THE EFFECTS OF LEGAL CERTIFICATION OF ACCOUNTS ON COMPANY PERFORMANCE: THE PORTUGUESE CASE

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Abstract

Portuguese legislation provides that limited liability companies be required to certify their accounts if for two consecutive years they meet the requirements of article 262 of the companies' code.
The research question and the purpose of this study are to know the main changes in the economic and financial performance of a sample of limited liability companies after having their accounts certified by a statutory auditor.
Besides descriptive statistics, the analysis was conducted using Shapiro-Wilcoxon's non-parametric tests for paired samples to determine the truth of the hypotheses.
In general, most of the indicators showed a positive evolution over the period in which the companies started to have certified accounts. The analysis of the results suggests that the mandatory appointment of a statutory auditor, in general, led to a positive evolution in the economic and financial indicators, despite little statistical significance.

Keywords: Legal Certification of Accounts, Statutory Auditor, Financial Auditing, Corporate Governance, Firm Performance

1. INTRODUCTION

The reliability of the financial statements prepared by the companies is an extremely important issue for managers, as well as for a diverse set of entities, namely, financial institutions, state, shareholders, employees, etc. The credibility of the financial statements depends, primarily, on the managers themselves, who are primarily responsible for them. In Portugal, the role of small and medium-sized enterprises (SMEs) is extremely important, given that they are the pillar of the economy. These business units create employment and bring benefit to the Portuguese economy. The national industrial business is of a family type and usually refers to its owners and credit institutions to finance them.

The Portuguese economy comprises a number of small companies, not listed on the stock exchange, where ownership coincides with management and where organizational structures are quite simple. These SMEs represent about 95% of the Portuguese industrial business; however, according to data released by the Bank of Portugal, only 10% of these small ones are audited.

Companies with their audited accounts have a differentiating factor to be taken into account by the shareholders of the company since they have a seal of guarantee that the financial information presented to them is credible and reliable. On the other hand, a company without audited accounts is more susceptible to manipulation, since it is not subject to analysis by a professional capable of guaranteeing independence, and there is an understanding that the financial information produced by SMEs will have inferior quality.

Currently, entities subject to audit and consequent statutory certification of accounts are public limited companies, limited liability companies that comply with the conditions set forth in article 262 No. 2 and No. 3 of the Commercial Companies Code (CSC), public companies, and agricultural cooperatives, holding companies and municipalities.

The auditing of limited liability companies is the responsibility of the Statutory Auditor (ROC), if this is the sole auditor, or if he/she is part of the fiscal council, as established in No. 1 of article 420 and No. 4 of article 413 of the CSC. The statutory auditor (ROC) has the duty to supervise the management, as well as watch over the observance of the Law and the Statutes by the entities. The external audit is one of the essential supports of any system of government, taking into account that it is from the effectiveness and independence of its work that the quality and credibility of the economic and

financial information reported by the company arises.

At the end of their work, the ROCs prepare reports that may be different, according to the audit performed. They must be consistent with the auditor's commitment to the entity or the statutory or statutory provision that determines the preparation thereof. Audit reports add value to the accounting information organized by the managers of the companies for the equity holders, due to their independent examination. Once the audit work is completed, the ROC prepares the Legal Certification of Accounts (CLC), where it expresses its opinion on the financial statements, that is, whether they present or not, in a true and appropriate manner, the financial position of the company and the results of its operations for a certain date which normally coincides with the end of the calendar year. However, there are entities whose year-end may be any date throughout the year.

The present study is aimed at companies that have exceeded two of the three limits referred to in article 262, nº 2 of the CSC. In this type of company, the partners have limited liability up to the amount of the capital with which they entered into the company. The share capital is divided into quotas and each partner owns a quota corresponding to its entry, but responding jointly to the entries agreed in the articles of association, the company's assets account for the company's debts, the firm must be composed of the name or signature of all or some of the members, by private name or by both, added by "Limitada" or "Lda".

This article has as main objective to analyze the consequences in the economic and financial performance of the limited liability companies after the certification of their accounts by a statutory auditor, comparing with the performance that existed before having certified accounts.

This work is divided as follows. The introduction is presented in the Section 1. The literature review is presented in the Section 2. In the Section 3, the research methodology is presented. In the Section 4, the results are presented and discussed. In the last section, the conclusion and limitations of the study will be presented.

2. LITERATURE REVIEW

There is very little literature on the subject of research in this study, which consists of concluding, or not, an improvement in the economic and financial performance of companies, after the first mandate with accounts certified by a statutory auditor. However, some studies seek to compare two periods of business evolution, but in different contexts of this development.

Cabanda and Pajara-Pascual (2007) analyzed the operational and financial performance of companies in a merger context. Three periods were analyzed, the first three years before the merger, the second three years immediately after the merger and the third seven years after the merger. The period of empirical analysis covered the years 1994 to 2003. The authors tested the hypothesis that there were significant improvements in the financial performance of companies after the merger.

The empirical results of this study showed that the pre and post-merger values were mixed. Following the merger, some operational performance measures, such as total asset volume and net revenue, suggest statistically significant gains in long-term analysis. However, other performance variables such as net profit, asset return (ROA), the profitability of sales (ROS), net profit margin, capital expenditure, capital expenditure/sales (CESA), and capital expenditure (BETA), did not show significant gains after the merger.

