An agency theory approach
on Romanian listed companies' capital structure

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Abstract. *Capital structure is one of the most studied thematics in corporate finance because of its strong dependencies with companies' performance. Literature provides various theories trying to explain capital structure and financing decisions. Agency theory treats the subject from a principal-agent approach. Diverging interests of these two decisional factors can explain the financing decisions taken by companies where other capital structure's theories fail. Testing agency theory implications against a sample of Romanian listed companies will show whether this theoretical concept provides empirical results in an emerging market with developing capital market.*

Keywords: agency theory, optimal capital structure, stakeholder type, equity, leverage.

JEL Classification: G32.

Introduction

When considering agency theory, also known as Principal-Agent Model, one should bear in mind two essential elements. The *principal* and the *agent* are the two components of an agency relationship. The first one engages the second to perform a service on their behalf by delegating the authority to make decisions in the company (Grigore and Ștefan-Duicu, 2013). The principal is the one who writes off capital funds, bearing the risk of default and creating the incentives (Lambert, 2001).

Debates around agency theory are centered on the idea that there is a conflict between the managers and the shareholders (Jensen and Meckling, 1976). Each one is interested in maximizing their utility function. Achieving this objective opposes different strategies in structuring company's capital and financing policies. While the stakeholders bear the risk alone, managers tend to borrow beyond the optimal level in order to increase the company's size, which gives them more decisional power. Stakeholders can prevent such actions by implying some specific methods or instruments to control managerial activity.

Literature review

Agency theory was first introduced by Jensen and Meckling (1976) in their working paper about managerial behavior, agency costs and ownership structure. Even if this theory is very old in capital structure's literature, many works still refer at it today trying to explain its implications on company financial decisions.

Fama (1980) states that the extent to which a company invest in risky projects is probably determined by the type of the shareholder. A company may be controlled by a family (or an individual) or by a non-family owner/shareholder (companies, banks, financial institutions and others). Recent papers found that there are differences in behavior of listed family-controlled companies, these ones having a *safer* approach when engaging expenses or indebtedness. Because of the fact that the wealth of the controlling families is tied to the company assets, small and medium family-owned companies may show a higher risk aversion (Demsetz and Lehn, 1985). Moreover, implying a strategy based on consistent levels of growth may be limited (Kotey, 2005) to the extent these strategies do not jeopardize their survival (Gomez-Meija et al., 2007).

As a primary conclusion, it is widely expected from the family-owned companies to take decisions for reducing risk and not be able to make strategical changes in company activity such as product diversification, innovation or challenging new markets. Resistance to change is often explained by the primary objective of survival. Family owners may become isolated and not be able to respond appropriately to changes in the economic environment they activate (Boeker and Goodstein, 1991).

Big companies owned by other large companies or by financial institutions are more inclined to follow a profit maximizing strategy because they have a more capable managerial team. Most studies considers non-family companies to be more able to seize

market opportunities and at a greater extent. On the other side, for companies with mangers-not-shareholders, monitoring of the managers' expenditures on perquisites and other personal consumption relies on the vigilance of the non-managing shareholders and/or third parties, such as the company's creditor (Ang et al., 2000).

In family-controlled company, the agent and the principal are the same person. The advantage of this situation is that there can be no more the case of diverging interest or opinions. At the end of the day, their utility functions will follow the same direction. The differences found by recent studies in the behavior of family-owned companies and the others types of companies represent evidences that agency theory has practical support.

Methodology and data

This section explains how the research has been conducted in this paper. A combination of descriptive and quantitative approach was used in order to answer the facts questioned in the first part. This was accomplished by collecting data from a sample of 595 Romanian listed companies. Bucharest Stock Exchange currently holds for 83 listed companies at primary category. The rest of the companies are gathered from the secondary categories operating alongside Bucharest Stock Exchange. RASDAQ market operated independently until it merged by absorption in 2005 with Bucharest Stock Exchange.

This was done on a 9-year period between 2007-2015. A longer period of time would have been preferred but for unavailability reasons the period was limited to a 9-year period. Financial figures used in this working paper were extracted from the companies' annual reports on stock exchange and other financial data sites. The annual reports were used as a primary source because it lowers the chance of errors generated by transferring the data.

At first, a general analysis to the companies in the sample was assigned. After transferring the data in Excel a number of companies were eliminated. Banks, financial companies, mutual funds/nominee/trusts, foundations, research institutes and other types of financial companies were cut down. In total, 81 companies were eliminated, making the final sample to contain 514 firms. This included Romanian listed companies between 2007-2015, even if some of them may have been delisted in this period of time.

