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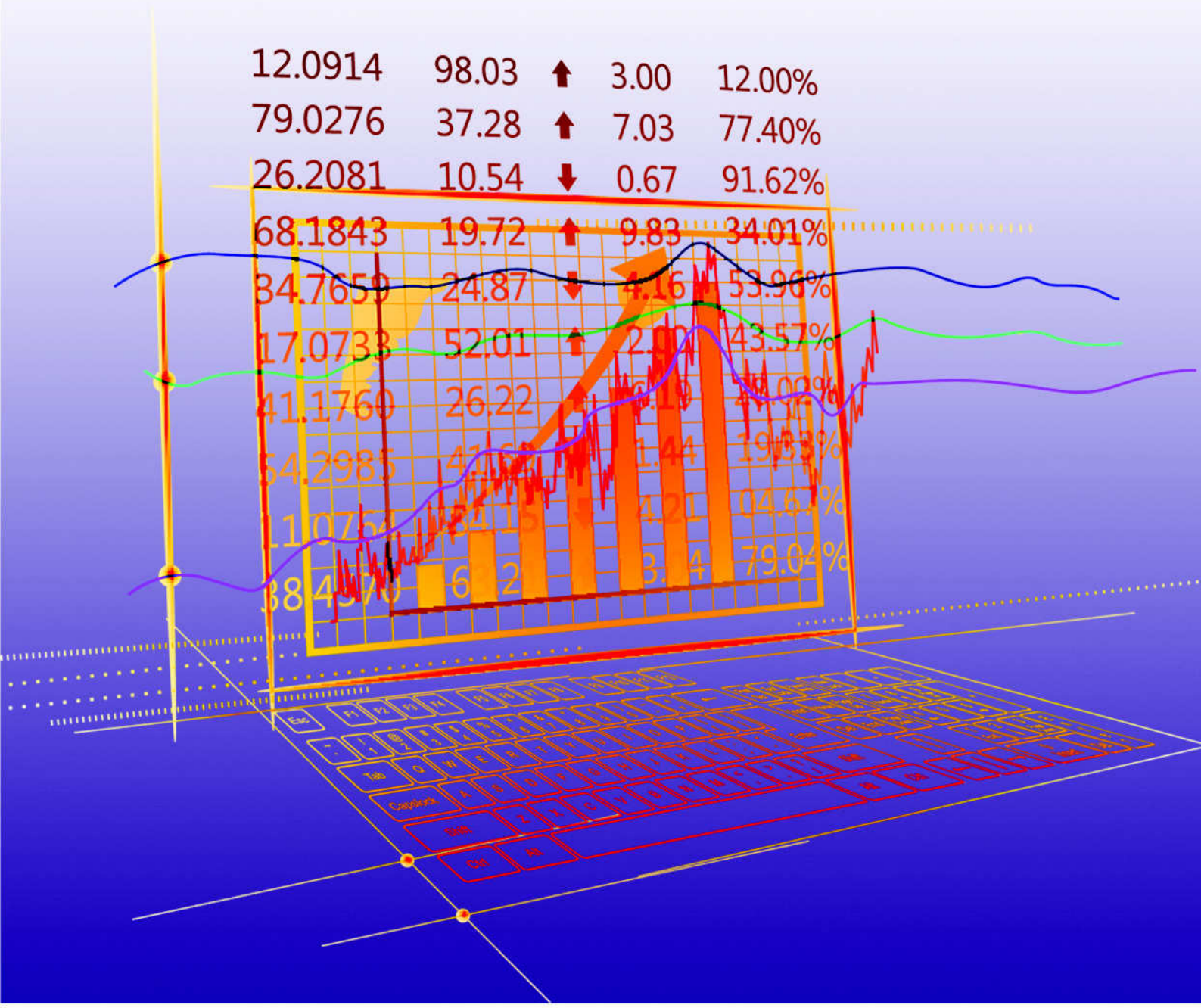
9th Finance Conference

Proceedings



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Determinants of financial performance measured by Return on Assets in Portugal

Ana Paula Carvalho do Monte

António Borges Fernandes

Determinants of financial performance measured by Return on Assets in Portugal

ABSTRACT

In this paper we use a unique, privately database with financial data (and some non-financial variables) of 1,024 enterprises headquartered in the interior north and center of mainland Portugal for the time period of 2006 to 2009 to answer to the research question: "The return on total net assets (ROA) is influenced by firm's capital structure, sales return, location and economic activity sector?"
Using a positivist quantitative approach by a descriptive analysis and inferential analysis through a multivariate OLS regression analysis, we tested seven main hypotheses. The results indicate that the return on assets of these companies is influenced positive and statistically significant by the net sales return (before taxes), Location and negative and statistically significant by the capital structure of the company and owners capital. The gross investment and the economic activity sector are not statistically significant.

