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THE FINANCIAL LEVERAGE OF LARGE PORTUGUESE FIRMS IN THE EUROPEAN CONTEXT

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ABSTRACT

The Financial Leverage of Large Portuguese Firms in the European Context

This paper studies the leverage, cost of debt servicing ability and structure of debt maturity of large Portuguese firms, over the pre-crisis (2006-2009) and post-crisis (2010-2013) periods through a comparative analysis with other European peers. We document that large Portuguese firms have been reducing their leverage since the end of 2009. We find that this decrease in leverage is not a consequence higher Equity levels but rather a result of asset's downsizing. We also document that Portuguese firms are still more leveraged than their European peers, even though this difference has decreased over time. High corporate debt levels are transversal across industries.

Keywords: Leverage, capital structure, large firms, Eurozone

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1. INTRODUCTION

1.1. PURPOSE OF THE PROJECT

The over-indebtedness of the business sector has always been a source of concern in Portugal. In fact, the debt burden, faced by Portuguese firms, might have extremely adverse effects, especially in times of financial crisis, making economic recoveries to take longer and corporate defaults to increase substantially, which can result in undesired impairment levels for banks.

Under this framework, and during my internship at Credit Risk Division of Banco BPI, we found appropriate to develop a study focusing on the financial leverage of large Portuguese firms. Through a comparative analysis with other European peers we provide some insight into leverage, cost of debt servicing ability and structure of debt maturity for Portuguese firms, over the last 8 years (2006-2013).

In this analysis we found appropriate to split the whole period in two different periods: pre-crisis (2006-2009) and post-crisis (2010-2013) periods. Through this segmentation we are taking into consideration the different macroeconomic circumstances that existed before and during financial crisis.

More specifically we aim to address the following questions:

- How leveraged are large firms in Portugal?
- Have large firms decreased financial leverage over the post-crisis period?
- Which are the most leveraged industries? How do these levels compare with the rest of Europe?
- And how different are its debt cost capacity and debt structure, when compared to their European peers?

2. LITERATURE REVIEW

2.1. CAPITAL STRUCTURE

In the literature there are two main theories that are commonly used to describe capital structure choices: the trade-off and pecking-order theories.

The trade-off theory, developed by Kraus and Litzenberg (1963), essentially states that the optimal capital structure in a firm is met when the marginal benefit of a debt unit is equal to its marginal cost. Where the benefits are the tax shield of debt and the management discipline (imposed by the reduction of free cash flows to equity) and the costs are the financial distress, namely the direct and indirect bankruptcy costs and the agency costs of debt.

Myers and Majluf (1984), with an alternative theory, known as pecking order theory, argued that firms prefer to finance themselves internally, firstly through retained earnings, secondly through debt and finally through equity. They explain this hierarchy based on the information asymmetry that exists between managers and investors.

Based on this two main theories above, empirical researchers, in this area, have been testing intensively the variables that can best explain capital structure choices. Titman and Wessels (1988) present some important firm's variables, namely: collateral value of assets, non-debt tax shield, growth, uniqueness, industry classification, size, earnings volatility and profitability.

In the most recent literature we can find some international papers that provide cross-country comparisons about financial leverage and capital structure. For instance, Borio (1990) developed a leverage comparison between Anglo-Saxon firms (United States, United Kingdom and Canada) and other major economies (Japan, Germany, France and Italy); Zybblock (1997) a comparison on leverage between Canada and US firms; and Silva and Valle (2008) a comparison between US and Brazilian firms.

In the present project it is provided a similar analysis applied to the Portuguese economy focusing on large firms. Moreover, as mentioned above, two different periods are considered

in order to take into consideration the different macroeconomic circumstances that existed before and during crisis.

2.2. CLOSER LOOK AT PORTUGUESE BUSINESS SECTOR

The generalized high levels of debt observed in the business sector could have extremely adverse effects for the economic growth of a country. As pointed by Bernanke and Campbell (1988) industries with relatively high average values of financial leverage face higher bankruptcy events, deeper recessions and slower recoveries.

Some studies have shown that firms in Portugal are highly leveraged. Ferrão (2012), for example, observed that Portuguese firms, on average, have presented one of the lowest Shareholder's Equity Ratios in EU over the last decade. Moreover, according to Boletim Estatístico of Banco de Portugal (2014), the average Debt-to-GDP ratio, over the last 8 years, stood at 159.6%, one of the highest values among European countries.

Despite these values, especially since the economic adjustment program had taken place in Portugal in 2011, we have observed a smooth deleveraging process occurring in the non-financial business sector, however, less visible for large firms.

According to Amorim (2002) in terms of debt financing in Portugal, on average, 60% of corporate debt came from loans, 30% from creditors and only 10% from bond issues. As he argues, these large proportions of bank loans, compared to other sources of funds, can be explained by the high degree of information asymmetry that exists between managers and Investors in Portugal. Here - and despite some limitations in the quality of accounting disclosures verified in Portugal, according to the expertise of Banco BPI, - the close relationship that exists between banks and Portuguese firms helps to reduce this type of cost.

Moreover, the low proportions of bond issues in Portugal result from the higher information asymmetry costs, associated with this type of financial instruments, and from the weak capital markets that exist in the country, which makes this a costly alternative to raise funds.

To sum up, based on the studies mentioned above, we can say that Portuguese firms, in general, are highly leveraged compared to other EU peers, with companies very dependent on the banking industry. Moreover, a deleveraging process has been taking place, specially, after the restrictions imposed by the financial assistance programme of 2011¹.

3. METHODOLOGY

The first part of our analysis (section 4.1.) provides a general overview for large firms in Portugal, presenting the main indicators and trends on capital structure. In the second part (section 4.2.) we look outside the country to assess how these indicators compare to the rest of Europe. Finally, in the last section (section 4.3), some conclusions are drawn, underlining the most important aspects in terms of financial leverage, cost of debt servicing ability and structure of debt maturity of large Portuguese firms, addressed throughout the study.

3.1. COUNTRY BLOCS AND INDUSTRY CLASSIFICATION

European Blocs

Blocs	Countries
Core Group	Austria Belgium Finland France Germany Luxembourg Netherlands
Peripheral Group	Greece Ireland Italy Spain
Eastern Group	Estonia Lithuania Latvia Slovakia Slovenia Malta

The sample comprises a total of 9,075 large firms from 11 industries of 18 Eurozone countries, whereof 292 are Portuguese firms. In order to organize and simplify our analysis all countries are grouped in three different Blocs, named as European Core Group, European Peripheral Group and European Eastern Group. This division was made based on similar macroeconomic profiles shared by countries within the same group. The

TABLE 1 - EUROPEAN BLOCS AND COUNTRIES.

Core Group comprises Austria and all the EU founding members, except for Italy, whose economic profile is closer from Peripheral countries. The Peripheral Group includes all countries affected by the sovereign debt crisis, which are the Southern countries and Ireland

¹ Under the deleveraging process imposed by Troika to the Banking Sector in Portugal. (Loans/Deposits target =120%)

(Bailed out in 2008). Finally the Eastern Group comprises all other Eurozone countries not included in the previous groups: ex-URSS Baltic countries, Slovenia, Slovakia and Malta.

