Market value and corporate debt. The 2006-2010 international evidence.

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We analyze the differences in the financial debt level of firms both in market-oriented systems (USA, UK) and bank-oriented systems (Germany, France and Italy) on a sample of 3,360 listed companies between the period 2006-2010. Results indicate that the debt level is significantly higher in market-oriented systems when compared to the book value of equity. We find confirmation that book-to-market cannot explain the debt level in bank-oriented systems but, contrary to reference literature, we observe that book-to-market ratio has a negative relation to debt level in market-oriented systems, especially in the United States. We claim different reasons to explain the evidence: i) the financing standards of market-oriented countries, with an inflationary effect of market values on debt; ii) an underlying activity for ownership protection; iii) the unfavourable conditions of stock market over the years of the financial crisis that reduced the convenience of equity issuance.

Keywords: Corporate debt; book-to-market; financial crisis; market-oriented vs. bank-oriented financial systems

JEL Classification: G10; G30; G32

I. Introduction

Does the market value of equity inflate the level of corporate financial debt?[1] Many empirical findings consistently show that market-to-book value has a negative relationship with the indebtedness of firms measured through a financial leverage ratio. The evidence holds also when different financial systems are considered, indirectly highlighting that market value does not seem to explain the level of corporate indebtedness and why companies employ financial debt. We conduct an analysis on a sample of 3,360 companies listed in market-oriented (US and UK) and bank-oriented financial markets (France, Germany and Italy) over the period 2006-2010. We point out that in the former group of companies the level of debt increases dramatically when moving from a financial leverage ratio computed with the market value of equity at the denominator to a ratio that instead employs the book value of equity, while in the latter group the two financial indicators do not show such a large distance. In a following regression analysis, we delve into the relationship between the equity market value – through the use of the book-to-market ratio – and the level of debt. We observe that in market-oriented systems, especially in the US, the debt level rises as book-to-market value decreases, thus as the equity market value increases. In bank-oriented systems book-to-market ratio is not able to explain the debt level, corroborating similar results of previous studies. Evidence found in market-oriented systems can be attributed to these possible reasons: i) financing standards typical of these countries, with an inflationary effect of market values on debt; ii) anti-takeover actions to protect corporate ownership; iii) behaviours

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[1] In this article the term 'financial debt' and 'debt' are used as synonym, as well as 'financial leverage' and 'leverage'.

correlated with the unfavourable conditions of stock market over the years of the financial crisis broken out in 2008.

II. Literature Review

Titman and Wessels (1988) and Harris and Raviv (1991) have stressed that the identification of the key factors able to affect the financial structure of firms is not a simple task. Both internal and external factors to companies contribute to shape their indebtedness. In addition to firm-specific variables, each financial system has a different impact on leverage, and country specific variables affect it both directly and indirectly (de Jong, Kabir and Nguyen, 2008). Among others, Demirgüç-Kunt and Maksimovic (1999) and de Jong *et al.* (2008) find that a developed financial market has a milder effect on the recourse to debt and is assumed to decrease the weight of the tangibility variable, measured as the ratio between tangible assets on total assets, on leverage. Moreover a better legal system can affect the capital structure choice by increasing the default costs. Firm size, taken as an inversely related proxy of default risk, is likely to lead companies to be more cautious on the raise of new debt, since default costs are high. When shareholders benefit from higher guarantees from the financial system, issues of information asymmetry will be lower, and thus some directly related factors as size are assumed to have smaller relevance. Nonetheless, a more developed financial system implies higher information circulation that is a useful input to investors for their capital allocation choices (Grossman and Stiglitz, 1980). Demirgüç-Kunt and Maksimovic (1999) demonstrate that in developing countries, an improvement of financial market standards and especially an increase of the stock market functioning brings about higher financial leverage. Frank and Goyal (2009) find that in addition to the four factors identified by Rajan and Zingales (1995), the average industry leverage and inflationary expectations can

explain corporate indebtedness. The relationship between the major examined variables and level of corporate indebtedness described in literature is briefly examined in the following lines.