Souza and Correa (2014) studied performance indicators in small and medium-sized enterprises with the intention of answering two important questions: do small and medium-sized enterprises (SMEs) use performance measurement indicators. Do organizational characteristics influence the use of performance measurement indicators? The results showed that the companies surveyed adopted financial and non-financial indicators, but the financial indicators are more used.

Ferreira (2013) in his comparative study of company performance before and after a corporate restructuring analyzed the impact of different forms of corporate restructuring on the performance of Portuguese companies. From a theoretical point of view, he presented the various types of company restructuring, the reasons that lead companies to resort to these processes, and the resulting effects, in particular, on their economic and financial performance.

According to Muller, Stawinoga, and Velte (2015), auditing introduces credibility and reliability, reduces uncertainties, increases security, and confidence in decision-making by information users.

In the same direction, Euler (2014) defends that the audit confirms the true and fair view of the financial position, results and cash flows, allowing others to make appropriate assessments of the effectiveness and efficiency with which the resources are used.

At the same time, Salewski, Teuteberg, and Zulch (2016) concluded that the audit assesses the risks of disruption of continuity and the ability to adapt to changes in system policies, organization, administration, techniques, and technology, giving users a boost in decision-making.

According to Freidank and Sassen (2015), the audit can contribute to the prevention and detection of distortions arising from intentional acts, significant failures, and fraud in the audited entity and provide for the identification of uncertainties related to the principle of continuity.

To Eulerich, Haustein, Zipfel, and Van Uum (2013), the audit can help improve the organization's performance by detecting uncertainties or failures and introducing rigor at all organizational levels, contributing to the improvement of management and internal control system, monitoring or strengthening the strategy, the mission initially established by the audited company.

In addition, according to Stiglbauer (2011), the audit allows verification of compliance with the accounting, fiscal, statutory and legal standards of the audited entity in terms of corporate governance structure and practices and reporting.

The performance analysis underlying this comparative study assumes two essential modalities: economic analysis and financial analysis. The economic analysis evaluates the ability of the company to generate value or income that ensures the satisfaction of the partners, suppliers and other economic agents with whom the companies relate. On the basis of the income statement, the gross margin, pre-tax and post-tax profit, gross operating surplus, gross value added, productivity and

profitability are analyzed, the company from an economic perspective.

On the other hand, the financial analysis supports its reports in accounting documents such as balance sheet, income statement by nature, statement of changes in equity, statement of cash flows and annexes. The method of indicators or ratios is to establish relationships between accounts and groupings of balance sheet accounts, income statement and cash flow statement, or between financial quantities.

The study sought to answer the following questions: first, whether there are significant statistical differences between the economic and financial indicators of companies before and after the auditing and certification of the accounts. Secondly, conclude whether the certification of accounts has an impact on the economic and financial performance of the company. The results showed that there are no significant differences between economic and financial indicators for the years under study. The author concluded that there are no improvements in the indicators for 2011 compared to the same indicators for 2009. Accordingly, the certification of accounts did not change the economic and financial performance of the companies under study, and it was not concluded that there was an increase in profits for the companies analyzed.

3. METHODOLOGY

Our research, as to its nature, is applied research, since it is the resolution of practical problems, without concerns of generalization and construction of theories. It is of the descriptive type, that is, we try to describe the characteristics of a Portuguese sample of limited liability companies establishing relations among the analyzed variables. In our study, we intend to test the existence of associations between economic and financial variables.

As for its logical approach, it is a deductive investigation. This form of investigation starts from principles recognized as true and undisputed and makes it possible to reach conclusions in a purely formal way, that is, by virtue of its logic alone. Taking into account the specific nature of the problem under analysis and the stated objectives, we formulate the following hypotheses of investigation:

H1: There are significant differences between the economic and financial performance of Portuguese limited liability companies after the legal certification of accounts.

H2: There are no significant differences between the economic and financial performance of Portuguese limited liability companies after the legal certification of accounts.

In our study we work with two paired samples of the Portuguese limited liability companies that comply with the conditions set forth in article 262 No. 2 of the CSC, which states the following:

– Balance sheet total: EUR 1500 000.
– Total net sales and other income: EUR 3 000 000.
– A number of employees employed on average during the year: 50.

Paired samples are constructed using the same subjects, based on some unifying criteria of the sample elements (e.g., samples in which the same variable is measured before and after a given treatment in the same subjects).

In this matched samples, the subjects making up the samples are purposely related. They may even be the same individuals (e.g., in longitudinal studies or repeated measurements), or individuals with matched characteristics (in statistical block studies). In the case of paired samples, the sources of variability external to the treatment are reduced by using the same individuals, for example, before and after treatment. Thus, the observed variations are, with greater confidence, attributable to the treatment.

This type of sample should be used when, at the outset, the investigator is aware that there are other factors or sources of variability that have no connection with the factors under study but may interfere with their effects. Since there are two samples, which cover the same number of companies, with a registration of the same variables before and after legal certification of accounts, they are defined as paired samples

To obtain the 50 companies, a survey was made in the SABI database, which contains business information on Portuguese and Spanish entities. SABI database was used on this investigation, in first place, because it contains comprehensive information for analysis on individual companies; secondly, it is easy to use, search by hundreds of criteria and it does a detailed financial analysis of a company; lastly, this database get a quick view of a company´s financial strength. Based on accounting information such as the balance sheet, income statement, cash flow statement, statement of changes in equity, information in the financial statements annexes, data available in the SABI database, it was possible to make an analysis of the economic and financial performance of a representative sample of Portuguese limited liability companies.