Industry Classification

Industries were defined based on the industry classification used by the internal rating based (IRB) approach of Banco BPI. The following industries are taken into consideration: Construction², Sale of Motor Vehicles, Hotel & Accommodation, Retail, Wholesale, Manufacture of Food & Beverage, Manufacture of Pharmaceutical Products, Manufacture of Non-metallic Mineral Products, Manufacture of Chemical Products, Transports and Utilities.

3.2. DATA

Standard balance sheet and income statement items, for all 9,075 large firms, were obtained from Amadeus database (2006-2013 period). The annual values for assets, liabilities and equity are measured on a book value basis, since it was taken into consideration, not only publicly traded firms, but also private firms. As mentioned by Graham, Leary and Roberts (2014) while market value could be more economically meaningful, book values are often the focus of financing decisions, particularly as they concern to credit decisions.

Large firms are defined as firms with an operating revenue larger than €50 million that come from one of the 11 industries mentioned above. This criteria is coherent with the one adopted by Banco BPI for rating segmentation (large firms).

When a company publishes both consolidate and unconsolidated accounts we always give priority to the first type of reporting basis. However, the holding of each economic group is not included in our sample. This results from the fact that Amadeus database does not classify these firms as belonging to the relevant industry but as belonging to a specific industry classified as Holding Activities.

² Due to the higher complexity in defining the risk profile, Banco BPI, does not include Real State firms in this category for rating purposes. Therefore we are strictly considering construction firms in this category.

By ignoring these Holdings we could lose some important information, since a significant proportion of debt, within a business group, may be recorded on the balance sheet of the parent company.

3.3. FINANCIAL RATIOS

In order to compare capital structures and provide information about financial leverage, some financial ratios were computed. A brief explanation of each is given as follow:

Equity Ratio: It is expressed as the percentage of shareholder's equity on total assets. It represents the proportion of assets on which shareholders have a residual claim. Small equity ratios mean higher financial leverage.

Net Debt to EBITDA Ratio: This ratio measures the firm's ability to pay its net debt amount taking in consideration its operating results. The debt is subtracted from cash and equivalents, in order to show a better overall debt situation, and it is divided by EBITDA which is an approximation of a company's operating cash flow. It shows us how many years a company takes to pay off its net debt if net debt and EBITDA are held constant. The higher this ratio, the more leveraged firms are.

Interest Coverage Ratio: It shows the company's ability to service its existing debt cost (interests) taking into consideration only financial resources that come from the normal activity of the business. It is calculated dividing EBIT by interest expenses (interest and commission of debt). The higher the coverage ratio, the better the business is able to meet its debt obligations;

Long-term Debt to Total Debt Ratio: It represents the proportion of debt on the balance sheet that has a maturity higher than 1 year. Companies with substantial low Long-Term Debt to Total Debt Ratios, all else held constant, have a higher refinancing risk.

4. RESULTS AND DISCUSSION

4.1. LARGE FIRMS IN PORTUGAL

4.1.1. EQUITY RATIO AND DEBT STRUCTURE TRENDS

The following figures show us how large firms in Portugal have been evolving, in terms of Equity Ratio and debt structure, over the last 8 years.

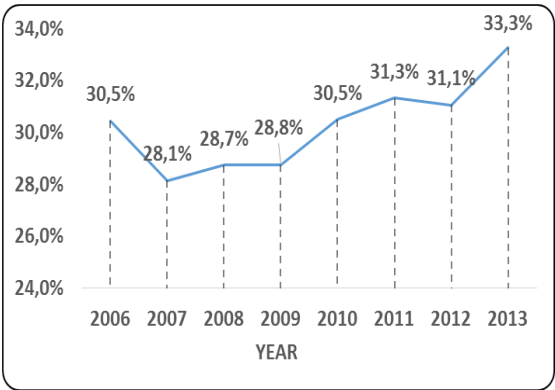


FIGURE 1 - AVG. EQUITY RATIO FOR LARGE FIRMS IN PORTUGAL (2006-2013).

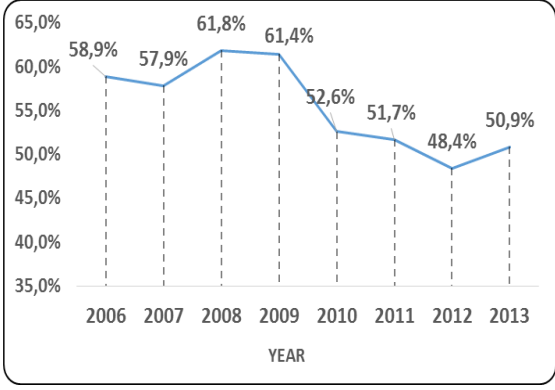


FIGURE 2 - AVG. LT DEBT TO TOTAL DEBT FOR LARGE FIRMS IN PORTUGAL (2006-2013).

Large firms have been improving their Equity levels since the end of 2007, showing a significant increase from 2009 onwards (figure 1). The highest point was reached in the last observed year (2013), meaning that on average, in that year, 33.3% of the firms' assets were being financed with shareholder's funds. The Equity Ratio shows a total growth, over the whole period, of 2.82 percentage points, which corresponds to a positive relative change of 9.26%. If we take into consideration the total growth since 2007 (lowest observation) until 2013 we get a positive variation of 18.2%.

Until 2007 there was a liquidity boom in the market, which resulted in larger portions of debt on firms' balance sheet and consequently low Equity Ratios. The significant improvement that has been taking place since 2009, could be explained by credit restrictions that started after the financial crisis of 2008 (see appendix A.1).

In fact, the banking industry has been under a deleveraging process since 2009, with banks less available to engage on long-term commitments. This is clear when we look at figure 2,

where large firms show a downward trend in the average Long-Term Debt to Total Debt Ratio between 2009 and 2013.

Therefore, one of the main explanations for this leverage improvement, measured in terms of Equity Ratio, could be the liquidity squeeze in the money market that took place after crisis, decreasing substantially the supply of loans to the business sector, especially for long-term maturities.

4.1.2. NET DEBT TO EBITDA AND COVERAGE RATIO TRENDS

In order to assess properly a firm’s leverage profile we should also look at the Net Debt to EBITDA Ratio, which takes into consideration not only the net debt amount but also the firm’s capacity to generate cash to meet its financial obligations, in this case measured by EBITDA (proxy for operating cash flow). Figures 3 and 4 show us the average values of Net Debt to EBITDA and Coverage Ratios for large firms in Portugal between 2006 and 2013.

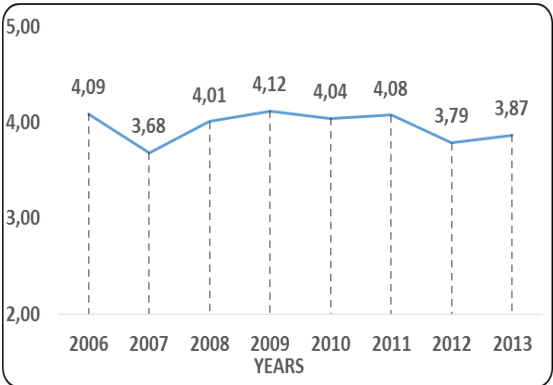


FIGURE 3 - AVG. NET DEBT TO EBITDA RATIO FOR LARGE FRIMS IN PORTUGAL (2006-2013).

