher level of legal protection must be accompanied with lower levels of financial distress. Nenova (2001), confirmed the midmost level of German civil law protection. The author found that private benefits are 4.5% in common law countries, 25.4% in French civil law countries and 16.2% in German legal origin countries. Based on the different regimes of legal protection, the hypotheses H1 and H2 are defined as follows:

H_1: In the case of low legal protection, there is a negative impact of leverage on the performance of listed firms.

H_2: In the case of high legal protection, there is a positive impact of leverage on the performance of listed firms.

In some cases of legal protection the ultimate owners expropriate outside minorities by beating some regulations through the structuring of legal transactions. For example, in many European countries the pyramid structure appears if there are restrictions concerning the use of dual class shares. Accordingly, it is very difficult to detect the impact of financial structure on performance without considering micro factors such as ownership concentration and deviation from the principle of one share-one vote. The logic behind this assumption has been supported by many scholars. For example, Filatotchev et al. (2001) reported that ownership structure may provide an incentive to the ultimate owners to expropriate the minority when the investment project is funded by debt. Brailsford et al. (2002) stated that managers seek to reduce their risks and use less debt at high levels of ownership concentration. Du and Dai (2005) revealed that owners with small proportions of shares tend to increase debt to acquire more resources. Boubaker (2007) confirmed that the level of expropriation is very high in French firms, specifically when shareholders own a small part of cash-flow rights. As for the deviation between cash-flow rights and control rights, prior studies show that tunneling and expropriation activities through debt increases in firms with high ratios of deviation between cash-flow and control rights. In 2002, Claessens et al. completed the study of Filatotchev et al. by indicating that tunneling by ultimate owners often takes place in firms in which there is significant divergence between cash flow rights and control rights. The same results have been observed by La Porta el al. (2002). Finally, Faccio et al. (2002) and Masulis et al. (2009) revealed that a high ratio of ownership rights (O) to control rights (C) and a weak creditor protection enable the owner to use the debt to extract private benefits. When a weak legal system exacerbates the situation of owners, ownership concentration rises as a proxy system to mitigate the level of expropriation. Hence, the final two hypotheses of this study are defined as follows:

H_3: A high level of concentrated ownership reduces the risk of expropriation through debts.

H_4: A high level of deviation between ownership rights and control rights increases the risk of expropriation through debts.

DATA AND METHODOLOGY

This study is based on a new database extracted from European countries at the end of 2012. As a starting point for the data collection, eight European countries from different regimes of legal protection were selected to explore the impact of capital structure on financial performance. From each regime of legal protection we used the richest countries based on gross domestic product (GDP) as identified from Eurostat (http://epp.eurostat.ec.europa.eu). France, Italy and Spain represent the French civil law countries; Austria, Germany and Switzerland represent the GS civil law countries and Ireland and UK represent the common law countries. The selected countries represent 77.7% of European countries GDP (Table 1).

Based on Worldscope database we start with 7,501 listed companies extracted from eight European countries. There are three restrictions on this sample. First, we exclude banks and insurance companies to prevent specificity in our study. Second, we eliminate companies with missing data on ownership and financial structure. Finally, we exclude companies owned by the government. We end up with 5,050 companies divided to three samples for which we can trace the ultimate owner and where stock market data are available. The sample of Common law countries consists of 1,667 listed firms, the sample of French law countries consists of 2,698 listed firms and the sample of GS civil law countries consists of 685 listed firms.

Table 1: GDP in 2012 per Country

Regime	French Law Countries			GS Civil Law Countries			Common Law Countries	
Country	France	Italy	Spain	Germany	Austria	Switzerland	UK	Ireland
GDP (2012)	2.61	2.01	1.32	3.42	0.394	0.491	2.446	0.210
GDP % of European countries	15.7%	12.1%	7.9%	20.6%	2.4%	3%	14.7%	1.3%
Total GDP for the selected countries Over the total of European GDP	77.7%							

This table provides the GDP power for the selected countries. The objective of this table is to prove that the selected countries represent the Europe in term of economic power.