Profitability and liquidity. The higher the firm profitability, the lower are the default costs and the larger is the tax benefit of debt. Being all other conditions equal, profitable firms should have a highly debt usage. This hypothesis is supported by the agency theory by which the debt benefit in controlling management is clearer in companies with positive cash flows (Jensen, 1986). On the contrary, according to the pecking order theory (Myers and Majluf, 1984), companies should prefer self-financing to external financing, thus we should expect that companies with higher cash flows have a lower level of debt.

Sector. The sector where companies operate has a key role in their level of indebtedness (Frank and Goyal, 2009; Lemmon *et al.*, 2008). The average sector financial leverage acts as a benchmark of the financial structure of firms. At the same time, we may identify an indirect relationship of the capital structure with the business sector: in fact, integration and competitiveness within the sector are surely key factors that affect the financial structure, since they are reflected on the composition of assets, risk, technology and regulation of the same industry.

Cash flow volatility. Higher cash flows volatility increases default risk, and brings about a diminishing ability of companies to raise new debt. It also implies lower capability to get tax benefits from debt. This situation increases the overall firm risk. Higher risk involves a contraction of both equity and debt financing opportunities.

Rating assessment. Investors' propensity to grant financial resources is directly related to the fact that companies are subjected to a corporate rating procedure. It has been shown that firms that can raise debt in the market have – *ceteris paribus* –

higher leverage ratios (Beck *et al.*, 2006). A lower capacity to access the credit market entails a lower firm capability to raise new debt, and thus a lower leverage ratio. Companies with better corporate rating scores are seen as more financially reliable, more transparent and with lower information asymmetry issues. These companies can get to risk capital more easily than debt.

Stock market cycle. According to the market timing theory, companies follow stock market trend by issuing new shares when the market is overvalued. Gertler and Gilchrist (1994) affirm that shares issues are pro-cyclical, while new debt issues are countercyclical. Following the steady trade-off model, a lower level of market leverage due to a positive market cycle, leads companies to increase debt to restore leverage targets, but drives to an increase in the book leverage. Instead, market timing theory suggests that companies usually issue new shares to take advantage of market overvaluation, with a decrease of book leverage levels.

Economic cycle. Heavy economic growth determines an increase in share values, a decrease in the default costs and growth in cash flows, thus suggesting an increase of the capability to raise new debt, that can be exploited to make new investments (Frank and Goyal, 2009; Gertler and Gilchrist, 1994). Instead, according to the pecking order theory, in view of an economic boom, companies will prefer to decrease external financing in favour of self-financing because of the higher cash flows generated; while in view of economic crisis, with lower amounts of cash flows, they are supposed to make use of larger amounts of debt. Following suggestions from some of the main literature references (Rajan and Zingales, 1995; Bevan and Danbolt, 2004), in the next section we focus on four independent variables whose connection with leverage and debt level have been extensively debated and validated over time. The only differences compared to the original

model presented by Rajan and Zingales (1995) are the inclusion of a liquidity factor rather than profitability and the use of debt in absolute value instead of the leverage ratio. The relationship between liquidity and indebtedness has been investigated at length (de Jong *et al.*, 2008; Gaud *et al.*, 2007).

III.   The Main Drivers of Debt at a Corporate Level

Growth opportunities

According to Myers (1977) companies with larger growth opportunities are those that are likely to under invest. Thus, a lower indebtedness is expected for companies with larger market-to-book ratio. Investors could be discouraged to fund these kind of companies as stated by Stohs and Mauer (1996), Barclay and Smith (1996, 1999), Funke *et al.* (1999), Ozkan (2000), Teti *et al.* (2012). Evidence demonstrates that a negative relationship between growth opportunities – measured by market-to-book ratio – and level of leverage is present (Titman and Wessels, 1988; Chung, 1993; Rajan and Zingales, 1995; de Jong *et al.*, 2008). Differently, Bevan and Danbolt (2004) observe a positive connection between growth opportunities and leverage, but only with reference to British firms. Further, Chen and Zhao (2006) find that the relationship between market-to-book ratio and leverage is not monotonic and negative, but a 'U-shaped' connection, negative for firms with high market-to-book value and positive for firms with medium and low market-to-book ratio, is noticed.

