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Effects of the Spanish Accounting Reform on the Economic and Financial Structure, and the Performance of Listed Companies

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Abstract

The aim of this paper is to examine the impact of the 2008 accounting reform on the economic and financial indicators which are commonly used in the financial analysis, as well as analyse whether there is an evolution on these measures as a consequence of a learning process or an adaptation to the accounting reform. Firstly, we do a normative analysis to examine the differences in the Spanish GAAP before and after the accounting reform. Based on the differences we find, we formulate a series of hypotheses about how these differences affect the main measures of economic structure, financial structure, and performance which are commonly used in the analysis of financial statements, as well as their effect on the accruals. These hypotheses are tested with a multivariate analysis in a sample of listed companies. Results show that the accounting reform has effects on the financial indicators.

Keywords: Accounting reform; Comparability; Differences in accounting standards

1. Introduction

The promulgation of the Decree 1514/2007 involved an in-depth reform of accounting rules in Spain, whose purpose was the convergence towards the International Financial Reporting Standards (IFRS) in the preparation of the individual financial statements, both for listed and unlisted companies; with regard to the consolidated financial statements, listed groups have to prepare them according to the IFRS since 2004, while unlisted groups have to prepare the consolidated financial statements according to the NOFCAC[3] since 2010, following the convergence process between the Spanish GAAP and the IFRS initiated with the accounting reform.After 10 years from the accounting reform, several studies have examined the impact of the reform on both the Spanish accounting rules (Gonzalo, 2014; Gandía and Huguet, 2018a) and the accounting information (Callao et al., 2010; Fitó et al., 2010; Legaz et al., 2015). The empirical studies have focused on the period of change between the two regulatory frameworks or in the years immediately following the accounting reform, but this approach involves an important limitation for two reasons: i) since they focus in the first years after the accounting reform, they cannot examine whether there is an evolution in the accounting information; and ii) the first years after the accounting reform coincide with the economic crisis, which can affect the accounting measures, disguising the real effect of the accounting reform (Huguet and Gandía, 2016).

The aim of this paper is to overcome these limitations, by doing an analysis of the period from 2004 to 2016, which includes 9 years after the accounting reform. This analysis lets us examine the evolution of the accounting measures, as well as analyse whether this evolution is a result of a learning process of the accounting rules and principles under the new regulatory framework, and the separation of the accounting reform to the economic crisis.

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[3]"Normas para la Formulación de las CuentasAnualesConsolidadas", Spanish standards for the preparation of the consolidated accounts.

To do this, we do the analysis in two parts: i) in the first part, we examine, at a normative level, the differencesbetween the former Spanish GAAP and those in force after the accounting reform in the recognition, valuation and reporting rulesfor assets, liabilities, incomes and expenses. Based on the differences we find, we formulate a series of hypotheses about how these differences can affect the main measures of economic structure, financial structure, and performance commonly used in the analysis of financial statements, as well as their effect in the accruals. These hypotheses are tested with a multivariate analysis in a sample of Spanish listed companies.The study contributes to the previous literature in the following ways: first, the normative analysis complements those performed in previous studies by considering the potential effect these changes can have on the accounting numbers; secondly, the extension of the time horizon compared to the previous studies lets us examine the evolution of the accounting numbers as a consequence of a period of adaptation to the accounting rules; finally, the consideration of the economic crisis lets us separate its effect from the expected because of the accounting reform.The study is of interest for the accounting regulator, especially because of the forthcoming accounting reform in Spain. The study is also of interest for the financial analysts, because of the effect that changes in the accounting rules have on the numbers reported in the financial statements and, hence, in the economic and financial indicators used for business analysis and valuation, what exposes the importance of the accounting analysis as a previous step to the financial analysis (Palepu et al., 2016).

The rest of the paper is organised as follows: in Section 2 we develop the theoretical framework, where we introduce the former regulatory framework, explain the relation between the Spanish accounting reform and the IFRS, and review prior literature about changes in accounting rules and their effects on accounting information; in Section 3 we perform the normative analysis of the Spanish GAAP before and after the accounting reform; Section 4 formulates the hypotheses to be tested, explains the research design and describes the sample; Section 5 reports the results of the main analysis and the additional tests, with an especial attention to the evolution over time and the economic crisis; and Section 6 presents our conclusions and the limitations of the study.

2. Theoretical framework

2.1. The General Accounting Plan of 1990

The approval of the General Accounting Plan of 1990 through Decree 1643/90, and in force from 1990 to 2007, meant an in-depth change in the Spanish accounting rules regulated by the 1973 Accounting Plan, which was driven by the principle of voluntary application unless the Government declared anything else. The General Accounting Plan of 1990 was the development in accounting of the commercial law and it was compulsory for every company. After the joining Spain to the European Economic Community, the General Accounting Plan of 1990 was in charge of adapting the Spanish accounting rules the European ones.

The General Accounting Plan of 1990 was structured in five parts:

- **Part One – Accounting principles.** It was a development of article 38 of the Commercial Code.
- **Part Two – Chart of accounts.** It presented a list of groups, subgroups and accounts to be used in accounting; its application was voluntary.
- **Part Three – Accounting definitions and relations.** It was a complement for the chart of accounts; it gave content to the accounts based on its definitions, and it described the most usual movements for these accounts.
- **Part Four – Annual accounts.** This part was compulsory, and included the rules for the preparation of the annual accounts, as well as models for the balance sheet, the profit and loss account, and the notes.
- **Part Five – Measurement standards.** It included the measurement criteria of the assets, liabilities, income and expenses.

Over the years, there were both industry adaptations of the General Accounting Plan and developments through orders and administrative resolutions. Nevertheless, since 2005, with the adoption of the IFRS by the European Union, the need of a higher level of harmonisation in accounting was clear.

2.2. The IFRS and the 2008 accounting reform

Although the globalisation of the business requires an only financial language that enhances the comparability of accounting information and improves its credibility, the differences between the accounting standards cause distortions in the accounting treatment of the financial transactions, using divergent treatments for similar operations (García and Gandía, 1998; Bradshaw and Miller, 2008; Barth et al., 2012).

In that sense, previous literature has examined both the differences in accounting standards (Ding et al., 2007; Bae et al., 2008) and the comparability of the accounting numbers between countries (Beuselinck et al., 2008; De Franco et al., 2011; Barth et al., 2012), and it shows that the lack of comparability in the accounting numbers affects the functioning of the financial markets.

The limitations derived from the lack of comparability have been tackled through the process of accounting harmonisation, which can follow two alternative ways (Gandía and Huguet, 2018a): i) the harmonisation of the local GAAP in a convergence process (García and Gandía, 1998; Barth et al., 2012); and ii) the adoption an only normative system, like the proposed by the IFRS (Carmona and Trombettta, 2008; Brown et al., 2014).