JEL Codes: G32

Keywords: ROA, Determinants, capital structure.

Introduction

In competitive times it is very important for companies, investors and shareholders to know what are the drivers of company's profitability. The profitability of a company can be analysed in two perspectives: (a) from the perspective of the management or the firm and (b) from the perspective of the shareholders. In the first perspective is usual to analyse the return of invested capital or return on assets. In second perspective is usual to analyse the return on equity. Knowing the determinants of the profitability of a company is crucial for management but also for policy-makers at regional and national level to adopt measures to promote regional development. The interior region of a mainland Portugal is facing some problems related to aging population, lack of opportunities for young people, depressed and weak economy, where it is necessary to take measures to strengthen the business environment and gain power of attractiveness.

For some authors, namely Ayyagari, Beck and Demirgüç-kunt (2003), (Psillaki & Daskalakis, 2009) and Schmieder, Marsch, and Forster-van Aerssen (2009), companies, mainly SMEs - Small and Medium Enterprises, are the basis of market economies, being essential its existence for the development of a region. The location of this type of companies outside of the major industrial zones, involves a higher technical personnel costs and poor quality of infrastructure and telecommunications (Bennett, Robson, & Bratton, 2001).

This seems to be one of the reasons leading countries in general, and the European Commission in particular, to develop measures to enable regions affected by difficulties in the development of economic activities, to overcome these same difficulties (Fernandes, 2013). These measures are intended to promote regional entrepreneurship, focusing on the support, in the kind of entrepreneurs that a region needs. As an example, we can say that the entrepreneurs of the commercial area may be attracted to regions with high population density and high yields, while the entrepreneurs of the industrial sector may be attracted to regions with low wages and well-developed infrastructure. The choice of investment location is driven by regional opportunities with the presence or absence of barriers to entry (Verheul, Carree, & Santarelli, 2008). Regional opportunities may be related to several factors, among which the activity sector.

In this context, this research aims to analyze the factors that may influence the profitability of the companies' assets in the interior of Portugal, including the sector of activity (industry) and its location. In other words, through a number of variables under research, we intend to realize what or which of these variables exert a greater influence on the profitability of the asset and consequently on firm's financial performance. It uses a sample of 1024 observations for the period 2006 to 2009. To identify the factors was applied a multivariate factor analysis and the structural equations modelling to identify the model that explain the ROE.

It is expected that factors such net sales returns as measure by Earnings before taxes, gross investment, capital structure, financial debt cost, location and industry sector influence positively or negatively the return on assets (that is the return of all capital invested in the company)

This paper is organized as follows: In the next section is a summarized literature review on companies' profitability and factors that may explain it. Also is discussed the relation between sales return, asset return and other financial factors with profitability and financial performance. In section 2 there is a description of the data base used and the methodology employed in the empirical analysis. The data analysis and results are presented and discussed in section 3. Lastly, the conclusions, limitations and suggestions for future research are presented.

1. Corporate Financial performance and profitability

The profitability of companies is related to its financial performance. The performance assessment is considered a key principle in the management of companies (Muchiri, Pintelon, Gelders, & Martin, 2011). This theme became recurring for many managers, being of interest to both managers and researchers (Venkatraman & Ramanujam, 1986). Competitive pressure, as well as the evolution of products and technological processes, challenge management systems to further improves the performance indicators in terms of its design and use at both strategic and operational level (Lima, Costa, Angelis, & Munik, 2013).

According to Zu, Robbins, and Fredendall (2010), the strategic management system of performance indicator is a system that uses information about the performance to produce a positive change in organizational culture, through their systems and processes.

Venkatraman and Ramanujam (1986) consider that a narrower concept of business performance focuses on the use of financial indicators supported by simple results. According to these authors, these are assumed to reflect the compliance of the economic objectives of the companies, such as the analysis of several indicators like sales growth, profitability, sales turnover, net income, among others. However, taking into account a broader concept of performance of a business, it should be given relevance to operational performance indicators, i.e., non-financial indicators in addition to financial performance indicators.