We selected 45 companies, five of which were excluded due to the lack of information on values in the items necessary for the calculation of economic and financial indicators. A survey of the first 250 companies in the database and these companies was done before. Through the taxpayer number and with the help of the justice portal, it was possible to know the year of the cut, that is, the year in which the companies had the legal certification of accounts. We obtained 50 companies, which did not have legal certification of accounts in the years 2008 to 2010 and passed the legal certification of accounts in the year 2011 to 2013. After the elimination of the five companies, we obtained 45 companies, which were analyzed for the economic and financial performance before and after legal certification of accounts.

Thus, we have two paired samples under study:
– Sample 1: 45 companies before legal certification of accounts, the year 2008 to 2010.
– Sample 2: 45 companies after legal certification of accounts, the year 2011 to 2013.

The year of 2011 was the cut-off year, i.e., the period in which the companies under analysis appointed a statutory auditor for legal certification of accounts. Therefore, economic and financial performance was analyzed before legal certification of accounts (2008 to 2010) and after legal certification of accounts (2011 to 2013). For the analysis of the data, we used the statistical program SPSS. We have used descriptive statistics, such as measures of central tendency and dispersion. The data under analysis are also ordinal, so we used the frequencies, the amplitude of variation and the

values of the median, and the standard deviation, and the means and medians were the privileged analytical measures because they are metric data.

After the sampling process, it was possible to define the variables under study. The variables under study are quantitative and continuous, variables whose measurement scale allows the ordering and quantification of differences between them, and these variables can be measured in an intercalary scale and ratio measurement scale. The quantitative variables are measurable and can assume any value in a given range of real numbers.

The variables can be composed of categories, options of possible responses of the attributes (what one intends to study), in this case, these answers are given through economic and financial indicators. The performance of Portuguese limited liability companies was calculated using economic and financial indicators. The most usual typology separates indicators according to their financial, economic, economic-financial, activity, technical or market nature.

The actual ratios are taken from historical financial documents (balance sheet, income statement, and statement of cash flows) and statistics with data from a particular company. Budget ratios are calculated from a company's budgets. The sector ratios are calculated from the central balance sheets with a representative number of companies in the sector or activity segment. Ideal ratios are defined by managers and financial analysts based on their knowledge of the industry and the company in question, considering optimized management.

When interpreting the economic-financial indicators, it should be noted that these in themselves, do not represent the economic-financial situation of the company, that is, simply analyze the numerical results that must be adequately explained. Thus, it is necessary that the financial analyst has a reasonable knowledge of the business in which the company operates, in order to interpret the results using the ratios method, as well as, must have knowledge in matters related to financial analysis and accounting.

The ratios were grouped as follows: capital structure ratios, profitability ratios, treasury ratios, liquidity ratios.

In the first place, the capital structure ratios. The capital structure of a company is a mix of debt and equity that the company uses to finance its business. The decision about the capital structure of a company is to determine the financial leverage or capital structure that maximizes the value of the company, minimizing the weighted average cost of capital. The ratios used to analyze the capital structure are as follows:

Debt ratio: (Total liabilities / Total assets) x 100. This indicator measures the total amount of debt (long term and short term) that a company uses to finance its activities.

Property asset: (Non-current assets / Equity) x 100. This indicator measures how the company's net assets are invested in non-current assets, thus, the greater or less dependence of third-party funds for the continuity of the company's activities.

Short-term liabilities: (Current assets / Current liabilities) x 100. This indicator measures the degree of hedging of the asset by the liability that is if the value of the current assets of the company pays its current liabilities.

Long-term liabilities: (Non-current assets / Non-current liabilities) x 100. This indicator measures the degree of hedging of the asset by liabilities, i.e. if the value of the non-current assets of the company pays its liabilities chain.

Solvency: (Equity / Total liabilities) x 100. This indicator assesses the ability of the company to meet its obligations. The financial risk of a company that assesses how to finance the business with debt or equity is evaluated.

Financial autonomy: (Equity / Total assets) x 100. This indicator indicates the percentage of the asset that starts to be financed by the equity of the company, that is, it provides information on the percentage of the assets that are financed by the equity of the company. This indicator has a maximum value of 1 and a minimum value of zero.

In the second place, the profitability ratios analyze the company's ability to manage its expenses in order to generate profits from its sales. The ratios used to analyze profitability are as follows:

Return on equity. This indicator measures the capacity and effectiveness of the remuneration of the capital invested by the partners or shareholders of the company. It gives us the percentage of profit for each value (e.g., euro) invested.

Return on investment: (Net result / Total assets) x 100. This indicator measures the return on capital invested in a company, that is, assesses the ability of assets to generate results.

The average cost of external capital: (Financial expenses / Total liabilities) x 100. This indicator measures the remuneration required by the holders of third-party capital, taking into account the risk levels based on their respective applications.

Profitability of sales: (Net profit / Turnover) x 100. This indicator measures the profitability that the company has after all operational expenses, financial charges, and taxes have been incurred. It portrays the price policy, the costs of the production process and the efficiency in the use of factors.

Turnover of assets: (Turnover / Total assets) x 100. The asset turnover ratio indicates the degree of asset utilization. The rotation of equity is an indicator that quantifies the relationship between turnover and equity. Indicates the number of times the latter was sold during the review period.