Size

Rajan and Zingales (1995) claim that large firms are usually more diversified and have lower default probability. For smaller firms, agency costs are higher because creditors would manage the credit risk granting short-term financing to firms, thus reducing their overall leverage ratio (Smith and Waner, 1979; Michaelas *et al.*,

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1999). A significant positive association between size and overall leverage is identified by Rajan and Zingales (1995) Barclay and Smith (1996), Bevan and Danbolt (2004), de Jong *et al.* (2008), Frank and Goyal (2009). Other scholars indicate that the maturity of debt is positively correlated with firm size, corroborating the assumption that investors prefer to fund larger firms with long-term debt, and smaller firms with short-term debt (Demirgüç-Kunt and Maksimovic (1999).

Liquidity

According to the pecking order theory, more liquid companies prefer to use self-financing to support growth, thus they are likely to have lower leverage ratios. Studies previously mentioned show a consolidated negative relationship between liquidity and leverage, confirming that firms with larger cash flows prefer self-financing to external financing.

Tangibility

The presence of higher values of tangible assets provides companies greater opportunities to raise higher external financing (Harris and Raviv, 1990). Tangible assets are also a more solid guarantee for creditors, because in case of default cannot be easily replaced with riskier assets by the owner (Frank and Goyal, 2009). Rajan and Zingales (1995) show a positive and significant relationship between tangible assets and firm leverage ratio.

Market value

Following Baker and Wurgler (2002) market-to-book ratio affects the firm financial structure in the long-run. Companies with higher market-to-book ratio are encouraged to raise new debt in positive market phases, as this will allow them to exploit market-timing opportunities. In market-oriented countries like US and UK, it

is sensible to suppose that in rising market phases when market-to-book ratio is higher, investors will be more inclined to finance companies both through equity and debt. In this work, we will try to demonstrate that in market-oriented systems, higher capitalized companies tend to have higher debt levels than smaller capitalized ones also in phases of declining market. The bond investors consider higher capitalization as a positive factor, indicating the capability of the company to support debt. As result, we may assume that the debt level has a positive relationship with market capitalization in market-oriented systems.

IV. Data and Method

Data

Economic and financial data of most of non-financial companies listed on five Stock Exchanges – US, UK (market-oriented systems), France, Germany and Italy (bank-oriented systems) – are analyzed. The countries examined are quite homogeneous in the way the balance sheets are drawn up, as reported in Table 1. Data refer to average value for each country in the period 2006-2010.

Insert Table 1 about here

Financial data are collected from Orbis database (Bureau Van Dijk), that gives access to financial information of most companies from 2006 to date. Firms with missing adequate financial data are excluded from the analysis. The number of examined companies varies from country to country. 3,360 firms belonging to 18 different sectors are analyzed on the whole over the period from 2006 to 2010: 437 French, 398 German, 136 Italian, 610 UK and 1,780 US. The sample does not

include observations comprised in the first and last percentile to exclude possible outliers from analysis.

The sample is mainly composed of companies operating in two sectors: manufacturing and telecommunications, even though some differences between countries can be noticed. Continental European countries have a concentration of manufacturing and telecommunication companies equal to 70%, while these are just above 50% for UK and US (see Figure 1).

Insert Fig. 1 about here

Firm size is quite similar in all examined countries, with the exception of US firms that show an average size, that is about 30% larger in terms of both capitalization and sales (see Figure 2).