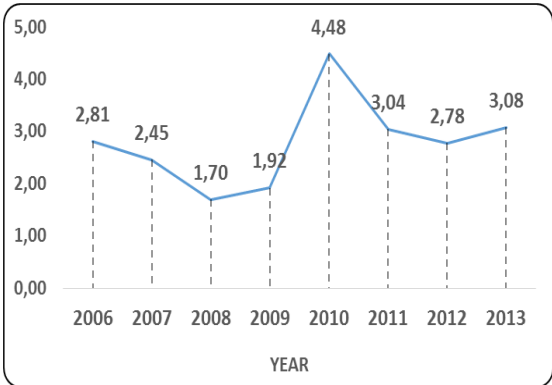


FIGURE 4 - AVG. COVERAGE RATIO FOR LARGE FIRMS IN PORTUGAL (2006-2013).

From 2006 to 2007 we can observe a drop in Net Debt to EBITDA values from 4.09 to 3.68 (figure 3). This initial drop was followed by a turnup in 2008 back to the same initial values of 2006. From then on, we can observe a period of stability with a slight decrease in Net Debt to EBITDA Ratio until 2013, when the ratio remained at 3.87. Taking into consideration the period 2009-2013 the Net Debt to EBITDA Ratio presented a negative relative change of roughly 6%.

The 2007 unexpected drop in Net Debt to EBITDA Ratio could be explained by the unusual large EBITDA values observed before crisis. In fact, the highest real GDP growth rate, over the

last decade in Portugal, was observed in 2007 (see appendix A.2). Since EBITDA presented a higher rate of growth, during that year, than the positive change in net debt, the ratio fell to a value of 3.68.

Even though there was significant decrease in debt amounts since 2008, as a consequence of banking restrictions, the deleveraging process of large Portuguese firms, when measured by Net Debt to EBITDA Ratio, has been going slowly, mainly due to the substantial declines in firms' capacity to generate operating results after crisis.

Since Net to EBITDA Ratio remained relatively stable from 2008 onwards (smooth decline), Coverage Ratio has been mainly affected by the cost of debt. In figure 4, it is clear that there is a negative correlation between this ratio and interest rates (see appendix A.3).

Interest rates reached the lowest point in 2010 and, consequently, coverage ratio peaked to a value of 4.48 in that year. After that, even with low interest rates, credit spreads increased, triggered by the sovereign debt crisis, and coverage ratio dropped until 2012. In 2013 the coverage ratio was 3.08, which is a good indicator, since it is higher than values observed before crisis.

4.1.3. INDUSTRY INDICATORS

The following table show us the average values of capital structure indicators, during post-crisis period, for each industry in Portugal.

(2010-2013)	Equity Ratio	LT Debt/Total Debt	ND to EBITDA Ratio	Coverage Ratio
Chemical	41,5%	54,4%	3,2	2,7
Construction	20,6%	46,8%	3,6	1,3
Food & Beverage	40,9%	45,6%	4,3	4,8
Hotel	37,4%	78,5%	8,9	1,5
NM Mineral Prod	48,2%	67,1%	3,7	2,9
Pharmaceutical	38,3%	65,4%	2,4	5,5
Retail	30,6%	46,8%	3,6	3,6
Sales of Vehicles	25,0%	25,6%	3,9	2,4
Transportation	29,8%	70,7%	4,5	2,4
Utilities	24,3%	59,9%	3,9	5,2
Wholesale	31,0%	42,6%	4,3	5,5

TABLE 2 - CAPITAL STRUCTURE INDICATORS: AVERAGE VALUES PER INDUSTRY IN PORTUGAL (2010-2013).

EQUITY RATIO

Looking at table above, Portuguese industries show a wide range of Equity Ratios. In the last period (2010-2013) the outstanding industries, presenting lowest Equity average levels, are Construction, Utilities and Sales of Vehicles, with values of 20.6%, 24.3% and 25.0% respectively. Contrarily, the Non-metallic Mineral Production, Chemical and Food & Beverage are the ones that show the highest ratios, with values of 48.2%, 41.5% and 40.9%.

As expected, and suggested by Titman and Wessels (1988), industries that present higher collateral values of assets (tangibility), non-debt tax shield (depreciations) and lower earnings volatility tend to show lower Equity Ratios. This is clear when we look at both Construction and Chemical industries, where differences between risk profiles gives them different debt capacities.

LONG TERM DEBT TO TOTAL DEBT RATIO

The Hotel & Accommodation industry is the one that presents the highest proportion of medium and Long-Term Debt on Total Debt, with a value of 78.5%, against the smallest value of only 25.6% for Sales of Vehicles industry.

When we look at industries as Hotel & Accommodation, Transportation and Non-metallic Mineral Production, whose assets present longer useful life, we notice that these firms tend to match maturities on both sides of balance sheet, borrowing also over the long term. Contrarily, since Retail and Wholesale industries do not present relevant long-term assets, they have lower capacity to engage in long-term commitments and, therefore, they usually borrow over the short term.

NET DEBT TO EBITDA RATIO

The Net Debt to EBITDA Ratio measures the firm's ability to pay off its debt. As we said previously, it can be seen as the number of years a company takes to pay off its debt if net debt and EBITDA are held constant.

For the period 2010-2013 the Hotel & Accommodation industry stands out from the other industries, with a value of 8.9. This means that firms within this industry would take, on average, 8.9 years to pay off its existent debt.

In a different position is the Pharmaceutical industry, characterized by important investments in R&D, showing an average Net Debt to EBITDA Ratio of only 2.4. This is consistent with the idea that firms with higher amounts of intangible assets and higher uncertainty, in terms of future cash flows, tend to exhibit lower Net Debt to EBITDA Ratios.

COVERAGE RATIO

In the same way, the Coverage Ratio is usually higher for firms that show lower Net Debt to EBITDA Ratios. Here, the Pharmaceutical and Wholesale industries have the higher ratios, with values of 5.5x and 4.5x respectively.

Even though Construction has an average Net Debt to EBITDA Ratio bellow the expected, with a value of only 3.6x, it shows a Coverage value of only 1.3x, meaning that EBIT only covers 1.3x interest expenses. In fact, Construction is one of the industries that has been more affected by financial crisis of 2008, with firms facing higher credit spreads due to the increasing perceived risk in this sector.

Other industries that present substantial low Coverage Ratios levels are Hotel, Transportation and Sales of Vehicles, with values of 1.5x, 2.4x and 2.4x respectively.