With regard to this second option, it is worth noting that the decision of adoption the IFRS by European Union in 2002, formally materialised with the Regulation 1606/2002, involved a great support to their adoption at an international level. Currently, 119 countries have adopted them, at least among listed companies (IFRS Foundation). In the European Union, consolidated financial statements have to be prepared according to IFRS since 2005. Nevertheless, although the harmonisation of accounting standards has been achieved among European groups, the complete comparability of accounting numbers is not a reality, because it depends on other factors, such as the incentives of the preparers of accounting information, the institutional differences among countries, and the effectiveness of the enforcement at national level (Pope and McLeay, 2011; Kvaal and Nobes, 2012).

On the other hand, although the adoption of the IFRS by the EU for the preparation of the consolidated information by listed companies has involved the normative harmonisation for a part of the European companies, it also introduced a distorting element in the comparability of information at national level, as long as two different accounting systems (IFRS and national GAAP) were in force in the same country. For this reason, the Regulation 1606/2002 considered the potential extension of the IFRS to individual financial statements and consolidated financial statements of unlisted companies. However, some countries, such as Spain, decided to carry out an accounting reform at national level, with the aim of converging to the IFRS. This process ended with the approval of the 2007 General Accounting Plan, in force from 1 January 2008.

Therefore, the 2008 accounting reform posed an in-depth modification of the Spanish GAAP, involving a substantial convergence towards the IFRS, although there are significant differences between the standards yet (Garrido and Vázquez, 2011; Gandía and Huguet, 2018a). These differences are partly explained by the scope of the local GAAP, which have been prepared to be used by unlisted companies[4]. After 10 years from the accounting reform, several studies have examined the differences between the current Spanish GAAP, the previous ones,and the IFRS (Garrido and Vázquez, 2011; Ruiz Lamas, 2009; Gonzalo, 2014), as well as the impact of the accounting reform on accounting information (Callao et al., 2010; Fitó et al., 2010; Legaz et al., 2015; Marín et al., 2015). With regard to the effect of the accounting reform on accounting information, Callao et al. (2010) examine the effect of the changes in the accounting policies and criteria on the equity, and they evaluate if its informative ability is affected. Comparing the accounting numbers at the end of year 2007 (prepared according to the former GAAP) with those at the beginning of year 2008 (prepared under the GAAP in force since the accounting reform), the authors find empirical evidence that the changes have resulted in a significant increase of both the equity and its informative ability.

On the other hand, Fitó et al. (2010) analyse the impact of the accounting reform on the main items of the balance sheet and the profit and loss account, as well as its effect on the most commonly used ratios in the financial analysis, by the examination of the financial data of year 2007. Their results show that the effect is significant in most items and in several ratios, and the authors conclude that the flexibility introduced by the new plan in the transition year infringed the principle of comparability of the financial information.Lastly, Legaz et al. (2015) analyse the effect of the changes in the accounting policies and criteria on consolidated equity, using a sample of Spanish unlisted groups. Comparing de numbers for the equity in years 2007 and 2008, the authors do not find evidence of a significant impact on the consolidated equity, so they conclude that the information for the two periods (pre-reform and post-reform) was comparable.

[4] With regard to the use of the Spanish GAAP among listed companies, Ruiz Lamas (2009) states that the regulatory authorities have looked for the comparability between listed and large unlisted companies, an issue also tackled by Gonzalo (2014).

Hence, they consider that allowing companies not to present comparative informationwas a right decision of the accounting regulator, because it make easier the transition between the accounting standards without increasing the burden costs of preparing the information.The previous studies have focused on the period immediately after the accounting reform, either in the transition between the two regulatory frameworks (Callao et al., 2010; Fitó et al., 2010; Legaz et al., 2015) or in the immediate years after the accounting reform (Marín et al., 2015). The analysis of this period involves two limitations when extrapolating the results: i) since they are focused in the first years after the accounting reform, they cannot observe whether there is a learning period, for which accounting numbers evolve in a determined way; and ii) the period of analysis mostly coincides with the economic crisis, what can affect the accounting numbers, masking the effects of the accounting reform (Huguet and Gandía, 2016).

This paper tries to overcome these limitations, by considering a 9-years period after the accounting reform. This period lets us examine whether there is an evolution in the accounting numbers, as a result of a learning process in the accounting principles and rules according to the new normative framework, as well as to separate the effect of the accounting reform from the effect of the economic crisis. To do so, we do the analysis in two parts: i) in the first one, we examine at a normative level the potential effect that differences in reporting, recognition, and measurement rules between the pre-reform and post-reform Spanish GAAP have on the balance sheet and the profit and loss account; ii) in the second part, taking in account the differences we found, we carry out an empirical analysis to examine how the accounting reform has affected the economic and financial indicators commonly used in the financial analysis.

3. Normative analysis

With the aim of examining the differences between the pre-reform and post-reform Spanish GAAP, we perform a normative analysis, in which we compare the items from the balance sheet and the profit and loss account prepared according both regulatory frameworks. In this analysis, we look for both reporting issues and recognition and measurement issues, suggesting the potential impact that these items can have on the financial statements, and thus on the financial ratios.

Figure 1 shows in a concise way the analysis; the figure is composed of a four-columns table: the first column shows the analysed item; in the second and third columns we reproduce the recognition and measurement rules, as well as the reportingrules, for this item according to the Spanish GAAP before and after the accounting reform, respectively; and the last column summarizes the differences between both standards, with a comment about the potential effect on the item. These comments are the base for the formulation of hypotheses in Section 4.As we can see in Figure 1, the accounting reform has involved the disappearance of the fictitious assets. According to the accounting framework in force after the accounting reform, these items do not fulfil the definition of assets and thus they cannot be recognised. It is assumed that the disappearance of these items should reduce both total assets and non-current assets. Nonetheless, its impact may be reduced in our study, because most listed are well established and their fictitious assets may be residual items.

Secondly, we observe a change in the composition of the assets, especially property, plant and equipment (PP&E). The first difference arises because of the leasing contracts: while the former GAAP recognised them as intangible assets, after the accounting reform they may be considered PP&E, depending on the assets' nature. Although this difference suggests an increase of the PP&E, we have to note that this item is broken down in three lines: i) PP&E, ii) investment properties, and iii) construction in progress. Therefore, the global effect on the PP&E is not clear.