Insert Figure 2 about here

With regard to the leverage factor, it can be observed that debt on book value ratio (D/BV) is higher than debt to market value (D/E) in all examined contexts. This can be seen as a normal consequence linked to larger market value of equity compared to the corresponding accounting value. As this is a similar trait to all examined countries, an impact of equal extent should be expected in each sample (see Table 2). However, it can be observed that bank-oriented countries – France, Germany and Italy – report on average a 30% higher D/BV value than D/E value, while in the two market-oriented countries – US and UK – the gap is much larger, almost double in the US case. Debt values refer to long-term financial liabilities and the share of long-

term debt pertaining to the business period. Market capitalization is measured by using the annual average price per share, while the accounting share value refers to the consolidated financial statements as of 31 December of each year.

Insert Table 2 about here

Method and model

To test whether a positive relationship between financial debt and market capitalization in market-oriented countries exists or not, we run a regression model that includes book-to-market ratio (BTM), and some control variables whose connection with debt and financial leverage have been already tested in different works (Rajan and Zingales, 1995; Gaud *et al.*, 2007; de Jong *et al.*, 2008; Chen and Zhao, 2006). Actually, as suggested by Musumeci and Peterson (2010) we use book-to-market ratio (BTM) rather than market-to-book ratio, as the use of the former allows to reduce the potential presence of outliers, thus making the regression more significant.

The regression is completed with the inclusion of the following variables: sales, as a proxy of firm size; asset tangibility, as a ratio between tangible and total assets; liquidity, as the ratio between short-term assets and short-term liabilities.

Insert Table 3 about here

For a more appropriate statistical handling, the variables are included in the regression through their natural logarithm. The focus on these specific variables is

justified by the attention already paid by previous studies (Rajan and Zingales, 1995; Chen and Zhao, 2006; Fan *et al.*, 2010; Oztekin and Flannery, 2012). However, differently from the original study by Rajan and Zingales, we replaced the profitability variable expressed by ROA with the liquidity factor, since the use of an indicator such as ROA in periods of severe financial crisis would have resulted in several negative values, not always consistent with the use of logarithm.

Therefore, the estimated regression can be written as follows:

$$Ln\ Debt_t = \alpha + \beta_1\ Ln\ Sales_t + \beta_2\ Ln\ Book\text{-}to\text{-}market_t + \beta_3\ Ln\ Tangibility_t + \beta_4\ Ln\ Liquidity_t + \varepsilon_t \qquad (1)$$

Based on these observations and the literature review on the topic, the following assumptions have been made.

1. Assumption 1: A positive relationship of debt level with sales is expected (HP 1);

2. Assumption 2: A positive relationship of debt level with asset tangibility is expected (HP 2);

3. Assumption 3: A positive relationship of debt level with BTM is expected (HP 3);

4. Assumption 4: A negative relationship of debt level with liquidity is expected (HP 4).

V.   Results and Discussion

The main results of the analysis are shown in Table 4.

Insert Table 4 about here

Book-to-market ratio

The analysis indicates a positive but not significant relationship between BTM and level of debt in bank-oriented systems, while a negative connection in market-oriented systems is identified. The case of the United States is particular, as the relationship with this variable is negative and extremely significant. In market-oriented countries, larger cap companies have higher amount of debt in their financial structure than smaller companies. Since BTM does not have the same impact on the firms of all five countries, we can claim that market capitalization has an inflationary effect on debt only in market-oriented contexts, and in the US specifically, where firms with higher market value make use of more debt, being all other conditions equal.

This evidence has to be linked to the typical financing standards of 'arm's length' financial systems, like the US one, where investors pay high attention to market trend in order to capture the information incorporated in prices. In their investment decisions they take into higher account market capitalization than book data of firms. In the countries of Central Europe, the relationship between BTM and debt level is positive but not statistically significant, from which it can be deduced that market capitalization effect is not so relevant to financing decisions. When assessing the firm soundness European investors, and in general those operating in 'relationship-

based' financial systems, place less emphasis on market trend and instead pay more attention to historical trend of the book value of equity.