An important issue was the heterogeneity of the sample. The main idea was to keep as many companies in order to generate a general overview on the economic environment during this period. However, many companies did not have reportings for the whole period. Maintaining only companies with all observations available would have kept a small number of companies in the sample and would have biased the results. The decision was to analyse the whole sample and create subsamples of companies where necessary.

Main findings

In order to analyse the tendencies of capital structure for the selected sample it was first rendered the average value for the whole period (Figure 1). At first, capital structured has been proxied by the ratio between shareholder funds and total assets. For empirical analysis, this ratio will be used in order to evaluate capital structure of companies. Average value has been calculated for each company in each year, and then for the whole period. For companies with incomplete financial reports, the ratio has been rendered for available years only. Then, a simple average for the whole sample and period has been calculated as seen in Figure 1.

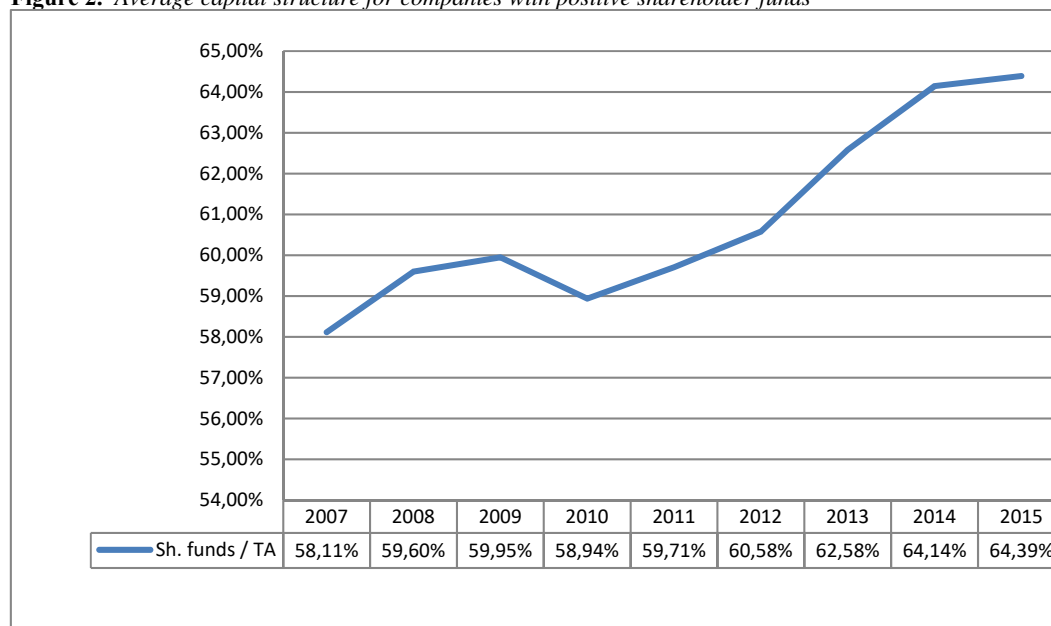**Figure 1**. *Average capital structure*
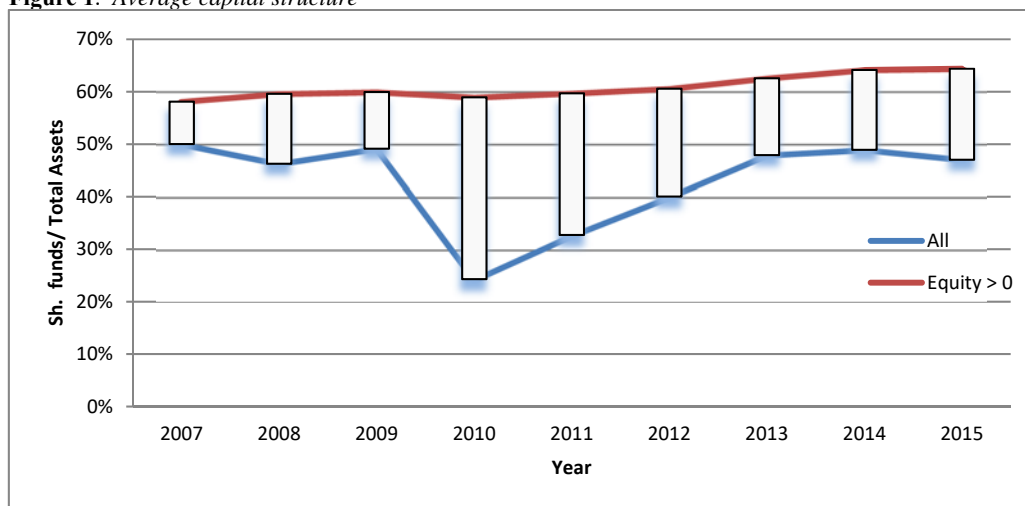
Source: own calculations.