Table 1 provides that the French civil law countries have an important role in Europe due to their Economic contribution in terms of GDP. The three richest countries extracted from French civil law contribute 35.7% of Europe's GDP. This contribution drops to 16% for common law countries. The market capitalization of our three samples (Table 2) is more developed in common law countries followed by French civil law countries then GS civil law countries. These results indicate that listed firms in common law countries specifically those listed on the London stock Exchange may have a direct and fast market reaction on their financial behavior. The research methodology involves quantitative analysis to identify the impact of capital structure on the performance of listed firms by considering different regimes of legal protection. To address this issue, we run the following two regressions by focusing on both micro and macro factors of European firms:

$$Q = \beta_1(DBT) + \beta_2(DBT) * (OWN) + \beta_3(DBT) * (O/C) + \beta_i X_i + e_i \quad (1)$$

$$Q = \beta_1(DBT) + \beta_2(DBT) * (OWN)^2 + \beta_3(DBT) * (O/C)^2 + \beta_i X_i + e_i \quad (2)$$

Table 2: Total Number of Selected Companies per Regime of Legal Protection

Regime	French Law Countries			GS Civil Law Countries			Common Law Countries	
Country	France	Italy	Spain	Germany	Austria	Switzerland	UK	Ireland
# of listed companies 2012	862	279	3167	665	70	238	2179	42
Market capitalization in Billion USD	1823	480	995	1486	106	1079	3019	109
# of selected companies per country	592	175	1931	466	41	178	1639	28
Market capitalization in Billion USD for selected sample	1341	310	562	1021	69	798	2498	66
Total # of selected companies per regime of legal protection	2698			685			1667	
Market capitalization in Billion USD for selected sample	2213			1888			2564	

This table provides the distribution of selected sample based on market capitalization and number of listed firms. In this table we can detect two main points: 1-civil law countries are the most prevalent in Europe, 2-the economic of common law countries is the most important in Europe.

Where *ei* is the stochastic error term and *Xi* denotes all the vector of control variables that can affect the performance. These control variables include firm size measured by the natural log of the book value of total assets, firm age measured by the natural log of the number of years since the firm's inception and firm growth measured as the annual growth rate in sales. The first model (Eq.1) is used to determine the impact of financial debt (*DBT*: debt-to-total assets ratio) on Tobin's Q (*Q*). Tobin's *Q = (EQ + PRE + DEBT)/(ASSETS)*. Where *EQ* = the year-end market value of the firm's common stock; *PRE* = the year-end book value of the firm's preference shares (preferred stock); *DEBT* = the year-end book value of the firm's total debts; and *ASSETS* = the total assets employed by the firm. Further analysis of this regression reveals the combined effects of debt with the variables OWN (cash-flow concentration) and O/C (deviation between cash-flow and voting rights). If debt is employed as a disciplinary mechanism, we would expect a positive relationship between {(DBT)*(O/C)} and firm's performance when O/C is used to extract private

benefits. Otherwise, if the ownership concentration is the alternative disciplinary device, we expect a positive and significant relationship between {(DBT)*(OWN)} and firm performance when debts are used to extract private benefits. The second regression (Eq.2) captures any non-monotonic relations. The debt ratio may be non-linearly related to performance when the variables (OWN) and (O/C) increase. On the one hand, higher deviation between ownership and performance might give ultimate owners more power to expropriate through debt. On the other hand, higher cash-flow rights might align the interests of controllers with those of minorities. We regress also the combined effect of financial structure and legal regime by dividing our sample into three subsamples. The first subsample includes French civil law countries, the second one consists of GS civil law countries and the last subsample includes common law countries. The objective is to detect the impact of financial structure on the performance by considering the specificity of each legal regime.

Table 3 provides descriptive statistics of variables used in this study. The sample consists of eight European countries: France, Italy, Spain, Germany, Austria, Switzerland, UK and Ireland. The firms in common law countries have the highest level of performance with the highest level of firm growth. Firms in GS law countries rank second in term of performance while the firms in French civil law rank last. Oppositely, in term of debt ratio French civil law countries rank first ahead of the listed firms in Italy (0.387) and Spain (0.293). Thus, highest debt ratios may be employed as a disciplinary device to reduce cash flow waste. The lowest level of debt ratio exists in UK and Ireland with (0.173) and (0.161) respectively. Between the lowest and the highest debt ratio, firms in France, Germany, Austria and Switzerland have a mid-position.