Figure 1. Normative analysis of the accounting reform

Item	Pre-accounting reform GAAP	Post-accounting reform GAAP	Differences and effects
Uncalled capital	It is a fictitious asset.	It does not fulfil the definition of asset, thus it does not appear in the assets and is considered negative equity.	The disappearance of an asset item may involve a decrease in the value of the assets.
Non-current assets	Non-current assets include fictitious assets (start-up costs). Assets are measured at cost, determined as thepurchase price or production cost.	Fictitious assets disappear from the balance sheet. Assets are measured at cost, determined as the purchase price of production cost.	The measurement of assets in both standards is similar, but the definition of assets after the accounting reform excludes fictitious assets, so we can expect a decrease in both the value of assets and the proportion of non-current assets.
Intangible assets	Leasing rights are considered intangible assets.	Leased assets are classified as intangible or PP&E depending on its nature.	The change in the treatment of leasing contracts may involve an increase in PP&E as well as a reduction of intangible assets.
Property, plant and equipment	Investment properties and construction in progress are not separated from PP&E.	Investment properties and construction in progress are separated from PP&E.	Separated reporting of investment properties and construction in progress may involve a decrease in the proportion of PP&E.
Financial assets	Measurement at cost.	Several measurement criteria, fair value among them.	The use of the fair value for some groups of financial assets may involve an increase in the value of assets, as well as an increase in the proportion of financial assets to total assets.
Own shares	It is a fictitious asset.	It does not fulfil the definition of asset, thus it does not appear in the assets and is considered negative equity.	The disappearance of an asset item may involve a decrease in the value of assets.
Deferred expenses	It is a fictitious asset.	It does not fulfil the definition of asset, thus it disappears from the balance sheet.	The disappearance of an asset item may involve a decrease in the value of assets.
Current assets	Assets are measured at cost. Current assets included fictitious assets (short-term own shares).	There is a new line (non-current assets held for sale) which is measured at fair value. Part of the short-term financial assets are measured at fair value.	The use of fair value may involve an increase in the value of assets and the proportion of current assets to total assets.
Financial liabilities	Financial debt was measured at reimbursement value. Payables were measured at their nominal amount.	Debts and payables are measured at amortised cost; payables can be measured at their nominal value. Part of the financial liabilities are measured at fair value.	Use of amortised cost may involve a decrease in the value of financial liabilities, but since some of them can be measured at fair value, the global effect is not clear.

Provisions	There was not information about their measurement; reimbursement value was assumed to be used.	They are measured at present value.	Measurement at present value may involve a decrease in the liabilities' value.
Deferred tax liabilities	They appeared in line "other non-trade payables". A liability was recognised for taxable temporal differences.	They appear in a specific line. A liability is recognised for taxable temporary differences.	Although the concepts "temporal differences" and "temporary differences" are not identical, the recognition and measurement standard is similar, so we do not expect significant effects.
Equity	The concept was not exactly the same as today; its components corresponded to lines "Capital and reserves" and "Deferred income".	Part of the fictitious assets are subtracted from the equity. Valuation adjustments are included in the equity, because of use of fair value. (Net) grants and donations are included in the equity.	Although measurement at fair value may involve an increase of the equity, the subtraction of fictitious assets may decrease its value. Anyway, the global effect on the equity will be the difference between the variation in the assets and the variation in the liabilities.
Net earnings	The ubiquity of the principle of conservatism over the remaining principles involves an asymmetric recognition of incomes and expenses.	Principle of conservatism is not preponderant. Use of fair value on some groups of assets and liabilities affect the recognition of incomes and expenses.	The loss of preponderance for the principle of conservatism may involve a higher symmetry in the recognition of incomes and expenses. Measurement of assets and liabilities at fair value may involve an increase of both incomes and expenses.

On the other hand, we have to highlight the measurement at fair value of part of the financial assets, what involves a symmetrical recognition of profits and losses related to these assets. Although we can expect an increased in both the value of assets and the proportion of financial assets on total assets, we have to note that the economic crisis could limit the value increases, so its effect may not be significant.

With regard to the liabilities, the measurement of financial debt at amortised cost, rather than the previously known as reimbursement value, may involve a decrease in the value of the financial liabilities, and consequently a reduction of the leverage, as well as an enhancement of the companies' liquidity. However, some liabilities are measured at fair value; if we also consider the effect of the economic crisis on the leverage, the direction of the variation in the leverage and liquidity ratios after the accounting reform is not clear.

Regarding the profit and loss account, two changes may support an increase in the net earnings and thus in the profitability: i) the loss of preponderance for the principle of conservatism, and ii) the measurement at fair value. Both changes involve a higher symmetry between expenses and income, increasing the net earnings. Nevertheless, since the period of implementation of the accounting reform mostly overlaps the economic crisis. The impact on the expenses may be higher, thus reducing the profitability.

4. Empirical study: Research design

4.1. Methodology

After the normative analysis we performed in the previous section, we proceed to do the empirical study, in which we employ regression models to examine the effect of the accounting reform on some of the most usual financial ratios. Specifically, we examine the effect of the accounting reform on economic structure indicators, financial structure measures, performance indicators, and accruals.

a. Economic structure measures: hypotheses and models

The normative analysis from Section 3 suggests that the accounting reform has had an impact on the total amount and composition of the assets of the company, so we formulate the following general hypothesis:H1: The accounting reform has had a significant impact on the amount and composition of the companies' assets.

From this general hypothesis we derive three specific hypotheses, related with the size and composition of the assets. Firstly, the normative analysis suggests than the changes made by the accounting reform may involve either an increase in the assets (because of the measurement at fair value of some financial assets) or a reduction (because of the disappearance of the fictitious assets); since the global effect is not clear, we formulate hypothesis H1a in null form:H1a: The accounting reform has not had a significant impact on the total amount of the companies' assets.

On the other hand, the normative change affects the composition of the assets, especially non-current assets, what can affect the collateral ratios employed in the financial analysis. First, the transfer of leasing items from the intangible assets to the PP&E may increase the last line; however, the new distinction between PP&E, investment properties, and construction in progress will reduce the proportion of PP&E over total assets.

Therefore, we formulate the following null hypothesis:H1b. The accounting reform has had a negative impact on the proportion of PP&E to total assets.

Finally, with regard to the financial assets, we expect an increase in their proportion, as a consequence of the measurement at fair value of part of them:H1c. The accounting reform has had a positive impact on the proportion of financial assets to total assets.To test these hypotheses, we posit an economic structure model, in which we regress the dependent variable (economic structure measure) on a dummy variable (POST[5]), which equals 1 for the years after the accounting reform and 0 for the previous years, and a series of control variables. The economic structure measures (ECO) we use as a dependent variable are:

$$ECO_A = LNASS = Naturallogaritmof TotalAssets \rightarrow (Company\ size)$$

$$ECO_B = PPE\_ASS = \frac{Property, PlantandEquipment}{TotalAssets} \rightarrow (Collateralratio)$$

$$ECO_C = FIN\_ASS = \frac{FinancialAssets}{TotalAssets} \rightarrow (Proportionoffinancialassetstototalassets)$$

These measures are important in the financial analysis for the following reasons: i) companies' total assets are usually used as a proxy for the company size (Kim et al., 2003; Gill de Albornozand Illueca, 2007; Van Tendeloo and Vanstraelen, 2008); ii) the ratio of PP&E to total assets is commonly considered a proxy for the companies' collateral, assuming that companies with a higher proportion of PP&E have more financial soundness; it is also a measure of capital intensity (Gill de Albornozand Illueca, 2007; Kimet al., 2011); the ratio of financial assets to total assets shows how much euros are invested in activities different from the operating ones; a high proportion of financial assets may suggest problems to find profitable projects (Palepu et al., 2016).