This result is not surprising since in bank-based countries, the role of banks is central and often the relation between them and firms is so entrenched that the most common financing logics are subordinated to the maintaining of thick networks of historical relationships, often sealed by cross-share holdings. Results found in this work argue those obtained Rajan and Zingales (1995) and other researchers. Literature developed around the original work from Rajan and Zingales draw conclusions based on statistical analyses on past data. By including data updated to December 2010 we have studied a financial system that is quite different from that analyzed in previous studies by scholars. In period of financial crisis like in 2008-2009, firms are not encouraged to issue new shares, but usually raise funds from banks or the bond market. However, when also the banking system is in difficulty, firms are constrained to address directly to the investors. The trend of non-financial corporate bond issues, shown in Fig. 3, corroborates what found by Hovakimian (2006): a heavy rise is noticed in 2009, almost double than the previous year.

Insert Figure 3 about here

Graham and Harvey (2001) show that companies' financing decisions are also affected by interest rates. In particular, firms make more use of debt in periods when interest rates are particularly advantageous. This is a distinguishing trait of the years of financial crises, also justifying the rising number of new bond issues occurred.

The main dissimilarities between the different financial systems make it possible to understand why US firms with higher MTB have also a higher level of debt. In the

US context, hostile takeovers are often carried out to acquire the ownership of firms with positive cash flows, with encouraging growth prospects and high return potential. The corporate control of these firms can be acquired by big investors, that can take advantage of the absence of ownership concentration (Damiani and Pompei, 2009). Hostile takeovers are not always driven by efficiency principles, but sometimes arise from temporary market undervaluation of firms. The powerful role of market for the corporate control induces management to take actions to discourage hostile takeover bids. Bond issues or a higher leverage ratio are some of the most used tools. Market-to-book ratio is a potential growth indicator, but it can also reflect a higher firm profitability and propensity to generate cash flows. These observations are useful to explain why in the period we examined US firms with high MTB have observed sizeable leverage ratios: the more the firms can be easily «preyed by the market», the more they will try to increase the level of debt as a way to defend themselves from possible hostile takeovers. Even though in 2009 the debt market boosted in both the US and Europe, the US companies made more used of debt than European ones already from 2009. Grossman and Stiglitz (1980) have demonstrated that the share prices listed in the market incorporate many of the information available to most advised investors. Where markets are more efficient and companies are more transparent, the investors will be encouraged to lend money.

Sales

Results indicate a positive relationship between sales and the debt level, probably due to the lower riskiness of large-sized companies, allowing them to raise funds at lower costs than small-sized ones. Therefore, the first assumption is confirmed, as well as the main evidence highlighted by literature. The impact of firm size on the

debt level is similar for all analyzed countries. On average, we observe that a potential increase by one per cent of sales should result in an increase by one per cent of debt.

Tangibility

The results indicate that tangibility has a positive effect on the debt level in all five considered countries, also confirming findings from Rajan and Zingales (1995) and Demirgüç-Kunt and Maksimovic (1999). At the same time, when tangible assets are sold off have a larger value than intangible assets and will then be the first assets to be claimed by creditors. Further, tangibility makes more difficult for shareholders to replace less-risky assets with more risky ones. Apart from Germany, the impact of tangibility on the level of debt is similar in all analyzed country.

Liquidity

Our results confirm what found by literature, as a negative relationship between liquidity and debt level is identified. It is expectable that highly liquid companies are less indebted, as of course cash and equivalents decrease the value of the net financial position. We can assume that firms with higher indebtedness have smaller liquid resources, since a part of cash flows will be addressed to reimburse debt.

VI. Conclusions

This work aimed to answer two main research questions: whether differences on the level of financial debt between firms operating in different financial systems exist or not; and then, whether the market value of equity is able to explain these potential differences or not. The analysis joins the debate developed around the original work