In third place, the treasury ratios. The cash and cash equivalents are equal to cash assets (EAT) minus liabilities (EFT), where EATs represent cash and EFTs represent short-term loans. From this calculation, three situations can arise:

– treasury = 0, there is a financial balance;
– treasury > 0, there is an excess of medium and long-term resources;
– treasury < 0, there is insufficient medium and long term resources.

If there is no financial balance, the surplus or deficit is denominated in treasury. It can be obtained by using the following calculation formula: *Cash (working capital - working capital requirement) x 100.* The cash position can also be calculated by the difference between the asset items that are not considered as cash requirements and the same items of liabilities also not considered for the calculation of working capital resources. The treasury is deficient, or with a negative balance, when the working capital is lower than the working capital needs, that is, when the company's working capital is not sufficient to meet working capital needs. The treasury is said to be in surplus, or with a positive

balance, when the working capital is greater than the working capital needs, that is, when the company has a working capital superior to the needs of working capital.

At last, the liquidity ratios. The liquidity ratios indicate the company's ability to meet its short-term commitments. The liquidity is analyzed and works every day, in the company or any other entity, to ensure that there is adequate cash at all times to pay the debts that expire day-to-day. For Correia (2014) liquidity ratios provide information on the entity's ability to meet the entity's short-term liabilities, namely, payment of debts to suppliers, the state and other current creditors, as well as amortization of financing with a maturity of less than 1 year. An entity is solvent in the short term as it is able to meet the payments that derive from its operating cycle. If there is liquidity, there is a short-term financial equilibrium. Accordingly, we will analyze the general liquidity and the reduced liquidity ratios.

The working capital (FM) = (Permanent capital - Fixed assets) x 100, where, permanent capital = Equity + Non-current liabilities, or FM = (Current assets - Current liabilities) x 100. The working capital requirements (NFM) ratio, also in absolute value, is reflected by the difference between total working capital needs and total working capital resources. That is, working capital needs = (Cyclical needs - Cyclical resources) x 100, where the cyclical needs = (Stocks + Customers) and the cyclical resources or cyclical liabilities = (Suppliers + State). The working capital requirements essentially depend on the operating conditions of the operating cycle, for example, the stock rotation and the technology used, the terms of the credits granted, the terms of the credits obtained the level of activity. For

example, higher turnover leads to higher working capital needs in and of itself.

The general liquidity = (Current assets / Liabilities, current) x 100. This indicator determines the relationship existing in the current equity structure between investments and financing. It represents the working capital fund (current assets - current liabilities). When the general liquidity is greater than 1, it means low risk to the creditors of the company, since the realization of current assets in liquidity is satisfactory to meet the short-term debt. When the general liquidity is equal to 1.5 it is considered normal, when the general liquidity is less than 1, it means that there may be cash difficulties.

The reduced liquidity = (Current assets - Inventories) / (Current liabilities) x 100 or *the reduced liquidity = (Current assets - Inventories - Biological assets – Non-current assets held for sale) / (Current liabilities) x 100.* This indicator indicates the weight that inventories, biological assets and non-current assets held for sale have in the company's current assets. In relation to this indicator, the most difficult assets to be converted into liquid financial assets in a short period should be withdrawn from current assets. Reduced liquidity equal to 1.1 is considered normal.

The research hypotheses were verified by means of statistical tests, which evaluate the association of the study variables (economic and financial ratios) over a period of six years, i.e. three years before (2008 to 2010) and three years after (2011 to 2013).

Next, we present a table, in which we subdivided the companies by the sectors of activity to which they refer (Table 1).

Table 1. Distribution of samples by sector

CAE description	Number of companies	Activity sector
Wholesale trade services of olive oil, oil, and fats	3	Tertiary
Manufacture of other components for motor vehicles	2	Secondary
Non-specialized wholesale of food, beverages, and tobacco	2	Tertiary
Management activities of condominiums, architecture, engineering, energy	1	Tertiary
Security Company	1	Tertiary
Energy management and automation	1	Tertiary
Manufacture of plastic containers	1	Secondary
Trade in motor vehicles	4	Tertiary
Buying and selling of real estate	1	Tertiary
Installation, maintenance, and repair of elevators	2	Tertiary
Wholesale of pharmaceutical goods	5	Tertiary
Trade and service	2	Tertiary
Production and distribution of medical and hospital equipment	1	Tertiary
Logistics and Forwarding	2	Tertiary
Editing, designing, printing, and distribution of graphic material	1	Tertiary
Production and commercialization of industrial, medical and pharmaceutical gases	2	Secondary
Retail sale of furniture, lighting equipment	1	Tertiary
Secondary Shoe	2	Secondary
Temporary employment agency activities	1	Tertiary
Manufacture of industrial fittings and equipment	2	Secondary
Manufacture of automotive cables, power cables, telecommunications, and special cables	1	Secondary
Collective catering service	2	Tertiary
Information service	1	Tertiary
The industry of synthetic resins, manufacture of vinyl polymers	2	Secondary
Automotive electrical cable production	1	Secondary
Manufacture of components for the automotive electrical industry, electronics and cabling for the computer industry	2	Secondary
Wholesale of household appliances, radio and television sets	2	Tertiary
Marketing and assistance, pre and post-sale of computer products and services; consulting and project management; training in computer science	2	Tertiary
Total companies 50	50	

Source: Own elaboration.

The tertiary sector is represented in 35 companies and the secondary sector is represented with 15 companies. In Table 2, we present the 50 companies by municipalities.