Table 3: Descriptive Statistics

Regime	**French Law Countries**			**GS Civil Law Countries**			**Common Law Countries**	
Country	France	Italy	Spain	Germany	Austria	Switzerland	UK	Ireland
Tobin's Q	1.624	1.193	1.181	1.935	1.622	1.801	2.094	1.902
DBT	0.261	0.387	0.293	0.284	0.288	0.196	0.173	0.161
OWN	0.448	0.467	0.425	0.458	0.531	0.378	0.359	0.407
O/C	0.883	0.711	0.791	0.854	0.908	0.896	0.842	0.905
FSize	6.187	4.893	4.667	6.213	4.709	4.954	6.001	4.486
FAge	45.21	36.48	39.32	42.87	35.09	39.87	48.32	31.76
FGrow	0.214	0.154	0.179	0.237	0.126	0.245	0.267	0.154
N	592	175	1931	466	41	178	1639	28

This table shows the descriptive statistics of the dependent and independent variables. The dependent variable is Tobin's Q measured by the following equation = (EQ + PRE + DEBT)/(ASSETS). Where; EQ = the year-end market value of the firm's common stock; PRE = the year-end book value of the firm's preference shares (preferred stock); DEBT = the year-end book value of the firm's total debt; and ASSETS = the total assets employed by the firm. The independent variables are: DBT measured by total debt over total assets; OWN measured by cash flow concentration; O/C measured by the deviation between control and ownership; Fsize measured by the natural log of the book value of total assets; Fage measured by the natural log of the number of years since firm's inception; Fgrow is the annual growth rate in sales.

Table 3 shows that ownership is very concentrated in French civil law countries specifically in France (44.8%) and Italy (46.7%), while the lowest level of concentration exists in UK (35.9%) and Switzerland (37.8%). These results indicate that firms in common law countries are wildly held corporations where owners have a very small part of controlling rights. However, unlike the widely held corporations, the closely held corporations in French and GS civil law countries are controlled by majority shareholders such as families and financial institutions. Again, there is considerable variation across countries in terms of deviation between ownership and control. The descriptive statistics indicate that the O/C ratio is at the highest level in GS civil law countries and the lowest level exists in Italy (0.711) and Spain (0.791). Through pyramids, multiple voting rights and a weak legal environment in French civil law countries, controlling shareholders have a high incentive to expropriate non-controlling shareholders.

To demonstrate any meaningful link between all the variables of the study correlation statistics were computed by using Pearson's correlation test. The results in Table 4 indicate the relationship between Tobin's Q and firm's growth is positive and significant whereas the relationship between performance and

debt ratio is negative and statistically significant. In light of these results it seems that debt is not used as a disciplinary tool in European countries. The positive relationship between O/C and Debt reveals the possibility of entrenchment, specifically when the ultimate owner has a low cash flow concentration. The negative relationship between OWN and O/C may confirm our first findings.

Table 4: Correlation Statistics

Variables	Tobin's Q	Debt	OWN	O/C	Firm Size	Firm Age	Firm Growth
Tobin's Q	1						
DBT	-0.032*	1					
OWN	0.115	-0.221	1				
O/C	-0.328	0.129**	-0.176*	1			
FSize	0.109	-0.045	0.035	-0.267	1		
FAge	0.185	0.106	-0.076	0.003	0.091*	1	
FGrow	0.254**	-0.097	-0.064	0.051	0.022	-0.031	1