Well-defined performance indicators can potentially identify and support gaps in the company's performance to compare actual performance with the desired performance (Muchiri et al., 2011). In this way, one obtains an indication of the achieved progress in order to eliminate gaps. Within the framework of performance is rational to address measures such as: participation in the markets, the introduction of new products, product quality, marketing effectiveness, value-added production, and other technical efficiency measures in the field of business performance (Eisenmann, 2006; Venkatraman & Ramanujam, 1986).

The business performance may be dependent to some extent, of normal use of non-current assets, as well as of the deterioration of those assets, or other failures that may occur, especially when the equipment go beyond the limits of its useful life. As a result, downtime of equipment, quality problems, speed losses, security risks or environmental pollution negatively affect operating costs, profitability, customer demand satisfaction, and productivity among other important requirements the company's performance (Muchiri et al., 2011). To contest these factors it is necessary to set a proper maintenance of all equipment, supported by a particular maintenance strategy in a coherent manner taking into account certain factors such as the company's policy, production policy and other policies that cause restrictions on business (Swanson, 1997, 2001). In this manner, it becomes relevant an adequate maintenance management of the

production equipment so that a company be able to keep itself productive and profitable (Van Horenbeek & Pintelon, 2014).

The company's performance as well as their growth is very dependent on investment. The companies that carry out more investment, especially when this investment is related to innovation, in general, are able to generate greater technological capacity, in terms of its processes and product innovations, obtaining as a result, a greater effect on the performance and growth of the company (Wang & Shyu, 2009; Zahra & Das, 1993). To invest companies need affordable sources of financing either in quantity or in price. However, in inefficient economic systems, in which are evident the difficulty to access to finance, these difficulties have a negative impact, both direct and indirectly, on the performance of companies with consequences for economic growth (Schneider & Veugelers, 2010). That is one of the reasons given by Schneider and Veugelers (2010) to justify the difference in growth performance between companies in the European Union and those from the United States. To overcome these limitations several EU Member States have developed a number of measures to facilitate the growth and performance of the companies (Schneider & Veugelers, 2010).

Van Horenbeek & Pintelon (2014) consider that each business sector has its specific objectives at different organizational levels, which define their strategy. This recognition is crucial for the implementation and application of a system for measuring the performance. Similarly, each business environment needs to have different performance indicators for all organizational levels in order to measure the performance appropriately. Not forgetting that those who have the power of decision can get an overview of the performance of the company at every level of management in order to improve the overall performance of the company through its profit (Instituto Português da Qualidade, 2009). Nonetheless, this also means that people who work at different levels of management within the company have their own custom performance indicators (Van Horenbeek & Pintelon, 2014). In a research developed by Verheul, Carree, and Santarelli (2008) was analysed how regional opportunities influencing the creation of companies in 103 Italian provinces between 1997 and 2003. They consider that companies install themselves due to its own characteristics and the characteristics of the region at the same time, i.e., for example, a restaurant tends to settle in areas with high population density, while a manufacturing company in an area with good infrastructure. In the same study, one of the variables studied were the regional tax

benefits, which has not found statistical evidence on the relationship between the benefits and the creation of companies. Also in this context, Audretsch and Fritsch (1999) found in a study conducted in Germany between the years 1986 and 1989 that the impact of each specific geographic variable on the creation of new businesses varies considerably between the various industries. Overall, following the conclusions of Gergely (2003), it appears that the market characteristics are among the main determinants (e.g. production costs, natural resources, transportation costs and exchange rates) for the location of investment.

Thus, it was widely accepted that the company's performance was influenced by the range of human resource management practices and human capital in the field of strategic human resource management (Wang & Shyu, 2009). Some researchers (e. g., Arthur, 1994; Whicker & Andrews, 2004; Dalton, 2005; Wang & Shyu, 2009) have indicated that the effectiveness of human resource management of a company has a positive and direct impact on the performance of the organization. Gollan (2005) considers that the involvement and participation of workers in company policies, encourages workers to enhance an important contribution to the competitiveness of the company.

The performance of the company has influence in its growth that, particularly in small companies, may become a concern on the part of governments, since such companies may be largely responsible for economic development by creating employment resulting in the economic welfare of countries (Morrison, Breen, & Ali, 2003). Growth can be measured by several variables including the number of jobs, sales growth and asset growth, among others (Birley & Westhead, 1990; Laitinen, 2014; Wang & Shyu, 2009).