Heterogeneity of the sample proved to be something needed to be addressed. *Outliers* generated by companies with financial difficulties or undergoing bankruptcy procedures drastically affect the average value for this indicator. This is shown by the blue line which is the average ratio calculated for all the companies, including ones with at least one negative value. The red line considers only companies with positive values for shareholder funds, eliminating 74 companies out of 514. This resampling is made on the assumption that companies with positive shareholder funds constitute the healthy component. Negative shareholder funds values usually occurs at high values distorting the average indicator.

Nevertheless, comparing the two indicators may give some piece of information. The gap between the two colored lines includes the effect of negative shareholder funds situations, proxing the extent to which companies faced unfriendly economic environment. According to Figure 1, 2010 displays the largest gap between the two values, indicating the start of financial crisis in Romanian economy. Afterwards, the gap gradually narrows down reaching pre-2010 values in 2013. The narrowing trend inverses again starting year

2015. For further research purposes, it would be useful to determine if more recent data would confirm the inverting dynamics.

Figure 2. *Average capital structure for companies with positive shareholder funds*

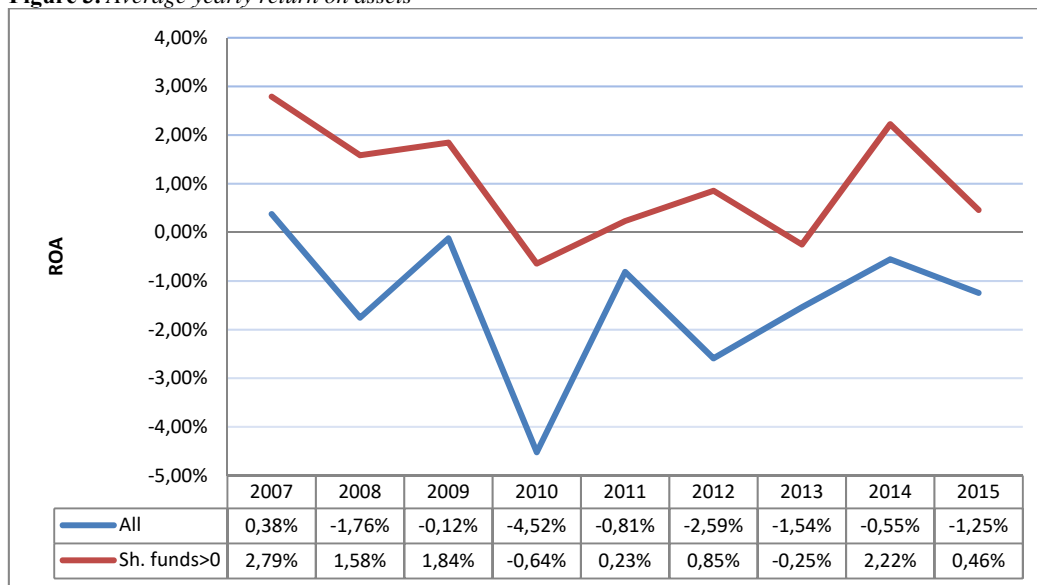|	2007	2008	2009	2010	2011	2012	2013	2014	2015
Sh. funds / TA	58,11%	59,60%	59,95%	58,94%	59,71%	60,58%	62,58%	64,14%	64,39%

Source: own calculation.

Regarded independently, companies with positive shareholder funds trend around 60 percent for the capital structure proxy ratio (Figure 2). Comparing the starting value (58 percent for 2007) with the final one (64 percent in 2015) it can be stated that companies improved their indebtedness situation. Another conclusion which can be drawn is that companies in this sample did not face important economic hardship during years of financial turmoil. Companies with positive shareholder funds maintained an positive trend during period, even if it registered lower value during the peak of the crisis in 2010. They not only managed to avoid high variations in their capital structure but also improved this indicator over the observed period.