from Rajan and Zingales (1995). By analyzing the data of non-financial companies listed in the main market-oriented countries (US and UK) and bank-oriented countries (France, Germany and Italy) we observe substantial differences between the two contexts. In market-oriented economies, D/BV value is almost double than D/E, the corresponding market value, while the gap is less noticeable in the Continental European countries, where investors essentially pay attention to book value of equity and stock markets are less developed. The model we identified compares the debt stock of firms to four factors whose relationship has been widely tested by literature: sales, book-to-market, liquidity and asset tangibility. Results are in line with previous studies with the only exception of BTM for which the assumed positive relationship with debt is not confirmed in the UK and US particularly, while it is supported in bank-oriented countries. When commenting on our results, it must be pointed out that the impact of the 2008/2009 financial crisis has been substantial on the analyzed sample of firms. The negative relationship of BTM with debt in market-oriented countries is highly affected by the active role played by market for corporate control of firms in these systems. This situation has perhaps constrained management to issue new debt to make firms less attractive in the eyes of potential buyers. This situation is more common when stock markets are depressed and it is possible to make acquisitions at lower prices. Since companies with high MTB usually issue new shares rather than using new debt to raise new funds, a negative relationship between MTB and debt level was expected. However, in periods when markets tend to heavily undervalue firms compared to previous years, companies are not likely to get funds through share issues, but rather increasing the debt level. Finally, the work indicates that in market-oriented systems, larger capitalized firms are probably considered as more financially reliable by investors, since a high

capitalization is taken as a signal of faith from the market towards the firm. In market-oriented systems investors' propensity to place their trust in information incorporated in market prices allows the larger capitalized companies to make more easily use of debt. Firms that usually issue shares to finance their growth (companies with high MTB) were hence constrained to turn to debt because of too low share values, which made any kind of transaction on the share capital unfavourable.

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Tables and Figures

Table 1. Balance sheets of non-financial companies: period 2006-2010

	France	Italy	Germany	UK	US
ASSETS					
Intangible fixed assets	0.27	0.24	0.19	0.20	0.23
Tangible fixed assets	0.27	0.37	0.26	0.36	0.36
Other fixed assets	0.12	0.10	0.17	0.14	0.11
Fixed assets	*0.66*	*0.71*	*0.62*	*0.70*	*0.70*
Stock	0.07	0.05	0.09	0.07	0.08
Debtors	0.11	0.14	0.10	0.08	0.09
Other current assets	0.16	0.11	0.20	0.14	0.13
Current assets	*0.34*	*0.29*	*0.38*	*0.30*	*0.30*
Total assets	100.0	100.0	100.0	100.0	100.0
LIABILITIES					
Loans	0.04	0.01	0.01	0.02	0.02
Creditors	0.11	0.12	0.08	0.08	0.07
Other current liabilities	0.17	0.15	0.23	0.17	0.13
Current liabilities	*0.32*	*0.28*	*0.32*	*0.27*	*0.21*
Long term debt	0.18	0.26	0.20	0.19	0.23
Other non-current liabilities	0.18	0.15	0.19	0.14	0.18
Non-current liabilities	*0.36*	*0.41*	*0.39*	*0.33*	*0.41*
Capital	0.04	0.09	0.03	0.02	0.06
Other shareholders' funds	0.28	0.22	0.25	0.38	0.32
Shareholders' funds	*0.31*	*0.31*	*0.29*	*0.40*	*0.38*
Total sh. funds and liabilities	100.0	100.0	100.0	100.0	100.0

Source: Orbis, Bureau Van Dijk (2011).
Notes: The values reported are calculated as a percentage of the asset book value. Then, the average values for all non-financial firms listed in the relating financial markets has been calculated.

Table 2. Financial leverage

	No.	Debt to Equity (D/E)	Debt to Book Value (D/BV)	(D/BV)/(D/E)
Italy	136	0.40	0.55	1.38
Germany	398	0.26	0.36	1.38
France	437	0.41	0.53	1.28
United Kingdom	610	0.22	0.40	1.80
United States	1,780	0.39	0.75	1.94

Source: our elaboration on Orbis data (2011).
Notes: D/E is the ratio between net financial debt and the equity market value. D/BV is the ratio between net financial debt and the accounting equity value. Average values on 2006-2010 data.