In general, entrepreneurs, mainly opportunistic, plan the growth of the company and identify growth opportunities of the company (Bracker & Pearson, 1986). Some authors (e.g. Birley & Westhead, 1990; Taani, 2013) consider that the size of the company has no significant effect on its performance. The performance of the companies is enhanced through rules, procedures and well-defined structures, which highlights the consistency and budget estimate (Berson, Oreg, & Dvir, 2008). The growth and performance of an (small size) enterprise can be seen, in a simple way, as the ease at which the owner and manager adapts and learns from the experience of dealing with the internal environment

and the external environment in which the company run its business (Birley & Westhead, 1990; Eisenmann, 2006). The individual values of the entrepreneurs are the key to understand the relationship between the personal characteristics of entrepreneurs and the performance of the company (Berson et al., 2008; Tomczyk, Lee, & Winslow, 2013).

Enz (1988) considers that the main managers intend to transmit their values to employees as a way to shape their behaviour and manage in this way the company. Thus, the values of the managers have a significant influence on their perceptions and behaviour, which in turn play a role in shaping the organization's characteristics and their performance (Berson et al., 2008).

2. Data Base and Methodology

2.1. - Objectives and Research Hypothesis

The objective of this research aims to analyze the factors that may influence the profitability of the companies' assets in the interior of Portugal, including the sector of activity (industry) and its location. In other words, through a number of variables under research, we intend to realize what or which of these variables exert a greater influence on the profitability of the asset and consequently on firm's financial performance.

The objective defined above, raises the question of research: "The return on total net assets (ROA) is influenced by firm's capital structure, sales return, location and economic activity sector?" as indicated previously in this paper, being our purpose to answer it throughout this manuscript. Further, the following research hypotheses have been formulated supported by the performed literature review:

H1: The return on assets is influenced by Gross Investment.

H2: The return on assets is influenced by the Common or Owner's Capital.

H3: The return on assets is influenced by the EBT to Sales Ratio.

H4: The return on assets is influenced by the Location of the companies.

H5: The return on assets is influenced by the Economic Activity Sector.

H6: The return on assets is influenced by the Capital of Structure.

H7: The return on assets is influenced by Cost of Financial Debt.

2.2. – Sample and Data Collection

The population of the study refers to the companies of the interior of Portugal which account for a total of 60329 companies in 2009 distributed throughout the interior of Portugal. The sample is neither probabilistic nor random, being considered casual or convenient sample. In this type of sampling, the likelihood of an element belonging to the sample is not equal to the remaining elements, not followed, however, the basic principles of probability theory (Marôco, 2011). However, the author considers that in many research settings, it is not possible, practical or even desirable, for limited time and / or cost obtain a probabilistic sample. To collect the companies' IES, we selected only companies headquartered in the interior of Portugal, framed in Article 2.º of Law No. 171/99 of 18 September, some of which are accounting firms belonging to the NUTS III: Alto Trás-os-Montes, Ave, Douro, Tâmega, Beira Interior Norte, Beira Interior Sul, Cova da Beira, and Dão e Lafões. For the sample were only be considered firms incorporated under the legal form of companies (or Limited Liability Company).

The collection of data, from our point of view it is an added value in in this paper, insofar as 1024 companies' data were collected comprising the sample. Thus, the collected data can be classified as secondary source (Costa, 2012), since, although it is collected directly from the companies or entities related to it, it was collected through tax documents. The data collection was made through the Simplified Business Information (IES) for the years 2006 to 2009 inclusive. It should be noted that in 2006, was introduced the IES, previously known as Annual Declaration (AD). In 2010, IES was dramatically changed due to the implementation of the Accounting Standardisation System (known by the acronym SNC). Thus, during the period 2006-2009, the models used by companies to disclose their accounts remain unchanged, allowing a homogeneous computer processing for all years.

For reasons of confidentiality, the information provided omit any information that could lead to the identification of the companies, having been assigned to the database, a number (code) to the companies when introducing the respective data.

2.3 - Variables Used

Considering that the main objective of this research consists of analyzing the influencing variables of the asset profitability of companies in the interior region of Portugal, we have set up initially the research variables as presented in Table 1.