In addition to POST, the regression model includes a series of control variables that can affect the total amount and composition of the assets: the natural logarithm of a company's net sales (LNSALES), the return on assets (ROA), calculated as the ratio of net earnings to total assets[6], and the leverage (LEV_B), calculated as the ratio of financial debt to total assets. The model also includes dummies to control for the industry in which the company operates:

$$ECO_{it} = \alpha + \beta_1 POST_{it} + \beta_2 LNSALES_{it} + \beta_3 ROA_{it} + \beta_4 LEV\_B_{it} + \gamma IND_i \varepsilon_{it} \quad [1]$$

b. Financial structure measures: hypotheses and models

The normative analysis from Section 3 shows that, although there are differences in the measurement of both the financial and operating liabilities, their global effect is not clear. Nevertheless, we consider that the accounting reform has significantly affect both the total amount of liabilities and their composition:

[5] Variables used to test hypotheses are summarized in the Appendix.

[6] We use alternative measures of profitability, such as ROE and ROBA, as defined in Section 4.1.b, and results remain qualitatively similar.

H2: The accounting reform has had a significant impact on the total amount and composition of the companies' liabilities.

Specifically, we expect the accounting reform has increased financial liabilities, involving an increase in the financial leverage:H2a: The accounting reform has had a significantly positive impact on the companies' financial leverage.On the other hand, since we expect an increase of the financial liabilities, and especially short-term liabilities (where liabilities at fair value are reported), liquidity will decline if current assets are maintained:H2b: The accounting reform has had a significantly negative impact on the companies' liquidity.To test these hypotheses, we posit two regression models, in which we regress the dependent variable (financial structure measures) on POST and a series of control variables. The financial structure measures to be examined are the leverage (LEV) and quick (QUICK) ratios:

$$LEV_A = \frac{TotalLiabilities}{TotalAssets} \rightarrow TotalLeverage$$

$$LEV_B = \frac{FinancialDebt}{TotalAssets} \rightarrow FinancialLeverage$$

$$QUICK = \frac{Receivables + ShortTermFinancialAssets + Cash}{CurrentLiabilities} \rightarrow QuickRatio$$

These ratios are commonly used in the financial analysis to examine the companies' financial structure and liquidity: i) LEV_A compares a company's total liabilities to total assets, and it shows the proportion of assets which are financed with resources other than equity; its inverse ratio is commonly used as a solvency measure (Gandía and Huguet, 2018b); ii) LEV_B compares the financial (cost-bearing) debt to total assets; and iii) QUICK is an indicator of a company's liquidity, measuring its ability to meet its short-term obligation with its most liquid assets. In addition to POST, the regression model includes a series of control variables that can affect the financial structure measures: for LEV_A and LEV_B, we include the company size, measured by the natural logarithm of the total assets (LNASS), the proportion of PP&E to total assets (PPE_ASS), the company growth, measured as the variation rate of the sales (GROWTH), and the assets lifespan (LIFESPAN), measured in the following way (López and Mestre, 2013):

$$Lifespan = \frac{NonCurrentAssets}{TotalAssets} \times \frac{NonCurrentAssets}{Depreciation\&Amort} + \frac{Receivables}{TotalAssets} \times \frac{Receivables}{Sales} + \frac{Inventory}{TotalAssets} \times \frac{Inventory}{Sales} + \frac{OtherAssets}{TotalAssets}$$

With regard to the quick ratio (QUICK), we include the company size (LNASS) and the assets lifespan (LIFESPAN). Both models include industry dummies:

$$LEV_{it} = \alpha + \beta_1 POST_{it} + \beta_2 LNASS_{it} + \beta_3 PPE\_ASS_{it} + \beta_4 GROWTH_{it} + \beta_5 LIFESPAN_{it} + \gamma IND_i \varepsilon_{it} \quad [2]$$

$$QUICK_{it} = \alpha + \beta_1 POST_{it} + \beta_2 LNASS_{it} + \beta_3 LIFESPAN_{it} + \gamma IND_i \varepsilon_{it} \quad [3]$$

c. Performance measures and accruals: hypotheses and models

The normative analysis of Section 3 suggests that the measurement of some groups of financial instruments at fair value, as well as a lesser prevalence of the principle of conservatism as compared to the previous regulatory framework, may drive higher income, and thus higher earnings and profitability. Nevertheless, the measurement at fair value is also applicable for financial liabilities, which can affect in a negative way the net earnings, so the global effect is an empirical question:H3: The accounting reform has had a negative impact on the companies' profitability.

To test the hypothesis, we regress our profitability measure (PROF) on POST and a series of control variables. We measure a company's profitability with two proxies[7]: i) the return on equity (ROE), measured as the ratio of net earnings to equity, which shows the company's profitability for the shareholders' perspective; and ii) the return on business assets (ROBA), as the ratio of NOPAT+NIPAT[8] to business assets, which measures how profitable a company is able to deploy its operating and investments assets to generate profits, i.e. a company's ROE if it is in theory totally financed with equity (Palepu et al., 2016).With regard to the control variables, the model includes the level of total accruals (TA[9]), the company size (LNASS), the proportion of non-current assets to total

[7] Unreported results using ROA as defined in Section 4.1.a are qualitatively similar.

[8] Net Operating Profit After Taxes & Net Investment Profit After Taxes.

[9] Total accruals have been calculated as: TA = (□ CA – □ Cash) – (□ CL – □ Debt) – Dep, were TA mean total accruals, □ CA is the change in the current assets, □ Cash is the change in cash, □ CL is the change in current liabilities,□ Debt is the change in the short-term financial debt, and Dep is the depreciation and amortization expense.

assets (FIX_ASS), the company growth, as defined in Section 4.1.b (GROWTH), the ratio of current assets to current liabilities (CURRENT), the solvency ratio, measured as the ratio of financial liabilities to equity (SOLV), the coverage interest ratio (COV), and the age of the company (AGE). As the previous models, we also include industry dummies:

$$PROF_{it} = \alpha + \beta_1 POST_{it} + \beta_2 TA_{it} + \beta_3 LNASS_{it} + \beta_4 LNSALES_{it} + \beta_5 FIX\_ASS_{it} + \beta_6 GROWTH_{it} + \beta_7 CURRENT_{it} + \beta_8 SOLV_{it} + \beta_9 COV_{it} + \beta_{10} AGE_{it} + \gamma IND_i \varepsilon_{it} \quad [4]$$

We have to note that, in case POST had an effect on the company's profitability, it should be driven by the effect of POST on changes in the recognition of income and expenses that do not involve cash flows, so POST should also affect accruals; otherwise, we should explore alternative explanation to the changes in the companies' performance, such as the economic crisis. Therefore, we formulate our last hypothesis as:H4: The accounting reform has had a significant impact on the companies' level of total accruals.