Considering the fact that out of 514 companies, 74 were found with at least one negative value for shareholder funds, which would make around 15 percent of the sample. By the amplitude by which the blue line gaps the red one it can be concluded that the financial shock was mostly absorbed by that 15 percent of companies.

In Figure 3 is shown an average financial indicator for the samples of companies presented above. Return on assets is calculated in yearly average values for the same subsamples in order to inspect if this profitability indicator trends in a similar way with capital structure indicator. Negative values smaller than 100 percent were deleted in order to keep the sample consistent.

Țaga and Stănică (2016) found that, in case of Romanian companies, there is a negative relationship between profitability and debt ratio. Serghiescu and Văidean (2014) also found negative dependencies between the two variables, stating that profitability is the variable with the highest impact on the capital structure choices.

Figure 3. *Average yearly return on assets*

	2007	2008	2009	2010	2011	2012	2013	2014	2015
All	0,38%	-1,76%	-0,12%	-4,52%	-0,81%	-2,59%	-1,54%	-0,55%	-1,25%
Sh. funds>0	2,79%	1,58%	1,84%	-0,64%	0,23%	0,85%	-0,25%	2,22%	0,46%

Source: own calculations.

Results showed that average return on assets has its lowest value during 2010 for both samples. This coincides with the lowest levels for the shareholder funds reported to total assets presented earlier. First year, 2007, displays the highest value for the ROA indicator. Second highest peak for profitability is registered in 2014 (2.22 percent) but does not exceed past record value of 2.76 percent.

This shows that even if companies succeeded in regaining their shareholder funds-debt ratio after the financial crisis, profitability indicator remains inferior to pre-crisis's values. For companies with positive shareholder's funds (red line) negative values were registered in 2010 as expected, but also in 2013. At whole sample level, average value for return on assets failed in reaching positive values as in 2007.

Table 1 includes data about industry classification and ownership type for the sample of companies. It also includes information about the companies in the sample classified depending on the industry where it operates. Percentages for each class shows that *manufacturing* companies makes up for around 46 percent of the sample. Other important percentages are read for *wholesale and retail trade* (12 percent), *construction* (11 percent), *agriculture*, *transportation* and *HoReCa*[1] (each one around 7 percent). Such imbalanced numbers are specific to developing economies with relatively small service sector.

In Table 1 companies are considered and analysed by the type of ownership. As seen in the table, almost 60 percent of the companies included in the sample are owned by families or individuals. Financial companies or banks own 10 percent of the companies, while other companies have a share of 11 percent of the total sample.

The rest it is owned by employees, managers, directors or others type of institutions which includes foundations, research institutes, mutual and pension funds or unspecified/ undisclosed owners. This distribution implies a high concentration of companies owned by families or individuals, which is seen across all domains of activity except for electricity and health.

Table 1. *Industry classification and ownership type*

Industry classification/ Ownership type	Percent (%)	Financial companies/ banks	Families or individuals	Industrial companies	Employees/ Managers/D irectors	Others
Mining and quarrying	2.14	1	8	2		
Electricity, gas, steam and air conditioning supply	0.97		1	4		
Manufacturing	**45.72**	20	138	27	21	29
Agriculture, forestry and fishing	7.59	5	24	3	5	2
Transportation and storage	7.00	1	24	4	4	3
Construction	11.48	5	35	7	6	6
Wholesale and retail trade, repair of motor vehicles and motorcycles	12.06	11	35	3	5	8
Water supply, sewerage, waste management and remediation activities	0.19		1			
Accommodation and food service activities	7.20	10	20	3		4
Information and communication	0.97		4	1		
Professional, scientific and technical activities	2.72		10	1	1	2
Human health and social work activities	0.19			1		
Administrative and support service activities	0.97		4	1		
Others service activities	0.39		1			1
Others	0.39			1	1	
Total	514 companies	53	**305**	58	43	55
Percent		**10.31**	**59.34**	**11.28**	**8.37**	**10.70**

Source: own calculations.

Table 2 includes some financial indicators for the companies in the samples classified according to the ownership type. There were calculated average yearly values for return on assets and shareholder funds to total assets ratio for 2007-2015 period. Not all companies have recorded values in all years. As earlier, where incomplete data

occurred, average was computed for available values. There were eliminations where extreme outliers occurred because of atypical economic situations. Even if those values were deleted, high variance marked the data series. For this reason, alongside average indicator, median was also calculated. Capital structure indicator was included only for positive shareholder funds.