Table 3. Descriptive analysis of the sample variables

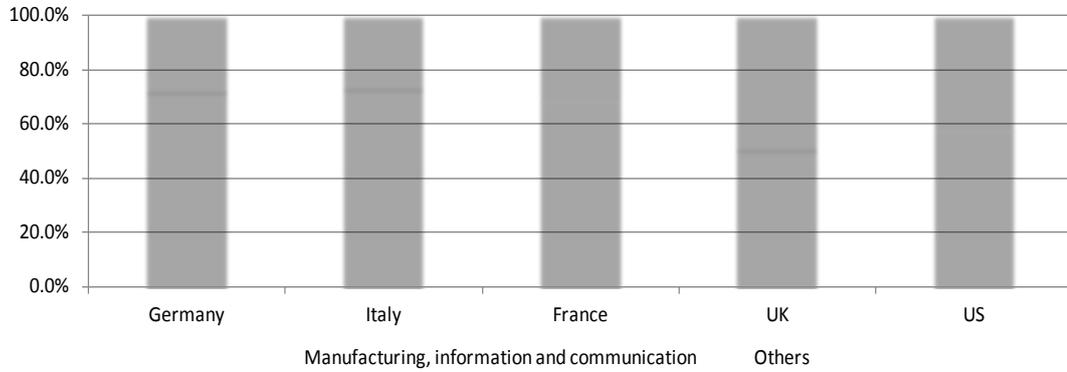|	Italy	Germany	France	UK	US
N.	136	398	437	610	1780
LN SALES	12.73	11.82	12.06	11.25	12.96
	(12.52)	(11.71)	(11.84)	(11.20)	(13.14)
LN DEBT	10.75	8.35	9.85	7.76	10.73
	(10.90)	(9.05)	(9.69)	(8.26)	(11.57)
MTB	1.81	2.91	2.02	2.83	2.68
	(1.54)	(1.55)	(1.48)	(1.86)	(1.91)
BTM	0.78	0.73	0.74	0.66	0.58
	(0.65)	(0.63)	(0.68)	(0.54)	(0.51)
TANG	0.24	0.21	0.17	0.22	0.29
	(0.17)	(0.17)	(0.11)	(0.13)	(0.21)
LIQ	1.45	2.18	1.74	2.12	0.66
	(1.16)	(1.68)	(1.41)	(1.42)	(0.53)

Notes: the values here reported are calculated on the 2006-2010 five-year average of Orbis data. LN Sales is the natural logarithm of sales turnover, used here as a proxy of firm size. LN DEBT is the logarithm of debt at accounting values, given by the sum of long-term debt plus the part of long-term debt pertaining to the business period. MTB is the market-to-book ratio. BTM is the book-to-market ratio. TANG is the ratio between tangible assets and total assets . LIQ is a measure of liquidity calculated as the ratio between short-term assets and short-term liabilities. For each indicator the mean (first line) ad median values (second line in bracket) are indicated.