We test this hypothesis by regressing the total accruals (TA) on POST and a series of control variables: companies size (LNASS), leverage (LEV_B), measured as the ratio of financial debt to total assets; companies' growth (GROWTH); return on equity (ROE), the ratio of current assets to current liabilities (CURRENT), a dummy variable which equals 1 when a company report negative earnings, 0 otherwise (N_EARN); and the companies' age (AGE). The model also includes dummies to control for the industry in which the company operates:

$$TA_{it} = \alpha + \beta_1 POST_{it} + \beta_2 LNASS_{it} + \beta_3 LEV_{it} + \beta_4 GROWTH_{it} + \beta_5 ROE_{it} + \beta_6 CURRENT_{it} + \beta_7 N\_EARN_{it} + \beta_8 AGE_{it} + \gamma IND_i \varepsilon_{it} \quad [5]$$

4.2. Sample and descriptive statistics

We regress the models explained in Section 4.1 using the data from the individual financial statements of Spanish listed companies for the period 2004-2016, which include both pre-reform years (2004-2008) and post-reform years (2008-2016). We have used SABI, a Spanish database that contains financial information of Spanish companies from the Spanish Mercantile Registry, to select the sample. The inclusion of a 12-years period lets us examine in greater depth the effect of the accounting reform on the financial measures, partly because of the analysis of the time evolution after the accounting reform, but also because we can exclude the first years after the reform, which can be affected by the economic crisis. These issues are tackled in Sections 5.2 and 5.3.

On the other hand, we have chosen to use only listed companies because they were preparing their consolidated financial statements according to the IFRS since 2005, and it is useful for the following reasons: since listed companies were using a regulatory framework which is considered to be of higher quality (Hung and Subramanyam, 2007; Daske et al., 2013), we can expect a more moderated impact because of the change in the accounting standards, and thus the differences as a result of a wrong use of the new standards the first years after the reform should be lower.

The selection of the sample using SABI involves a limitation, which is related with the definition of listed companies in the database, since it only provides information about its current state (listed, unlisted, or delisted). To avoid the exclusion of companies which were listed during the examined period, as well as the inclusion of companies that were unlisted then, we have depurated the variable which indicates the listing state: based on the date the company began to be listed and the date when it was delisted, we consider a company is listed in year t if it is among the two dates. When this information is not available in SABI, we have consulted this information in the official registry of the CNMV[10], which is available in its website.

Once we have selected the sample and dropped the observations belonging to unlisted companies for the examined period, we have eliminated companies belonging to banking and insurance industries. To alleviate the influence of outliers, continuous variables are truncated at percentiles 1 and 99.

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[10]Comisión Nacional del Mercado de Valores, it is the Spanish government agency responsible for the financial regulation of the securities markets in Spain.

Table 1 shows the composition of the final sample, which is composed of 1705 observations from 184 companies, 485 of them corresponding to the period 2004-2007 (previous to the accounting reform) and 1220 of them belonging to the period 2008-2016 (after the accounting reform). With regard to its distribution by industry, it is worth noting that the financial industry has 453 observations, even after eliminating companies from banking and insurance activities; nevertheless, we have to note that these companies develop holding activities, i.e. they are matrix companies. Other industries which have relevance are manufacturing (362 observations), professional, scientific and technical activities (184 observations), and construction (175 observations).

Table 2 reports the descriptive statistics of the economic, financial and performance measures. We can see that the number of observations varies depending on the availability of the items to be examined, fluctuating between 1612 for LNASS and 1093 for ROBA; in general, there are more observations for the economic structure measures, and less for the financial structure measures.When performing the multivariate analysis, these numbers are slightly lower because availability of data is required for all the variables included in the models, as we can see in Section 5.

We have to note the high proportion of financial assets (0.1016), which can be partially explained for the investments in group companies and associates. It is also worth noting the dispersion between the profitability measures, what shows the importance of using alternative measures.

Table 1. Sample distribution by industry and year

	Pre-2008	Post-2008	Total
Agriculture, forestry and fishing	4	9	13
Mining and quarrying	11	17	28
Manufacturing	115	247	362
Electricity, gas, steam and air conditioning and equipment	4	14	18
Water supply, sewerage, waste management and remediation activities	8	18	26
Construction	50	125	175
Wholesale and retail trade, repair of motor vehicles and motorcycles	18	54	72
Transporting and storage	14	21	35
Accommodation and food service activities	8	18	26
Information and communication	32	73	105
Financial services	125	328	453
Real estate activities	28	82	110
Professional, scientific and technical activities	45	139	184
Administrative and support service activities	11	27	38
Human health and social work activities	7	29	36
Arts, entertainment and recreation	1	9	10
Other services activities	4	10	14
Total	485	1220	1705

Table 3 shows the descriptive statistics based on the period before the accounting reform (2004-2008) or the period after the accounting reform (2008-2016). We can observe that there are significant differences between both periods in almost all the variables. Specifically, the post-reform observations have higher assets (LNASS), higher leverage (LEV_A and LEV_B), a lower proportion of PP&E (PPE_ASS) and financial assets (FIN_ASS), lower liquidity (QUICK), lower profitability (ROE and ROBA), and lower accruals (TA). Although most of these differences are in line with the comments in the normative analysis from Section 3 and hypotheses stated in Section 4.1, we have to note that we have not controlled for other factors, different from the accounting reform, so we do a multivariate analysis in Section 5 using the models explained in Section 4.1.