Table 2. *Financial indicators by ownership type*

Descriptive analysis for ownership type							
Variable	**Indicator**	**Financial companies and banks**	**Family and individuals**	**Industrial companies**	**Employees/ Managers/ Directors**	**Other**	*Average*
ROA	Average	-0.51%	0.63%	-3.95%	-1.20%	-0.46%	-1.10%
	Median	0.69%	1.04%	0.99%	1.38%	0.78%	
Capital structure*	Average	72.76%	62.97%	60.69%	56.93%	63.47%	62%
	Median	85.03%	66.69%	59.50%	57.91%	66.91%	
***Capital structure was calculated only for positive values of shareholder funds by the same (Shareholder funds / Total Assets), **All data is considered at yearly values.**							

Source: own calculations.

The averages values are heavily marked by high negative values for a number of companies registering high loses. In these cases, median indicator could be more representative in drawing conclusions.

Family and individual owned companies look more performant than the other categories. Average ROE is the only positive and highest for family-owned companies. Median values does not confirm this ranking, employers/managers/directors companies being more efficient. Negative values for median indicator indicates that a larger number of companies were non-performant.

If this is coupled with positive values for average indicator means that high performant companies compensate for the higher number of non-performant companies. Looking at ROA indicator, all categories of companies have positive median values, meaning more profitable entities in yearly average. Combining median and average values, family and individual owned companies tops the performance indicator. Anyway, unless further refinements on the sample is done for variance reduction, these data should be looked at prudently.

Capital structure may give more accurate information considering only companies with positive shareholder funds were selected. Family companies were expected to be the least leveraged, with a higher portion of total assets financed through shareholder funds. Surprisingly, the least indebted companies are those with financial and bank ownership, with a 0.72 shareholder funds to assets ratio. This contradicts the theory that credit facilities and group membership's advantages generates higher leverage levels.

Companies with industrial companies' ownership rank third, with a 0.61 ratio on average. Family and individual owned companies, which make for around 60 percent of the sample, have a shareholder funds – assets ratio equal to the average of the whole sample, 0.62, which is contrary to expectations of a lower leverage's level for this type of companies.

Companies owned by employees, managers or directors have the highest level of indebtedness, financing only 57 percent of its assets through shareholder funds.

Lastly, companies in the sample have been classified according to the country of the owner. As expected, majority of the companies are owned by Romanian owners, whatever the type of ownership.

**Figure 4.** *Location of the owner*
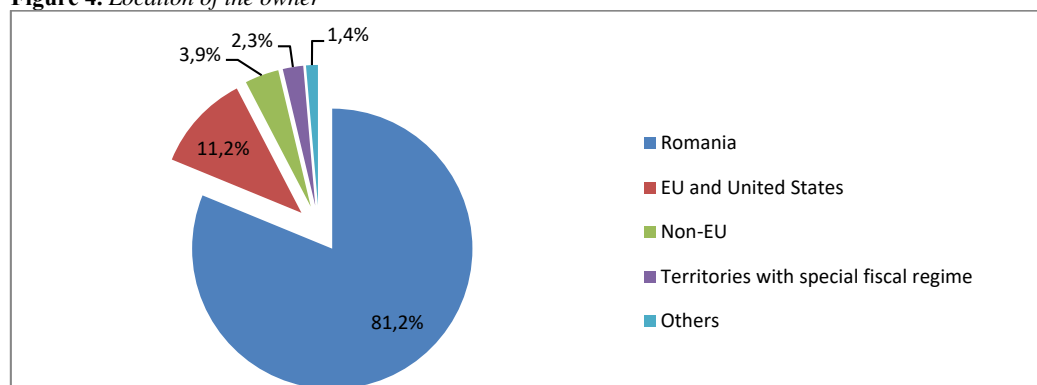
Source: own calculations.

Capital structure ratio was then analysed according to the origin of the owner. There were set forth four categories of territories or countries: Romania, European Union and United States of America, Non-EU countries and territories/countries with special fiscal regimes.

This separation was done on the basis that each category may have different economic behavior or financing policy. The huge imbalance in favor of domestic ownership was expected by the high percent of companies owned by families or individuals. In any case, this could be a signal of a developing stock exchange with insufficient strength.

Companies with foreign owners are usually backed by larger companies or holdings. This could determine their financing decisions by raising their equity and lowering their financial and commercial debt's necessary. On the other side, intragroup credit facilities could raise debt levels.

Figure 5 displays the average capital structure for each category of companies separated by above mentioned criteria. Average capital structure is determined as presented in earlier analysis. Companies with owners in Romania, European Union, United States of America or non-EU countries are about equal in equity-debt ratios. These companies finance their assets by shareholder funds in 63 percent.