MEAN DIFFERENCES BETWEEN PRE-CRISIS AND POST-CRISIS PERIODS

Difference	Equity Ratio	LT Debt/Total Debt	ND to EBITDA Ratio	Coverage Ratio
Chemical	6,0	-4,4	-0,9	1,2
Construction	-0,1	-23,1	-0,7	-0,9
Food & Beverage	1,2	-3,5	-0,1	2,1
Hotel	2,7	-6,5	3,4	1,0
NM Mineral Prod	9,6	-2,8	1,4	1,4
Pharmaceutical	4,4	-1,9	-0,5	-0,1
Retail	6,0	-26,9	0,4	1,6
Sales of Vehicles	4,2	-14,8	-0,4	1,9
Transportation	0,9	-1,2	0,6	0,5
Utilities	-2,9	-14,6	0,4	2,2
Wholesale	4,0	-3,5	-0,2	2,5

TABLE 3 – ACTUAL DIFFERENCES BETWEEN PERIODS (2006-2009 AND 2010-2013).

Looking at table 3 we realize that most of the industries in Portugal have improved their Equity Ratio levels between pre-crisis and post-crisis periods. The exceptions here are Construction and Utilities industry, where changes are negative.

The deterioration in the average Equity Ratio observed in these industries is mainly due to firms' bad performances, in terms of P&L, during the post-crisis period, which resulted in negative equity changes (decrease in the numerator) between these two periods.

Contrarily, Non-metallic Mineral Production, Retail and Chemical industries were the ones that presented best improvements in their average Equity Ratios, with positive changes of 9.6, 6.0 and 6.0 percentage points, respectively.

In terms of structure of debt maturity, all industries show lower average Long-Term Debt to Total Debt ratios over the second period. This is consistent with the higher risk aversion of banks to engage in long-term commitments during this period. Here, Retail, Construction and Sale of Vehicles are the ones that stand out, showing significant changes, with values of -26.9, -23.1 and -14.8 percentage points. This clearly reflects the lending restrictions imposed by creditors, during adverse macroeconomic scenarios, towards these industries.

When we talk about Net Debt to EBITDA Ratio, 6 out of 11 industries are better off. With Chemical and Construction presenting the best improvements. On the opposite side are Hotel & Accommodation and Non-metallic Mineral Production, with actual changes of 3.4 and 1.4 points, between periods.

As we can see, not all industries in Portugal have been reducing their Net Debt to EBITDA Ratio. This is one of the reasons that explains why the deleveraging process in the non-financial business sector, when measured as Net Debt to EBITDA Ratio, has been evolving so slowly.

In terms of Coverage Ratio, most of the industries are better off. This reflects the effect of the sharp decrease in the cost of debt that took place during crisis. The only exceptions here are

Construction, showing the current vulnerabilities of its business environment, and Pharmaceutical industry, presenting lower coverage ratios over the second period.

4.2. COMPARATIVE ANALYSIS

4.2.1. GLOBAL COMPARISON

In this section, for the sake of prioritization and rationalization, we will focus only on Shareholder’s Equity Ratio and Net Debt to EBITDA Ratio, since these are the most relevant indicators to describe financial leverage. The analysis will be extended to the other two indicators (Long-Term Debt and Coverage Ratios) in subsection 4.2.2 for a detailed industry comparison.

4.2.1.1. EQUITY RATIO

The following figures show us the average Equity Ratio values, for different Eurozone Groups and Southern countries, between pre-crisis and post-crisis periods.

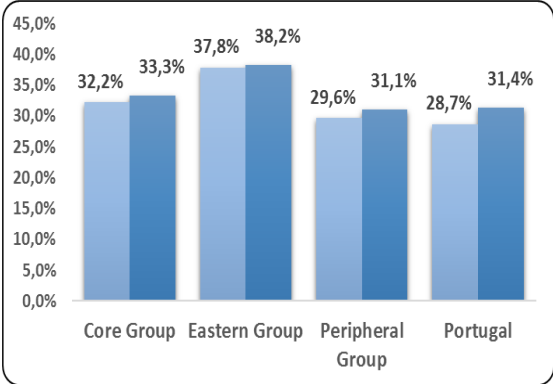


FIGURE 5 - AVG. EQUITY RATIO 2006-2009 AND 2010-2013.

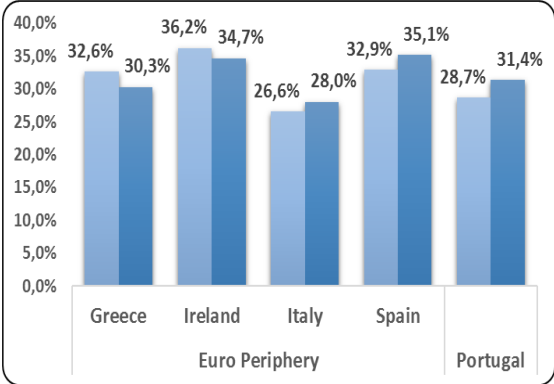


FIGURE 6 - AVG. EQUITY RATIO 2006-2009 AND 2010-2013 (PERIPHERAL COUNTRIES).

From figure 5 we can notice that the Eastern Group is the one that shows higher Equity levels, showing, on average, a value of 38.2% during the post-crisis period, followed by the Core Group with a value of 33.3%.

These relatively high values in terms of Equity Ratio, in the Eastern and Core Group, could be the result of different corporate economic performances, capital markets and banking sector

profiles (see appendix A.4), as well as different shareholders' risk aversions that exists in those countries, relative to Peripheral ones.

Contrarily to these groups, with lower corporate Equity Ratios, we can find Portugal and the Peripheral Group, with values of 31.4% and 31.1% respectively.

It is important to mention that the low levels of corporate debt presented by Eastern countries could give them some competitive advantage over Portugal. In fact, the large proportion of shareholder's funds on balance sheet gives these firms higher leverage capacity to undertake future investment opportunities.

Looking at figure 5 we can observe a generalized improvement in terms of Equity Ratios all over Eurozone. Here Portuguese firms stand out from their European peers, showing the highest increase among European blocs, with a value of 2.7 percentage points (relative change of 9%).

Comparing to Southern countries (figure 6), we realize that Portugal shows higher Equity Ratio levels than Italy (28%) and Greece (30.3%). However, it still exhibits lower values than Ireland (34.7%) and Spain (35.1%).

4.2.1.2. NET DEBT TO EBITDA RATIO

Figure 7 and 8 show us the average values for Net Debt to EBITDA Ratios, in different Eurozone Groups and Southern countries, between pre-crisis and post-crisis periods.

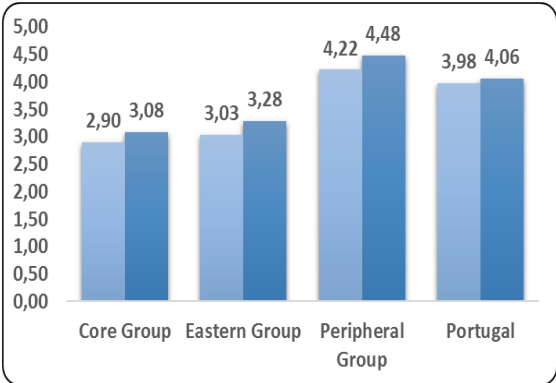


FIGURE 7 - AVG. NET DEBT/EBITDA 2006-2009 AND 2010-2013.