Table 1

Observable variables

Name	Description	Unit	Source
X1	Total Net Assets	€	IES – A0276
X2	Turnover	€	IES – A0133
X3	Earnings Before Taxes	€	IES – A0146
X4	Financial Expenses	€	IES – A0417
X5	Headquarters Location	€	IES – Q02 n.º 1
X6	CAE - Portuguese Classification of Economic Activities	€	IES – Q09 n.º 4
X7	Current Liabilities and Debt (banks)	€	IES – A0331
X8	Long-term Liabilities and Debt (banks)	€	IES – A0299

The following variables were also used:

- The NUT variable that takes the value of 1 for companies based in the NUT Douro; 2 for NUT Alto Trás-os-Montes; 3 for the NUT Cova da Beira; 4 for NUT Beira Interior Norte; 5 for NUT Ave; 6 for NUT Dão e Lafões; 7 for NUT Beira Interior Sul; and 8 for NUT Tamega;

- Economic activity sector (CAE), which assigns the value of 1 for the primary sector, 2 to the secondary sector and 3 for the tertiary sector. This variable was obtained based on the 2009 Portuguese classification of economic activities (revision 3): CAE-Rev.3. The primary sector includes the division's activities 01 to 09; the secondary sector includes the activities of the division 10 to 43 and Division 45 to 99 for the tertiary sector;

- Return on Equity (ROE), calculated by dividing Earnings Before Taxes (EBT) by total Equity;

- Capital Structure, calculated by dividing Total Debt by Total Net Assets;

- Interest Rate, represents the cost of financial debt, is calculated dividing the financial expenses by Financial Debt

- Return on Total Net Assets (ROA), being the dependent variable, is calculated by dividing Earnings before Taxes (EBT) by Total Net Assets.

2.4. - Treatment and Data Analysis

The treatment and data analysis had begun with the reading of the IES. For this purpose we used the Able2ExtractProfessional Version 6.0 software to convert information to Excel. Once inserted the information in Excel, we proceeded to the construction of filters, which allow removing the several observable variables. Then it was constructed a database, which was analysed through IBM SPSS software version 21. During all these phases, control mechanisms have been developed in order to ensure the reliability of data (Costa, 2012). In the processing of data in Excel, a numerical coding of companies was used. Although the data obtained, the tax returns do not have confidential character, this procedure ensures the confidentiality of it, given that they are not publicly available (Desai & Dharmapala, 2009).

Given that this research fits, methodologically, in the quantitative positivist approach, there is critical need of using statistical techniques that allow us to test the research hypothesis. The descriptive analysis is performed according to the size, the company's activity sector, and region, allowing the characterisation of the sample under consideration. It was used some descriptive measures like frequencies (absolute and

relatives), central tendency measures (mode, median and mean) and dispersion measures (range, standard deviation, etc.)

The general model used is expressed in equation 1:

$$Y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_k X_k + \varepsilon_i, \quad (i=1, 2, \ldots, n) \qquad (1)$$

Where,

Y_i: Dependent variable (Net Return on Assets);

$X_1, X_2, \ldots, X_k$,: independent variables presented in table 1 above;

β_0: intercept coefficient;

β_k: partial slope of independent variables (k=1, …; n):

ε_i: random variables.

Collected all data, it is necessary to code it in order to measure the concepts, to stablish causality and create associations between variables. In this way, a descriptive statistical analysis of data was implemented. Taking into account that are considered several explanatory variables, or independent variables, it is used a multiple linear regression (Rodrigues, 2012).

3. Results

3.1. Characterisation of the sample

The sample characterization was done by sector, by size and by region. In terms of sector of activity, companies were classified into three sectors: primary, secondary and tertiary due to simplification and clarity of analysis. Companies were also divided by size into 4 groups: micro, small, medium and large companies. Table 2 exhibits the distribution of companies (number) in the sample by size and economic activity sector. The majority of companies in the sample are micro, small and medium enterprises. Nevertheless, the number of medium and large companies is reduced. Substantial number of micro companies that make up the sample can serve the purpose advocated by Ramalho and Silva (2009) who believe that this group of companies should have special attention, given the weight they have in the Portuguese business structure.

In terms of sector of activity, according to the analysis of Table 2, the tertiary sector is the one with the largest number of companies, followed by the secondary sector and, finally, the primary sector. These figures follow the trend of the Portuguese business fabric, where the tertiary sector has about 83% of the number of companies, followed by the secondary with about 16.5%, and the primary with only 0.5%.