Table 2. Descriptive statistics

Name	Obs.	Media	Std. Dev.	Smallest	25%	50%	75%	Largest
LNASS	1612	19.6186	2.1718	11.7178	18.0888	19.4685	21.2269	25.2571
PPE_ASS	1476	0.1016	0.1493	0.0000	0.0029	0.0301	0.1436	0.8352
FIN_ASS	1253	0.4987	0.3086	0.0033	0.2018	0.4999	0.7872	0.9834
LEV_A	1282	0.2927	0.2173	0.0039	0.1139	0.2572	0.4271	1.2354
LEV_B	1476	0.5459	0.2738	0.0367	0.3474	0.5470	0.7128	2.2065
QUICK	1258	1.0918	1.6488	0.0084	0.3420	0.7133	1.1930	20.2374
ROE	1522	0.0677	0.4507	-2.9271	-0.0056	0.0721	0.1782	2.4405
ROBA	1093	0.0933	0.1840	-0.5375	0.0115	0.0663	0.1539	1.2170
TA	1264	0.0924	0.4799	-10.7729	-0.0242	0.0710	0.2300	0.8871

Table 3. Mean and standard deviation of variables by period

	Period 2004-2007			Period 2008-2016			Test for mean differences		
Variable	Obs.	Mean	Std. Dev.	Obs.	Mean	Std. Dev.	Dif.	t	
LNASS	439	19.3605	2.1799	1173	19.7153	2.1618	-0.3548	-2.9266	***
PPE_ASS	412	0.1209	0.1538	1064	0.0942	0.1469	0.0267	3.0934	***
FIN_ASS	369	0.5543	0.3249	884	0.4755	0.2987	0.0787	4.1438	***
LEV_A	288	0.2607	0.1759	994	0.3020	0.2272	-0.0413	-2.8472	***
LEV_B	392	0.4994	0.2257	1084	0.5627	0.2875	-0.0633	-3.9423	***
QUICK	368	1.3044	1.6030	890	1.0040	1.6603	0.3004	2.9488	***
ROE	379	0.1614	0.2882	1143	0.0367	0.4890	0.1247	4.7011	***
ROBA	199	0.1317	0.1330	894	0.0848	0.1926	0.0469	3.2653	***
TA	261	0.1368	0.2084	1003	0.0809	0.5276	0.0559	1.6772	**

5. Empirical study: Results

5.1. Main analysis

This section reports the results from regressions of Models 1-5 explained in Section 4.1. Firstly, we computed a correlation matrix (unreported) to examine whether multicollinearity was a potential issue. Although most of correlations are significant, there are only two of them are higher than 70%: the correlation between CURRENT and QUICK (0.7667), what is explained because the two variables are liquidity measures, and the correlation between LNASS and LNSALES (0.7476), what is also explained because both variables are used as proxies of the company size. With regard to the correlation between the liquidity measures, it does not matter, since they are not included in the same model. Regarding the correlation between LNASS and LNSALES, it is below 0.80, so we do not expect collinearity problems (Firth, 1997; Huguet and Gandía, 2014; Huguet and Gandía, 2016). We then run Models 1-5 to test the formulated hypotheses. Table 4 reports the regression results.

Table 4. Regression results

Panel A: Model 1 (economic structure measures)

	LNASS			PPE_ASS			FIN_ASS		
	Coef.	t	P>|t|	Coef.	t	P>|t|	Coef.	t	P>|t|
POST	0.0242	0.31	0.754	-0.0403	-5.67	0.000	-0.0137	-0.85	0.398
LNSALES	0.6074	37.58	0.000	0.0037	2.45	0.015	-0.0127	-3.78	0.000
ROA	0.3323	1.02	0.310	-0.0581	-1.96	0.051	0.1160	1.63	0.102
LEV	-0.3990	-2.38	0.017	-0.0188	-1.23	0.219	-0.1831	-5.14	0.000
_CONS	9.1702	8.59	0.000	-0.0361	-0.37	0.709	0.3031	1.87	0.061
N	1222			1183			1025		
F	73.33			38.28			25.39		
Adj. R^2	75.13%			61.19%			54.36%		

Panel B: Models 2 and 3 (financial structure measures)									
	LEV_A			LEV_B			QUICK		
	Coef.	t	P>|t|	Coef.	t	P>|t|	Coef.	t	P>|t|
POST	0.0595	3.12	0.002	-0.0183	-0.13	0.901	-0.2351	-2.40	0.016
LNASS	-0.0014	-0.27	0.788	-0.2369	-5.05	0.000	-0.1162	-3.78	0.000
GROWTH	0.0000	1.49	0.137	-	-	-	-	-	-
LIFESPAN	0.0002	2.52	0.012	-0.0014	-2.13	0.033	-0.0004	-1.09	0.277
PPE_ASS	-0.0189	-0.25	0.803	-	-	-	-	-	-
_CONS	0.2878	1.81	0.071	5.8533	2.97	0.003	5.3491	3.93	0.000
N	687			698			833		
F	7.85			4.67			2.35		
Adj. R^2	31.49%			19.15%			6.97%		
Panel C: Models 4 and 5 (performance and accruals measures)									
	ROE			ROBA			TA		
	Coef.	t	P>|t|	Coef.	t	P>|t|	Coef.	t	P>|t|
POST	-0.0672	-2.17	0.030	-0.0388	-2.93	0.003	-0.0208	-1.40	0.162
TA	-0.3293	-3.84	0.000	-0.1250	-3.3	0.001	-	-	-
LNASS	0.0185	1.37	0.172	0.0062	1.06	0.288	-0.0344	-8.73	0.000
LNSALES	0.0145	1.22	0.224	0.0120	2.36	0.019	-	-	-
FIX_ASS	-0.5109	-5.74	0.000	-0.1889	-4.97	0.000	-	-	-
GROWTH	0.0000	0.50	0.618	0.0000	-0.04	0.971	0.0000	1.15	0.249
CURRENT	-0.0038	-0.43	0.668	-0.0047	-1.23	0.221	0.0232	6.17	0.000
SOLV	-0.0357	-3.63	0.000	-0.0095	-2.54	0.011	-	-	-
COV	0.0014	6.38	0.000	0.0010	10.38	0.000	-	-	-
AGE	0.0000	0.02	0.982	0.0000	0.19	0.851	0.0006	2.49	0.013
LEV	-	-	-	-	-	-	0.2533	8.07	0.000
ROE	-	-	-	-	-	-	-0.0256	-1.61	0.108
N_EARN	-	-	-	-	-	-	-0.0256	-1.630	0.103
_CONS	-0.0687	-0.26	0.791	-0.1134	-1.02	0.309	0.8990	7.03	0.000
N	788			782			839		
F	5.06			8.26			16.63		
Adj. R^2	21.46%			32.99%			49.24%		

Panel A of Table 4 reports the results of the economic structure model. We can observe that POST has a significantly negative effect on PPE_ASS, while it is not significant for LNASS and FIN_ASS. Results are interpreted in the following way: with regard to LNASS, although the normative analysis suggested a decrease in the assets value, we have to note that the relevance of the disappeared items (mainly fictitious assets) may be residual, such as start-up costs. Regarding PPE_ASS, the negative effect of POST is line with the normative analysis, and it may be due to the separation of some items that were grouped in the PP&E before the accounting reform (investment properties and construction in progress). Finally, with regard to FIN_ASS, it seems that the use of fair value for some groups has not had a significant effect, probably because the relative importance of this assets is low.