This table presents correlation statistics between the variables of the study (dependent and independent). The dependent variable is Tobin's Q measured by the following equation = (EQ + PRE + DEBT)/(ASSETS). Where; EQ = the year-end market value of the firm's common stock; PRE = the year-end book value of the firm's preference shares (preferred stock); DEBT = the year-end book value of the firm's total debts; and ASSETS = the total assets employed by the firm. The independent variables are: DBT measured by total debts over total assets; OWN measured by cash flow concentration; O/C measured by the deviation between control and ownership; Fsize measured by the natural log of the book value of total assets; Fage measured by the natural log of the number of years since firm's inception; Fgrow is the annual growth rate in sales.
****, ** and * indicate significance at the 1, 5 and 10 percent levels respectively.*

These findings need further investigation. Accordingly, we try to verify them in the next analysis by regressions analysis. Table 5 presents the results of regression analysis which reveal the relationship between the performance (Tobin's Q), the independent variables (DBT, OWN and O/C), and the control variables (FSize, FAge and FGrow). Before starting the regression analysis of the study, ($\chi 2$) and (F) tests were conducted on our classical linear regression models. Both tests indicate that there is no evidence of heteroscedasticity problems.

Table 5: Regression Results

Region	European Countries		French Civil Law Countries		GS Civil Law Countries		Common Law Countries	
Regression	1	2	3	4	5	6	7	8
Equation	Eq.(1)	Eq.(2)	Eq.(1)	Eq.(2)	Eq.(1)	Eq.(2)	Eq.(1)	Eq.(2)
DBT	-0.1622	-0.1451	-0.1908**	-0.2041*	-0.1027	-0.0938	0.0413*	0.0262**
DBT*(OWN)	0.1012	--------	-0.2339*	--------	-0.1362*	--------	0.0152	--------
DBT*(O/C)	-0.1823*	--------	-0.2755**	--------	-0.1401	--------	0.0321	--------
DBT*(OWN)^2	--------	0.1501	--------	0.0189**	--------	0.1202	--------	0.1064
DBT*(O/C)^2	--------	-0.2452**	--------	-0.3454**	--------	-0.1311*	--------	-0.0045
OWN	0.0034	0.0035	0.0041*	0.0137**	0.0054*	0.0051	0.0027	0.0030
O/C	-0.0136**	-0.0143*	-0.0211**	-0.0224*	-0.0198*	-0.0201*	-0.0121	-0.0116
FSize	0.0110*	0.0123	0.0164*	0.0199	0.0186	0.0201	0.0113**	0.0156*
FAge	0.0021	0.0019	0.0031	0.0021	0.0019*	0.0022	0.0021**	0.0016
FGrow	0.0671**	0.0578*	0.0633*	0.0602*	0.0711**	0.0765*	0.0665*	0.0659**
R^2	0.5946	0.5422	0.5487	0.5075	0.5071	0.4861	0.4953	0.4739
Adjusted R^2	0.5145	0.4961	0.4376	0.4387	0.4406	0.4243	0.4661	0.4261
F-statistic	7.7786	7.5641	6.7856	6.4605	6.8013	6.7456	7.2987	7.0785
N	5050	5050	2698	2698	685	685	1667	1667

*This table presents the results of regression analysis to test the mutual impact of capital and legal structures. The first two regressions are applied without dividing our total sample (5050) into subsamples. Regressions 3, 4, 5, 6, 7 and 8 are applied after dividing our sample into three subsamples based on legal origin: regressions 3 and 4 for French civil law countries, regressions 5 and 6 for GS civil law, and finally 7 and 8 for common law countries. The dependent variable is Tobin's Q measured by the following equation = (EQ + PRE + DEBT)/(ASSETS). Where; EQ = the year-end market value of the firm's common stock; PRE = the year-end book value of the firm's preference shares (preferred stock); DEBT = the year-end book value of the firm's total debts; and ASSETS = the total assets employed by the firm. The independent variables are: DBT measured by total debt over total assets; OWN measured by cash flow concentration; O/C measured by the deviation between control and ownership; Fsize measured by the natural log of the book value of total assets; Fage measured by the natural log of the number of years since firm's inception; Fgrow is the annual growth rate in sales. ***, ** and * indicate significance at the 1, 5 and 10 percent levels respectively.*