Table 2

Number of companies in the sample by size and activity sector

Size of firm		Activity Sector			Total
		Primary	Secondary	Tertiary	
Micro	n	32	201	608	841
	% Size of firm	3,8%	23,9%	72,3%	100,0%
	% Activity Sector	82,1%	70,0%	87,1%	82,1%
Small	n	6	73	79	158
	% Size of firm	3,8%	46,2%	50,0%	100,0%
	% Activity Sector	15,4%	25,4%	11,3%	15,4%
Medium	n	1	10	10	21
	% Size of firm	4,8%	47,6%	47,6%	100,0%
	% Activity Sector	2,6%	3,5%	1,4%	2,1%
Large	n	0	3	1	4
	% Size of firm	0,0%	75,0%	25,0%	100,0%
	% Activity Sector	0,0%	1,0%	0,1%	0,4%
Total	**n**	**39**	**287**	**698**	**1024**
	% Size of firm	**3,8%**	**28,0%**	**68,2%**	**100,0%**
	% Activity Sector	**100,0%**	**100,0%**	**100,0%**	**100,0%**

Regarding the NUT III (see table 2), which have a higher number of companies in the sample, and belonging to the primary sector, are the Douro and Alto Trás-os-Montes as evidenced by the analysis of Table 3. Drove this result may contribute the weight of companies in the agricultural sector in the region. The NUT III Ave is the one with the

highest number of industrial companies, a region dominated by companies in the industrial sector.

Table 3

Number of companies in the sample by activity sector and NUT III

NUT III		Economic Activity Sector			**Total**
		Primary	**Secondary**	**Tertiary**	
Douro		11	37	143	191
	% NUT III	5,8%	19,4%	74,9%	100,0%
	% Activity Sector	28,2%	12,9%	20,5%	18,7%
Alto Trás-os-Montes	n	10	80	220	310
	% NUT III	3,2%	25,8%	71,0%	100,0%
	% Activity Sector	25,6%	27,9%	31,5%	30,3%
Cova da Beira	n	1	13	44	58
	% NUT III	1,7%	22,4%	75,9%	100,0%
	% Activity Sector	2,6%	4,5%	6,3%	5,7%
Beira Interior Norte	n	3	16	39	58
	% NUT III	5,2%	27,6%	67,2%	100,0%
	% Activity Sector	7,7%	5,6%	5,6%	5,7%
Ave	n	0	6	9	15
	% NUT III	0,0%	40,0%	60,0%	100,0%
	% Activity Sector	0,0%	2,1%	1,3%	1,5%
Dão-Lafões	n	9	83	174	266
	% NUT III	3,4%	31,2%	65,4%	100,0%
	% Activity Sector	23,1%	28,9%	24,9%	26,0%
Beira Interior Sul	n	1	21	22	44
	% NUT III	2,3%	47,7%	50,0%	100,0%
	% Activity Sector	2,6%	7,3%	3,2%	4,3%
Tâmega	n	4	31	47	82
	% NUT III	4,9%	37,8%	57,3%	100,0%
	% Activity Sector	10,3%	10,8%	6,7%	8,0%
Total	**n**	**39**	**287**	**698**	**1024**
	% NUT III	**3,8%**	**28,0%**	**68,2%**	**100,0%**
	% Activity Sector	**100,0%**	**100,0%**	**100,0%**	**100,0%**

To draw up the tables below, (tables 4 to table 7) some companies in the sample were excluded because they present unusual accounting features. Therefore, by analysing the results reported in Table 4 it is found that of 4,080 IES, 81.7% are relate to IES of micro-enterprises and only 0.3% relate to large companies.

Table 4

Earnings Before Taxes of the companies in the sample.

Size	**n**	**Mean**	**Standard deviation**	**Minimum**	**Maximum**
Micro	3333	7.344 €	47.356 €	-387.260 €	1.555.771 €
Small	634	45.632 €	200.274 €	-1.901.885 €	2.095.472 €
Medium	99	225.906 €	941.431 €	-5.956.128 €	3.688.968 €
Large	14	5.870.475 €	7.783.250 €	404.722 €	26.241.808 €
Total	**4080**	**38.716 €**	**583.788 €**	**-5.956.128 €**	**26.241.808 €**

Table 5 exhibits the number of observations by firm size for situations in which was registered a negative and a positive Earnings Before Taxes (EBT), in each year of the time horizon under analysis. During the four years under review, of the 4080 observations, 26.7% had a negative EBT. This amount is split among the four years uniformly with a slight increase in 2008, but just decreasing in the following year. Making the analysis by size of company, one can be seen that the micro-enterprises are those with the highest percentage of companies with negative EBT (28.9%), followed by medium-sized enterprises (19.2%) and then small businesses (17.2%). It should be noted that in our sample large companies have a positive EBT in all the years under review.