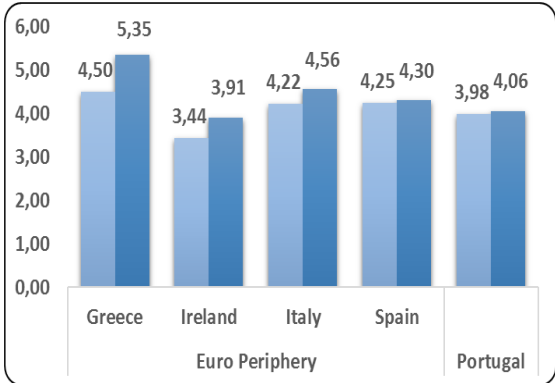


FIGURE 8 - AVG. NET DEBT/EBITDA 2006-2009 AND 2010-2013 (PERIPHERAL COUNTRIES).

In figure 7 we can see that large firms in Portugal are highly leveraged when compared to Core and Eastern countries, showing a value of 4.06 points in the second period.

The Core Group (3.08) is less leveraged than Eastern Group (3.28), reflecting the good performances, in terms of corporate operating results (EBITDA), in these most developed countries.

The Peripheral Group shows even higher levels than Portugal in terms of Net Debt to EBITDA Ratio. This value of 4.48, presented by Peripheral Group, is being considerably influenced by the over-indebtedness of Greek firms, especially during the post-crisis period.

Contrarily to Greece, Ireland is the country that presents the lowest average value of Net Debt to EBITDA Ratio among Peripheral countries.

All over Eurozone we can notice an increase in Net Debt to EBITDA Ratio from the first to the second period. Here, Portugal follows the same trend, presenting a slight relative change of 2%. Despite the worst profile exhibited in the second period by large firms in Portugal (2% change in Net Debt to EBITDA Ratio), and as mentioned before, a smooth deleveraging process has been taking place during the post-crisis period (2010-2013), as we can see in figure 1 and 3 (section 4.1.1.).

4.2.2. INDUSTRY COMPARISON

As stated before, Portuguese firms exhibit, on average, higher leverage levels than their European peers. In order to assess whether this is a consequence of the general indebtedness observed across industries or, contrarily, is due to some extreme values observed in few industries, a comparative analysis from an industry approach is presented.

EQUITY RATIO

Table 4 shows the average values for Equity Ratio, during the post-crisis period, for each industry in Portugal and European Blocs. The actual mean differences, measured in percentage points (p.p.), between Portuguese and European industries are presented in table 5.

Industry	Core Group	Eastern Group	Peripheral Group	Portugal	Eurozone
Chemical	42,1%	56,7%	41,1%	41,5%	42,2%
Construction	27,9%	33,2%	23,2%	20,6%	26,2%
Food & Beverage	37,5%	42,2%	35,1%	40,9%	36,6%
Hotel	37,6%	17,2%	32,0%	37,4%	34,3%
NM Mineral Prod	41,2%	54,0%	41,6%	48,2%	42,3%
Pharmaceutical	43,8%	59,7%	43,7%	38,3%	44,1%
Retail	31,3%	35,0%	29,6%	30,6%	30,9%
Sales of Vehicles	23,7%	32,7%	25,6%	25,0%	24,7%
Transportation	29,8%	36,6%	27,2%	29,8%	29,2%
Utilities	38,0%	48,5%	25,4%	24,3%	34,0%
Wholesale	30,6%	23,5%	29,0%	31,0%	29,6%
All firms	33,3%	38,2%	31,1%	31,4%	32,6%
# Observations	4730	495	3558	292	9075
Std. Deviation	22,0%	24,7%	21,9%	22,5%	22,2%

TABLE 4 - AVG. EQUITY RATIOS FOR EUROPEAN BLOCS AND PORTUGAL FOR 2010-2013 PERIOD.

Industries (Portugal)	Core Group	Eastern Group	Peripheral Group	Eurozone
Utilities	-13,6	-24,1	-1,0	-9,7
Pharmaceutical	-5,5	-21,4	-5,4	-5,8
Construction	-7,3	-12,6	-2,6	-5,6
Chemical	-0,6	-15,2	0,4	-0,7
Retail	-0,7	-4,4	1,0	-0,3
Sales of Vehicles	1,3	-7,7	-0,6	0,3
Transportation	0,0	-6,8	2,6	0,6
Wholesale	0,4	7,5	2,0	1,4
Hotel	-0,2	20,2	5,4	3,1
Food & Beverage	3,4	-1,3	5,8	4,3
NM Mineral Prod	6,9	-5,8	6,5	5,9
Total	-1,9	-6,9	0,3	-1,3

TABLE 5 - ACTUAL DIFFERENCES FOR PORTUGUESE INDUSTRIES TAKING EUROPEAN BLOCS AS REFERENCE (SORTED FROM SMALLEST TO LARGEST IN EUROZONE COLUMN).

When we take all firms into account, we can observe that Portugal is slightly below the European average in terms of Equity Ratio (table 4). This is mainly due to Core and Eastern countries, which present higher levels than Portugal.

However, from table 5, we can see that not all industries in Portugal are below Eurozone averages in terms of Equity Ratio. In fact, only 5 out of 11 industries in Portugal are below European levels.

Here, Utilities, Construction and Pharmaceutical, are the industries, from the non-financial business sector in Portugal, that exhibit larger discrepancies from European averages, with actual differences of -9.7 p.p. (-28%), -5.6 p.p. (-21%) and -5.8 p.p. (-13%) respectively.

Contrarily, Non-metallic Mineral production and Food & Beverage are the ones that stand out positively, with actual differences of 5.9 p.p. (+14%) and 4.3 p.p. (+12%).

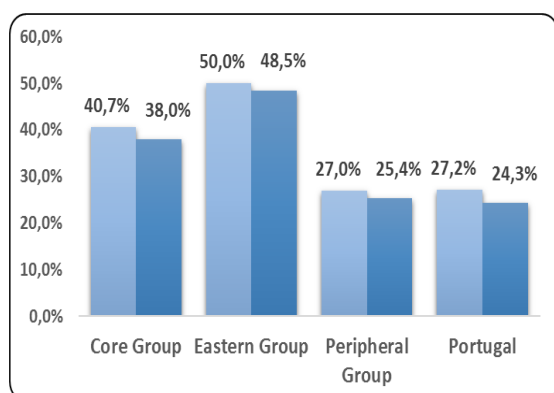


FIGURE 9 – AVG. EQUITY RATIO FOR UTILITIES DURING 2006-2009 AND 2010-2013 PERIODS.

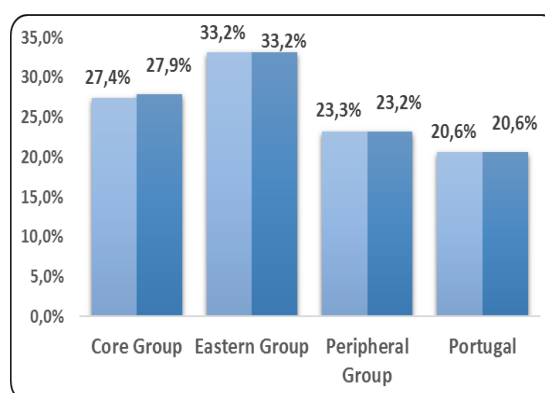


FIGURE 10 - AVG. EQUITY RATIO FOR CONSTRUCTION DURING 2006-2009 AND 2010-2013 PERIODS.