This research intends to obtain valid answers to the questions or hypotheses formulated. It is information that gives a clear picture of the phenomenon to be observed. In addition to responding to research questions, design controls the potential sources of bias, which may influence the results of the study. By designing your research project, the researcher can eliminate, or at least reduce the sources of error, in a way that only reasonable explanation emits from the results obtained. In the background, the research design allows the observer to analyze the data, to ensure control over the variables being studied.

4. PRESENTATION AND DISCUSSION OF RESULTS

At this point, the descriptive statistics, as well as the correlations between the variables under study, are presented. The present work consists of analyzing the economic and financial indicators of 50 companies for 6 years (2008 to 2013), in order to respond to the defined objectives. This analysis will be done using Wilcoxon's non-parametric tests for paired samples to determine the truth of one of the above hypotheses.

The distribution of the analyzed variables is not normal, that is, it was verified that 13 variables do not follow the normal distribution and 3 variables follow the normal distribution (for example, Indebtedness, ROI and Financial Autonomy), for which we chose to perform Wilcoxon non-parametric tests for paired samples for comparison of means.

Non-parametric tests are hypothesis tests that do not need assumptions for data distribution. Parametric tests are generally considered as an alternative to parametric tests, when the conditions of application of these, namely the normality of the variable under study and the homogeneity of variances between the groups, are not verified.

The nonparametric test to be used to test the research hypothesis will be the Wilcoxon test, this test is equivalent to the *t-Student* test; the best-known application of the Wilcoxon test is, however, the comparison of two population medians from paired samples. This test can also be used as an alternative to the Student's t-test for paired samples when the assumption of normal distribution of the variable in the two measurements is not verified and is not possible (in the case of small samples) or desirable (in the case of very skewed distributions or to defend the robustness of parametric methods when this assumption is not valid.

The Wilcoxon test allows formulating hypotheses about the F (X) distribution of variable X in two generic populations 1 and 2 from which paired random samples were extracted. Statistical hypotheses can be written as:

H0: F (X1) = F (X2) vs. H1: F (X1) ≠ F (X2) for a bilateral test;

H0: F (X1) ≤ F (X2) vs. H1: F (X1) > F (X2) for a one-sided right test;

H0: F (X1) ≥ F (X2) vs. H1: F (X1) < F (X2) for a one-sided left-hand test,

where the variable F represents the median of the population.

In the following sections, we present the descriptive statistics as well as the correlations between the variables under study. In the end, the results of the Wilcoxon test are discriminated. The descriptive statistics presented are a number of cases, mean, median, standard deviation and sig of the Shapiro-Wilcoxon normality test.

In the years, from 2008 to 2011, the indicator with the highest median is the working capital, with 6298.83; this means that the central/intermediate observation of this indicator of the 50 companies presents the value 6298.83. The cost of external capital is the indicator with the lowest median value, 0.0290. In relation to the average, working capital is the indicator with the highest value 12986.3 and the cost of the capital of others is the indicator with a lower value of 0.0379.

For the years (2011 to 2013), the working capital continues with the highest median, whose value is 8741.17 and the highest average with the value of 18015.8. The profitability of sales has a lower median value of 0.0340 and for the average; the profitability of sales is the indicator with a lower value of 0.0424.

In general, it has been observed that, on average, there was a positive evolution of the indicators, since they have the highest values in the years (2011 to 2013) in relation to the years (2008 to 2011). Table 2 presents the descriptive statistics

Table 2. Descriptive statistics (Part 1)

	No.	Average	Median	Standard deviation	Shapiro Wilk test
ME(2008-2010)	50	,6159	,6221	,20463	,170
ME (2011-2013)	50	,6089	,6575	,23247	,149
MIP (2008-2010)	50	1,3555	,7242	2,3268	,000
MIP (2011-2013)	50	1,3900	,7902	1,9426	,000
MCPCP (2008-2010)	50	1,9994	1,3706	1,8625	,000
MCPCP (2011-2013)	50	2,1126	1,4460	2,4316	,000
MCPLP 2008-2010)	50	7,6416	3,1861	12,2477	,000
MCPLP (2011-2013)	50	44,6660	3,5370	209,5391	,000
MS (2008-2010)	50	1,1168	,6426	1,8382	,000
MS (2011-2013)	50	1,3494	,5249	2,7297	,000
MAF (2008-2010)	50	,3841	,3779	,2046	,170
MAF (2011-2013)	50	,3911	,3425	,2325	,140
MRCP (2008-2010)	50	,1612	,1640	,1662	,004
MRCP (2011-2013)	50	,1399	,1381	,2257	,000
MROI (2008-2010)	50	,0652	,0616	,0511	,563
MROI (2011-2013)	50	,0503	,0459	,0557	,196
MCCA (2008-2010)	50	,0379	,0290	,0329	,000
MCCA (2011-2013)	50	,0429	,0347	,0323	,001
MR (2008-2010)	50	,0473	,0379	,05950	,006
MR (2011-2013)	50	,0424	,0340	,05998	,000
MRA (2008-2010)	50	1,9206	1,5658	1,5225	,000
MRA (2011-2013)	50	9,1514	4,1552	16,9266	,000

Table 2. Descriptive statistics (Part 2)

	No.	*Average*	*Median*	*Standard deviation*	*Shapiro Wilk test*
MFM (2008-2010)	50	12986,3	6298,83	31527,52	,000
MFM (2011-2013)	50	18015,8	8741,17	41465,58	,000
MLG(2008-2010)	50	1,9994	1,3706	1,8625	,000
MLG (2011-2013)	50	2,1126	1,4460	2,4316	,000
MLR (2008-2010)	50	1,6400	1,1429	1,7560	,000
MLR (2011-2013)	50	1,7288	1,1061	2,2236	,000
MRCP (2008-2010)	50	8,7442	4,6755	13,7442	,000
MRCP (2011-2013)	50	9,1514	4,1552	16,9266	,000

Source: Own elaboration.