Table 5

Number of companies with positive and negative EBT

Companies size			year				Total
			2006	2007	2008	2009	
Micro	Positive EBT	n	596	607	577	591	2371
		% Total	17,9%	18,2%	17,3%	17,7%	71,1%
	Negative EBT	n	232	230	254	246	962
		% Total	7,0%	6,9%	7,6%	7,4%	28,9%
	Total	*n*	*828*	*837*	*831*	*837*	*3333*
		% Total	*24,8%*	*25,1%*	*24,9%*	*25,1%*	*100,0%*
Small	Positive EBT	n	133	126	128	138	525
		% Total	21,0%	19,9%	20,2%	21,8%	82,8%
	Negative EBT	n	29	28	32	20	109
		% Total	4,6%	4,4%	5,0%	3,2%	17,2%
	Total	*n*	*162*	*154*	*160*	*158*	*634*
		% Total	*25,6%*	*24,3%*	*25,2%*	*24,9%*	*100,0%*
Medium	Positive EBT	n	22	22	18	18	80
		% Total	22,2%	22,2%	18,2%	18,2%	80,8%
	Negative EBT	n	5	4	7	3	19
		% Total	5,1%	4,0%	7,1%	3,0%	19,2%
	Total	*n*	*27*	*26*	*25*	*21*	*99*
		% Total	*27,3%*	*26,3%*	*25,3%*	*21,2%*	*100,0%*
Large	Positive EBT	n	3	3	4	4	14
		% Total	21,4%	21,4%	28,6%	28,6%	100,0%
	Total	*n*	*3*	*3*	*4*	*4*	*14*
		% Total	*21,4%*	*21,4%*	*28,6%*	*28,6%*	*100,0%*
Total	Positive EBT	**n**	**754**	**758**	**727**	**751**	**2990**
		% Total	**18,5%**	**18,6%**	**17,8%**	**18,4%**	**73,3%**
	Negative EBT	**n**	**266**	**262**	**293**	**269**	**1090**
		% Total	**6,5%**	**6,4%**	**7,2%**	**6,6%**	**26,7%**
	Total	**n**	**1020**	**1020**	**1020**	**1020**	**4080**
		% Total	**25,0%**	**25,0%**	**25,0%**	**25,0%**	**100,0%**

Tables 6 exhibits the summary statistics of the dependent variable: ROA and independent variables: ROE, Capital Structure, Interest Rate and EBT to sales ratio.

Table 6

Summary statistics of independent and dependent variables

Variables	n	Minimum	Maximum	Mean	Std. Deviation
ROA	3835	-1,597	0,973	0,02593	0,15024
ROE	3826	-33,14286	56,88889	0,12587	2,17238
Capital structure	3835	0,000	7,091	0,68718	0,48366
Interest rate	3835	0,000	0,999	0,07762	0,13815
EBT to Sales Ratio	3835	-0,992	0,987	0,01877	0,16701

From table 6 it can be observable that during the period of 2006-2009, the average Net Asset Return is 2,593% (SD[1] = 15,024%) and average ROE of 12,587% (SD=217,238%). This last indicator reveals to be very volatile, being observable highly differences among companies and years. Analysing the average capital structure, it shows that on average companies are highly leverage (mean=68, 72%; SD=48,37%). The cost of financial debt (interest rate) is on average 7,762% (SD=13,815%) and net return of sales (EBT to Sales ratio) is very low (mean=1,877%; SD=16,7%), which indicates that during this period for each euro of sales a company had a net profit (before taxes) of 0,0188€.

Table 7 show values that suggest, as was expected, that both the average value of the total net assets either turnover, vary according to the size of firms.

[1] Standard deviation.

Table 7

Summary statistics of variables: Total Net Asset and Turnover

Variable		Company's size				
		Micro	**Small**	**Medium**	**Large**	**Total**
Total net asset	**n**	3333	634	99	14	4080
	Mean	296.101 €	1.370.504 €	7.997.452 €	112.336.637 €	1.034.378 €
	Standard deviation	795.489 €	1.617.090 €	7.881.797 €	77.457.053 €	8.105.239 €
	Minimum	867 €	34.356 €	144.259 €	30.149.292 €	867 €
	Maximum	21.944.133 €	18.087.392 €	39.936.071 €	227.829.338 €	227.829.338 €
Turnover	**n**	3333	634	99	14	4080
	Mean	234.519 €	1.539.419 €	10.542.106 €	128.069.481 €	1.126.050 €
	Standard deviation	342.103 €	1.885.566 €	12.145.771 €	84.079.383 €	9.211.881 €
	Minimum	- €	23.676 €	218.495 €	38.410.861 €	- €
	Maximum	4.314.731 €	22.557.849 €	98.402.341 €	279.465.299 €	279.465.299 €