In figure 9 we can see that, in Portugal, firms from Utilities industry compare poorly with their European peers, showing, on average, an Equity Ratio of only 24.3% against 48.5% in the Eastern group and 38% in the Core Group.

Looking at figure 10, Construction firms show, on average, an equity ratio of 20.6%, which is slightly lower than their Peripheral peers (23.2%) and considerably lower than Core and Eastern firms (27.9% and 33.2%).

LONG-TERM DEBT TO TOTAL DEBT

In the same way tables 6 and 7 present the average values for Long-Term Debt to Total Debt Ratios and actual differences, in percentage points, between Portugal and European blocs.

Industry	Core Group	Eastern Group	Peripheral Group	Portugal	Eurozone
Chemical	58,0%	41,8%	45,8%	54,4%	53,3%
Construction	51,1%	49,2%	50,6%	46,8%	50,7%
Food & Beverage	53,6%	37,4%	40,9%	45,6%	47,3%
Hotel	45,7%	73,9%	67,3%	78,5%	57,1%
NM Mineral Prod	58,1%	34,3%	52,5%	67,1%	55,4%
Pharmaceutical	58,4%	36,8%	45,7%	65,4%	52,3%
Retail	58,2%	40,4%	49,1%	46,8%	54,5%
Sales of Vehicles	33,3%	15,1%	25,7%	25,6%	30,5%
Transportation	63,1%	59,2%	49,1%	70,7%	58,4%
Utilities	72,6%	62,1%	55,5%	59,9%	65,9%
Wholesale	41,8%	28,0%	37,0%	42,6%	39,9%
All firms	53,6%	43,7%	44,9%	49,7%	50,2%
# Observations	4730	495	3558	292	9075
Std. Deviation	39,0%	34,3%	33,5%	31,2%	37,1%

TABLE 6 - AVG. LTD RATIO (LTD/TD) FOR PORTUGAL AND EUROPEAN BLOCS FOR 2010-2013 PERIOD.

Industries (Portugal)	Core Group	Eastern Group	Peripheral Group	Eurozone
Retail	-11,4	6,4	-2,3	-7,7
Utilities	-12,7	-2,1	4,4	-6,0
Sales of Vehicles	-7,7	10,5	-0,1	-4,9
Construction	-4,3	-2,4	-3,8	-3,9
Food & Beverage	-7,9	8,2	4,7	-1,7
Chemical	-3,6	12,5	8,5	1,0
Wholesale	0,8	14,6	5,6	2,7
NM Mineral Prod	8,9	32,7	14,6	11,7
Transportation	7,6	11,5	21,6	12,3
Pharmaceutical	7,0	28,6	19,7	13,1
Hotel	32,8	4,6	11,3	21,4
Total	-3,9	6,0	4,8	-0,4

TABLE 7 - ACTUAL DIFFERENCES FOR PORTUGUESE INDUSTRIES TAKING EUROPEAN BLOCS AS REFERENCE (SORTED FROM SMALLEST TO LARGEST IN EUROZONE COLUMN).

Large Portuguese firms, on average, present a Long-Term Debt Ratio of 49.7%, which is quite similar to Eurozone levels (50.2%). Here, the Core Group is the only European bloc that shows a higher average ratio than Portugal (53.6%), with Eastern and Peripheral Groups standing below Portugal's average, with ratios of 43.7% and 44.9% respectively.

In fact, more than half of the industries in Portugal compare favorably with Eurozone levels. With Hotel, Pharmaceutical, Transportation and Non-metallic mineral Production standing out positively, with actual differences of 21.4 p.p. (+37%), 13.1 p.p. (+25%), 12.3 p.p. (+21%) and 11.7 p.p. (+21%), respectively.

On the other hand, Sales of Vehicles, Retail and Utilities firms are the ones that present lower proportions of Long-Term Debt in their balance sheets, with actual differences from the European average of -4.9 p.p. (-16%), -7.7 p.p. (-14%) and -6.0 p.p. (-9%).

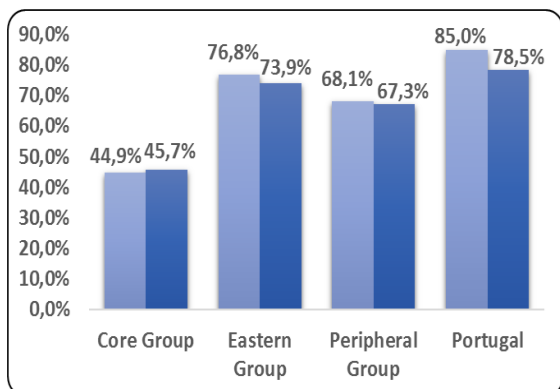


FIGURE 11 - AVG. LTD RATIO FOR HOTEL DURING 2006-2009 AND 2010-2013 PERIODS.

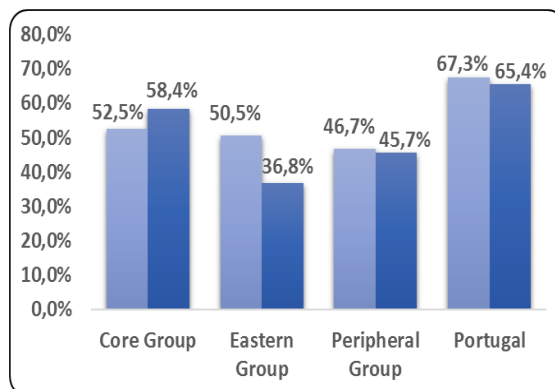


FIGURE 12 - AVG. LTD RATIO FOR PHARMACEUTICAL DURING 2006-2009 AND 2010-2013 PERIODS.

As we can observe Hotel firms in Portugal compare favorably with their European peers, especially with Core countries. While Hotel firms in Portugal present 78.5% of Long-Term Debt to Total Debt Ratio, Core firms present, on average, a proportion of only 45.7%.

From figure 11 we can notice a significant ratio decline between periods from 85% to 78.5% for Hotel Portuguese firms. This deterioration could suggest that this sector has also been affected by the lending restrictions, for long term maturities, carried out by Banks in Portugal.

Looking at figure 12, we see that Pharmaceutical firms present Long-Term Debt Ratios substantially above their European peers. The larger discrepancy is observed between Portuguese and Eastern firms, with a relative difference of 12%.

NET DEBT TO EBITDA RATIO

Tables 8 and 9 present the average values of Net Debt to EBITDA Ratios and actual differences between Portugal and European Blocs for each industry.