Panel B of Table 4 reports the results of the financial structure models. We can see that the accounting reform has positively affected the leverage ratios, while QUICKis negatively affected. The results suggest that liabilities increased more than assets, regardless they were current or non-current items. Finally, Panel C of Table 4 shows the results of the performance and accruals models. We have to note that, although POST has a significantly negative effect on the performance measures, the effect on TA is not significant. These results suggest that the effect of the accounting reform on profitability may be affected by other contemporary factors, such as the economic crisis. For this reason, we carry out a series of analysis to examine these results.

5.2. Time evolution

Although the analysis from previous section shows that the accounting reform has had a significant impact on some of the examined ratios, we think that the effect may have been progressive, and thus the impact in the ratios should not been immediate, but after a learning process.

To examine the time evolution of the examined ratios, we replace POST for TIME, a variable which equals 0 for the years before the accounting reform, and t-2007 for the years after the accounting reform (1 for year 2008, 2 for year 2009, 3 for year 2010…), with the aim of examining whether there is a time trend in the change of the analysed variables. Since learning curves rarely have a lineal form, we also include SQ_TIME, as the squared term of TIME. Table 5 reports the regression results of the models after the inclusion of TIME and SQ_TIME.

Table 5. Inclusion of year dummies

Panel A: Economic structure measures

	LNASS			PPE_ASS			FIN_ASS		
	Coef.	t	P>|t|	Coef.	t	P>|t|	Coef.	t	P>|t|
TIME	-0.0120	-0.34	0.737	-0.0097	-2.97	0.003	-0.0071	-0.94	0.349
SQ_TIME	0.0043	1.07	0.283	0.0003	0.91	0.364	0.0012	1.42	0.157
LNSALES	0.6091	37.76	0.000	0.0032	2.13	0.034	-0.0128	-3.81	0.000
ROA	0.3582	1.09	0.276	-0.0623	-2.10	0.036	0.1219	1.71	0.088
LEV	-0.3901	-2.34	0.020	-0.0229	-1.51	0.132	-0.1849	-5.21	0.000
_CONS	9.1468	8.59	0.000	0.1550	2.74	0.006	0.2637	1.62	0.105
N	1222			1183			1025		
F	72.43			38.69			25.02		
Adj. R	75.26%			61.92%			54.47%		

Panel B: Financial structure measures

	LEV_A			LEV_B			QUICK		
	Coef.	t	P>|t|	Coef.	t	P>|t|	Coef.	t	P>|t|
TIME	0.0241	2.86	0.004	0.0303	3.55	0.000	-0.1533	-3.35	0.001
SQ_TIME	-0.0022	-2.40	0.017	-0.0031	-3.17	0.002	0.0153	2.86	0.004
LNASS	-0.0012	-0.22	0.829	0.0230	4.15	0.000	-0.1775	-6.06	0.000
GROWTH	0.0000	1.63	0.103	0.0000	1.81	0.071	-	-	-
LIFESPAN	0.0002	2.69	0.007	0.0002	2.39	0.017	-0.0005	-1.30	0.194
PPE_ASS	-0.0230	-0.30	0.762	0.0655	0.83	0.405	-	-	-
_CONS	0.2836	1.78	0.076	0.0268	0.16	0.875	7.2025	5.54	0.000
N	687			736			842		
F	7.66			9.93			3.68		
Adj. R	31.34%			36.36%			13.04%		

Panel C: Performance and accruals measures

	ROE			ROBA			TA		
	Coef.	t	P>|t|	Coef.	t	P>|t|	Coef.	t	P>|t|
TIME	-0.0156	-1.15	0.250	-0.0132	-2.28	0.023	-0.0035	-0.55	0.582
SQ_TIME	0.0007	0.45	0.652	0.0008	1.33	0.183	-0.0004	-0.50	0.618
TA	-0.3352	-3.92	0.000	-0.1273	-3.45	0.001	-	-	-
LNASS	0.0185	1.36	0.173	0.0063	1.09	0.275	-0.0338	-8.62	0.000
LNSALES	0.0135	1.13	0.258	0.0114	2.24	0.026	-	-	-
FIX_ASS	-0.4940	-5.48	0.000	-0.1767	-4.60	0.000	-	-	-
GROWTH	0.0000	0.41	0.685	0.0000	-0.17	0.865	0.0000	1.00	0.318
CURRENT	-0.0026	-0.29	0.772	-0.0040	-1.05	0.294	0.0243	6.47	0.000
SOLV	-0.0361	-3.68	0.000	-0.0096	-2.59	0.010	-	-	-
COV	0.0014	6.50	0.000	0.0010	10.53	0.000	-	-	-
AGE	0.0001	0.19	0.851	0.0001	0.42	0.672	0.0007	2.58	0.010
LEV	-	-	-	-	-	-	0.2554	8.20	0.000
ROE	-	-	-	-	-	-	-0.0253	-1.60	0.110
N_EARN	-	-	-	-	-	-	-0.0228	-1.47	0.143
_CONS	-0.0762	-0.29	0.769	-0.1201	-1.08	0.280	0.8845	6.96	0.000
N	788			782			839		
F	4.99			8.21			16.71		
Adj R	21.47%			33.28%			49.84%		

Results for the economic structure measures (Panel A) are in line with the main analysis: TIME is significantly negative for PPE_ASS, suggesting a significantly decrease in the proportion of PP&E, while there is not a significant impact on LNASS and FIN_ASS. With regard to SQ_TIME, it is not significant in any regression. Regarding the financial structure measures (Panel B), we observe that both TIME and SQ_TIME are significant for the three measures, showing a non-linear impact on them: for LEV_A and LEV_B, the negative coefficient of SQ_TIME

indicates an increase followed by a decrease, while the negative effect on QUICK indicates a decrease followed by an increase. Solving an algebraic operation, we can estimate the highest leverage ratios when TIME equals approximately 5, while the lowest quick ratios are estimated for TIME equals approximately 7. These estimations suggest that the maximum and minimum values in the financial structure measures appear in the period 2012-2014, years of economic crisis, so the potential effect of the accounting reform may have been mixed with the economic crisis. Therefore, in the next Section we try to separate the effect of the accounting reform.

5.3. Economic crisis

In Section 2 we explained how difficult is the separation of the effects of the accounting reform from those of the economic crisis because they arise in the same period. Our suspicions are partly supported by the results from Section 5.2, especially with regard to the financial structure measures.

Therefore, we carry out two additional analyses with the aim of controlling for the effect of the economic crisis: i) firstly, we include in our regression models the dummy CRISIS, which equals 1 for the years when the variation rate of the Gross Domestic Product was negative, and 0 for the years when the variation rate was positive[11]; and ii) in an unreported analysis, we regress models 1-5 excluding the crisis years (those when CRISIS equals 1).