According to regressions 1 and 2 the relationships between debt and performance is negative and not significant. After dividing our main sample that consists of 5,050 firms to three subsamples, the results

reveal two opposite impacts of debt. On the one hand, debt is related negatively to the performance of listed firms in French civil law countries. On the other hand, there is a positive relationship between debt and the performance of listed firms in common law countries. These results suggest that debt is an important source of expropriation in French civil law countries while there is no evidence of expropriation through debt in GS civil law countries. At low levels of legal protection, managers may expropriate minorities by increasing the debt levels. The recent study of Bai et al. (2013) confirms that the expropriation of minorities is positively related to debt usage in fully-privatized firms. In the same line Agrawal and Knoeber (1996) show that increasing debt levels have a significant negative affect on firm performance. Oppositely, in common law countries it seems that debt is used to increase performance by eliminating risks of expropriation and entrenchment. The evidence of debt in common law countries is consistent with the study of Harris and Raviv (1991) that supports the agency cost hypothesis by showing that higher debt can be used as a monitoring device.

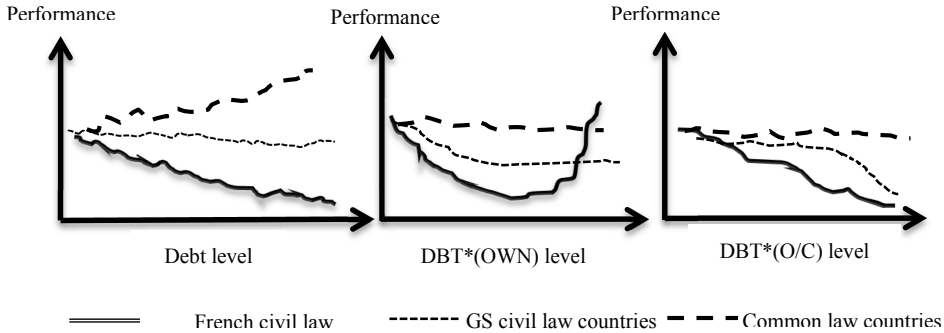
To explore the interaction between debt, performance and ownership concentration, two main variables are run with performance. The first variable is (DBT*OWN), detecting the risk of expropriation through debt at low level of ownership concentration. The second variable is (DBT*OWN2) which is used to capture the risk of tunneling through debt at high level of ownership concentration. In French civil law countries, a non-linear impact of debt (U-Shaped) is identified with ownership concentration while a positive and non-significant impact is pointed out in common law countries. The results lead us to conclude that risk of entrenchment and expropriation through debt exists in French civil law countries especially at low levels of ownership concentration. At high levels of ownership concentration, managers become less entrenched and more controlled by ultimate shareholders. Regression 4 confirms these contentions by demonstrating that ownership concentration in French civil law countries rises as a proxy mechanism to limit the risk of expropriation. This is consistent with hypothesis (H4) which indicates that a high level of concentrated ownership reduces the risk of expropriation through debt.

In GS civil law countries, risks of entrenchment and expropriation are also present when ownership concentration is widely dispersed. At this level of dispersed ownership, managers entrench their powers and derive private benefits from their control of the firm. The explored impact of (DBT*OWN) in GS civil law countries is significantly lower than that of French civil law countries, suggesting a higher risk of expropriation in France, Spain and Italy. In common law countries, ownership is not used to constrain the expropriation of minorities but the high level of legal protection rises as an alternative system. The non-significant impact of (OWN) in regressions 7 and 8 is consistent with this analysis.

Next we examine impact of (DBT*O/C) on the performance of European firms. All the regressions in French civil law countries reveal that high deviation between ownership and control leads the ultimate owner to use debt to expropriate the external shareholders. According to regressions 4 and 6, a negative impact of debt is also detected when the level of deviation between ownership and control comes to be more developed in GS and French civil law countries. From the results it can be argued that the negative impact of (DBT)*(O/C)2 in French and GS civil law countries is significantly higher than that of (DBT)*(O/C), suggesting a higher risk of expropriation through debt with higher a level of deviation. These results are consistent with the studies of La Porta et al. (1999), Faccio et al. (2002) and Claessens et al. (2002) that show a high risk of expropriation and tunneling in firms characterized by high degree of divergence between cash flows rights and control rights. The positive relationship between leverage and (O/C) (Table 4) is also reliable with the hypothesis that debts facilitate tunneling and expropriation.