Table 4. Factors correlated with debt

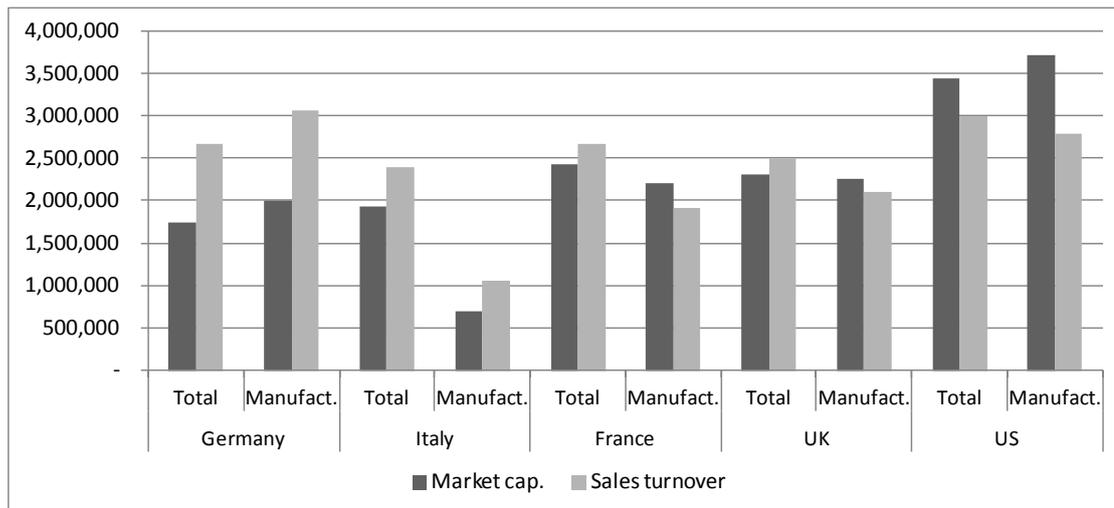|	**Italy**	**Germany**	**France**	**UK**	**US**
Constant	-2.821	-1.834	-2.480	-0.770	-1.317
	(0.003)***	(0.139)	(0.001)***	(0.352)	(0.001)***
LN SALES	0.946	1.098	1.034	0.827	0.953
	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***
LN BTM	0.265	0.251	0.731	-0.071	-0.592
	(0.641)	(0.690)	(0.4323)	(0.891)	(0.004)***
LN TANG	6.415	2.551	4.164	4.728	3.895
	(0.000)***	(0.016)***	(0.000)***	(0.000)***	(0.000)***
LN LIQ	-1.219	-2.442	-1.200	-1.617	-0.874
	(0.002)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***
No. of observations	398	136	437	610	1780
R-square	54.10%	67.97%	72.35%	47.54%	49.96%

Notes: the dependant variable is the logarithm of the accounting value of long-term debt and the part of long-term debt ascribable to the business period (LN DEBT). LN SALES is the natural logarithm of net sales turnover. LN BTM is the logarithm of the ratio between the accounting value of equity and the equity market value. LN TANG is the logarithm of the ratio between tangible assets and total assets . LN LIQ is the logarithm of the ration between short-term assets and short-term liabilities. *P*-value is reported in brackets.
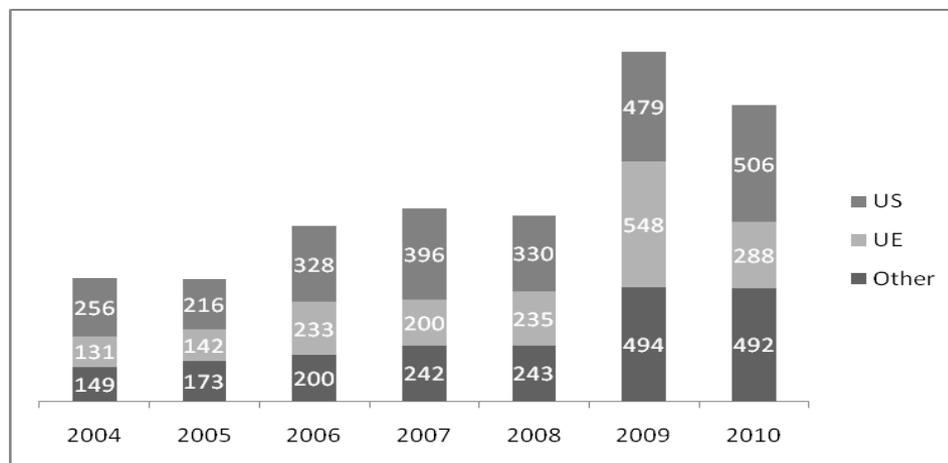
Figure 1. Distribution by sector

Manufacturing, information and communication   Others

Source: our elaboration on Orbis data (2011).

Figure 2. Firms size by turnover and market capitalization

■ Market cap.   ■ Sales turnover

Source: our elaboration on Orbis data (2011).

Figure 3. Corporate bonds issues, 2004-2010

Corporate bonds issues from non-financial firms. Data in $ bn.

Source: Dealogic data, McKinsey Global Institute (2011).