Figure 5. *Capital structure by ownership location*
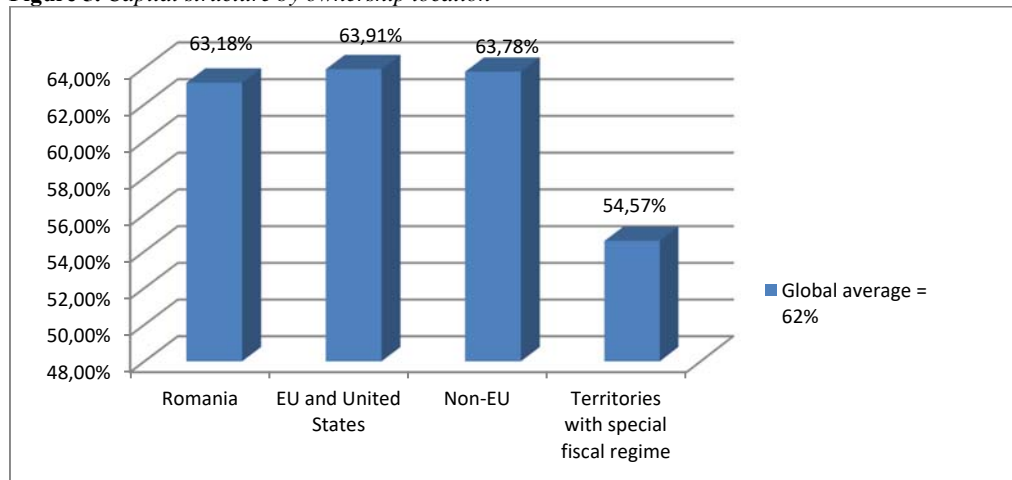
Source: own calculation.

However, companies with owners from territories or countries with special fiscal regimes have a much lower equity share in total capital. Their financing preference shows an almost equal percent between shareholder funds and debt. This is the most important finding when analysing capital structuring according to the origin of the ownership. Higher levels of indebtedness for these companies may be explained by lower rentability rates for fiscal reasons.

Similar behavior for the first three categories shows that ownership location is not an important factor in explaining capital structure. However, companies with owners located in territories with special fiscal regimes displayed different behavior. Further studies may determine if there is a lower performance for this type of companies.

Conclusions

This study performed an analysis over a sample of Romanian listed companies trying to determine if there are any agency theory implications. Analysis resumed descriptive analysis of data collected and put together from different sources.

The aspects covered in this paper are limited in addressing agency theory to some particular issues. Ownership type and location approaches were addressed. There were also reviewed aspects related to performance of companies, negative shareholder funds issue, and variations in capital structure determined by financial crisis.

The most important limitation of the paper stems from sample selection. The main objective was to include as many companies as possible in order to determine an overall perspective. However, many small companies in economic turmoil, especially during years financial distress, were included in the sample. Considering such a wide range of companies may have reduced the statistical significance of the results. Separating in sub-samples according to size criteria may represent the reason of further studies.

Industry classification was applied but the study did not conduct analysis of capital structuring for each domain of activity. This may have offered interesting results on how different industries responded to financial shocks.

However, this paper have shown that a majority of companies included are manufacturing companies and are family owned. Companies owned by families or individuals were more profitable in than their counterparts. This was shown both in average and median calculations, contradicting recent studies where family owned companies were seen as less efficient. Capital structuring for companies owned by families or individuals should have underperformed in indebtedness ratio. Expectations were that this companies should borrow less, but results showed their equity-assets ratio was near average and around 0.60. Companies owned by financially companies displayed a surprisingly low rate of indebtedness.

As far location of ownership is concerned, only companies with owners located in territories with special fiscal regimes trended differently. Their level of debt is higher than for the rest of the sample.

Finally, there have been recorded changes in capital structure behavior during the period observed. Speaking of the 440 companies with positive shareholder funds value, the ratio between shareholder funds and total assets raised from 0.58 to 0.64. This positive trend was interrupted in 2009, but recovered previous values starting with 2011. The shock of financial crisis was not so important, according to low variation in capital structure average. For companies less performant which included negative shareholder funds values during observed period, the shock was higher. The gap between these two categories showed that less performant companies were predominantly affected by financial turmoil.

Note

[1] HoReCa stands for accommodation and food service activities.

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