In common law countries, there is no significant impact of the deviation between ownership and control on the performance of listed firms. Moreover, from regressions 7 and 8 (in Table 5) it seems that the impacts of (DBT)*(O/C) and (DBT)*(O/C) are not significant which means that the owners don't use debt to expropriate external shareholders when the deviation between ownership and control exists. The high level of legal protection is employed as a disciplinary device to eliminate risk of expropriation.

Figure 1: Interaction between Capital Structure, Micro Factors and Legal Protection



This figure presents the results of our empirical study by considering the level ownership concentration (OWN), the level of deviation between cash-flow and voting rights (O/C) and finally the legal origin.

The results in Figure 1 indicate the impact of capital structure on firm performance by considering some micro and macro factors. However, if it is in fact endogenously determined, the results may be non-specified. In order to address the potential endogeneity effect, the following simultaneous equations are used:

$$DBT = \beta_1(Q) + \beta_2(OWN) + \beta_3(O/C) + \beta_i X_i + e_i \quad (3)$$
$$DBT = \beta_1(Q) + \beta_2(OWN)^2 + \beta_3(O/C)^2 + \beta_i X_i + e_i \quad (4)$$

Where e_i is the stochastic error term and X_i denotes all the vector of control variables that can affect the performance including firm size, measured by the natural log of the book value of total assets, firm age, measured by the natural log of the number of years since the firm's inception and firm growth, measured by the annual growth rate in sales.

Table 6: Endogeneity Results

Region	European Countries		French Civil Law Countries		GS Civil Law Countries		Common Law Countries	
Regression	1	2	3	4	5	6	7	8
Equation	Eq.(1)	Eq.(2)	Eq.(1)	Eq.(2)	Eq.(1)	Eq.(2)	Eq.(1)	Eq.(2)
Q	-0.0022	-0.0051	-0.0026	-0.0043	-0.0155	-0.0098	-0.0018	-0.0021
(OWN)	-0.0175	--------	-0.0339	--------	-0.0162	--------	-0.0082	--------
(O/C)	0.1271**	--------	0.1755*	--------	0.1002**	--------	0.0821*	--------
$(OWN)^2$	--------	-0.0501	--------	-0.0439	--------	-0.0347	--------	-0.0654
$(O/C)^2$	--------	0.1922**	--------	0.2272**	--------	0.1724*	--------	0.1097*
FSize	0.1210**	0.1243*	0.1566*	0.1699**	0.1262*	0.1271*	0.1361*	0.1431*
FAge	0.0133	0.0171*	0.0192	0.0202	0.0079*	0.0094*	0.0132	0.0096
FGrow	0.1254**	0.1361*	0.1135**	0.1224*	0.0981**	0.1024**	0.1335*	0.1427**
R^2	0.4546	0.5542	0.5117	0.5151	0.5022	0.4662	0.5115	0.4929
Adjusted R^2	0.5441	0.4961	0.5006	0.4889	0.4844	0.4668	0.5012	0.4881
F-statistic	8.2241	8.0114	7.2341	7.5245	8.0413	7.6113	8.0311	7.6231
N	5050	5050	2698	2698	685	685	1667	1667

*This table presents results of regression analysis to test the endogeneity issue of capital and financial performance. The first two regressions are applied without dividing our total sample (5,050) into subsamples. Regressions 3, 4, 5, 6, 7 and 8 are applied after dividing our sample into three subsamples based on legal origin: regressions 3 and 4 for French civil law countries, regressions 5 and 6 for GS civil law, and finally 7 and 8 for common law countries. The dependent variable is DBT measured by total debt over total assets. The independent variables are: Tobin's Q measured by the following equation = (EQ + PRE + DEBT)/(ASSETS). Where; EQ = the year-end market value of the firm's common stock; PRE = the year-end book value of the firm's preference shares (preferred stock); DEBT = the year-end book value of the firm's total debts; and ASSETS = the total assets employed by the firm.; OWN measured by cash flow concentration; O/C measured by the deviation between control and ownership; Fsize measured by the natural log of the book value of total assets; Fage measured by the natural log of the number of years since firm's inception; Fgrow is the annual growth rate in sales. ***, ** and * indicate significance at the 1, 5 and 10 percent levels respectively.*