Table 6 reports the regression results after the inclusion of CRISIS. With regard to the economic structure measures, we can see that CRISIS is significantly positive for PPE_ASS, having the opposite sign to that obtained by POST, which maintains both its sign and significance from the previous analysis; regarding the economic structure measures, we observe that CRISIS is not significant for any measure, while POST remains significant in the three regressions; finally, although the performance measures are not affected by CRISIS, this variable has a significantly positive effect on TA, while POST becomes negative; these results suggest that, although the economic crisis increased accruals (probably with the aim of managing earnings), the accounting reform restrained them, so the global effect was almost nullified.

Table 6. Inclusion of variable CRISIS

Panel A: Economic structure measures

	LNASS			PPE_ASS			FIN_ASS		
	Coef.	t	P>|t|	Coef.	t	P>|t|	Coef.	t	P>|t|
POST	0.0611	0.71	0.475	-0.0484	-6.15	0.000	-0.0058	-0.32	0.747
CRISIS	-0.0688	-1.00	0.317	0.0149	2.37	0.018	-0.0146	-0.98	0.326
LNSALES	0.6083	37.58	0.000	0.0035	2.34	0.020	-0.0126	-3.74	0.000
ROA	0.3039	0.93	0.355	-0.0522	-1.75	0.080	0.1102	1.55	0.122
LEV	-0.3992	-2.38	0.017	-0.0186	-1.22	0.223	-0.1830	-5.14	0.000
_CONS	9.1577	8.57	0.000	-0.0339	-0.35	0.725	0.2931	1.81	0.071
N	1222			1183			1025		
F	71.94			37.79			24.91		
R	76.19%			63.02%			56.63%		
Adj. R^2	75.13%			61.35%			54.36%		

Panel B: Financial structure measures

	LEV_A			LEV_B			QUICK		
	Coef.	t	P>|t|	Coef.	t	P>|t|	Coef.	t	P>|t|
POST	0.0564	2.65	0.008	0.0529	2.51	0.012	-0.2487	-2.30	0.022
CRISIS	0.0052	0.32	0.746	0.0123	0.71	0.476	-0.1532	-1.56	0.118
LNASS	-0.0015	-0.27	0.783	0.0227	4.08	0.000	-0.1732	-5.90	0.000
GROWTH	0.0000	1.50	0.134	0.0000	1.71	0.087	-	-	-
LIFESPAN	0.0002	2.52	0.012	0.0002	2.27	0.023	-0.0004	-1.13	0.257
PPE_ASS	-0.0208	-0.27	0.784	0.0715	0.91	0.362	-	-	-
_CONS	0.2886	1.81	0.071	0.0308	0.18	0.857	7.1197	5.48	0.000
N	687			736			842		
F	7.68			9.86			3.76		
R	36.09%			40.25%			18.21%		
Adj. R^2	31.39%			36.17%			13.37%		

[11] In an unreported analysis, we use the variable VGDP, measured as the variation rate of the GDP, and results are qualitatively similar to those reported in this analysis.

Panel C: Performance and accruals measures									
	ROE			ROBA			TA		
	Coef.	t	P>|t|	Coef.	t	P>|t|	Coef.	t	P>|t|
POST	-0.0656	-1.90	0.057	-0.0364	-2.46	0.014	-0.0333	-2.03	0.042
CRISIS	-0.0027	-0.11	0.915	-0.0042	-0.38	0.705	0.0217	1.80	0.072
TA	-0.3292	-3.84	0.000	-0.1247	-3.37	0.001	-	-	-
LNASS	0.0185	1.37	0.171	0.0062	1.07	0.285	-0.0345	-8.76	0.000
LNSALES	0.0145	1.22	0.224	0.0120	2.36	0.018	-	-	-
FIX_ASS	-0.5114	-5.73	0.000	-0.1897	-4.98	0.000	-	-	-
GROWTH	0.0000	0.49	0.623	0.0000	-0.06	0.956	0.0000	1.24	0.216
CURRENT	-0.0039	-0.44	0.663	-0.0048	-1.25	0.211	0.0236	6.27	0.000
SOLV	-0.0357	-3.63	0.000	-0.0096	-2.55	0.011	-	-	-
COV	0.0014	6.37	0.000	0.0010	10.34	0.000	-	-	-
AGE	0.0000	0.02	0.986	0.0000	0.17	0.865	0.0006	2.48	0.013
LEV	-	-	-	-	-	-	0.2535	8.09	0.000
ROE	-	-	-	-	-	-	-0.0256	-1.61	0.108
N_EARN	-	-	-	-	-	-	-0.0261	-1.67	0.095
_CONS	-0.0689	-0.27	0.791	-0.1131	-1.02	0.310	0.8993	7.05	0.000
N	788			782			839		
F	4.96			8.10			16.43		
R	26.75%			37.55%			52.58%		
Adj. R^2	21.36%			32.92%			49.38%		

6. Conclusions

The 2008 accounting reform in Spain involved an in-depth change in the Spanish GAAP, whose aim was the convergence towards the IFRS, which were already used for the preparation of the consolidated financial statements of the listed companies. After 10 years of the accounting reform, studies about the impact of the reform on the financial analysis are rather scarce. The present study contributes to alleviate this lack of empirical research. Using a sample of listed Spanish companies for the period 2004-2016, we examine whether the accounting reform has had a significant impact on economic structure, financial structure, and performance measures commonly used in the financial analysis. The study also examines whether there is a learning process on the accounting reform, and controls for the economic crisis.

With regard to the economic structure measures, the results show that the accounting reform has involved a decrease in the proportion of PP&E over total assets, probably because the separation of the former line into PP&E, investment properties, and construction in progress. Nevertheless, the accounting reform has not had a significant impact on the total assets and the proportion of financial assets. Regarding the financial structure measures, although the main analysis shows that they are affected by the accounting reform, the time analysis suggests a non-linear relationship between the accounting reform and these measures, suggesting either a learning process or a mixed effect of the economic crisis. Finally, the analysis on the performance measures shows that the accounting reform has had a significant impact on them; although results do not show a significant impact of the economic crisis on them, the fact that accruals are indeed suggests that the economic crisis has indirectly affected the performance indicators.

The main limitation of the study is related the use of global structure and performance measures, so a greater detail in the analysis of the items from the financial statements should be needed to make an in-depth analysis about the effect of the accounting reform. Nevertheless, this analysis cannot be carried out because of the differences in the reporting on the financial statements among the two regulatory frameworks. The paper presents several opportunities for future research. Firstly, since the study is focused on listed companies, an analysis of the effect of the accounting reform on private companies is needed, since different results are expected because of their lower developed accounting information systems and lack of experience in the use of IFRS. On the other hand, the complexity on the separation of the accounting reform and economic crisis recommends the examination of alternative methodologies which let separate their effects. In that sense, differences-in-differences models (Gandía and Montagud, 2011) may be useful to separate the treatment effect (the accounting reform) between the treated group and a control group.

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