Where:
– ME: average debt;
– MIP: average property, plant and equipment;
– MCPCP: average short-term liabilities;
– MCPLP: average long-term liabilities;
– MS: average solvency;
– MAF: average financial autonomy;
– MRCP: average return on equity;
– MROI: average return on investment;
– MR: average profitability of sales;
– MRA: average asset turnover;
– MRCP: average of the capital turnover;
– MFM: working capital average;
– ML: average overall liquidity;
– MR: reduced liquidity average.

The correlations between the variables under study were analyzed using the Spearman correlation. Spearman's correlation coefficient is a measure of non-parametric association between at least two ordinal variables. The Spearman's correlation coefficient allows the evaluation of the strength and direction of this association, varying between +1 and -1.

Next, we describe the correlations and consider those in which it is greater than or equal ($r >= 0.50$) since not all correlations translate information that adds value, that is, translate relevant information into the model.

Correlations between the different measures indicate that MIP has a significant negative correlation with MCPCP ($r = - 0.66$, $p < 0.001$), and has a significant negative correlation with MFM ($r = - 0.68$, $p < 0.001$), which has a significant negative correlation with MLG ($r = -0.66$, $p < 0.001$), which has a significant negative correlation with MLR ($r = - 0.60$, $p < 0.001$), which has a significant negative correlation ($r = -0.63$, $p < 0.001$), which has a significant negative correlation with MIP ($r = -0.66$, $p < 0.001$), which has a significant positive correlation with MS ($r = 0.66$, $p < 0.001$).

The correlations between the different measures indicate that MS has a significant negative correlation with ME ($r = -99$, $p < 0.001$), and that it has a significant positive correlation with MCPCP ($r = .66$, $p < 0.001$), which has a significant positive correlation with MAF ($r = .99$, $p < 0.001$), which has a significant positive correlation with MROI ($r = .62$, $p < 0.001$), which has a positive correlation ($r = -69$, $p < 0.001$), which has a significant positive correlation with MFM ($r = .57$, $p < 0.001$), which has a significant positive correlation with MLG ($r = .66$, $p < 0.001$), which has a significant positive correlation with MLR ($r = .78$, $p < 0.001$), which has a significant negative correlation with MRCP ($r = -74$, $p < 0.001$).

Correlations between the different measures indicate that MAF has a significant negative correlation with ME ($r = -1000$, $p < 0.001$), and has a

significant positive correlation with MCPCP ($r = .63$, $p < 0.001$), which has a significant positive correlation with MS ($r = .99$, $p < 0.001$), which has a significant positive correlation with MROI ($r = .65$, $p < 0.001$), which has a significant positive correlation with MR ($r = .68$, $p < 0.001$), which has a significant positive correlation with MFM ($r = .55$, $p < 0.001$), which has a significant positive correlation with MLG ($r = .63$, $p < 0.001$), which has a significant positive correlation with MLR ($r = .76$, $p < 0.001$), which has a significant negative correlation with MRCP ($r = -71$, $p < 0.001$).

The correlations between the different measures indicate that MR has a significant positive correlation with MROI ($r = .74$, $p < 0.001$), and that it has a significant positive correlation with MR. 61, $p < 0.001$).

The correlations between the different measures indicate that MROI has a significant negative correlation with ME ($r = -.65$, $p < 0.001$), and that it has a significant positive correlation with MS. 62, $p < 0.001$), which has a significant positive correlation with MAF ($r = .65$, $p < 0.001$). ($r = .74$, $p < 0.001$), which has a significant positive correlation with MR ($r = .89$, $p < 0.001$), which has a significant positive correlation with MLR ($r = .51$, $p < 0.001$).

The correlations between the different measures indicate that MR has a significant negative correlation with ME ($r = -.68$, $p < 0.001$), and that it has a significant positive correlation with MS. 69, $p < 0.001$), which has a significant positive correlation with MAF ($r = .68$, $p < 0.001$), which has a significant positive correlation with MCP yield ($r = .61$, $p < 0.001$), which has a significant correlation with MROI ($r = .89$, $p < 0.001$), which has a significant positive correlation with MLR ($r = .62$, $p < 0.001$), which has a significant positive correlation with MRCP ($r = .75$, $p < 0.001$), which has a significant negative correlation with MRCP ($r = -.51$, $p < 0.001$).

The correlations between the different measures indicate that MLM has a significant negative correlation with ME ($r = -63$, $p < 0.001$), and that it has a significant negative correlation with MIP ($r = .66$, $p < 0.001$), which has a significant positive correlation with MCPCP ($r = 1.00$, $p < 0.001$), which has a significant positive correlation with MS ($r = .66$, $p < 0.001$), which has a positive correlation ($r = .63$, $p < 0.001$), which has a significant positive correlation with MFM ($r = .87$, $p < 0.001$), which has a significant positive correlation with MLR ($r = .82$, $p < 0.001$), which has a significant negative correlation with MRCP ($r = -61$, $p < 0.001$).