Industry	Core Group	Eastern Group	Peripheral Group	Portugal	Eurozone
Chemical	2,4	3,2	3,1	3,2	2,7
Construction	3,9	2,7	6,1	3,6	4,7
Food & Beverage	2,9	4,4	4,8	4,3	3,8
Hotel	3,9	-	7,1	8,9	6,0
NM Mineral Prod	2,6	2,1	4,7	3,7	3,5
Pharmaceutical	1,9	0,5	1,9	2,4	1,9
Retail	2,4	2,2	3,6	3,6	2,8
Sales of Vehicles	4,7	2,5	6,3	3,9	5,1
Transportation	3,0	4,2	4,4	4,5	3,6
Utilities	2,5	3,1	3,9	3,9	3,1
Wholesale	3,3	4,8	4,7	4,3	3,9
All firms	3,1	3,3	4,5	4,1	3,7
# Observations	4730	495	3558	292	9075
Std. Deviation	3,4	3,5	3,9	3,6	3,7

TABLE 8 - AVG. NET DEBT/EBITDA FOR PORTUGAL AND EUROPEAN BLOCS FOR 2010-2013 PERIOD.

Industries (Portugal)	Core Group	Eastern Group	Peripheral Group	Eurozone
Hotel	5,0		1,8	2,9
Transportation	1,4	0,3	0,1	0,8
Utilities	1,4	0,8	0,0	0,8
Retail	1,1	1,4	0,0	0,8
Chemical	0,8	0,1	0,2	0,5
Pharmaceutical	0,5	1,9	0,4	0,5
Wholesale	1,0	-0,5	-0,3	0,5
Food & Beverage	1,4	-0,2	-0,5	0,4
NM Mineral Prod	1,0	1,5	-1,1	0,2
Construction	-0,3	0,9	-2,5	-1,2
Sales of Vehicles	-0,8	1,3	-2,4	-1,2
Total	1,0	0,8	-0,4	0,4

TABLE 9 - RELATIVE DIFFERENCES FOR PORTUGUESE INDUSTRIES TAKING EUROPEAN BLOCS AS REFERENCE.

Taking into consideration the amount of net debt and the firm's capacity to generate cash flow, we can see that Portuguese firms are, on average, more leveraged than their European peers. While Portuguese firms would take, on average, 4.1 years to pay off their net debt, European firms, would take only 3.7 years.

Contributing to this discrepancy, we can find Core and Eastern countries, with average values of Net Debt to EBITDA Ratios of 3.1 and 3.3 points respectively. In a worse situation are the Peripheral Group (4.5), whose average has been mainly affected by the high degree of leverage observed in countries like Greece, Italy and Spain, as mentioned before.

Looking at table 9 we notice that most of the industries in Portugal compare poorly with their European peers, with the exceptions for Construction and Sale of Vehicles, whose average values for Net Debt to EBITDA Ratio, in both industries, stand below European levels.

In Portugal the most leveraged industries, taking into consideration the European framework, are Hotel, Retail, Utilities and Pharmaceutical, with actual differences, from European levels, of 2.9 (+48%) , 0.8 (+28%), 0.8 (+26%) and 0.5 (+26%) points, respectively.

In a better position are Construction and Sales of Vehicles, showing actual differences, from Eurozone average values, of -1.2 points.

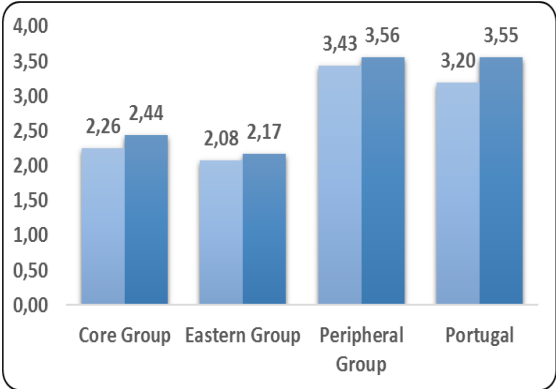


FIGURE 13 - AVG. NET DEBT/EBITDA FOR RETAIL DURING 2006-2009 AND 2010-2013 PERIODS.

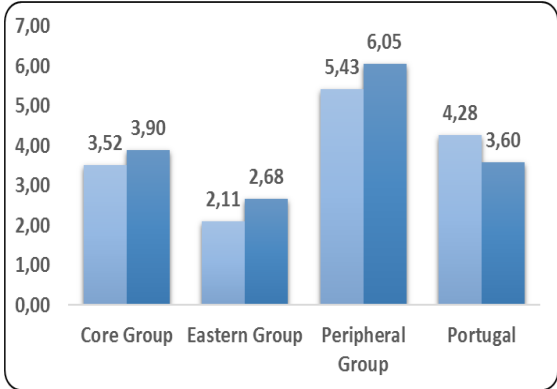


FIGURE 14 - AVG. NET DEBT/EBITDA FOR CONSTRUCTION 2006-2009 AND 2010-2013 PERIODS.

Retail firms in Portugal exhibit Net Debt to EBITDA levels quite similar to the ones observed in Peripheral countries (figure 13). However, they are highly leveraged when compared to Core and Eastern firms. Moreover, we can see that retail firms are substantially more leveraged in the post-crisis period, showing a Net Debt to EBITDA Ratio of 3.55 points against only 3.2 points in the pre-crisis period.

In the particular case of Construction firms in Portugal, the low values observed in Net Debt to EBITDA Ratios reflect the fast deleveraging process that has been taking place over the last years in the industry (figure 14). Moreover, most of Peripheral countries have not started yet a deleveraging process in the Construction sector, mainly due to the negative trend in operating results (denominator) that persists in most of these construction firms.

COVERAGE RATIO

Tables 10 and 11 present the average values of Coverage Ratios and actual differences between Portugal and European Blocs for each industry.

Industry	Core Group	Eastern Group	Peripheral Group	Portugal	Eurozone
Chemical	4,9	11,3	4,5	2,7	4,8
Construction	4,1	4,3	2,2	1,3	3,3
Food & Beverage	4,6	3,4	4,0	4,8	4,3
Hotel	1,7	-	1,3	1,5	1,5
NM Mineral Prod	3,8	4,2	2,2	2,9	3,2
Pharmaceutical	6,5	11,2	5,6	5,5	6,1
Retail	5,6	7,3	3,7	3,6	5,0
Sales of Vehicles	4,0	6,9	2,4	2,4	3,6
Transportation	2,4	5,0	2,6	2,4	2,5
Utilities	5,1	3,9	3,6	5,2	4,5
Wholesale	4,4	3,7	4,2	5,5	4,4
All firms	4,4	4,9	3,5	3,7	4,1
# Observations	730	495	3558	292	9075
Std. Deviation	6,1	6,5	5,5	4,8	5,9

TABLE 10 - AVG. COVERAGE RATIO FOR PORTUGAL AND EUROPEAN BLOCS FOR 2010-2013 PERIOD.