4.2. Factors that explain the Return on Total Net Assets

After a brief sample characterization it will be determined the relation between the variables under analysis, performing a linear regression analysis through the Ordinary Least Squared Method (OLS regression). The adjusted model presents an adjusted determination coefficient, R2 adjusted, of 0,566, i.e., 56,6% of the return on Total Net Assets (ROA) of companies under review can be explained by independent variables of the model, using method "*Enter*", thus, the remaining variability may be explained by factors not included in the model. The ANOVA of the regression to proposed model allows to conclude that the model is statistically significant, for a level of significance lower than 5% (p-value < 0,001), i.e., indicating the rejection of H_0.

The model do not show correlation between variables as the Durbin-Watson test has a value of 2,008. In this way the residuals are independent. The independent variables do

not show multicollinearity since all variables exhibit Variance Inflation Factors (VIF) lower than 10 (Marôco, 2011).

Through the analysis of table 8 we notice that all independent variables included in the model are statistically significant (with α=5%), with exception of Gross Investment interest rate and CAE (industry sector). The variable EBT to sales ratio has the higher beta coefficient and it is positive (0,5824), that means if this variable increase by 1% the ROA will increase by 0,58% (*ceteris paribus*). The other significant variable is the capital structure but in inverse relation (with a Beta of ~ – 0,285). This is in line with pecking order theory which predicts that there is a inverse relation between profitability and capital structure and leverage (Banerjee & De, 2014; de Jong, Verbeek, & Verwijmeren, 2011; Serrasqueiro, Nunes, Leitao, & Armada, 2010; Serrasqueiro, Armada, & Nunes, 2011; Serrasqueiro & Nunes, 2008; Titman & Wessels, 1988) Owners Capital also has negative relation with ROA although with less influence ($\beta \cong$0,064). The region (location) has with positive influence but only has a beta of 0,0307.

Table 8

OLS Regression Results

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	,0707	,0062		11,4947	,0000		
Gross investment	-,0009	,0023	-,0042	-,3904	,6963	,9558	1,0462
Owners capital	-,0256	,0044	-,0636	-5,8585	,0000	,9612	1,0403
EBT to Sales ratio	,5239	,0106	,5824	49,5186	,0000	,8178	1,2228
NUT III	,0019	,0007	,0307	2,8644	,0042	,9872	1,0130
CAE	,0001	,0001	,0152	1,4110	,1583	,9807	1,0197
Capital structure	-,0884	,0036	-,2847	-24,4805	,0000	,8363	1,1958
Interest rate	-,0198	,0117	-,0182	-1,6959	,0900	,9833	1,0170

According to the results presented in table 8, the hypothesis H1, H5 and H7 is not validated. The hypothesis H2, H3, H4 and H6 are validated. Summarizing the financial

performance of companies in Portugal seems to be influenced negatively (and statistically significant) by their capital structure and positively (and statistically significant) by the net return on sales.

Conclusion and suggestions for further research

This paper aimed to analyze if financial factors such as capital structure, net sales profitability, cost of financial debt, gross investment and owners capital have influence on total assets of return along with non-financials variables like industry sector and location of the companies. To do so we took into account a sample of 1,024 companies, located in the interior north and centre of Portugal, from various sectors of activity.

Our OLS regression model explain 56,6% of total asset return for the period of 2006-2009 and the variables that have higher coefficient were the net profitability of sales as measure by the ratio EBT to Sales, with a positive influence and capital structure with negative influence (hypothesis H3 and H6, respectively validated). The owners capital and location are the other variables that influence the ROA and have statistical significance but with less influence. In another words, our results seems to indicate that the profitability of companies (as measured by ROA) is influenced by net sales profitability, capital structure, owners capital and localizations of the company (geographic region) but not by cost of financial debt, gross investment and industry sector. These results are important for managers and stakeholders as indicate that drivers of asset returns are some variables analyse in this research, specially the return on sales and capital structure.

This study has some limitations in which can be considered the fact that the sample is only made up of enterprises with legal structure of companies without regard to individual entrepreneurs. Since this sample is a convenience sample, it may be another limitation of research.

As suggestions for further research we propose the same analysis but extended to a more recent time frame. One can also use other proxies to the company's profitability, such as the return on equity and analyze the determinants of these returns using proxies to measure determinants such as tangibility, growth opportunities and capital structure

as well as other non-financial variables like human capital, social and environmental performance, the competition in the sector, the innovation level and investment among others.

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