The correlations between the different measures indicate that MLR has a significant negative correlation with ME ($r = -76$, $p < 0.001$), and that it has a significant negative correlation with MIP ($r = -60$, $p < 0.001$), which has a significant positive

correlation with MCPCP (r = .82, p < 0.001), which has a significant positive correlation with MS (r = .78, p < 0.001), which has a significant positive correlation with MAF (r = .76, p < 0.001), which has a significant positive correlation with MROI (r = .51, p < 0.001), which has a significant positive correlation with MR (r = .62, p < 0.001), (r = .73, p < 0.001), which has a significant positive correlation with MLG (r = .82, p < 0.001), which has a significant negative correlation with MRCP (r = .55, p < 0.001).

The correlations between the different measures indicate that MIP has a significant positive correlation with ME (r = 0.66, p < 0.001) and has a significant negative correlation with MCPCP (r = -0.72, p < 0.001), has a significant negative correlation with MS (r = -0.66, p < 0.001), has a significant negative correlation with MAF (r = -0.66, p < 0.001), has a significant negative correlation with MFM = -0.63, p < 0.001), which has a significant negative correlation with MLG (r = -0.72, p < 0.001), which has a significant negative correlation with MLR (r = -0.69, p < 0.001).

The correlations between the different measures indicate that MS has a significant negative correlation with ME (r = -.91, p < 0.001), and that it has a significant negative correlation with MIP (r = .66, p < 0.001), has a significant positive correlation with MCPCP (r = .71, p < 0.001), has a significant positive correlation with MAF (r = .91, p < 0.001), has a significant positive correlation with MROI (r = .60, p < 0.001), has a significant positive correlation with MR (r = .57, p < 0.001), has a significant negative correlation with ARM (r = -73, p < 0.001), has a significant negative correlation with MRC (r = -73, p < 0.001), has a significant positive correlation with MFM (r = .63, p < 0.001), has a significant positive correlation with MLG (r = .71, p < 0.001), has a significant positive correlation with MLR (r = .79, p < 0.001).

The correlations between the different measures indicate that MAF has a significant negative correlation with ME (r = -1.00, p < 0.001), and that it has a significant negative correlation with MIP (r = -.66, p < 0.005), has a significant positive correlation with MCPCP (r = .71, p < 0.005), has a significant positive correlation with MS (r = .91, p < 0.001), has a significant positive correlation with MROI (r = .51, p < 0.001), has a significant positive correlation with MR (r = .57, p < 0.001), has a significant negative correlation with ARM (r = -.73, p < 0.001), has a significant correlation with MMC (r = .63, p < 0.001), has a significant positive correlation with MLG (r = .71, p < 0.001), has a significant positive correlation with MLR (r = .78, p < 0.001).

Correlations between the different measures indicate that MRCP has a significant positive correlation with MROI (r = .61, p < 0.001), and that it has a significant positive correlation with MR (r = .52, p < 0.001), has a significant positive correlation with ARM (r = .54, p < 0.001).

The correlations between the different measures indicate that MROI has a significant negative correlation with ME (r = -.51, p < 0.001), and has a significant positive correlation with MS (r = .60, p < 0.001), has a significant positive correlation with MAF (r = .51, p < 0.001), has a significant positive correlation with MR (r = .89, p < 0.001), has a significant positive correlation with MLR r = .59, p < 0.001).

The correlations between the different measures indicate that MR has a significant negative correlation with ME (r = -.57, p < 0.001), and that it has a significant positive correlation with MS. 57, p < 0.001), has a significant positive correlation with MAF (r = .57, p < 0.001), has a significant positive correlation with M CP yield (r = .54, p < 0.001), has a significant positive correlation with MROI (r = .89, p < 0.001), has a significant positive correlation with MLR (r = .54, p < 0.001).

The correlations between the different measures indicate that MRA has a significant positive correlation with ME (r = .73, p < 0.001), and that it has a significant negative correlation with MCPCP (r = -.61, p < 0.001), has a significant negative correlation with MS (r = -.73, p < 0.001), has a significant negative correlation with MAF (r = -.73, p < 0.001), has a significant positive correlation with MRC (r = 1.00, p < 0.001), has a significant negative correlation with MLG (r = -61, p < 0.001) and has a significant negative correlation with MLR (r = -56, p < 0.001).

The correlations between the different measures indicate that MLF has a significant negative correlation with ME (r = -71, p < 0.001), and that it has a significant negative correlation with MIP (r = .72, p < 0.001), has a significant positive correlation with MCPCP (r = 1.00, p < 0.001), has a significant positive correlation with MS (r = .71, p < 0.001), has a significant positive correlation with MAF (r = .71, p < 0.001), has a significant negative correlation with ARM (r = -61, p < 0.001), has a significant negative correlation with MRC (r = -61, p < 0.001), has a significant positive correlation with MFM (r = .89, p < 0.001) and has a significant positive correlation with MLR (r = .84, p < 0.001).