Industries (Portugal)	Core Group	Eastern Group	Peripheral Group	Eurozone
Chemical	-2,1	-8,6	-1,8	-2,0
Construction	-2,8	-0,6	-0,9	-2,0
Retail	-2,0	-3,7	-0,1	-1,4
Sales of Vehicles	-1,6	-4,5	-0,1	-1,2
Pharmaceutical	-1,0	-5,7	-0,1	-0,6
NM Mineral Prod	-1,0	-1,3	0,7	-0,3
Transportation	0,0	-2,5	-0,2	-0,1
Hotel	-0,1	-	0,3	0,1
Food & Beverage	0,1	1,4	0,7	0,4
Utilities	0,0	1,2	1,6	0,6
Wholesale	1,0	1,7	1,3	1,1
Total	-0,7	-1,2	0,2	-0,4

TABLE 11 - ACTUAL DIFFERENCES FOR PORTUGUESE INDUSTRIES TAKING EUROPEAN BLOCS AS REFERENCE (SORTED FROM SMALLEST TO LARGEST IN EUROZONE COLUMN).

In terms of Coverage Ratio, Portuguese firms compare poorly with Core and Eastern firms and favorably with Peripheral firms. On average, the firms' operational results (EBIT) in Portugal cover only 3.7x interest expenses, which stands below the European average in roughly 10%.

Looking at table 11, we can see that in 7 out of 11 industries, Portuguese firms show lower Coverage Ratios than European averages. Here, the most serious case is Construction, showing an average value for Coverage Ratio of only 1.3x against Eurozone average of 3.3x.

Other industries, whose firms present a considerable low ability to service their cost of debt, are Chemical, Sales of Vehicles, Retail and Non-metallic Mineral Production, with actual

differences, from Eurozone average values, of -2.0 (-43%), -1.2 (-33%), -1.4 (-28%), and -0.3 (-9%) points respectively.

Contrarily to these industries, Wholesale and Utilities are the ones that stand out positively, presenting actual changes of 1.1 (+25%) and 0.6 (+16%) above European levels.

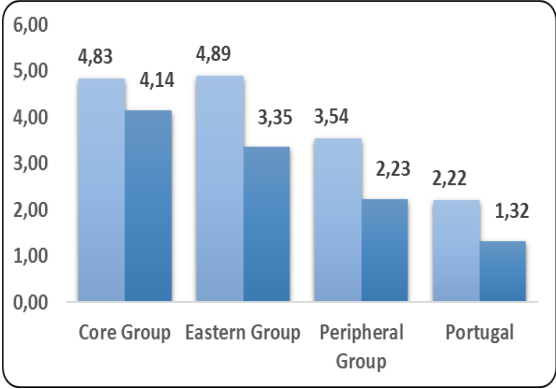


FIGURE 15 - AVG. COVERAGE RATIO FOR CONSTRUCTION 2006-2009 AND 2010-2013 PERIODS.

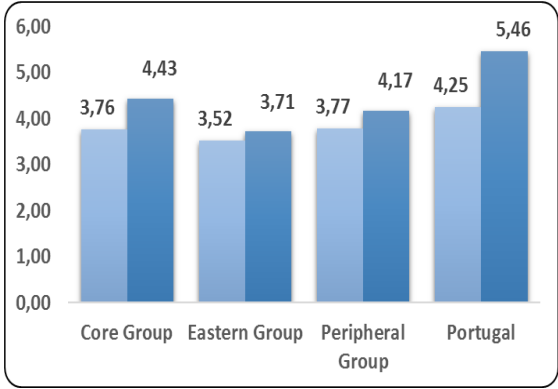


FIGURE 16 - AVG. COVERAGE RATIO FOR WHOLESALE DURING 2006-2009 AND 2010-2013 PERIODS.

Although Construction in Portugal compares favorably with the Eurozone average in terms of Net Debt to EBITDA Ratio, when we take into consideration the firms’ ability to pay interest expenses, we see that Portuguese firms, within this sector, are worse than their European peers (figure 15), showing, on average, a Coverage Ratio of only 1.32x during the post-crisis period. These low levels presented by construction firms are probably a consequence of the weak operating results, combined with the high credit spreads experienced by the sector during the post-crisis period in Portugal.

In a different situation we can find Wholesale firms, showing a better capacity to deal with interest expenses than their European peers (figure 16).

5. CONCLUSION

This project was set out to analyze the capital structure profile of large Portuguese firms. Through a comparative analysis with other European peers we provided some insight into leverage, cost of debt servicing capacity and structure of debt maturity.

Since the end of 2009 large firms in Portugal have been improving their leverage situation, with a significant increase in Equity Ratio levels, a slight decline in Net Debt to EBITDA Ratio and a consequent improvement in Coverage Ratio levels. Unfortunately, this deleveraging process turns out not being a consequence of higher shareholder's contributions, but an effect of the asset's downsizing and disinvestment.

When we look at Shareholder's Equity Ratio and Net Debt to EBITDA Ratio, we realize that large firms in Portugal stand slightly above Peripheral levels, but compare poorly with Core and Eastern firms. Here, the lower financial leveraged presented by Eastern peers could give them some competitive advantage over Portuguese firms. Moreover, looking inside the Peripheral Group, indebtedness levels of Portuguese firms are quite similar to the ones observed in Spain and Italy, higher than Ireland and substantially lower than Greek levels.

From a sectoral perspective we can say that, in 5 out of 11 industries, Portuguese firms are below European levels in terms of Equity Ratio. With Utilities, Construction and Pharmaceutical, being the ones that present the lowest relative proportions of Shareholder's Equity on Total Assets. In terms of Net Debt to EBITDA Ratio, most of the industries in Portugal compare poorly with their European peers. With the exceptions for Construction and Sale of Vehicles, whose ratios, for both industries, stand below European levels. Based on this financial ratio, we can say that, in Portugal, the most leveraged industries, taking into consideration the European framework, are Hotel, Retail, Utilities and Pharmaceutical.

Despite the improvements observed in the business sector over the last years, and the smooth convergence process to European average levels, we can say that Portuguese large firms are still substantially leveraged when compared to their European peers.

Therefore, solvency improvements, in a form of shareholder's contributions, are required in the future in order to reduce the debt burden faced by Portuguese firms and give them better conditions to undertake future investments.

Here, the introduction of a new tax environment, discriminating positively the use of equity and quasi-equity instruments, and also the implementation of important reforms to foster capital markets development (particularly stock market), are essential, in order to provide firms the right conditions to raise equity funds in the future.

Limitations and Future Research

Although this study has reached its main goal of describing capital structure of large Portuguese firms, we should be aware of some limitations:

- Firstly, due to Database limitations, as mentioned before, Holding firms are not included in our sample. From this drawback we can expect actual leverage levels to be tendentiously higher than the ones presented in this study (for all EU countries), since a significant amount of debt could be “hidden” on the parent firm’s balance sheet. However, by ignoring these Holding firms we are not incurring in the inadequacy of considering multi-sectoral Holdings that could bias our industry analysis results.
- Secondly, the selection bias that result from sample changes, determined by bankruptcy events, could also affect some capital structure trends. However, this limitation is not as relevant as the first one, since we are considering only large firms in our analysis (few bankruptcy events among large firms).

Some questions that remain unanswered are: How do Portuguese large firms compare with their European peers, in terms of leverage, when taking into consideration also consolidated financial statements of holding firms? And what differences can we find between Portuguese and European firms in terms of determinants of capital structure choices? We will leave these questions to future research.

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