Taking the endogeneity issue into consideration, the analysis of Table 6 confirms that capital structure affects performance and not vice versa. This result is contrary to findings of Bergeret al. (2006) and Margaritis et al. (2010). Moreover, the results in Table 6 indicate that a large deviation between control rights and cash flow rights leads controlling owners to increase debt levels, which suggests a positive effect on firm debt of the separation of control rights and cash flow rights. As a result (from Tables 5 and 6), the large separation of control rights from cash flow rights motives the controlling shareholder to expropriate minority shareholders by increasing debt levels. Table 7 represents the global results of the study, showing how macro and micro factors affect the relationship between capital structure and firm performance. Indeed, for countries with a low legal protection, financial structures are more likely to be used by owners to serve their private interests. For countries with high level of legal protection, it seems the financial market rises as a proxy system to constraint risk of expropriation and entrenchment.

Table 7: General Results

Number	Hypotheses Description	French Civil Law Countries	GS Countries	Common Law Countries
H_0	There is a significant impact of leverage on the performance of listed firms	Confirm	Not Confirm	Confirm
H_1	In the case of low legal protection, there is a negative impact of leverage on the performance of listed firms	Confirm*	Not confirm	--------
H_2	In the case of high legal protection, there is a positive impact of leverage on the performance of listed firms	----------	---------	Confirm
H_3	A high level of concentrated ownership reduces the risk of expropriation through debts.	Confirm	Not Confirm	Confirm
H_4	A high level of deviation between ownership rights and control rights increases the risk of expropriation through debts.	Confirm	Confirm	Not Confirm

This table presents the confirmed and non-confirmed hypotheses after showing the results of descriptive statistics and multivariate regression analysis. (*) This result is not reliable at high level of ownership concentration.

CONCLUSION

Using the data of 5,050 listed firms in European countries, this study focuses on the financial impact of capital structure by considering the level of legal protection. In countries with a low level of legal protection (such as France, Spain and Italy) corporate leverage is likely to be controlled by ultimate owners. At low level of ownership concentration, managers and ultimate owners try to use debt levels to increase tunneling, expropriation and entrenchment. At high levels of ownership concentration, ultimate owners use debt to constraint the entrenchment of managers and consequently increase firm performance. In this low level of legal protection, firms are more exposed to expropriation through debt when there is a high level of deviation between cash-flow and control rights. This is more likely to occur when a firm's structure is organized as a pyramid. In common law countries the situation is totally different.

The high level of legal protection decreases the levels of entrenchment, tunneling and expropriation. In this case, financial markets rise as a proxy system to constraint any opportunistic behavior and debts are enrolled as a monitoring tool to increase the level performance. In such a market-based system, hostile takeovers and investor activism play a key role to discipline managers and ultimate owners. Oppositely, in French civil law countries, capital markets are less protected, which leads ultimate owners to act as monitors to maximize the level of private profits. In GS civil law countries the results indicate no impact of financial structure on the performance of listed firms when it is measured by debt levels. The interaction between ownership and financial structure indicates that at low levels of ownership concentration, a negative and significant impact of debt is found, revealing a high risk of expropriation. This risk of expropriation is also detected when firms use a high level of deviation between ownership and control rights. However, all the results in Table 5 reveal a tendency of higher levels of expropriation in French civil law countries then in GS civil law countries which is consistent with the study of La Porta et al.(1998).

The evidence of this study is important but it could be developed over a longer period of time. The analysis should be improved by categorizing debt into short-term and long-term debt. Finally, more advanced criteria should be considered to classify levels of legal protection.

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