The correlations between the different measures indicate that MLR has a significant negative correlation with ME (r = -78, p < 0.001), and that it has a significant negative correlation with MIP (r = .69, p < 0.001), has a significant positive correlation with MCPCP (r = .84, p < 0.001), has a significant positive correlation with MS (r = .79, p < 0.001), has a significant positive correlation with MAF (r = .78, p < 0.001), has a significant positive correlation with MROI (r = .59, p < 0.001), has a significant positive correlation with MR (r = .54, p < 0.001), has a significant negative correlation with MRA (r = -.56, p < 0.001), has a significant positive correlation with MFM (r = .74, p < 0.001), which has a significant positive correlation with MLG (r = .84, p < 0.001).

As already said before, the aim of this study is to evaluate whether there are differences in economic and financial indicators of companies between 2008 and 2013, with and without the legal obligation of legally certified accounts. The indicators under study are quantitative and continuous variables, being numbers and can assume any value within a range of real values. This means that since the quantitative variables are continuous and the distribution is not normal, the use of the Wilcoxon test for paired samples is justified in order to determine whether there are differences in the companies after the introduction of the auditor.

The samples under study are paired, a total of 50 companies and the same economic and financial indicators are studied for the years 2008 to 2013, where the same group of companies will be compared to themselves in two different time periods (before and after the introduction of the

auditor), and the dependent variables are scale, i.e. the economic-financial indicators. Following, we present the Wilcoxon test results:

– There are marginally significant differences between the indicator of indebtedness (2008-2010) and indebtedness (2011-2013), Z = -0.27, p = 0.98. The indicator of indebtedness after the legal certification of accounts had an evolution, although not significant.

– There are marginally significant differences between the asset depreciation indicator (2008-2010) and asset depreciation (2011-2013), Z = -0.12 p = 0.90. The asset depreciation indicator after the financial audit has evolved, although not significant.

– There are marginally significant differences between the short-term liability coverage indicator (2008-2010) and the short-term liability coverage (2011-2013), Z = -0.63, p = 0.53. The indicator of short-term liability coverage after the financial audit has evolved, although not significant.

– There are marginally significant differences between the long-term liability coverage indicator (2008-2010) and the long-term liability coverage (2011-2013), Z = -0.75 p = 0.45. The long-term liability coverage indicator after the financial audit has evolved, although not significant.

– There are marginally significant differences between the solvency indicator (2008-2010) and solvency (2011-2013), Z = -0.52, p = 0.60. The solvency indicator after the financial audit has evolved, although not very significant. The solvency indicator after the financial audit has evolved, although not significant.

– There are marginally significant differences between the indicator of financial autonomy (2008-2010) and financial autonomy (2011-2013), Z = -0.27, p = 0.98. The indicator of financial autonomy after the financial audit has evolved, although not significant.

– There are marginally significant differences between the equity return indicator (2008-2010) and the return on equity (2011-2013), Z = -1.05, p = 0.29. The profitability indicator of equity after the financial audit has evolved, although not significant.

– There are marginally significant differences between the ROI indicator (2008-2010) and the ROI (2011-2013), Z = -1.83, p = 0.68. The ROI indicator after the financial audit has evolved, though not significant.

– There are marginally significant differences between the external capital cost indicator (2011-2013) and the cost of external capital (2006-2008), Z = -2.22, p = 0.03. The indicator of the cost of external capital after the financial audit has evolved, although not significant.

– There are significant differences between the asset turnover indicator (2008-2010) and the asset turnover (2011-2013), Z = -5.23, p = 0.000. This indicator has a level of maximum significance.

– There are marginally significant differences between the working capital indicator (2008-2010) and the working capital (2011-2013), Z = -1.64,

p = 0.10. The working capital indicator after the financial audit was non-significant.

– There are marginally significant differences between the general liquidity indicator (2008-2010) and general liquidity (2011-2013), Z = -0.63, p = 0.53. The general liquidity indicator after the financial audit has evolved, although not significant.

– There are marginally significant differences between the reduced liquidity indicator (2008-2010) and the reduced liquidity (2011-2013), Z = -0.35, p = 0.73. The reduced liquidity indicator after the financial audit has evolved, although not significant.

– There are marginally significant differences between the equity (2008-2010) and the equity (2011-2013), Z = -0.11, p = 0.91. The indicator of capital turnover after the financial audit has evolved, although not significant.

5. CONCLUSION

In general, the indicators showed a positive evolution over the period in which the companies started to have certified accounts by a statutory auditor. The analysis of the results suggests that the mandatory appointment of a ROC, in general, led to a positive evolution in the economic and financial indicators, despite little statistical significance. It should be noted that, in relation to the asset turnover indicator, there is a very significant evolution with the beginning of the certified accounts.

There are no statistically significant differences in the economic and financial performance of Portuguese limited liability companies after the introduction of the certified accounts. We can observe that some measures of economic and financial performance, such as indebtedness, fixed assets, coverage of term liabilities, medium and long term liabilities, solvency, financial autonomy, return on equity, return on investment, profitability of net sales, capital cost, capital turnover, working capital, general liquidity, reduced liquidity, did not show statistically significant gains, but improved positively in the period 2011-2013. The results verified in this study contribute significantly to the empirical literature on audited limited liability companies, leading to legal certification of accounts.

As limitations of this work, on one hand, the number of companies under investigation should be much bigger, what would give much more results. On the other hand, if we could have company financial information for more years before and after the beginning of the certification of accounts, the results would be more robust.

In sum, it is concluded that the appointment of a ROC in Portuguese private limited liability companies, has led to some improvement in their effectiveness and efficiency. After the work of the ROC in the Portuguese listed companies under analysis, we verified that the economic and financial indicators improved over time, although there was no statistical significance.

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